

# Appendix F: Arden (North Melbourne) precinct Environmental Performance Requirements assessment

Arden (North Melbourne) Precinct Development Plan - Environmental Performance Requirement assessment



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 Approver: Mat Peel  
 Date: 9/02/2018

Discipline	EPR Ref	Environmental Protection Requirements	Development Plan Response
Aquatic ecology and river health	AE1	1. Fully integrate the stormwater treatment system into the design of Melbourne Metro (all precincts) for construction to ensure that stormwater entering a receiving water body complies with SEPP (Waters of Victoria). 2. The best practice performance objectives for achieving compliance with SEPP (Waters of Victoria) during the construction phase are described below: See table in EPRs for performance objectives. Note (1) Best practice performance objectives are based on the Best Practice Environmental Management Guidelines for Urban Stormwater – CSIRO.	The Arden (North Melbourne) precinct response to stormwater treatment is presented in Section 4.4.1 of the Development Plan.
Aquatic ecology and river health	AE2	1. Best practice sedimentation and pollution control measures must be applied to protect waterways in accordance with Best Practice Environmental Management: Environmental Guidelines for Major Construction Sites – EPA publication 480 (1996) and in accordance with an approved CEMP. 2. Control measures may include: vehicle wheel wash and rumble bars at worksite egress points, appropriate placement of material stockpiles and chemical storages, covered loads, street sweeping and water quality monitoring, where required.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Surface Water Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Aquatic ecology and river health	AE3	1. During construction, discharge all tunnel, station box and portal construction water to sewer. 2. Where groundwater interception during construction is predicted to occur, dewatering is to be managed so that groundwater is not released to stormwater or sensitive surface water bodies. (See EPR GW3).	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Surface Water Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction. Discharge to the sewer may occur through a trade waste agreement (or similar) with provision for groundwater disposal.
Aquatic ecology and river health	AE4	1. Where ground treatment works are required in waterways, design and implement methods that prevent discharge of sediments into the water column.	Arden is in close proximity to Moonee Ponds Creek (west). Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Surface Water Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Aquatic ecology and river health	AE5	1. Design the Arden electrical substation so that it is appropriately protected against floodwaters during operation (see EPR SW1), to prevent the release of contaminants to Moonee Ponds Creek.	The Arden electrical substation will be subject to a separate Development Plan process prior to any works commencing on the construction of this facility.
Aquatic ecology and river health	AE6	1. During operation, discharge tunnel drainage water to sewer, unless otherwise agreed by EPA and Melbourne Water and in compliance with SEPP (Waters of Victoria). 2. Where groundwater interception during operation is predicted to occur, disposal is to be managed so that contaminated water is not released to stormwater or to sensitive surface water bodies (see EPR GW4).	Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Surface Water Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Aquatic ecology and river health	AE7	1. Fully integrate the stormwater treatment system into the design of all precincts and portals to ensure that any stormwater entering a receiving water body complies with SEPP (Waters of Victoria). See table in EPR Notes (1) Best practice performance objectives are based on the Best Practice Environmental Management Guidelines for Urban Stormwater – CSIRO. (2) An example using SEPP (Waters of Victoria), general surface waters segment. (3) SEPP Schedule F7 – Yarra Catchment – urban waterways for the Yarra River main stream. (4) Litter is defined as anthropogenic material larger than five millimetres. 2. Sedimentation and pollution control measures must be applied to protect waterways and habitat areas such as periphery surrounding Moonee Ponds Creek in accordance with industry best practice. This must include water quality monitoring, where required.	The Arden (North Melbourne) precinct response to stormwater treatment is presented in Section 4.4.1 of the Development Plan.
Aboriginal Cultural Heritage	AH1	1. Comply with a Cultural Heritage Management Plan approved under the <i>Aboriginal Heritage Act 2006</i> and prepared in accordance with the Aboriginal Heritage Regulations 2007.	The Arden (North Melbourne) precinct design is within the activity area defined in the Cultural Heritage Management Plans. Compliance with this Environmental Performance Requirements will be in accordance with MMRA's approved Environmental Management Framework, including all Cultural Heritage Management Plans.
Air Quality	AQ1	1. Prior to commencement of Project works, develop and implement plan(s) for dust management and monitoring, to minimise and monitor the impact of construction dust. Develop the plan(s) in consultation with EPA and the owners of key sensitive equipment or locations, and advise the community of the plan, in accordance with the contractors Community and Stakeholder Engagement Plan (see EPR SC4). 2. The plan(s) must: a) Set out air quality criteria and outline the justification for those criteria for above ground construction works. b) Be informed by air modelling of construction activities, which should identify the main dust sources and the location of sensitive land uses. Air modelling for particulate dispersion must include construction ventilation discharges, and assess for both dust particulates and respirable crystalline silica. c) Be informed by a human health risk assessment, conducted by a suitably qualified professional, for high risk construction activities which may generate possible airborne contaminants of potential concern, including: dust, respirable crystalline silica, asbestos, Aspergillus spores (Precinct 4 only) and any other common industrial contaminants within dust (such as metals and polycyclic aromatic hydrocarbons). d) Describe the proposed dust management and monitoring system including (but not necessarily limited to): i Routinely reviewing weather model predictions. ii Continuous monitoring and real-time alert systems in the event of measured exceedances. iii Protocols for record-keeping. iv Protocols to ensure that site personnel advise the site manager if excessive dust emissions are observed. e) Describe the mitigation measures that will be implemented to ensure compliance with air quality criteria. f) Address monitoring requirements for key sensitive receptors, including (but not limited) to: i Residential and commercial properties, including ACMI. ii Hospitals and research facilities within the Parkville precinct. iii Heritage listed places sensitive to dust including St Pauls Cathedral and the Melbourne City Baths. iv Universities, including The University of Melbourne and RMIT. v Schools, including Melbourne Grammar School (South Yarra Campus) and Christ Church Grammar School. vi The Arts Centre Melbourne and National Gallery of Victoria. vii Public parks and outdoor public recreational areas including the Shrine of Remembrance Reserve and JJ Holland Reserve.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Air Quality Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.

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Air Quality	AQ2	1. Manage construction activities to minimise dust and other emissions in accordance with EPA Publication 480, Environmental Guidelines for Major Construction Sites (EPA 1996).	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Air Quality Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Air Quality	AQ3	1. Control the emission of smoke, dust, fumes and other pollution into the atmosphere during construction and operation in accordance with the SEPPs for Air Quality Management and Ambient Air Quality.	Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Air Quality Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Arboriculture	AR1	1. During detailed design, review any potential tree impacts and achieve the maximum possible tree retention on both public and private land, including retaining all valuable habitat linkages or corridors where practicable. 2. Trees to be removed during early works must only be those associated with early works. 3. Comply with any requirements of Heritage Victoria if the trees are on the VHR. 4. Prior to commencement of Project Works, develop and implement a plan in consultation with the relevant local council that identifies all trees in the Project Area which covers: a) Trees to be removed or retained. b) Condition and significance of the trees to be removed. c) Options for temporary re-location of palms and reinstatement at their former location or another suitable location. d) Options for re-location of all trees and, if feasible for the tree species, reinstatement of the trees at their former location. 5. The plan should include a tree removal protocol established in consultation with the City of Melbourne, the City of Port Phillip, the City of Stonnington, the Shrine of Remembrance and Shrine Trustees, University of Melbourne and Heritage Victoria as applicable that includes a process for MMRA approval of trees prior to removal.	The public realm response in regards to tree retention for Arden (North Melbourne) Station is presented in Section 4.4.2 of the Development Plan.
Arboriculture	AR2	1. Reinstatement quality soils to sufficient volumes to support long-term viable growth of replacement trees. Ensure ongoing supply of water to tree root zones, especially during their establishment stage. Employ water sensitive urban design principles (WSUD) where possible.	The public realm response in regards to tree soil and water supply is presented in Section 4.4.2 of the Arden (North Melbourne) Precinct Development Plan.
Arboriculture	AR3	1. Develop a tree replacement program to re establish lost canopy cover and achieve canopy size equal to (or greater than) healthy, mature examples of the removed species in Melbourne. 2. Establish protocols to govern the use of advanced and super advanced trees, where such use is appropriate to re-establish canopy and valued landscape character in a way that balances long term viability of the tree with immediate impact. 3. Consult with the City of Melbourne, the City of Port Phillip, the City of Stonnington, the Shrine of Remembrance and Shrine Trustees, University of Melbourne and Heritage Victoria as applicable. 4. When re establishing trees, regard should be had to the following documents where relevant: a) The City of Melbourne's Tree Retention and Removal Policy (2012) (excluding sections 8.2 and 8.3) and Urban Forest Strategy, South Yarra Urban Forest Precinct Plan, Central City Urban Forest Precinct Plan, Carlton Urban Forest Precinct Plan and Kensington Urban Forest Precinct Plan. b) The City of Port Phillip's Community Amenity Local Law No. 1 and Greening Port Phillip – An Urban Forest Approach. c) The City of Stonnington's General Local Law 2008 (No 1) and City of Stonnington Street Tree Strategy. d) Any associated precinct plans. e) Specific policies of the Domain Parklands Conservation Management Plan, for trees within Domain Parklands. f) Shrine of Remembrance Conservation Management Plan (Lovell Chen, 2010) or any future review and the Shrine of Remembrance Landscape Improvement Plan (Rush Wright Associates, 2010). g) South African Soldiers Memorial Conservation Management Plan (Context, 2016). h) The preferred future character of the University of Melbourne, for trees in the grounds of the University of Melbourne. 5. The re establishment of trees must also consider the contribution that the replacement trees can make to the creation of habitat corridors and linkages where this is possible. (See EPRs CH13 and CH18 as appropriate).	The public realm response in regards to tree replacement for Arden (North Melbourne) Station is presented in Section 4.4.2 of the Development Plan.
Arboriculture	AR4	1. Prior to commencement of construction of any Project works that could affect trees, prepare and implement Tree Protection Plans for each precinct in accordance with AS4970 2009 Protection of Trees on Development Sites. The plans must respond to the detailed design and construction methodology of the Project and ensure that trees proposed to be retained are adequately protected from the impact of construction or related activities. 2. Where a Tree Protection Plan is required for a heritage place, the plan must be developed in consultation with Heritage Victoria or the relevant council (as applicable).	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Ecology Management Plan (including a Tree Protection Plan) with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Arboriculture	AR5	1. For City of Melbourne trees that are to be retained and protected, a bank guarantee or bond of the trees' value will be held against the approved Tree Protection Plan for the duration of the works in accordance with the City of Melbourne Tree Retention and Removal Policy.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Ecology Management Plan (including a Tree Protection Plan) with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. A Bank guarantee or bond for the trees' value will be provided to the City of Melbourne for City of Melbourne trees that are to be retained and protected in accordance with the City of Melbourne Tree Retention and Removal Policy.
Business	B1	1. Reduce the disruption to businesses from direct acquisition or temporary occupation of land, and work with business and land owners to endeavour to reach agreement on the terms for possession of the land. 2. Provide businesses with adequate notice (as required under the relevant legislation) of any need for relocation, as a result of the Project including the termination of leases of public or private land where the displacement is a direct consequence of the Project.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Communications and Stakeholder Engagement Management Plan, which will include a Business Engagement and Continuity Management Plan (Business Disruption Mitigation Plan). This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.

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Business	B2	1. Prior to commencement of relevant works, prepare a business disruption plan consistent with the contractors Community and Stakeholder Engagement Management Plan (SC4) to: a) Manage potential impacts to non-acquired businesses, commercial property owners and not-for-profit organisations. b) Ensure appropriate engagement with local councils, businesses, property owners and the community throughout construction. 2. The plan must outline the stakeholder engagement measures for each precinct and include: a) Adequate notice of key Project milestones. b) Details of any changes to traffic and parking conditions and duration of impact. c) A Project construction schedule developed in coordination with transport authorities and local councils and in consultation with businesses to minimise cumulative impacts of this and other projects. d) Plans for notifying customers of proposed changes to business operations, including the setting of suitable timeframes for notification prior to commencement of works. e) Measures to ensure access to businesses is maintained for customers, deliveries and consistent with EPA T10 for waste removal, unless there has been prior engagement with affected businesses (including mutually agreed mitigation measures as required). These measures could include the installation of directional and business signage to assist customers and agreed protocols for engaging with service providers (i.e. deliveries, collections, etc.). f) Process for registering, management and resolution of complaints from affected businesses consistent with Australian Standard AS/NSZ 10002:2014 Guidelines for Complaint Management in Organisations. g) Measures for supporting affected businesses during construction in accordance with the Business Support Guidelines for Construction (BSGC) such as marketing and promotion, local activation, way-finding programs and up skilling opportunities. h) Where implementation of BSGC support measures have been exhausted for a business, provide the opportunity for assistance in preparing a Business Plan to develop a business profile and more detailed understanding of the business and how it operates (where appropriate a financial baseline may form part of the business plan) so that further measures can be factored into Business Disruption Plans.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Communications and Stakeholder Engagement Management Plan, which will include a Business Engagement and Continuity Management Plan (Business Disruption Mitigation Plan). This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Business	B3	1. Following consultation with potentially affected businesses and prior to commencement of relevant works, prepare management plans and during construction implement those plans to minimise dust, noise and vibration impacts during construction, as per EPRs AQ1, NV5 and NV21.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Communications and Stakeholder Engagement Management Plan as well as the Air Quality Management Plan and Noise and Vibration Management Plan. Site specific controls for Air quality and Noise and vibration will be detailed in the Site Environmental Implementation Plan. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Business	B4	1. Maintain vehicular and pedestrian access to hospital emergency departments at all times during construction and to other key health and medical facilities, where practicable.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Communications and Stakeholder Engagement Management Plan, which will include a Business Engagement and Continuity Management Plan (Business Disruption Mitigation Plan). This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Business	B5	1. Prior to relevant works, develop a stop work contingency plan for Class 1 emergencies (as defined in the Emergency Management Act 2013) in consultation with medical institutions in the Parkville precinct in the event that Melbourne Metro construction works are required to cease as a result of any such emergency.	This is not relevant to the Arden (North Melbourne) precinct. Refer to the Parkville Precinct Development Plan.
Business	B6	1. In consultation and agreement with the owners of the Westin Residential Apartments and the owners' corporations in Plan of Subdivision PS428405M, prepare a legacy design for the private car parking, storage units and services below the Westin building to a similar standard as prior to the commencement of the Project (taking into account station infrastructure requirements) or as otherwise agreed with the owners. The legacy design is to be implemented at the earliest opportunity.	This is not relevant to the Arden (North Melbourne) precinct. Refer to the CBD South Precinct Development Plan.
Contaminated Land and Spoil Management	C1	1. Prior to commencement of shaft construction and prior to commencement of main works, prepare and implement a Spoil Management Plan (SMP) for each Works Package. The SMP must be in accordance with MMRA's Spoil Management Strategy and any relevant regulations, standards or best practice guidelines. The SMP must be developed in consultation with the EPA. The SMP will include but is not limited to the following: a) Applicable regulatory requirements. b) Identifying nature and extent of spoil (clean fill and contaminated spoil). c) Roles and responsibilities. d) Identification of management measures for handling and transport of spoil for the protection of health and the environment (consistent with the transport management plan(s) as required by EPRs T2 and T3). e) Identification, design and development of specific environmental management plans for temporary stockpile areas f) Identifying potential sites for re-use, management or disposal of any spoil. g) Monitoring and reporting requirements. h) Identifying locations and extent of any prescribed industrial waste (PIW) and the method for characterising PIW spoil prior to excavation. i) Identifying suitable sites for disposal of any PIW. 2. The SMPs must include sub-plans as appropriate, including but not limited to an Acid Sulfate Soil and Rock (ASS/ASR) Management Sub-Plan (see EPR C2).	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The Construction Management Plan Sub-plan will include aspect-specific control measures including the Spoil Management Plan (Acid Sulfate Soils and Rock Management Plan); Remedial Management Plan and Prescribed Industrial Waste Management Plan. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Contaminated Land and Spoil Management	C2	1. Prior to commencement of shaft construction and prior to commencement of main works, prepare and implement an Acid Sulfate Soil and Rock (ASS/ASR) Management Sub-Plan as a sub-plan of the overarching SMP for each Works Package. The Sub-Plan must be developed in accordance with the Industrial Waste Management Policy (Waste Acid Sulfate Soils) 1999, EPA Publication 655.1 Acid Sulfate Soil and Rock and relevant (EPA) regulations, standards and best practice guidance and in consultation with the EPA. 2. This Sub-Plan will adopt the general requirements of the SMP and also: a) Identify locations and extent of any potential ASS/ASR. b) Characterise ASS/ASR spoil prior to excavation. c) Identify and implement measures to prevent oxidation of ASS/ASR wherever possible. d) Identify potential sites for re-use, management or disposal of any ASS/ASR.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The Construction Management Plan Sub-plan will include aspect-specific control measures including the Spoil Management Plan (Acid Sulfate Soils and Rock Management Plan); Remedial Management Plan and Prescribed Industrial Waste Management Plan. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Contaminated Land and Spoil Management	C3	1. Prior to commencement of shaft construction and prior to commencement of main works, prepare a Remedial Management Plan (RMP) for each Works Package for contaminated land and groundwater. The RMP must: a) Consider the outcomes of further investigations including the appropriate groundwater investigations and modelling required in EPRs GW1, GW2, GW3 and GW5. b) Interpret groundwater permeation and VOC results. c) Present and take account of the outcomes of risk assessments. d) If required, identify remedial options to be implemented for contaminated land and groundwater in accordance with relevant regulations, standards and best practice guidance and in consultation with the EPA. 2. If required, as an outcome of the RMP, prepare and implement a remedial action plan and integrate the remediation approach into the design of the Project in accordance with relevant regulations, standards and best practice guidance and to the satisfaction of EPA.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The Construction Management Plan Sub-plan will include aspect-specific control measures including a Remedial Management Plan and Prescribed Industrial Waste Management Plan. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.

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Contaminated Land and Spoil Management	C4	1. Prior to commencement of relevant works, prepare and implement a health, safety and environmental plan for the management of hazardous substances. The plan must include but not be limited to: a) Consideration of the risks associated with exposure to hazardous substances for employees, visitors and general public. b) The identification of methods to control such exposure in accordance with relevant regulations, standards and best practice guidance and to the satisfaction of WorkSafe and in consultation with EPA. c) Method statements detailing monitoring and reporting.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The Construction Management Plan Sub-plan will include aspect-specific control measures including a Spoil Management Plan, Remediation Management Plan, Prescribed Industrial Waste Management Plan and a Health and Safety Management Plan. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Historical Cultural Heritage	CH1	1. Design permanent and temporary works to avoid or minimise impacts on the cultural heritage values of heritage places. Consult, as required, with Heritage Victoria and/or the relevant local council (as applicable). Note (1) The Project must meet the requirements of the <i>Heritage Act 2017</i> .	Historical cultural heritage at Arden (North Melbourne) Station is presented in Section 4.4.3 of the Development Plan.
Historical Cultural Heritage	CH2	1. To avoid or minimise impacts on the cultural heritage values of heritage places, prior to commencement of relevant works, prepare and implement a Heritage Management Plan (HMP) in consultation with Heritage Victoria or the relevant local council (as applicable). 2. The HMP must identify the heritage values of the place, the degree of significance of component parts, how proposed works will affect the heritage values, the mitigation measures to be adopted to avoid or minimise impacts on heritage values and any possible heritage benefits.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Heritage Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements with Heritage Victoria and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Historical Cultural Heritage	CH3	1. To avoid or minimise impacts on the cultural heritage values of heritage places, prior to commencement of relevant works: a) Perform works in accordance with the following noise and vibration and ground movement EPRs as related to heritage places: NV2, NV3, NV4, NV8, NV9, NV21, GM2, GM3, GM4, GM5, GM6 b) Undertake condition assessments of heritage places prior to commencement of construction of relevant works where located within the identified vibration and ground settlement zones of sensitivity and monitor as per NV8,GM3, GM4 and GM5. 2. Should damage occur to a heritage place as a result of works, undertake rectification works in accordance with accepted conservation practice (with reference to the Australia ICOMOS Burra Charter 2013) with input from a qualified heritage practitioner and in consultation with the land owner and relevant local Council for places in a local Heritage Overlay, or with the written approval of the Executive Director of Heritage Victoria for places included in the Victorian Heritage Register.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Heritage Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements with Heritage Victoria and review by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Historical Cultural Heritage	CH4	1. Prior to commencement of relevant works, undertake archival photographic recording in accordance with Heritage Victoria's specification for the archival photographic recording of heritage places where heritage places are to be demolished or modified or their setting is to be impacted by works. The archival recording is to be provided to Heritage Victoria for places in the VHR and the relevant local council for places included in the Heritage Overlay and approved in writing. Once approved, a copy of the recording is to be lodged with the La Trobe Picture Collection, State Library of Victoria.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Heritage Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements with Heritage Victoria and review by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Historical Cultural Heritage	CH5	1. Prior to the construction of works that affect heritage structures or places, where it is proposed to dismantle, store and reconstruct heritage fabric, develop detailed methodology in accordance with the Australia ICOMOS Burra Charter 2013 and in consultation with Heritage Victoria or the land owner or relevant local council (as applicable). Work is to be documented and overseen by an appropriately qualified heritage practitioner. 2. Prior to dismantling the following heritage places, develop interpretative material for display while the heritage fabric is not visible: a) Burke and Wills Monument. b) University of Melbourne Main Entrance Gate (Gate 6) Pillars and Fence (VHR H918).	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Heritage Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements with Heritage Victoria and review by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Historical Cultural Heritage	CH6	1. Prior to commencement of relevant works which may directly or indirectly affect heritage places, develop and implement appropriate protection measures for heritage places and their settings. This is to be done in consultation with the land owner, and Heritage Victoria or relevant council (as applicable).	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Heritage Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements with Heritage Victoria and review by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Historical Cultural Heritage	CH7	1. In consultation with Heritage Victoria and as required by the <i>Heritage Act 2017</i> : a) Develop archaeological management plans to manage disturbance of archaeological sites and values affected by the Project. b) Undertake investigation in accordance with the Guidelines for Investigating Historical Archaeological Artefacts and Sites, Heritage Victoria 2014 (as amended or updated). 2. Develop and implement a protocol for managing previously unidentified historical archaeological sites discovered during Project works.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Heritage Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements with Heritage Victoria and review by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Historical Cultural Heritage	CH8	1. In consultation with Heritage Victoria, the relevant local council and/or Aboriginal Victoria (as applicable), develop and implement, a heritage interpretation strategy for places in the VHR and VHI or which explores historical and Aboriginal cultural heritage themes. 2. This must also include the railway workshop buildings in the proposed Railway Reserve Precinct (proposed HO1093) located at 173-199 Laurens Street, North Melbourne in the Arden precinct. 3. The heritage interpretation strategy should consider the MMRA Creative Strategy.	In consultation with Heritage Victoria, the City of Melbourne and/or Aboriginal Victoria, a heritage interpretation strategy will be developed for the Arden (North Melbourne) Station. This strategy will take into consideration the MMRA Creative Strategy. The heritage interpretation strategy is intended to be read alongside this development but is not part of the Arden submission.
Historical Cultural Heritage	CH9	1. Undertake all underground service works beneath or within heritage places or tree protection zones (TPZs) for trees as part of heritage places to avoid, minimise and mitigate impacts to the heritage fabric.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Heritage Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements with Heritage Victoria and review by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Historical Cultural Heritage	CH10	1. Ensure new development is responsive to heritage places in terms of height, massing, form, façade articulation, materials and impacts on their settings and key views.	Historical cultural heritage at Arden (North Melbourne) Station is presented in Section 4.4.3 of the Development Plan.
Historical Cultural Heritage	CH11	1. Ensure no direct impact on heritage buildings on the former Glueworks site in Kensington.	This is not relevant to the Arden (North Melbourne) precinct. Refer to the Western Portal Precinct Development Plan.
Historical Cultural Heritage	CH12	1. Retain and protect Langford Street pumping station as part of the design for the new substation.	The design electrical substation is not included within the Arden Precinct Development Plan and will be subject to a separate development plan process prior to any works commencing on the construction of this facility.
Historical Cultural Heritage	CH13	1. In consultation with VicRoads, Heritage Victoria and/or the relevant local council, replace removed Elm trees in Royal Parade as part of Project delivery using appropriate species and re-establish the boulevard formation and heritage values. 2. Provide suitable soil conditions to facilitate the growth of new trees to reach the size of the existing mature trees in the boulevard. (See EPR AR3).	This is not relevant to the Arden (North Melbourne) precinct. Refer to the Parkville Precinct Development Plan.
Historical Cultural Heritage	CH14	1. During detailed design ensure the eastern Parkville station entry is set no less than 8-10 metres from the original Gatekeeper's Cottage and an appropriate boundary treatment is retained or re-established for the heritage building.	This is not relevant to the Arden (North Melbourne) precinct. Refer to the Parkville Precinct Development Plan.
Historical Cultural Heritage	CH15	1. During detailed design for the CBD South station, consult with City of Melbourne regarding the incorporation of the Charles Bush sculpture into the design for the new building on the Port Phillip Arcade site, preferably in a prominent position on the Flinders Street façade.	This is not relevant to the Arden (North Melbourne) precinct. Refer to the CBD South Precinct Development Plan.

Arden (North Melbourne) Precinct Development Plan - Environmental Performance Requirement assessment



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 Approver: Mat Peel  
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Discipline	EPR Ref	Environmental Protection Requirements	Development Plan Response
Historical Cultural Heritage	CH16	1. In the event that temporary or permanent relocation of the Burke and Wills Monument from its current site is required, resolve the final location of the monument in consultation with the City of Melbourne prior to the commencement of relevant works. (See EPR CH5).	This is not relevant to the Arden (North Melbourne) precinct. Refer to the CBD South Precinct Development Plan.
Historical Cultural Heritage	CH17	1. Integrate the bluestone pillar and cast iron fencing at the corner of Grattan Street and Royal Parade into the design for the station entry and surrounds in consultation with the University of Melbourne.	This is not relevant to the Arden (North Melbourne) precinct. Refer to the Parkville Precinct Development Plan.
Historical Cultural Heritage	CH18	1. Replace removed trees as part of Project delivery in accordance with relevant policy documents and to reinstate heritage values in consultation with the City of Melbourne, the City of Port Phillip, Heritage Victoria, the Shrine of Remembrance and Shrine Trustees (as applicable). Policy documents are as follows: a) Any Conservation Management Plan adopted by those bodies, including: i Domain Parklands Conservation Management Plan (2016) and the Domain Parklands Masterplan (when completed). ii Shrine of Remembrance Conservation Management Plan (Lovell Chen, 2010) or any future review and the Shrine of Remembrance Landscape Improvement Plan (Rush Wright Associates, 2010). iii South African Soldiers Memorial Conservation Management Plan (Context, 2016). (See EPR AR3).	This is not relevant to the Arden (North Melbourne) precinct. Refer to the Domain Precinct Development Plan.
Historical Cultural Heritage	CH19	1. In consultation with Heritage Victoria, the City of Melbourne, the Shrine of Remembrance and Shrine Trustees (as applicable), review the siting and design of the eastern Domain station entry during detailed design to ensure it is as recessive as possible in this location and has only a limited presence on the edge of the Shrine of Remembrance Reserve. 2. The design needs to allow for the maintenance of an appropriate setting to the Macpherson Robertson Memorial Fountain.	This is not relevant in the Arden (North Melbourne) precinct. Refer to the Domain Precinct Development Plan.
Historical Cultural Heritage	CH20	1. Prior to dismantling the South African Soldiers Memorial, in consultation with City of Port Phillip and Heritage Victoria develop interpretive material to display in the precinct until the monument is restored. 2. For detailed design, in consultation with City of Port Phillip and Heritage Victoria review the siting and design of the western Domain station entry to ensure the South African Soldiers Memorial and other components of the Albert Road Reserve retain their heritage values including an appropriate setting. If no appropriate setting can be established, consider options for relocation of the memorial to an alternative site.	This is not relevant in the Arden (North Melbourne) precinct. Refer to the Domain Precinct Development Plan.
Historical Cultural Heritage	CH21	1. In consultation with VicRoads, Heritage Victoria and relevant local councils, replace any trees in St Kilda Road that must be removed in a manner which will re-establish the boulevard formation and reinstate heritage values. 2. Resolve the physical and visual impacts of new above ground structures and changes to the functional layout with input from Heritage Victoria, relevant local council, VicRoads, Yarra Trams and PTV/DEDJTR (Transport) in the Heritage Impact Statement (HIS).	This is not relevant to the Arden (North Melbourne) precinct. Refer to the Domain Precinct Development Plan.
Historical Cultural Heritage	CH22	1. Retain and protect the Cross Street Electrical Substation in situ within or abutting proposed construction site.	This is not relevant in the Arden (North Melbourne) precinct. Refer to the Rail Turnback Precinct Development Plan.
Historical Cultural Heritage	CH23	1. Ensure that, where impacted by Project works, street fabric and infrastructure is conserved and/or accurately reconstructed in consultation with Heritage Victoria and the relevant local council.	Culturally significant street fabric and infrastructure at Arden (North Melbourne) Station is presented in Section 4.4.3 of the Development Plan.
Historical Cultural Heritage	CH24	1. Prior to commencement of main works, consider the construction noise and vibration pre-construction surveys and review the ground movement plan required by EPR GM3. On this basis, identify heritage places that may be vulnerable to damage from construction and identify appropriate mitigation measures to prevent damage to heritage places. 2. Prior to the commencement of main works: a) Conduct pre construction condition surveys of heritage places identified as potentially being vulnerable to damage to record structural condition and structural integrity. b) Implement the identified mitigation measures to prevent damage to heritage places in consultation with Heritage Victoria and the relevant local council (as applicable). c) Conduct vibration monitoring at the heritage places that may be vulnerable to damage to assess the actual impacts from construction works. 3. If the vibration monitoring demonstrates that a heritage place has been, or may be, damaged as a result of vibration, ground vibration must be reduced until the risk of vibration related damage is assessed as acceptable. 4. Construction techniques must also seek to limit, as far as practicable, ground movement to avoid causing damage to heritage places, (see also EPRs GM3, GM4, GM5, GM6, NV4, NV8 and NV2).	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Heritage Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements with Heritage Victoria and review by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
EMF	EMF1	1. Prior to commencement of Project works, prepare and implement an Environmental Management System (EMS) that is certified to ISO 14001:2015 Environmental Management Systems – requirements with guidance for use for construction and operation.	Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. Site specific controls are detailed in the Site Environmental Implementation Plan. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and review by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
EMF	EMF2	1. Prepare a Construction Environmental Management Plan (CEMP), Site Environment Implementation Plans (SEIP), Operations Environmental Management Plan (OEMP) and other plans as required by the Environmental Performance Requirements (EPRs) and as relevant to any stage of the Project. 2. Develop a program to set out the process and timing for development of an EMS, CEMP, SEIP, OEMP and other plans as required by the EPRs and as relevant to any stage of the Project. 3. The process for development of and implementation of the CEMP, the SEIP and OEMP must include consultation with Councils, Heritage Victoria, the Roads Corporation, Melbourne Water, Public Transport Victoria (PTV)/DEDJTR (Transport), the Environment Protection Authority (EPA) and other stakeholders as relevant. These consultation processes must be described in the program. Plans are to be reviewed in accordance with the EMF. 4. The CEMP should be prepared in accordance with EPA Publication 480, Environmental Guidelines for Major Construction Sites (EPA 1996).	Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. Site specific controls are detailed in the Site Environmental Implementation Plan. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and review by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
EMF	EMF3	1. Prior to commencement of Project works, appoint an Independent Environmental Auditor to audit proposed plans, as required in the Incorporated Document, so as to ensure the plans comply with the EPRs and to undertake environmental audits of compliance with the approved CEMP, SEIP, OEMP (the OEMP is for Public Private Partnership (PPP) only), EPRs and approval conditions.	An Independent Environmental Auditor has been appointed and will ensure the relevant plans comply with the EPRs and will undertake environmental audits to satisfy this EPR.
EMF	EMF4	1. Prior to commencement of Project works, develop and implement a process for the recording, management and resolution of complaints from affected stakeholders consistent with Australian Standard AS/NZS 10002: 2014 Guidelines for Complaint Management in Organisations. 2. The complaints management approach will be documented in the Community and Stakeholder Engagement Management Framework required under EPR SC3 and be integrated with the Proponent and Contractors' own EMS'. The complaints management system will address requirements of the Business Support Guidelines for Construction (BSGC). (See EPR B2).	Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. Site specific controls are detailed in the Site Environmental Implementation Plan. A Communications and Stakeholder Engagement Management Plan will also be prepared. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and review by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.

Arden (North Melbourne) Precinct Development Plan - Environmental Performance Requirement assessment



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Discipline	EPR Ref	Environmental Protection Requirements	Development Plan Response
Electro Magnetic Interference	EMI1	1. During detailed design activities for main works: a) Undertake a Project wide Electro Magnetic Interference (EMI) assessment for existing infrastructure, considering: i Baseline conditions. ii Stakeholder requirements. iii Manufacturer specifications of sensitive equipment. iv Any electromagnetic emissions where the magnetic fields are altered by moving metallic objects and which may alter the operation of any electrical or electronic equipment to be used during construction and operation of the Project. b) Undertake baseline monitoring of sensitive equipment in accordance with any relevant manufacturer environmental test requirements, where available. c) Determine operational EMI limits in consultation with sensitive equipment owners having regard to equipment manufacturer environmental specifications where available and background EMI levels. d) If EMI limits are expected to be exceeded, as a result of either the construction and/or operation of the Project, design mitigation measures, in consultation with equipment owners, so as to minimise impact on sensitive equipment in accordance with 'best practice' industry standards. 2. The findings of the assessment undertaken in EPR EMI1 should be summarised and addressed in the Management Plan prepared in response to EPR EMI2.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Design Management Plan (Electro-Magnetic Compatibility Management Plan). These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and review by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Electro Magnetic Interference	EMI2	1. Prior to commencement of relevant works, prepare and implement an Electro Magnetic Compatibility (EMC) Management Plan that includes the following (but is not necessarily limited to): a) An assessment of the likely electromagnetic emissions generated by the main works and the operation of the Project. b) Identification of sensitive equipment that might be affected by those electromagnetic emissions and the proposed management measures. c) A testing strategy in accordance with equipment specifications to monitor performance of appropriate management measures. d) Identification of possible works to sensitive equipment to avoid adverse impacts. e) A program for regular auditing of electronic and electrical systems during the construction, testing and commissioning. f) Remedial action to be undertaken if EMI limits are not met during the construction, testing, commissioning and operation of the Project.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Design Management Plan (Electro-Magnetic Compatibility Management Plan). These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and review by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Terrestrial flora and fauna	FF1	1. Where the removal of native vegetation is 'unavoidable' (as defined under relevant policy) meet the requirements of the Permitted Clearing of Native Vegetation – Biodiversity Assessment Guidelines.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Ecology Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Terrestrial flora and fauna	FF2	1. Develop and implement measures to avoid the spread or introduction of weeds and pathogens during construction, including vehicle and equipment hygiene.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Ecology Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Terrestrial flora and fauna	FF3	1. Trees identified for removal under EPR AR1, which may be used for breeding by native wildlife, should be removed outside the spring breeding season (August-December inclusive) where practicable. Immediately prior to site clearance for construction, large old trees with habitat hollows must be inspected by a suitably experienced and qualified arborist, to check for fauna occupancy, and native fauna removed and released at a nearby location immediately outside the impact zones.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Ecology Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Greenhouse Gas	G1	1. Prior to commencement of main works, develop and implement a Sustainability Management Plan to meet, as a minimum, the Melbourne Metro sustainability targets, including achieving the specified ratings under the Infrastructure Sustainability Council of Australia's Infrastructure Sustainability Rating Tool and the Green Star Design and As Built Melbourne Metro Rail Tool.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Sustainability Management Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Greenhouse Gas	G2	1. Monitor and report on how each of the best practice GHG abatement measures and sustainability initiatives identified in the Concept Design is implemented in the detailed design of the Project and whether any additional measures not included in the Concept Design are feasible.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Sustainability Management Plan, which will include sub-plans such as Climate Resilience, Carbon and Energy. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Ground Movement and Land Stability	GM1	1. Prior to commencement of shaft construction and prior to commencement of main works, develop and maintain geological and groundwater model(s) (as per EPR GW2) for each Works Package which: a) Use monitored ground movement and ground water levels prior to construction to identify pre-existing movement. b) Inform tunnel design and the construction techniques to be applied for the various geological and groundwater conditions. c) Assess potential drawdown and identify trigger levels for implementing additional mitigation measures to minimise potential primary consolidation settlement. d) Assess potential ground movement effects from excavation and identify trigger levels for implementing additional mitigation measures to minimise potential ground movement effects.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The Construction Management Plan Sub-plan will include aspect-specific control measures detailed in the Spoil Management Plan and the Design Management Plans will include a Groundwater Management Plan and Ground Movement Management Plan. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Ground Movement and Land Stability	GM2	1. Design and construct the permanent structures and temporary works to limit ground movements to within appropriate acceptability criteria (to be determined in consultation with relevant stakeholders, local councils and land managers and which build upon the assumptions for criteria presented in the EES) for vertical, horizontal, and angular deformation as appropriate for Project activities during the construction and operational phase. In the design of the works and the planning of construction and mitigations, incorporate the findings of investigations reported in the EES and subsequent relevant investigations.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Ground Movement Management Plan, which is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Ground Movement and Land Stability	GM3	1. Prior to commencement of shaft construction and prior to commencement of main works, develop and implement a Ground Movement Plan(s) for each Works Package for construction and operational phases of the Project that: a) Addresses the location of structures/assets which may be susceptible to damage by ground movement resulting from Melbourne Metro works, having particular regard to heritage places and EPR CH2. b) Identifies appropriate ground movement impact acceptability criteria for buildings, utilities, trains, trams and pavement after consultation with the various stakeholders. c) Identifies mitigation measures to ensure acceptability criteria can be met. d) Identifies techniques for limiting settlement of buildings and protecting buildings from damage. Where these may apply to heritage places, they should be developed in consultation with Heritage Victoria and the relevant local council (as applicable). e) Addresses additional measures to be adopted if acceptability criteria are not met such as reinstatement of any property damage. For heritage places, refer to EPR CH2 and CH24. f) Establishes ground movement monitoring requirements for the area surrounding proposed Melbourne Metro works and at the location of various structures/assets to measure consistency with the predicted model. g) Consult with land and assets owners that could be potentially affected and whereby mitigation measures would be required.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Ground Movement Management Plan, which is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.

Arden (North Melbourne) Precinct Development Plan - Environmental Performance Requirement assessment



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Discipline	EPR Ref	Environmental Protection Requirements	Development Plan Response
Ground Movement and Land Stability	GM4	1. Conduct pre-construction condition surveys for the assets predicted to be affected by ground movement, including where a property owner reasonably expects to be potentially affected and has requested a pre-construction condition survey. 2. Develop and maintain a data base of as-built and pre-construction condition information for each potentially affected structure identified as being in an area susceptible to damage (see EPR GM3) or where a property owner has requested a pre-construction condition survey, specifically including: a) Identification of structures/assets which may be susceptible to damage resulting from ground movement resulting from Melbourne Metro works. b) Results of condition surveys of structures, pavements, significant utilities and parklands to establish baseline conditions and potential vulnerabilities. c) Records of consultation with landowners in relation to the condition surveys. d) Post-construction stage condition surveys conducted, where required, to ascertain if any damage has been caused as a result of Melbourne Metro. e) Share pre- and post-condition assessments and records of consultation with the property owner proactively. f) Ensure all stakeholder engagement activities are undertaken in accordance with the contractors Community and Stakeholder Engagement Management Plan.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Ground Movement Management Plan and Communications and Stakeholder Engagement Management Plan, which is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
	GM5	1. Adopt construction techniques for Melbourne Metro to limit ground movement to within appropriate acceptability criteria (to be determined in consultation with relevant stakeholders).	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Ground Movement Management Plan, which is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
	GM6	1. For properties and assets affected by ground movement, undertake any required repair works or other actions as agreed with the landowner. For places on the VHR, consultation with Heritage Victoria and the relevant local council must occur (as applicable).	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Ground Movement Management Plan, which is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Groundwater	GW1	1. Design the tunnel and underground structures so that they minimise changes to groundwater levels during construction and operation to minimise impacts on groundwater dependent values, ground movement and contamination plume migration. 2. In the case of existing, registered groundwater bore users, for the assessment of tolerable groundwater drawdown criteria, drawdown level should not exceed the point where the available saturated aquifer thickness of the bore is reduced by further than 10 per cent.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Groundwater Management Plan and Ground Movement Management Plan, which will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Groundwater	GW2	1. Develop a groundwater model through a process that involves ongoing referral to the Independent Environmental Auditor consistent with the Australian Groundwater Modelling Guidelines (Barnett et al, 2012). Apply the model for the detailed design phase to predict impacts associated with any changes to construction techniques or operational design features proposed during detailed design, and reconfirm that the EPRs and mitigation measures are sufficient to mitigate impacts from changes in groundwater levels, flow and quality. 2. The groundwater model should be updated to address comprehensively transient calibration, aquifer specific storage parameter values and their justification, prediction of cumulative impacts during construction and uncertainty assessments. 3. Ensure that the model geometry set up (node and grid network of model and layering definition) is accurately matched into the Project's detailed design excavation geometry. 4. Undertake monitoring during construction to ensure that predictions are accurate and mitigation measures are appropriate, and adjust the model if required.	Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Groundwater Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Groundwater	GW3	1. Prior to commencement of shaft construction and prior to commencement of main works, develop and implement a Groundwater Management Plan (GWMP) for each Works Package detailing groundwater management approaches to address the predicted impacts to groundwater dependent values during construction and to ensure protection of groundwater dependent values. 2. The GWMP must be based on the detailed design phase groundwater model, and should include the following details: a) Approach to collection, treatment and disposal of groundwater collected during construction in accordance with the MMRA Groundwater Disposal Strategy. b) Identifying and if necessary, specifying mitigation measures to protect groundwater dependent vegetation during periods of drawdown. c) An approach identified in consultation with the EPA so that contaminant migration causes no significant impacts on beneficial uses or vapour intrusion into underground structures, and establish appropriate monitoring networks to measure the effectiveness of the approach. d) Methods for minimising drawdown in areas of known PASS and establishing appropriate monitoring networks to confirm effectiveness of approach. e) Methods for minimising drawdown at any existing recharge bores, and establishing appropriate monitoring networks to measure the effectiveness of mitigation. f) Groundwater drawdown trigger levels for groundwater dependent values at which additional mitigation measures must be adopted. g) Design, operation and management of groundwater injection bore fields. h) Contingency measures if impacts occur at existing active groundwater bores and surface water bodies. i) Contingency measures should unexpected groundwater conditions be encountered. 3. The GWMP must be developed in consultation with EPA and relevant water authorities. 4. The GWMP should also address MMRA's sustainability requirements where appropriate.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Groundwater Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Groundwater	GW4	1. Use the Groundwater Disposal Strategy and GWMP to obtain a Trade Waste Agreement with the relevant Water Retailers for groundwater disposal.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Groundwater Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction. A Trade Waste Agreement will be obtained at the relevant time.
Groundwater	GW5	1. Prior to commencement of shaft construction and prior to commencement of main works, develop and implement a groundwater monitoring plan as part of the GWMP for each Works Package that details sufficient monitoring of groundwater levels to verify that no significant impacts occur from potential: a) Contaminant migration on the beneficial uses of groundwater at third party properties caused by drawdown or vapour intrusion to underground structures b) Activation of PASS and groundwater acidification c) Reduction in access to water for bore owners in the area around the Project d) Reduction in access to groundwater for trees – particularly in the Tunnels precinct between CBD South and Domain stations, and the CBD South station and eastern portal precincts e) Change in injection rates in any existing recharge bores that may be present in the area around the Project.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Groundwater Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.

Arden (North Melbourne) Precinct Development Plan - Environmental Performance Requirement assessment



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Discipline	EPR Ref	Environmental Protection Requirements	Development Plan Response
Land Use and Planning	LU1	1. Prior to commencement of relevant works, develop and implement a plan for construction and operation of the Project that has as its purpose minimising impacts on existing land uses during both early works and main works, including by: a) Limiting the extent of any permanent change of use within existing public open space. b) Minimising the footprints of construction sites and any permanent infrastructure which is to be located on public land. c) Locating and designing all Project works to avoid, to the extent practicable, any temporary and permanent loss of public open space to maximise the re-instatement potential of that land. d) Minimising impacts to existing public open spaces and recreational facilities and the users of these facilities, including (but not limited to): JJ Holland Park, University Square, the Melbourne City Baths, City Square, Federation Square, the Shrine of Remembrance and the Shrine Reserve, Domain Parklands, Edmund Herring Memorial Oval, and the Albert Road Reserve. e) Minimising the impacts to existing residential areas by locating new above ground infrastructure, such as electrical substations in appropriate locations considering adjoining properties and exploring the co-location of rail infrastructure facilities where practicable. f) Ensuring residents are notified in advance of works in accordance with EPRs SC4 and SC10. 2. Such measures must be developed in consultation with affected land managers for public land, local councils and key stakeholders, as applicable. Note (1) The approach to defining key stakeholders is to be outlined in the Community and Stakeholder Engagement Management Framework (see EPR SC3).	Land use and planning, in particular the impact on existing land use, is presented in Section 4.4.4 of the Arden (North Melbourne) Precinct Development Plan.
Land Use and Planning	LU2	1. Development of the Project must be generally in accordance with the relevant Open Space Master Plans (including but not limited to, the Domain Parklands, and University Square Master Plans and Chapel ReVision Structure Plan), and be consistent with the Melbourne Metro Urban Design Strategy and EPR SC8 in designing and constructing above ground infrastructure for the tunnels. 2. Consultation must occur with land managers and/or agencies responsible for the implementation of the relevant Open Space Master Plans, including local councils and key stakeholders. The outputs must be consistent with EPR SC8.	The design of Arden (North Melbourne) Station has been considered in accordance with relevant Master Plans, this is presented in Section 4.4.4 of the Development Plan.
Land Use and Planning	LU3	1. Prior to commencement of relevant works, develop and implement a plan for the design and construction of Arden station that adopts an integrated approach to urban design and planning of the station and which is generally in accordance with the Vision and Framework Plan for Arden. This must include consultation with the Victorian Planning Authority, City of Melbourne and any other relevant agencies such as Melbourne Water and the plan must be referred to the Urban Design and Architectural Advice Panel (UDAAP). 2. The design must include integrated water sensitive urban design (EPR SW2) and management of the extent of flooding across the site.	The design of Arden (North Melbourne) Station in reference to land use and planning is presented in Section 4.4.4 of the Development Plan.
Land Use and Planning	LU4	1. Prior to commencement of relevant works, develop and implement a plan in consultation with the Urban Design and Architectural Advice Panel (UDAAP) to ensure the design of the Project meets the Melbourne Metro Urban Design Strategy and relevant planning schemes that considers: a) Permanent above ground structures. b) Temporary structures adopting principles of the Growing Green Guide 2014 including green walls, roofs and facades, where practicable. c) The MMRA Creative Strategy. d) Wayfinding, signage and advertising for above ground elements of the Project. 2. The strategies must be developed in consultation with relevant local councils and land managers. (See EPR LV1).	The design of the Arden (North Melbourne) precinct was developed in consultation with the Urban Design Strategy, this is presented in Section 4.4.4 of the Development Plan.
Landscape and visual	LV1	1. Prior to commencement of relevant works, develop and implement a plan for the design of permanent and temporary works, including temporary landscaping, in consultation with relevant local councils and the Office of Victorian Government Architect to comply with the Melbourne Metro Urban Design Strategy. Avoid or minimise, to the extent practicable, visual impacts in both duration and intensity on sensitive receptors and heritage places, and maintain broader landscape character and heritage precinct values, particularly in relation to: a) Tunnels: Queen Victoria Gardens, Tom's Block. b) Western Portal: JJ Holland Park. c) Parkville Station: University of Melbourne, Victorian Comprehensive Cancer Centre, Royal Melbourne Hospital, University Square. d) CBD North Station: RMIT University, the State Library and State Library Forecourt, City Baths, and A'Beckett Street open space. e) CBD South Station: St Paul's Cathedral, Federation Square, City Square, Flinders Street Station, Young and Jackson Hotel. f) Domain Station: The Shrine of Remembrance, Shrine of Remembrance Reserve, St Kilda Road, Albert Road Reserve, Domain Parklands. g) Eastern Portal: South Yarra Sidings Reserve, Osborne Street, Lovers Walk Pedestrian Walk. h) Existing habitat corridors within and proximate to Moonee Ponds Creek, if the alternate substation site adjacent to the Moonee Ponds Creek is selected. 2. Consult with University of Melbourne in relation to location and design of station entries on University land.	Landscape and visual impacts at the Arden (North Melbourne) precinct are presented in Section 4.4.5 of the Development Plan.
Landscape and visual	LV2	1. Develop and implement a plan in consultation with the Office of Victorian Government Architect, local councils and other land managers to comply with the Melbourne Metro Urban Design Strategy to re-establish and enhance public open space, recreation reserves and other valued places disturbed by temporary works. Some of these are heritage places and further consultation will be required. 2. The plan must include, but not be limited to, a methodology and timeframe for storage, reinstatement or replacement of existing public art, monuments and public infrastructure such as poles (including banner poles), bins, and other street furniture such as wayfinding signage (including signage hubs). 3. Where temporary works on public open space, recreation reserves and other valued places disturb trees in these locations, the plan must be consistent with measures proposed under plans and actions required under EPR AR1, AR2 and AR3 regarding reinstatement of trees. 4. The plan should include a timeframe for re-establishment of public open space, recreation reserves and other valued places disturbed by temporary works and should also include exploring opportunities for renewal of public spaces for the benefit of communities beyond resident groups, including visitors, business owners and commuters.	The re-establishment of public open space is presented in Section 4.4.5 of the Arden (North Melbourne) Precinct Development Plan.
Landscape and visual	LV3	1. Prior to commencement of relevant works where temporary lighting is required, develop measures to minimise light spillage during construction to protect the amenity of adjacent neighbourhoods, parks and community facilities. Lighting for operation must be designed in accordance with council requirements and relevant standards.	Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Urban Design Management Plan, which will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Landscape and visual	LV4	1. Develop and implement a plan to consider the use of temporary landscape and other temporary features or structures during construction. Temporary landscape treatments or features should be reused across the Project, where appropriate.	Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Urban Design Management Plan, which will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Noise and Vibration	NV1	1. Manage construction noise in accordance with EPA Publication 1254 Noise Control Guidelines and as specified in the Construction Noise and Vibration Management Plan (CNVMP) prepared under EPR NV21. The CNVMP must not prescribe standards or practices which are less rigorous than recommended by EPA Publication 1254.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.

Arden (North Melbourne) Precinct Development Plan - Environmental Performance Requirement assessment



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Noise and Vibration	NV2	1. For construction works conducted between CBD South station and Domain station, comply with the requirements of the Notification of Referral Decision for the Melbourne Metro Rail Project (EPBC 2015/7549, dated 22 September 2015) under the EPBC Act for vibration monitoring and measurement, as follows: a) Conduct pre-construction dilapidation surveys of the nearest Commonwealth Heritage listed structures to the construction activity, including the Former Guardhouse (Block B), to record structural condition and structural integrity prior to commencement of tunnelling. b) Conduct vibration monitoring at the commencement of tunnelling in geological conditions that are similar to those at Victoria Barracks in order to quantify the actual tunnel boring machine vibration characteristics (level and frequency) for comparison to the values derived from the literature and the German DIN (DIN 4150) target. c) Conduct continuous vibration monitoring at the nearest Victoria Barracks heritage structures to the construction activity, including the Former Guardhouse (B Block), to assess the actual tunnelling vibration for acceptability, taking into account both the vibration frequency and condition of structures, until monitoring of vibration at the Former Guardhouse (B Block) shows measurements equivalent to preconstruction vibration readings at the Former Guardhouse (B Block). d) If monitoring conducted according to the above demonstrates the condition of heritage structures may be degraded as a result of vibration, ground vibration must be reduced by adjusting the advance rate of the tunnel boring machine until monitoring of vibration at the Former Guardhouse (B Block) shows consistent measurements equivalent to preconstruction vibration readings at the Former Guardhouse (B Block). Other management actions to ensure the integrity of the heritage building may be employed if considered to be appropriate. (See EPR CH24).	This is not relevant to the Arden (North Melbourne) precinct. Refer to the CBD South and Domain Precinct Development Plan.
Noise and Vibration	NV3	<b>Noise and Vibration Modelling – Design</b> 1. Prior to commencement of shaft construction and prior to commencement of main works, each Works Package contractor must appoint a suitably qualified acoustic and vibration consultant to predict construction noise and vibration (through modelling) and update the modelling to reflect current construction methodology, site conditions and specific equipment noise and vibration levels (this will require noise and vibration measurements). The model is to be used to determine appropriate mitigation to achieve the EPRs. 2. The acoustic and vibration consultant must document the modelling and mitigation investigation in a Construction Noise and Vibration Assessment Report for review by the Independent Environmental Auditor. This report must provide the basis for the development of the construction noise and vibration management plan required under EPR NV21. 3. The model must consider airborne noise to residential and non-residential receivers, ground-borne noise at residences, blasting vibration and ground-borne vibration. (For heritage places see EPR CH24).	This Development Plan presents the extent and scope of the built form of the Arden (North Melbourne) precinct including the new station to the ticket gate as required by the Incorporated Document. Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Noise and Vibration	NV4	<b>Noise and Vibration Monitoring - Construction</b> 1. Prior to commencement of shaft construction and prior to commencement of main works, each Works Package contractor must appoint a suitably qualified acoustic and vibration consultant to undertake noise and vibration monitoring. 2. The acoustic and vibration consultant must undertake noise and vibration monitoring to assess levels with respect to any Guideline Targets specified in the EPRs. Where monitoring indicates exceedences of Guideline Targets, appropriate management actions must be implemented as soon as possible. 3. The model developed during the Design Stage should be updated / calibrated using the results of the noise and vibration monitoring to provide more accurate predictions of the noise and vibration levels associated with ongoing and future construction works. It may be appropriate to adjust management measures as a result of the more accurate predictions. (For heritage places see EPR CH24).	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Noise and Vibration	NV5	1. Prior to commencement of project works, each Works Package contractor must prepare and implement a communications plan to liaise with potentially affected community stakeholders and land owners regarding potential noise and vibration impacts. The plan must include procedures for complaint management as per SC3. In developing the plan, consult with relevant local councils, EPA Victoria, the Parkville Precinct Reference Group and RMIT University and other precinct reference groups, as appropriate. (See EPRs SC4 and SC11).	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Construction Noise and Vibration Communications Management Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Noise and Vibration	NV6	<b>Airborne Construction Noise Guideline Targets (External)</b> 1. Implement management actions if construction noise is predicted to or does exceed the Guideline Noise Levels at residential locations as specified in EPA Publication 1254. See table in EPRs Note (1) During Normal Working Hours, the CNVMP must address noise levels that exceed the Management Levels specified in Table EPR NV21A.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Noise and Vibration	NV7	<b>Airborne Construction Noise Guideline Targets (Internal)</b> 1. Implement management actions if construction noise: a) Is predicted to or does exceed the internal noise levels below for Sensitive Areas (based on AS/NZS 2107:2000); and b) Adversely impacts a noise sensitive receptor within the Sensitive Area. See EPR for table 2. If construction exceeds the internal noise levels above: a) Consider the duration of construction noise b) Consider the relevant ambient noise levels c) Consult with the owner or operator of the noise sensitive receptor d) Consider any specific acoustic requirements of specialist space to determine whether a noise sensitive receptor within a Sensitive Area is adversely impacted and, if so, whether further management actions are required. (See EPR NV21, subclause B).	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Noise and Vibration	NV8	<b>Vibration Guideline Targets for Structures</b> 1. Implement management actions if, due to construction activity, the following DIN 4150 Guideline Targets for structural damage to buildings (for short-term vibration or long-term vibration) are not achieved. See EPR for table NV8-1: Short-term vibration on structures Notes (1) It may be appropriate to modify the guideline targets for particular structures following the completion of pre-construction condition surveys. (2) At frequencies above 100 Hz, the values given in this column may be used as minimum values. (3) Vibration levels marginally exceeding the DIN4150 guideline targets in the table above would not necessarily result in damage to buildings and structures, but warrant further investigation to determine if higher vibration levels can be accommodated without risk of damage. (4) For civil engineering structures (e.g. with reinforced concrete constructions used as abutments or foundation pads) the DIN 4150 guideline targets for Type 1 buildings in the table above may be increased by a factor of 2. (5) Short-term vibration is defined as vibration which does not occur often enough to cause structural fatigue and which does not produce resonance in the structure being evaluated. (6) Where land owners agree, pre-construction condition surveys must be performed at all properties located within designated Project Area where it is predicted that DIN 4150 guideline targets will be exceeded. See EPR for table NV8-2 Long-term vibration on structures Notes (1) It may be appropriate to modify the guidelines targets described in the table above for particular structures following the completion of pre-construction condition surveys. (2) Vibration levels marginally exceeding those in the Table would not necessarily mean that damage would occur and further investigation would be required to determine if higher vibration levels can be accommodated without risk of damage. (3) Long-term vibration means vibration events that may result in a resonant structural response. (4) Where land owners agree, pre-construction condition surveys must be performed at all properties located within designated Project Area where it is predicted that the Guideline Targets described in the Table above will be exceeded.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.

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Noise and Vibration	NV9	<b>Vibration Guideline Targets for Above-ground Utility Assets and Infrastructure</b> 1. Prior to commencement of relevant works, undertake condition assessments of above ground utility assets and infrastructure, including (but not limited to) the Arden Street Bridge and Princes Bridge, to establish construction vibration limits in consultation with asset owners. 2. Monitor vibration during construction to demonstrate compliance with the relevant vibration guideline targets under NV8 or those agreed with the asset owners. Take remedial action if limits are not met. (See EPRs CH3 and CH24).	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Noise and Vibration	NV10	<b>Vibration Guideline Targets for Below-ground Infrastructure</b> 1. Prior to commencement of relevant works, undertake condition assessments of below-ground infrastructure, including (but not limited to) Swanston Street Brick Drain and Flinders Street Drain, to establish construction vibration targets with the asset owner. 2. Implement management actions if agreed construction vibration targets (or if no specific targets have been established the following DIN 4150 Guideline Targets for buried pipework/underground infrastructure) from construction are not achieved. See EPR table Notes (1) The DIN 4150 Guideline Targets may be reduced by 50% when evaluating the effects of long-term vibration on buried pipework. (2) The DIN 4150 Guideline Targets are based on the assumption that pipes have been manufactured and laid using current technology (however it is noted that this is not the case for the majority of buried pipework potentially affected by Melbourne Metro). (3) Compliance with asset owner's Utility Standards is to be achieved.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Noise and Vibration	NV11	<b>Vibration Dose Values (VDVs) (Human Comfort)</b> 1. Implement management actions if the following Guideline Targets (VDVs) (based on Table 1 in BS6472-1:2008) for continuous (as for TBMs and road headers), intermittent, or impulsive vibration are not achieved. See EPR table Notes (1) The Guideline Targets are non-mandatory; they are goals that should be sought to be achieved through the application of feasible and reasonable mitigation measures. If exceeded then management actions would be required. (2) The VDVs may be converted to PPVs within a future noise and vibration construction management plan under EPR NV21.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Noise and Vibration	NV12	<b>Sensitive Equipment Guideline Targets</b> 1. For Construction: Implement management actions (which may include source mitigation) if equipment manufacturer specifications, measured background levels or other agreed levels (after consultation with the affected organisation) whichever are higher, are expected to be or are exceeded for vibration sensitive equipment at the Parkville and CBD North precincts. 2. For Operation: If the manufacturer's specification or measured background levels (whichever are higher) or other agreed levels (after consultation and agreement from the affected organisation) are predicted to be exceeded, assess practicable mitigation to reduce the vibration levels to the relevant target. 3. Where equipment manufacturer specifications are not available for vibration, adopt the applicable ASHRAE Equipment Vibration Guideline Targets: See EPR Table Notes (1) Background vibration and noise must be measured in accordance with equipment environmental test requirements. (2) Monitoring must be undertaken in accordance with equipment specifications to demonstrate compliance, and monitoring locations determined in consultation with operators of sensitive equipment (See EPR NV21). (3) The proponent may undertake consultation with the users and agree alternative Guideline Targets for Construction and/or Operation phases. (4) Subject to being given the asset owner's consent, during the construction phase, a continuous monitoring program must be adopted (to the asset owner's agreement), with asset owner access to monitoring data using an alert with respect to a 'limit' approach.	Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Noise and Vibration	NV13	<b>Ground-borne (internal) Noise Guideline Targets for Amenity</b> 1. Implement management actions as agreed with potentially affected land owners to protect amenity at residences, sleeping areas in hospital wards, student accommodation and hotel rooms where the following ground-borne noise Guideline Targets are exceeded during construction (See Table below based on NSW Interim Construction Noise Guidelines 2009) Implement management actions, as determined in consultation with potentially affected land owners, where ground-borne noise levels unreasonably limit usage in education institutions such as lecture theatres. See table in EPRs for targets. Notes (1) Levels are only applicable when ground-borne noise levels are higher than airborne noise levels. (2) The noise levels are assessed at the centre of the most affected habitable room. (3) Management actions include extensive community consultation to determine acceptable level of disruption and provision of respite accommodation in some circumstances. (4) The levels of the Night and Evening periods are shown to protect amenity and sleep. Alternative and day time targets may be determined in consultation with potentially affected non-residential users where ground-borne noise levels may reasonably limit the usage of the spaces (e.g. lecture theatres).	Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Noise and Vibration	NV14	<b>Blasting</b> 1. Comply with Australian Standard AS2187.2-2006, Explosives –Storage and use Part 2 – Use of explosives for all blasting. 2. For intensive care wards, hospital wards, operating theatres, surgeries and Bio-resources and areas with vibration sensitive equipment which are not covered in AS2187.2-2006, agree a plan with facilities owners that: a) Avoids damage to vibration sensitive equipment. b) Minimises adverse impact on Sensitive Areas and limits adverse impacts on Bio-resources.	Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Noise and Vibration	NV15	<b>Bio Resources and Sensitive Research</b> 1. Implement management actions where the following guideline targets (based on Code of Practice for the Housing and Care of Laboratory, Mice and Rats – Department of Primary Industries, Victoria, 2004) are expected to be or are exceeded for areas housing bio-resources: a) Background noise should be below 50 dBL (internal) and should be free of distinct tones. b) Short exposure should be less than 85 dBL (internal). c) Any alternative noise level agreed with the owner of the bio-resources. Notes (1) The nominated levels are guideline targets for both construction and operation. (2) The levels above should take into consideration the limited frequency range associated with hearing for the Bio-resource under consideration. (3) Higher levels may be acceptable if it can be shown that the Bio resource under consideration is exposed to higher levels and is not adversely impacted by them. (4) Noise includes airborne and ground-borne noise at the sensitive receptors. (5) Consider the existing ambient noise levels when assessing predicted exceedences. (6) During the construction phase, a continuous monitoring program must be implemented in accordance with EPR NV21 . (7) Consideration should be given to adopting a vibration limit in agreement with the MMRA and stakeholders.	Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.

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Noise and Vibration	NV16	<p><b>Noise and Vibration Modelling</b></p> <p>1. Design Phase</p> <p>a) Appoint a suitably qualified acoustic and vibration consultant to predict and assess operational noise and vibration and determine practicable mitigation measures necessary to achieve the EPRs.</p> <p>b) The acoustic and vibration consultant must prepare an Operation Noise and Vibration Report for review by the Independent Environmental Auditor, which documents the predictions and mitigation measures.</p> <p>3. Commissioning / Operation</p> <p>a) Appoint a suitably qualified acoustic and vibration consultant to undertake commissioning noise and vibration measurements to assess levels with respect to the EPRs.</p>	<p>Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Noise and Vibration	NV17	<p><b>Victorian Passenger Rail Infrastructure Noise Policy (PRINP)</b></p> <p>1. Avoid, minimise or mitigate rail noise where the following PRINP (April 2013) Investigation Thresholds are exceeded during operation:  <i>See table in EPRs for targets</i></p> <p><i>Notes</i></p> <p>(1) If an investigation shows that the Investigation Thresholds are not exceeded, then no further action is considered under the PRINP.</p> <p>(2) The barrier thresholds of the PRINP are to be used as the design targets for the barrier heights and configuration.</p> <p>(3) If the Investigation Thresholds cannot be achieved with the installation of barriers or other on-reservation treatment then off-reservation treatment such as upgrades to residential building facades must be considered. Such treatments should be designed to meet the following internal noise levels where practicable to do so and subject to landowner consent:</p> <p>a. Maximum noise levels of trains should not exceed 50 dB LAMax in bedrooms.</p> <p>b. Maximum noise level of trains should not exceed 60 dB LAMax in living areas.</p> <p>(4) LAMax, is defined as maximum A-weighted sound pressure level and is the 95 percentile of the highest value of the A-weighted sound pressure level reached within the day or night</p> <p>(5) For Melbourne Metro the location of assessment is at 1m from the centre of the window of the most exposed external façade.</p>	<p>This EPR relates to the operational phase of the Project. Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Noise and Vibration	NV18	<p><b>Noise from Fixed Plant</b></p> <p>1. For operation, noise from fixed plant associated with Melbourne Metro must:</p> <p>a) Comply with State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1 (SEPP N-1).</p> <p>b) Where SEPP N-1 does not apply, comply with the internal Satisfactory Recommended Design Sound Levels as defined in AS/NZS 2107 for the following sensitive areas:</p> <ul style="list-style-type: none"> <li>i Teaching spaces</li> <li>ii Laboratories</li> <li>iii Conference rooms</li> <li>iv Libraries</li> <li>v Music studios</li> <li>vi Operating Theatres / Surgeries</li> <li>vii Wards / Recliners</li> <li>viii Performance spaces / Galleries</li> <li>ix Places of worship</li> </ul> <p>2. If the existing internal background noise level within any of the above areas exceeds the Maximum Recommended Design Sound Level in AS/NZS 2107, then noise from the fixed plant associated with the Melbourne Metro Project must not exceed the existing background levels within these spaces at the commencement of operation.</p> <p>3. This does not apply to noise generated by trains and/or trams.</p>	<p>This EPR relates to the operational phase of the Project. Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Noise and Vibration	NV19	<p><b>Ground-borne Noise Guideline Targets for Operation</b></p> <p>1. Where operational ground-borne noise Guideline Target levels, as shown in the table below (based on NSW EPA Rail Infrastructure Noise Guideline, May 2013), are exceeded for a sensitive land use, assess and implement practicable mitigation to reduce the noise level so that it either meets or achieves noise levels as close as practicable to the Guideline Target.  <i>See table in EPR for trigger levels.</i></p> <p><i>Notes</i></p> <p>(1) Specified noise levels refer to noise from heavy or light rail transportation only (not ambient noise from other sources).</p> <p>(2) Assessment location is internal near to the centre of the most affected habitable room.</p> <p>(3) LASmax refers to the maximum noise level not exceeded for 95% of the rail pass-by events.</p> <p>(4) For schools, educational institutions, places of worship the lower value of the range is most applicable where low internal noise levels is expected.</p> <p>(5) The values for performing arts spaces may need to be reassessed to address the specific requirements of a venue.</p>	<p>This EPR relates to the operational phase of the Project. Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Noise and Vibration	NV20	<p><b>Vibration Guideline Targets for Operation</b></p> <p>1. During operation, achieve the following guideline targets (based on Table 1 in BS6472-1:2008) or background levels (whichever is higher) for vibration as follows:          See EPR for table</p> <p><i>Notes</i></p> <p>(1) The Guideline Targets are non-mandatory; they are goals that should be sought to be achieved through the application of feasible and reasonable mitigation measures.</p> <p>(2) Compliance with these values implies no structural damage due to operation.</p>	<p>This EPR relates to the operational phase of the Project. Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Noise and Vibration	NV21	<p><b>Construction Noise and Vibration Management Plan</b></p> <p>1. Prior to commencement of project works, each Works Package contractor must develop and implement a Construction Noise and Vibration Management Plan (CNVMP) in consultation with EPA Victoria and the relevant councils. The CNVMP must comply with and address Noise and Vibration EPRs, be informed by the modelling undertaken by the acoustic and vibration consultant in accordance with EPR NV3 and must include (but not be limited to):</p> <ul style="list-style-type: none"> <li>a) Identification of sensitive receivers along Melbourne Metro's alignment.</li> <li>b) Details of construction activities and an indicative schedule for construction works, including the identification of key noise and/or vibration generating construction activities (based on representative construction scenarios, including at ancillary facilities) that have the potential to generate noise and/or vibration impacts on surrounding sensitive receivers.</li> </ul> <p>2. The CNVMP must include the following:</p> <p>A. Airborne Noise Management Levels during Normal Working Hours</p> <p>A1. The CVNMP must adopt daytime Management Levels for airborne noise at residences during Normal Working Hours (as defined in EPR NV6) in accordance with Table NV21-A. The Management Level in Table NV21-A is not a noise limit or target, but represents noise levels above which community reaction may be adverse and which should trigger management actions to minimize the noise impact.  <i>See EPR for table NV21-A Airborne Noise Management Levels during Normal Working Hours</i></p> <p><i>Note</i></p> <p>(1) Outside of Normal Working Hours, the Guideline Noise Levels in NV6 (which are adopted from EPA Publication 1254) apply.</p> <p>(2) Noise levels based on the NSW Interim Construction Noise Guidelines 2009.</p> <p>A2. In addition to the Management Levels shown in Table NV21-A, the Guideline Targets shown in EPRs NV6 and NV7 are to be adopted and addressed in the CNVMP.</p>	<p>Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>

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Noise and Vibration	NV21	<p>B. Airborne Noise Mitigation Measures</p> <p>B1. Identification of reasonable and practicable measures to be implemented to manage construction noise impacts in accordance with :</p> <ul style="list-style-type: none"> <li>i EPA Publication 1254 Noise Control Guidelines</li> <li>ii NSW ICNG (excluding Part 5, and Part 7.2.1 which relates to pre-approval documentation relevant to NSW) and TfNSW Construction Noise Strategy (but with Section 7 construction hours as per EPA1254 as shown in EPR NV6).</li> </ul> <p>B2. Any management actions to be implemented if predicted noise levels exceed, for an extended period of time, the guideline targets specified in EPRs NV6 or NV7 or the Management Levels in Table NV21-A.</p> <p>B3. Measures to be implemented in accordance with the MMRA Residential Impact Mitigation Guidelines including (but not limited to) mitigation measures for out of hours works (including unavoidable works) where predicted noise levels exceed the noise levels specified in the Residential Impact Mitigation Guidelines.</p> <p>C. Vibration: Structures</p> <p>C1. Identification of any alternative vibration guideline targets to those specified in EPRs NV8, NV9 or NV10 deemed necessary and/or appropriate to protect the structural integrity of structures based on pre-construction condition surveys, undertaken in accordance with CH24, GM4 and NV9 (or as otherwise required to assess the impact of vibration on structures along the alignment).</p> <p>C2. Identification of practicable measures to be implemented to manage construction vibration impacts in accordance with the:</p> <ul style="list-style-type: none"> <li>i Vibration guideline targets for structures specified in, or otherwise determined in accordance with, EPR NV8</li> <li>ii Construction vibration limits for above ground utility assets determined in accordance with EPR NV9</li> <li>iii Vibration guideline targets for below ground infrastructure specified in, or as otherwise determined in accordance with NV10.</li> </ul> <p>C3. Any management actions to be implemented if predicted vibration levels exceed the guideline targets specified in EPRs NV8, NV9, or NV10.</p> <p>C4. Specific heritage measures where relevant in accordance with EPRs CH2 and CH24.</p>	<p>Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Noise and Vibration	NV21	<p>D. Vibration and Ground-borne Noise: Human Comfort</p> <p>D1. Identification of reasonable and practicable measures to be implemented to manage construction vibration and ground borne noise impacts in accordance with the:</p> <ul style="list-style-type: none"> <li>i Vibration dose values for human comfort specified in EPR NV11 (which may be expressed as peak particle velocity rates for the purposes of the CVNMP).</li> <li>ii Ground-borne (internal) noise guideline targets for amenity specified in EPR NV13.</li> </ul> <p>D2. Any management actions to be implemented if predicted vibration or ground-borne noise levels exceed, for an extended period of time, the guideline targets identified in EPRs NV11 or NV13.</p> <p>D3. Any measures to be implemented in accordance with the Residential Impact Mitigation Guidelines including (but not limited to) mitigation measures for out of hours works (including unavoidable works) where ground-borne noise levels are predicted to exceed the ground-borne noise construction targets specified in the Residential Impact Mitigation Guidelines.</p> <p>E. Vibration and Ground-borne Noise: Sensitive Equipment and Bio-resources</p> <p>E1. Identification of reasonable and practicable measures, to be determined following consultation with the Parkville Precinct Reference Group and RMIT University, to be implemented to manage construction vibration and ground-borne noise impacts in accordance with the:</p> <ul style="list-style-type: none"> <li>i Vibration sensitive equipment guidelines specified in, or as otherwise determined in accordance with EPR NV12</li> <li>ii Bio-resource guideline targets specified in, or as otherwise determined in accordance with EPR NV15.</li> </ul> <p>E2. Any management actions to be implemented if predicted vibration or ground-borne noise levels exceed the guideline targets identified in EPRs NV12 or NV15.</p> <p>F. Blasting</p> <p>F1. If blasting is proposed, an assessment of the potential noise and vibration impacts associated with blasting activities, and the identification of measures to ensure compliance with Australian Standard AS2187.2-2006 as specified in EPR NV14.</p> <p>F2. Any measures to be implemented in accordance with the Residential Impact Mitigation Guidelines.</p>	<p>Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan with site specific controls in the Site Environmental Implementation Plan. This is reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Noise and Vibration	NV21	<p>G. Community Consultation</p> <p>G1. Details of all community consultation measures to be implemented in accordance with NV5 and SC3 including:</p> <ul style="list-style-type: none"> <li>i Any precinct-specific community consultation measures; and</li> <li>ii The establishment of measures concerning complaints management.</li> </ul> <p>H. Haulage</p> <p>H1. Operational procedures and controls that minimise truck noise, including, but not limited to, consideration of the following:</p> <ul style="list-style-type: none"> <li>i Where reasonable and practicable, limit heavy construction vehicle movements to Normal Working Hours (as defined by the EPA) providing this limitation does not include vehicles essential to maintaining construction operations</li> <li>ii Where practicable, select traffic routes to limit the amount of accelerating and braking, prioritise routes with existing heavy vehicle usage where possible, and avoid local roads (e.g. residential streets), particularly for 24- hour activities</li> <li>iii Install 'no engine braking' signs on designated routes</li> <li>iv Ensure trucks are fitted with mufflers that comply with the original equipment manufacturer specifications and relevant EPA in-service noise requirements</li> <li>v Enforce speed restrictions on all construction vehicles</li> <li>vi Complete regular maintenance checks of road surfaces and trucks</li> <li>vii Implement temporary changes to traffic light sequences on designated routes to minimise trucks starting and stopping at junctions</li> <li>viii Monitor construction vehicle driver behaviour</li> <li>ix Identify suitable locations for trucks to idle pending arrival at construction sites</li> <li>x Minimise the need for trucks to reverse and require the use of broadband reverse alarms</li> <li>xi Address to the extent practicable noise from any truck wash required for vehicles leaving construction sites (particularly at night).</li> </ul>	<p>Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan and Construction Noise and Vibration Communications Management Plan. Site specific controls are detailed in the Site Environmental Implementation Plan. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>

Arden (North Melbourne) Precinct Development Plan - Environmental Performance Requirement assessment



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Discipline	EPR Ref	Environmental Protection Requirements	Development Plan Response
Noise and Vibration	NV21	<p>I. Monitoring</p> <p>I1. Mechanisms to ensure effective monitoring of noise and vibration associated with construction in accordance with EPR NV4, including:</p> <ul style="list-style-type: none"> <li>i) Vibration and noise measurement methodologies for monitoring both baseline and construction levels, including details of the parameters to be obtained, the measurement equipment, and relevant standards to be adhered to for the collection and analysis of data</li> <li>ii) Baseline and construction noise and vibration monitoring locations</li> <li>iii) The most critical periods, whether determined separating distance or ground conditions, and the duration of monitoring periods</li> <li>iv) Specific measures, to be determined following consultation with relevant stakeholders, with respect to sensitive equipment and biological resources (which must, where practicable, include continuous monitoring during construction)</li> <li>v) How the results of monitoring would be recorded, reported, and interpreted.</li> </ul> <p>J. Unavoidable Work</p> <p>J1. The following Unavoidable Works may need to be undertaken outside of Normal Working Hours:</p> <ul style="list-style-type: none"> <li>i) The delivery of oversized plant or structures that police or other authorities determine require special arrangements to transport along public roads</li> <li>ii) Emergency work to avoid the loss of life or damage to property, or to prevent environmental harm</li> <li>iii) Maintenance and repair of public infrastructure where disruption to essential services and/or considerations of worker safety do not allow work within standard hours</li> <li>iv) Tunnelling works including mined excavation elements and the activities that are required to support tunnelling works (i.e. spoil treatment facilities)</li> <li>v) Rail occupations or works that would cause a major traffic hazard</li> <li>vi) Works where a proponent demonstrates and justifies a need to operate outside normal working hours such as work that once started cannot practically be stopped until completed such as a concrete pour or construction of diaphragm walls.</li> </ul> <p>J2. Prior approval must be obtained for the above work to be undertaken outside of Normal Working Hours (except for item ii). In all cases management actions would need to be applied as per the Residential Impact Mitigation Guidelines and practicable mitigation measures employed to reduce the impact of the noise. All other works must comply with the Guideline Noise Levels in EPR NV6.</p> <p>J3. For unavoidable work:</p> <ul style="list-style-type: none"> <li>i) Approval for planned unavoidable works can only be granted by the Independent Environmental Auditor</li> <li>ii) Details of unavoidable works including the type of work, equipment to be used and duration of works must be made publicly available</li> <li>iii) For emergency unavoidable work, the proponent must provide a rationale to the satisfaction of the Independent Environmental Auditor as soon as practicable.</li> </ul>	<p>Cross Yarra Partnership has prepared an Environmental Management System, Construction Environmental Management Plan and Operational Environmental Management Plan. The aspect-specific control measures are identified in the Noise and Vibration Management Plan and Construction Noise and Vibration Communications Management Plan. Site specific controls are detailed in the Site Environmental Implementation Plan. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Social and Community	SC1	<p>1. Reduce as far as is practicable the disruption to residences from direct acquisition or temporary occupation through measures such as:</p> <ul style="list-style-type: none"> <li>a) Using a case management approach for all Project interactions with affected landowners</li> <li>b) Appointing a social worker, buyers' advocate or equivalent to assist households with special needs to manage the transition</li> <li>c) Taking into account relative vulnerability and special needs of occupants</li> <li>d) Purchasing properties early when supported by the landowner.</li> </ul>	<p>Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Communications and Stakeholder Engagement Management Plan including the Respite and Relocation Management Plan. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Social and Community	SC2	<p>1. Prior to commencement of relevant works in areas affected, develop a relocation management framework that responds to the Residential Impact Mitigation Guidelines to ensure a consistent approach across the Project for the voluntary (temporary) relocation of households subject to:</p> <ul style="list-style-type: none"> <li>a) Construction activities likely to unduly affect their amenity (e.g. out of hours works or sustained loss of amenity during the day for residences with special circumstances such as shift workers)</li> <li>b) Loss of access.</li> </ul>	<p>Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Communications and Stakeholder Engagement Management Plan including the Respite and Relocation Management Plan. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Social and Community	SC3	<p><b>Community and Stakeholder Engagement Management Framework (CSEMF)</b></p> <ol style="list-style-type: none"> <li>1. MMRA must develop a Community and Stakeholder Engagement Framework to outline the principles and approach to advising key stakeholders and other potentially affected stakeholders across the Project of the construction activities.             <ul style="list-style-type: none"> <li>a) The CSEMF will cover all stages of work including early works and mains works for all contract works packages.</li> <li>b) The CSEMF will inform the CSEMP prepared by each contract works package.</li> </ul> </li> <li>2. The CSEMF must provide for any interested stakeholder to be able to register their contact details to the Project webpage to ensure they are included and automatically advised of planned construction activities, Project progress, mitigation measures and intended reinstatement measures where applicable.</li> <li>3. The CSEMF must document a complaints management process in accordance with EPR EMF4.</li> <li>4. The CSEMF must be approved by the Minister for Planning prior to the commencement of early works.</li> </ol>	<p>Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The Community and Stakeholder Engagement Management Framework has been prepared by MMRA and will be implemented where required, during construction works. The Community and Stakeholder Management Framework will inform the Communications and Stakeholder Engagement Management Plan, which will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Social and Community	SC4	<p><b>Community and Stakeholder Engagement Management Plan (CSEMP)</b></p> <ol style="list-style-type: none"> <li>1. Prior to the commencement of Project works, each works package contractor must develop and implement a Community and Stakeholder Engagement Management Plan (CSEMP) in accordance with the CSEMF, to engage potentially affected stakeholders individually or through groups such as the Precinct Reference Groups. The CSEMP should advise potentially affected stakeholders of the planned construction activities, Project progress, mitigation measures and intended reinstatement measures where applicable.</li> <li>2. The CSEMP should integrate all Project activities that potentially impact on community and business operations as well as provide for and direct a well coordinated communication and engagement process. The plan must include:             <ul style="list-style-type: none"> <li>a) Measures to minimise impacts to the development and/or operation of existing facilities including ensuring replacement power, network or other utility services are provided, if necessary and where practicable, where any disruption to such service is likely.</li> <li>b) Measures for providing advance notice of significant milestones, changed traffic conditions, interruptions to utility services, changed access and parking conditions, periods of predicted high noise and vibration activities.</li> <li>c) Measures for communicating the design of and results from environmental monitoring programs (e.g. vibration, noise, dust, ground movement).</li> <li>d) Process for informing landowners about pre-condition property surveys (as stated in EPRs GM4 and NV5).</li> <li>e) Process for notifying key stakeholders and the public of the release of early works plans or development plans for public inspection and comment.</li> <li>f) Process for registering, managing and resolving complaints consistent with Australian Standard AS/NSZ 10002:2014 Guidelines for Complaint Management in Organisations.</li> <li>g) Measures to address any other matters which are of concern to potentially affected stakeholders through the construction of the Project.</li> </ul> </li> <li>3. The plan must consider each precinct and station location in detail. Stakeholders to be consulted relevant to each precinct and considered in the plan include:             <ul style="list-style-type: none"> <li>a) Local councils</li> <li>b) Land managers</li> <li>c) Potentially affected residents</li> <li>d) Potentially affected businesses</li> <li>e) Recreation, sporting and community groups and facilities</li> <li>f) Royal Melbourne Hospital, Victorian Comprehensive Cancer Centre, Peter Doherty Institute and other health and medical facilities</li> <li>g) The University of Melbourne</li> <li>h) RMIT University</li> <li>i) Melbourne Grammar School</li> <li>j) Other public facilities in proximity.</li> </ul> </li> </ol>	<p>Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Communications and Stakeholder Engagement Management Plan, which include sub-plans, such as Business Engagement and Continuity Management Plan, Respite and Relocation Management Plan. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Social and Community	SC5	<p>1. Prior to commencement of shaft construction, work with the City of Melbourne to identify if there are any suitable areas for use as alternative public open space, incorporating vegetation, and establish for community use during the construction phase to minimise the impacts of loss of the City Square.</p>	<p>This is not relevant to the Arden (North Melbourne) precinct. Refer to the CBD South Precinct Development Plan.</p>

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Social and Community	SC6	1. Work with relevant local councils to plan for and coordinate with key stakeholders during major public events. This should include, but not be limited to: a) Timely provision of construction schedules to allow for appropriate event planning. b) Timely notification of schedule changes that may impact upon major public events. c) Consideration of appropriate alternative sites and routes for events and parades.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Communications and Stakeholder Engagement Management Plan, which include sub-plans, such as Special Events Plan. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Social and Community	SC7	1. In consultation with the relevant local councils, develop a relocation strategy for sports clubs and other formal users of directly impacted recreational facilities. This strategy should aim to identify available local alternative facilities for formal recreational users displaced from recreational facilities by the Project. This strategy should avoid displacing existing users at alternative facilities and provide adequate notification to clubs to minimise the impact of relocation.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Communications and Stakeholder Engagement Management Plan, which include sub-plans, such as Respite and Relocation Management Framework. These plans will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Social and Community	SC8	1. In consultation with relevant local Councils and key stakeholders, and in accordance with the Melbourne Metro Urban Design Strategy, relevant statutory approvals and other relevant requirements: a) Improve community access to open or recreational space within the CBD by identifying potential opportunities to return as much land as possible used for construction to permanent public open space at City Square and Federation Square b) Re-establish sites impacted by construction works, to be generally in accordance with adopted open space master plans, and conservation management plans (where appropriate), including (but not limited to): i Childers Street, Kensington ii JJ Holland Park iii Royal Parade and Grattan Street, Parkville iv City Square v Federation Square vi The south western entrance of the proposed CBD South station vii St Kilda Road boulevard viii Edmund Herring Memorial Oval ix Osborne Street Reserve x South Yarra Sidings Reserve xi Lovers Walk xii A Beckett Street open space xiii The South African Soldiers Memorial. (See EPRs LV1, LV2 and LU2).	Public open space at Arden (North Melbourne) precinct is presented in Section 4.3.3 and 4.4.6 of the Development Plan.
Social and Community	SC9	1. In consultation with the City of Melbourne, develop a plan to utilise part of the Franklin Street road reserve for public open space post-construction. Plans must be in accordance with the Melbourne Metro Urban Design Strategy.	This is not relevant to the Arden (North Melbourne) precinct. Refer to the CBD North Precinct Development Plan.
Social and Community	SC10	1. Prior to commencement of relevant works, provide written notice to adjoining landholders of any works to be carried out in a precinct. Such notice must advise of the works to be undertaken, the duration of those works, what local impacts might occur and contact details for further information.	Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Communications and Stakeholder Engagement Management Plan, which will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.
Social and Community	SC11	1. Prior to commencement of relevant works, establish a Parkville Reference Group comprising an independent chair, relevant government agencies including MMRA, PTV/ DEDJTR (Transport), VicRoads, the Victorian Department of Health and Human Services, Ambulance Victoria, Yarra Trams, and key institutions in the Parkville Precinct as detailed in MMRA Technical Note 044 Parkville Precinct Reference Group (19 August 2016) document number 21 and tabled 22 August 2016.	This is not relevant to the Arden (North Melbourne) precinct. Refer to Parkville Precinct Development Plan.
Social and Community	SC12	1. In addition to EPR SC11, MMRA to establish Precinct Reference Groups as required for all other Project precincts, which collectively provide for representation of interested and relevant stakeholders. 2. These groups should be configured in a way that broadly satisfies the recommendation in the Minister's Assessment and which also allows each Group to function coherently and effectively. Each Precinct Reference Group should have an independent chair.	MMRA has established the Arden Community Reference Group, which has been consulted on the design development and the Development Plan process.
Surface Water	SW1	1. Prior to commencement of relevant works, for all Precincts (with the exception of the western turnback) design permanent and temporary works and, if necessary, develop and implement emergency flood management measures for the tunnels, tunnel portals, access shafts, station entrances and Arden electrical substation to provide appropriate protection against floodwaters and overland stormwater flows. 2. The design of these works must be informed by a flood immunity risk assessment that considers a range of events, and to the requirements and satisfaction of Melbourne Water and/or the relevant council. 3. The flood immunity risk assessment referred to above must address all portal areas (or other flood entry points) for the existing Melbourne Underground Rail Loop, or similar secondary infrastructure items that may allow for flood entry into the Project.	Flood design and water sensitive urban design for the Arden (North Melbourne) precinct is presented in Section 4.4.7 of the Development Plan.
Surface Water	SW2	1. For all precincts, to the satisfaction of the responsible waterway management authority: a) Undertake modelling of the design of permanent and temporary works to demonstrate the resultant flood levels and risk profile b) Maintain existing flood plain storage capacity potentially impacted by the Project c) Ensure that permanent and associated temporary construction works do not increase flood levels to result in additional flood risk d) Ensure permanent and associated temporary works do not increase flow velocities that would potentially affect the stability of property, structures or assets, and/or result in erosion during operation or construction e) Undertake stormwater modelling of the design of permanent and temporary works to demonstrate the resultant stormwater quantity and quality response to the Project. 2. For all Precincts adopt WSUD and integrated water management principles in the stormwater design, as required through the Melbourne Metro Urban Design Strategy, and to the requirements of the relevant local council.	Flood design and water sensitive urban design for the Arden (North Melbourne) precinct is presented in Section 4.4.7 of the Development Plan.

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Transport	T1	<p><b>Traffic and Transport Working Group</b></p> <p>1. MMRA must establish and maintain a Traffic and Transport Working Group (TTWG), working under a terms of reference determined by MMRA, and comprising relevant representatives from MMRA, PTV / DEDJTR (Transport), road management authorities, relevant councils, relevant public transport providers and other relevant agencies as required.</p> <p>2. The TTWG will be responsible for reviewing and providing feedback on:</p> <ul style="list-style-type: none"> <li>a) Transport management plans.</li> <li>b) Relevant designs and methodologies for monitoring implementation of transport management plans.</li> <li>c) Transport modelling and proposed transport network upgrades to mitigate the transport effects of constructing the Project.</li> </ul> <p>3. The TTWG must also:</p> <ul style="list-style-type: none"> <li>a) Invite other key affected stakeholders to present or attend where matters specific to those stakeholders in the relevant precincts are being discussed or addressed, carried out consistent with the Community and Stakeholder Engagement Management Plan/s under EPR SC4;</li> <li>b) Provide feedback to the key affected stakeholders on how their comments or matters of interest or concern are addressed in transport management plans; and c) Advise those key affected stakeholders of potential impacts and proposed traffic and transport mitigations, and consider stakeholders' responses on these matters in providing feedback on the transport management plans required under EPRs T2 and T3.</li> </ul>	<p>A Traffic and Transport Working Group (TTWG) has been established (by MMRA) and includes the listed stakeholders. The TTWG will operate in accordance with the terms of reference determined by MMRA and as per EPR T1.</p>
Transport	T2	<p><b>Transport Management Plans</b></p> <p>1. Prior to commencement of relevant works, each Works Package contractor must develop a transport management plan(s) in consultation with the Traffic and Transport Working Group and implement the plan(s) to minimise disruption to affected local land uses, traffic, car parking, on road public transport, pedestrian and bicycle movements and existing public facilities during all stages of construction.</p> <p>2. The transport management plan(s) must be prepared for each precinct, and also be coordinated across the whole Project to provide an overall transport management plan for the Project.</p> <p>3. The transport management plan(s) must be informed and supported by an appropriate level of transport modelling, as agreed by the TTWG, and must include, but not be limited, to:</p> <ul style="list-style-type: none"> <li>a) Management of any temporary or permanent full or partial closure of traffic lanes including (but not limited to):                             <ul style="list-style-type: none"> <li>i Childers Street, Tennyson Street and Lloyd Street, Kensington.</li> <li>ii Arden Street, Langford Street and Laurens Street, North Melbourne.</li> <li>iii Royal Parade, Grattan Street, Barry Street and Leicester Street, Parkville.</li> <li>iv Franklin Street, A'Beckett Street and Little La Trobe Street, at CBD North.</li> <li>v Flinders Street, Flinders Lane and Swanston Street, at CBD South.</li> <li>vi Linlithgow Avenue, St Kilda Road, Domain Road, Albert Road, Bowen Crescent and Bowen Lane, at Domain.</li> <li>vii Toorak Road West at Fawcner Park (and the surrounding road network) during construction of the route 8 tram diversion along Toorak Road West between St Kilda Road and Park Street, South Yarra.</li> <li>viii Osborne Street and William Street, South Yarra.</li> </ul> </li> <li>b) A monitoring methodology and a program for monitoring results of the implementation of transport management plans to be reported to the TTWG. If unanticipated adverse effects are further identified, practicable mitigation measures must be developed and implemented.</li> <li>c) Monitoring of:                             <ul style="list-style-type: none"> <li>i Travel behaviour changes caused by construction works, including pre construction baseline data and periodic reporting on behaviour change. Use this data as an input to the design of transport networks following construction and for review of the transport management plan(s), which should occur at least annually.</li> <li>ii Traffic, public transport, pedestrian and bicycle movements throughout the construction period.</li> </ul> </li> </ul> <p>4. The transport management plan(s) must be developed recognising other Projects operating concurrently and transient businesses such as bus/walking/cycling tours and airport transfers, where relevant.</p> <p>Note - Typically called a traffic management plan, for Melbourne Metro, it is referred to as a transport management plan to ensure all modes of active and passive transport are considered.</p>	<p>Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Transport Management Plan and Communications and Stakeholder Engagement Management Plan, which will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements with the Traffic and Transport Working Group and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Transport	T3	<p><b>Road Transport (Construction Phase)</b></p> <p>1. Road Network Management: As appropriate, transport management plan(s) must include/address the following issues:</p> <ul style="list-style-type: none"> <li>a) In consultation with emergency services, develop suitable measures to ensure emergency service access is not inhibited as a result of Melbourne Metro construction worksites.</li> <li>b) Provision for two-way traffic on St Kilda Road through the construction period within the Domain station precinct.</li> <li>c) Domain Road should be kept open from the east up to the existing entrance of Edmund Herring Memorial Oval, with provision for a local turnaround.</li> <li>d) Develop and implement Network Enhancement Projects (NEPs) in consultation with the TTWG for locations including, but not limited, to:                             <ul style="list-style-type: none"> <li>i College Crescent, Gatehouse Street, Cemetery Road and other east west roads in the Parkville Precinct, to accommodate traffic that may use these roads as a result of the Grattan Street closure for Parkville station.</li> <li>ii Kings Way, Canterbury Road and other roads and intersections to accommodate traffic that may use these roads as a result of the St Kilda Road lane reduction for Domain station construction.</li> </ul> </li> </ul> <p>These NEPs should have the objective of balancing impacts across the transport network and must consider the VicRoads Road Users Hierarchy principles set out in SmartRoads to ensure the needs of vehicle traffic and on-road public transport are appropriately accommodated during disruptions.</p> <ul style="list-style-type: none"> <li>e) Provision of suitable routes for vehicles to maintain connectivity for road users to JJ Holland Park, South Kensington station, to medical facilities in the Domain Precinct and to the medical and educational facilities adjacent to the Parkville construction work site.</li> <li>f) Provision of alternative routes for trucks accessing the 50 Lloyd Street Business Estate, Kensington.</li> </ul> <p>2. Construction trucks: As appropriate, transport management plan(s) must include/address the following issues:</p> <ul style="list-style-type: none"> <li>a) Potential routes for construction vehicles travelling to and from all Melbourne Metro construction work sites, recognising sensitive receptors and minimising the use of local streets where practicable (refer to EPR NV21).</li> </ul>	<p>Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Transport Management Plan (including relevant sub-plans, such as the Precinct Transport Management Plan and Transport Management Implementation Plan), which will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements with the Traffic and Transport Working Group and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>

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Transport	T3	<p>Approved truck routes in the Arden precinct must not include the use of Miller Street, North Melbourne.</p> <p>b) Provision of construction vehicle staging areas and/or construction methodologies to minimise the potential impacts of truck call-forward options on residents and businesses.</p> <p>c) Special arrangements for delivery or removal of large loads.</p> <p>3. Parking: As appropriate, transport management plan(s) must include/address the following issues:</p> <p>a) Provision of alternative parking where possible to replace public and commuter parking lots from West Footscray Station, Childers Street, Laurens Street, Grattan Street, Domain Road, St Kilda Road and Albert Road during construction and preventing parking at undesignated locations on local roads.</p> <p>b) The need to minimise the loss of public parking and replace or reinstate parking at the earliest opportunity.</p> <p>c) Provision of suitable alternative parking and associated facilities to replace private parking and facilities lost or inaccessible during construction for any significant time, in consultation with the relevant stakeholders. The private parking is to be replaced or reinstated at the earliest opportunity.</p> <p>d) A parking management plan prepared in consultation with and approved by the relevant road authority to manage parking in and around the construction zones. The plan must:</p> <p>i) Include parking controls to support other relevant EPR requirements.</p> <p>ii) Maintain Police Only parking bays in Swanston Street and Flinders Lane to the satisfaction of Victoria Police.</p> <p>iii) Minimise impacts on existing users, particularly those with special needs.</p> <p>iv) Provide a suitable level of accessibility to loading zones.</p> <p>e) Provision of car parking for construction workers where practicable and in this regard:</p> <p>i) Use of off street car parks for construction workers must be by prior agreement with the relevant management body; and</p> <p>ii) Measures must be implemented to prevent, to the extent practicable, construction workers parking in on street spaces, unless it can be demonstrated by car parking surveys that there is adequate on street supply.</p> <p>f) A green travel strategy to encourage construction workers to travel to / from worksites by means other than private vehicle and / or outside peak times. This should include provision for on site tool storage where practicable and consideration given to the use of shuttle buses to ferry workers to and from off site car parks.</p>	<p>Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Transport Management Plan (including relevant sub-plans, such as the Precinct Transport Management Plan and Transport Management Implementation Plan), which will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Transport	T4	<p><b>Public Transport (Construction Phase)</b></p> <p>1. Prior to commencement of relevant works, develop and implement a plan for occupying railway land and tracks at the western portal, eastern portal and western turnback that minimises the disruption to railway services during construction. The plan must be developed to the satisfaction of VicTrack, PTV, DEDJTR (transport) and MTM, as relevant.</p> <p>2. In consultation with the TTWG, provide suitable routes for pedestrians to maintain connectivity where access is altered by the contractor, including DDA access where practicable, for users of South Kensington Station, Melbourne Central Station, Flinders Street Station, new tram and bus stops relocated or constructed during the construction period, and around all construction sites generally.</p> <p>3. In consultation with the TTWG, investigate and implement intersection modifications where practicable, including public transport priority measures for affected bus and tram routes.</p> <p>4. Develop and implement measures to minimise disruption to the tram and bus networks resulting from the construction of Melbourne Metro in consultation with the relevant road management authorities, and to the satisfaction of PTV / DEDJTR (Transport), including (but not limited to):</p> <p>a) Options to divert the 401, 402, 403, 505 and 546 bus services.</p> <p>b) Tram routes on La Trobe Street and Swanston Street.</p> <p>c) Tram routes on Flinders Street and Swanston Street.</p> <p>d) Tram operations on Toorak Road West and the diversion of the No. 8 tram route.</p> <p>e) Periodic closures of Royal Parade tram route.</p> <p>f) Tram routes on St Kilda Road.</p> <p>g) Disruption to other tram routes through Domain tram stop.</p> <p>h) Bus replacement services for disrupted rail passengers.</p>	<p>Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Transport Management Plan (including relevant sub-plans, such as the Precinct Transport Management Plan and Transport Management Implementation Plan), which will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements with Transport for Victoria, VicTrack, Public Transport Victoria, Department of Economic Development, Jobs, Transport and Resources, Metro Trains Melbourne and the Traffic and Transport Working Group and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Transport	T5	<p><b>Active Transport (Construction Phase)</b></p> <p>1. Develop and implement transport management measures in consultation with the TTWG and relevant road management authorities for cyclists and pedestrians to maintain connectivity and reasonable performance levels throughout construction for road and shared path users including (but not limited to): JJ Holland Park, South Kensington station, Laurens Street, Grattan Street, Swanston Street adjacent to Gate 4 at University of Melbourne, Franklin Street (including RMIT facilities), Swanston Street, Flinders Street, St Kilda Road, Domain Road, Domain Parklands, Albert Road, Toorak Road, Fawkner Park, Osborne Street, William Street and Chapel Street.</p> <p>2. Implement active control and wayfinding information at construction work site access points to maintain safety by avoiding potential conflicts between trucks, pedestrians and cyclists.</p> <p>3. In consultation with the City of Melbourne, provide a suitable route for pedestrians to maintain connectivity and connection between Domain Road and the diverted number 8 tram on Toorak Road West.</p> <p>4. In consultation with the City of Melbourne, provide suitable routes for cyclists and pedestrians throughout construction to maintain connectivity for road and shared path users around JJ Holland Park and South Kensington station.</p> <p>5. In consultation with the City of Stonnington, provide suitable routes for cyclists and pedestrians to maintain connectivity and connection, having regard to the removal of the William Street Bridge and Lovers Walk pedestrian path during the construction phase.</p> <p>6. If surface works are required at Linlithgow Avenue or nearby for temporary construction access shafts, provide for movement along the Tan Track in the Botanical Gardens near the Linlithgow Avenue construction sites, or provide a suitable alternative pedestrian path during construction.</p> <p>7. Maintain appropriate pedestrian access to public car parks and adjoining properties adjacent to or within construction areas including the car park beneath University Square.</p>	<p>Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. The aspect-specific control measures are identified in the Transport Management Plan (including relevant sub-plans, such as the Precinct Transport Management Plan and Transport Management Implementation Plan), which will be reviewed by the project's Independent Reviewer. This is subject to separate stakeholder consultation requirements with the Traffic and Transport Working Group and reviewed by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>

Arden (North Melbourne) Precinct Development Plan - Environmental Performance Requirement assessment



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 Approver: Mat Peel  
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Transport	T6	<p><b>Travel Demand Management Strategy</b></p> <p>1. Prior to commencement of construction works, MMRA is to develop and implement a Travel Demand Management Strategy and appropriate tools to promote specific transport behaviour changes in response to road, bicycle and pedestrian paths closures/modifications and to reduce traffic congestion around construction sites, particularly in the vicinity of the Parkville and Domain precincts where road closures and restrictions are proposed. The strategy must be consistent with the MMRA Community and Stakeholder Engagement Management Framework (under EPR SC3) and, where practicable, include a mechanism for collecting and disseminating real-time travel time information to the public. Existing traffic and public transport information channels should be used wherever possible.</p> <p>2. Engage with key stakeholders in the development, implementation and monitoring of the Travel Demand Management Strategy including, but not limited to, councils, road management authorities, PTV and relevant public transport providers, educational facilities, research institutions, businesses, impacted community groups and other affected key stakeholders in each precinct.</p>	<p>Cross Yarra Partnership has prepared an Environmental Management System and Construction Environmental Management Plan. A Travel Demand Management Strategy has been developed by MMRA and will inform the development of the Transport Management Plan (including relevant sub-plans, such as the Precinct Transport Management Plan and Transport Management Implementation Plan), which will be reviewed by the project's Independent Reviewer. The Transport Management Plan is subject to separate stakeholder consultation requirements with councils, road management authorities, Transport for Victoria, Public Transport Victoria and relevant public transport providers, educational facilities, research institutions, businesses and impacted community groups, and review by the Independent Environmental Auditor, including quarterly audits of performance throughout construction.</p>
Transport	T7	<p><b>Road Transport (Operational Phase)</b></p> <p>1. Design all roadworks and shared path works to relevant design standards to maintain safety of movement in consultation with the relevant road management authorities and TTWG, as required. Designs should be underpinned by appropriate transport modelling and have an objective to facilitate public transport and minimise carpark loss to the extent practicable.</p> <p>2. Develop and implement a plan to reinstate car parking on Childers Street, Kensington and Laurens Street, North Melbourne in consultation with the relevant road management authorities that:</p> <ul style="list-style-type: none"> <li>a) Minimises the permanent loss of parking where possible.</li> <li>b) Ensures re-instated car parking does not encroach on JJ Holland Park.</li> <li>c) Considers opportunities for replacement of any net loss of parking at nearby locations.</li> <li>d) Reduces the risk of overflow parking in local streets from South Kensington station and activities at JJ Holland Park.</li> <li>e) Replaces loading zones to service the needs of the existing businesses in the precinct where disrupted during construction.</li> </ul> <p>3. Develop and implement a plan for the Arden Precinct in consultation with the relevant road management authorities to manage parking generated by the new Arden Station.</p> <p>4. Develop and implement a plan for the reinstatement of Grattan Street, Parkville in consultation with the relevant road management authorities that includes:</p> <ul style="list-style-type: none"> <li>a) Optimal replacement of car parking spaces along Grattan Street to service the needs of the hospitals and the University of Melbourne, including the retention or replacement of specific short term and DDA compliant parking.</li> <li>b) Optimal design of the road network around Grattan Street associated with the changed demands and network changes on Grattan Street and Royal Parade / Elizabeth Street.</li> </ul> <p>5. Develop and implement a plan for the future use of Franklin Street in consultation with the relevant road management authorities that includes:</p> <ul style="list-style-type: none"> <li>a) Optimising the design of Franklin Street in the Project Area.</li> <li>b) Regard to the future function of Franklin Street envisaged in the Queen Victoria Market Precinct Renewal Master Plan.</li> <li>c) Monitoring the change in travel patterns around the area associated with the revised design of Franklin Street.</li> </ul> <p>6. Develop and implement a plan for the design of A'Beckett Street, Little La Trobe Street and Swanston Street in consultation with relevant road management authorities that includes:</p> <ul style="list-style-type: none"> <li>a) Optimising the design of A'Beckett Street and location of station infrastructure.</li> <li>b) Consideration of pedestrian and vehicle movements on Swanston Street between La Trobe and A'Beckett Streets and on Little La Trobe Street.</li> </ul> <p>Optimise the design of the reinstated St.Kilda Road and apply the road user hierarchy in consultation with the relevant road management authorities to:</p> <ul style="list-style-type: none"> <li>a) Reduce delays and congestion</li> <li>b) Maintain safe operations through the precinct.</li> <li>c) Determine the optimal parking provision in the area and replace any lost parking where possible.</li> </ul> <p>8. Where vehicles and pedestrian access are altered during construction, ensure that vehicle and pedestrian access is reinstated appropriately, in accordance with relevant road design standards, so adjacent land is not compromised.</p>	<p>Operational road transport for the Arden (North Melbourne) precinct is presented in Section 4.4.8 of the Development Plan.</p> <p>7.</p>

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Transport	T8	<p><b>Public Transport (Operational Phase)</b></p> <ol style="list-style-type: none"> <li>Review, with PTV /DEDJTR (Transport), the bus services in the areas around Arden, Parkville, CBD North, CBD South and Domain stations, including a review of the route 401 bus frequency that is expected to have reduced demand following implementation of Melbourne Metro.</li> <li>In consultation with PTV / DEDJTR (Transport), optimise the design of Melbourne Metro stations to ensure integration with existing and planned future uses and so that they will provide connections:               <ol style="list-style-type: none"> <li>Between the Parkville station and the new tram stop on Royal Parade.</li> <li>For interchange between the CBD North station and the existing tram and bus services along La Trobe Street and Swanston Street.</li> <li>For interchange between the CBD South station and the existing tram services along Flinders Street, Swanston Street and Collins Street.</li> <li>Between the Domain station and the new island platform tram stop in the centre of St Kilda Road and connections to the tram network.</li> </ol> </li> <li>In consultation with the relevant road management authorities, implement measures to address pedestrian congestion at and around station entrances where they interface with the Precincts, to the extent practicable.</li> <li>Provide adequate wayfinding to facilitate passenger transfers (see EPR LU4).</li> <li>Review, with PTV/ DEDJTR (Transport) and Yarra Trams, the bus and tram services in the area to optimise the functionality of the CBD North and CBD South stations and to reduce the reliance on the Swanston Street tram corridor.</li> </ol>	Operational public transport for the Arden (North Melbourne) precinct is presented in Section 4.4.8 of the Development Plan.
Transport	T9	<p><b>Active Transport (Operational phase)</b></p> <ol style="list-style-type: none"> <li>Develop and implement a permanent pedestrian footpath and on road bicycle design for Childers Street, Kensington with the relevant road management authority, relevant local council, and the land manager prior to the removal of the shared use path on the southern side of the street.</li> <li>In cooperation with the relevant road management authority and local council, and where practicable to do so, re-instate on-road bicycle lanes and bicycle parking provisions removed during construction.</li> <li>In consultation with PTV / DEDJTR (Transport) and relevant local councils undertake a study of bicycle parking demands for the new stations.</li> <li>Provide appropriate bicycle parking at each station adopting a flexible design that would allow for future expansion of capacity in consultation with relevant local councils and user groups, if required.</li> <li>Review the reinstatement and provision of safe and effective bicycle lanes and pedestrian access in and around the Melbourne Metro station sites in cooperation with the relevant road management authorities and the relevant local council.</li> <li>Provide wayfinding information to enhance connectivity for pedestrians and public transport users, in consultation with relevant local councils and user groups, including (but not limited to) the following locations:               <ol style="list-style-type: none"> <li>Between Melbourne Central Station and CBD North Station.</li> <li>The underground connection between Flinders Street Station and CBD South Station.</li> <li>At modal interchanges between new Melbourne Metro stations and other transport modes.</li> </ol> </li> <li>Consult with the TTWG on active transport, where required.</li> <li>In consultation with the Parkville Reference Group, established under EPR SC11, review future pedestrian movement and conditions at the Parkville Precinct in order to optimise the number and location of station entries and the surrounding footpath environment.</li> </ol>	Operational active transport for the Arden (North Melbourne) precinct is presented in Section 4.4.8 of the Development Plan.
Transport	T10	<p><b>Waste collection</b></p> <ol style="list-style-type: none"> <li>Prior to commencement of relevant works, develop and implement a plan or plans, in consultation with local councils and private waste collection services, to manage changes to waste collection and waste storage in the areas affected by construction activity. The plan/s should include, but not be limited to:               <ol style="list-style-type: none"> <li>Providing for minimal change in waste collection times where the change might affect the capacity of residents to sleep.</li> <li>Providing access for existing waste collection services from existing properties considering the extent of the construction areas and road network changes.</li> <li>Providing access to alternative waste collection locations for properties during Project construction and operation where existing waste disposal locations are removed or obstructed.</li> <li>Design for re instatement of appropriate access for existing waste services during Project operation.</li> <li>Consultation with affected businesses, land owners and residents to be undertaken jointly with local councils to encourage alternative waste management options to be adopted.</li> </ol> </li> </ol>	Waste collection for the Arden (North Melbourne) precinct is presented in Section 4.4.8 of the Development Plan.