



EARLY WORKS PLAN FOR

TOORAK ROAD WEST TRAM DIVERSION PROJECT

Yarra Trams

July 2017

DOCUMENT REVISION

Draft issues of this document shall be identified as Revision A, B, C etc. The first post approval version will start Revision 00. Revision numbers shall use a sequential numbering system commencing at Rev. 01, 02, etc.

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Rev	Date	Prepared by	Reviewed by	Approved by	Remarks
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Name	Ted Phillips Senior Project Manager	Signature		Date	25/07/2017
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TABLE OF CONTENTS

Document Revision	2
Distribution	2
Table of Contents	1
Tables	3
Figures	3
Definitions and Abbreviations	5
1 Introduction	1
1.1 Purpose of the Early Works Plan	1
1.2 Context of the Tram Diversion Project within the Early Works Package	1
1.3 Metro Tunnel Project Description	3
1.3.1 Background	3
1.3.2 Metro Tunnel Project	3
1.4 Other Approvals	5
2 Metro Tunnel Works Program	6
2.1 Enabling Works	6
2.2 Preparatory Works	6
2.3 Early Works	6
2.3.1 Yarra Trams Early Works	7
2.3.2 Managing Contractor Early Works	7
2.4 Main Works	7
3 Tram Early Works Package Scope	8
3.1 Tree Management and Removal Considerations	8
3.2 Road and Transport Network Changes	10
3.3 Construction Activities to Construct New Tram Infrastructure	10
4 TRW Tram Diversion Project	11
4.1 Purpose	11
4.2 Location and Site Context	12
4.3 Scope of Works	12
4.3.1 Overview	12
4.3.2 Timing	13
4.3.3 Service investigations and relocations	13
4.3.4 Site office and facilities set-up	14
4.3.5 Toorak Road West – Tram infrastructure construction	14
4.3.6 St Kilda Road – Construction of tram infrastructure	16
4.3.7 Domain Road and Park Street – Tram infrastructure changes	18
4.3.8 Tree Management and Removal	19
5 Process and Controls for Delivering the TRW Tram Diversion Project	21

5.1	Environmental Management Framework.....	23
5.2	Environmental Management System	24
5.2.1	Yarra Trams Environmental Management System	25
5.3	Construction Environmental Management Plan	25
5.4	Environmental Risk Assessment.....	27
5.5	Traffic Management Plan.....	29
5.6	Environmental Performance Requirements.....	30
5.7	Response to Urban Design Strategy	49
5.7.1	Overview.....	49
5.7.2	Melbourne tram network-wide design considerations.....	49
5.7.3	Desired outcomes for TRW Tram Diversion Project	50
5.7.4	Consistency with Metro Tunnel design guidelines outlined in the UDS.....	51
5.7.5	Final design summary.....	63
6	Early Works Plan Consultation Process	65
6.1	Overview.....	65
6.2	Specific requirements as listed within the Incorporated Document.....	66
6.3	Early works plan Consultation	66
6.4	Community Consultation	66
7	Change Management.....	67
8	Conclusion	68
Appendix A.	Site Layout Plan	69
Appendix B.	Platform arrangement drawings.....	71
Appendix C.	Tree Removal Plan.....	73

TABLES

Table 1	Summary of works	11
Table 2	Tree removals in St Kilda Road and Toorak Road West	19
Table 3	Key environmental risks associated with the delivery of the TRW Tram Diversion Project and associated mitigation measures.	28
Table 4	Response to Environmental Performance Requirements relevant to the TRW Tram Diversion Project	31
Table 5	Comparison of UDS design guidelines, TRW Tram Diversion Project assessment criteria and related EPRs	52

FIGURES

Figure 1	Governance Framework for the delivery of the Metro Tunnel Project.....	2
Figure 2	Precincts within the Metro Tunnel Project Land	3
Figure 3	Project Land relevant to the TRW Tram Diversion Project	5
Figure 4	Flow chart detailing Yarra Trams process for considering tree removal as part of the delivery of the TRW tram diversion works	9
Figure 5	Artist's Impression of new Easy Access Stop located on Toorak Road West, near Millswyn Street (Indicative image only)	15
Figure 6	Plans showing location of new Easy Access Stop located on Toorak Road West, near Millswyn Street.....	16
Figure 7	Artist's Impression of new centre island platform and side platform stop, located on St Kilda Road, north of Kings Way (Indicative Image only)	17
Figure 8	Plans showing location of new centre island platform and side platform stop, located on St Kilda Road, north of Kings Way	17
Figure 9	Reconfigured tram track arrangement at the intersection of Park Street and Toorak Road West.....	19
Figure 10	Summary of document structure as adopted for delivery of the TRW Tram Diversion Project.....	22
Figure 11	Environmental Management Framework adapted for the Metro Tunnel Rail Project	24

Figure 12	Environment and Sustainability documentation framework and CEMP development	26
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DEFINITIONS AND ABBREVIATIONS

Term / Abbreviation	Definition
Construction Environment Management Plan (CEMP)	Overarching document which details the management of environmental aspects and impacts associated with the delivery of the Toorak Road West (TRW) Tram Diversion Project. This document is prepared in accordance with the applicable requirements of the Incorporated Document (Clause 4.7.3).
Contraflow	Temporary situation where traffic on a road is transferred from its usual side to share the other half of the carriageway with traffic moving in the opposite direction.
Early Works	Works identified as Early Works in the Melbourne Metro Rail Project's EES (section 6.5.10 and applicable technical appendices). Works in this phase can only commence following approval of an applicable Early Works Plan. Early Works include the Yarra Trams works and the Early Works Package (see below).
Early Works Package	Works overseen/delivered by the Managing Contractor which are undertaken prior to the commencement of the main program. The Managing Contractor scope of works is identified within the EES and includes the following: • Utility service relocation and protection of utility assets; • Site preparation works, including demolition works, removal or relocation of trees and monuments, minor road / transport network changes; and • Works for construction of shafts at CBD North and CBD South station precincts.
Early Works Plan	Document approved by the Minister for Planning in accordance with Condition 4.9 of the Incorporated Document.
Enabling Works	Works identified in Victorian Government Gazette No. S361 (24 November 2015) and excluded from assessment under the EES.
Environment Effects Statement (EES)	Assessment of the potential environmental, social and business impacts associated with the proposed construction and operation of Metro Tunnel under the <i>Environment Effect Act 1978</i> .
Environmental Management Framework (EMF)	Refer to Clause 4.7 of the Incorporated Document - Part 1 of the EMF, including EPRs, was approved by the Minister for Planning on 9 February 2017. Part 2 of the EMF incorporated the Residential Impact Mitigation Guidelines and the Business Support Guidelines for Construction which were approved by the Minister for Planning on 26 and 20 March 2017 respectively.
Environmental Management System	Yarra Trams has an ISO 14001 Accredited Environmental Management System which will be used for delivery of the Project
Environmental Performance Requirements (EPRs)	Performance requirements as detailed within the approved EMF.
High impact road and transport network changes	High impact road and transport changes are considered to be 'legacy items' in that the anticipated impacts will extend beyond the duration of the Early Works Package. Such impacts include fundamental changes to the existing operation of road and/or transport network, and works that would require or result in the alteration of access to a road zoned Road Zone 1 (RDZ1).

Term / Abbreviation	Definition
Incorporated Document	Incorporated Document for the Melbourne Metro Rail Project (December 2016) as referenced in The Maribyrnong, Melbourne, Port Phillip and Stonnington Planning Schemes.
Key stakeholders	The term stakeholder refers to any person or organisation with an interest in the project. To determine key stakeholders the following factors need to be considered: • Whether a stakeholder has a regulatory or approval role in a given activity. • Whether the stakeholder represents an impacted facility or activity that is of importance to the wider community. • Whether a stakeholder possesses unique knowledge or skills that would contribute to a significantly better solution. • Whether a stakeholder can effectively represent the views or interests of many of those impacted by a given activity.
Managing Contractor	John Holland Group is the Managing Contractor engaged by Melbourne Metro Rail Authority to manage the delivery of the Early Works Package in accordance with the Managing Contractor agreement.
Melbourne Metro Rail Authority (MMRA)	Melbourne Metro Rail Authority
Metro Tunnel	Metro Tunnel Project as identified within the Incorporated Document.
Metro Tunnel Project	Metro Tunnel Project as identified within the Incorporated Document
Minister's Assessment	Minster's Assessment of the Metro Tunnel Project EES as made under the <i>Environment Effects Act 1978</i> (dated 20 December 2016).
Minor Utility Installation	As defined under Clause 74 of the Victorian Planning Provisions.
Occupation	Occupation of a defined section of tram track corridor in order to undertake construction works. A Yarra Trams occupation occurs when the tracks are occupied by the construction works and the tram service cannot operate.
Planning Scheme Amendment (PSA)	Planning Scheme Amendment GC45.
Preparatory Works	Works identified under clause 4.12 of the Melbourne Metro Rail Project Incorporated Document (December 2016) that are preparatory to the carrying out of works identified as Early Works in the Melbourne Metro Rail Project's EES (section 6.5.10 and applicable technical appendices). Works in this phase may proceed prior to the approval of plans or other matters listed in Clauses 4.6 to 4.9 of the Incorporated Document.
Principal Environmental and Planning Approvals	Key approvals required for the delivery of Metro Tunnel. Includes statutory requirements associated with the <i>Planning and Environment Act 1987</i> (i.e. obligations stemming from the Planning Scheme Amendment), the <i>Heritage Act 1995</i> (i.e. Permits and Consents) and the <i>Aboriginal Heritage Act 2006</i> (i.e. Cultural Heritage Management Plan).
Project Agreement	The agreement titled 'Projects Agreement – Tram' between PTV and KDR Victoria Pty Ltd (trading as Yarra Trams) 2009
Project Land	Land as identified within Appendix A of the Incorporated Document.
Road and transport network changes	Some of the road and transport network changes identified in the EES will have greater or longer term impacts during construction and so require a more detailed approach within the Early Works Plan to appropriately manage impacts in accordance with the EMF and EPRs. Subsequently, road and transport network changes include activities that would result in

Term / Abbreviation	Definition
	permanent/long-term alteration of access to a road zoned Road Zone 1 (RDZ1) (and would ordinarily require consideration pursuant to Clause 52.29 – Land Adjacent to a Road Zone, Category 1, or a Public Acquisition Overlay for a Category 1 Road of the applicable planning scheme), or works which may have a significant impact on key pedestrian links.
Route 8 Tram	Route 8 Tram runs from Domain Interchange along Domain Road and onto Park Street and left into Toorak Road.
Route 58 Tram	From May 2017 Route 8 and Route 55 services combine to make the new Route 58 Tram Service. These two services merge at Domain Interchange.
Sensitive Receptor	Sensitive receptors as per relevant statutory guidelines, including homes, schools, universities and hospitals, or places where a person's regular daily life might be affected by amenity impacts as a consequence of the Project. Sensitive receptors do not include public open space or places of work.
TRW	Toorak Road West
TRW Tram Diversion Project	All works required to implement the diversion of Tram Route 8 (soon to be Tram Route 58) from Domain Road to Toorak Road West.
Traffic Management Plan (TMP)	Traffic Management Plan.
Urban Design Strategy (UDS)	Refer to Clause 4.8 of the Incorporated Document – the UDS was approved by the Minister for Planning on 16 February 2017.
Victorian Integrated Transport Model (VITM)	Strategic model which is used to identify potential changes in traffic.
Victorian Heritage Register (VHR)	Register of significant heritage places or/objects which are identified and protected under the <i>Heritage Act 1995</i> .
Victorian Heritage Inventory (VHI)	Inventory of historical archaeological sites which are identified and protected under the <i>Heritage Act 1995</i> .
Works	All work which Yarra Trams is, or may be, required to execute or manage under Agreement with MMRA for the TRW Tram Diversion Project, including those to procure, supply, construct and commission the works set out in the Project Brief in accordance with all requirements of this Agreement.

1 INTRODUCTION

1.1 PURPOSE OF THE EARLY WORKS PLAN

The Environment Effects Statement (EES) for the Metro Tunnel Project identifies the 'Diversion of tram services along Toorak Road to connect with St Kilda Road' as 'Early Works.' Clause 4.9 of the Melbourne Metro Rail Project – Incorporated Document, (December, 2016) (here after referred to as the Incorporated Document) requires that works identified as 'Early Works' require approval by the Minister for Planning of an Early Works Plan (EWP) prior to commencement of works. This document has been prepared to address this requirement.

The purpose of this EWP is to define works being undertaken by Yarra Trams to deliver the Toorak Road West Tram Diversion Works (the Project) and demonstrate how these works will be managed in accordance with the Melbourne Metro Rail Authority (MMRA) EES Environmental Management Framework (EMF); the Environmental Performance Requirements (EPRs) within the EMF and the Urban Design Strategy (UDS). It aims to demonstrate that environmental and social risks associated with the works have been thoroughly assessed and will be managed throughout project delivery and that disruption to stakeholders will be mitigated as much as possible.

1.2 CONTEXT OF THE TRAM DIVERSION PROJECT WITHIN THE EARLY WORKS PACKAGE

The framework for the approval of the Metro Tunnel Project allows for certain works to occur at early stages to prepare works sites and help facilitate the timely delivery of the Metro Tunnel Project. To help progress such works Melbourne Metro Rail Authority (MMRA) has procured an Early Works Package which seeks to complete targeted works in advance of Main Works commencing.

To allow for the closing of Domain Road during the construction of Domain Station the Route 58 tram (currently the Route 8 tram) needs to be diverted. The construction works associated with diverting the tram from Domain Road to run down Toorak Road West (TRW) comprises a component of works which are allowed to occur in the early stages of the Metro Tunnel Project. These works are to be delivered in direct agreement between MMRA and Yarra Trams. As part of the tram franchise arrangements, the State has entered into Project Agreements with Yarra Trams to deliver tram infrastructure works on behalf of the State.

Running parallel with the delivery of the Tram Works Package John Holland Group has been designated as the Managing Contractor for the Early Works Package and has been tasked with coordinating applicable works (not subject to consideration under this Early Works Plan). The remaining works packages are yet to be awarded (refer to Figure 1).

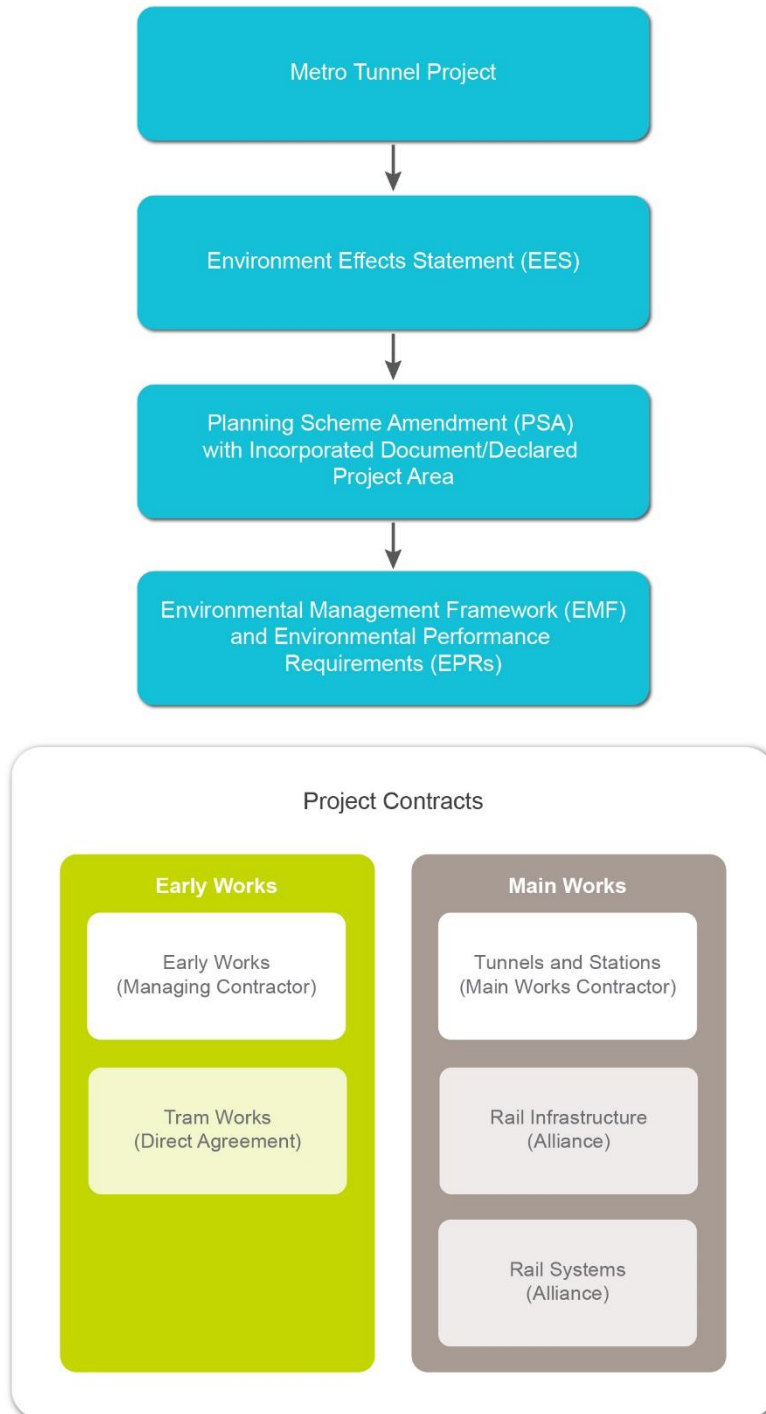


Figure 1 Governance Framework for the delivery of the Metro Tunnel Project

1.3 METRO TUNNEL PROJECT DESCRIPTION

1.3.1 Background

In early 2015, the Victorian Government committed to the delivery of the Metro Tunnel Project. The MMRA was established as an administrative office of the Department of Economic Development, Jobs, Transport and Resources and tasked with the delivery of the Metro Tunnel Project. The MMRA is responsible to the Minister for Public Transport.

1.3.2 Metro Tunnel Project

The Metro Tunnel Project comprises twin nine kilometre rail tunnels between Kensington in the inner west and South Yarra in the inner southeast of Melbourne that will connect the Sunbury and Pakenham/Cranbourne train lines. The Metro Tunnel Project will provide five new inner city underground railway stations at Arden (western end of Queensberry Street in North Melbourne), Parkville (Grattan Street and Royal Parade), CBD North (Swanston Street between Victoria Street and La Trobe Street), CBD South (Swanston Street between Collins Street and Flinders Street) and Domain (St Kilda Road between Domain Road and Toorak Road). The Metro Tunnel Project is intended to significantly increase inner city station capacity and open the Parkville and Domain precincts to the rail network. The alignment is shown in Figure 2.

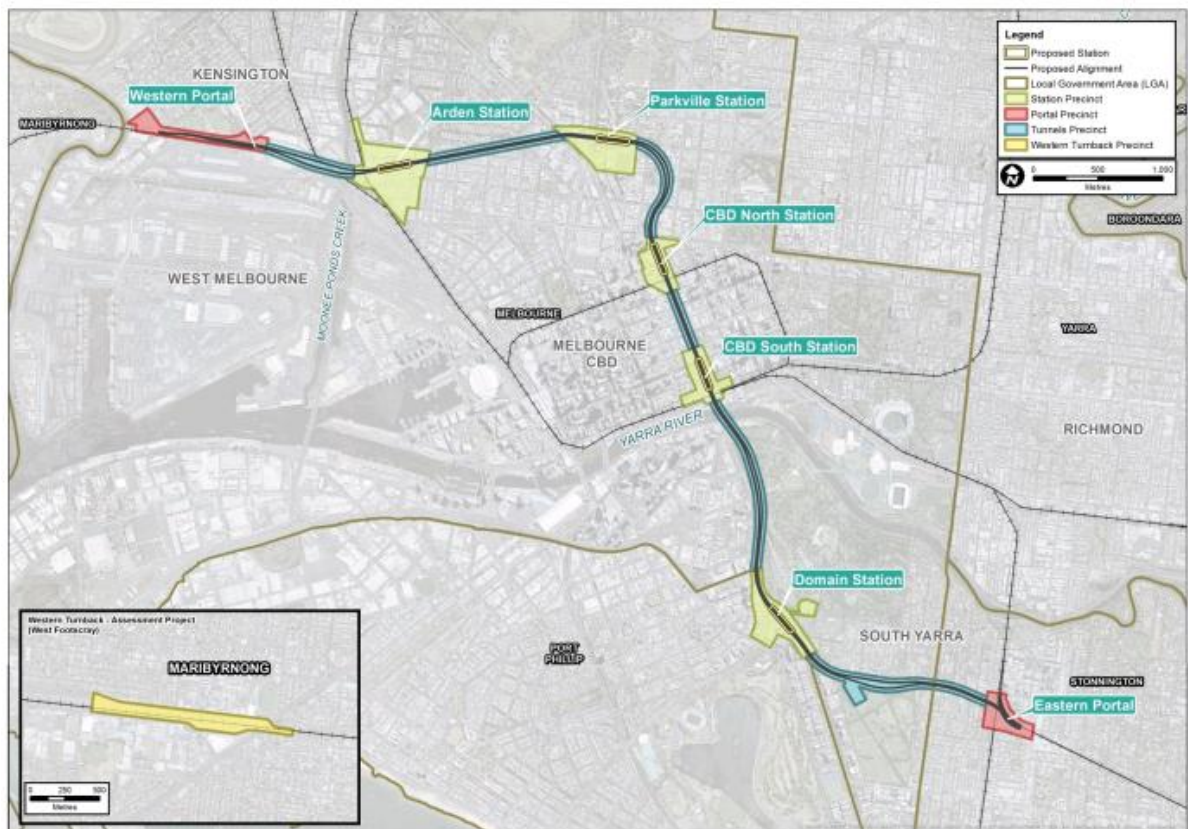


Figure 2 Precincts within the Metro Tunnel Project Land

The area directly affected by the Metro Tunnel Project comprises land that is currently used for railway or road purposes, developed urban land (including land in Melbourne's central business district), and parkland. The Metro Tunnel Project's alignment commences at the Western Portal east of the Maribyrnong River, passes under Moonee Ponds Creek near City Link and the Yarra River adjacent to Princes Bridge and returns to the surface at the Eastern Portal in the rail reserve at South Yarra, between Toorak Road and Chapel Street. For assessment purposes, the Metro Tunnel Project has been divided into nine precincts based on the location and nature of project components and construction works, the potential impacts on local areas and the characteristics of surrounding communities (refer to Table 1 for further details):

1. Tunnels (not applicable to the Early Works Package);
2. Western Portal (Kensington);
3. Arden Station;
4. Parkville Station;
5. CBD North Station;
6. CBD South Station;
7. Domain Station;
8. Eastern Portal (South Yarra); and
9. Western Turnback (West Footscray) (not applicable to the Early Works).

A detailed description of the Metro Tunnel Project is provided in Volume 1, Section 6 of the EES. The Metro Tunnel Project and its potential effects on the environment are presented in the EES in the context of a concept design and specific alternative design options. The final detailed design will be prepared by the preferred tenderer, expected to be appointed to design and construct the Metro Tunnel Project during 2017 whilst Metro Tunnel Project Land is as identified within Appendix A of the Incorporated Document.

The diversion of tram Route 8 (to become Route 58 when Route 55 and Route 8 merge) occurs within the Metro Tunnel Project Land designated for the Tunnels Precinct (refer to Figure 3) with changes to traffic and tram operations during the construction also impacting the Domain Precinct.

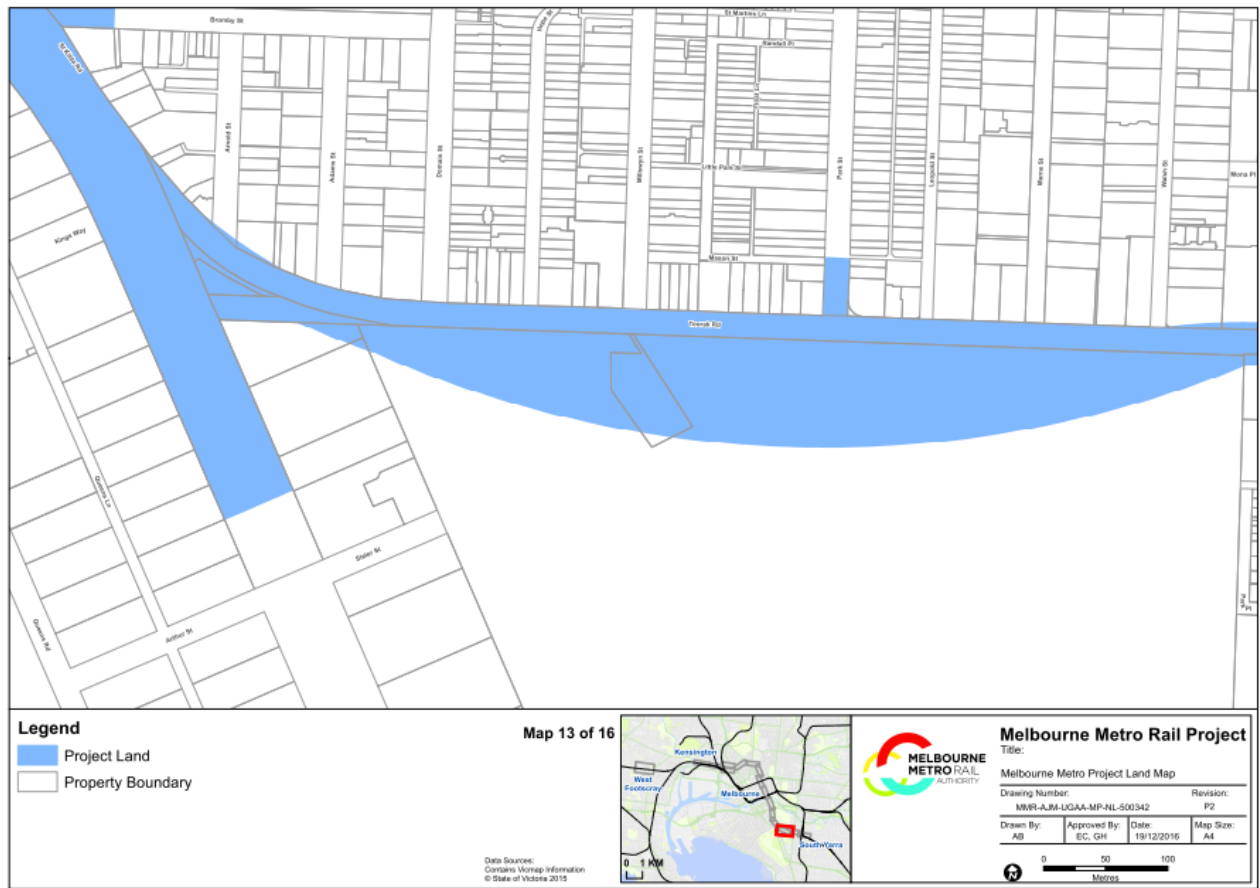


Figure 3 Project Land relevant to the TRW Tram Diversion Project

1.4 OTHER APPROVALS

As some of the Early Works are located within the St Kilda Road heritage site, a Heritage Permit is required in the provisions of the *Heritage Act 1995*. This Heritage Permit (reference P25649) was approved by the Executive Director of Heritage Victoria on 27 April 2017. The Heritage Permit process under the *Heritage Act 1995* is a separate process to, but informed by the Minister's Assessment of the EES.

2 METRO TUNNEL WORKS PROGRAM

Work on the Metro Tunnel Project is proposed to proceed in phases. These are described below and are variously referred to in the text of the Minister's Assessment.

2.1 ENABLING WORKS

Enabling Works are identified in Victorian Government Gazette No. S361 (24 November 2015) and were excluded from assessment under the EES.

2.2 PREPARATORY WORKS

Preparatory Works are defined under Clause 4.12 of the Incorporated Document, and are intended to commence prior to the approval of an Early Works Plan or Development Plan in accordance with Clause 4.12.2. These include Preparatory Works such as:

- a. Works, including vegetation removal, that would not require a permit under the provisions of the Planning Schemes that, but for the Incorporated Document, would apply to the relevant land.
- b. Investigations, surveys, testing and preparatory work to determine the suitability of land.
- c. Creation of construction access points.
- d. Establishment of environmental and traffic controls.
- e. Fencing and temporary barriers to enable preparatory works.
- f. Utility service relocations and protection works limited to the following locations only:
 - i. in the CBD North Precinct that are preparatory to works for the construction of shafts at Franklin and A'Beckett streets (including associated tree removal);
 - ii. on Flinders Lane between Russell and Swanston streets that are preparatory to works for shaft construction at City Square; and
 - iii. at Toorak Road West (between St Kilda Road and Leopold Street) that are preparatory to works associated with diverting tram services along Toorak Road West to connect with St Kilda Road.

2.3 EARLY WORKS

Early Works are referred to under Clause 4.9 of the Incorporated Document and as described within the EES, are intended to commence prior to the approval of Development Plans but after the approval of the EMF (including EPRs) and UDS. Early Works include activities which are the responsibility of the Managing Contractor and activities which are to be delivered by Yarra Trams (and/or other parties). In accordance with Clause 4.9.7, Early Works cannot commence until such time as an Early Works Plan has been formally approved by the Minister for Planning.

2.3.1 Yarra Trams Early Works

The activities that are considered Early Works for the Toorak Road West Tram Diversion Project include:

- Tree Management and Removal
- Road and Transport Network Changes
- Construction activities to construct new tram infrastructure.

These are further described in Sections 3 and 4. The focus of this particular Early Works Plan is on works which are to be delivered by Yarra Trams.

2.3.2 Managing Contractor Early Works

Managing Contractor Early Works are part of other contracts and therefore approval obligations will be addressed via separate Early Works Plan.

2.4 MAIN WORKS

Main Works encompass the main body of the Metro Tunnel Project works and are subject to the preparation and approval of a Development Plan. The bulk of Main Works will be completed by the contractor engaged by the MMRA to deliver the Metro Tunnel Project. In accordance with Clause 4.6, Main Works cannot commence until a Development Plan has been approved for the applicable works.

3 TRAM EARLY WORKS PACKAGE SCOPE

The nature and extent of activities associated with the delivery of works required for the TRW Tram Diversion Project, which forms part of the Early Works for the Metro Tunnel Project, include:

- Tree Management and Tree Removal
- Road and Transport Network Changes
- Construction activities to construct new tram infrastructure.
- Site office

3.1 TREE MANAGEMENT AND REMOVAL CONSIDERATIONS

The delivery of the Early Works Package involves the removal of a number of trees. A design and construction hierarchy has been adopted to inform activities undertaken around trees. This approach has been taken in recognition of sensitivities associated with trees throughout the Metro Tunnel Project Land.

The design and construction hierarchy adopted for the delivery of the Early Works Package includes the following steps:

1. Avoid works within designated Tree Protection Zones:
 - Tree Protection Zones are to be allocated in accordance with AS 4970-2009 Protection of Trees on Development Sites;
 - Where practical, priority is to be given to the relocation of infrastructure away from trees to reduce the potential for immediate or future damage.
2. If works are required within a designated Tree Protection Zone:
 - Works are to be undertaken in accordance with advice as received from the arborist;
 - Where excavation works are proposed within a Tree Protection Zone, the Project Arborist must prepare a Tree Protection Plan;
 - Open trenching is to be avoided unless it is demonstrated by the Project Arborist that the viability of the tree will not be affected.
3. Tree and/or root pruning is to only be pursued in instances where it has been assessed by the Project Arborist as not having a detrimental impact on the viability of the tree. Such works must be undertaken in accordance with Australian Standard AS4373-2007 – Pruning of Amenity Trees.
4. Tree removal is to be pursued only as a last resort, with preference to be given to trees that will require removal to facilitate the main works program (i.e. trees situated within the designated station boxes).

All works must be undertaken in accordance with the EMF/EPRs, and all tree removal is to progress in accordance with an agreed Tree Protection and Removal Plan prepared by an arborist, which includes timely notification of the asset owner/manager.

Further information regarding tree management within Yarra Trams scope of works is provided in section 4.3.8 and Table 4.

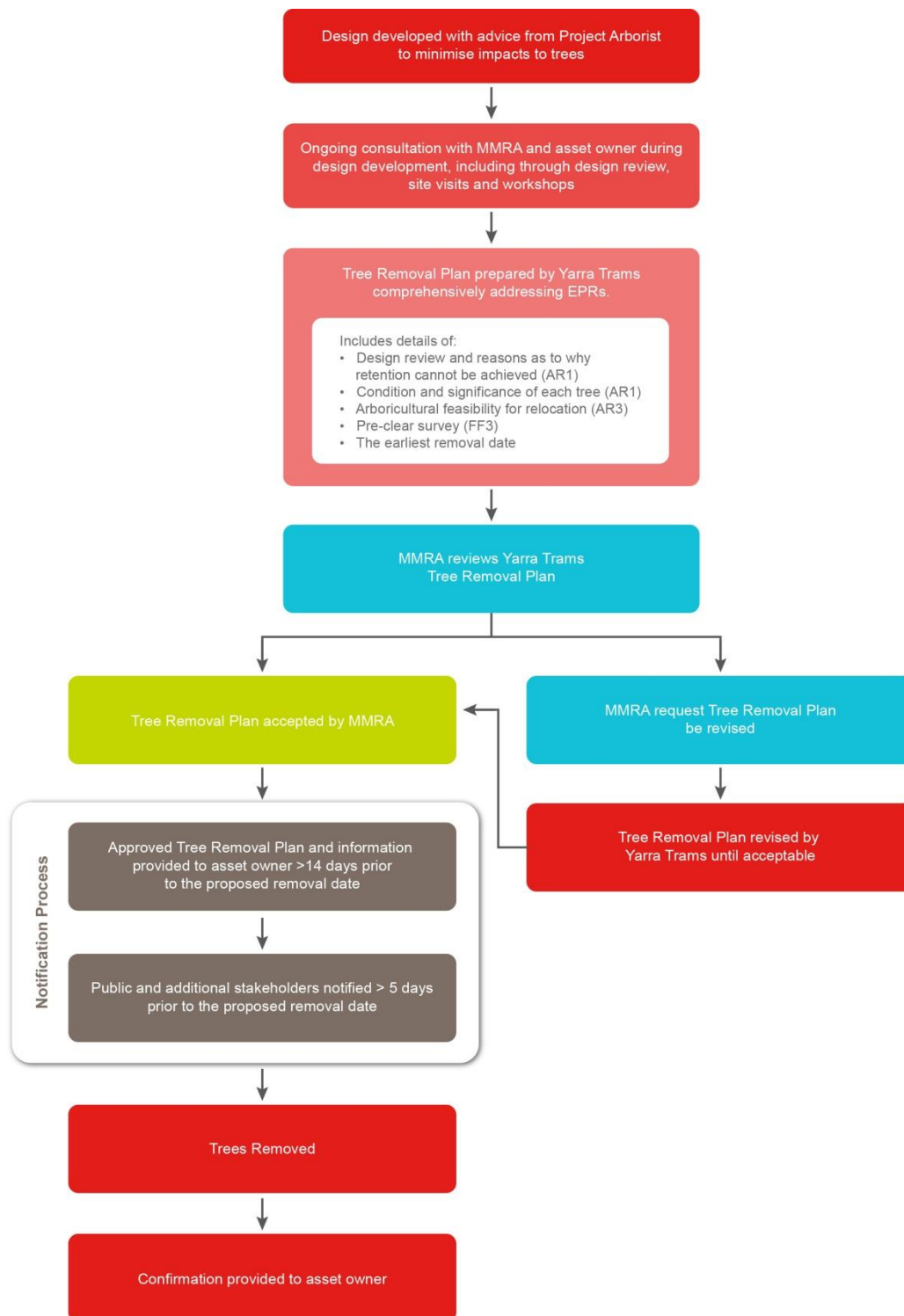


Figure 4 Flow chart detailing Yarra Trams process for considering tree removal as part of the delivery of the TRW tram diversion works

3.2 ROAD AND TRANSPORT NETWORK CHANGES

Works associated with road and transport network changes are to progress in consultation with Councils, VicRoads and other applicable stakeholders as identified under Clause 4.9.4 and 4.11.1 of the Incorporated Document. Such works include activities that would result in permanent/long-term alteration of access to a road zoned Road Zone 1 (RDZ1) (and therefore would ordinarily require consideration pursuant to Clause 52.29 – Land Adjacent to a Road Zone, Category 1, or a Public Acquisition Overlay for a Category 1 Road of the applicable planning scheme), or works which may have a significant impact on key pedestrian links.

Additional approvals will need to be sought in accordance with regulatory and contractual obligations (including the requirements of the EMF – refer to 5.1 of this Plan).

3.3 CONSTRUCTION ACTIVITIES TO CONSTRUCT NEW TRAM INFRASTRUCTURE

Associated construction activities for implementation of the TRW Tram Diversion Project include activities that would ordinarily require planning permission. Such activities comprise construction works within a designated Heritage Overlay (not listed as under the Victorian Heritage Register), and long-term car parking/access changes that would ordinarily trigger the need for a planning permit (under the provisions of *Clause 52.06 - Car Parking*).

4 TRW TRAM DIVERSION PROJECT

4.1 PURPOSE

To enable construction of the new Domain station, Domain Road will be closed for an extended period by the Early Works Managing Contractor between St Kilda Road and the western extent of Edmund Herring Oval. The Route 8 tram service which currently travels along Domain Road and Park Street, South Yarra will be re-routed to Toorak Road West during this time.

New tram infrastructure will be built on Toorak Road West between Park Street, South Yarra and St Kilda Road to maintain a direct connection from South Yarra to the CBD during construction of the Metro Tunnel project.

Yarra Trams will be delivering these works from April 2017 until August 2017 ahead of major construction for Domain station and the rail tunnels.

Works are summarised in Table 1 and further detail provided in section 4.3 below.

Table 1 Summary of works

Location	Description of activities
Toorak Road West	• Install 33 metre long Easy Access Tram Stop. • Install approximately 650 metre of segregated dual tram track in the middle traffic lanes, connecting St Kilda Road to the existing track east of Park Street. • Associated electrical works including pole and trolley wire installation for new tram infrastructure. • Removal of two juvenile trees (N73 and N74) • A new pedestrian crossing and signals located on Toorak Road West at the Walsh Street Tram Stop.
St Kilda Road	• Upgrade Stop 22 on St Kilda Road, to an accessible 66 metre Centre Island Platform and 66 metre Side Platform. • Track works at the intersection of St Kilda Road and Toorak Road West. • Associated electrical works including pole and trolley wire installation for upgraded tram infrastructure. • Removal of seven trees (PH145, PH155, PH197, DK028, DK065, DK066 and DK072). • Associated road works including new pedestrian crossing and traffic signals.
Domain Road and Park Street	• Track reconfigured at the intersection of Park Street and Toorak Road. • Overhead power along Domain Road and Park Street decommissioned. • Removal of shelters and tram infrastructure on Domain Road and Park Street • Tram tracks remain in-situ.

4.2 LOCATION AND SITE CONTEXT

The Toorak Road West Tram Diversion Project area is located along Toorak Road West and St Kilda Road in South Yarra; approximately 4km south-east of the Melbourne CBD.

The site runs for approximately:

- 0.8 km along Toorak Road West between St Kilda Road and Park Street (inclusive of the intersection) in South Yarra, and;
- 0.45 km along St Kilda Road, between Toorak Road West and Bromby Street, South Yarra.

Minor works will also be required on Domain Road and Park Street, South Yarra to remove tram stops, installation of wayfinding signage and decommissioning of overhead following the diversion.

For a map of the site layout please see Appendix A.

The surrounding land use includes a mix of residential and commercial uses as well as public open space including Fawkner Park.

4.3 SCOPE OF WORKS

4.3.1 Overview

The following works are required as part of the TRW Tram Diversion Project:

- Service investigations and relocation
- Site office and facilities set-up
- Construction of tram infrastructure on Toorak Rd West including one new easy access stop, segregated dual tram track, overhead power system, and associated civil works
- New tram infrastructure on St Kilda Rd including an upgrade of the existing safety zone stop to a centre island platform and side platform, and construction of a short section of a third track north of Toorak Rd intersection, reconfigured overhead power system, road reconfiguration and associated civil works
- Removal of some tram infrastructure on Domain Road and Park Street to avoid confusion for passengers and road users and to maintain the urban realm in a safe condition whilst trams are diverted
- Tree management and removals.

The alignment of the tram route diversion was determined by the Metro Tunnel project requirements. Further information pertaining to the design process is described in Section 5.7.5 of this EWP.

The location and design of the proposed new tram infrastructure was determined to provide the best overall outcome for the local community, tram passengers and road users.

Works will be staged generally in accordance with the headings provided below to minimise impacts to local access and the St Kilda Road corridor.

A Site Layout Plan which provides an indicative summary for the tram works is provided at Appendix A.

4.3.2 Timing

Early Works can commence once the EWP (this document) has been formally approved by the Minister for Planning in accordance with Condition 4.9.7 of the Incorporated Document. Timing and staging of the tram project is being carefully scheduled to minimise impacts to the local community, tram passengers and the broader travelling public as required under the EMF.

It is envisaged that Early Works for the TRW Tram Diversion Project will commence in April 2017 and take up to four months to complete.

Key considerations to this are:

- Minimising noise and amenity impacts to the local community
- Minimising the duration of works impacting operating tram tracks, known as “occupations”. Occupation works will be undertaken 24 hours a day, 7 days a week
- Maintaining tram operations including services on St Kilda Road, whenever possible, to minimise disruptions to tram passengers
- Minimising disruption to the road network so that alternative diversion routes are available for the local community and through traffic. The majority of works involving road disruption are scheduled to take place during school holiday periods
- The timing of works will be determined in consultation with the tram project contractors, local councils and EPA Victoria.
- After hours works will also be required outside of the occupation period in order to complete work safely and to reduce disruption to tram passengers and motorists. Neighbouring residents and businesses will be notified in advance of these works.

4.3.3 Service investigations and relocations

Services in St Kilda Road may require relocation or protection before construction of the new tram infrastructure begins. All utility relocations will be undertaken in accordance with utility service provider requirements, to ensure that safe depths of cover are maintained or services can easily be accessed and maintained.

During relocations, services will be maintained to passengers and changeover periods will be kept to a minimum. Utility service providers will notify passengers of any planned service disruptions.

These works may require some traffic and pedestrian diversions to be put in place for short periods.

4.3.4 Site office and facilities set-up

Prior to tram works commencing, temporary site offices and facilities will be setup and maintained for the duration of TRW Tram Diversion Project.

Facilities will be located within a VicRoads controlled road in the vicinity of the St Kilda Road and Toorak Road West junction.

Set up will not result in a loss of car park spaces.

4.3.5 Toorak Road West – Tram infrastructure construction

New tram infrastructure will be constructed on Toorak Road West between the junction of St Kilda Road and the Park Street intersection (refer to Appendix A).

A new 33 m Easy Access Tram Stop will be constructed on Toorak Road West, to the east of the existing pedestrian operated signals near Millswyn Street. Easy Access Tram Stops are part of a suite of stop designs employed across Melbourne's tram network. These stops provide level access on streets where road space is both shared and limited. Easy Access stop create and involve the following:

- level access from the kerb to the tram door, improving passenger loading and unloading times and making tram travel more reliable, safe and efficient.
- raising the road surface to remove the 'step' between the road and low floor trams. The new waiting area is created by extending the kerb and will include one shelter on each side of road. It will be a similar style to existing shelters across the tram network and will not contain advertising.

Refer to Figure 5 for an artist's impression of the new tram stop on Toorak Road West, near Millswyn Street stop and Figure 6 for a plan view.

Approximately 650 m of segregated dual tram track will be constructed in the middle traffic lanes, connecting St Kilda Road to the existing track east of Park Street. Key outcomes of these works include:

- Tracks will be raised approximately 80 mm above the level of the road. The separating of trams and road vehicles is important for the safe and efficient operation of the tram network.
- Two vehicle crossing points will be provided to support local access movements. Crossing function will remain at Domain and Millswyn Streets.
- Emergency services will also use the tram reserve to avoid delays on the road network.
- Fifty of the current on-street parking spaces between St Kilda Road and Park Street will be removed. Sixty-one car park spaces will be retained.
- Removal of carparks and alterations to the St Kilda Road/Toorak Road slip lane.

Traffic will be maintained through Toorak Road West (with the exception of occupations) during construction.

Preliminary works, including tram pole installation, storm water changes in civil works, will be completed with local traffic management maintaining traffic in both directions.

The majority of the works in Toorak Road West will be completed without requiring an occupation of the operating tram network. However, the intersection of Toorak Road West and Park Street will be closed to complete the connection to the existing track, resulting in disruptions to tram services. To minimise disruption, this work will coincide with occupation works in St Kilda Rd. During this time, the Route 58 will be replaced with a temporary bus service between Domain Interchange and the terminus on Toorak Road.

Appendix B provides detailed drawings of the Easy Access Stop in plan and section view.



Figure 5 Artist's Impression of new Easy Access Stop located on Toorak Road West, near Millswyn Street (Indicative image only)

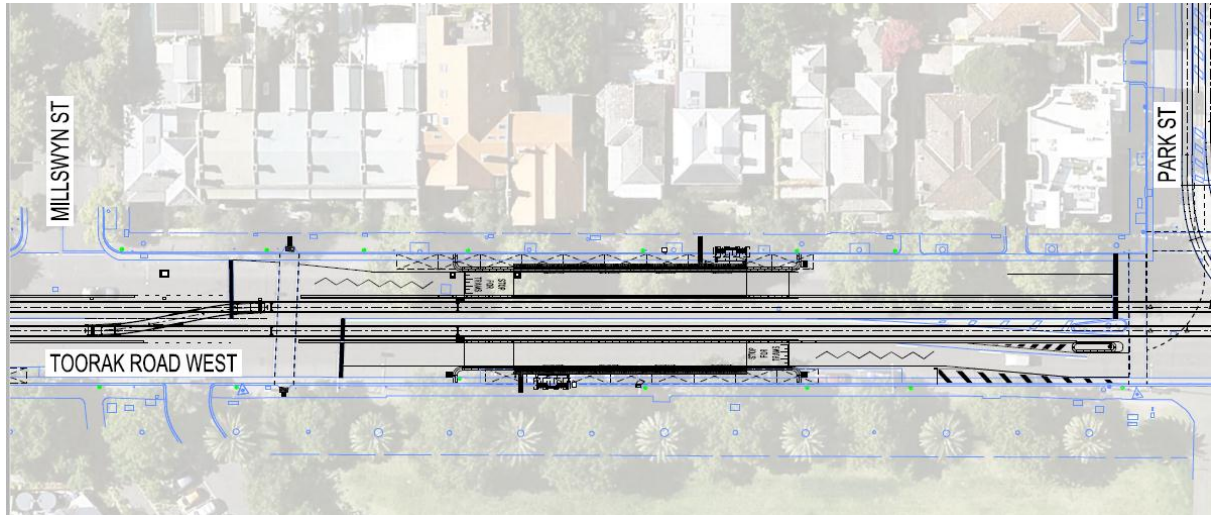


Figure 6 Plans showing location of new Easy Access Stop located on Toorak Road West, near Millswyn Street

4.3.6 St Kilda Road – Construction of tram infrastructure

The new Stop 22 on St Kilda Road, north of Kings Way will be upgraded to an accessible 66 m Centre Island Platform and 66 m Side Platform, giving the stop three platforms to cater for capacity and provide network resilience. It includes the following features:

- The new level access stop is bigger than the existing safety stop, can accommodate higher capacity trams and more passengers, caters for increased patronage and provides much needed resilience to the network during Metro Tunnel works.
- This larger triple platform stop will provide improved safety and ease of use for passengers changing from one tram to another.
- The triple track design replicates the current turn into Domain Road at Domain interchange arrangement, helping our passengers to get to their destinations as quickly and easily as possible during construction of the Domain station.
- An additional pedestrian crossing will be installed at the north end of the stop to improve customer safety.

Refer to Figure 7 for an artist's impression of the new centre island platform and side platform stop, located on St Kilda Road and Figure 8 for plan view. Appendix B provides detailed drawings of the stop in plan and section view.

Through consultation with VicRoads and Councils, and recognising the significant comments from the community regarding tree removal, it has been agreed that St Kilda Road will be reduced to two lanes in each direction between Kings Way and Bowen Crescent. This is an interim arrangement until St Kilda Road is further reduced to one lane in early 2018. With this agreement, the centre median row of trees can be retained with the construction of the tram stop on St Kilda Road. Further description as to how this change assists in tree retention is provided in Section 4.3.8.



Figure 7 Artist's Impression of new centre island platform and side platform stop, located on St Kilda Road, north of Kings Way (Indicative Image only)

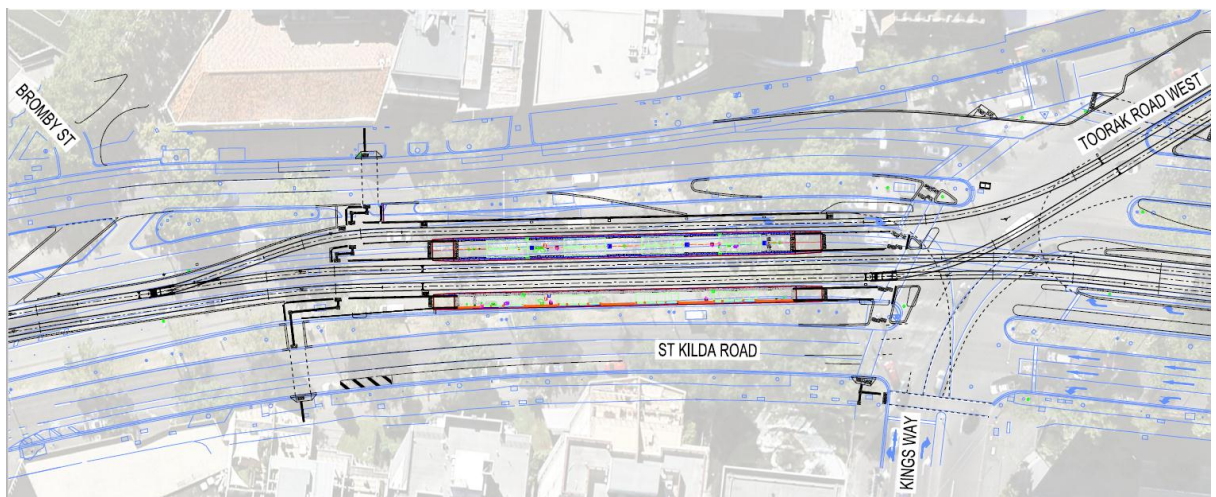


Figure 8 Plans showing location of new centre island platform and side platform stop, located on St Kilda Road, north of Kings Way

Preliminary construction works including, traffic median alteration, tree removal, removal of slip lane into Toorak Road West, tram pole installation, underground services relocations will be completed with local traffic management maintaining traffic in both directions.

The main tram works on St Kilda Road, including the platform construction, track works at the intersection of St Kilda Road and Toorak Road West, and overhead power system modifications will require an occupation of the tram network. Tram routes 3, 5, 6, 16, 64, 67 & 72 will be replaced by bus services between Domain Interchange and St Kilda Road, around the Commercial Road and High Street intersections.

A level of traffic flow will be maintained on St Kilda Road throughout the works, with outbound traffic being transferred from its usual side of the road to share the inbound service road with traffic moving in the opposite direction (contraflow).

4.3.7 Domain Road and Park Street – Tram infrastructure changes

Track will be reconfigured at the intersection of Park Street and Toorak Road. Prior to work commencement the overhead power along Domain Road and Park Street will be decommissioned. Refer to Figure 9 for plan view of the reconfigured arrangement.

Once tram services commence on the new alignment, some tram passenger signage, shelters and tram infrastructure will be removed from Domain Road and Park Street to assist wayfinding and enable remaining assets to be reasonably maintained in a safe condition whilst trams do not operate on these roads.

This stage will also include separation of power and track assets from in use tram infrastructure.

Tram tracks will remain in-situ pending a decision on the long term alignment of combined Route 58.

PTV has recently announced changes to the route of bus 605 which will improve transport connectivity in this area. Route 605 currently travels between Punt Road and Swan Street into the city. Starting 25 June 2017, the route will travel along Anderson Street, Domain Road and Birdwood Avenue into the western end of town, along Queen Street as far as La Trobe Street.

The new route will allow passengers to connect to trams along St Kilda Road, as well as trains at Flagstaff Station. It will pass Melbourne Grammar School and Melbourne Girls Grammar School, providing students with direct connections into the city.

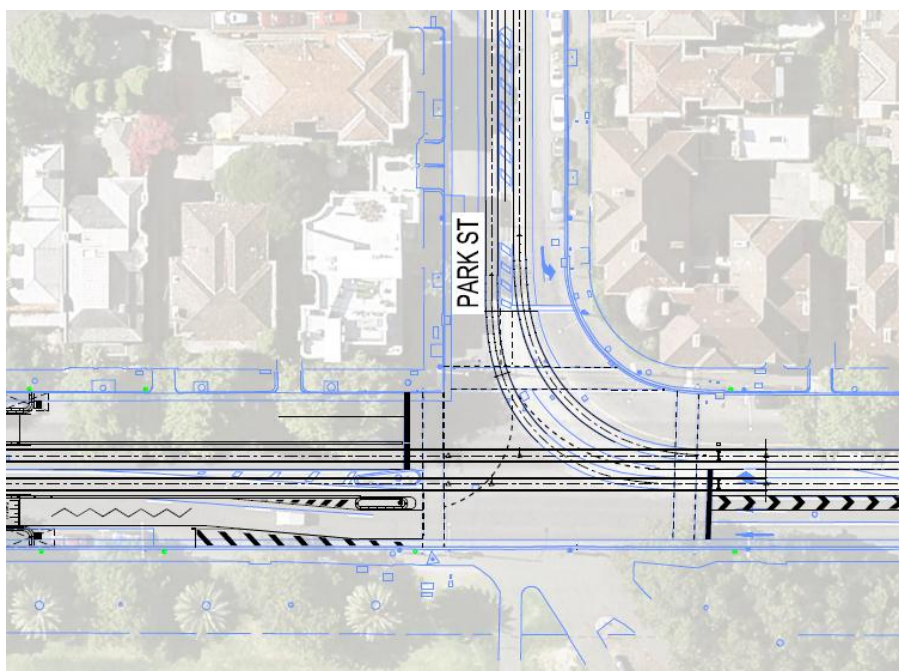


Figure 9 Reconfigured tram track arrangement at the intersection of Park Street and Toorak Road West

A new signalised pedestrian crossing will be located on Toorak Road West adjacent to the Walsh Street Tram Stop. The installation of the pedestrian crossing responds to safety concerns associated with the potentially high numbers of tram passengers (including local community and school children) crossing Toorak Road West to access the tram stop. The crossing will include the installation of outstands, with tram shelters and associated infrastructure to be located within the outstands. The design also includes an additional kerb outstand on the northern side of Toorak Road, east of Walsh Street, which allows for the improved sight lines and safety for vehicles entering Toorak Road West from Walsh Street.

4.3.8 Tree Management and Removal

The extent of tree removal is presented in the Tree Removal Plan provided in Appendix C. A total of 9 trees are to be removed as part of the works. A summary of trees to be removed is provided in Table 2 with greater detail provided in Appendix C.

Table 2 Tree removals in St Kilda Road and Toorak Road West

Tree No.	Common Name	Scientific Name	Location	Heritage Status	Owner
PH145	English Elm	<i>Ulmus procera</i>	St Kilda Road	VHR	CoPP
PH155	English Elm	<i>Ulmus procera</i>	St Kilda Road	VHR	CoPP
PH197	London Plane	<i>Platanus Xacerifolia</i>	St Kilda Road	VHR	CoPP
DK028	English Elm	<i>Ulmus procera</i>	St Kilda Road	VHR	CoM
DK065	London Plane	<i>Platanus Xacerifolia</i>	St Kilda Road	VHR	CoM
DK066	London Plane	<i>Platanus Xacerifolia</i>	St Kilda Road	VHR	CoM
DK072	English Elm	<i>Ulmus procera</i>	St Kilda Road	VHR	CoM

Tree No.	Common Name	Scientific Name	Location	Heritage Status	Owner
N74	Norfolk Island Pine	<i>Araucaria heterophylla</i>	TRW	None	CoM
N73	Norfolk Island Pine	<i>Araucaria heterophylla</i>	TRW	None	CoM

CoM = City of Melbourne; CoPP = City of Port Phillip; VHR = Victorian Heritage Register, indicates tree is within VHR Site for St Kilda Road Reserve (VHR H2359)

As a result of the consultation process with stakeholders the number of trees to be removed has been reduced from 22 presented in the Draft EWP to 9 as presented in Table 2. Of the 9 to be removed 5 are juvenile and 3 are in poor health.

To facilitate the retention of trees in St Kilda Road the design of the project has been modified. This modification has included removal of a median strip on the southern side of St Kilda Road resulting in a need to move the location of a tram pole in the design. This pole will now be located on the corner of Kings Way and St Kilda Road but will result in the removal of one tree, PH155 (refer to Appendix C) which has been assessed by an arborist as being in poor health and in decline.

An arborist has advised design modifications to minimise impacts on retained trees on both St Kilda Road and Toorak Road West. The Tree Protection and Removal Management Plan includes Tree Protections Plans (TPP) for each tree which is within close proximity to the construction site and guidance on pruning required to maintain clearance of infrastructure while optimising pruning for tree health.

A Heritage Permit application was received on 27 April 2017 (reference P25649) for tree removal works within the St Kilda Road Victorian Heritage Register (VHR) site. Following consent from both Heritage Victoria and the relevant Councils, tree removal will be undertaken in accordance with Yarra Trams Tree Protection and Removal Plan.

All tree management will be carried out in accordance with the EMF the Metro Tunnel Tree Removal Plan, and Yarra Trams Tree Protection and Removal Management Plan.

5 PROCESS AND CONTROLS FOR DELIVERING THE TRW TRAM DIVERSION PROJECT

The following section has been prepared to provide an explanation as to how the Toorak Road West Tram Diversion Project will be undertaken in accordance with the approved EMF and UDS (pursuant to Clause 4.9.3), and to detail the management structure and broader communication processes associated with the delivery of the works. Figure 10 provides a summary of the overarching document structure that has been adopted for the delivery of the Toorak Road West Tram Diversion Project.

The section starts with a summary of the overarching Environmental Management Framework and Environmental Management System which govern the delivery of Toorak Road West Tram Diversion Project, before discussing each EPR as it relates to the delivery of the works. In discussing these processes, the section provides context for how EPR compliance will be achieved and summarises roles, risks and reporting obligations. The section then discusses relevant considerations as detailed within the UDS and outlines how applicable considerations will be integrated into the design and construction program.

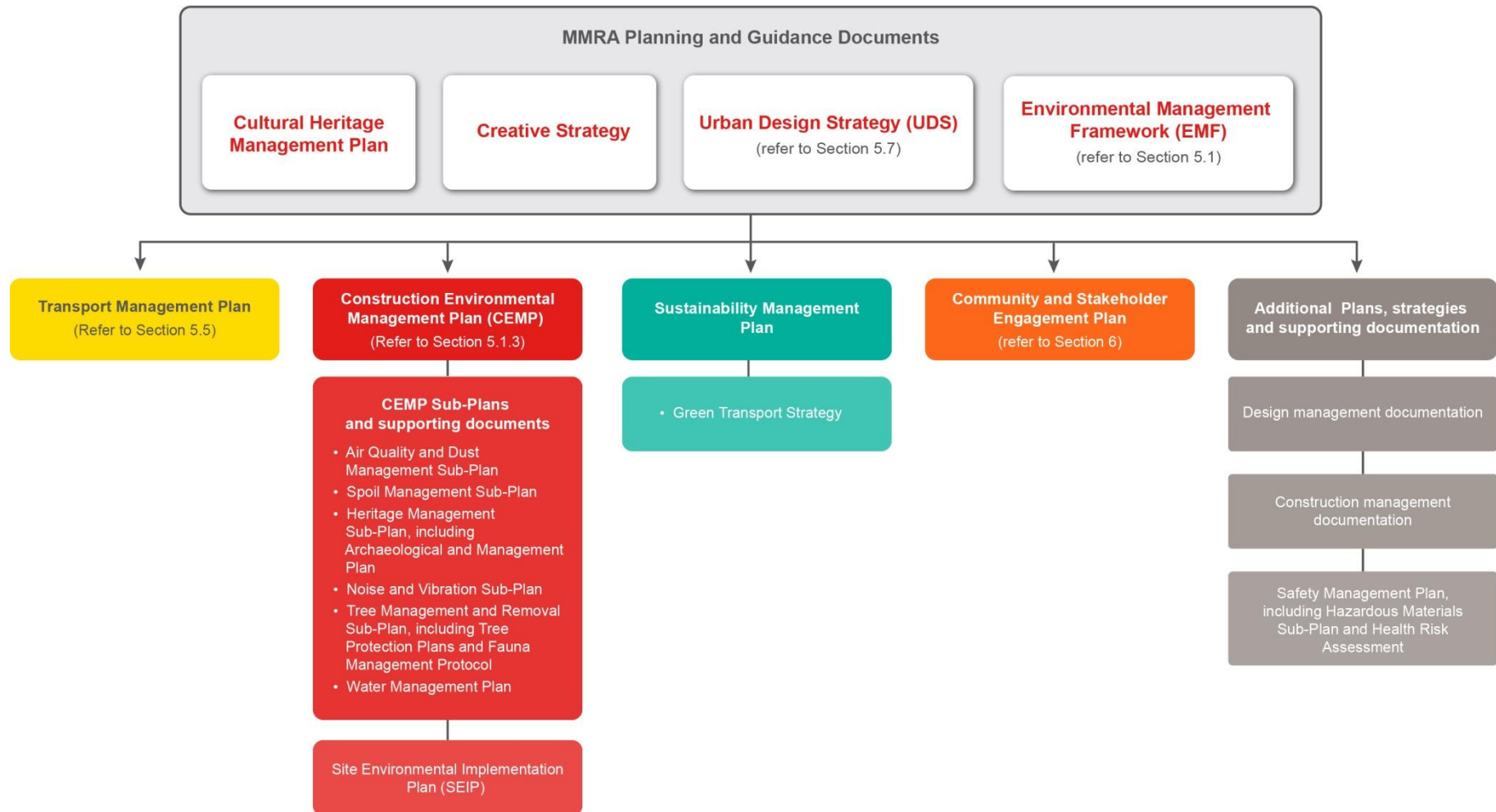


Figure 10 Summary of document structure as adopted for delivery of the TRW Tram Diversion Project

5.1 ENVIRONMENTAL MANAGEMENT FRAMEWORK

The EMF has been developed by MMRA to address the requirement of Clause 4.6 of the Incorporated Document and is summarised in Figure 11 below. The EMF provides a transparent and integrated governance framework to manage environmental aspects associated with the design, construction and operational phases of the Toorak Road Tram Diversion Project. The requirements of the EMF and the EPRs will be enforced by MMRA on behalf of the State through the contractual arrangements for the delivery of the Project. Clause 4.9.10 of the Incorporated Document requires that Early Works, including tram works, development be carried out in accordance with an approved Early Works Plan.

The EMF has been informed by the environmental risk assessment and specialist environmental studies completed for the Metro Tunnel EES. The EMF identifies accountabilities for the delivery and monitoring of actions required to achieve the outcomes of the EPRs. The EMF requires that MMRA, Contractors and Operators operate under a certified Environmental Management System (EMS).



5.2 ENVIRONMENTAL MANAGEMENT SYSTEM

The MMRA Environmental Management System Manual (the Manual) provides a structured management approach for outlining and tracking compliance with the environmental management responsibilities for all parties, including the contractors. The Manual requires the establishment of a system whereby project environmental

risks and impacts are managed in accordance with ISO14001 requirements and the relevant obligations as stipulated under the EPRs (refer to 5.6). The Manual also provides guidance on development of subordinate plans, systems and tools including the CEMP.

5.2.1 Yarra Trams Environmental Management System

Yarra Trams is responsible for delivery of the Toorak West Tram Diversion Project on behalf of MMRA. Yarra Trams has an ISO Accredited EMS which will be used to deliver the works. Roles and responsibilities for environmental management will be defined in the CEMP, which articulate mitigation measures for managing environmental impacts and implementing EPRs.

The Yarra Trams EMS is certified to ISO 14001:2004, and reflects the requirements of the overarching MMRA EMS Manual. In accordance with the EMS Manual, and ISO14001 requirements, the Yarra Trams EMS and Toorak West Tram Diversion Project CEMP provide a framework for implementation (i.e. controls, training, communications, emergency response, etc.) and measurement / evaluation (inspections, monitoring, reporting, auditing, corrective action, etc.).

Prior to works commencing Yarra Trams will engage an independent environmental auditor to undertake an environmental audit of the plans to ensure they address the requirements of the EPRs. This audit will be documented in an audit report and provided to MMRA in-line with reporting requirements under the EMF. An independent audit will also be undertaken during the works to ensure compliance with the CEMP.

5.3 CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

The Construction Environmental Management Plan (CEMP) will describe environmental aspects and impacts that will be managed during the construction phase of the Toorak Road Tram Diversion Project. The CEMP is being developed in accordance with Yarra Trams ISO14001 Environmental Management System (EMS) and will describe how Yarra Trams will, during the construction phase of the works, comply with the EMF and relevant EPRs set out in the Metro Tunnel Project EES, the UDS and other documents. Figure 12 outlines the environment and sustainability documentation framework and how the CEMP is informed by various MMRA and Yarra Trams management systems and documents.

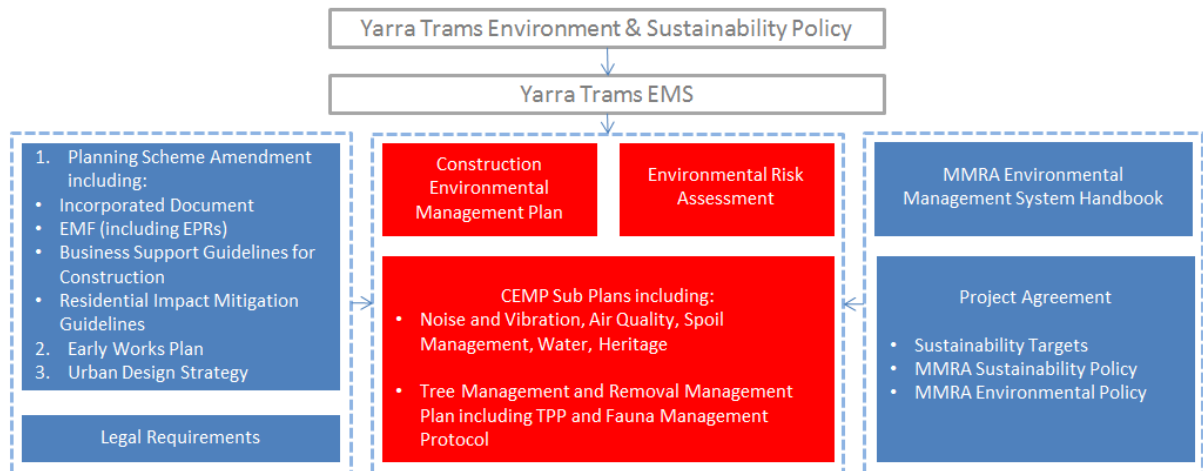


Figure 12 Environment and Sustainability documentation framework and CEMP development

The CEMP is being developed in accordance with EPA Publication 480, Environmental Guidelines for Major Construction Sites (EPA 1996) and will be reviewed by the Environmental and Sustainability Manager (ESM) for the Toorak Road Tram Diversion Project following:

- Completion of complimentary plans and site investigations
- Identification of a new issue that requires update of the Environmental Risk Register.

The CEMP will include a number of Sub-Plans that reference relevant EPRs and provide procedures and controls to manage key environmental risks and meet EPRs. Sub-Plans will be prepared for the following key areas:

1. Tree protection and removal
2. Water management including sediment and erosion, discharge and groundwater management
3. Cultural Heritage (both historical and Indigenous) management
4. Air quality and dust management
5. Contaminated soil and contaminated material management
6. Waste management
7. Fuels and chemicals
8. Noise and vibration.

Environmental monitoring requirements will be documented in each Sub-Plan for the tram works project and will reflect monitoring requirements specified in the EPRs including (but not limited to) monitoring of:

1. Noise and vibration
2. Air quality
3. Greenhouse gas emissions

4. Water, fuel and energy consumption
5. Spoil and waste (generation and transport)
6. Tree protection
7. Impacts on places of historical significance (Fawkner Park, Royce Hotel)
8. Traffic.

The CEMP will provide a framework for reporting. As a minimum this will include a monthly performance report to MMRA which summarises:

1. Results of monitoring undertaken
2. Any environmental incidents or non-compliance events
3. Results of internal and external audits.
4. Reports as and if required by EPA Victoria, Heritage Victoria and other stakeholders.

The CEMP will specify requirements for both internal and independent audits. Yarra Trams will engage an independent environmental auditor to check compliance with the Toorak Road Tram Diversion Project CEMP.

5.4 ENVIRONMENTAL RISK ASSESSMENT

Yarra Trams has undertaken an environmental risk assessment for the Toorak Road Tram Diversion Project in accordance with:

- Yarra Trams ISO14001 Accredited Environmental Management System (EMS)
- AS/NZS ISO 31000:2009: Risk management—Principles and guidelines
- Risk process provided in the Yarra Trams Enterprise Risk Management Procedure
- Contract agreement with MMRA.

The iterative risk assessment process has involved the preparation of a risk register by Yarra Trams. This register was added to and refined during a risk assessment workshop with key project personal from both Yarra Trams and MMRA whereby project risks were identified, the levels of risk calculated and controls developed to be incorporated into the CEMP and Sub Plans. Prior to commencement of works Yarra Trams will review the risk assessment as part of the pre-construction risk assessment with the construction team.

The CEMP and Sub-Plans align risks from the Metro Tunnel Project EES process, Yarra Trams Risk Assessment process and the EPRs to demonstrate the relationships between risk and mitigation measures. Yarra Trams will continue to manage environmental risks as per the *AS/NZS ISO 31000:2009: Risk management—Principles and guidelines*. This will include close monitoring of the effectiveness of mitigation measures to provide for an adaptive regime in the context of risk management.

Some impacts associated with the project are unavoidable and therefore remain a high risk. Of particular relevance to the TRW Tram Diversion Project is tree removals and noise at night due to night works. Specific environmental risks associated with the Toorak Road Tram Diversion Project are outlined in Table 3.

Table 3 Key environmental risks associated with the delivery of the TRW Tram Diversion Project and associated mitigation measures.

Risk	Mitigation
Removal and management of trees especially in the context of landscape, heritage and amenity values	Compliance with applicable EPRs (refer to Table 4); adopt a design and construction hierarchy to inform activities undertaken near trees (see section 3.1); tree assessment by qualified arborist; compliance with conditions within the Heritage Permit for Metro Tunnel Works in St Kilda Road; consultation with City of Melbourne; City of Port Phillip and Heritage Victoria prior to removal; pruning of trees in-line with Australian Standards (Pruning of Amenity Trees AS 4373-2007 and Protection of Trees on Development Sites AS 4970-2009); management of trees as per Tree Protection Plans; follow Tree Removal Plan in accordance with design and construction hierarchy.
Noise and vibration generated during construction works	Compliance with applicable EPRs (refer to Table 4); installation of monitoring points near sensitive receptors; management of works to reduce potential for adverse amenity impacts; notification of applicable stakeholders prior to commencement of works; implementation of Noise and Vibration Management Plan.
Traffic and transport management (includes local traffic congestion dust and mud on roads)	Compliance with applicable EPRs (refer to Table 4); implementation of a Traffic Management Plan informed by traffic modelling; obtain specialist advice for minimising impacts on amenity and traffic; notification of applicable stakeholders in advance of works taking place; installation of wayfinding signage and alternative access plans where significant pedestrian links are to be modified to accommodate works. Where impacts are unavoidable, diversions have been identified and will be implemented to ensure safe and efficient circulation of traffic, acknowledging that a broader Network Enhancement Program is progressively being implemented to help mitigate against impacts associated with temporary and permanent road modifications.
Impacts on existing businesses during construction	Compliance with applicable EPRs (refer to Table 4); notification of applicable stakeholders in advance of works taking place; implementation of the approved Business Support Guidelines for Construction; ongoing monitoring of effectiveness of initiatives.
Dust emissions impacting sensitive receptors	Compliance with applicable EPRs (refer to Table 4); notification of applicable stakeholders in advance of works taking place; implementation of the Air Quality and Dust Management Plan; ongoing monitoring of the effectiveness of initiatives.

5.5 TRAFFIC MANAGEMENT PLAN

The purpose of the Traffic Management Plan (TMP) is to outline how the Toorak Road Tram Diversion Project interfaces with the public to maximise the safety of all road users, public and the construction workforce whilst minimising disruptions during project delivery. The TMP provides a coherent and organised approach to identifying and managing the direct and cumulative impacts of construction on the transport network with consideration of all modes including buses, trams, commercial vehicles, cars, pedestrians and cyclists as well as parking and loading areas.

Elements incorporated into the TMP include:

- Responding to traffic related EPRs
- Identifying, minimising and managing risks associated with the worksite and managing traffic.
- Providing sufficient delineation and warning to provide safe and efficient movement of vehicles past the work site.
- Minimising the number of roads/lanes that are closed at the same time and the duration of temporary road/lane closures.
- Ensuring adequate advanced/guidance signage is provided for motorists.
- Ensuring advance communication of impacts to stakeholders and the community.
- Short-term traffic arrangements.
- Bus replacement services
- Site access where the activity warrants changes or additional signage.
- Construction activities adjacent to, or on, the transport network.

5.6 ENVIRONMENTAL PERFORMANCE REQUIREMENTS

The EMF defines EPRs, which are Metro Tunnel Project-wide environmental outcomes that must be achieved during design, construction and operation of the Metro Tunnel.

The TRW Tram Diversion Project forms a small component of the larger Metro Tunnel project, and as such not all of the EPRs are applicable. EPRs relevant to the TRW Tram Diversion Project are listed in Table 4 under their respective disciplines with the left hand column outlining how the Toorak Road Tram Diversion Project has been developed to respond to them.

Responsibilities for delivering on EPRs for the TRW Tram Diversion Project are distributed between MMRA (detailed design) and Yarra Trams (construction). The scope of the EWP is to demonstrate how the Toorak Road Tram Diversion Project will adhere to design and construction phase EPRs therefore these are further presented in Table 4 below. It should be noted that many of the EPRs have elements that are not relevant to the project. Only relevant points are responded to in Table 4.

Relevant EPRs are as follows: EMF1, EMF2, EMF3, EMF4, AE1, AE2, AH1, AQ1, AQ2, AQ3, AR1, AR2, AR3, AR4, AR5, B2, B3, B4, C4, CH1, CH2, CH3, CH4, CH6, CH7, CH8, CH9, CH10, CH18, CH21, CH23, FF2, FF3, GHG2, GM2, GM4, LU1, LU2, LU4, LV1, LV2, LV3, NV1, NV3, NV4, NV5, NV6, NV7, NV8, NV9, NV10, NV11, NV13, NV21, SC2, SC3, SC4, SC6, SC7, SC8, SC10, SC12, SW2, T1, T2, T3, T4, T5, T6, T7, T10.

Table 4 Response to Environmental Performance Requirements relevant to the TRW Tram Diversion Project

No	TRW Tram Diversion Project Response
Environmental Management Framework (EMF)	
EMF1	Yarra Trams has worked with MMRA to develop a timeline for delivery of Toorak Road Tram Diversion Project documentation to address all relevant EPRs. Yarra Trams operates in accordance with an ISO 14001 Accredited EMS. The works will be delivered in accordance with Yarra Trams EMS. A framework has been developed for the development of plans required by the relevant EPRs and Incorporated document. A consultation program to engage key stakeholders including Melbourne City Council, City of Port Phillip, Heritage Victoria, VicRoads, Melbourne Water, Public Transport Victoria, and the Environment Protection Authority has been developed and is being implemented.
EMF2	Yarra Trams operates in accordance with an ISO 14001 Accredited EMS. The works will be delivered in accordance with this system. An environmental risk assessment has been carried out for the construction phase of the works in order to identify and control risks and to inform the development of a Construction Environmental Management Plan (CEMP). The CEMP will reference the EMF, EPRs, MMRA Environmental Policy and Yarra Trams EMS and be prepared in accordance with EPA Publication 480, Environmental Guidelines for Major Construction Sites (EPA 1996). It will provide a framework for the identification, control, responsibility, review and auditing of environmental risks. Yarra Trams is and will continue to consult with key stakeholders including Councils, Heritage Victoria, the Roads Corporation, Melbourne Water, Public Transport Victoria (PTV)/DEDJTR (Transport), and the Environment Protection Authority (EPA)
EMF3	An independent environmental auditor will be engaged prior to the finalisation of the plans to ensure all plans comply with the requirements of the EPRs. The independent environmental auditor will also undertake an environmental compliance audit during the construction phase of the works to ensure compliance with the EMF, EPRs and approved CEMP.
EMF4	Yarra Trams will manage all feedback complaints in accordance with the Metro Tunnel complaints management approach documented in the Metro Tunnel Community and Stakeholder Engagement Management Framework (refer EPR SC3 and SC4). The Metro Tunnel complaints management approach will include protocols prepared in accordance with the <i>Australian Standards AS/NZS 10002:2014 Guidelines for Complaint Management in Organisations</i> and ensure that complaint management addresses requirements set out in the Business Support Guidelines for Construction. The Metro Tunnel Project Information Line is the primary reference point for construction related enquiries. Yarra Trams will work with MMRA to cooperate on the use of their complaints management system. Complaints forwarded to Yarra Trams in regard to the works will be handled and any escalation will be actioned as per prior agreement with MMRA. Complaints management processes will be thoroughly explained to the contractors delivering the works and as part of their contractual obligations, to include stakeholder engagement and complaints management and resolution as part of worker toolbox sessions and general onsite communications. In addition, Yarra Trams will ensure that any feedback received via other existing channels, such as the PTV Call Centre and the Yarra Trams

No	TRW Tram Diversion Project Response
	webpage, is forwarded to the Toorak Road Tram Diversion Project team and responded to in a timely manner.
Aquatic Ecology and River Health (AE)	
AE1	The design requires the minor relocation of existing pits and installation of new pits to divert existing stormwater around tram platforms. The design does not change the existing stormwater catchment characteristics nor does it impact on the existing stormwater runoff quality. Yarra Trams will ensure the construction site adheres to best practice performance objectives for achieving compliance with SEPP (Waters of Victoria). Measures will include: vehicle wheel wash and rumble bars where required, appropriate placement of material stockpiles and chemical storages, covered loads, street sweeping and water quality monitoring. The design requires the minor relocation of existing pits and installation of new pits to divert existing stormwater around tram platforms. The design does not change the existing stormwater catchment characteristics nor does it impact on the existing stormwater runoff quality.
AE2	Yarra Trams will ensure the construction site adheres to best practice sedimentation and pollution control measures are applied to protect waterways in accordance with Best Practice Environmental Management: Environmental Guidelines for Major Construction Sites – EPA publication 480 (1996). A Stormwater Management, Spoil Management and Hazardous Materials Sub Plans will be included within the CEMP to mitigate potential risks to stormwater.
Aboriginal Cultural Heritage (AH)	
AH1	The Toorak Road West Tram Diversion Project will be delivered in accordance with the MMRA's Cultural Heritage Management Plan (CHMP) approved under the <i>Aboriginal Heritage Act 2006</i> and prepared as per the provisions set out in the Aboriginal Heritage Regulations 2007. The Toorak Road West tram diversion works are included in the defined Activity Area for the CHMP. Should a site be discovered during works the procedures set out in the CHMP will be followed to mitigate impacts to a place of Aboriginal Cultural Heritage significance. The main potential risk to Aboriginal Cultural Heritage is disturbance of a site during excavations. However; as all excavations associated with the works occur within the road reserve, which is already highly modified; the disturbance of such as site is expected to be low risk.
Air Quality (AQ)	
AQ1	Yarra Trams has engaged specialist air quality consultants to provide advice on air quality modelling, impact assessment and management. It was determined by the consultants and in consultation with EPA that air quality modelling was not appropriate given the small scale of the works and that dust emissions should be straight forward to mitigate. Yarra Trams is working with air quality consultants and liaising with EPA to ensure appropriate plans and procedures are prepared to manage air emissions. The Yarra Trams Air Quality Management Sub Plan (within the CEMP) will refer to the relevant EPRs and: • Set out air quality criteria • Describe the proposed air quality management system including (but not necessarily limited to): a) Routinely reviewing weather model predictions b) Continuous monitoring and real-time alert systems in the event of measured exceedances

No	TRW Tram Diversion Project Response
	c) Protocols for record-keeping d) Protocols to ensure that site personnel advise the site manager if excessive dust emissions are observed • Describe the measures that would be implemented to ensure compliance with air quality criteria. • Address monitoring requirements for key sensitive receptors, including (but not limited) to: e) Residential and commercial properties f) Heritage listed places sensitive to dust including Fawkner Park g) Schools, including Melbourne Grammar School and Christ Church Grammar School h) Public parks including the Shrine of Remembrance Reserve. EPA Victoria has reviewed the methodology for air quality assessment and monitoring to ensure methodology adheres to relevant regulations. EPA Victoria has advised that air quality modelling is not appropriate for informing the air quality assessment.
AQ2	Dust and other emissions will be managed throughout the construction phase in accordance with EPA Publication 480, Environmental Guidelines for Major Construction Sites (EPA 1996) and as per the Yarra Trams Air Quality Management Sub Plan.
AQ3	Dust and other emissions will be managed throughout the construction phase in accordance with SEPPs for Air Quality Management and Ambient Air Quality and as per the Yarra Trams Air Quality Management Sub Plan.
Arboriculture (AR)	
AR1	A qualified arborist has provided specialist advice to inform design in order to maximise tree retention and reduce impacts on remaining trees. A tree impact assessment has been completed on all trees within the works area (includes trees to be removed and retained and conditions and significance of the tree). For TRW tree impacts have been minimised through the design hierarchy with reduction in tree pruning requirements achieved through change pole locations. A Tree Protection and Removal Plan has been developed which includes Tree Protection Plans for each tree prepared in accordance with AS4970-2009 Protection of Trees on Development Sites. Pruning of trees will be undertaken by the City of Melbourne. Replacement of canopy cover will be undertaken as directed by MMRA on a Metro Tunnel Project wide approach. Location and information pertaining to trees to be removed are shown the Tree Removal Map and accompanying table in Appendix C. A Heritage Permit application was received on 27 April 2017 (reference P25649) for tree removal works within the VHR Site St Kilda Road Reserve (VHR H2359). A tree removal protocol is being developed by MMRA in consultation with City of Melbourne, the City of Port Phillip, and Heritage Victoria. The removal protocol includes notification and feedback periods processes and level of information/rationale required. Trees will be removed in accordance with the Tree Removal Protocol, the Tree Removal Plan agreed between MMRA and Yarra Trams and the Yarra Trams Tree Protection and Removal Plan prepared by a qualified arborist. Further information regarding tree removal is provided in Sections 3.1, 4.3.8 and Appendix C.
AR2	There are limited opportunities to implement Water Sensitive Urban Design within the Toorak Road West tram diversion as the stormwater currently drains to the existing stormwater system at the outer kerb and footpath. Reinstatement will be undertaken as per design requirements and Reinstatement Plan and in consultation with relevant Council, arborist and Heritage Victoria. This will include reinstatement of quality soils to

No	TRW Tram Diversion Project Response
	sufficient volumes to support long-term viable growth of replacement trees and ensuring ongoing supply of water to tree root zones, especially during their establishment stage.
AR3	In St Kilda Road, trees are required to be removed in the northbound and southbound carriageways to facilitate the requirement for a tram platform and two through lanes of traffic in both directions. As a result of the consultation process with stakeholders the number of trees to be removed has been reduced from 22 presented in the Draft EWP to 9. Of the 9 to be removed 5 are juvenile and 3 are in poor health. There is limited opportunity to plant trees in the short term in their original location as the road reserve will be completely covered by existing trees, road and tram infrastructure.
AR4	Tree Protection Plans prepared by a qualified arborist in accordance with <i>AS4970-2009 Protection of Trees on Development Sites</i> will be implemented to mitigate potential impacts on trees. Relevant Councils and Heritage Victoria will be consulted and will be provided a copy of the TPPs.
AR5	City of Melbourne trees to be retained will have a bank guarantee or bond on the trees value held against the Tree Protection Plan as agreed.
Business (B)	
B2	Businesses and traders are a key community group considered under the TRW Communications and Engagement Plan (refer EPR SC4). Yarra Trams will administer business as usual approach to engaging affected traders and businesses in line with the Metro Tunnel Business Support Guidelines for Construction. This approach includes: • Communications activities to ensure traders and businesses are informed of the works within the minimum agreed disruption timeframe and regularly throughout the works. • Early engagement with business owners will be undertaken to ensure that businesses can trade and operate as usual during the works period, including access and delivery needs • Identification of proactive business support activities to assist businesses to communicate to their passengers that they are still open for trade and accessible to the public. Examples of these could include on-board marketing and wayfinding signage around the work zone. Refer to EMF4 and SC4 for further details, including feedback and complaints management processes.
B3	Yarra Trams has commissioned specialist consultants to provide advice on the management of the site to minimise impacts on air quality and noise and vibration impacts and to prepare Air Quality and Noise and Vibration Management Plans (sub plans to CEMP) to manage potential impacts. Construction activities will be managed to minimise as much as practicable dust, noise and vibration impacts beyond the construction zone. The construction site will be managed in accordance with EPA Noise Control Guidelines Publication 1254 and EPA Publication 480, Environmental Guidelines for Major Construction Sites (EPA 1996) while monitoring of air quality and noise will be undertaken during construction to ensure EPRs set for air quality and noise are met. Businesses will be informed of upcoming works using standard agreed timelines and a complaint management system in place to ensure timely response to concerns.

No	TRW Tram Diversion Project Response
B4	The Alfred Hospital has been identified as a key stakeholder by Yarra Trams and MMRA and will be consulted with to ensure business as usual during the works. This includes ensuring they continue to have access to an accessible tram platform for their patients, that ambulance routes are maintained and Ambulance Victoria are kept informed and consulted throughout and leading up to the works. Traffic modelling has been undertaken using the Victorian Integrated Transport Model (VITM) which is a strategic model which is used to identify potential changes. The VITM has been based traffic volumes in peak periods. The VITM indicates that the changes to traffic in the vicinity of the Alfred Hospital will be relatively minor and within the daily fluctuations currently experienced. The Alfred Hospital falls outside the area of detailed traffic modelling undertaken for the TMP.
Contaminated Land and Spoil Management (C)	
C4	Yarra Trams is preparing a Spoil Management Sub Plan as part of the CEMP. Yarra Trams will engage specialist consultants to undertake soil testing to determine the presence of contaminated land and Acid Sulfate Soils (ASS). Test results will inform preparation of plans and procedures for handling and storage of hazardous substances to ensure risks to the environment employees, visitors and general public associated with hazardous substances are controlled. An OH&S Management Plan will also be prepared and implemented in accordance with relevant regulations, standards and best practice guidance and to the satisfaction of WorkSafe and in consultation with EPA Victoria.
Cultural Heritage – Historical (CH)	
CH1	The works are in the vicinity of the following places of historical cultural heritage significance: VHR H2359: St Kilda Road Reserve: Heritage Victoria has been consulted and a permit application has been submitted by MMRA for the tram diversion works (including tree removals) within St Kilda Road VHR. The City of Melbourne and City of Port Phillip have been consulted in the preparation of the permit application. Fawkner Park (VHR H2361 and VHI198656): Toorak Road West lies adjacent to Fawkner Park which is subject to a Heritage Overlay (HO6) in the Melbourne Planning Scheme and listed on the Victorian Heritage Register and Victorian Heritage Inventory. Work along Toorak Road West will avoid impacts to the Fawkner Park VHR, with the exception of tree pruning for overhead wire poles. Both Heritage Victoria and the City of Melbourne have been consulted in the design process and advice obtained from an arborist (including preparation of Tree Protection and Removal Plan) to reduce impacts on Fawkner Park trees. VHI H7822-2220: Former St Kilda Road Cable Tram Engine House Track: Consultation is occurring with Heritage Victoria to ensure appropriate exemptions are obtained to disturb the track. VHI H7822-2246 Former St Kilda Road Cable Tram Engine House: the Noise and Vibration Management Plan will include protocols for undertaking condition surveys and vibration monitoring to minimise any potential impacts to the Former St Kilda Road Cable Tram Engine House. Heritage protected blue stone kerbing: The City of Melbourne and Heritage Victoria has been consulted and impacts minimised through design for the activities that impact on bluestone kerb and channel along Toorak Road West. During construction any bluestone

No	TRW Tram Diversion Project Response
	removed will be stored and will be reinstated where possible.
CH2	Heritage consultants have been engaged and will be consulted throughout the Toorak Road Tram Diversion Project to provide advice on managing potential impacts on historical cultural heritage. The Toorak Road Tram Diversion Project will be delivered in accordance with a Heritage Management Plan (HMP) developed as part of the CEMP, which will identify the mitigation measures to be adopted to avoid or minimise impacts on the cultural heritage values of heritage places. The HMP will identify heritage values, the degree of significance, how proposed works may impact the heritage value and the mitigation measures which will be employed to minimise impacts. In addition the Noise and Vibration Management Plan will ensure works are carried out in accordance with relevant EPR targets that aim to minimise impacts on heritage structures. Heritage Victoria is being consulted in development of the Toorak Road Tram Diversion Project as part of the EWP consultation process and in providing advice regarding necessary approvals, permits and exemptions.
CH3	Works associated with the Toorak Road Tram Diversion Project are at relatively shallow depth and will occur in the centre of the road reserve minimising potential vibration impacts on buildings and structures outside the road reserve. Yarra Trams have engaged specialist acoustic and vibration consultants as well as heritage consultants to provide advice on potential impacts on heritage places. It has been concluded by these specialists that the Toorak Road Tram Diversion Project works are unlikely to cause any impacts due to vibration on heritage structures as there are no heritage structures within close enough proximity to the works and the works to be undertaken are shallow. Yarra Trams will undertake condition surveys as directed by specialist consultants for assets within close proximity to the work site.
CH4	The Toorak Road Tram Diversion Project will be delivered in accordance with a Heritage Management Plan which will include archival photographic, undertaken by the Toorak Road Tram Diversion Project archaeologist for recording in accordance with Heritage Victoria's specifications. For places within the VHR photos will be lodged with the La Trobe Picture Collection at the State Library of Victoria.
CH6	Heritage Victoria has been consulted to ensure all necessary consents, exemptions and permits are obtained prior to works commencing and have been consulted in development of the Heritage Management Plan. City of Melbourne and City of Port Phillip have been consulted as part of the heritage approval process for service proving.
CH7	Qualified archaeologist has been appointed and will be available for the duration of the works. Heritage Victoria have been consulted to ensure all necessary consents, exemptions and permits are obtained prior to works commencing and will be consulted in development of the Heritage Management Plan. The HMP will include a protocol for managing previously unidentified historical archaeological sites discovered during works.
CH8	MMRA has developed a Creative Strategy that provides guidance on opportunities for the interpretation of heritage.
CH9	All works within close proximity to trees will be undertaken as per specifications agreed with Heritage Victoria, City of Melbourne and City of Port Phillip and outlined in the Tree Protection Plans prepared by a qualified arborist.
CH10	Toorak Road West and the adjoining houses are covered by a local Heritage Overlay (HO6: South Yarra Precinct). The significance of this overlay relates to Fawcner Park and the built form of the abutting residential areas rather than the road reserve itself. There will be not advertising on the tram shelters located on Toorak Road West.

No	TRW Tram Diversion Project Response
CH18	Reinstatement of trees will be undertaken as per design requirements and as per Reinstatement Plan agreed with MMRA and in consultation with relevant Council and Heritage Victoria. Replacement of canopy cover will be undertaken as directed by MMRA on a Metro Tunnel Project wide approach. Procedures and specifications for reinstatement of trees will be prepared by a qualified arborist. The reinstatement of trees will be carried out by the PPP.
CH21	Reinstatement of trees will be undertaken as per design requirements and in consultation with relevant Council and Heritage Victoria. Replacement of canopy cover will be undertaken as directed by MMRA on a Metro Tunnel Project wide approach. Procedures and specifications for reinstatement of trees will be prepared by a qualified arborist. Trees will be replaced and re-established as agreed with stakeholders on a Metro Tunnel Project level by MMRA (i.e. not relevant to YT).
CH23	Where possible reinstatement works will be undertaken as soon as possible following construction works however; some reinstatement works will not be possible until after the Main Works for the Metro Tunnel are completed. Reinstatement must be done to original condition and to VicRoads specifications, except where explicitly agreed with MMRA, Heritage Victoria or the relevant Council. Any bluestone kerbing removed shall be reinstated to original condition. Surfaces or roads and footpaths shall be reinstated with asphalt as soon as practicable following the works. Yarra Trams shall undertake a site inspection following works to ensure reinstatement has been completed in line with Stakeholder's expectations. Requirements for reinstatement will be implemented as per specifications provided in the Heritage Management Plan.
Flora and Fauna – Terrestrial (FF)	
FF2	The CEMP will include weed hygiene procedures for all plant, equipment and construction methodologies to avoid the spread or introduction of weeds and pathogens during construction.
FF3	The Tree Protection and Removal Management Plan will provide control measures developed to minimise impacts on native terrestrial and aquatic flora and fauna. Control measures will include conduct of pre-clear surveys to determine species and numbers of fauna present within trees earmarked for removal, and staging of clearing to minimise impacts on fauna present. The Fauna Management Protocol will be developed in consultation with the Yarra Trams arborist and fauna handling specialists to capture best practice fauna management. The Protocol will include contingency measures in the event that listed fauna species are unexpectedly discovered during works.
Greenhouse Gas (GHG)	
GHG2	The street lighting design has specified the use of low energy LED street lights where new lights are being installed. In addition, the design has specified a minimum 25% supplementary cementitious material to reduce the Portland cement use.
Ground Movement and Land Stability (GM)	
GM2	The design of the Toorak Rd West tram diversion is in accordance with Yarra Trams standard drawings. Acceptable ground movement limits are

No	TRW Tram Diversion Project Response
	to be agreed with the relevant stakeholders to ensure the integrity of their assets are maintained throughout construction and operation of the tram infrastructure. The design of the Toorak Rd West tram diversion is in accordance with Victorian Rail Industry Operators Group Standards Tram Track Design Manual including standard drawings and construction techniques that are well understood. The vibration levels predicted are lower than the limits for damage to structures in DIN 4150-3 Structural Vibration Part 3: Effects of Vibration on structures (DIN 4150), and consequently it is not expected that there will be any damage.
GM4	Construction techniques that are well understood will be used. The vibration levels predicted are lower than the limits for damage to structures in DIN 4150-3 Structural Vibration Part 3: Effects of Vibration on structures (DIN 4150), and consequently it is not expected that there will be any damage. A pre-construction survey will be carried out based on a review undertaken by Yarra Trams/MMRA/Designers. This review will consider reasonable requests from affected property owners.
Land Use and Planning (LU)	
LU1	As the majority of the works are occurring within the road reserve, Yarra Trams are not permanently altering the use of the land as road. Site sheds and fencing will be placed within the road reserve during construction, their impact will be limited and short term as they will be carefully sited and temporary. Implementation of the CEMP will minimise impacts to amenity that could reduce users' enjoyment and or use of public open space in close proximity to the works. Land managers including City of Melbourne, City of Port Phillip and VicRoads will be consulted to ensure minimal impact of temporary fencing and sheds on public open space, roads and any associated amenity. Yarra Trams has identified several sensitive receptors in close proximity to the construction area. Consideration of these sensitive receptors is being taken into account in selecting arrangements of access routes, hoardings and other features during the construction period. Engagement of specialist consultants to prepare models to predict potential noise, vibration and air quality impacts will inform CEMP Sub-Plans and ensure any potential impacts on viability and amenity of the local area are minimised. Residents in the immediate area will be notified of works prior to works commencing.
LU2	The design has considered the Melbourne Metro Urban Design Strategy. Refer to EPR LU4 and Section 5.7 of this EWP for further information.
LU4	As noted in Section 5.7 of the EWP, the permanent alignment of tram routes to integrate with the new Domain station will be considered as part of the PPP procurement process. However, it is recognised that the diversion of combined Route 58 and associated tram infrastructure will remain in place for some time, and therefore should consider the guidance provided in the Metro Tunnel Urban Design Strategy (UDS). Section 5.7 describes how the TRW Tram Diversion Project is consistent with the UDS, and outlines the assessment process for platform location and design. Further, Section 5.7 provides an overview of other legislative requirements and minimum standards applicable to ensure that tram infrastructure is delivered in a safe and consistent manner across the Melbourne tram network including the Disability Standards for Accessible Public Transport

No	TRW Tram Diversion Project Response
	(2002) and the Victorian Rail Industrial Operators Group Standards (VRIOGS).
Landscape and Visual (LV)	
LV1	The design has considered the Melbourne Metro Urban Design Strategy. Refer to EPR LU4 and Section 5.7 of this EWP for further information. Yarra Trams is consulting with the City of Melbourne and City of Port Phillip for design and selection of tram infrastructure. Where possible Yarra Trams will avoid or minimise to the extent practicable visual impacts on sensitive receptors associated with the construction phase of the works. For example MMRA branded scrim/screens/hoardings will be used as per the Metro Tunnel Project branding suite to ensure consistency across the Metro Tunnel Project. Where possible Yarra Trams will seek to conserve, salvage and reuse materials as part of achieving sustainability targets for the Toorak West Tram Diversion Project. Landscaping works will be completed as soon as possible and to design requirements.
LV2	No public art is being removed for the tram works. All trees to be retained will be allocated a TPP and City of Melbourne trees will have a bank guarantee held against each TPP. How the Toorak Road Tram Diversion Project is responding the Metro Tunnel Urban Design Strategy is detailed in Section 5.7 of this EWP. No public open space will be occupied during the construction or operation period. MMRA branded scrim/screens/hoardings will be used as per the Metro Tunnel Project branding suite to ensure consistency across the Metro Tunnel Project. The Communications and Engagement Plan for the tram project will provide opportunities to convey information about the Metro Tunnel Project to the community including explanation of the tram project objectives, scope of works, construction impacts, innovations and progress through: • Project updates • Disruption notifications • Info sessions • Door knocking • Trader visits • Web updates • Social media posts • Info hubs • Ground decals • On board information • Marketing messaging Implementation of the CEMP will work to maintain the neat presentation of the construction area and minimise amenity impacts of the surround area. Where possible and appropriate effort will be made to ensure the legacy stops compliment the local area (e.g. sensitive lighting and shelter

No	TRW Tram Diversion Project Response
	design).
LV3	Yarra Trams is consulting with the City of Melbourne and City of Port Phillip in developing a temporary lighting plan. Lighting will be designed and implemented as per council requirements and in order to have a safe work site during any night works.
Noise and Vibration (NV)	
NV1	Yarra Trams has engaged a suitably qualified acoustic and vibration consultant to assess the potential noise and vibration impacts associated with the works. The consultants have undertaken baseline monitoring and performed modelling to determine likely impacts and have used this information to inform the preparation of a Noise and Vibration Management Plan which is currently being prepared. EPA was consulted prior to engagement of consultants to obtain advice as to the methodology for noise and vibration modelling. The Noise and Vibration Management Plan will refer to the EPA Publication 1254 Noise Control Guidelines to ensure all construction noise is managed in accordance with these guidelines. The Plan will be audited by the Independent environmental Auditor to ensure consistency with relevant legislation and EPRs. The Plan will be available to all site personal, will be included as part of site induction and the implementation the plan will be audited.
NV3	Yarra Trams consulted EPA to develop a methodology for modelling and assessment of construction noise and vibration. An acoustic and vibration consultant has been engaged to undertake noise modelling. Specialist advice confirmed that vibration modelling is not required as shallow depths of excavations and proximity of buildings mean vibration impacts are not likely. The modelling considers airborne noise for both residential and non-residential receivers and takes into account sensitive receptors such as teaching spaces and businesses. Five scenarios (1. Excavation of surface layer and sub base, 2. Reform sub-base, 3. Forming connections to existing tramway, 4. Track laying and concreting, 5. Asphaltting and installation of overhead wires) are being modelled and calculations conducted in octave bands, and the overall sound power level (SWL) presented for each item of plant or construction operation. The overall levels and spectra were obtained from either the specialist consultants database, or BS 5228-2:2010. Noise and vibration specialist consultants have undertaken baseline monitoring prior to works commencing. Data gathered has been used to inform the model and to provide a benchmark for ambient noise levels.
NV4	Yarra Trams will engage a suitably qualified acoustic and vibration consultant to undertake noise and vibration monitoring throughout the duration of the construction phase of the works. Information gathered will be entered into the original noise and vibration model to improve accuracy of modelling outcomes and assist Yarra Trams to ensure noise and vibration are mitigated as much as possible. The Noise and Vibration Management Plan mentioned in response to NV1 will ensure noise and vibration impacts are mitigated. This plan will stipulate the monitoring required including locations, duration and time of day to ensure appropriate capture of data.
NV5	The TRW Communications and Engagement Plan is described under EPR SC4 ensures that appropriate notification is given to community stakeholders and land owners regarding potential noise and vibration impacts.
NV6	An acoustic and vibration consultant is preparing a Construction Noise and Vibration Assessment Report and Management Plan.

No	TRW Tram Diversion Project Response
	Works will be undertaken during normal working hours as much as possible however; some works due to potential disruption to traffic are best performed at night and will be considered as 'Unavoidable Works' under EPA Publication 1254 Noise Control Guidelines. Works deemed unavoidable have no specific noise guidelines however it is understood that night time works cannot be conducted in an unreasonably noisy manner and Yarra Trams will ensure all reasonable management measures are adopted to minimise noise emissions Notification (including planned duration and timing) of night works will be provided to residents and other relevant stakeholders at a minimum of 7 business days prior to night works commencing. Monitoring of airborne noise will be undertaken throughout the construction works. Should noise levels detected exceed EPA1254 Guidelines (outside of night works) Yarra Trams will implement appropriate management measures.
NV7	The Noise and Vibration Management Plan will provide procedures for mitigating noise and vibration impacts associated with the construction phase of the works to meet targets for ground-borne (internal) noise. Monitoring of sensitive receptors including the Fawkner Park Children's Centre & Kindergarten and residents will be undertaken during the works. If noise guidelines are not being achieved then management strategies to achieve targets will be investigated to determine whether managing actions are required.
NV8	The design of the Toorak Road West tram diversion is in accordance with Victorian Rail Industry Operators Group Standards Tram Track Design Manual including standard drawings. Construction techniques that are well understood. The vibration levels predicted are lower than the limits for damage to structures in DIN 4150-3 Structural Vibration Part 3: Effects of Vibration on structures (DIN 4150), and consequently it is not expected that there will be any damage.
NV9	Consideration of vibration has been assessed against DIN 4150 for the potential of the works to result in structural damage to the adjacent dwellings or buildings. Advice from Yarra Tram's appointed acoustic and vibration consultant is that predicted vibration levels fall well short of those leading to structural damage at any location along the works. A pre-construction survey will be carried out based on a review undertaken by Yarra Trams/MMRA/Designers. This review will consider reasonable requests from potentially affected property owners. Monitoring of vibration will be undertaken as directed by Yarra Trams acoustic and vibration consultant and in consultation with MMRA during the construction period.
NV10	Consideration of vibration has been assessed against DIN 4150 for the potential of the works to result in structural damage to the adjacent dwellings or buildings. Advice from Yarra Tram's appointed acoustic and vibration consultant is that predicted vibration levels fall well short of those leading to structural damage at any location along the works. A pre-construction survey will be carried out based on a review undertaken by Yarra Trams/MMRA/Designers. This review will consider reasonable requests from potentially affected property owners. Monitoring of vibration will be undertaken as directed by Yarra Trams acoustic and vibration consultant and in consultation with MMRA during the construction period.
NV11	Consideration of vibration falls into two areas: • The potential for the works to result in structural damage to the adjacent dwelling or building, which is assessed against DIN 4150.

No	TRW Tram Diversion Project Response
	The potential for annoyance to occupants, which is assessed against the NSW EPA's <i>Assessing Vibration: A Technical Guideline (2006)</i>. Advice from Yarra Tram's appointed acoustic and vibration consultant is that predicted vibration levels fall well short of those leading to structural damage at any location along the works. The levels will however be clearly perceivable to the occupants in buildings along the route. Yarra Trams will manage impacts to building occupants by providing notification of works prior to works commencing; use of construction methods that minimise vibration as much as possible; and monitoring of vibration during the construction period.
NV13	Management actions to address potential amenity impacts are outlined in the Noise and Vibration Management Plan, Business Disruption Support Guidelines and Residential Impact Mitigation Guidelines (RIMG). Communications and engagement activities and notification requirements are addressed under EPR SC2 and EPR SC4.
NV21	Yarra Trams has engaged an acoustic and vibration consultant to prepare a Construction Noise and Vibration Assessment Report and Management Plan. The methodology for the assessment and modelling to inform the management plan has been determined in consultation with EPA Victoria. Prior to commencement of works the management plan will be provided to EPA Victoria, City of Melbourne and City of Port Phillip for information and comment. The Noise and Vibration Management Plan will provide procedures for mitigating noise and vibration impacts associated with the construction phase of the works. Noise monitoring will be undertaken for any 'highly sensitive receptors' within close proximity to the works to ensure noise targets for maximum internal construction noise are achieved. If noise targets are not being achieved then management strategies to achieve targets will be investigated to determine whether managing actions are required. The Noise and Vibration Management Plan will respond to measures outlined in the Business Support Guidelines for Construction and Residential Impact Mitigation Guidelines (RIMG) (refer EPR SC2). Construction works will be undertaken in accordance with the requirements of the EPA's Noise Control Guidelines Publications 1254. As stated in response to NV6 works will be undertaken during normal working hours as much as possible however; some works due to potential disruption to traffic are best performed at night and will be considered as 'Unavoidable Works.' Works deemed unavoidable have no specific noise guidelines it is understood that night time works cannot be conducted in an unreasonably noisy manner and Yarra Trams will ensure all reasonable management measures are adopted to minimise noise emissions. In addition potentially impacted stakeholders will be notified prior to works commencing as per the TRW Communications and Engagement Plan (refer EPR SC4).
Social and Community (SC)	
SC2	Any decision to temporarily relocate affected residents will be undertaken in accordance with the Metro Tunnel Residential Impact Mitigation Guidelines. Wherever possible, impacts to residential amenity will be minimised in accordance with the noise and vibration performance criteria. Refer EPR NV1 to NV21. Early notification of disruptive works will be provided in accordance with SC10 to enable residents to make alternative plans for disruptive periods

No	TRW Tram Diversion Project Response
	as they deem suitable.
SC3	MMRA is responsible for developing a Community and Stakeholder Engagement Management Framework (CSEMF) that outlines the principles and approach to advising potentially affected stakeholders across the Toorak Road Diversion Project of the construction activities. The TRW Tram Diversion Project CSEMF will be prepared in accordance with Metro Tunnel CSEMF and will aim to give a snapshot of the communications and engagement activities past, present and future and will be adapted as necessary during the delivery of the works. It also indicates when and where a collaborative approach has, or will be taken, towards communications and engagement between Yarra Trams, MMRA, Public Transport Victoria (PTV) and other contractors delivering works for the Metro Tunnel. The CSEMF will provide a shared understanding of the activities, roles and responsibilities for planning and delivering Toorak Road Diversion Project related communications, and demonstrate how we will provide strong community and Toorak Road Diversion Project outcomes by keeping stakeholders informed whilst minimising potential impacts. The CSEMF will respond to and support requirements outlined in: • Written notification requirements (EPR SC10) • The Metro Tunnel Residential Impact Mitigation Guidelines (EPR SC2) • The Metro Tunnel Business Support Guidelines for Construction (EPR B2) • Complaints management procedures (EPR EMF4)
SC4	A draft TRW Tram Diversion Communications and Engagement Plan has been prepared and will be updated in accordance with the Metro Tunnel CSEMF. The draft TRW Tram Diversion Communications and Engagement Plan outlines our approach to ensure open and proactive engagement with stakeholders and the community and to respond to their issues. The plan builds upon Yarra Trams standard practices for communications and engagement, developed through our extensive experience in managing construction impacts across the tram network, whilst maintaining consistency with the broader Metro Tunnel protocols. A key aim of the plan is to work with MMRA and the Early Works Managing Contractor, John Holland Group, to ensure that communications are coordinated across the Domain precinct. In addition to the community immediately affected by the construction works, the TRW Tram Diversion Communications and Engagement Plan seeks to ensure that tram passengers and road users are provided with timely and effective information regarding works disruptions and longer term journey changes. This plan includes: • Stakeholder analysis which includes communities of interest who are likely to be impacted by the Toorak Road Diversion Project and associated service changes. • Risk assessment and mitigation measures developed to ensure impacts are minimised. • Community disruption notification processes as agreed between YT, MMRA and JH outlined. Communications activities identified to ensure

No	TRW Tram Diversion Project Response
	effective and timely communications with community members and key stakeholders. • Feedback and complaints management protocols • Roles, responsibilities and collaboration opportunities between the various transport network partners including MMRA, Yarra Trams, PTV, VicRoads A suite of communications tools and techniques will be used, targeted to the communications needs of the intended audience. These include: • Meetings and briefings with key stakeholder organisations and community members • Toorak Road Diversion Project newsletters to provide information on the works and longer term access changes • Works notifications issued prior to disruptions, including a minimum 7 business days' notice for night works. We will aim to provide early information at least four weeks prior and confirm disruption details one week prior to works commencement. • All written communications will be distributed via letterbox drop, available on the Metro Tunnel Project website, and shared via the Metro Tunnel project email updates • Community drop-in sessions to answer any additional questions • Signage and announcements at tram stops and on-board affected tram routes • Digital and social media channels to reach broader target audiences such as tram passengers and St Kilda Road commuters • Works contractor briefings and information cards Wherever possible, we will utilise existing relationships, working groups and communication channel with our network-wide stakeholders to manage disruptions impacts and service changes.
SC6	As part of network-wide commitments, Yarra Trams works with local councils to understand, plan and manage service requirements during major public events. In addition, early and ongoing engagement with local councils specifically related to the TRW Tram Diversion Project is outlined under EPR SC4. This feedback is a key consideration in determining when the works are scheduled to avoid conflict with the timing of major events and associated pressures on the tram and road network. Refer EPR T2 and T6. YT has agreed with MMRA protocols a for consultation and engagement with key stakeholders including City of Melbourne and City of Port Phillip to enable provision for event planning, timely notification for public events and consideration of alternative sites for events and parades. This includes a commitment to regular meetings and communications which allow for the exchange of information and tram project updates.
SC7	No sports clubs or recreational facilities will be displaced as part of the works. Fawkner Park Tennis Centre is the only sporting facility which may be disrupted by the works. An access plan is included as part of the TMP to ensure access is maintained for patrons throughout the construction phase.

No	TRW Tram Diversion Project Response
	Melbourne Grammar will continue to have access to their facilities during the works, sometimes under changed carpark access arrangements. The requirements of the school, its staff, students and parents, are being managed through regular meetings and communications.
SC8	The construction footprint will mostly be confined to the road reserve therefore provision of alternative public open space is not necessary. The construction phase will involve fencing off of a large median strip near the corner of St Kilda Road and TRW however this space is not used for public events. A detailed response to how the TRW Tram Diversion Project will be delivered in accordance with the Metro Tunnel UDS is presented in Section 5.7
SC10	SC4 outlines YT's proposed approach to communications and engagement. In accordance with our business-as-usual approach, we will endeavour to provide written notice of a minimum of 4 weeks and 1 week prior to major works. In particular, every effort will be made to ensure that residents are provided with 7 business days' notice of night works. We are committed to continuously updating the community through written notice in their letterbox, trader visits to their business and email and social media updates to ensure they are aware of works, dates, times and locations, as well as their impacts.
SC12	MMRA will establish Precinct Reference Groups for all Metro Tunnel works. Yarra Trams will participate in the Domain Precinct Reference Group. Any feedback from the Precinct Reference Groups will be communicated to the TRW Tram Diversion Project team for response and action as appropriate.
Surface Water (SW)	
SW2	Flood modelling has not been undertaken as the part of the Toorak Road West tram diversion. The characteristics of the catchment have not been altered by these works and consequently the flooding risk is unchanged. There is no flood overlay relating to the Toorak Road West tram diversion area and consequently there is no need to provide flooding storage. The stormwater design requires the minor relocation of existing pits and installation of new pits to divert existing stormwater around tram platforms. The design does not change the existing stormwater catchment characteristics nor does it impact on the existing flood risk. Yarra Trams will ensure the construction site adheres to best practice performance objectives for achieving compliance with SEPP (Waters of Victoria). Measures will 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.
Transport (T)	
T1	As a public transport provider Yarra Trams are represented on the Metro Tunnel Traffic and Transport Working Group (TTWG) in order to understand, manage and respond to Metro Tunnel works affecting the broader Melbourne tram network. In addition, Yarra Trams will coordinate with the TTWG to develop and implement the Traffic Management Plan for the TRW Tram Diversion Project (refer EPR T2).

No	TRW Tram Diversion Project Response
	Yarra Trams representatives on the TTWG will ensure that any relevant information shared on separate, but related projects, is shared with the TRW Tram Diversion Project team for consideration and action as appropriate.
T2	A Traffic Management Strategy has been developed in consultation with the Traffic and Transport Working Group (TTWG). Traffic modelling commissioned by MMRA will be used to inform the development of a TRW Tram Diversion Project Traffic Management Plan (TMP) to mitigate impacts on traffic and transport associated with the construction phase of the works. The TMP is being developed in consultation with VicRoads, Councils, PTV, MMRA, the Early Works Managing Contractor and other key stakeholders to minimise disruption to local land uses, traffic, car parking, public transport, pedestrian and bicycle movements during construction. The TMP will provide a framework, plans and procedures for: • Management of any temporary, full or partial closure of traffic lanes including (but not limited to) St Kilda Road and Toorak Road West. • Monitoring of travel behaviour changes caused by construction works • Provision for a minimum of one lane for traffic in each direction on St Kilda Road to be maintained throughout the construction phase. • Potential routes for construction vehicles travelling to and from the construction site, recognising sensitive receptors. • Provision of alternative parking and car parking for construction workers. • Provision of suitable routes for cyclists and pedestrians to maintain connectivity and safety for roads and shared paths to provide continued access • In consultation with emergency services, develop suitable measures to ensure emergency service access is not inhibited as a result of the construction worksite • Special arrangements for delivery or removal of large loads • Provide suitable routes for pedestrians to maintain connectivity, including DDA access. • Implement active control at construction work site access points to maintain safety by avoiding potential conflicts between trucks, pedestrians and cyclists. • Parking options for construction workers to minimise potential impacts on street parking for residents and businesses. The TMP will be developed recognising other Metro Tunnel Project works being undertaken by the Early Works Managing Contractor as well as any other projects being undertaken in close proximity to the Toorak Road West Tram Diversion Project site simultaneously. The transport modelling has been presented to the TTWG. The TTWG has provided feedback relating to the outputs of the modelling and associated impacts. VicRoads has accepted the strategic modelling, the VITM, as being fit for purpose. Impacts on local pedestrian traffic will be minimised through safe and accessible detours with wayfinding signage. Use of existing and placement of accessible, temporary stops and a bus replacement service will minimise impacts on tram passengers. Customer service personnel will be placed at key locations throughout the tram network to assist passenger access to tram services during the construction phase of the works.
T3	Implementation of the TMP will ensure provision of suitable routes for pedestrians to maintain connectivity, including DDA access where practicable, for users of temporary tram and bus stops relocated or constructed during the construction period. Yarra Trams has consulted with

No	TRW Tram Diversion Project Response
	PTV and VicRoads to investigate and implement intersection modifications where practicable, including public transport priority treatments for affected bus and tram routes. The TMP includes measures to minimise disruption to the tram and bus associated with construction and provides a framework, plans and procedures as mentioned in response to T2 above. Site layout plans are being developed to organise storage of equipment, materials and tools to assist in manage timing of deliveries outside of peak periods.
T4	Implementation of the TMP will ensure provision of suitable routes for pedestrians to maintain connectivity, including DDA access where practicable, for users of temporary tram and bus stops relocated or constructed during the construction period. Yarra Trams are working with VicRoads to investigate and implement intersection modifications where practicable, including tram priority treatments for affected tram routes. The TMP includes measures to minimise disruption to the tram and bus associated with construction.
T5	The TMP is being prepared in consultation with VicRoads PTV, CoM, CoPP, MMRA and TTWG. Implementation of the TMP will assist to maintain connectivity for cyclists and pedestrians during construction through St Kilda Road, TRW and Fawkner Park. Implementation of the TMP will ensure active control and wayfinding information is provided. The Communications and Engagement Plan will assist in reducing traffic and transport impact by: • Mapping out consultation with relevant authorities for cyclists and pedestrians to maintain connectivity throughout construction for road and shared path users. • Developing wayfinding options to ensure that changed routes are communicated clearly to commuters. E.g. platform and stop signage will be removed from recommissioned route on Domain and Park Streets and wayfinding provided to direct passengers to closest platform. Reinstatement of infrastructure to facilitate active transport including bicycle lanes and pedestrian access will be undertaken as soon as possible following completion of works. Wayfinding information will provide connectivity during construction and operation of the project.
T6	MMRA is responsible for development and implementing a Travel Demand Management Strategy to manage the cumulative impacts of all Metro Tunnel works. Where appropriate, Yarra Trams will support the Metro Tunnel Travel Demand Management Strategy in response to TRW Tram Diversion Project needs. Yarra Trams has an ongoing commitment to ensure that our passengers can get to their destinations with ease, including during periods of planned works and unplanned disruptions: • We schedule works across the tram network to minimise impacts to both our passengers and the broader metropolitan transport network. • We work closely with our colleagues at PTV to ensure that wayfinding signage and communication activities are executed so that commuters are aware of works and how these will affect their journey. These include at-stop and on-board signage and hangers, website updates, social media and tramTRACKER. The delivery of the TRW Tram Diversion Project itself is a key element of the Metro Tunnel Travel Demand Management Strategy, by ensuring

No	TRW Tram Diversion Project Response
	that Melburnians can continue to rely on consistent public transport during construction of the Metro Tunnel project.
T7	Specialist consultants have been engaged to develop a traffic management model to inform the Traffic Management Plan (TMP) and Bus Replacement Plan (BRP). The TMP and BRP are currently being developed in consultation with VicRoads, PTV, City of Melbourne, City of Port Phillip, VicRoads, Transdev, Ventura and the Early Works Managing Contractor. A core objective of these plans is to maintain circulation and transport safely and efficiently for the duration of the construction works. The transport modelling has been presented to the TTWG. The TTWG has provided feedback relating to the outputs of the modelling and associated impacts. VicRoads has approved the strategic modelling, the VITM, as being fit for purpose. Active site management and quality control systems will ensure compliance of works, including vehicle and pedestrian access, in accordance with relevant road design standards. Impacts on local pedestrian traffic will be minimised through safe and accessible detours with wayfinding signage. Use of existing and placement of accessible, temporary stops and a bus replacement service will minimise impacts on tram users. Customer service personnel will be placed at key locations throughout the tram network to assist customer access to tram services during the construction phase of the works. Staging of works has been carefully planned to minimise impacts on vehicular traffic. Where impacts are unavoidable diversions have been identified and will be implemented to ensure safe circulation of traffic. Clauses 2-6 are not relevant to the TRW Tram Diversion Project.
T10	YT will work with local councils and private waste collection services to manage changes to waste collection. Yarra Trams will consult affected businesses through the Business Disruption Plan provided as part of the Communications and Stakeholder Engagement Plan.

5.7 RESPONSE TO URBAN DESIGN STRATEGY

5.7.1 Overview

The Urban Design Strategy (UDS) was approved by the Minister for Planning in February 2017 and provides urban design guidance relating to the design, procurement and implementation of Metro Tunnel and associated infrastructure.

The primary focus of the UDS is on the finished built form and use of the Metro Tunnel Project and associated spaces, rather than temporary works undertaken as part of the project construction process. The permanent alignment of tram routes to integrate with the new Domain station, and the location and design of associated infrastructure will be considered as part of the PPP procurement process for the tunnels and stations works package.

Further, no decision has been made on the legacy (long-term) alignment of the Route 58 tram route. However, it is recognised that the deviation and associated tram infrastructure will remain in place for some time, and therefore, should be designed and constructed in accordance with the UDS.

Please note that this section relates to the design and location of above ground infrastructure, and associated *medium to long term impacts* to local amenity, traffic and transport movements, and development opportunity resulting from the “finished built form”. *Short term* impacts experienced during the construction of the TRW Tram Diversion project, e.g. traffic and noise disruptions, are addressed in accordance with the relevant EPRs identified in Section 5.6 of this EWP.

5.7.2 Melbourne tram network-wide design considerations

Tram infrastructure across the Melbourne tram network is delivered in a consistent manner, in terms of functionality and style of presentation, to support the hierarchy of transport modes and create a legible urban environment. Legislative requirements and minimum standards for the safety, efficiency, reliability and efficiency of the road and tram include, but are not limited to:

- Accessibility – The *Disability Discrimination Act (1992)* is Commonwealth legislation that requires all of public transport infrastructure to be accessible for people with a disability by 2032. New and upgraded infrastructure is required to meet the minimum standards for access outlined in the *Disability Standards for Accessible Public Transport (2002)*. This includes level access from platforms to low floor trams.
- Typical platform designs and passenger amenities – The *Victorian Rail Industry Operators Group Standards (VRIOGS)* covers the design requirements to deliver universally accessible tram stops on the Melbourne network. The document includes the functional requirements for passenger amenity, accessibility, tram operations and road design and traffic management that apply to the development of platform tram stops.

- Road network design requirements – VicRoads uses the Austroads road industry guides to ensure consistency and standardization for all road work. These include minimum design requirements for speed limits, lane widths, intersection and turning circles, kerb requirements.

5.7.3 Desired outcomes for TRW Tram Diversion Project

The diversion of the tram route from Domain Road and Park Street to Toorak Road West was driven by broader Metro Tunnel requirements, and the location of the required diversion was fixed by the existing road and tram networks and operational requirements. However, a number of options were considered for the location and style of platform stops, and the alignment of the track connection from Toorak Road West to St Kilda Road. All options were assessed for their ability to meet the following desired outcomes:

- Improve network resilience before, during and after Metro Tunnel construction by increasing the number of opportunities to interchange between tram routes
- Improve safety and accessibility for all tram passengers and road users including drivers, cyclists and pedestrians
- Minimise disruption to local traffic movement including maintaining right-turn access to the Fawkner Park Child Care Centre and Kindergarten
- Minimise disruption to the local community, environment and heritage by constructing infrastructure within existing road reserves and limiting loss of car parking
- Deliver more efficient and reliable tram operations and road network operations by optimizing stop spacing to international standards of 400m to 500m between new and existing stops and, where possible, maintaining consistent platform types
- Support local residents, businesses and community uses by minimising walking distance to and from local residences, shops, schools, public spaces and other key destinations.

The desired outcomes were translated and simplified into five assessment criteria that relate to the legislative requirements and design standards for the purposes of options assessment:

- Safety of all road users, including trams, general traffic, cyclists and pedestrians
- Reliability and efficiency of the tram and road network, including travel times
- Accessibility and inclusive design, including *Disability Discrimination Act* compliance
- Stop spacing and walkability, including proximity to residences, institutions and businesses
- Local access and amenity, including heritage, environment and parking considerations.

5.7.4 Consistency with Metro Tunnel design guidelines outlined in the UDS

Table 5 demonstrates how the desired outcomes for the TRW Tram Diversion Project align with the relevant broader Metro Tunnel design guidelines defined in Section 3 – Key Directions for Metro Tunnel and Section 4.7 – Precinct 7: Domain Precinct of the UDS. Cross-reference is also provided to related EPRs as addressed in Section 0 of this EWP. The full UDS document is available on the Metro Tunnel Project website at: metrotunnel.vic.gov.au.

Table 5 demonstrates that compliance with any individual UDS design guideline depends on a holistic approach and the satisfaction of a number of interrelated design guidelines, EPRs and TRW Tram Diversion Project desired outcomes. As a result, rather than providing a response to individual UDS design guidelines, Section 5.7.5 provides an overview of options assessment process and justification for the chosen design.

Table 5 Comparison of UDS design guidelines, TRW Tram Diversion Project assessment criteria and related EPRs

UDS Guideline	TRW Tram Diversion Design Criteria					Related EPRs	Design Response
	Safety of all road users	Reliability and efficiency	Accessibility, inclusive design	Stop spacing, walkability	Local access and amenity		
3. Key directions for metro tunnel							
3.1 Make new and improved connections							
3.1.c.1. Support safe and predictable movements that are prioritised along the transport hierarchy	X	X		X		T1, T2, T3	The new platform stops on Toorak Road West and St Kilda Road will be integrated, modern and accessible, providing an improved experience for passengers with shelters, seating, lighting and real time tram arrival displays.
3.1.c.2. Provide for integration of all transport modes in line with the modal hierarchy above	X	X		X		T1, T2, T3	The new platform stops on Toorak Road West and St Kilda Road will provide for integration of all transport modes in line with the stated modal hierarchy. . The platforms will be modern and accessible and meet all the required DDA standards. This will provide an improved experience for all passengers with shelters, seating, lighting and real time tram arrival displays.
3.1.c.3. Minimise conflicts between transport modes and intersecting routes of travel	X	X		X		T1, T2, T3, T9	Conflicts between the station and the trams will be minimised through the location and design of the platforms. The platforms have been designed to meet the current accessibility standards and to meet future increased passenger usage generated by the Metro Station and the location of Domain Station – they are wider so they can accommodate more passengers, longer so that they can be used by the higher capacity trams, and provide for improved safety and accessibility through lighting, seating and signage. In addition, the road way has been designed to allow for people to safety cross the roads and access their chosen mode of transport.
3.1.c.4. Support ease of wayfinding			X	X	X	T5	Design of wayfinding, signage and advertising for above ground elements will consider relevant planning schemes, the Metro Tunnel UDS, Growing Green

UDS Guideline	TRW Tram Diversion Design Criteria					Related EPRs	Design Response
	Safety of all road users	Reliability and efficiency	Accessibility, inclusive design	Stop spacing, walkability	Local access and amenity		
							Guide and the MMRA Creative Strategy.
3.1.c.5. Create and improve strategic walking and cycling routes	X			X	X	T5, T6, T9	The design for Toorak Road West reinstates the existing bicycle lanes as per the existing conditions. As part of the network enhancements there are plans to provide an alternative north-south bicycle route along Park Street, South Yarra, and Moray Street, South Melbourne, to reduce the cyclist demand from St Kilda Road during construction of the Domain Station.
3.1.c.6. Provide universal access throughout public spaces and stations	X		X			SC8	The new platform stops on Toorak Road West and St Kilda Road will be integrated, modern and accessible, providing an improved experience for passengers with shelters, seating, lighting and real time tram arrival displays. The platforms are larger, can accommodate higher capacity trams and more passengers, catering for increased patronage and providing much needed resilience in the network during Metro Tunnel works.
3.1.c.7. Provide for vehicular traffic lanes as appropriate	X	X			X	T1, T2, T3	The design of roadworks has been developed in accordance with the relevant design standards and in consultation with the relevant stakeholders and the TTWG. The design has been informed by transport modelling, both at a strategic level in the Victorian Integrated Transport Model (VITM) and detailed modelling, and optimised to minimise impacts. The modelling has enabled the road layout, turning lanes and traffic signal plans to be optimised. In addition, the loss of existing car parking has been informed by the transport modelling and the design optimised to minimise any losses.
3.1.c.8. Provide for vehicle parking, as appropriate	X	X			X	B2, B6, SC4, T2, T3, T7, T9	The loss of 50 existing car parking has been informed by the transport modelling and the design optimised to minimise any losses.
3.2 Make great public places							
3.2.c.1. Ensure that all aspects of the	X		X		X	LV2, SC8	The Toorak Road West Tram Diversion Project has been designed to the

UDS Guideline	TRW Tram Diversion Design Criteria					Related EPRs	Design Response
	Safety of all road users	Reliability and efficiency	Accessibility, inclusive design	Stop spacing, walkability	Local access and amenity		
design are of a high quality in concept, resolution and execution							relevant design standards and is supported by transport modelling which considers and optimises the needs to all users. The Project will be delivered in accordance with MMRA's Cultural Heritage Management Plan (CHMP) approved under the Aboriginal Heritage Act 2006 and prepared as per the provisions set out in the Aboriginal Heritage Regulations 2007. The Toorak Road West tram diversion works are included in the defined Activity Area for the CHMP. In addition the works will meet the Metro Tunnel sustainability objectives.
3.2.c.2. Design spaces to be activated by public use			X		X	LV2, SC8	The new platform stops on Toorak Road West and St Kilda Road will be integrated, modern and accessible, providing an improved experience for passengers with shelters, seating, lighting and real time tram arrival displays. The platforms are larger, can accommodate higher capacity trams and more passengers, catering for increased patronage and providing much needed resilience in the network during Metro Tunnel works.
3.2.c.3. Provide safe environments that promote safe behaviour and the feeling of safety	X		X		X	C4	The new platform stops on Toorak Road West and St Kilda Road will be integrated, modern and accessible, providing an improved experience for passengers with shelters, seating and lighting, all of which help create the feeling of safety. The St Kilda Rd platform arrangement features ramps and pedestrian operated signals (POS) at both the northern and southern end of the platform to support safe and easy pedestrian access across St Kilda Road and interchange between platforms.
3.2.c.4 Respect heritage and respond to local cultural and indigenous heritage issues					X	CH1 – CH24	The Toorak Road West Tram Diversion Project will be delivered in accordance with MMRA's Cultural Heritage Management Plan (CHMP) approved under the Aboriginal Heritage Act 2006 and prepared as per the provisions set out in the Aboriginal Heritage Regulations 2007. The works will preserve the bluestone kerbing along Toorak Rd West.

UDS Guideline	TRW Tram Diversion Design Criteria					Related EPRs	Design Response
	Safety of all road users	Reliability and efficiency	Accessibility, inclusive design	Stop spacing, walkability	Local access and amenity		
3.2.c.5 Make provision for stormwater drainage and management	X				X	AE1, AE3, AE6, AE7, SW1, SW2	The design requires the minor relocation of existing pits and installation of new pits to divert existing stormwater around tram platforms. The design does not change the existing stormwater catchment characteristics nor does it impact on the existing stormwater runoff quality.
3.2.c.6 Select and design paving and surface finishes to be fit for purpose, durable and sustainable	X		X		X	LU1	The design of the paving is as per the relevant stakeholders requirements to ensure they are durable and fit for purpose. Where possible we have sought to implement sustainability measures while not compromising the design of the paving (such as the reduction in Portland cement content).
3.2.c.7 Integrate street and park furniture into the overall design of public spaces as appropriate			X		X	LV2	The new platform stops on Toorak Road West and St Kilda Road will be integrated, modern and accessible, providing an improved experience for passengers with shelters and seating. Existing street furniture will be retained where possible.
3.2.c.8 Provide lighting for amenity, wayfinding, visual comfort, road safety and personal security	X		X		X	GHG2, LV3	Lighting will be provided on the new tram platforms and where street lighting is required to be modified it is designed to the relevant standard. The St Kilda Rd platform arrangement features ramps and pedestrian operated signals (POS) at both the northern and southern end of the platform to support safe and easy pedestrian access across St Kilda Road and interchange between platforms. Wide platform areas provide for high patronage levels and additional space can accommodate improved seating and shelter provision.
3.2.c.9 Provide access to public amenities including public toilets	NA	NA	NA	NA	NA	NA	
3.2.c.10. Provide access to public transport facilities including passenger shelters, ticket			X			LU1	The design includes new tram platforms that are DDA compliant providing better access for all passengers. The new platform stops on Toorak Road West and St Kilda Road will be integrated, modern and accessible, providing

UDS Guideline	TRW Tram Diversion Design Criteria					Related EPRs	Design Response
	Safety of all road users	Reliability and efficiency	Accessibility, inclusive design	Stop spacing, walkability	Local access and amenity		
sales etc.							an improved experience for passengers with shelters and seating.
3.2.c.11. Incorporate public art in appropriate places	NA	NA	NA	NA	NA	NA	
3.2.c.12. Provide signage in accordance with PTV, VicRoads, and authority standards		X	X			T1	The design of signage is as per the relevant stakeholders requirements.
3.2.c.13. Ensure advertising complements the character, functionality and amenity of the precinct:			X		X	LU4	Any advertising will be in accordance with the relevant stakeholder requirements.
3.2.c.14. Incorporate plantings as an integral part of site designs	NA	NA	NA	NA	NA	NA	
3.2.c.15. Address irrigation including passive irrigation and opportunities for rainwater infiltration	NA	NA	NA	NA	NA	NA	The Toorak Road West Tram Diversion Project has been designed to the relevant design standards and is supported by transport modelling which considers and optimises the needs to all users.
3.3 Balance line-wide consistency with site responsiveness							
3.3.c.1 Operational elements must be consistent with the transport system as a whole	X	X	X			T1-T10	The new platform stops on Toorak Road West and St Kilda Road will be integrated, modern and accessible, providing an improved experience for passengers with shelters, seating, lighting and real time tram arrival displays. These elements are to Yarra Trams standards and therefore consistent with other tram infrastructure.
3.3.c.2. The character of individual stations may vary and should	NA	NA	NA	NA	NA	NA	

UDS Guideline	TRW Tram Diversion Design Criteria					Related EPRs	Design Response
	Safety of all road users	Reliability and efficiency	Accessibility, inclusive design	Stop spacing, walkability	Local access and amenity		
<i>be responsive to their context</i>							
3.3.c.3 <i>Locate and design infrastructure to integrate with surroundings and maintain amenity and functionality of surroundings</i>			X	X	X	LV1 – LV4	The new platform stops on Toorak Road West and St Kilda Road will be integrated, modern and accessible, providing an improved experience for passengers with shelters, seating and lighting, as per Yarra Trams standards.
3.3.c.4 <i>Design streetscapes and open spaces to integrate with their context</i>	NA	NA	NA	NA	NA	NA	The new platform stops on Toorak Road West and St Kilda Road will be integrated, modern and accessible, providing an improved experience for passengers with shelters, seating, lighting and real time tram arrival displays. These elements are to Yarra Trams standards and therefore consistent with other tram infrastructure.
3.4 Support integrated site redevelopment							
3.4.c.1 to 3.4.c.8	NA	NA	NA	NA	NA	NA	Not relevant
3.5 Design to help manage construction impacts							
3.5.c.1. <i>Maintain circulation and transport operations during the construction process</i>	X	X	X	X	X	T1 – T10	Specialist consultants have been engaged to develop a traffic management model to inform the Traffic Management Plan (TMP) and Bus Replacement Plan (BRP). The TMP and BRP are currently being developed in consultation with VicRoads, PTV, City of Melbourne, City of Port Phillip, VicRoads, Transdev, Ventura and the Early Works Contractor. A core objective of these plans is to maintain circulation and transport safely and efficiently for the duration of the construction works. Impacts on local pedestrian traffic will be minimised through safe and accessible detours with wayfinding signage. Use of existing and placement of accessible, temporary stops and a bus replacement service will minimise impacts on tram users. Customer service personnel will be placed at key

UDS Guideline	TRW Tram Diversion Design Criteria					Related EPRs	Design Response
	Safety of all road users	Reliability and efficiency	Accessibility, inclusive design	Stop spacing, walkability	Local access and amenity		
							locations throughout the tram network to assist customer access to tram services during the construction phase of the project. Staging of works has been carefully planned to minimise impacts on vehicular traffic. Where impacts are unavoidable diversions have been identified and will be implemented to ensure safe circulation of traffic.
3.5.c.2 Protect the viability of, and amenity for, activities at and near construction work sites			X	X	X	LV – LV4	Yarra Trams has identified several sensitive receptors in close proximity to the construction area. These are shown in Appendix A. The CEMP and accompanying Sub Plans will ensure that the project achieves the relevant EPRs and in doing so protects the viability and amenity of activities occurring near the site. In addition principles of Crime Prevention Through Environmental Design will be applied to arrangements of access routes, hoardings and other features during the construction period. Engagement of specialist consultants to prepare models to predict potential noise, vibration and air quality impacts will inform CEMP Sub-Plans and ensure any potential impacts on viability and amenity of the local area are minimised.
3.5.c.3 Protect features from damage	X	X			X	LV1 – LV4 HC1 – HC24	- The key features associated with the Site Area are heritage and council protected trees. A qualified arborist has been engaged to provide specialist advice to inform design and reduce impacts on trees. The arborist is preparing a tree impact assessment report to document trees to be removed/retained and conditions and significance of the tree. Prior to construction the arborist will develop a Tree Protection Plan in accordance with AS4970-2009 Protection of Trees on Development Sites, addressing the detailed design and construction methodology of the project. Replacement of canopy cover will be undertaken as directed by MMRA on a project wide approach. - Services proving and relocation are being undertaken in consultation with

UDS Guideline	TRW Tram Diversion Design Criteria					Related EPRs	Design Response
	Safety of all road users	Reliability and efficiency	Accessibility, inclusive design	Stop spacing, walkability	Local access and amenity		
							service owners to ensure minimal impact to services. - There are no monuments and artworks which will need to be removed / relocated to implement the project. - Where possible Yarra Trams will seek to conserve, salvage and reuse materials as part of achieving sustainability targets for the project. - Any bluestones that are to be removed as part of the works will be salvages and reused in agreement with the relevant authority.
3.5.c.4. Maintain an attractive presentation to surrounding areas			X	X	X	LV1 – LV4	MMRA branded scrim/screens/hoardings will be used as per the Metro Tunnel Project branding suite to ensure consistency across the Metro Tunnel Project. The Communications and Engagement Plan for the project will provide opportunities to convey information about the Metro Tunnel Project to the community including explanation of the project objectives, scope of works, construction impacts, innovations and progress through - Project updates - Disruption notifications - Info sessions - Door knocking - Trader visits - Web updates - Social media posts - Info hubs - Ground decals - On board information - Marketing messaging Implementation of the CEMP will work to maintain the neat presentation of the

UDS Guideline	TRW Tram Diversion Design Criteria					Related EPRs	Design Response
	Safety of all road users	Reliability and efficiency	Accessibility, inclusive design	Stop spacing, walkability	Local access and amenity		
							construction area and minimise amenity impacts of the surround area. Where possible and appropriate effort will be made to ensure the legacy stops compliment the local area (e.g. sensitive lighting and shelter design).
3.6 Design for the future							
3.6.c.1 Anticipate population growth and future changes in activity patterns and development	X	X	X	X	X	LU1 – LU3	The new platforms are larger, can accommodate higher capacity trams and more passengers, catering for increased patronage and providing much needed resilience in the network during Metro Tunnel works.
3.6.c.2 Management requirements of asset owners must be supported by the design	X	X	X	X	X	LV1 – LV4	The design is in accordance with the relevant stakeholder requirements.
3.6.c.3 Allow for long-term flexibility in the uses of public spaces and in the provision of facilities and services	X	X	X	X	X	LV1 – LV4	The design is in accordance with the relevant stakeholder requirements.
3.6.c.4 Support the healthy growth of canopy trees and minimise constraints to plant and replant opportunities					X	LU4, LV2, AR1, AR2, AR3, CH1-CH24	The design has been informed by arborist reports to minimise the impacts to existing trees and to identify opportunities for tree plantation where possible.
3.6.c.5. Create robust and durable landscapes	X				X	LV1 – LV4	The design is in accordance with the relevant stakeholder requirements.
3.6.c.6. Respond to changing climate and microclimate condition	X		X		X	LV1 – LV4	The design is in accordance with the relevant stakeholder requirements. The design has been informed by arborist reports to minimise the impacts to existing trees and to identify opportunities for tree plantation where possible.

UDS Guideline	TRW Tram Diversion Design Criteria					Related EPRs	Design Response
	Safety of all road users	Reliability and efficiency	Accessibility, inclusive design	Stop spacing, walkability	Local access and amenity		
3.6.c.7 <i>Integrate water-sensitive urban design initiatives</i>	X				X	LU3, AR2	There are limited opportunities to implement water-sensitive urban design (WSUD) within the Toorak Road West tram diversion as the stormwater currently drains to the existing stormwater system at the outer kerb and footpath. The existing kerb and road crossfall is not being altered by the proposed works. The existing trees located in the footpath are to remain.
3.6.c.8 <i>Practice sustainable use of materials and resources</i>					X	EMF1 – EMF4	The works have been designed and constructed to meet the Melbourne Metro sustainability objectives.
4.7 Precinct 7: Domain Station							
4.7.1 St Kilda Road							
4.7.e.1 <i>Consider stakeholder requirements and potential for integration of future streetscape improvements</i>	X			X	X	LV1 – LV4	There has been extensive consultation with stakeholders throughout the design phase. This consultation has identified numerous requirements that have been captured in the design.
4.7.e.2 <i>Provide convenient pedestrian access</i>	X		X	X	X	T2, T3, T4, T5, T6, T7, T8, T9, 10 LV1,	The St Kilda Rd platform arrangement features ramps and pedestrian operated signals (POS) at both the northern and southern end of the platform to support safe and easy pedestrian access across St Kilda Road and interchange between platforms. The Toorak Rd West platform is an Easy Access Platform conveniently located just to the east of the existing pedestrian crossing to facilitate crossing the road and access to platforms.
4.7.e.3 <i>Provide protected bicycle lanes, connecting to bike lanes north and south of the project area.</i>	X				X	T2	The design for Toorak Road West reinstates the existing bicycle lanes as per the existing conditions. As part of the network enhancements there are plans to provide an alternative north-south bicycle route along Park Street, South Yarra, and Moray Street, South Melbourne, to reduce the cyclist demand from St Kilda Road during construction of the Domain Station.
4.7.e.4 <i>Complement St Kilda Road's</i>					X	LV1 –	In St Kilda Road, trees are required to be removed in the northbound and

UDS Guideline	TRW Tram Diversion Design Criteria					Related EPRs	Design Response
	Safety of all road users	Reliability and efficiency	Accessibility, inclusive design	Stop spacing, walkability	Local access and amenity		
<i>formal boulevard character</i>						LV4	southbound carriageways to facilitate the requirement for a tram platform and two through lanes of traffic in both directions. As a result there is limited opportunity to plant trees in their original location during main construction works due to the road and tram infrastructure. Replacement of canopy cover will be undertaken where areas are not required for other works for the Metro Tunnel Project and in consultation with relevant Councils and Heritage Victoria.
<i>4.7.e.5 Reconstruct the area of the existing tram interchange to complement the typical boulevard layout</i>	NA	NA	NA	NA	NA	NA	There has been extensive consultation with stakeholders throughout the design phase. This consultation has identified numerous requirements that have been captured in the design.
<i>4.7.e.6 Locate and design vent shafts, the chiller plant and substations to minimise their visual impacts</i>	NA	NA	NA	NA	NA	NA	The St Kilda Rd platform arrangement features ramps and pedestrian operated signals (POS) at both the northern and southern end of the platform to support safe and easy pedestrian access across St Kilda Road and interchange between platforms. The Toorak Rd West platform is an Easy Access Platform conveniently located just to the east of the existing pedestrian crossing to facilitate crossing the road and access to platforms.

5.7.5 Final design summary

The TRW Tram Diversion Project does not restrict any future options in the vicinity of Domain station which will be determined as part of the PPP procurement process. However, all new infrastructure has been designed to a future-proofed standard in accordance with Victorian Rail Industry Operating Standards.

The new platform stops on Toorak Road West and St Kilda Road will be integrated, modern and accessible, providing an improved experience for passengers with shelters, seating, lighting and real time tram arrival displays. The platform style can accommodate higher capacity trams and more passengers, catering for increased patronage and providing much needed resilience within the network during Metro Tunnel works.

All new infrastructure delivered across the tram network is designed to a minimum standard that can accommodate the modern E-Class trams to enable flexibility in the tram network.

Above and below ground services and utilities have been designed in accordance with the asset owner's requirements, including: location, depth and operational requirements.

Potential streetscape improvements to adjacent footpaths and parklands are outside the scope of the TRW Tram Diversion Project.

St Kilda Road

The design and location of Stop 22 on St Kilda Road has been chosen on the assumption that this location will be retained as a legacy platform stop irrespective of the permanent alignment for the combined Route 58. The new 66m, triple platform arrangement supports services operating on St Kilda Road, and enables two E-Class trams to be stationed at the stop at the same time, thus providing broader network benefits.

The triple track design at Stop 22 St Kilda Road replicates the current Domain interchange arrangement, helping passengers to get to their destinations as quickly and easily as possible. This will provide much needed resilience during the Metro Tunnel construction and will provide increase interchange opportunities into the future.

The arrangement features ramps and pedestrian operated signals (POS) at both the northern and southern end of the platform to support safe and easy pedestrian access across St Kilda Road and interchange between platforms. Wide platform areas provide for high patronage levels and additional space can accommodate improved seating and shelter provision.

Toorak Road West

As part of the design process for Metro Tunnel, MMRA worked closely with Yarra Trams, VicRoads, City of Melbourne, City of Port Philip, PTV Transport for Victoria and other key stakeholders to determine the most appropriate design and location for the new accessible platforms.

A number of options were considered against a range of legislative requirements and design criteria as outlined under Section 5.7.2 and 5.7.3 of EWP, safety for all road users, reliability and efficiency of the tram and road network, accessibility and inclusive design, and local access and amenity.

The final design of an easy access stop near Millswyn Street was selected as it provides the best overall outcome for the local community, tram passengers and road users, as well as being the most likely to proceed without delaying the overall Metro Tunnel programme.

The location optimises spacing between the new Stop 22 on St Kilda Road and the existing Stop 27 on Toorak Road West, and ensures that key destinations such as the Domain Road Village, the Royal Botanic Gardens and schools are within easy walking distance.

Easy Access Stops are part of a suit of stop designs employed across Melbourne's tram network. They are a good way to provide level access to tram stops without taking away lanes used by other vehicles on streets where road space is both shared and scarce. Easy Access Stops involve raising the road surface to remove the 'step' between the road and low floor trams. Drivers and cyclists can continue to use the kerbside (outer) lane of the road.

One of the key benefits of the chosen design on Toorak Road West is that the Easy Access Stop arrangement does not impact on heritage bluestone or require encroachment into Fawkner Park, and minimising impact to mature trees. All other options assessed would require a widening of road reserve, and subsequently detrimentally impact on prescribed heritage values.

In addition raised tracks and curved safety curbing are a key design element in the new tram infrastructure on Toorak Road West. The curved safety kerbing and raised tracks improve the safety and reliability of tram services by deterring cars from illegally driving across the middle of the road into the pathway of trams. The raised or segregated tracks also make it easier for emergency services vehicles to use tram infrastructure to access incidents quickly.

Passengers will benefit from safer, more reliable tram services on St Kilda Road and Toorak Road West, due to fewer cars illegally crossing the tracks in front of trams. It will also reduce the number of times a tram driver is forced to use the emergency brake, which can lead to passenger falls. The network will also benefit from improved service delivery and punctuality as a result of fewer disruptions caused by car related incidents.

6 EARLY WORKS PLAN CONSULTATION PROCESS

6.1 OVERVIEW

It is recognised, that there is likely to be a high level interest in the TRW Tram Diversion Project from stakeholders and community members across Domain precinct as the most significant early works will occur in this precinct. In addition, the new tram infrastructure will be the first major above-surface infrastructure to be constructed in association with the Metro Tunnel Project.

Yarra Trams has both a short term obligation to those communities affected by the construction works and associated service changes, and a long term obligation to provide an accessible and reliable service to the broader Melbourne metropolitan community and visitors.

Yarra Trams is committed to minimising nuisance to passengers by providing advance notification of works and any planned travel disruptions, in order to assist them with planning their journeys with the least possible nuisance.

As part of the design process for Metro Tunnel, MMRA has been working closely with Yarra Trams, VicRoads, City of Melbourne and PTV to determine the most appropriate design and location for the new infrastructure associated with the TRW Tram Diversion Project. A number of other key stakeholders were also involved in the design assessment and selection process including representatives from City of Port Phillip, Victoria Police, Ambulance Victoria and the Metropolitan Fire Brigade.

The formal approvals and community engagement period for the broader Metro Tunnel project was completed in December 2016 in accordance with the EES process. Feedback received as part of this process was considered by MMRA, PTV and Yarra Trams throughout the design phase and has informed the final design of the TRW Tram Diversion Project.

Consultation activities on the EWP have been undertaken and the resulting Consultation Summary Report focusses on the Toorak Road West Tram Diversion Project and provides more detail on the associated impacts and benefits of the new infrastructure and construction period.

6.2 SPECIFIC REQUIREMENTS AS LISTED WITHIN THE INCORPORATED DOCUMENT

Minimum consultation requirements for the Early Works Plan are stipulated under Clause 4.9.4 of the Incorporated Document:

- Consultation must include:
 - Relevant local councils
 - Affected utility service providers
 - Where relevant, the Roads Corporation, Public Transport Development Authority, Melbourne Water and Heritage Victoria
 - Other key stakeholders
- The document must be made available for public inspection and comment on a clearly identifiable Project website for 15 business days
- Before, or on the same day as an Early Works Plan is made available, a notice must be published in a newspaper generally circulating in the area to which the Early Works Plan applies informing the community of the public inspection period.
- The Early Works Plan submitted to the Minister for Planning for approval must be accompanied by all written comments received during the public inspection period, and a summary of consultation and response to issues raised during consultation.

6.3 EARLY WORKS PLAN CONSULTATION

Comments were sought on the first draft version of the Early Works Plan for Toorak Road West Tram Diversion Project from a number of prescribed stakeholders listed above including local Councils, Heritage VIC, EPA and a number of utility service providers. Following this the EWP was provided for Public Display for a period of 15 business days (between 14 March to 3 April 2017), as required by the Incorporated Document. Feedback received during this process has been incorporated where appropriate in the Early Works Plan.

6.4 COMMUNITY CONSULTATION

In line with the requirements in the Metro Tunnel Incorporated Document, the community will be notified of the Early Works Plan in the following ways:

- A notice will be published in a major daily newspaper where work will take place
- An email will be sent to everyone registered on the Metro Tunnel eNews list and;
- The Early Works Plan will be made available on the Metro Tunnel website at metrotunnel.vic.gov.au

In addition, we will inform people via our social media channels (Twitter and Facebook) and provide copies for council offices for members of the public to inspect (if requested by councils).

7 CHANGE MANAGEMENT

As detailed under Clause 4.9.9 of the Incorporated Document, an Early Works Plan may be prepared and approved in stages or parts and may be amended from time to time with the approval of the Minister for Planning. Yarra Trams does not intend on submitting the Early Works Plan in stages, and where change is sought that is not contemplated within this Early Works Plan then the Early Works Plan will need to be amended in accordance with the Clause 4.9.9 process.

As detailed within the Incorporated Document, an amendment made under the Clause 4.9.9 process must comply with the requirements of clauses 4.9.3, 4.9.4, 4.9.5, 4.9.6 unless, in the opinion of the Minister:

- a) the proposed amendment:
 - i. does not result in a material detriment to any person; or
 - ii. a person who may suffer a material detriment as a result of the Minister's approval of the amendment has already been sufficiently consulted in respect of the amendment; and
- b) any amendment does not involve any change to an approved Environmental Performance Requirement.

8 CONCLUSION

The TRW Tram Diversion Project has been identified as Early Works within the Metro Tunnel EES. As such works for the Toorak Road West Tram Diversion Project are subject to the obligations required for Early Works within the Incorporated Document and require formal approval by the Minister for Planning through the preparation, public exhibition and submission to the Minister for Planning of an Early Works Plan. Consistent with the requirements of Clause 4.9 of the Incorporated Document, the EWP establishes the context for, and provides a description of, the TRW tram diversion works, including the separation of elements to provide clear understanding of activities that need to be identified and addressed within the plan.

The EWP identifies the environmental, cultural heritage and social controls applicable to the delivery of the Toorak Road West tram diversion works, including providing a summary of EMF process and identification of EPRs as applicable to the TRW Tram Diversion Project. The EWP also outlines how the applicable works will be managed in accordance with relevant aspects of the UDS.

Yarra Trams have a direct contract with MMRA to deliver the Toorak Road West Tram Diversion Project and it is Yarra Tram's responsibility to deliver all works in accordance with regulatory, statutory and contractual obligations.

Finally, as required under Clause 4.9.4 of the Incorporated Document, the EWP includes a summary of consultation process undertaken with key stakeholders which includes a summary of the engagement strategy undertaken. Once approved, this EWP will allow for the Early Works components for the TRW Tram Diversion Project to commence in accordance with the obligations identified within this plan.

APPENDIX A. SITE LAYOUT PLAN



TIMELINE LEGEND Events Local Traffic Management Traffic Management	May					June		July		August		December		Indicative Scale 50m
	North													
	Title: Toorak Road West Indicative Project Summary Version: v2.5 Revised: 19-07-17 J McCutchan Reviewed: 19-07-17 J McKenzie-Smith Created: 27-Sep-16 T Heinrich													

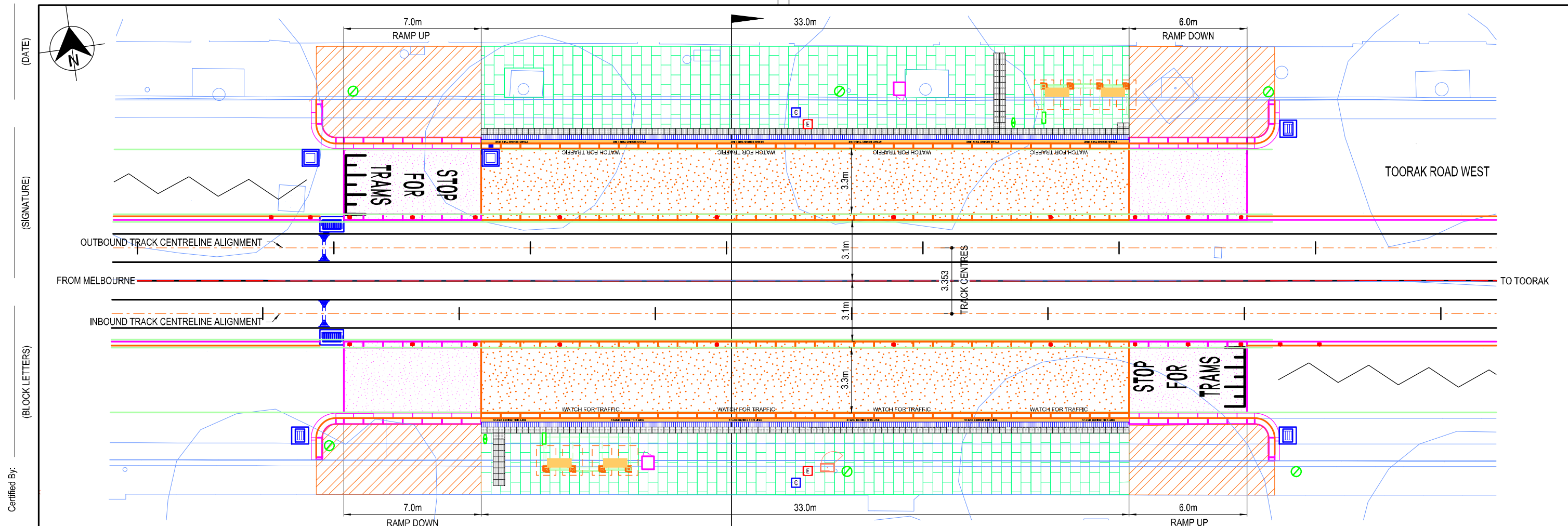


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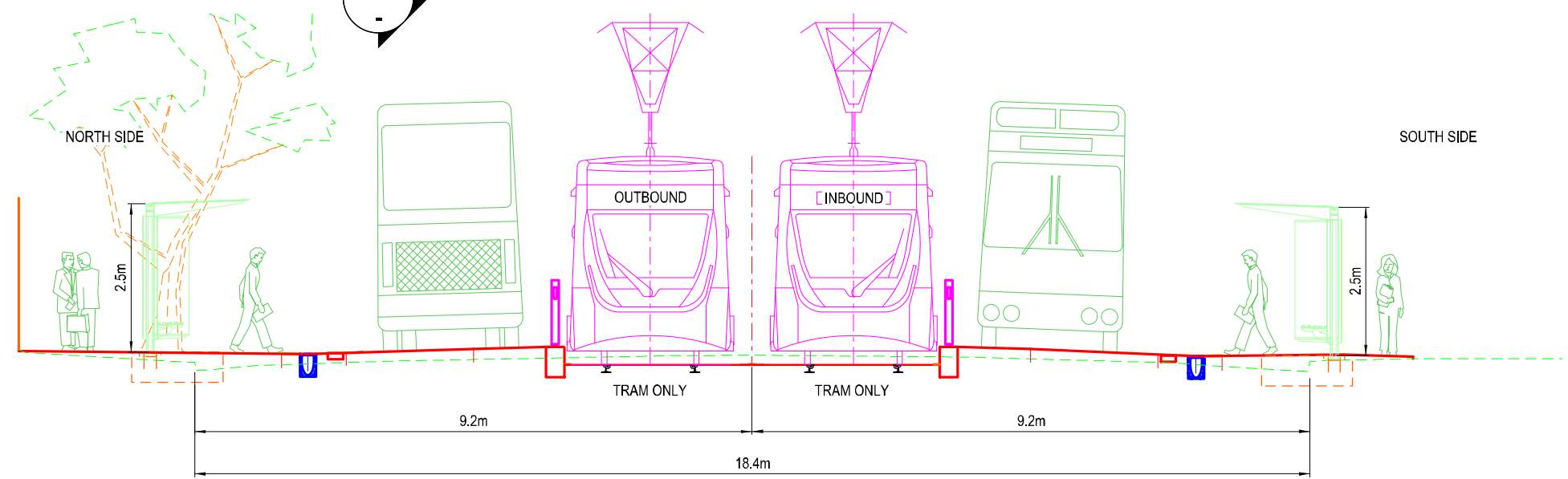


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APPENDIX B. PLATFORM ARRANGEMENT DRAWINGS



EASY ACCESS STOP - PLAN VIEW
SCALE 1:250



PROPOSED SECTION C
SCALE 1:100



- LEGEND:**
- LIFTING KERBING, RETAIN LEVEL AT BUILDING LINE TO MAKE FOOTPATH CROSS FALL DDA COMPLIANT, 1 IN 40.
 - BLUESTONE PAVING
 - EASY ACCESS PLATFORM - ASPHALT
 - PLATFORM RAMP - ASPHALT

FOR INFORMATION

11:57:41 AM
9/03/2017

Revised By	In Serv	Rev.	Date	Description	Designed	Checked	Ind. Rev.	Approv.

Consultant

Joint Venture

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TRAM INFRASTRUCTURE TOORAK ROAD WEST MILLSWYN STREET EASY ACCESS PLATFORMS GENERAL ARRANGEMENT			
Up Location	Down Location	Datum	
East. 322286.98	East. 322364.33	MGA Z55	
North. 5810274.27	North. 5810263.34		
ID#	ID#		

Project Drawing Number MMR-AJM-PWAA-MP-NN-500674

Drawn By T Q NGUYEN	Designed By T Q NGUYEN
Checked By	Ind. Review
Approved	Approval Date
Drawing Number	
Revision	

File Name
MMR-AJM-PWAA-MP-NN-500674.dgn

Sheet No. 01 of 01

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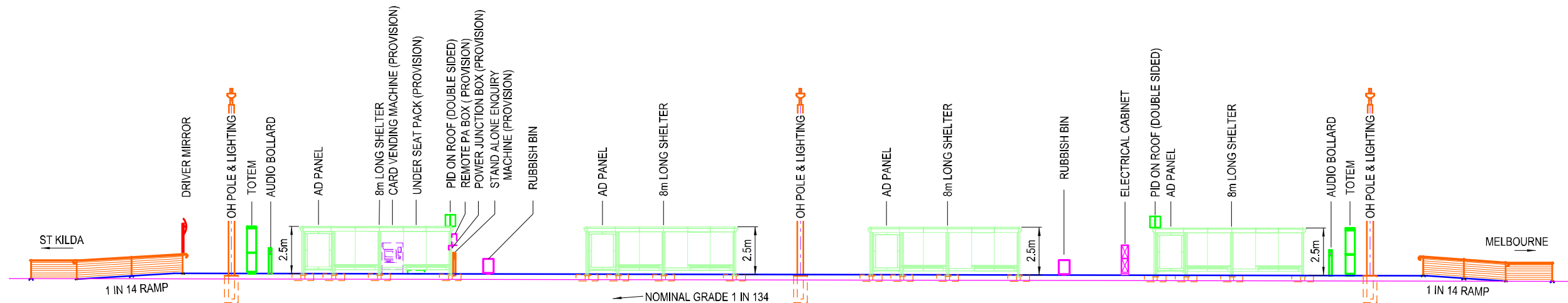
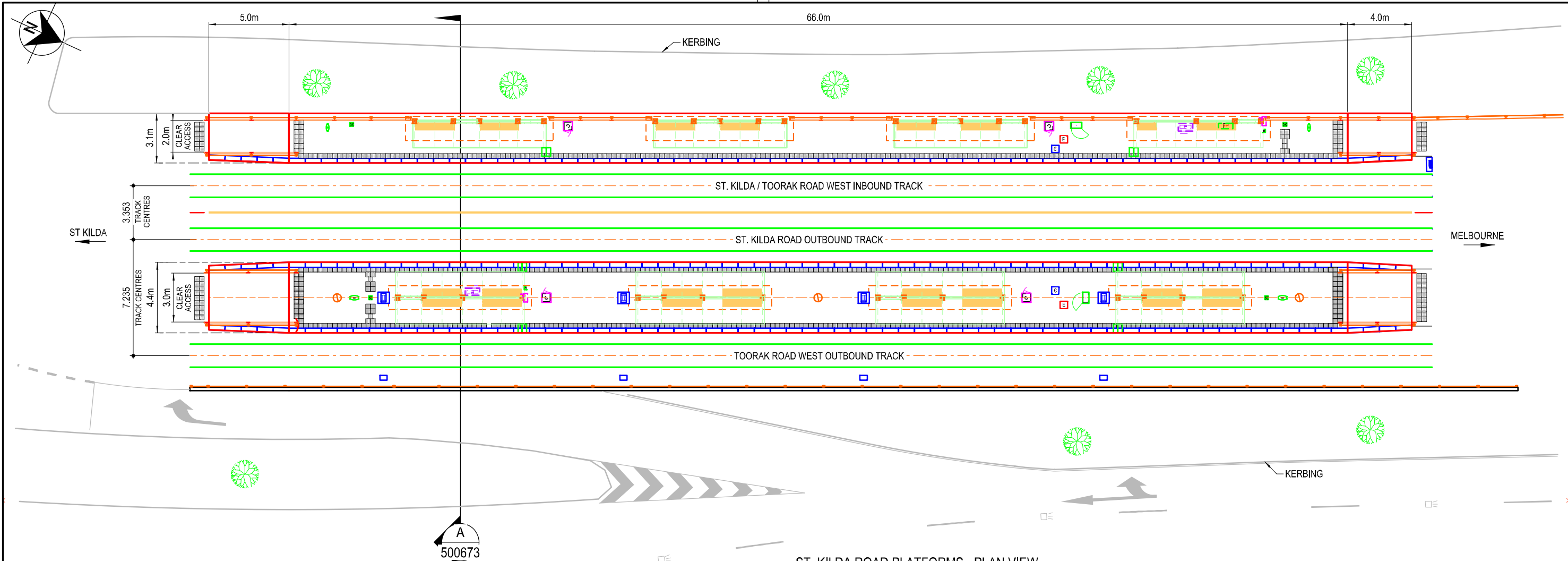
Scale 1:250 Sheet Size A3

Certified By:

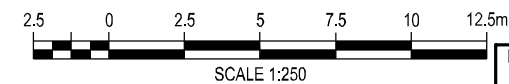
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TRAM INFRASTRUCTURE
ST. KILDA ROAD
TOORAK ROAD WEST JUNCTION
PLATFORMS
GENERAL ARRANGEMENT

Up Location	Down Location	Datum
East. 321863.203	East. 321822.466	MGA Z55
North. 5810443.366	North. 5810532.119	
ID#	ID#	

Project Drawing Number MMR-AJM-PWAA-MP-NN-500672

VicTrack
ACCESS

File Name
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Sheet No. 01 of 01

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Scale 1:250 Sheet Size A3

Drawn By T Q NGUYEN	Designed By T Q NGUYEN
Checked By	Ind. Review
Approved	Approval Date
Drawing Number	Revision

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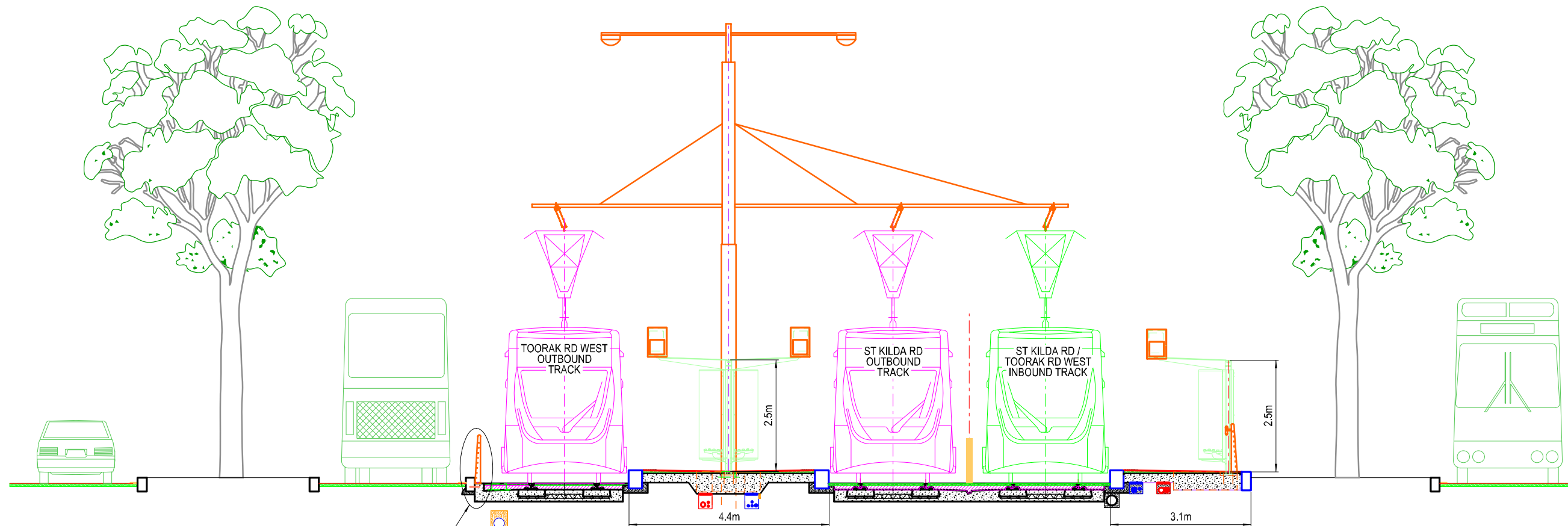
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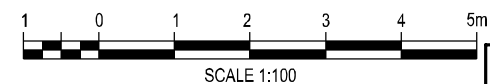


TYPE OF FENCE
SUBJECT TO VICROADS APPROVAL

ST. KILDA ROAD PLATFORMS

SECTION A
SCALE 1:100 500672

FOR INFORMATION



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TRAM INFRASTRUCTURE
ST. KILDA ROAD
TOORAK ROAD WEST JUNCTION
PLATFORMS LAYOUT
ELEVATION VIEW

Up Location	Down Location	Datum
East. 321863.203	East. 321822.466	MGA Z55
North. 5810443.366	North. 5810532.119	
ID#	ID#	

Project Drawing Number MMR-AJM-PWAA-MP-NN-500673

VicTrack
ACCESS

File Name
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Sheet No. 01 of 01

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Approved	Approval Date
Drawing Number	Revision



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APPENDIX C. TREE REMOVAL PLAN

Tree No.	Common Name	Scientific Name	Location	Reason for Removal	Heritage Status	Owner
PH155	English Elm	<i>Ulmus procera</i>	St Kilda Road	Trees to be removed for tram and road configuration works	VHR	CoPP
PH145	English Elm	<i>Ulmus procera</i>	St Kilda Road	Trees to be removed for tram and road configuration works	VHR	CoPP
PH197	London Plane	<i>Platanus Xacerifolia</i>	St Kilda Road	Trees to be removed for tram and road configuration works	VHR	CoPP
DK028	English Elm	<i>Ulmus procera</i>	St Kilda Road	Trees to be removed for tram and road configuration works	VHR	CoM
DK065	London Plane	<i>Platanus Xacerifolia</i>	St Kilda Road	Trees to be removed for tram and road configuration works	VHR	CoM
DK066	London Plane	<i>Platanus Xacerifolia</i>	St Kilda Road	Trees to be removed for tram and road configuration works	VHR	CoM
DK072	English Elm	<i>Ulmus procera</i>	St Kilda Road	Trees to be removed for tram and road configuration works	VHR	CoM
N74	Norfolk Island Pine	<i>Araucaria heterophylla</i>	TRW	Trees to be removed for tram and road configuration works	None	CoM
N73	Norfolk Island Pine	<i>Araucaria heterophylla</i>	TRW	Trees to be removed for tram and road configuration works	None	CoM



Tree Legend

- Trees to be removed for tram and road configuration works

Note: New tram poles will be installed throughout work zone.
Some trees will require pruning accordingly.

Tram Infrastructure Legend

- Existing Track
- Track to be renewed/realigned
- New Track
- Track to be decommissioned
- New Platform Stops
- New Easy Access Stops

Indicative Scale 100m

North



Title: Tree Removal Plan for TRW Diversion Works
Version: v2.2
Revised: 06-04-17 H Cui
Reviewed: 08-03-17 T Phillips
Created: 23-02-17 H Cui

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