Government of South Australia
Department for Infrastructure and Transport

Station Bus Interchanges – Train System

Engineering Standard

Rail Commissioner

AR-PW-PM-SPE-00129011 (D071)

DOCUMENT AMENDMENT RECORD

REV	CHANGE DESCRIPTION	DATE	COMMENTS
0	Initial issue	March 11	
1	Changes in various sections	July 12	
2	Document number change	July 13	
3	Standards update	April 19	
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1. Introduction

The Department of Infrastructure and Transport owns the Adelaide Metropolitan Passenger Rail Network (AMPRN) currently operated and maintained under the Rail Accreditation of third party. There are approximately 89 train stations serving the AMPRN.

A bus/rail interchange is a location where a train station is in immediate vicinity to two or more bus stops, where passengers are able to interchange modes of transport without leaving the station precinct to continue their journey.

2. Purpose

The purpose of this standard is to outline the design requirements for bus interchange facilities at train stations. This standard should be read in conjunction with the remainder of the DIT Station Standards for the Train System, as outlined in Section 4 – Related Documents and as listed in DIT Master Specification Part RW-STS-D1 Stations.

3. Scope

This standard applies to all new or upgraded bus interchanges located at DIT train stations. Existing bus interchanges may be rated against this standard.

4. Related Documents

DOCUMENT NAME	DOCUMENT NUMBER
Standard Drawing Kerb and Gutter Details	CS1-DRG-361824
Standard Drawing Car Park & Bus Interchange Signage & Pavement Marking Layout	CS1-DRG-361815
Standard Drawing Signage Schedule Drawing Register	CS1-DRG-361816
Station Precinct Concept – Bus Shelter	S7071 sheet 23
Standard Drawing Bus/Rail Interchange – General Layout	CS3-DRG-361825
Station – Shelters – Train System – D064	AR-PW-PM-SPE-00129005
Station Pedestrian Access – Train System – D065	AR-PW-PM-SPE-00129006
Station Platforms – Train System – D062	AR-PW-PM-SPE-00129003
Station Fencing – Train system – D068	AR-PW-PM-SPE-00129009
Station Furniture – Train System – D066	AR-PW-PM-SPE-00129007
Stations Signage and Pavement Marking – Train System – D070	AR-PW-PM-SPE-00129010

5. References

- AS 1428 Design for Access and Mobility
- AS 3500.3 Plumbing and Drainage – Stormwater Drainage
- Austroads Guide to Pavement Technology Part 2: Pavement Structural Design
- DIT Supplement to the Austroads Guide to Pavement Technology Part 2: Pavement Structural Design – RD-PV-D1

Legislative Requirements

- *Disability Standards for Accessible Public Transport (DSAPT)*

6. Acronyms

ACRONYM	FULL NAME
AMPRN	Adelaide Metropolitan Passenger Rail Network
CPTED	Crime Prevention Through Environmental Design
DIT	Department of Infrastructure and Transport
DSAPT	Disability Standards for Accessible Public Transport

7. Design Requirements

7.1. Design Life

Assets shall have the following minimum design life:

ASSET	DESIGN LIFE (YEARS)
Structural elements of buildings	50
Exterior fixtures and fittings	40

7.2. Types of Interchanges

There are two types of bus/rail interchanges at railway stations:

1. integrated; and
2. separate.

7.2.1. Integrated Bus/ Rail Interchange

The bus set down and pick up area shall be integrated with the rail platform and shelter. The bus set down and pick up area and rail platform shall also be at the same level and adjacent to each other.

Refer to CS3-DRG-361825 Bus/Rail Interchange - General Layout BR1 – Typical Integrated Bus/Rail Interchange Configuration.

7.2.2. Separate Bus/ Rail Interchange

Where site constraints/ conditions exist, the bus set down and pick up areas may be separated by distance or height from the rail platform. Refer to CS3-DRG-361825 Bus/Rail Interchange - General Layout BR2 – Typical Separate Bus/Rail Interchange Shelter Configuration.

7.3. Bus Stop Details

The number and length of bus stops required will be determined by the estimated patronage of the station and bus interchange. The set down and pick up area areas shall be parallel to the kerb. Indented bus bays shall not be installed.

The minimum distance between bus stops shall be 35 m measured from tactile to tactile.

7.4. Layover Areas

The layout of the bus layover shall be designed so that the buses travel in a clockwise direction.

7.5. Bus Lane Widths

A dedicated bus road shall be a minimum width of 7000 mm between kerb faces. A single bus lane, adjacent to other traffic lanes, shall be a minimum width of 3500 mm.

7.6. Pavement Design

Bus lanes shall be surfaced with either asphalt or concrete depending on the anticipated volume and traffic. The surface shall be chosen to provide the longest lifespan and least maintenance requirements.

Pavements for bus lanes shall be provided in accordance with Austroads Guide to Pavement Technology Part 2: Pavement Structural Design, RD-PV-D1 Pavement Design Austroads Supplement and DIT Master Specification Part D020 Design Roadworks.

7.7. Drainage

The drainage in the bus interchange areas shall be provided in accordance with AS 3500.3 Plumbing and Drainage – Stormwater Drainage.

7.8. Kerbing

The bus interchange shall be kerbed in accordance with CS1-DRG-361824 Kerb and Gutter Details.

7.9. Interchange Surface

The surface of the waiting (and boarding areas) for all bus interchanges shall be provided in accordance with AR-PW-PM-SPE-00129006 Pedestrian Access. For integrated bus/rail platforms the platforms shall have the same characteristics as the rail platform surfaces in accordance with AR-PW-PM-SPE-00129003 Platforms.

7.10. Kerb Ramps

As a minimum a kerb ramp shall provide access from at least one end of the bus waiting area.

Kerb ramps shall be provided in accordance with AR-PW-PM-SPE-00129006 Pedestrian Access.

7.11. Bus Interchange Shelter

For an integrated interchange the station shelter shall be extended from the rail side to incorporate the bus shelter and waiting areas. Refer to AR-PW-PM-SPE-00129005 Shelters for shelter requirements and design.

For separate interchanges, the style of shelter shall reflect the design of the nearby station and wider community. The proposed shelter design shall be in accordance with Crime Prevention Through Environmental Design (CPTED) principles to minimise risk of vandalism and other anti-social behaviours. All elements of the bus interchange shelter shall be designed to minimise vandalism and coated with an approved anti-graffiti coating.

All metal finishes shall have no sharp edges, be de-burred, smooth and shall provide a minimum radius of 3mm. Use of potentially reflective materials in areas that could cause glare for train drivers shall be avoided.

7.12. CCTV

CCTV coverage of bus interchange areas shall be provided as part of the overall station CCTV design in accordance with PI5-DOC-003517 Public Transport Infrastructure Security Systems – Engineering Specification.

7.13. Lighting

Lighting for bus interchange areas, shelters and access paths/ramps shall be provided in accordance with CS5-DOC-003511Electrical Infrastructure Engineering - Design.

7.14. Passenger Information Systems

Electronic passenger information systems at the bus stops may be used to display bus information.

7.15. Fencing

For details of usage and fencing types refer to AR-PW-PM-SPE-00129009 Fencing.

7.16. Tactile Ground Surface Indicators

TGSIs shall be provided in accordance with AR-PW-PM-SPE-00129006 Pedestrian Access.

Hazard and directional indicators shall be installed at bus stops in accordance with AS/NZS 1428.4.1 and CS3-DRG-361825 Bus/Rail Interchange – General Layout.

7.17. Allocated Spaces

Allocated spaces shall be provided under shelters in accordance with Disability Standards for Accessible Public Transport (DSAPT) and shall be located closest to the hazard and directional TGSIs.

At stations with integrated bus / rail interchanges, allocated spaces shall be provided adjacent to a seat in line with each bus stop. Refer AR-PW-PM-SPE-00129007 Furniture.

At stations with separate bus / rail interchange facilities, allocated spaces shall be provided underneath the bus shelter adjacent to the seating, in accordance with S7071, Sheet 23.

The allocated spaces shall have no pavement marking.

7.18. Waiting Rooms

Waiting rooms are not required at bus / rail interchange stations.

7.19. Signage and Pavement Marking

Signage and Pavement Marking shall be provided in accordance with AR-PW-PM-SPE-00129010 Signage and Pavement Marking.