

Master Specification

Part RD-PT-D1

Bus Infrastructure Design

September 2024



Government of South Australia
Department for Infrastructure
and Transport

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RD-PT-D1 Bus Infrastructure Design

1 General

- a) This Master Specification Part sets out the requirements for bus infrastructure including:
 - i) the requirements for bus stopping areas, as set out in section 2;
 - ii) the requirements for council, SAPTA and community liaison, as set out in section 3;
 - iii) the traffic management considerations, as set out in section 4;
 - iv) the passenger waiting area and infrastructure requirements, as set out in section 5;
 - v) the guidelines for indented bus bays, as set out in section 6; and
 - vi) the bus shelter and seating performance criteria, as set out in section 7.
- b) The Contractor must consult with and establish a co-operative relationship between the South Australian Public Transport Authority (SAPTA) and other contractors, and endeavour to provide best customer service for bus passengers and stakeholders in relation to bus infrastructure (including bus stop management).
- c) The design of bus infrastructure must comply with:
 - i) the Reference Documents, including:
 - A. AS 1742 Manual of uniform traffic control devices;
 - B. AS/NZS 2890 Parking facilities;
 - C. AS/NZS 1158 Lighting for roads and public spaces;
 - D. Department Operational Instruction 20.2 School Bus Stops on Rural Roads (available from: https://dit.sa.gov.au/standards/standards_and_guidelines);
 - E. South Australian Public Transport Authority Wayfinding Rulebook;
 - F. GD 800 Bus Shelters & Indented Bus Bays; and
 - G. Department Standard Drawings, including:
 - I. Department Standard Drawing 95271, sheets 1 to 4;
 - II. Department Standard Drawing S-7470;
 - III. Department Standard Drawing S-7471; and
 - IV. sketch number GD 801 "Bus Stop Pad Layout"; and
 - ii) all relevant Laws, including:
 - A. *Disability Discrimination Act 1992* (Cth);
 - B. *Disability Standards for Accessible Public Transport 2002* (Cth);
 - C. *Passenger Transport Act 1994* (SA); and
 - D. *Australian Road Rules* (SA).

2 Bus stopping areas

2.1 General

- a) The Contractor must consider the spacing, location and design of the bus stop including any provided passenger shelter to optimise the operational efficiency of not only the bus service but also that of the local road network within the immediate area.

- b) The Contractor must consider legal requirements, safety issues, kerb length and height requirements, bus stop spacing, residents', local government and transport planning desires and requirements in the selection of bus stop locations. The Contractor must take care in relation to placement of bus stopping areas and acknowledge that residents are particularly sensitive to the location of bus stops within their street.
- c) The Contractor must ensure that the best possible public transport service is provided in connection with a safe, effective and efficient location and erection of bus stops and passenger shelters.

2.2 Responsibility

- a) The Contractor must obtain all relevant Approvals from the South Australian Public Transport Authority (SAPTA) of the Department which has sole responsibility for establishment and relocation of bus stopping locations in South Australia, under the *Passenger Transport Act 1994 (SA)* and for the consultation process with any relevant road maintenance authority.
- b) Service contractors to SAPTA will be responsible for the erection of detour signage (outside of the City of Adelaide and interchange locations) where bus stops are not shared by other operators.

2.3 Bus stop styles

- a) The design of bus stops must be consistent with the SAPTA Wayfinding Rulebook.
- b) Bus stop signs must be set at a minimum of 2 m above the path of pedestrian travel.
- c) Bus stop poles must have a minimum of 30% luminance contrast with background.
- d) Bus stop signage is generally characterised by black lettering on a bright yellow background but other colours are also available (such as Go Zone and O-Bahn, Limited). This uniformity makes the bus stop signs easily identifiable.
- e) The Contractor must ensure that the bus stop signs as part of the Works and Temporary Works are uniform with existing bus stop signs for the existing Adelaide network to ensure that passengers can travel throughout Adelaide (refer to SAPTA Wayfinding Rulebook).

3 Council, SAPTA and community liaison

3.1 Bus stop responsibility

- a) SAPTA is generally responsible for the location, installation and maintenance of all bus stop poles and plates, as set out in section 5.1a).
- b) Councils are responsible for the footpath area of all public roads, including street furniture.

3.2 Council, SAPTA and community liaison process

- a) For the location or relocation (as applicable) of a bus stop (both of a temporary and permanent nature) the Contractor must facilitate discussion (at a minimum in accordance with the requirements set out in section 3.2c)) between authorised SAPTA representatives and council officers and obtain the Approval from SAPTA for each location prior to the relevant works commencing.
- b) Where bus stops are to be placed upon private land, the Contractor must comply with the Contract Documents, including obtaining written permission from the landowner and lessee.
- c) For the proposed bus stop location or relocation (as applicable), the Contractor must:
 - i) submit to SAPTA and the relevant council(s) the proposal;
 - ii) present to SAPTA and the relevant council(s) the proposal;

- iii) receive comments on the proposal from SAPTA and the relevant council(s) (allowing at least 14 days to receive comments);
- iv) where required, facilitate further discussions between SAPTA and the relevant council(s);
- v) receive an in-principal agreement from SAPTA and relevant council(s) to the proposal;
- vi) ensure that SAPTA and the relevant council(s) (as applicable) consults local residents and landowners of the proposal (for a minimum period of 14 days);
- vii) for bus zones that are located where there is likely to be a demand for cars parking too close to the bus stop (such as outside shops and schools), obtain the Approval from the relevant council(s);
- viii) obtain the Approval from SAPTA and council to the proposal; and
- ix) following obtaining the Approval from SAPTA and council to the proposal:
 - A. include the proposal in the relevant Design Documentation and Construction Documentation; and
 - B. arrange for SAPTA to commence rollout of the proposal.
- d) The length of the bus zone must be determined by the SAPTA and is based on the type and frequency of buses arriving at a particular location, and unless otherwise agreed by the SAPTA must be at a minimum 20 m on the approach and 10 m on the departure side in accordance with the *Australian Road Rules* (SA).
- e) The Contractor must facilitate discussion with SAPTA and where required by SAPTA include bus zone signage and broken yellow line markings.

3.3 Good neighbour considerations

The Contractor must ensure that all new and relocated bus stops forming part of the Works and Temporary Works are located:

- a) where practical, adjacent to side fences rather than property frontages, unless this will result in buses stopping immediately adjacent to house windows;
- b) away from house front doors and bedroom windows; and
- c) adjacent to property boundaries, where this can be accommodated in relation to other obstructions.

4 Traffic management considerations

4.1 Bus stops in general

- a) Subject to the requirements set out in section 3.2, bus stop locations must:
 - i) provide a balance between passenger walking, accessibility and average vehicle speeds;
 - ii) for standard services in populated areas be located on the basis of approximately 2 to 3 bus stops per kilometre or one, on average, every 400 to 500 m;
 - iii) be located, including varying the spacing, by consideration of locations of pedestrian access points, aged citizens' complexes, shopping centres and carriageway gradient, etc.; and
 - iv) be located between 300 to 400 m apart on hilly gradients (including uphill and downhill gradients).
- b) Unless otherwise specified in the Contract Documents, bus stops must be located on the departure side of side streets, and where not practical to locate on the departure side of side

streets located mid-block between side streets provided sufficient sight distance to allow exiting motorists to see on-coming traffic is available.

- c) Bus stops must be located where access can be obtained from the surrounding area by way of side streets, walkways and other potential pedestrian access points where possible.
- d) New developments must consider the interface between land use and public transport to maximise the level of service accessibility for residents.

4.2 Kerb length of bus stop

- a) Subject to the requirements set out in sections 3.2 and 4.2b), the following requirements apply to the kerb length of bus stop concrete pads (excluding approach and departure dimensions, which must be in accordance with sections 4.4 and 4.5) forming part of the Works and Temporary Works:
 - i) 18 m must be provided; or
 - ii) where 18 m cannot practicably be achieved, 12 m may be adopted.
- b) For busy stops, terminus points or where required by SAPTA, kerb lengths may need to cater for 2 or more buses.

4.3 Location of bus stop pole from kerb alignment

- a) The bus stop pole datum point (either a post, quad frame, totem, plinth or an electricity / light pole) must be located directly adjacent to the point at which the front of the bus is expected to stop.
- b) The bus stop pole must be placed 300 mm from back of kerb in metropolitan districts and 600mm from back of kerb in Adelaide City on the footpath in line with the front of the vehicle.
- c) Where there is an obstruction on the roadway (such as a parking space) forward of the bus stop the bus stop pole must be placed a minimum of 5 m back from that obstruction.
- d) For the purposes of this section 4.3, the dimension of the bus stop pole distance from behind the kerb must be measured from the back of the kerb alignment to the closest point of obstruction on the bus stop pole.

4.4 Vehicle pull in (approach) dimension

- a) The Contractor must ensure that the bus can pull in parallel to the kerb, with the first step of each door close enough to the kerb to enable a person with limited mobility to step directly between the first step and the footpath, including where an obstruction exists (such as a parked car) to the rear of the parked bus where the minimum distance from the closest obstruction to the rear of the parked bus must be, for:
 - i) an articulated or 14.5 m rigid vehicles, 17 m;
 - ii) rigid (11 to 12.5 m length) vehicles, 7 m; and
 - iii) smaller vehicles, where agreed by the SAPTA in accordance with section 3, may be less than 7 m.
- b) The Contractor must ensure the requirements of the *Disability Standards for Accessible Public Transport, 2002* (Cth) are met, such that a bus can park so a wheelchair ramp can be deployed to enable a standard mobility device to safely enter the bus.

4.5 Vehicle pull out (departure) dimension

The Contractor must ensure that the minimum distance from the front of the bus to the closest obstruction (such as a parked car) forward of the vehicle is 5 m (for all bus types) to allow sufficient space for the bus to pull out from the kerb.

4.6 Distance of bus stop prior to right turn movement

- a) The minimum distance of a bus stop from an intersection at which a bus is to make a right hand turn after departing the bus stop must be:
 - i) for local roads:
 - A. with a 50 km/h or less signposted speed: 30 m; or
 - B. with a 60 km/h signposted speed: 40 m; and
 - ii) for all other roads:
 - A. with single lanes: 150 m;
 - B. with 2 lanes: 200 m; or
 - C. with 3 lanes: 300 m.
- b) For the purposes of this section 4.6, the distance of bus stops from intersections or junctions must be measured from the bus stop pole to the approach kerb alignment for non-signalised intersections or junctions or to the stop line at signalised intersections or junctions.

4.7 Distance of bus stop prior to left turn movement

- a) The minimum distance of a bus stop from an un-signalised intersection or junction at which a bus is to make a left turn movement after departing the bus stop must be:
 - i) for roads with a 50 km/h or less signposted speed: 30 m; or
 - ii) for roads with a 60 km/h or greater signposted speed: 40 m.
- b) For the purposes of this section 4.7, the distance of bus stops from intersections or junctions must be measured from the bus stop pole to the centre point of the local residential connecting side road or street.
- c) Subject to achieving the requirements of section 4.7a), for buses only preceding straight ahead, a bus stop in the left lane prior to the location of the painted on-road left turn arrow is acceptable, as a bus leaving such a stop is merely changing lanes.

4.8 Distance of bus stop from side streets / roads

- a) Bus stops must be located:
 - i) on the departure side of un-signalised intersections with side streets and at least 28 m from the departure side of the kerb alignment;
 - ii) where they cannot practicably be located in accordance with section 4.8a)i), mid-block in accordance with this Master Specification Part, including section 4.13;
 - iii) where they cannot practicably be located in accordance with sections 4.8a)i) and 4.8a)ii), on the approach side of un-signalised side streets:
 - A. for roads with a 50 km/h or less signposted speed: at least 30 m from the side street; and
 - B. for roads with a 60 km/h or greater signposted speed: at least 40 m from the side street; and
 - iv) at a minimum 10 m from the side street.
- b) For the purposes of this section 4.8, the distance of bus stops from intersections or junctions must be measured from the bus stop pole to the approach kerb alignment of the local residential connecting side road or street.

4.9 Distance of bus stop prior to shopping centre entry and exit driveways

- a) Where bus stops are located near shopping centre entry and exit driveways, they must be located at least:
 - i) where no infrastructure is provided on the footpath (such as passenger shelters), 10 m past the departure kerb alignment of the driveway;
 - ii) where located on the departure side at least 28 m from the departure side of the kerb alignment; and
 - iii) where section 4.9a)i) does not apply:
 - A. for roads with a 50 km/h or less signposted speed, 40 m past the centre point of the driveway; and
 - B. for roads with a 60 km/h or greater signposted speed, 55 m past the centre point of the driveway.
- b) For the purposes of this section 4.9, the distance of bus stops from the shopping centre entry and exit driveways must be measured from either the front or rear of the bus (whichever is closer to the driveway) to the departure kerb alignment of the driveway.
- c) Where the requirements of section 4.9a) cannot be achieved then the requirements of section 4.8 may be applied for bus stops located near shopping centre entry and exit driveways.

4.10 Distance of bus stop from signalised intersections

- a) For tramway and railway crossing signals with painted stop bars, bus stops may be located a minimum 38 m from the approach painted stop bar to the front of the bus.
- b) Bus stops located near signalised intersections (excluding tramway and railway crossing signals) must be located:
 - i) either on the approach or departure side of the traffic signals;
 - ii) subject to section 4.10b)iii), between 150 m to 200 m, measured from either the front or rear of the bus (whichever results in the least distance) to the kerb alignment of the intersecting road (for the departure side) or painted stop bar (for the approach side);
 - iii) where indented bus bays are utilised and approved by SAPTA bus stops may be located up to 38 m from either the front or rear of the bus (whichever results in the least distance) to the kerb alignment of the intersecting road (for the departure side) or painted stop bar (for the approach side),
so that buses can pick up or set down passengers without being obstructed by a traffic queue.
- c) Bus stops must be located in such a way as to avoid accidents to passengers on the vehicle caused by the bus stopping suddenly at signals when passengers are waiting to alight, or rear-end collisions caused when motorists are not expecting a bus to stop again after moving through an intersection. This practice also avoids the queuing of vehicles across the intersection.

4.11 Distance of bus stop from signalised pedestrian crossings, pedestrian refuges and marked foot crossing

- a) Bus stops near signalised pedestrian crossings, pedestrian refuges and marked foot crossings must be located:
 - i) at least 28 m on the departure side of the crossing or refuge (as applicable); and
 - ii) where they cannot be practically located in accordance with section 4.11a)i), at least 30 m on the approach to the crossing or refuge (as applicable).
- b) For the purposes of this section 4.11, bus stops must be measured in accordance with the *Australian Road Rules 2019 (SA)*, treating the bus stop as a parked vehicle.

4.12 Buses stopping over driveways

- a) The Contractor must ensure that the location of bus doors is such that passengers can safely board and alight from the kerb, and not from a driveway or crossover.
- b) The Contractor must ensure that bus stops are located such that buses do not stop across or directly adjacent to driveways, access points and crossovers.
- c) Where bus stops cannot be practically located in accordance with section 4.12b) and subject to achieving the requirements of section 4.12a) bus stops may be located such that buses may stop across or directly adjacent to driveways, access points and crossovers.

4.13 Allowance for bus entry and exit doors

- a) Subject to section 4.13b) and obtaining the approval of SAPTA in accordance with section 3.2, the design of bus stops must allow free passage to all combinations of bus doors, including front, middle and rear doors (as applicable), which must be clear of adjacent street furniture, trees, posts, and as a minimum the following clear dimensions must be achieved:
 - i) for all front door combinations: 0.0 to 2.0 m from the front of the bus;
 - ii) for all rigid rear and articulated middle doors: 5.0 to 8.0 m from the front of the bus; and
 - iii) for all articulated rear doors: 12.0 to 14.0 m from the front of the bus.
- b) The dimensions may be varied from those in section 4.13a) for other smaller vehicles, which are not part of the standard Government fleet (including mini or midi vehicles) to allow free passage to all combinations of bus doors, including front, middle and rear doors (as applicable), which must be clear of adjacent street furniture, trees and posts.

4.14 Distance of obstructions from kerb line due to bus rear end swing

- a) The design of bus stops must allow a minimum of 1 m from the kerb alignment to all obstructions, including street furniture, trees, hydrants, mail boxes and frangible street lighting posts.
- b) Where the requirements in section 4.14a) cannot be practically achieved the minimum distance from the back of kerb alignment to all obstructions may be reduced to 700 mm.

4.15 Minimum width of platform area adjacent a bus stop

- a) Subject to section 4.15b), at least a width of 2.5 m of footpath or platform waiting area adjacent to a bus stop must be provided to safely allow pedestrians to pass waiting passengers and to allow the deployment of wheelchair ramps from public transport vehicles is required.
- b) Where bus stops require bus shelters that incorporate advertisement panels or where a large number of passengers (as determined by the SAPTA) regularly catch public transport services (such as bus interchanges), a combined platform waiting area footpath width of at least 4 m must be provided.

4.16 Manoeuvring areas and footpath widths

- a) A continuous accessible path of travel of at least 1800 mm must be provided.
- b) Where the requirements of section 4.16a) cannot be achieved, a continuous accessible path of travel of 1200 mm may be adopted subject to providing a passing area at least every 6 m for 2 m.
- c) The minimum required manoeuvring area at the bottom of a ramp from the bus is 2070 mm in the direction of travel x 1540 mm.

4.17 Minimum roadway widths

4.17.1 General

- a) In addition to the requirements of RD-GM-D1 "Road Design", as a minimum the roadway dimensions required for buses to safely traverse streets and roads must be in accordance with this section 4.17 and where in the vicinity of bus stops must be approved by SAPTA in accordance with section 3.2.
- b) The minimum road carriageway width dimensions detailed in this section 4.17 exclude solid centre medians and painted on-road bicycle lanes and in addition must allow for at least 2.5 m footpaths on both sides of the road.

4.17.2 Local roads (one lane in each direction)

For local roads with undivided two-way traffic, at least the following road carriageway widths must be adopted:

- a) 12 metres;
- b) 9 m where no car parking is located on one side of the road;
- c) 9 m where indented car parking bays are on one side of the road; and
- d) 7 m where either indented car parking bays or no car parking is permitted, on both sides of the road.

4.17.3 Collector and arterial roads

For collector and arterial roads, at least a 12 m carriageway width must be adopted.

4.17.4 Freight routes

For roads with freight routes at least a road carriageway width of 12 m must be adopted.

4.17.5 Through, left and right movements - no stopping

- a) For bus straight movements at intersections at least a 3.5 m lane width must be adopted unless it is not practically achievable where a 3.2 m lane width may be adopted.
- b) For bus right or left turn movements at intersections at least a 3.5 m lane width must be adopted unless it is not practically achievable where a 3.2 m lane width may be adopted.

4.17.6 Bus stopping - interchanges

- a) Where a central platform is located at a bus interchange, at least 2 lanes in one direction must be provided with at least a 7.5 m (one-way) carriageway width.
- b) Where the required carriageway width in accordance with section 4.17.6a) is not practically achievable a 7.0 m (one-way) carriageway width may be adopted.
- c) Where side platforms are located at a bus interchange, at least 4 lanes must be provided to allow dual directional flow with at least 15 m of carriageway width.
- d) Where side platform(s) are utilised at bus interchanges, side platform(s) must be provided on both sides of the carriageway.

4.17.7 Bus stopping - city streets and roads

- a) For Adelaide city at bus stop locations, at least 2 lanes in one direction must be provided with at least a 7.5 m (one-way) carriageway width.
- b) Where the required carriageway width in accordance with section 4.17.7a) is not practically achievable a 7.0 m (one-way) carriageway width may be adopted.

- c) Buses must be able to depart bus stops safely and manoeuvre around a stationary bus located directly in front without the need to cross over a dividing traffic lane with vehicles moving in the same direction or into the flow of oncoming vehicles travelling in the opposite direction.

4.18 Minimum roadway widths

- a) Subject to sections 4.17.5 and 4.18b), for all lanes where buses operate a lane width of at least 3.5 m must be adopted.
- b) Where the requirements of section 4.18a) cannot be achieved lane widths of at least 3.2 m may be adopted.

4.19 Bus stops on curved roadways

- a) Subject to sections 4.19b) and 4.19c), bus stops must not be located on sharp curves or bends, including on left curves on single lane carriageways where a bus operator cannot see traffic approaching from the rear.
- b) For dual lane carriageways where the bus does not need to re-enter the flow of traffic and subject to achieving at least a 100 m sight distance (in accordance with *Australian Road Rules 2019 (SA)*) bus stops may be located on left curves.
- c) Bus stops in non-built-up areas on right hand curves or bends may be adopted subject to achieving at least a 100 m sight distance.

4.20 Bus stops in hilly areas

- a) Unless otherwise approved by SAPTA in accordance with section 3.2, bus stops must not be located on steep hills (especially on the ascent of steep hills).
- b) In hilly areas the Contractor must locate bus stops on the top of a crest, at a location at which the rear of the stopped bus can be seen from an approaching vehicle with appropriate sight distance.

4.21 Bus stops in indented bus bays

- a) Subject to sections 4.21c) and 4.23, bus stops in indented bus bays must not be adopted.
- b) The SAPTA does not normally request or support the provision of indented bus bays due to the reduction in bus operational efficiency that results, unless the location is a time point, a layover location or there are safety concerns regarding queued traffic behind a stopped bus into an intersection.
- c) Where approved by SAPTA in accordance with section 3.2 and in accordance with the Department's road design standards and guidelines, including GD 800 Bus Shelters & Indented Bus Bays, bus stops in indented bus bays may be adopted.

4.22 Bus stops opposite each other

- a) Bus stops must not be located directly opposite each other on single carriage roadways unless approval is obtained by SAPTA in accordance with section 3.2 and the intention is to reduce traffic vehicle movements along this carriageway, which must be in accordance with the relevant local council and their requirements.
- b) Bus stops and indented bus bays must be offset to allow for the setup of safe pedestrian and passenger crossing points. This must provide all pedestrians and passengers with a crossing location between the rear end of opposing buses.
- c) The offset required in section 4.22b) must be at least a 5 m allowance between opposite rear ends of the buses. If opposing stop locations are contained in approved indented bus bays then the crossing point (such as a pedestrian refuge or no official crossing identifier) must be contained within the vehicles pull in (approach) dimension (reference section 4.4).

- d) Bus stops must not be located directly opposite each other on narrow local streets but may be off-set by a minimum distance of 5 m (either front of bus facing opposite front of bus or rear of bus to opposite rear of bus). The rear to rear placement must be adopted where possible.

4.23 Timepoint bus stops locations

Timepoint bus stops must:

- a) not cause undue traffic congestion;
- b) be located such that through traffic is not affected when a bus is stopped (for example through the use of indented or painted bays, or wide lanes);
- c) be located away from major intersections (at least 150 to 200 m) or where indented bus bays are utilised and approved by SAPTA timepoint bus stops may be located up to 38 m from either the front or rear of the bus (whichever results in the least distance) to the kerb alignment of the intersecting road (for the departure side) or painted stop bar (for the approach side);
- d) have at least a 18 m kerb length; and
- e) where used on both sides of the road, be staggered on either side of road.

5 Passenger waiting areas and infrastructure

5.1 Passenger shelter provision and ownership

- a) There are 4 approaches to passenger shelter ownership and maintenance:
 - i) council owned: public bus shelters owned and maintained by local government (council);
 - ii) commercial: public bus shelters owner and maintained by private advertising companies such as Adshel. The commercial organisation responsible for install, maintaining, replacing and removal of units at contract expiry. There are 2 current public bus shelter commercial contracts, one with local councils and another with the Department;
 - iii) council grant scheme: public bus shelters installed by council's with a prior Department grant program. The grant deed assigned day-to-day maintenance responsibility (including graffiti, litter, cleaning and minor repairs) to councils. The Department retained responsibility for ongoing major works (such as major tree damage, vehicle impact, or end of life replacement); and
 - iv) Department owned: public bus shelters installed and maintained by SAPTA (Asset Management Directorate), and are typically located within the Department's bus interchanges or adjacent purpose-built park and ride facilities.
- b) Historically the asset owners (as set out in section 5.1a)) have prescribed the style and type of public bus shelters installed.
- c) The majority of public bus shelters are installed on council footpaths. In accordance with Law, councils are responsible for, regardless of public bus shelter ownership, other non-operational elements of a bus passenger waiting area including footpath paving, ramps, tactiles and bins.

5.2 Criteria for installing new or replacement passenger shelters

- a) SAPTA is responsible for planning the South Australian metropolitan bus network and asset management of related bus infrastructure. SAPTA, in the absence of recurrent budgets for public bus shelters, must approve any proposal, by a project team, to install additional or replace existing public bus shelters.
- b) Before any additional or replacement public bus shelters are approved to be installed at least one of the following requirements must be met:

- i) an executed commercial agreement (such as the current Adshel model) with the third party fully responsible for all ongoing maintenance, replacement when due and removal at contract expiry;
 - ii) evidence of assurance of ownership and ongoing maintenance for any additional or replacement public bus shelters that will permanently transfer to local council as part of Handover;
 - iii) a formal agreement with a third party assigning ongoing maintenance and replacement responsibilities for the life of the asset; or
 - iv) SAPTA is provided a recurrent funding stream for SAPTA to maintain and replace the additional assets. SAPTA must be consulted and approve the funding stream to ensure sufficient allocation of funds.
- c) SAPTA's preferred approach for additional or replacement public bus shelters is detailed in section 5.2b)i) or section 5.2b)ii). A proposed public bus shelter must not be installed unless one of the criteria in accordance with this section 5.2 has been met and approval obtained.
- d) Approval must be obtained for the installation of additional or replacement passenger shelters in accordance with this Master Specification Part, including sections 1b), 3.1 and 3.2.

5.3 Passenger shelter criteria

- a) Subject to achieving the requirements set out in section 5.2, the requirements of this section 5.3 must be achieved prior to proposing a passenger shelter at a bus stop.
- b) Unless stated otherwise in the Contract Documents, or where otherwise approved by SAPTA, passenger shelters must be provided at new or replaced bus stops that serve 300 or more boarding and transferring passengers per week. Table RD-PT-D1 5-1 must be used to determine the combined effect of passenger numbers and service frequency.

Table RD-PT-D1 5-1 Passenger shelter priority based on passenger numbers and service frequency⁽²⁾

Number of passengers per week ⁽¹⁾	Average peak period frequency of services		
	Less than 4 per hr	5 to 11 per hr	More than 12 per hr
500 or more	1	1	1
400 to 499	2	2	3
350 to 399	2	3	4
300 to 349	3	3	4

Table notes:

(1) Where more than 50% of the average combined daily number of passengers are elderly or persons with disabilities then the number of passengers per week figures will be one-half of the values shown.

(2) The values 1 to 4 represent priorities, where 1 is high priority and 4 is low priority.

5.4 Design of passenger shelters

Passenger shelters must take into account the needs of people with disabilities. Unless otherwise approved by SAPTA, passenger shelters must provide weather protection for all passengers including wheelchair users and in accordance with section 7.

5.5 Positioning of passenger shelters

- a) Subject to section 5.5b), passenger shelters must be located in accordance with the following requirements:
 - i) between the front and centre doors of the parked bus;
 - ii) 7.5 m from the furthest end of the passenger shelter to the bus stop post;
 - iii) at least 1540 mm from the back of the roadside kerb; and

- iv) so that they do not cause sight distance issues for motorists, in accordance with the requirements of AS 1742.2 Manual of uniform traffic control devices, part 2: traffic control devices for general use.
- b) Where the requirements of section 5.5a) cannot be met due to an obstruction, the passenger shelter must be placed downstream of the bus stop where a setback of at least 1200 mm from the back of the roadside kerb can be achieved and DDA requirements for wheelchairs.
- c) Passenger shelters must be situated such that:
 - i) waiting passengers can see approaching buses, and the bus drivers can see waiting passengers;
 - ii) they are located at the back of footpath;
 - iii) subject to section 5.5c)iv), they face away from the prevailing south-westerly weather and towards the road; and
 - iv) they face away from the front windows of private houses where any front windows are visible from the street.

5.6 Height of overhead interchange roofing

- a) Subject to section 5.6b), overhead roofing of interchanges must:
 - i) be high enough to safely allow the passage of buses, including allowing for air conditioning units and up-right exhaust stacks; and
 - ii) have at least a ground to roof height clearance of 4.5 m.
- b) Where the requirements of section 5.6a) cannot be achieved and subject to the approval of SAPTA in accordance with section 3.2, a height of at least 3.6 m may be adopted from ground to roof height clearance of interchanges.

5.7 Height of bus

The design of the Works must ensure that the height of buses utilising the relevant carriageway is catered for, including as a minimum providing:

- a) for a double decker bus of 4.3 m in height; and
- b) for a regular bus of 3.4 m in height.

6 Guidelines for indented bus bays

- a) The design of indented bus bays must meet the requirements of GD 800 Bus Shelters & Indented Bus Bays.
- b) Where a bicycle lane is present or is planned to be installed on a roadway that accommodates a public transport bus then the public transport bus must be located on the edge of the outer bicycle lane line marking between the bicycle lane and the near side kerbside lane.

7 Bus shelter and seating performance criteria

7.1 Shelter and seating performance specifications

Passenger shelters must include:

- a) 0.5 m² space per standing passenger per shelter;
- b) shelter from inclement weather and sun for at least 6 seated passengers and 6 standing passengers at all stops on arterial roads;
- c) shelter for at least 4 seated passengers and 4 standing passengers at all stops on collector and local roads;

- d) shelter and shade from inclement weather and the sun of 800 mm x 1300 mm for a mobility device must be provided;
- e) a minimum of 2 allocated spaces or 5% of the area (whichever is greater) must be available for passengers with disabilities;
- f) lighting in accordance with AS 1428.2 Design for access and mobility, Part 2: enhanced and additional requirements - buildings and facilities, from sunset to midnight where there is no adjacent street lighting to be considered;
- g) walls which will allow waiting passengers surveillance of the surrounding area;
- h) walls which will allow waiting passengers and approaching bus drivers to observe each other;
- i) accessibility to the requirements of the *Disability Standards for Accessible Public Transport 2002* (Cth);
- j) access through the front and central doors on the kerb side of the bus for passengers who use mobility devices such as wheelchairs or walkers;
- k) information display units placed within the shelter to be visible and readable by either seated or standing passengers;
- l) a colour theme identifying with council needs;
- m) smooth surfaces;
- n) durable low maintenance, graffiti and vandal resistant materials; and
- o) rubbish bins, clocks, phones and help phones where required by SAPTA.

7.2 Shelter and seating placement specification

Passenger shelters must be:

- a) designed and installed in a manner which minimises the amount of street furniture;
 - b) highly visible during the day;
 - c) visible at night;
 - d) acceptable to local councils and their communities as having incorporated good urban design principles;
 - e) compliant with all necessary council planning requirements;
 - f) functional and present a desirable image for public transport; and
 - g) located within the standards and guidelines approved by the SAPTA of the existing or relocated (as applicable) bus stop posts.
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