LXRA

PROJECT REQUIREMENTS SPECIFICATION

ALLIANCE
ADDITIONAL WORKS PACKAGE – BELL TO MORELAND

LEVEL CROSSING REMOVAL AUTHORITY

VICTORIA State Government

Version	Date	Description
6.2	16/08/2017	Issued for use
6.4	1/09/2017	Issued for use
6.6	16/10/2017	Issued for use
6.8	3/01/2018	Issued for use
7.0	10/04/2018	Issued for use
7.2	30/07/2018	Issued for use
7.4	26/11/2018	Issued for use
7.4.1	30/05/2019	Issued for Submission
7.4.2	06/06/2019	Revised for LXRP comments
7.4.3	13/06/2019	Schedule I update
7.4.3	25/06/2019	Schedule K update
7.4.4	02/07/2019	Issued for Resubmission
7.4.5	19/08/2019	Issued for use

Contents

Outside scope

Outside scope

Page 5 redacted for the following reason:
- - - - - - - - - - - - - - - - - - - -
Outside scope

Outside scope

Outside scope

Outside scope

Outside scope

Outside scope

Outside scope

Pages 8 through 14 redacted for the following reasons:
- -
Outside scope

Part A3 Scope of Works

A3 - 1 MTM RTO ROLE

A3 - 1.1.1 The following activities and services constitute the MTM RTO Role:

(a) facilitating and expediting all MTM Authorisations;

(b) provision of engineering services including engineering design review and acceptance;

(c) arranging access to land which is defined as Land under the MTM Franchise Agreement;

(d) facilitating and expediting access to Rail Infrastructure including:

(i) planning and arranging railway track occupations;

(ii) providing suitably qualified, experienced and authorised MTM personnel required for obtaining access to Rail Infrastructure and for work performed on or near Rail Infrastructure;

(iii) managing planned disruption to rail services including time table changes, captive running and the provision of replacement buses;

(iv) contingency planning for and responding to unplanned disruptions to rail services;

(e) training MTM personnel including:

(i) operations staff, train drivers and signalers;

(ii) station staff and customer service staff; and

(iii) maintenance and engineering staff;

(f) Rail Infrastructure drawing management including:

(i) updating databases (including Ellipse and PASS);

(ii) timely submission of as-constructed drawings to the DMS team within PTV;

(g) acceptance of the Rail Infrastructure and the New Stations; and

(h) management of change – preparation of documentation, internal RTO consultation, consultation with Office of the National Rail Safety Regulator, and implementation.

A3 - 100 ADDITIONAL WORK PACKAGE 4 – BELL TO MORELAND

A3 - 100.1.1 Replace the following at-grade railway crossing with a rail over road grade separated solution:

(a) Bell Street, Coburg

(b) Moreland Road, Brunswick

(c) Munro Street, Coburg

(d) Reynard Street, Coburg

A3 - 100.1.2 New stations at Coburg Station and at Moreland Station including all station infrastructure

A3 - 100.1.3 Undertake rail infrastructure works including:

Outside scope

A3 - 100.1.6 All reasonable approvals, adjustment, reinstatement, protection and improvements to existing utility services, roadways, and paths necessary as a consequence of the Works.

A3 - 100.1.7 New and modified footpaths and shared paths to facilitate connections along the corridor.

A3 - 100.1.8 Urban design and public realm works in accordance with the Urban Design Guidelines.

Outside scope

Pages 17 through 20 redacted for the following reasons:
- -
Outside scope

B1 - 6 URBAN DESIGN, LANDSCAPE AND ARCHITECTURE

B1 - 6.1.1 The Works must be undertaken in accordance with the LXRA Urban Design Framework and the associated site specific urban design guidelines identified in B1 - 101.

B1 - 6.1.2 The Works must incorporate the creative works developed in accordance with the Integrated Art Guidelines.

B1 - 6.1.3 Landscaping must be designed and constructed in accordance with Section 720 of the VicRoads Standard Specifications for Roadworks and Bridgeworks.

B1 - 6.1.4 Garden beds must be designed to ensure that mulch and soil is not easily transported by natural elements onto abutting surfaced areas.

Outside scope

Outside scope

B1 - 13 DESIGN

B1 - 13.1 Design packages

B1 - 13.1.1 The design of the Works must be divided into logical design packages to suit the program for the Works.

B1 - 13.1.2 Each design package must represent a complete package of works capable of being reviewed in isolation of other design packages.

B1 - 13.1.3 Design packages must contain:

(a) a design report as identified in B1 - 13.3;

(b) Design Documents; and

(c) site data as identified in B1 - 13.4.

B1 - 13.1.4 Design packages and their contents must be:

(a) in English and in metric units;

(b) in the format generally required by the relevant Ultimate Infrastructure Owner; and

(c) identified and controlled in accordance with:

(i) LXRA Level Crossing Removal Project Engineering Document Numbering Guideline; and

(ii) LXRA Level Crossing Removal Project Version Control of Rail Infrastructure Drawings Guideline.

B1 - 13.2 Design package register

B1 - 13.2.1 A comprehensive register of design packages must be compiled and maintained throughout the Works.

B1 - 13.2.2 The register must identify:

(a) the documents in each design package;

(b) design reviewers and approvers;

(c) the design review period;

(d) progress in terms of:

(i) percentage of design packages completed;

(ii) review comments received; and

(iii) review comments closed out;

(e) the status of Authorisations and Approvals required; and

(f) the planned and actual date for completion of design packages in accordance with the Alliance works program.

B1 - 13.3 Design report

B1 - 13.3.1 Each design report must:

(a) include an introduction and summary;

(b) describe the design objectives and an overview of the design process;

(c) describe the part of the Works the design package applies to;

(d) include an index of all Design Documents included within the design package;

(e) comply with Ultimate Infrastructure Owner requirements (including RTO requirements) for design submissions including the provision of design calculations;

(f) identify the design inputs, assumptions used to create the Design Documents;

(g) demonstrate all Authorisations required by the design have been obtained;

(h) identify the Reference Documents used to create the design and any variances to Standards that have been sought to support the design solution;

(i) describe with justification, including life cycle cost analysis, any departures from the:

(i) Design Solution;

(ii) Technical Requirements; and

(iii) Reference Documents;

(j) identify verification and proof engineering activities including copies of design certificates;

(k) confirm and identify how the design addresses all relevant issues and comments raised in the previous versions of the design;

(l) identify Safety in Design activities including design risk assessments and human factors considerations;

(m) demonstrate that the Works are within the Project Area;

(n) demonstrate maintenance access arrangements addressing the items identified in B1 - 2 and C1 - 11.1;

(o) where appropriate:

(i) identify compliance with the requirements of Part G;

(ii) include concept Signal Arrangement Plans;

(iii) include a 3D model for signal sighting commensurate to the level of design development;

(iv) include an emergency egress plan that identifies how emergency requirements have been met;

(v) demonstrates integration with IDO's including the movement of people and vehicles to, from and around the IDO Land;

(vi) demonstrate integration with artwork developed in accordance with the Integrated Art Guidelines; and

(vii) demonstrate (RAM) considerations have been addressed.

(p) provide a Requirements Compliance Matrix using the Requirements Management System.

B1 - 13.4 Site data

B1 - 13.4.1 Site data consists of data required to design the Works including:

(a) motorised vehicle, cyclist and pedestrian data;

(b) land surveys;

(c) geotechnical and hydrological surveys;

(d) structural assessments;

(e) condition assessments;

(f) electrical and rail signaling studies; and

(g) utility and infrastructure assessments.

B1 - 13.4.2 The Alliance must obtain all site data required to design the Works.

B1 - 13.4.3 Geoscience Data obtained by the Alliance must be provided to Geological Survey of Victoria in accordance with the LXRA / Geological Survey of Victoria Memorandum of Understanding.

B1 - 13.5 Design process

B1 - 13.5.1 Unless otherwise agreed by the Project Director and the relevant Ultimate Infrastructure Owner the design for the Works must include the following stages:

(a) preliminary design;

(b) detailed design;

(c) final design;

(d) issued for construction design; and

(e) as-built design.

B1 - 13.5.2 Design packages must be issued for review at each stage of design development identified in the Design and Engineering Management Plan to:

(a) the Project Director;

(b) the Participants;

(c) the Relevant Ultimate Infrastructure Owners, RTOs and land owners;

(d) the IDO Developer as agreed with the IDO Developer;

(e) the Urban Design Advisory Panel (UDAP) for architectural, landscaping and urban designs; and

(f) others as may be advised by the Project Director from time to time.

B1 - 13.5.3 Design Documents must identify changes from the previous version.

B1 - 13.6 Design planning and environmental approvals

B1 - 13.6.1 Design planning and environmental approvals are identified in Part B2.

B1 - 13.7 Design verification

B1 - 13.7.1 Design verification must be carried out by suitably qualified and competent persons independent of those having direct responsibility for the design work.

B1 - 13.8 Proof engineering

B1 - 13.8.1 Proof engineering and proof engineering certificates for the Works must be obtained in accordance with Statutory Requirements and for the items identified in B1 - 13.8.2.

B1 - 13.8.2 Proof engineering must be undertaken on the following:

(a) structural design including; bridges, overhead rail structures, structural drainage culverts and buildings (except where covered by National Construction Code);

(b) geotechnical and structural design of retaining wall structures, cut embankments and mechanical stabilised batters and fill;

(c) Temporary Works relating to structures including formwork, falsework and lifting arrangements for precast concrete or steel elements; and

(d) existing structures where structural analysis has been undertaken.

B1 - 13.8.3 Proof engineers:

(a) must not be part of the designer's organisation;

(b) must not have participated in the preparation of any part of the design of the Works in any manner whatsoever;

(c) must be a Chartered Professional Engineer with qualifications admitting to Corporate Membership of the Institution of Engineers;

(d) must have extensive experience and skill that is relevant to the design being proof engineered; and

(e) must stamp and sign all relevant drawing(s) as evidence of the proof engineer's detailed check and acceptance prior to the issue of the drawing(s) for construction.

B1 - 13.8.4 All advice, comments and calculations provided by a proof engineer must be in writing and included in the design report.

B1 - 13.8.5 Any amendment to the design after the issue of the proof engineering certificate must be referred to the proof engineer for review and written confirmation that the certificate remains valid.

B1 - 13.9 Safety in design

B1 - 13.9.1 The Works must be designed in accordance with formal processes and activities for 'Safety in Design' (or 'Safe Design') to:

(a) identify, at the design stage, hazards to health, safety and the environment throughout the project lifecycle including demolition and site preparation, construction, use, operation, maintenance, decommissioning and dismantling;

(b) assess the risk (likelihood) of hazards occurring;

(c) determine measures to control those risks;

(d) compile and manage a 'safety in design' risk register (the Design Risk Register); and

(e) incorporate relevant risk control measures identified in the Design Risk Register and in the design of the Works.

B1 - 13.9.2 Safety in Design processes and activities must comply with:

(a) Statutory Requirements for safe design, including Section 28 of the *Occupational Health and Safety Act 2004* (Vic);

(b) the policies and guidelines and other material published by Safe Work Australia and WorkSafe Victoria including:

(i) Safe design of structures (July 2012); and

(ii) Guidance on the principles of safe design for work;

(c) VicRoads and RTO requirements; and

(d) other Authority requirements.

B1 - 13.10 Systems engineering

B1 - 13.10.1 The Works must be designed in accordance with formal processes and activities for 'systems engineering' to:

(a) identify system requirements;

(b) develop system specifications;

(c) develop system architectures (by decomposing overall system specifications into a structured hierarchy of sub-systems and interfaces);

(d) validate, verify subsystems; and

(e) integrate sub-systems into systems.

B1 - 13.10.2 Systems engineering processes and activities must be established and controlled in accordance with:

(a) ISO/IEC 15288:2008(E) ‘Systems & Software Engineering – System lifecycle processes’;

(b) SA/SNZ TR ISO/IEC 24748 ‘Systems & Software Engineering – Life cycle management’ (Parts 1 & 2);

(c) the PTV Systems Engineering Policy and Systems Engineering Policy Guidance; and

(d) RTO requirements for systems engineering.

B1 - 13.10.3 Systems engineering processes and activities must be managed using the Requirements Management System to address:

(a) system architectures and system specification;

(b) RAM requirements;

(c) human factors;

(d) system interfaces;

(e) systems integration;

(f) requirements verification and validation;

(g) systems engineering related risk management;

(h) systems assurance; and

(i) requirements change management.

B1 - 13.11 Other design processes

B1 - 13.11.1 The earthing, bonding, lightning protection and electrolysis mitigation strategy identified in C4 - 5 must be agreed prior to the submission of associated preliminary design documents.

Outside scope

Pages 28 through 29 redacted for the following reasons:
- -
Outside scope

Outside scope

B1 - 101 SITE SPECIFIC URBAN DESIGN GUIDELINES

Title	Number
Urban design guidelines in accordance with the Bell Moreland Urban Design Guidelines	Coburg - LXRA-LX31-04-UD-RPT-0001, Moreland - LXRA-LX31-37-UD-RPT-0002

Outside scope

Pages 31 through 49 redacted for the following reasons:
- -
Outside scope

Part B7 Defects Correction Period

Outside scope

B7 - 2 VEGETATION LANDSCAPING

B7 - 2.1.1 Subject to B7 - 102 landscaping must be maintained in accordance with VicRoads specification “Section 720 – Landscaping Works”, as supplemented by B7 - 101 during the Defects Correction Period.

B7 - 2.1.2 Landscaping located within the non-public areas of the RTO land, as identified in the Ultimate Land Drawings, is exempt from the maintenance requirements during the Defects Correction Period.

Outside scope

Page 51 redacted for the following reason:
- - - - - - - - - - - - - - - - - - - -
Outside scope

Part C RAIL INFRASTRUCTURE

Part C1 General

Outside scope

C1 - 2 DESIGN CRITERIA

C1 - 2.1 General

C1 - 2.1.1 The design of Rail Infrastructure must incorporate:

(a) consistency of design, system and equipment types and manufacture;

(b) crime prevention;

(c) sustainability;

(d) ease of maintenance of Project Infrastructure; and

(e) systems that are consistent and integrated with the most recent systems used elsewhere on the rail network.

C1 - 2.1.2 The systems set out in Part C6 must be incorporated into the New Stations and surrounds.

C1 - 2.1.3 The design of mechanical, electrical and communication systems must incorporate a modular approach to enable ease of adding, upgrading and swapping components.

Outside scope

Pages 53 through 86 redacted for the following reasons:
- -
Outside scope

Part D STATIONS

Part D1 Design

Outside scope

D1 - 2 DESIGN CRITERIA

D1 - 2.1 General

D1 - 2.1.1 New stations and surrounds must:

Outside scope

(b) provide an integrated, safe, convenient and efficient environment for:

(i) the movement of pedestrians and cyclists; and

(ii) staff to operate the station and conduct Rail Operations; and

(c) prioritise and address pedestrian and cyclist desire lines and land and infrastructure distribution in accordance with

(i) D1 - 3;

(ii) the LXRA Urban Design Framework; and.

(iii) the site specific urban design guidelines of B1 - 101.

Outside scope

Outside scope

Page 88 redacted for the following reason:
- - - - - - - - - - - - - - - - - - - -
Outside scope

Outside scope

D1 - 3 LAND DISTRIBUTION

D1 - 3.1 Space hierarchy

D1 - 3.1.1 The distribution of land for different purposes near stations must generally:

(a) be allocated using the following space hierarchy:

(i) roads (including bicycle lanes and footpaths) as identified in F1 - 107;

(ii) rail tracks and associated infrastructure;

(iii) the station public entrance and forecourt as identified in the Urban Design Guideline;

(iv) station platforms as identified in D2 - 105

(v) Paths - according to the following sub hierarchy:

(A) footpaths servicing the station and passing through the station precinct including those identified in the Urban Design Guideline and F1 - 105;

(B) bicycle and shared paths identified in the Urban Design Guideline and F1 - 105;

(vi) station staff and operational rooms and areas identified in D2 - 100, protective services officer's facilities as identified in D2 - 104 and D2 - 108 and public facilities as identified in D2 - 107;

(vii) bicycle parking identified in D2 - 103, adjacent to station forecourt;

(viii) kiosks identified in D2 - 102;

(ix) commuter facilities identified in F1 - 104 and associated access footpaths;

(x) taxi, kiss and ride, police and DDA parking areas identified in D2 - 103 and their associated access footpaths and roads;

(xi) passive public areas;

(xii) train driver's operational rooms and areas identified in D2 - 101;

(xiii) waste disposal area as identified in D2 - 3.17 and the associated access footpaths and roads;

(xiv) IDO Land identified in the Project Area Drawings and the associated access footpaths, roads and open space;

(xv) staff / maintenance car parking as identified in D2 - 103 and the associated access footpaths and roads;

(xvi) park and ride parking as identified in D2 - 103 and the associated access footpaths and roadways;

(xvii) charity bins and the associated access footpaths.

(b) be consistent with the Concept Space Plan identified in the Design Solution:

Outside scope

D1 - 3.1.2 When the allocation of land for an item in the space hierarchy identified in D1 - 3.1.1 necessitates the repositioning of land space of an item higher in the hierarchy, then if the realignment of land space results in an allocation inconsistent with the following PTV hierarchy then that realignment is subject to PTV agreement.

(a) Active transport (pedestrian, cycling)

(b) Sustainable transport (train, tram, bus and coach)

(c) Emergency and short-term vehicles (emergency vehicle access, commercial/private transport taxi ranks, kiss and ride)

(d) Private transport (accessible car parking, staff and maintenance car parking, park and ride car parking)

D1 - 3.2 **Layout**

D1 - 3.2.1 Platform access points, canopies and seating for new stations must be located to help evenly distribute customers along the platform waiting to board trains.

D1 - 3.2.2 Bicycle Cages must be located to encourage natural surveillance of access doors and the interior.

D1 - 3.2.3 Where active transport routes cross each other or other transport routes the intersection of those routes must be treated as identified in the LXRA Cycle Guideline – Appendix 1 Conflict Matrix.

Outside scope

Pages 91 through 101 redacted for the following reasons:
- -
Outside scope

D2 - 5 PARKING

D2 - 5.1 General

D2 - 5.1.1 Stations must be provided with the parking facilities identified in D2 - 103 which must meet the requirements identified in this section D2 - 5.

D2 - 5.1.2 Station car parking must cater for user class 1 of Australian Standard AS 2890 and be delineated as shown in Figures 4.1 (a) and 4.2 (a) of Australian Standard AS 2890 Part 1.

D2 - 5.1.3 Car park entry and exit intersections with the road network must be:

(a) designed and constructed to provide a degree of saturation of less than 0.9; and

(b) located to minimise impacts on local residents.

D2 - 5.1.4 When one-way car park entry points are provided they should be located close to the station and the corresponding exit at the far end of the car park.

D2 - 5.1.5 Station car parks must be gazetted by an order under section 98 of the Road Safety Act 1986 (Vic) to enable enforcement of parking regulations.

D2 - 5.2 Kiss and ride

D2 - 5.2.1 Kiss and ride facilities must:

(a) be located parallel to the kerb;

(b) have a 2-minute time limit; and

(c) include a wheelchair accessible ramp between the facility and the adjacent footpath.

D2 - 5.3 Bicycle

D2 - 5.3.1 Bicycle Cages must:

(a) not include steps, internally or at the entrance;

(b) include the number and type of parking spaces as identified in D2 - 103;

(c) be designed and constructed in accordance with AS 2890 Part 3;

(d) be designed with an internal layout to allow full use of all parking spaces;

(e) be accessible only via Bicycle Network issued access cards;

(f) incorporate a T15 Gallagher card reader;

(g) consist of walls and doors which:

(i) subject to D2 - 5.3.2, are at least 60% see-through; and

(h) prohibit unauthorised full or partial access through gaps; have one access door that can be operated with one hand and is self-closing;

(i) not include RTO Rail Infrastructure within it;

(j) have gaps less than 100mm; and

(k) meet Bicycle Network's usual requirements for Bicycle Cages.

D2 - 5.3.2 Bicycle Cages may notwithstanding D2 - 5.3.1(g)(i) may consist of one wall being a shared wall with a station building.

D2 - 5.4 **Taxi**

D2 - 5.4.1 Taxi facilities must:

(a) be located parallel to the kerb; and

(b) include a wheelchair accessible ramp between the facility and the adjacent footpath.

D2 - 5.5 **Staff and maintenance parking**

D2 - 5.5.1 Staff parking facilities identified in D2 - 103 must be located together and designated with signage and line marking.

D2 - 5.6 **Emergency services parking**

D2 - 5.6.1 Parking provisions for police and ambulance vehicles must be provided within taxi and or kiss and ride parking provisions.

D2 - 5.6.2 Parking provisions for fire vehicles must be determined in consultation with the fire authority.

Pages 104 through 121 redacted for the following reasons:
- -
Outside scope

Part F ROADWAYS AND PATHS

F1 - 1 GENERAL

F1 - 1.1.1 Roads and Paths must be designed to reflect a network management approach.

F1 - 1.1.2 Roads must be designed and constructed to ensure:

(a) vehicles and cyclists can safely and efficiently travel along them;

(b) public transport is catered for with appropriate priority; and

(c) pedestrians and cyclists can safely and efficiently cross them.

F1 - 1.1.3 All Road Infrastructure including structures, retaining walls and paths must be located within the road boundaries identified in the agreed Ultimate Land Drawings.

F1 - 1.1.4 New roads and Paths must:

(a) integrate seamlessly with the abutting roads and Paths; and

(b) match the line, level and cross section of abutting roads and Paths at the limit of Works.

F1 - 1.1.5 Reverse curves, adverse super elevation, compound and broken back curves must not be used unless otherwise agreed by the relevant Road Authority.

F1 - 1.1.6 With respect to the Austroads Road Design Guide the Works must be:

(a) classified as being located in:

(i) an “urban environment”; and

(ii) on “flat terrain”; and

(b) designed with:

(i) a “reaction time” of 2.0 seconds; and

(ii) a “design domain” of 0.36

F1 - 1.2 Cross sections

F1 - 1.2.1 The width of Paths, traffic lanes, shoulders and medians on reconstructed and new roads and Paths must be in accordance with the following hierarchy:

(a) no less than identified in F1 - 100;

(b) as agreed with the relevant Road Authority; and

(c) no less than existed at the date of the Project Alliance Agreement.

F1 - 1.3 Vertical clearance

F1 - 1.3.1 The vertical clearance for structures above roads must be as identified in F1 - 101.

F1 - 1.3.2 The vertical clearance for other infrastructure above roads must be the greater of:

(a) 100mm higher than that identified in F1 - 101; and

(b) the usual requirements of the Ultimate Infrastructure Owner of that infrastructure.

F1 - 1.3.3 The vertical clearances identified in F1 - 1.3.1 and F1 - 1.3.2, measured based on a road level consistent with the existing road configuration, must extend across the full

width of the road reserve and any associated planning PAO, minus an allowance for Paths.

F1 - 1.4 **Design vehicles**

F1 - 1.4.1 New intersections and modified intersections must be designed to accommodate the Ultimate Infrastructure Owner's specified design vehicles.

F1 - 1.4.2 Court bowl turn around areas must accommodate a 8.8m service vehicle.

F1 - 1.4.3 Residential property access must accommodate a 8.8m service vehicle.

F1 - 1.4.4 Existing property access must not diminished by the Permanent Works.

F1 - 1.5 **Swept path**

F1 - 1.5.1 Modified intersections must accommodate the Ultimate Infrastructure Owner's specified design vehicle for swept path clearance to obstructions.

F1 - 1.5.2 Obstructions must be located 500mm:

(a) clear of swept paths; and

(b) behind the face of kerb.

F1 - 1.6 **Extended design domain**

F1 - 1.6.1 The principles of Extended Design Domain as detailed in the VicRoads Supplement to the AUSTROADS Guide to Road Design must not be applied unless otherwise agreed by the relevant Road Authority.

F1 - 1.7 **Speeds**

F1 - 1.7.1 The posted speeds and design speeds used for road design must be as identified in F1 - 102.

F1 - 1.7.2 The minimum intersection turning speed must be in the range 5km/h to 15km/h except when the vehicle is facing a stop sign whereby it may be less than 5km/h.

F1 - 1.8 **Design traffic volumes**

F1 - 1.8.1 Unless otherwise agreed with the relevant road authority the design traffic volumes used for road design must be as identified in F1 - 103.

Outside scope

Page 124 redacted for the following reason:
- - - - - - - - - - - - - - - - - - - -
Outside scope

Outside scope

F1 - 5 PATHS

F1 - 5.1.1 Paths must be designed and constructed to ensure legal users, including where permitted those with mobility and vision impairment can safely and efficiently use them.

F1 - 5.1.2 Paths that are constructed on road bridges must be extended to at least the nearest existing Path or nearest existing intersection.

F1 - 5.1.3 Paths identified in F1 - 105 must be constructed as part of the Works.

F1 - 5.1.4 Shared paths and bicycle paths must:

(a) be continuous from the start to the end as identified in F1 - 105, including across roads;

(b) be designed with well controlled and defined intersections with other Paths and give clear guidance to users, including priority using principles for good intersection design;

(c) be constructed of continuously reinforced concrete with saw cut joints;

(d) cater for rail maintenance vehicles when forming part of the rail maintenance vehicle access track or crosses a rail maintenance vehicle access track;

(e) cater for Emergency Services vehicles;

(f) cater for the landscape maintenance vehicles which need to use the path to access landscaped areas;

(g) cater for all maintenance activities which use or are adjacent to the path, without impacting the safety of path users including;

(i) providing appropriate offsets from cabinets, including opening allowances; and

(ii) maintenance vehicle parking areas;

(h) have 1.0m clear zones from edge of path free from obstructions when not on structure;

(i) have directional signage to major nearby destinations; and

(j) not form part of station concourse areas; and

(k) where they abut other sections of shared path or bicycle path, new or existing, form a continuous path.

F1 - 5.1.5 A dedicated pedestrian path must be provided:

(a) between the parking facilities identified in D2 - 103 and the station platforms; and

(b) within 50m of all park and ride facilities.

F1 - 5.1.6 A pedestrian path must abut:

(a) bicycle parking facilities;

(b) parking facilities for the disabled;

(c) taxi stops;

(d) kiss and ride facilities;

(e) commuter bus stops; and

(f) rail replacement bus stops.

F1 - 5.1.7 A shared path or bicycle path must be provided adjacent to bicycle parking facilities.

F1 - 5.1.8 The existing level of traffic control provided for Paths from bus stops to New Stations must not be reduced.

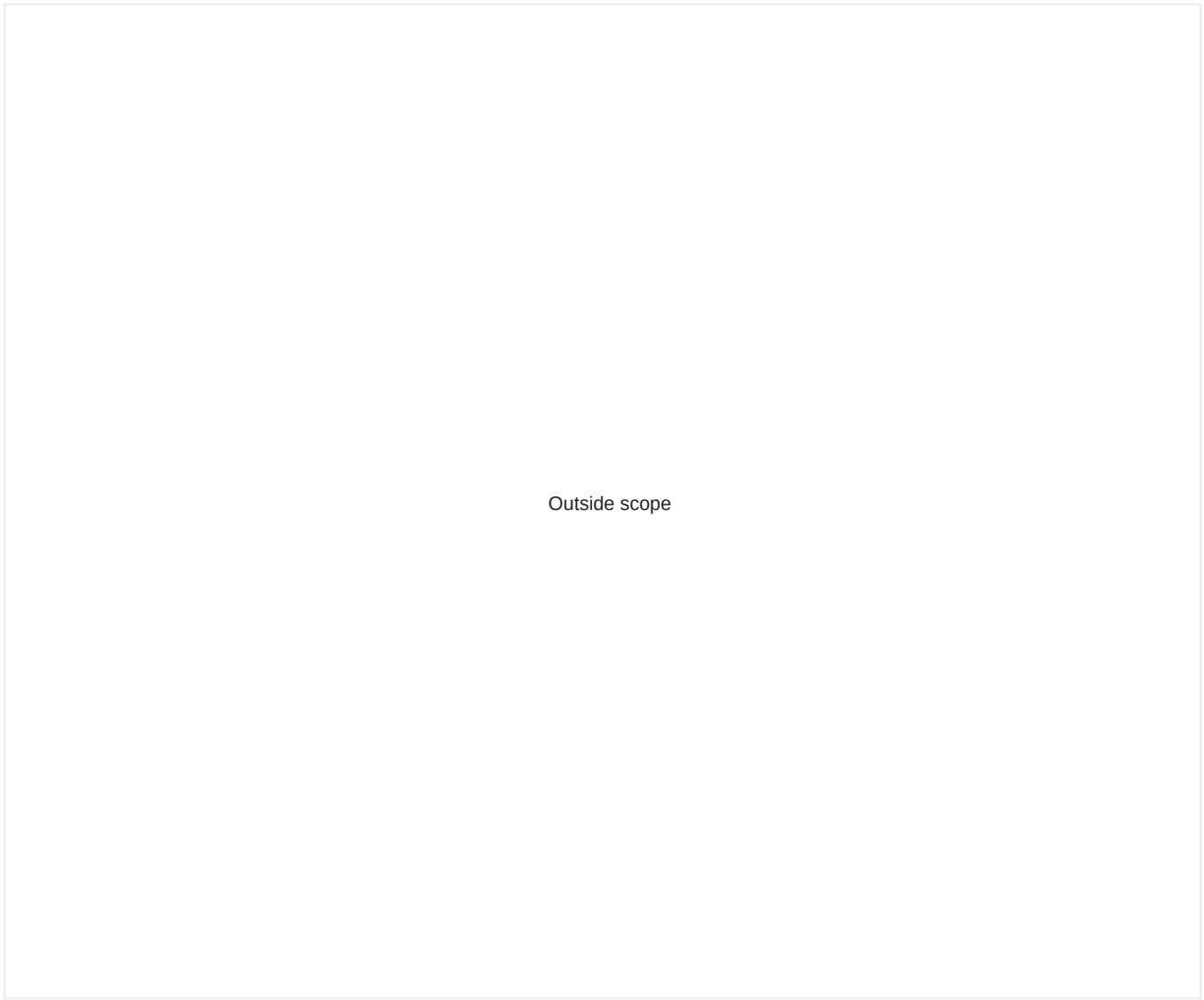
Pages 127 through 129 redacted for the following reasons:
- -
Outside scope

Outside scope

F1 - 105 PATHS

Section / Type		Start	End	Width
Cycle paths – Chainages are approximate				
	Upfield Bike path Pedestrian path	8900	10000	3.0 m 2.0 m
	Upfield Bike path Pedestrian path	10000	10250	3.0 m 2.0 m
Shared paths – Chainages are approximate				
	Upfield Bike path	8200	8280	Existing
	Upfield Bike path	8280	8900	3.0 m
	Upfield Bike path	10250	10400	3.0 m
	Upfield Bike Path	10400	10650	Existing
Pedestrian paths – Chainages are approximate				
	Upfield Pedestrian path	8860	10050	1.5m
	Upfield Pedestrian path	10050	10360	Existing
On-road cycle paths				
	Munro Street	Limit of physical works Tie in to existing immediately adjacent to the level crossing	Limit of physical works Tie in to existing immediately adjacent to the level crossing	Existing

Section / Type		Start	End	Width
Cycle paths – Chainages are approximate				
	Upfield Bike path Pedestrian path	8900	10000	3.0 m 2.0 m
	Upfield Bike path Pedestrian path	10000	10250	3.0 m 2.0 m
	Moreland Road	Limit of physical works Tie in to existing immediately adjacent to the level crossing	Limit of physical works Tie in to existing immediately adjacent to the level crossing	1.2m



Pages 132 through 135 redacted for the following reasons:
- -
Outside scope

Part H PROJECT MANAGEMENT SYSTEM

H1 - 1 GENERAL

H1 - 1.1.1 The Works must be performed in accordance with:

(a) the Project Management Plan;

(b) a quality management system established and controlled in accordance with ISO 9001:2016, “Quality management systems – Requirements”;

(c) an environmental management system established and controlled in accordance with AS/NZS 14001:2004 “Environmental management systems”; and

(d) a health and safety management system established and controlled in accordance with AS/NZS 4801:2001 “Occupational health and safety management systems”.

H1 - 2 PROJECT MANAGEMENT PLAN

H1 - 2.1.1 The Project Management Plan is the overarching plan which must:

(a) describe the scope and objectives of the project;

(b) describe the roles of each of the Participants;

(c) describe the overall approach to planning, designing, constructing, commissioning and hand over of the Works;

(d) describe the organisation structure and the overall approach to managing the project workforce;

(e) describe process to ensure all management levels in the Alliance understand:

(i) the LXRA program objectives; and

(ii) the contractual framework and the relevant contractual documents they will be operating under;

(f) describe the approach to managing Subcontractors including how Subcontractors practices will be aligned with the requirements of this Part H;

(g) specify the principles, philosophies and strategies the Alliance will use to minimise the extent and duration of adverse impacts on the public due to the construction and commissioning of the Works; and

(h) include each of the project plans identified below in Sections H1 - 3 to H1 - 31.

H1 - 2.1.2 The Project Management Plan and each project plan must be:

(a) developed, implemented and maintained in accordance with the requirements of H1 - 1.1.1;

(b) address as a minimum the items identified for that plan; and

(c) integrate with one another to form a coherent and complete suite of documents for performing the Works.

Outside scope

Pages 137 through 139 redacted for the following reasons:
- -
Outside scope

Outside scope

H1 - 9 DESIGN AND ENGINEERING MANAGEMENT PLAN

H1 - 9.1.1 The Design and Engineering Management Plan must describe the processes and activities the Alliance will use to design the Works.

H1 - 9.1.2 The Design and Engineering Management Plan must:

(a) address the items identified in B1 - 13;

(b) specify the design review framework for:

(i) ensuring that all relevant design processes and activities have been completed for each design package;

(ii) issuing design packages for review;

(iii) ensuring adequate time for review by recipients of the design package;

(iv) closing out design review comments and resolving disputes in relation to design review comments;

(v) granting approval for subsequent design stages to commence; and

(vi) consultation with key Stakeholders;

(c) identify design interfaces and boundaries and the extent of any Related Works;

(d) specify the design processes and activities for each discipline for each project phase including requirements capture, design, implementation, integration, verification and acceptance into service;

(e) align with the principles in the:

(i) LXRA Delivery Phase - Design Review Process Flowchart;

(ii) LXRA Design Review Comments Sheet Template; and

(iii) LX/MTM Risk Register Template;

(f) specify processes and activities for:

(i) quality assurance;

(ii) design verification;

(iii) design validation;

(iv) proof engineering;

(v) design personnel competencies and accreditations;

(vi) obtaining design input data, including site data;

(vii) change management including; identification, impact, analysis, review, approval, managing and documenting of changes to ensure the Works are not compromised and revised design continues to comply with this Final Project Requirements Specification;

(viii) design coordination and integration between Participants, Subcontractors, IDO Developer and others including inter-discipline design co-ordination and integration;

(ix) design risk management;

(x) safe design and safety in design;

(xi) systems engineering;

(xii) systems and safety assurance;

(xiii) risk management; and

(xiv) human factors and ergonomics requirements;

(xv) identifying the maintenance access requirements for Project Infrastructure and Existing Infrastructure;

(xvi) developing a Project Integrated Art Strategy in accordance with the LXRA Integrated Art Guidelines;

(xvii) addressing the site specific urban design guidelines identified in B1 - 101, the LXRA Urban Design Framework, the Integrated Art Guidelines and the PTV Public Transport Precincts Design Policy and Guideline;

(xviii) consultation with the LXRA Urban Design Advisory Panel (UDAP) as identified in the LXRA Urban Design Management Plan;

(xix) documenting compliance of the sustainability requirements identified in B2 - 4;

(xx) achieving the Project Owner's VfM Statement;

(xxi) whole of life, value engineering and future proofing;

(xxii) re-use of Existing Infrastructure;

(xxiii) compiling and handing over asset management data;

(xxiv) compiling and handing over project documentation including:

(A) Safety Management Documentation;

(B) Practical Completion Documentation; and

(C) Post Practical Completion Documentation;

(xxv) assisting RTOs and providing information required in the preparation of Safety Management Documentation; and

(xxvi) determination of spare parts requirements.

(g) specify the approval processes for the design departures identified in B1 - 13.3.1(i) which must address LXRA change management requirements.

Pages 142 through 170 redacted for the following reasons:
- -
Outside scope