Transport for NSW

Responses to post-hearing questions

Portfolio Committee No. 8 – Customer Service

Public toilets

Hearing date – 7 April 2025

QUESTIONS ON NOTICE

QUESTION 1. P37

The Hon. AILEEN MacDONALD: Do you collaborate with local councils and—we've just heard from another witness—Placemaking NSW or other agencies to support broader toilet access? I know you've just answered that question.

HAYDEN DONOGHUE: That's a good question. I might defer to Scott. In terms of more broadly around stations, I'd have to take that on notice.

ANSWER:

In relation to the Safe Accessible Transport Program, Transport for NSW engages with local councils, people with disability, disability peak bodies and other stakeholders on the design of accessible toilets. This includes family accessible and ambulant toilets for train station bathrooms, which are being replaced or upgraded as part of the Program.

Sydney Trains Customer Area Managers also collaborate with local councils in relation to public toilets that impact both Sydney Trains and the relevant local council. Sydney Trains has in place agreements with some local councils to clean their public toilets.

QUESTION 2. P38

The Hon. ANTHONY D'ADAM: Do you have any regulatory authority over service stations?

SCOTT GREENOW: No, Transport for NSW doesn't. With the highway service centres, there are some contractual agreements with the provision of their services, but not regulatory controls over the service stations themselves.

The Hon. ANTHONY D'ADAM: The siting of service stations, the number of service stations and the overall stewardship of the road network for users—Transport for NSW has no actual authority to regulate that or control, in some way, where and how many there are?

SCOTT GREENOW: I'm happy to take the question on notice. However, where any development like that interacts with the State road network, then Transport for NSW has some interactions with the development process and the approval process. However, the location or planning is less of a role for Transport and more the impact on the road network itself—accessing and addressing.

ANSWER:

Transport for NSW has control over the placement of Highway Service Centres when the Centre is located on Transport-owned land. Transport for NSW is also in the early stages of assessing the feasibility of future Highway Service Centre sites.

QUESTION 3. P38

The Hon. ANTHONY D'ADAM: Does Transport play a role, or is it playing a role, in the rollout and siting of recharging stations with a conversion to electric vehicles?

SCOTT GREENOW: I'll have to take the question on notice. Apologies. It's a part that is outside of my expertise. but there is certainly a view across governments of moving towards being able to provide access for charging infrastructure across the network in a way that allows the transition of industry from diesel-powered vehicles across to zero-emissions vehicles, and part of that is around the charging infrastructure across the network.

The Hon. ANTHONY D'ADAM: I suppose where I'm getting at is obviously if we're starting to think about a different form of service network for vehicles in our road system, perhaps this is an opportunity to start thinking about the support facilities that might be made available for drivers, particularly for those travelling distances. There may be an avenue there for some integrated planning between the need for toilets and, of course, the need for an expanded recharging system across the network.

ANSWER:

The NSW Government Electric Vehicle Strategy (2021) outlines the key actions undertaken to support the transition to electric vehicles (EVs). The lead NSW Government agency is the Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW), with Transport for NSW supporting activities such as industry partnerships such as with the NRMA to deliver EV charging throughout NSW Regional Fast Charger Program and EV charging in commuter car parks with Jolt Charge. Transport for NSW has worked closely with industry to identify optimal locations for these chargers.

NSW DCCEEW, as the lead agency for the Fast Charger, Kerbside and Destination programs, provide grant guidelines for their programs and consult with Transport for NSW as part of the development process. Part of the evaluation criteria for locations considers the amenities that are included in the design to enhance the consumer experience and ensure a safe consumer experience during all hours of operation.

Chargers may also be installed by the Australian Government, local councils or by independent charge point operators or businesses. Transport for NSW has published a signposting and line marking standard that outlines the minimum requirements and complementary services to be eligible for signposting on State roads. The standard identifies complementary services including 'public toilets nearby'.

Transport for NSW and NSW DCCEEW have also supported the Australian Government to develop 'Minimum Operating Standards' for publicly funded EV charging. These standards encourage consideration of sites that are near local amenities, shops, cafes, toilets, playgrounds and other facilities.

In relation to Highway Service Centres, for newer contracts, Transport for NSW will stipulate the need for electric charging stations and other fuel technologies. Any contracts for future Highway Service Centres on Transport for NSW land will also contain these requirements.

QUESTION 4. P38

The Hon. ANTHONY D'ADAM: I want to ask about station toilets, in terms of whether there's some benchmark standard in terms of hygiene that's applied. There seems to be very little in the way of specific guidance on how frequently toilets are cleaned, to what standard, and how frequently floors should be mopped, pans cleaned, seats wiped and stalls wiped down. I'm assuming that for those conditions where cleaning is contracted out, those things are specified in a cleaning contract. If you're delivering that service

internally, there must be some guidance. I just want to get a sense of how you arrive at the cleanliness standards that are being applied in station toilets.

HAYDEN DONOGHUE: Mr D'Adam, the standards have been built over a long period of time. Because we have the active measurement of our customer experience program, and also direct customer feedback with 131 500, Transport info or ministerials — a range of those things — we've adapted how we clean. My understanding — and I will double-check — is that we don't have a particular standard that we draw down from an Australian standard in terms of cleanliness. We base that upon customer feedback over a long period of time.

ANSWER:

Sydney Train's Customer Experience Management Program's '*Station Cleanliness Business Rules'* details train station cleanliness standards and an assessment program designed to support improving the delivery of services to customers. The toilet assessment rules are detailed in the document, as well as assessment scoring guidelines and example photos. Station cleaners are then expected to meet these standards of cleanliness.

Public toilet cleanliness is measured to the same cleaning standard for insourced and outsourced cleaning arrangements. Toilet cleanliness has the highest weighting when assessing overall station cleanliness, due to hygiene requirements and its potential to negatively impact the customer experience.

Train stations are also provided with cleaning duty sheets that provide guidance on the cleaning activities and frequency required. This varies between train stations and is dependent on the station size, customer volume and usage. It can also vary throughout the course of the day to align with demand and customer volume.

A deeper clean of the toilets occurs when patronage is low, for example during the early morning when train services are not running, or when the train station is shut, or when patronage data historically informs us that patronage is low.

QUESTION 5. P39

The Hon. ANTHONY D'ADAM: Can I ask about consumables? Is it a consistent standard across the network of soap, drying facilities and types of toilet paper? Are there different contingencies that need to be taken account of because of site-specific factors?

HAYDEN DONOGHUE: I'm happy to talk to a level of detail and, if it's not enough, I'll certainly get you some more information. We procure our cleaning products and also our soap and toilet paper centrally for the network. There might be some regional areas where we don't, but certainly from a metropolitan area where we use the bulk of those items, that's all procured centrally. It's a very strict regime of what sort of products can be used. For example, bleach products are prohibited in the cleaning process. While they might be fabulous in terms of getting things shiny and white, they're not good for the environment and they're also not good for people's health. So they're not used, for example.

ANSWER:

In relation to public toilets on the Sydney Trains network, the supply of consumables is consistent in so far as that Sydney Trains supply all in-house cleaning locations with consumables; however, there are certain factors that may change the type of items that may be provided, such as toilet paper dispenser and/or hand drying facilities.

Some public toilets at train stations may have electric hand dryers, where others (most of the stations) will have paper towels. Toilet paper receptacles and paper type can also

differ across stations to meet facility requirements, high cases of vandalism, or plumbing infrastructure.

In relation to relation to rest area public toilets, the majority of districts have in place contracted arrangements for the maintenance of the facilities. Contractors are required to supply the necessary toilet stocks for the sites, as well as cleaning products, mops and brooms. Some facilities are however resourced by Transport for NSW. In those circumstances, consumables such as toilet paper are procured centrally. Consumables are provided in response to the networks diverse needs based on usage, geography, age of the facilities and access.

While rest area toilets are built with generally vandal proof toilets, certain sites mat not be equipped with soap dispensers and/or soap tablets due to high rates of vandalism, theft of stock or for other reasons. Toilet roll holders may also be damaged or vandalised, or toilet paper stock can be stolen.

QUESTION 6. P39

The CHAIR: I might pick up on some of those lines of questioning, particularly the potential need for additional cleaning staff or an additional cleaning contract for out of hours. I imagine this is going to be taken on notice but do you have a sense of what that quantum would be across your Sydney suburban stations, if we were going to look at doing that?

HAYDEN DONOGHUE: I'd have to come back to you with detailed figures, but it would be a sizeable investment, particularly if we were to extend cleaning for the 11 hours at single-person stations. There would be quite a considerable cost in ensuring that that cleaning would be covered, particularly where there's only one or two toilets. The cleaning contractor or our own staff would be travelling to those locations to clean one, two, three or, at most, four toilets in the example I gave earlier where the Safe Accessible Transport program uplifts the capacity of toilets at those locations. I'd have to come back to you with detailed figures, Chair.

ANSWER:

Sydney Trains is currently investigating the different resourcing strategies and approaches required to extend cleaning arrangements at select stations. There would be a significant increase in operational expenditure to have all train station public toilets open 24 hours a day, 7 days a week.

QUESTION 7. P39

The CHAIR: You said that 99 per cent of your toilets have sanitary bins and sharps, and I'm really pleased to hear that's a majority. What are the barriers to that not being 100 per cent?

HAYDEN DONOGHUE: My understanding is the size of the cubicle itself. Some of our older bathrooms wouldn't meet current standards in terms of length, breadth, depth et cetera, and it is quite difficult to fit a bin in.

ANSWER:

All public toilets should have sharps containers and contain other hygiene requirements such as air fresheners. All female, all gender and accessible toilets should have sanitary

bins. In circumstances where a toilet cubicle is too small, which is not common and mainly the result of limited building space, a sanitary bin will be located nearby.

There may be circumstances where a sanitary bin and/or sharps containers are damaged through vandalism. This would then create a situation where these facilities are temporarily unavailable until they are replaced.

QUESTION 8. PP39-40

The CHAIR: My colleague Mr D'Adam asked a series of detailed questions about what guides your cleaning schedules and also the consumables that you're required to provide. Is there any kind of framework about design? If a new station is built or if a station is remodelled, how is the design of the toilets determined?

HAYDEN DONOGHUE: I'll talk high level, if that's okay, Chair. If any more detail is required, I will obtain that for you. First, we look at national standards, State standards and transport standards that cover the entire range of trying to ensuring that our toilets are fit for gender and fit for accessibility as well. There are a range of standards. Of course, each new set of toilets that is built or refurbished then meets the higher standard required. That's how we address that. In terms of the particular standards numbers, I would have to take that on notice.

The CHAIR: My follow-up question I imagine is about to get taken on notice. Are suburban train stations covered under the National Construction Code? Are those the requirements for toilets that you're talking about, or is there some kind of separate standard for design in a train station?

HAYDEN DONOGHUE: I'd have to take that on notice, Chair

ANSWER:

Sydney Train stations are subject to the Building Code of Australia (BCA) and the National Construction Code (NCC). Cleaning schedules and consumable supplies are based on customer patronage, demand usage, station operating hours and direct feedback from train station staff.

Sydney Trains also use insights regarding toilet designs from previous train station upgrades (e.g. sealed tiled floors to prevent stains, and anti-graffiti coating of walls depending on the demographics of the local area) to ensure a positive and safe customer experience.

QUESTION 9. P40

The CHAIR: I also want to ask Mr Greenow about the partnerships with the private providers for roadside stops. It's a very interesting precedent to hear about, because we've also had a number of suggestions about how government could engage with private providers in very different contexts, like shopping centres and other private facilities where there might not be space to build new public toilets. I'm interested in what that agreement covers and how long that has been in place.

SCOTT GREENOW: The agreements are primarily around highway service centres. The provision of rest areas focuses predominantly on the ability of heavy vehicle drivers to manage their fatigue as they move through the network. Services that typically would feature at a highway service centre that don't feature at other rest stops — in alignment with the Austroads Guides — are things like fuel, food and toilets. Often highway service centres will have meal rooms where drivers can access cooking facilities et cetera for their own use. They typically come with the ability for those operators, and as I said, usually fuel suppliers, to be able to have product services open to both heavy and light vehicles where there's a commercial outcome for them to be able to sell both fuel and food, and other services, for all of the passers-by. The provision, why Transport for NSW enters into those agreements, is to ensure there are adequate services for heavy vehicle drivers as well in those locations, given the complexity and difficulty of being able to park a heavy vehicle and find access to those services in local communities or in more remote, rural and regional areas.

The CHAIR: Is that an agreement at the time that a station is built, in terms of physical infrastructure? Or is this something like an ongoing contribution to the cost of running the centre?

SCOTT GREENOW: There can be multiple commercial approaches — and happy to take on notice to provide more detail if required. They usually revolve around a provision of access to land in the road corridor that Transport for NSW owns. That is then made available under a commercial agreement for the development of a highway service centre and operation of a highway service centre with some commercial arrangement between the operator and Transport for NSW.

ANSWER:

Highway Service Centres that are built on Transport for NSW-owned land have specific design requirements that the successful developer or operator is required to provide. This includes the design of the building, the services that are to be provided, the number of available parking spaces (heavy v light vehicles), the number of charging stations, and the applicable opening hours.

While Transport for NSW provides a lease over the land, the developer or operator bears responsibility for design and construction costs. Transport for NSW does however collect a percentage of revenue generated from the site. Maintenance costs are borne by the operator over the term of the lease. Buildings, and any other improvements are returned to Transport for NSW at the end of the lease.

QUESTION 10. P40

The CHAIR: It's not a road that I use frequently, because I live down in Albury-Wodonga, but we've received a number of complaints about the M1 particularly. Toilets along the M1 aren't at the standard that the community expects. Is that something that's already come across your desk?

SCOTT GREENOW: It hasn't been raised to me. It doesn't mean it hasn't been reported to the organisation, so I would have to take that on notice.

The CHAIR: I'm happy for you to take it on notice.

ANSWER:

Rest Areas along the M1 are cleaned three times a week by an independent contractor, with additional cleaning provided during busy periods such as school holidays and long weekends. Unfortunately, it is extremely difficult to control how the toilets are utilised between cleaning times.

Members of the public may report concerns related to rest areas to the Transport Management Centre (TMC) 24 hours/day, 7 days/week on 131 700. This allows for the matter to be brought to the attention of the area supervisor. In addition, there is signage in place which provides access to an automated text message service that alerts staff to issues that arise between cleaning times.

Transport for NSW carries out auditing of the cleaning contract on a regular basis to ensure the rest area is being cleaned and maintained to a satisfactory standard.

QUESTION 11. P40-41

The Hon. STEPHEN LAWRENCE: I have a couple of questions, but I note that I've had to rejoin the hearing not having heard any of the evidence to date. Please forgive and excuse me if the questions I ask have already been asked. In what circumstances does Transport provide traditional-style public toilets where customers are sharing a public space, maybe with a number of cubicles, as opposed to the more modern universal design of single-use cubicle accessible from public space? Have most of your facilities now moved to the latter or do you still provide some of the former? What's the policy position in respect of future construction?

SCOTT GREENOW: I might pass to my colleague in a moment in case he has something additional to add. Certainly from a rest stop point of view, I don't have the exact detail in front of me. I'm happy to provide it on notice. However, certainly my observation is that the commentary around the latter being the most predominant is the case. Primarily it's around single cubicles and, wherever possible, all-gender provision for toilets.

ANSWER:

Changes to an existing configuration only occurs when a major infrastructure program is undertaken (e.g. Safe Accessible Transport Program (formerly TAP).

Transport for NSW programs will otherwise upgrade toilet facilities in accordance with their '*System Requirement Specification'*, '*AMB Standard and Toilet Guideline*', '*AMB Standards TS 04951.2:10'*. In these Standards, the 'Functional Spaces Part 2: Stations Section 6.8.1 Customer toilets' states: "Customer toilets shall be secure, individual and self-contained in new stations".

The Standards also state "where an existing station has insufficient space to accommodate individual toilet facilities, combined facilities (that is, toilets with multiple partitions) may be provided."

Currently, there is a mixture of the older and newer configurations, with several large stations still having multiple bathroom partitions style due to heritage constraints.

In relation to rest area toilet facilities, Transport for NSW's process is to provide a mix of traditional and universal design public toilet facilities, depending on the specific location and needs of the customers.

In areas with high usage or where customers are sharing a public space, Transport for NSW may install traditional-style public toilet facilities with multiple cubicles. This allows for higher capacity and can be more suitable in certain environments. However, in many cases, Transport for NSW has been transitioning towards more modern universal design facilities. These single-use cubicles which are accessible directly from the public space offer greater privacy and accessibility. Transport for NSW aims to assess each location individually and provide the best solution.

In terms of the future construction of rest area toilets, Transport for NSW's process is to generally favour the universal design approach, as this offers benefits in terms of privacy, accessibility and flexibility. However, traditional multi-cubicle facilities may still be warranted in some high-use areas. The key is providing a mix of toilet designs to cater for diverse customer needs, while also considering factors like cost, maintenance and customer preferences. Transport for NSW continually reviews its processes to ensure public toilet facilities across the network meet the evolving requirements of customer.

QUESTION 12. P41

The Hon. STEPHEN LAWRENCE: In respect of your higher volume train stations, do you find that the former sometimes has to be done even in new constructions because of space constraints? Or do you generally find that, in new constructions, you can do the latter — the modern style — almost invariably?

HAYDEN DONOGHUE: The endeavour is for the latter. However, the latest build at Central, which was part of the north-south walk et cetera, did include the more traditional version of stalls inside a gender specific area, plus some gender-neutral stalls as well.

The Hon. STEPHEN LAWRENCE: Was that on account of space constraints because you're dealing with a limited space compared to a park or whatever?

HAYDEN DONOGHUE: I will confirm that for you. I'll take that on notice, but that's my understanding.

ANSWER:

As stated in the prior answer, there is a mixture of the older and newer public toilet configurations, with several heritage stations still having multiple toilet partitions instead of the newer configurations. This may be due to the original toilets being located within existing heritage buildings, or a limited ability to construct new bathroom buildings/facilities within the current building/space available.

QUESTION 13. P41

The Hon. STEPHEN LAWRENCE: When you have a male accessible single-use cubicle as compared to a female, how do they vary in terms of design? Are they basically the same or are there some differences? Obviously the ones with change facilities are different but, in terms of the standard male, standard female, are they the same or do they differ in some design respects?

HAYDEN DONOGHUE: I will have to take that on notice. My understanding is they are the same. There's a size specificity about it, whether it be a standard single or a larger single bathroom which, for example, could have a parent with a pram and room for luggage as well, for example, for people transferring through various train stations. There's a smaller single size and then a larger single size. But, to be more specific than that, I'll have to get you some information, if that's okay.

ANSWER:

Generally, accessible toilets are for any gender; however, ambulant toilets may be male or female specific. The requirements for Transport for NSW public toilets are set out in Transport for NSW AMD Standard TS 04951.2:1.0. The section titled *'Functional Spaces Part 2: Stations Appendix A Customer toilet spatial, fit out and fixtures requirement*s, indicates a uniform approach to accessible and ambulant bathrooms. As per the document, the provision of sanitary bins for female toilets is the only gender specific difference.

QUESTION 14. PP41-42

The Hon. STEPHEN LAWRENCE: Thank you. In terms of your provision of public toilets, does Transport operate on the basis of the national building code standards or do you have your own internal documents that guide in terms of provision and so forth and design?

HAYDEN DONOGHUE: I might just refer to Scott.

SCOTT GREENOW: There is a combination of — several standards apply for toilets. It goes through a hierarchy of approach: firstly, any legislative obligations, then there are Transport standards, the Australian standards, international standards and local or industry standards. The National Construction Code has effect through legislation, and contains mandatory requirements for the provision of sanitary fixtures — fixtures in numbers appropriate to building function or use. That is also an element. Transport has a toilet guideline document as well that helps — which I believe is made available by the then transport Minister for the inquiry, but happy to provide it again if need be.

The Hon. STEPHEN LAWRENCE: Are you able to provide the Committee with those guiding documents on notice?

SCOTT GREENOW: All of the guiding documents or the Transport toilet guideline?

The Hon. STEPHEN LAWRENCE: All of them that you think are feasible to provide, I think might be useful.

SCOTT GREENOW: Happy to take it on notice.

The CHAIR: I haven't got any more questions.

ANSWER:

Transport for NSW public toilets are installed in accordance with the Building Code of Australia (BCA), which is part of the National Construction Code (NCC), Disability Standards for Accessible Public Transport and applicable Australian Standards.

Specific requirements to comply with the BCA and NCC are covered in the Transport for NSW'S *Standard TS 04951.2:1.0 Functional Spaces Part 2: Stations* (Annexure A), and the *Toilet Guideline for Transport for NSW – Station New Builds and Major Upgrades* (Annexure B).

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Title: Safety amendments for station platforms – Amendment to TS 04951.2 *Functional Spaces – Part 2: Stations*, version 1.0

This technical direction is issued by the Asset Management Branch (AMB) as an update to TS 04951.2 *Functional Spaces – Part 2: Stations*, version 1.0.

The updates include amendments to provisions affecting passenger safety at station platforms.

1 Amendment to TS 04951.2

The following sections in TS 04951.2 are amended as follows:

Section 6.3.2 Configurations

In Section 6.3.2, delete all list items from and including list item 5 and replace with the following:

5. New platform surfaces shall have a levelled gradient in the direction of travel and provide a minimum crossfall of 1 in 100. The crossfall of new platform surfaces shall be graded away from the platform edges. The gradient shall enable for shedding of water and minimise the risk of wheelchairs and unattended loose items rolling towards the platform edge.
6. Resurfacing of existing station platform surfaces shall achieve crossfalls as follows for shedding of water:
    a. concrete surfaces – not be steeper than 1 in 40 and not be less than 1 in 100
    b. bitumen surfaces – not be steeper than 1 in 33 and not less than 1 in 80.
7. Resurfacing of existing station platform surfaces shall provide crossfalls graded away from the platform edges.

8. The platform surfaces shall comply with TS 04941 (T MU SS 90001 ST).
9. The platform surface shall not result in pooling or ponding of water.
10. Where an existing platform surface is graded towards the platform edge and is to be altered, for example by resurfacing, an assessment shall be undertaken to determine the risk of passengers or loose items unintentionally entering the track. The assessment shall take into account:
    a. pedestrian movements resulting from factors including but not limited to:
        - platform configuration
        - placement of FLRs
        - installed fixtures, furniture and equipment
        - avoidance of environmental effects such as rain, wind and sun exposure
        - attempted catching or collecting of items, such as rolling luggage, that have fallen onto the track
    b. the impact of wind on loose items.
11. The outcomes of the risk assessment shall be used to define measures necessary to reduce risk SFAIRP.
12. All platforms shall have a current risk assessment and appropriate risk reduction measures in place.

Section 6.8.12 Fixed location readers

Append the following to the end of Section 6.8.12:

The following additional requirements do not apply to metro stations.

The following requirements shall be achieved for FLRs:

a. The placement of FLRs shall take into account the risk of the following:
    1. wheelchair and unattended loose items rolling away while customers are occupied with tapping on or off
    2. reduced width of the path of travel due to queuing passengers backing up
    3. human factors, for example passengers being stationary when reading signage or choosing between multiple path of travel options.

    Note: Platform level FLRs located closest to the lift doors should have a dedicated pram parking spot that allows customers to momentarily park a pram while they tap on or off.

b. Where provided, pram parking spots shall:

   1. have signage installed in close proximity to inform customers of the risk of rolling away
   2. be graded, bunded or include a physical barrier to eliminate unintentional rolling towards the track.

Authorisation:

Approved by	Director Interchanges and Buildings Asset Management Safety, Environment and Regulation

TS 04951.2:1.0

ESB 003

Standard

Functional Spaces

Part 2: Stations

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1.0	31/08/2022	Supersedes ESB 003, v1.1. First issue as TS 04951.2. Version number recommenced in line with new designation.

Preface

This document supersedes ESB 003 *Station Functional Spaces*, version 1.1 and is a first issue as TS 04951.2 *Functional Spaces – Part 2: Stations*.

This standard forms part of TS 04951 series of standards related to functional spaces.

Stations are complex buildings with increased risks and constraints that may not be present in other buildings. Specific requirements are therefore necessary to ensure the safety, functionality and desired spatial quality of stations.

This standard sets the functional and spatial requirements for the design of new functional spaces and modifications to existing functional spaces in stations (metropolitan train stations, intercity train stations, regional train stations and metro stations).

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1 Scope

Functional spaces comprise the interior and exterior areas for facility access, pedestrian circulation, vehicular movement and spatial planning for buildings and structures.

This standard sets the requirements for functional spaces in stations (metropolitan train stations, intercity train stations, regional train stations and metro stations) in NSW. This standard facilitates a consistent approach to station environments to enhance customer experience and optimise construction, maintenance and whole of life costs.

This standard builds upon the principles in TS 04951.1.

This document covers the following in relation to functional spaces in stations:

- spatial requirements of station functional spaces
- materials and finishes
- temporary works
- lift collision protection and robustness
- access and maintenance
- design life.

This standard does not cover the following:

- building services and equipment (refer to the TS 04955 series of documents)
- civil engineering
- operational or information technology.

This standard should be read in conjunction with TS 04951.1.

2 Application

This standard applies to the whole-of-life of TfNSW architectural and structural assets in stations and interchanges in NSW. This document applies to TfNSW staff and TAOs involved in any asset life cycle stage relating to functional spaces.

This document provides high level requirements for metro stations. This standard is not the sole source of standards and technical requirements for metro stations. All sections except Sections 6.3.1, 6.3.2, 6.3.5, 6.3.6, 6.3.7, 6.3.9, 6.8.8, 6.10.11, 6.10.12 and 6.10.13 apply to metro stations. Refer to scope of works and technical criteria (SWTC) documents of the specific metro stations for detailed requirements.

Where inconsistencies occur between this standard and other TfNSW documents or legislation advice should be sought from AMB.

Where this standard specifies a higher level of compliance than required by legislation or other standards, the requirements of this standard take precedence.

Refer to TS 04951.1 for requirements related to new and existing sites.

3 Referenced documents

The following documents are cited in the text. For dated references, only the cited edition applies. For undated references, the latest edition of the referenced document applies.

International standards

ASTM–A480 *Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip*

BS 8102 *Protection of below ground structures against water ingress – Code of practice*

Australian standards

AS 1170 (all parts) *Structural design actions*

AS 1288 *Glass in buildings – Selection and installation*

AS 1428.1 *Design for access and mobility – Part 1:General requirements for access – New building work*

AS 1428.1:2001 *Design for access and mobility – Part 1:General requirements for access – New building work*

AS 1428.1:2021 *Design for access and mobility – Part 1:General requirements for access – New building work*

AS 1428.2 *Design for access and mobility – Part 2: Enhanced and additional requirements – Buildings and facilities*

AS 1428.2:1992 *Design for access and mobility – Part 2: Enhanced and additional requirements – Buildings and facilities*

AS 1428.4.1992 *Design for access and mobility – Part 4: Tactile ground surface indicators for the orientation of people with vision impairment*

AS 1720 (all parts) *Timber structures*

AS 1735.12:1999 *Lifts, escalators and moving walks – Part 12: Facilities for persons with disabilities*

AS 2047 *Windows and external glazed doors in buildings*

AS 2700:2011 *Colour standards for general purposes*

AS 2890.5:2020 *Parking facilities – Part 5: On-street parking*

AS 3610 *Formwork for concrete*

AS 3959 *Construction of buildings in bushfire-prone areas*

AS 4100 *Steel structures*

AS 4654.1 *Waterproofing membranes for exterior use – Above ground level– Part 1: Materials*

AS 4687 *Temporary fencing and hoardings*

AS 5100 (all parts) *Bridge design*

AS 5100.2:2017 *Bridge design – Part2: Design loads*

AS/NZS 1170 (all parts) *Structural design actions*

AS/NZS 1428.4.1:2009 *Design for access and mobility – Part 4.1: Means to assist orientation of people with vision impairment – Tactile ground surface indicators*

AS/NZS 1891 (all parts) *Industrial fall-arrest systems and devices*

AS/NZS 2890.6:2009 *Parking facilities – Part 6: Off-street parking for people with disabilities*

AS/NZS 3856.1:1998 *Hoists and ramps for people with disabilities – Vehicle mounted – Part 1: Product requirements*

HB 197 *An introductory guide to the slip resistance of pedestrian surface materials*

Transport for NSW standards

B220 *Protective Treatment of Bridge Steelwork*

ESC 210 *Track Geometry and Stability*

ESC 215 *Transit Space*

ESC 520 *Level Crossings*

T HR CI 12002 ST *Durability Requirements for Civil Infrastructure*

T HR CI 12020 ST *Underbridges*

T HR CI 12030 ST *Overbridges and Footbridges*

T HR CI 12065 ST *Station Platforms*

T HR CI 12090 ST *Airspace and External Developments*

T HR CI 12160 ST *Boundary Fences*

T HR EL 08001 ST *Safety Screens and Barriers for 1500 V OHW Equipment*

T HR SS 80001 ST *Infrastructure Lighting*

T HR SS 80003 ST *Infrastructure Emergency Lighting*

T HR SS 90002 ST *Barriers, Balustrades, Screens and Handrails*

TMC 511 *Boundary Fences*

T MU AM 01001 ST *Life Cycle Costing*

T MU EN 00003 GU *AEO Guide to Sustainability in Design*

T MU MD 21001 ST *Equipment Rooms and Cubicles for Programmable Electronic Systems*

T MU SS 80007 ST *Building Services for Commercial Tenancies in Public Transport Facilities*

T MU SS 90001 ST *Safe Pedestrian Surfaces*

T MU SS 90002 ST *Shelter at Railway Stations and Interchanges*

T MU SS 90007 ST *Bicycle Parking Facilities*

T MU SY 10001 ST *Public Transport Closed Circuit Television (CCTV) Functional Requirements Standard* (This document is not publicly available. To obtain access email standards@transport.nsw.gov.au)

T MU SY 20001 ST *Surface Transport Fixed Infrastructure Physical Security Standard* (This document is not publicly available. To obtain access email standards@transport.nsw.gov.au)

T MU TE 61005 ST *Customer Information Systems for Public Transport Buildings and Conveyances*

T MU TE 61006 ST *Help Points*

TS 00008.2 *Fire and Life Safety – Part 2: Stations*

TS 04951.1 *Functional Spaces – Part 1: Principles*

TS 04955.1 *Services, Systems and Equipment – Part 1: Principles*

TS 04955.2 *Services, Systems and Equipment – Part 2: Stations*

TS 04955.3 *Services, Systems and Equipment – Part 3: Lifts*

TS 04955.4 *Services, Systems and Equipment – Part 4: Escalators and Moving Walks*

Legislation

Disability (Access to Premises – Buildings) Standards 2010 (Cth)

Disability Discrimination Act 1992 (Cth)

Heritage Act 1977 (NSW)

State Environmental Planning Policy No 64 – Advertising and Signage (2001 EPI 199) (NSW)

Work Health and Safety Regulation 2017 (NSW)

Other referenced documents

American National Standards Institute (ANSI) NFPA 130 – *Standard for Fixed Guideway Transit and Passenger Rail Systems*

Australia-New Zealand Counter-Terrorism Committee, 2017, *Australia's Strategy for Protecting Crowded Places from Terrorism*

Australian Rail and Track Corporation (ARTC), *Section 170 Heritage and Conservation Register*

NSW Department of Planning and Environment, *NSW Guide to Activation – Public Spaces*

NSW Department of Planning, Industry and Environment, *NSW Public Spaces Charter – Ten principles for public space in NSW*

NSW Department of Planning, Industry and Environment, *NSW Smart Public Spaces Guide*

SafeWork NSW, 2019, *Code of Practice – Construction Work*

SafeWork NSW, 2019, *Code of Practice – Managing The Work Environment and Facilities*

Sydney Trains and NSW TrainLink, *Station Components Guide* (This document is not publicly available. To obtain access email standards@transport.nsw.gov.au)

The Australian Building Codes Board, *National Construction Code*

Transport Asset Holding Entity (TAHE), *Section 170 Heritage and Conservation Register*

Transport for NSW, *Around the Tracks – urban design for heavy and light rail*, December 2016 (This document is not publicly available. To obtain access email standards@transport.nsw.gov.au)

Transport for NSW, CP21001, *Providing for Walking and Cycling in Transport Projects P*olicy

Transport for NSW, *Creativity Guidelines – for transport systems,* December 2016 (This document is not publicly available. To obtain access email standards@transport.nsw.gov.au)

Transport for NSW, *Cycleway Design Toolbox – Designing for cycling and micromobility*

Transport for NSW, *Guide to operational and door signs – Stations and Interchanges* (This document is not publicly available. To obtain access email standards@transport.nsw.gov.au)

Transport for NSW, *Infrastructure Project Signage – Style Guide* (This document is not publicly available. To obtain access email standards@transport.nsw.gov.au)

Transport for NSW, *Toilet Guideline for Transport for NSW – Station New Builds and Major Upgrades* (This document is not publicly available. To obtain access email standards@transport.nsw.gov.au)

Transport for NSW, *Walking Space Guide – Towards Pedestrian Comfort and Safety*

Transport for NSW, *Wayfinding Kit of Parts – Metro, Train and Bus* (This document is not publicly available. To obtain access email standards@transport.nsw.gov.au)

Transport for NSW, *Wayfinding – Sign ID Placement Guide* (This document is not publicly available. To obtain access email standards@transport.nsw.gov.au)

Transport for NSW, *Wayfinding Planning Guide – Stations and Interchanges* (This document is not publicly available. To obtain access email standards@transport.nsw.gov.au)

Transport for NSW, *Wayfinding Planning Guide – Sydney Metro* (This document is not publicly available. To obtain access email standards@transport.nsw.gov.au)

Transport for NSW, *Wayfinding Planning Guide – Temporary Signs* (This document is not publicly available. To obtain access email standards@transport.nsw.gov.au)

Transport for NSW, *Station Wayfinding Product Catalogue* (This document is not publicly available. To obtain access email standards@transport.nsw.gov.au)

UGL Regional Linx (UGLRL), *Section 170 Heritage and Conservation Register*

Victorian Health and Human Services Building Authority, 2020, *Changing Places – design specifications*

WorkCover NSW, 1995, *Code of Practice – Overhead Protective Structures*

4 Terms, definitions and abbreviations

The following terms, definitions and abbreviations apply in this document.

access path a path that permits independent travel for all passengers within public transport premises, infrastructure or conveyances (Source: *Disability Standards for Accessible Public Transport 2002*)

AED automated external defibrillator

AMB Asset Management Branch

asset an item, thing or entity that has potential or actual value to an organisation

asset custodian the TfNSW Division accountable for the end to end lifecycle management and performance of assets (including asset condition, risk and reporting) on behalf of the asset owner to achieve agreed customer and community outcomes

asset steward the entity responsible for the management and performance of assets (including asset condition, risk and reporting) on behalf of the asset custodian for the required life cycle stage and duration of the partner relationship (for example, contracted operators and maintainers)

asset steward – delivery the entity responsible for:

- procurement of asset from investment decision to commissioning
- delivering the benefits

- translating requirements from the client and managing delivery outcomes
- selecting the most appropriate suppliers to meet project objectives

asset steward – operate or maintain the entity responsible for day to day operations and maintenance of the asset once commissioned. May be a part of the asset custodian division or a separate entity. Operator and maintainer of the assets might be separate entities.

ATM automatic teller machine

BAZ boarding assistance zone; the nominated location on a platform to provide for assisted boarding

CCTV closed circuit television

concourse the space within the station consisting of the transfer between paid and unpaid areas without a changing level

CPTED Crime Prevention Through Environmental Design

Crown certifier an appropriately competent person who:

a. acts on behalf of the Crown to confirm Building Code of Australia compliance of building works under Clause 6.28 of the Environmental Planning and Assessment Act 1979

b. has been endorsed (approved) by the TAO that holds authorisation to issue Crown Certificates.

DTS deemed to satisfy

DDA *Disability Discrimination Act 1992*

DSAPT *Disability Standards for Accessible Public Transport 2002*

EGRB emergency gate release button

equivalent access a process, often involving the provision of direct assistance, under which an operator or provider is permitted to vary the equipment or facilities that give access to a public transport service, so long as an equivalent standard of amenity, availability, comfort, convenience, dignity, price and safety is maintained. Equivalent access does not include a segregated or parallel service (Source: *Disability Standards for Accessible Public Transport 2002*)

FFL finished floor level

FLR fixed location reader

GAC gate attendant controller

gate array a gate array consists of a number of consoles assembled together boarded by end consoles

gateline a number of arrays may be logically connected together to form a single gateline

GRC glass reinforced concrete

initial design year year of starting normal operation after project completion

interchange a location where it is possible to change within a mode or between modes

intercity train stations stations servicing Blue Mountains Line, Central Coast and Newcastle Line, South Coast Line, Southern Highlands Line and Hunter Line

level access platform access category as defined in ESC 215

LoS level of service; as set out in Pedestrian planning and design by John J. Fruin

metropolitan rail area the area bounded by Newcastle Interchange (in the north), Richmond (in the northwest), Bowenfels (in the west), Macarthur (in the southwest) and Bomaderry (in the south), and all connection lines and sidings within these areas, but excluding private sidings.

metropolitan train stations stations servicing T1 to T9 lines

metro station a place to get on and off metro passenger services

NCC National Construction Code

OHW overhead wiring

overbridge footbridge, road overbridge and concourse structures that span over track

PA public address

paid area area within the station inside the barriers or the ticket control point

PE permanent effect

PID passenger information display

possession closure of one or more lines to allow work to be carried out in the Danger Zone using a Local Possession Authority (LPA) or a Track Occupancy Authority (TOA)

PSD platform screen door

public domain general publicly accessible areas around the station that are outside the site boundary

rail corridor means land –

a. that is owned, leased, managed or controlled by a public authority for the purpose of a railway or rail infrastructure facilities, or

b. that is zoned under an environmental planning instrument predominantly or solely for development for the purpose of a railway or rail infrastructure facilities, or

c. in respect of which the Minister has granted approval under Part 3A or Division 5.2 or (before its repeal) Division 4 of Part 5 of the Act, or consent under Part 4 of the Act, for carrying

out of development (or for a concept plan for a project comprising or including development for the purpose of a railway or rail infrastructure facilities.

RAM reliability, availability and maintainability

rail industry worker person accredited by Australasian Railway Association

regional train stations stations servicing North Coast, North Western, Western and Southern regions of NSW and to Brisbane, Canberra and Melbourne

running line those lines used for the through movement of rail traffic

S170 *Section 170 Heritage and Conservation Register*

SFAIRP so far as is reasonably practicable

SHR State Heritage Register

SSM self-service machine

standard access platform access category as defined in ESC 215

station includes train station and metro station

station precinct public area in front of station entries that are within the site boundary

TAO Technically Assured Organisation

TfNSW Transport for NSW

TGSI tactile ground surface indicators

train station a place to get on and off trains

ultimate design year year of the requirement for capacity to be safeguarded to allow for long term patronage growth

unpaid area area of a train station outside the barriers or ticket control point

WC water closet

wheelchair waiting space a three dimensional space that can accommodate a wheelchair or similar mobility aid (Source: *Disability Standards for Accessible Public Transport 2002*, modified from definition of allocated space)

5 Principles in the station environment

Sections 5.1 to 5.7 shall apply to all stations in addition to the requirements of TS 04951.1.

5.1 Safety

Station functional spaces shall take into account the safety implications specific to the operational station environment. Examples of safety implications include risks associated with

falls near platform edges and elevated areas, suction effects from rolling stock travelling past platforms, OHW protection and overcrowding during peak hours or special events.

Functional spaces that integrate with the station, for example as part of an integrated precinct or modal interchange, safety risks specific to the environment shall also be taken into account. Examples include conflicting traffic for pedestrians and cyclists and overcrowding of bus stop or taxi zone waiting area.

TAOs shall conduct risk assessments and provide control strategies to mitigate the risks SFAIRP.

5.2 Security

Station functional spaces shall take into account the security implications specific to the operational station environment. Examples of security implications include increased security risks in underpasses, underground stations, stations with low patronage, and risks from terrorism in stations with high patronage and are at key interchange nodes (such as stations that interchange between lines).

TAOs shall conduct risk assessments and provide control strategies to mitigate security risks SFAIRP.

Refer to T MU SY 10001 ST and T MU SY 20001 ST for security requirements.

Refer to *Australia's Strategy for Protecting Crowded Places from Terrorism* for additional information on protection strategies against terrorism in crowded environments.

5.3 Buildability

Buildability requirements shall be taken into account at each stage of the asset life cycle to improve the ease with which works can be delivered. Buildability requirements may vary greatly between new stations and upgrades to existing stations. The minimum set of buildability requirements to be taken into account by TAOs include constraints relating to the following:

- availability due to track possessions
- accessibility for machinery
- footprint of temporary works
- construction staging for existing stations.

During construction, TAOs shall minimise disruptions to station operations, existing facilities and neighbouring properties.

5.4 Maintenance and whole-of-life

Design and selection of materials in stations shall take into account the operational and maintenance requirements that are specific to a station. Examples of maintenance and whole of life considerations include limitation of equipment and panel sizes due to delivery route constraints and limitations of working near OHW.

See Section 7 for requirements related to materials and finishes.

See Section 11 for requirements related to design life.

Refer to T MU AM 01001 ST for life cycle costing requirements for whole-of-life management of assets.

5.5 Accessibility

The DSAPT and *Disability (Access to Premises – Buildings) Standards 2010* contain requirements that impact alteration works to existing stations and design of new stations and interchanges.

Where compliance with the DSAPT and *Disability (Access to Premises – Buildings) Standards 2010* during alterations to existing stations is not possible, for example due to heritage or topography issues, equivalent access shall be provided.

> Note: TfNSW and its agencies are unable to grant exemptions or variations to compliance with the DSAPT.

Concessions to AMB requirements that are above minimum DSAPT requirements, may be granted by the AMB, however they cannot be granted for items that contravene DSAPT requirements.

5.6 Heritage

Many stations have heritage value and are included in the State Heritage Register. Station heritage assets are identified in the State Heritage Inventory and in the following:

- *ARTC Section 170 Heritage and Conservation Register*
- *TAHE Section 170 Heritage and Conservation Register*
- *UGLRL Section 170 Heritage and Conservation Register.*

TAOs shall minimise the impact on items of recognised heritage value when making any modifications to buildings, for example, to comply with the DSAPT and *Disability (Access to Premises – Buildings) Standards 2010* requirements. Where competing interests from heritage requirements and other legislative requirements (such as DSAPT) arise, the TAOs should

develop a range of options, evaluate, and select the option that provides the best-balanced outcome.

5.7 Building services

Building services and infrastructure shall be provided in accordance with TS 04955.1 and TS 04955.2 to enable operation of customer facilities, services and equipment.

6 Space planning

6.1 Zone planning

Stations shall be zoned to define the functional characteristics of the internal and external station areas. The zoning shall be applied in accordance with *Wayfinding Planning Guide – Stations and Interchanges*.

Station zones consist of the following:

- Identification or approach – areas reserved for identification of the mode and station name. They are applicable both to customers arriving at the station from the surrounding precinct or arriving by train.
- Information – areas where customers need to plan their trip, find the right platform, see what time their service leaves, find information about connections to other forms of transport or destinations in the local precinct.
- Circulation – pinch points and other physically constrained areas that need to be kept clear so that customers can move comfortably and efficiently.
- Portal – critical decision points and portal areas, including station entries and exits and entries to stairs, ramps, corridors, escalators and lifts.
- Facilities or boarding – the facilities that customers need most often, including toilets, ticket machines and windows, customer service and locations for boarding areas.
- Waiting – spaces where customers can comfortably wait for their train, having already gathered the information they need for their journey.

  Note: The *Wayfinding Planning Guide – Stations and Interchanges* identifies the station zones using the following colour coding:

  - document: identification – orange zone
  - portal – red zone
  - information – blue zone
  - facilities – yellow zone

- circulation – purple zone
- waiting – green zone.

Figure 1 and Figure 2 show examples of zone planning of a station.

Figure 3 shows typical passenger circulation requirements.

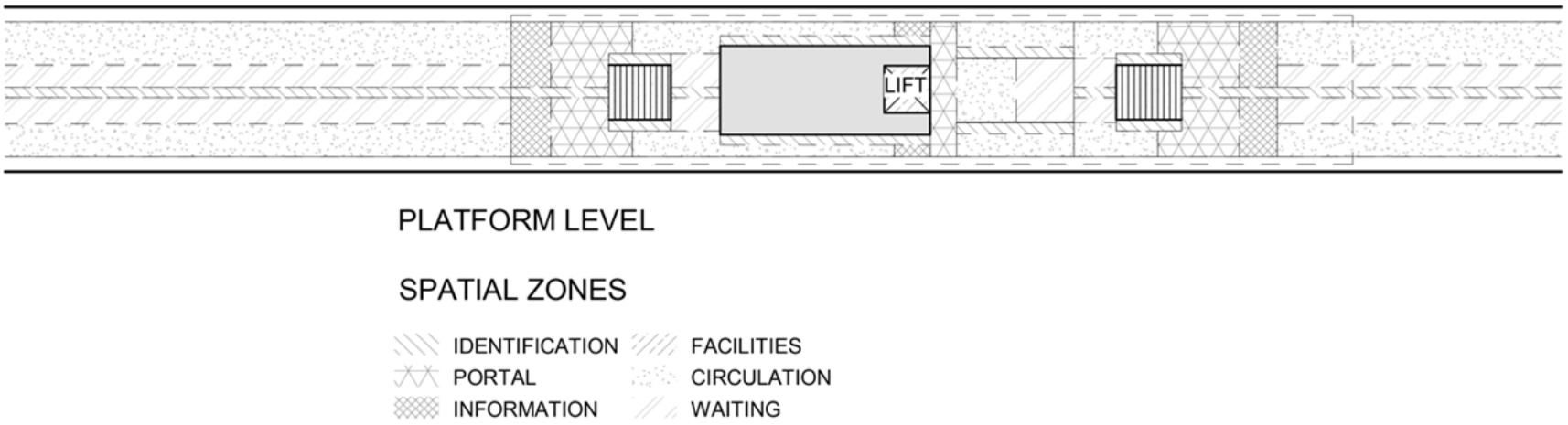

Figure 1– Example of zone planning of a station – platform level

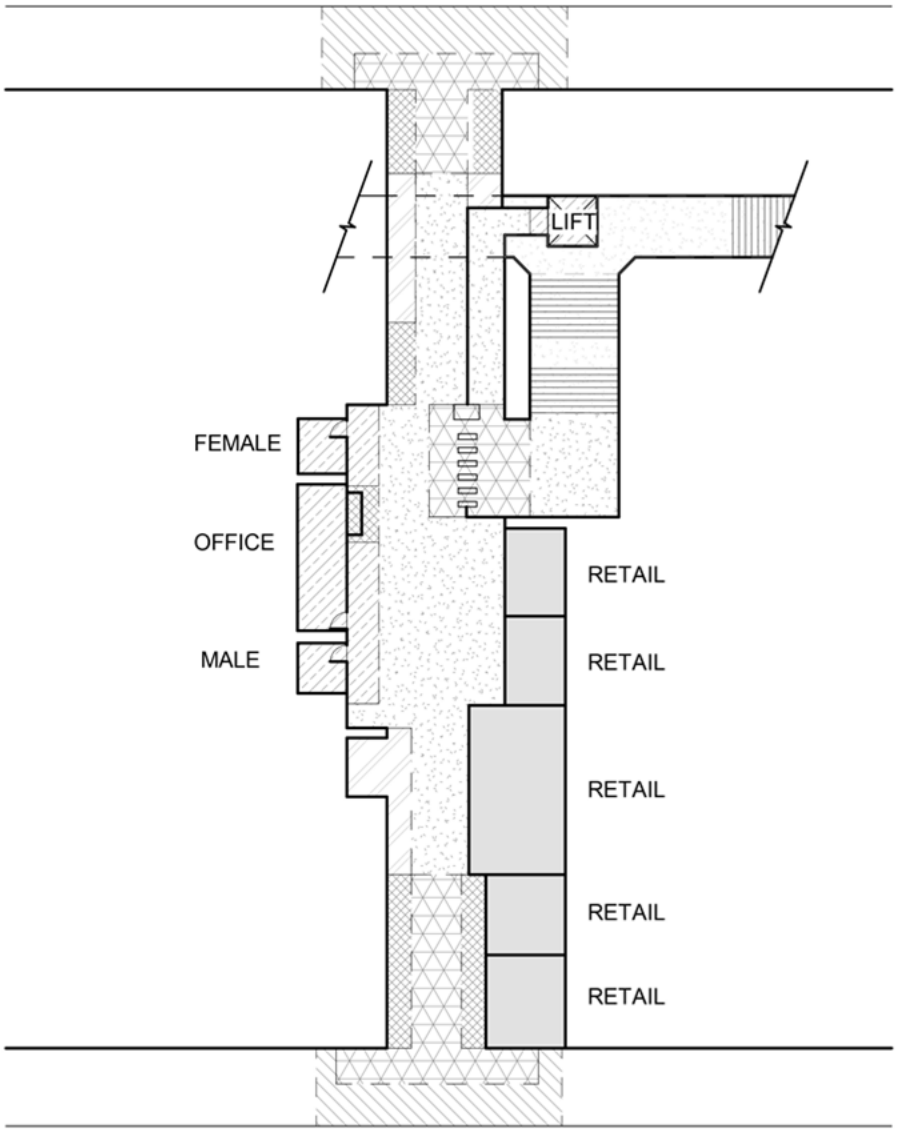

Figure 2– Example of zone planning of a station – concourse level

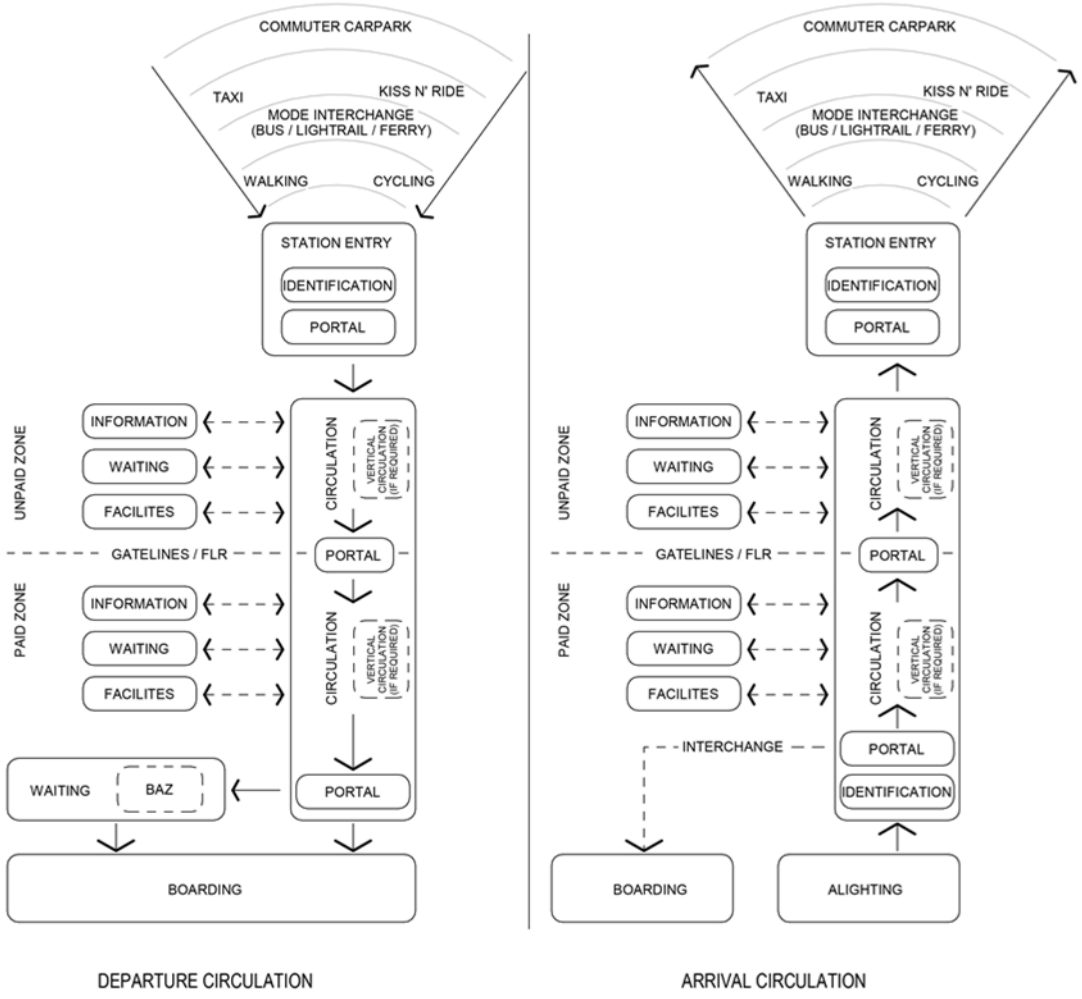

Figure 3 – Typical passenger circulation

6.2 Planning criteria and level of service

6.2.1 Patronage analysis and model selection

The following requirements shall be achieved for patronage analysis and model selection:

1. The need for patronage analysis or transport modelling shall be based on the scope of work, complexity of work involved, impact to existing station demand and availability of existing patronage data. The modelling method may be either static or dynamic. The modelling method shall ensure that it adequately answers the transport related questions specific to the stage of the asset life cycle.
2. Patronage analysis or transport modelling shall be conducted for all new stations and for the following changes to existing stations:
    a. Alteration of connectivity between stations and surrounding urban environments impacting on catchment zones and demands.

b. Alteration to inter-modal interchange activities.

c. Alteration of circulation structures within stations.

d. Addition, removal or modification of vertical transportation.

Where the type of analysis or modelling has not been determined the TAO shall consult and agree with the TfNSW analytics and modelling team on the type of analysis or modelling that is appropriate to the stage of the asset life cycle.

6.2.2 Level of service

The following LoS requirements shall be achieved:

1. Overall LoS C for all public circulation areas during the peak 15 minutes of the peak hours of the initial design year or ultimate design year (whichever is greater). Localised queuing LoS D is permitted on the approach to gatelines, escalators and stairs where LoS C cannot be achieved.
2. TAOs shall conduct resilience pedestrian modelling and demonstrate that a reasonable LoS can be maintained in reduced capacity or special events. Resilience pedestrian modelling shall comprise a combination of the following:

    a. delayed train condition

    b. failed vertical transportation

    c. failed gateline

    d. special event

    e. any other conditions specific to the site.

    Note: Where construction staging of an existing station is expected to significantly reduce the capacity of the station, the impact of construction staging to LoS should also be included into the scope of resilience modelling. LoS C should be maintained where practicable.

6.2.3 Ultimate design year

The determination of the ultimate design year shall be based on factors such as magnitude of investment, alignment with relevant strategic planning documents and future works (which may impact future demands).

For works involving upgrades to customer facilities, accessibility and interior finishes the ultimate design year shall take into account the design life of the asset, future works and implication of emerging technologies. Demand from long term patronage growth may be expected to be resolved through minor upgrades or emerging technologies once the ultimate design year has been reached.

For works involving construction or extension of new platforms, concourses, station entries and vertical transportation the determination of the ultimate design year shall take into account patronage demand from long term growth SFAIRP. Platforms, concourses, entries are typically constrained by track alignment, surrounding development and site boundaries. Additional spatial expansions typically involve high costs once the station has been constructed.

For projection of long-term growth of population, employment and workforce, deviations between the projected and actual outcome may be expected. Spatial configuration should provide for appropriate levels of buffer to safeguard the impact of potentially higher than projected long-term growth.

The station configuration, circulation and facilities shall accommodate the greater between the forecast initial design year patronage and forecast ultimate design year patronage to achieve the required level of service in accordance with Section 6.2.2.

6.2.4 Platform patronage and capacity

The following platform patronage and capacity requirements shall be achieved:

1. Platform clearance times shall be no more than the peak intervals of train arrivals from both directions based on signalling constrains. Platform clearance times of the initial design year or ultimate design year (whichever is greater) shall be not greater 150 seconds so that there is no queuing on the platform after that period.
2. Spacing shall not be less than 0.8 m^2 per person for peak service patronage. Standing space excludes areas between platform edges and the rear edges of the yellow line.

See Section 6.7 for egress requirements.

6.2.5 Flow rates

The flow rates shall be based on the following to determine the station capacity:

1. The capacity of public stairs for one-way flows shall be calculated based on 33 people per minute per metre width for regular access. The TAO shall make the determination of flow rates based on specific patterns of travel and incorporation of the impact of counterflows on capacity of the stairs for two-way flows.
2. The capacity of public ramps for one-way flows shall be calculated based on 37 people per minute per metre width for regular access. The TAO shall make the determination of flow rates based on specific patterns of travel and incorporation of the impact of counterflows on capacity of the ramps for two-way flows.
3. 1 m wide escalators based on 90 people per minute.
4. Ticket barriers or electronic gates based on 25 people per minute.
5. Wide access gates based on 7 people per minute.

6. FLRs based on 30 people per minute.
7. SSMs based on 1 person per minute.

6.2.6 Run-off and queuing zones

Escalators, lifts, stairways, gatelines and customer facilities generally require queuing or run-off zones to accommodate short durations of congestion from micro-peaking or degraded service events. The following requirements shall be achieved for run-off and queuing:

1. Run-off and queuing zones shall be determined by patronage analysis or pedestrian modelling.
2. Where escalators and gatelines are located in the same spatial zone of a station, pedestrian modelling shall be performed to ensure that there are adequate spatial allocations to avoid customer queuing backing onto escalators during normal operation and reduced capacity service.
3. Run-off or queuing zones shall not overlap with each other.
4. Queuing zones and the required circulation space shall not overlap with each other SFAIRP.

Where pedestrian modelling is not used due to the limited scope of works, then the requirements in Table 1 shall apply.

Table 1 – Run-off and queuing zone requirements

Component	Outer urban, suburban and community stations (see Section 12 for station classification)	City and major stations (see Section 12 for station classification)
Escalator run-off (measured from the last moving step)	Minimum 6 m	Minimum 6 m
Lift waiting zone	N/A	Minimum 1.5 x length of lift car (internal dimension)
Stair run-off	N/A	Minimum 1 x width of stair
Gateline run-off (measured from the centreline of gateline)	Minimum 6 m	Minimum 6 m

6.3 Platforms

6.3.1 Track geometry

Section 6.3.1 does not apply to metro stations.

The position of platforms in relation to adjacent rail tracks results in the following types of platforms:

- side platform (either bi-directional single track plus one-side platform, or two-side platforms serving two central tracks)
- island platform (single central platform serving two tracks)
- combinations of side and island platforms.

Refer to ESC 210 for design requirements of the alignment between track geometry and the platforms.

6.3.2 Configurations

Section 6.3.2 does not apply to metro stations.

The following requirements shall be achieved for platform configurations:

1. Platform lengths shall be in accordance with T HR CI 12065 ST.
2. The platform access category for station platforms of existing station shall be determined by taking into account the site-specific conditions. New stations located within the metropolitan rail area shall be constructed to provide a level access onto trains as defined in ESC 215.
3. Platform edges shall be straight for new stations.
4. The FFL of the edge of platforms shall be consistent for its entire length.
5. New platform surfaces shall have a levelled gradient in the direction of travel and provide a minimum crossfall of 1 in 100 for shedding of water. The crossfall of new platform surfaces shall be graded away from the platform edges.
6. Resurfacing of existing station platform surfaces shall achieve crossfalls as follows for shedding of water:
    a. concrete surfaces – not be steeper than 1 in 40 and not be less than 1 in 100
    b. bitumen surfaces – not be steeper than 1 in 33 and not less than 1 in 80.

    Note: Resurfacing of existing station platform surfaces should provide crossfalls graded away from the platform edges where practicable.
7. The platform surfaces shall comply with T MU SS 90001 ST.
8. The platform surface shall not result in pooling or ponding of water.

6.3.3 Platform gap

The following requirements shall be achieved for platform gap:

1. The TAO shall conduct risk assessments, consult and agree with TfNSW on the platform gap requirements and the best strategy for platform gap reduction in existing stations.

   Note: The horizontal gap measurements between the platform and train may be achieved by modifying the dimensions of the platform and/or providing a gap filler device that has been designed by the TAO and is endorsed by the asset steward – operate or maintain and type approved by AMB.

   For existing stations, the application of platform gap fillers is not for the purpose of achieving DDA compliance. Gap fillers improve the safety of customers and reduce the risk of falling through the gap between the train and platform edge.

2. The determination of the method of meeting the horizontal gap measurements shall be based on a whole of life value assessment (that is both financial and non-financial value) that is in favour of a particular method.

3. New stations shall achieve horizontal gaps of no more than 40 mm and vertical rises of no more than 12 mm between the platform and trains at the boarding point in accordance with clause 2.1.7 (f) and 2.1.8 (g) of AS/NZS 3856.1:1998.

Metro stations that are converted from a heavy rail station should achieve the horizontal and vertical platform gap measurements similar to new stations.

Platform gap dimensions shall take into account the interfaces with the transit space, rolling stock and rail track in accordance with ESC 215.

Platform gap filler devices shall be assessed for toxicity, flame spread, smoke density and peak heat release rate as part of the fire services design. Refer to TS 00008.2 for fire services design life requirements.

6.3.4 Platform screen doors

The following requirements shall be achieved for platform screen doors:

1. For new non-metro stations, the platform shall be constructed such that minimal civil and services infrastructure rework would be needed to support future installation of PSDs.

2. For new metro stations, the platform shall include PSDs.

6.3.5 Safety zones

Section 6.3.5 does not apply to metro stations and stations with PSDs.

A safety zone is the area between the platform edge and the general platform circulation area along the length of the platform and comprises the platform edge warning TGSI, yellow safety

line and the coping edge. Safety zones are designed to separate the platform circulation area and the platform edge and protect customers from falls at the platform edge and from moving trains. The yellow safety line serves as a highly visible platform safety management tool for customers to stand behind. People with vision impairment rely on the safety zone TGSI to identify the platform edge and where they need to stand before boarding a train.

The following requirements shall be achieved for safety zones:

1. Safety zones and access paths shall not overlap with each other.
2. Platform safety zones shall comprise the following parts and, in the order specified from the platform edge towards the platform:
    a. 750 mm – 800 mm wide platform coping zone
    b. 600 mm wide TGSI, consisting of 100 mm wide yellow safety line applied in warning TGSI, and 500 mm wide contrasting coloured TGSI. TGSI shall be consistent in type (except for the colour). See Section 7.2 for additional information.

Figure 4 shows the platform safety zone configuration.

Coping zone width of 800 mm is required for all new stations and existing stations with sufficient space. For existing stations where space is limited, the coping zone width may be reduced to not less than 750 mm to achieve the required access path.

The yellow safety line may be painted where the platform finish is non-asphalt. Where this is provided, TGSI shall be installed in accordance with the requirements of clause 6.7 of AS 1428.4:1992.

3. Platform coping zone shall be line marked in accordance with the requirements of boarding zone signs of *Wayfinding Planning Guide – Stations and Interchanges*.
4. Where platform coping zones are constructed with concrete coping edge, the concrete coping edge shall not be less than 450 mm wide. Provision of white platform coping surface shall be limited to the sections of surfaces that are not asphalt or bitumen.
5. Safety zones shall extend for the entire length of platforms.
6. The yellow safety lines shall be coloured Y15 sunflower in accordance with AS 2700:2011 or equivalent. Yellow safety lines are not required at the ends of platforms.
7. Service pit lids on platform surfaces shall be located away from the safety zone to allow for the provision of continuous and uninterrupted TGSI placement along the length of platforms. Pit lids located within tactile bands shall have TGSI installed.

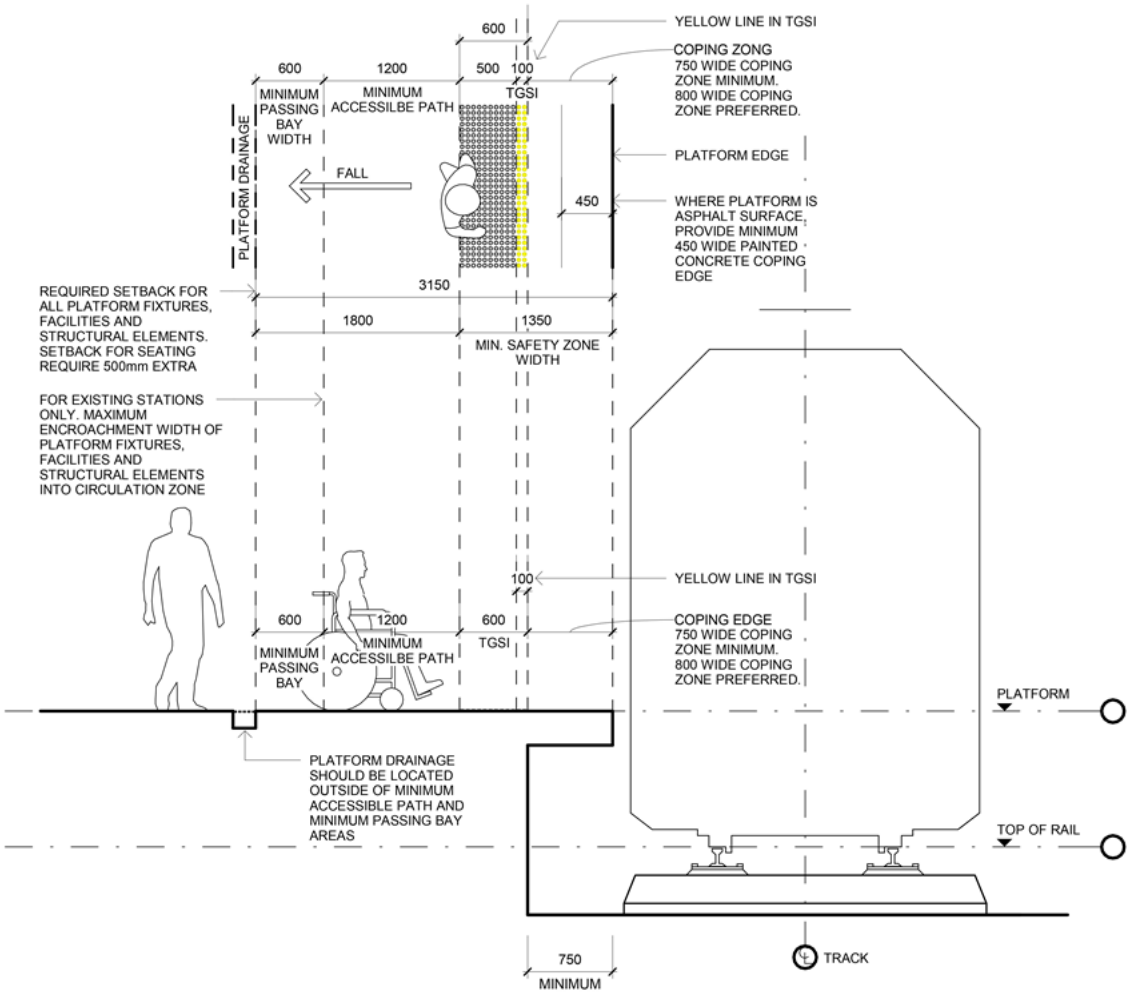

Figure 4 – Platform circulation requirements

6.3.6 Boarding assistance

Section 6.3.6 does not apply to metro stations.

The following requirements shall be achieved for boarding assistance:

1. Each platform shall have one BAZ.
2. The location of each BAZ shall be determined by taking into account the following:
    a. proximity to train guard access
    b. proximity to the door openings to trains at the platform or car markers
    c. travel distance between location of access to the platform and the BAZ for people with disability
    d. weather protection.

3. A BAZ shall have at least one wheelchair waiting space for wheelchair or similar mobility aid. Each wheelchair waiting space shall be located within a space allowing for a 180 degrees wheelchair turn in accordance with AS 1428.1.
4. The wheelchair waiting space shall not intrude into the platform safety zone.
5. The wheelchair waiting space shall not intrude into the accessible path except in the following circumstances:
    a. Existing platform widths cannot accommodate the wheelchair waiting space
    b. Existing platform widths is limited by station heritage elements.

Figure 5 shows a typical layout of wheelchair waiting space.

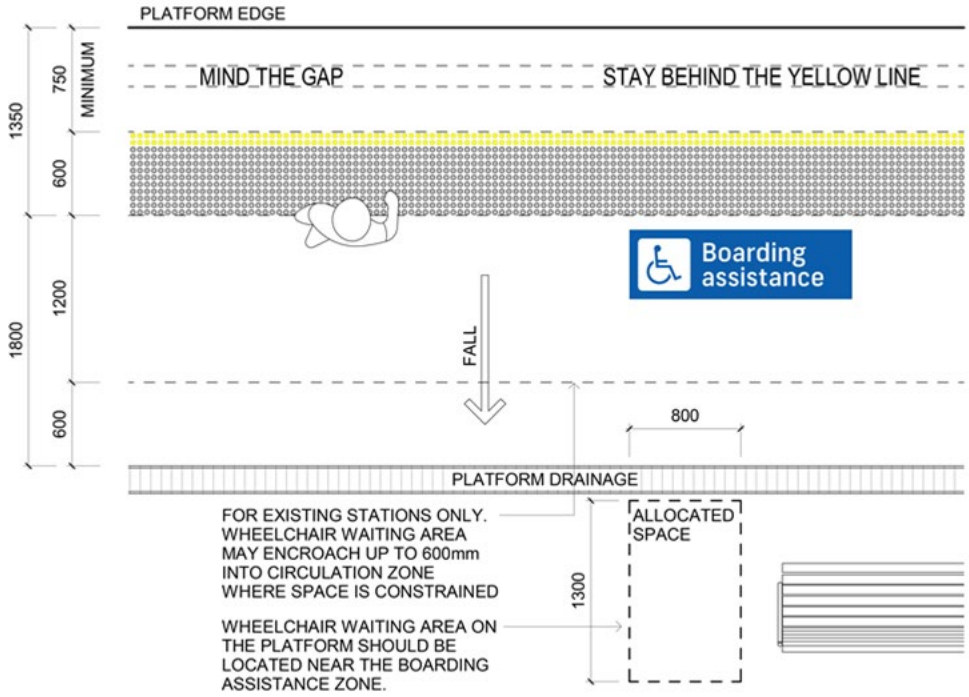

Figure 5 – Example of wheelchair waiting space near BAZ

6. A BAZ shall be provided with the following customer facilities:
    a. at least two seats identified as available for people with disability that comply with clause 27.2 of AS 1428.2:1992
    b. where PIDs are used for the station, a PID shall be located along the path of travel between the station entries to the BAZ, or near the BAZ
    c. BAZ line markings shall be in accordance with the dimensions specified in *Wayfinding Planning Guide – Stations and Interchanges*
    d. Weather protection (as specified in T MU SS 90002 ST) for BAZs shall be provided if weather protection is provided for other general waiting areas on the platform.

6.3.7 Boarding ramps

Section 6.3.7 does not apply to metro stations.

Boarding ramps shall be provided to enable customers to board and alight trains where the dimensional requirements of Section 6.3.3 list item 3, cannot be achieved. Space in front of the boarding ramps shall meet the following requirements:

1. The platform shall include sufficient space to facilitate deployment of a boarding ramp of not less than 800 mm wide.
2. The platform shall include sufficient manoeuvring space for wheelchairs or similar mobility aids to access the train using a boarding ramp. The area in front of the boarding ramp shall ensure compliant wheelchair turning space in accordance with AS 1428.1.
3. The slope of an external boarding ramp shall not exceed:
    a. 1 in 14 for unassisted access (clause 2.1.8 (e) of AS/NZS 3856.1:1998)
    b. 1 in 8 for unassisted access where the ramp length is less than 1520 mm (clause 8.4.2 (a) of AS 1428.2:1992 and figure 8 in AS 1428.1:2001).

Location of the boarding ramp cabinets are station specific. TAOs shall consult and agree with the asset steward – operate or maintain in determining the location of boarding ramp cabinets.

Boarding ramp cabinets should be located on the platform and positioned near the BAZ.

The boarding ramp cabinet door should not open into the accessible path.

6.3.8 General circulation areas

The following requirements shall be achieved for platform circulation:

1. Platform configurations shall provide good sightlines, open and spacious circulation and waiting areas for customers.
2. Platform fixtures shall be located in a neat and orderly manner. Equipment, components and signage shall not obstruct pedestrian movement or sightlines along platforms.
3. Customer information and facilities shall be clustered and logically located in accordance with wayfinding principles.

6.3.9 Platform end barriers and gates

Section 6.3.9 does not apply to metro stations.

Platform ends are provided with barriers to delineate the end of customer circulation areas and to prevent unauthorised access to train tracks and the rail corridor.

The following requirements shall be achieved for platform end barriers and gates:

1. balustrades and handrails shall be coordinated and be consistent with the architectural expression of the station
2. barriers shall be 1200 mm high
3. maintenance access gates shall be not less than 600 mm wide.

Where end of platform barriers is not present, TGSI shall be provided in accordance with the requirements of clause 6.7 of AS 1428.4:1992.

Refer to *Wayfinding Planning Guide – Stations and Interchanges* for signage requirements.

6.4 Concourses

The following shall be achieved for concourses:

1. provide an open and spacious environment with clear sightlines and logical progression to platforms and customer facilities for customers entering and exiting the station
2. accommodate appropriate run-off and queuing zones that does not impede customer circulation flows or spaces
3. provide gathering spaces for orientation and decision making that is out of the main customer circulation flows
4. avoid areas of concealment to comply with CPTED principles; refer to T MU SY 20001 ST for additional information on CPTED principles
5. provide delineation of paid and unpaid areas through a combination of gatelines, FLRs, barriers, paving or other architectural expressions.

   Note: Concourses may not be present or required in stations with a low patronage. Where a concourse is not present, the requirements related to concourses in this section should be adopted at the platform, station precinct or other respective station areas which accommodates the functions of a concourse.

6.5 Access paths

An access path allows unhindered passage to all customer areas, along platforms, walkways, ramps or landings. The following requirements shall be achieved for access paths:

1. Continuous accessibility in accordance with clause 7 of AS 1428.2:1992.
2. The minimum unobstructed width of a doorway in public areas shall not be less than 850 mm to allow for wheelchairs or similar mobility aids. Refer to relevant exemptions under the *Disability (Access to Premises – Buildings) Standards 2010*

3. The width of an access path shall not be less than 1200 mm and not overlap with the platform safety zone.
4. The crossfall of access paths shall not be steeper than 1 in 40. Asphalt and bitumen surfaces, or the like, shall have a crossfall not steeper than 1 in 33. The crossfall of access paths shall have a levelled finish so as not to allow water to pond.
5. Where an access path includes a ramp (including a kerb ramp or step ramp) on, or adjacent to a platform, it shall not discharge towards the direction of platform track side edges to mitigate the risk of customers falling down a ramp and onto the railway tracks.
6. New and upgraded building work shall provide passing spaces in accordance with clause 6.5 of AS 1428.2:1992.
7. Poles, columns, stanchions, bollards, fixtures and the like shall not encroach on access paths.

Where it is cost prohibitive to relocate elements on the platform to achieve the required clear width of access paths, the access paths may overlap with the TGSIs of the safety zone. Where this is proposed, the TAO shall obtain approval from the TAO DDA compliance service provider and provide notification to AMB.

6.6 Vertical circulation

The following requirements shall be achieved for vertical circulation:

1. The provision of vertical transportation shall be determined using pedestrian and traffic static analytical and simulation modelling tools for new stations.
2. The placement of vertical transportation shall meet the following requirements for new stations:
    a. be optimally located to facilitate safe, convenient access and minimise walking distances
    b. provide even distribution of passengers along the platform, where practicable
    c. provide safe emergency egress.

    Note: Existing stations should meet the above requirements SFAIRP.
3. Stairs and escalators shall not be the sole means of access.

    Note: Stairs are acceptable as an additional route on an access path.

Additionally, the following guidance applies to the selection of the type of vertical transportation for new and existing stations:

- Vertical circulation should contribute positively to an easy customer journey experience. Where the change in level is significant, provision of walkways, lifts and escalators should be prioritised over stairways and ramps along the main circulation routes.
- Consideration of continuous availability of access should be given to the selection of the type of vertical transportation. Walkways, ramps and stairs are continuously available and are not subject to mechanical failures, while lifts and escalators provide customers with better comfort and reduce fatigue.
- Where there is a change in level of less than 1 m, walkways, ramps and stairways should be used.
- Where there is a change in level of more than 1 m but less than 2 m, ramps and stairways should be used.
- Where there is a change in level of more than 2 m, a combination of stairs and lifts should be used.

  Note: See Section 6.6.3 for requirements for provision of lifts.
- Where the change in level is more than 5.4 m or where the passenger capacity cannot be satisfactorily accommodated by stairways, lifts and ramps, escalators should be considered in place of stairways.
- Where only one lift is provided for access paths between a changing level, higher RAM performance should be investigated and where practicable incorporated.

Refer to T MU SY 20001 ST for physical security requirements at and around vertical transportation in Sections 6.6.1 to 6.6.4 of this standard.

6.6.1 Public stairways

The following requirements shall be achieved for public stairways:

1. Stairways shall be safe for regular use and emergency egress.
2. Stairway clear width shall comply the following:
   a. asset fire life safety strategy for specific site, or in accordance with the DTS provisions of NCC, where asset fire life safety strategy does not exist
   b. each stair shall be not less than 1800 mm; this may be achieved accumulatively where there are intermediate hand rails
   c. be sufficient to move a stretcher of 2000 mm long and 600 mm wide
   d. comply with egress requirements of TS 00008.2.

3. The length of any stair mid-landings shall not be less than 1500 mm.
4. The configuration of steps on stairs shall comply with clause 13.2 and clause 13.3 of AS 1428.2:1992.
5. Stairways shall not discharge towards the direction of platform track side edges to mitigate the risk of customers falling down a stairway and onto the railway tracks.
6. The landing at the top and bottom of the stairs shall have a setback of not less than 900 mm from any cross circulation
7. Design configuration of the underside of the stairways shall prevent customers and staff from unintentionally accessing areas where the head height is less than 2.0 m.
8. Stair goings and risers shall be constant throughout. The dimensions of goings and risers are considered constant if the variation between adjacent risers, or between adjacent goings is not greater than 5 mm; the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm.
9. The strip of contrasting colour stair nosing profile shall be made of durable nonslip single piece element adhesively and mechanically fixed to the stairs. The strip of contrasting colour shall not be painted, applied with anti-slip tape or have any exposed aluminium edges.
10. Abutment of surfaces created by stair treads fitted with stair nosing strips shall meet the requirements of clause 7.2 of AS 1428.1:2009.
11. Where weather protection is provided for stairways, it shall comply with T MU SS 90001 ST.

See Section 7.1 for floor finishes requirements.

Refer to Part D3.3 and Part H2.7 of *Disability (Access to Premises – Buildings) Standards 2010* for accessible stairway requirements. Where a conflict between the requirements of Part D3.3 and Part H2.7 is evident for the same application, the requirements of Part H2.7 shall take precedence.

6.6.2 Public ramps and walkways

The following requirements shall be achieved for public ramps and walkways:

1. Ramps and walkways shall be safe for regular use and emergency egress.
2. Ramps and walkways shall have clear widths that:
    a. comply with the asset fire life safety strategy of specific site, or in accordance with the DTS provisions of the NCC where asset fire life safety strategy does not exist
    b. are not less than 1200 mm wide where ramps are used for regular access

    Note: Where practicable, ramps and walkways should not be less than 1800 mm wide.

c. are sufficient to move a stretcher that is 2000 mm long and 600 mm wide

d. comply with egress requirements in TS 00008.2

3. Ramps (including a kerb and step) and walkways on or adjacent to a platform shall not discharge towards the direction of platform track side edges to mitigate the risk of customers falling down a ramp and onto the railway tracks.

4. The landing at the top and bottom of the ramps shall have a setback of not less than 900 mm from any cross circulation.

5. The design configuration of the underside of ramps and walkways shall prevent customers and staff from unintentionally accessing areas where the head height is less than 2.0 m.

6. Where weather protection is provided for ramps and walkways, it shall comply with T MU SS 90001 ST.

See Section 7.1 for floor finishes requirements.

6.6.3 Passenger lifts

The following requirements shall be achieved for passenger lifts:

1. Lifts shall be provided where the change in level is greater than 2.0 m.

2. Lift capacity and size shall meet the following minimum requirements:

   a. not less than 1275 kg, 17 persons

   b. have internal dimensions suitable to accommodate wheelchair accessibility and stretcher access in accordance with AS 1735.12

   c. have internal dimensions suitable to accommodate elevated work platforms deemed suitable for the maintenance of the station

3. Lift cars shall have the maximum possible visibility to enable passive surveillance without compromising security.

4. The configuration of lift landings and circulation in front of lift doors shall meet the following minimum requirements:

   a. One wheelchair waiting space.

   b. One wheelchair turning space allowing for a 180 degrees approach and turn in accordance with dimensions of clause 6.2 of AS 1428.2:1992.

   c. Wheelchair turning space and wheelchair waiting space shall not overlap with each other.

   d. Wheelchair turning space and wheelchair waiting space shall not impede general circulation.

e. Lift doors shall not open towards active sections of platform edges.

f. Lift doors shall be protected against wind-blown rain based on lateral extent coverage in accordance with T MU SS 90002 ST.

g. Lift control box and other lift equipment shall be weather protected in accordance with manufacturers' instructions.

h. Wheelchair waiting spaces and wheelchair turning spaces shall be weather protected by the vertical projection of the canopy.

5. The following requirements shall be achieved for lift shafts:

   a. Lift shafts shall have passive surveillance, orientated towards places where people gather and aligned to the outcomes of the security risk assessment and T MU SY 20001 ST.

   b. Physical waterproofing barriers shall be provided to protect lift shafts.

See Section 6.2.6 for run-off and queuing requirements.

See Section 7.10 for lift shaft glazing requirements and Section 9 for lift collision protection requirements.

Refer to TS 04955.3 for detailed requirements.

6.6.4 Escalators

The following requirements shall be achieved for escalators:

1. Escalators shall be located to provide the following:

   a. safe and convenient access which maximises the points of access to each escalator for customers

   b. where required, support the evacuation process; refer to TS 00008.2 for additional information

2. TGSI at both landings shall be placed either wholly inside the escalator floor plates or wholly outside of the escalator floor plates.

3. Where escalators are positioned over an open void area of greater than 3 m vertically, fall protection barriers of not less than 1.5 m high, measured from the escalator step, shall be provided.

4. Preventative measures, such as vertical deflectors (head guards) shall be mounted where obstacles are present within 400 mm of the escalator, measured from outer edge of the handrail.

5. Design configuration of the underside of the escalators shall prevent customers and staff from unintentionally accessing areas where the head height is less than 2.0 m.

See Section 6.2.6 for run-off requirements.

Refer to TS 04955.4 for detailed requirements.

6.7 Egress

6.7.1 General

All functional spaces shall be designed to have paths of travel to enable safe egress. Compliance with the performance requirements of the NCC for egress can be achieved by either satisfying the DTS provisions or through performance-based fire engineering.

Where it is impracticable for the station design to comply with the DTS provisions of the NCC, then NFPA 130 shall be referenced in the development of performance based fire engineering solutions.

Compliance with the requirements of NFPA130, or demonstration of equivalence with the requirements of NFPA130, does not, by itself, demonstrate that the risk to life is reduced SFAIRP.

6.7.2 Fire isolated stairways for underground stations

The following shall be achieved for fire isolated stairways for underground stations:

1. Wheelchair waiting spaces shall be provided within the fire isolated passageway where points of egress may be accessed by the public. Wheelchair waiting spaces shall not encroach the path of egress.
2. Where vertical travel height from the lowest publicly accessed level to the open space is greater than 15 m, resting areas outside of the circulation area shall be incorporated.

6.8 Customer facilities

Customer facilities enhance customer comfort and convenience. Requirements for customer facilities, including location and quantity of facilities vary between stations. TAOs shall collaboratively engage with the asset custodian, asset steward – operate or maintain and asset steward – delivery during early stage of the works and agree on the provision of customer facilities.

All facilities shall be located and sized with consideration to the priority for unimpeded passenger circulation and operational requirements.

All customer facilities, furniture and fixtures shall be designed and selected to take into account the needs of people with disability, SFAIRP. This includes but are not limited to relevant height, controls, illuminations, and circulation requirements.

For Sections 6.8.9 to 6.8.12, the TAO shall consult and agree with TfNSW electronic ticketing system team on requirements specific to the station.

Note: Where there is a difference in requirements of customers facilities based on station category, see Section 12 for classifications of existing stations.

6.8.1 Customer toilets

Customer toilets are provided at stations for passengers as customer service. Customer toilets shall be provided at all metropolitan train stations, metro stations, staffed intercity train stations and staffed regional train stations.

Customer toilets may also be provided at unstaffed intercity train stations and regional train stations by enabling activation of toilets through remote access functionality.

The following requirements shall be achieved for customer toilets:

1. Customer toilets shall be secure, individual and self-contained in new stations.

   Note: Where an existing station has insufficient space to accommodate individual toilet facilities, combined facilities (that is, toilets with multiple partitions) may be provided.

2. Customer toilets shall be located within paid areas in new stations.

   Note: Customer toilets should be located within the paid areas of existing stations unless existing toilets are located outside of the paid area in existing stations.

3. The location of customer toilets shall comply with CPTED principles and maximise opportunities of passive surveillance of toilet waiting areas.
4. Customer toilet doors shall be oriented to minimise views into the toilets.
5. The number of customer toilets in a station shall be determined by patronage analysis and modelling or providing toilets in accordance with Table 2. Where discrepancy exists between the analysis, modelling and the contents of Table 2, the higher quantity shall apply.
6. To calculate the minimum number of customer toilets within the station, the usage time shall be based on an average of three minutes per customer.
7. The division of toilet types in stations shall be based on Table 3.
8. Regardless of the station patronage, each station shall have:
   a. Not less than four toilets at new stations, comprising one accessible toilet and three ambulant toilets (one unisex, one male and one female toilet).
   b. Not less than three toilets at existing stations, comprising one accessible toilet and two ambulant toilets (one male and one female toilet).
9. Where the number of toilets exceed 12, the division of toilets shall comprise 20% unisex, 40% female and 40% male and be rounded to the nearest whole number. Where rounding

causes the calculated total number of toilets to differ from the intended total number of toilets, the intended number of toilets shall be achieved by adjusting the number of unisex toilets to suit.

10. Hot water shall be provided to customer toilets. Refer to TS 04955.1 for services requirements.

See Appendix A for detailed requirements for spatial, fit out and fixtures.

Refer to T MU SY 20001 ST for security requirements related to customer toilets.

Table 2 – Provision of customer toilets

Station category (see Section 12)	Number of users using the station toilets
City	Not less than 2% of peak hour patronage of the initial design year or ultimate design year (whichever is greater)
Major	Not less than 2% of peak hour patronage of the initial design year or ultimate design year (whichever is greater).
Suburban	Not less than 2.5% of peak hour patronage of the initial design year or ultimate design year (whichever is greater).
Community	Not less than 3% of peak hour patronage of the initial design year or ultimate design year (whichever is greater).
Outer urban	Not less than 3% of peak hour patronage of the initial design year or ultimate design year (whichever is greater).

Table 3 – Number of customer toilets

Total number of toilets required	Unisex toilets (including accessible)	Female toilets	Male toilets
1	1	0	0
2	2	0	0
3	1	1	1
4	2	1	1
5	1	2	2
6	2	2	2
7	1	3	3
8	2	3	3
9	3	3	3
10	2	4	4
11	3	4	4

6.8.2 Accessible adult change facilities

Accessible adult change facilities are provided for people who cannot use standard accessible toilets. The facilities provide more space and extra features to support the needs of people with complex disabilities to receive care or provide care.

The provision of adult change facilities should be determined on a case-by-case basis taking the following factors into account:

- station location and patronage
- operational requirements by staff (whether the staff can provide access and maintenance to the facility)
- availability of adult change facilities nearby.

For existing city and major station upgrades, and new stations located within the vicinity (approximately 400 m) of health facilities such as hospitals, clinics and the like or major destinations, the TAO shall consult and agree with TfNSW on the provision of adult change facilities.

The NCC shall be used as the basis for design for adult change facilities in transport precincts. Additional features may also be provided based on design guidance in *Changing Places – design specifications*.

6.8.3 Public telephones

The requirement for and location of public telephones are site-specific. Public telephones may be installed within transport facilities in locations approved by the stakeholders comprising TfNSW advertising and revenue team, asset steward – operate or maintain and the TAO.

The following requirements shall be achieved for public telephones:

1. The provision for public telephones shall be assessed at a precinct level and the quantity and location shall be determined by assessing the following:
    a. existing public telephones at the station precinct
    b. community usage
    c. consultation with station operations
    d. consultation with the telecom service provider.

    Note: At least one public telephone should be available within the vicinity or within each station.
2. Public telephones shall be located on concourses, station precincts or in the public domain where practicable.

Note: Public telephones should not be located on platforms.

3. Public telephone and standing or wheelchair waiting spaces shall not overlap with circulation paths, run-off areas or any other queuing zones.

Refer to T MU SY 20001 ST for security requirements relating public telephone installations.

6.8.4 Help points

Help points may provide information, assistance, or a combination information and assistance. Where help points provide general transport service information, it shall align with the hierarchy in Section 6.9 and station tiering. TAOs shall consult with the asset steward – operate or maintain for the type of help point required.

Refer to T MU TE 61006 ST for detailed requirements.

Refer to T MU TE 61005 ST for station tiering information.

Refer to T MU SY 20001 ST for security requirements relating to help points.

6.8.5 Seating and resting points

Well designed and conveniently located seating and resting points in stations shall be provided for customer amenity. The seating and resting points should be conveniently located adjacent to platform entry points, such as lifts, escalators, stairs and ramps to cater for people with disability and the elderly. Seating and resting points on platforms should be evenly distributed along the length of the platform and located as far away as possible from the platform edge for customer safety.

The following shall be achieved for seating and resting points:

1. At least two wheelchair waiting spaces shall be provided on each platform.
2. At least two priority seatings for people with disability and the elderly shall be provided on each platform.
3. Resting points comprising at least one priority seating and one wheelchair waiting space shall be provided along access paths at least every 60 m. Seats for resting points shall be designed and installed in accordance with clause 27.1. and 27.2 of AS 1428.2:1992.
4. Seatings and other street furniture in general shall be located at least 500 mm away from an access path to reduce the risk of customers with vision impairment walking by clashing with street furniture or with people sitting down.
5. Seating shall be securely fixed to permanent structures.
6. Back-to-back seating configuration shall be spaced sufficiently apart for cleaning between the seats, to avoid clashing of heads and to prevent young children being stuck between them.

Notes:

1.Seating should be arranged so as to provide the following spacings:

- 300 mm separating the backrests between back to back seats
- 150 mm between seats and walls
- 200 mm between seats and windbreaks.

2. Seating should be located within weather protected areas. Seating with metal constructions should avoid exposure to direct sun light to prevent overheating of the seating.

3. Weather protected seating should be provided near lift landings where practicable.

4. Seating may be fitted with station identification signage, refer to *Wayfinding Planning Guide – Stations and Interchanges* for additional information.

5. Heritage seating should be retained and where required relocated to appropriate locations.

Refer to T MU SY 20001 ST for security requirements relating to assessment and mitigation of climbing risks.

6.8.6 Customer waiting rooms

Customer waiting rooms provide sheltered waiting areas for customers, which may be dedicated spaces or located on the platform. All customer waiting rooms shall meet the following requirements:

1. be accessible for people with disability
2. contain priority seating that complies with clause 27.2 of AS 1428.2:1992
3. contain at least two wheelchair waiting spaces.

Note: The design of customer waiting rooms in major and city stations should consider allocation of quiet spaces for customers with sensory issues such as autism, and provide amenities such as heating and cooling, power points, phone charging and commercial vending machines.

6.8.7 Public bins

The following requirements shall be achieved for public bins:

1. Bins shall be located on platforms and along the customer journey within the stations.
2. The number of bins shall be determined by a waste management assessment.
3. Bins shall be provided in twin sets, comprising of general waste and recycling.

Note: Twin sets should be placed in a side-by-side configuration for optimum resource recovery at the collection point.

4. Bins shall be designed to enable safe transfer of the bin contents.
5. Bins shall include a means of preventing unintended emptying of the bin contents.
6. Bins that are not placed within weather-protected area shall be protected from rainwater ingress.
7. Free standing bins shall not be placed in the immediate proximity of customer facilities such as seating, customer information posters and, drinking fountain and refill stations.

   Note: Bins should be integrated and clustered with other station fixtures, however bins should not be located less than 1200 mm away from customer amenities such as seating and resting area, drinking fountains and water refill stations.

Refer to T MU SY 20001 ST for additional requirements relating to bin placement, selection and operation in accordance with the station protective security category in Section 12.1.

6.8.8 Luggage facilities

This section applies to all regional train stations, as well as metropolitan train stations and intercity train stations which provides regional services.

Customers travelling on regional and interstate trains may choose to check in their luggage rather than taking it on board with them. Luggage facilities shall be provided at staffed stations that serve interstate or regional routes, including major terminal stations, regional stations and interstate rail service stations.

Luggage facilities shall meet the following requirements:

1. be located adjacent to the platforms serving the regional and interstate trains; location shall take into account the needs of people with disability for the check-in and collection of luggage
2. provide check-in counters and associated luggage weighing equipment
3. provide sufficient queuing areas in front of the check-in desks for customers and their luggage
4. provide a luggage storeroom behind the check-in desks, sufficiently large enough to separate the luggage of arriving and departing customers
5. provide a customer luggage pick-up point.

   Note: Where practicable, the customer service counter and the luggage counter should be integrated and jointly located.

Luggage kiosk may be provided in addition to luggage check-in counters at staffed stations, and at unstaffed stations.

The TAO shall consult with the asset steward – operate or maintain to determine the specific operational requirements of the stations.

6.8.9 Self-service machines and top-up or ticket machines

The following requirements shall be achieved for SSMs and top-up or ticket machines:

1. SSMs shall be located within the vicinity of the gateline or FLR. SSMs shall be outside any safety zone, access path, required circulation space and critical sight lines.
2. SSMs shall be located in unpaid areas of the station, except for SSMs that are located on the platforms.
3. The determination of whether a station requires SSMs, and the quantity and type shall be determined in consultation with TfNSW electronic ticketing team and the asset steward – operate or maintain. The number of SSMs shall take into account the present and future patronage.
4. SSMs shall be protected from weather and located away from direct sunlight.
5. The circulation space in front of a SSMs shall be adequate to allow a wheelchair to turn 180 degrees in accordance with AS 1428.1.

   Notes:

   1. Preference should be given to cashless SSMs rather than cash SSMs.
   2. Location of SSMs should be positioned based on left-in left-out movement.
   3. SSMs should be clustered together with other customer information components.
   4. SSMs may be installed as freestanding units or in an alcove or enclosure. Where practicable, an alcove or enclosure configuration should be provided, and SSMs positioned to enable the vending side to be prominent and the remaining sides to be concealed. This may be achieved by recessing and integrating into the wall cladding.

Refer to T MU SY 20001 ST for security requirements.

6.8.10 Gatelines

Electronic gates are installed in arrays or gatelines at the entrance and exit of paid areas. When planning and designing for gate arrays, the TAO shall take into account the accessibility and gateline ease of use for customers who may have a disability. Where a large gate array is being formed, the design shall minimise the incidence of pedestrian cross flows in front of the gate array as this may cause customers to have difficulty traversing from one end to the other.

The following requirements shall be achieved for gatelines:

1. The number and type of gates and readers shall be determined by station classification, patronage, station type and configuration, and pedestrian modelling.
2. Gatelines shall have dimensions to accommodate people with disability, customers with prams and customers with luggage and bulky items. Each standalone gate array or gateline shall have at least one wide access gate of minimum unobstructed width of 850 mm.
3. When the number of gates in an array result in a large gate array being formed customers requiring use of a wide access gate, may have to traverse across pedestrian traffic and disrupt pedestrian cross flow. Where this occurs, at least two wide access gates shall be provided to accommodate customers in a wheelchair, strategically placed to minimise the effects caused by cross flow.

   Note: A combination of one wide access gate and one maintenance gate may also be used in-lieu of two wide access gates in consultation and agreement with the asset steward – operate or maintain.
4. Gatelines shall have dimensions to accommodate run-off zones on either side of the gatelines or demonstrate that the proposed configuration complies with LoS using pedestrian modelling.
5. Gateline run-off shall not overlap with other queuing or run-off zones. See Section 6.2.6 for requirements.
6. Gate arrays shall be installed on continuous unbroken concrete of 25 MPa minimum with the floor incline of less than 1 in 40 in the direction of passage through the gate and less than 1:80 in the direction along the length of the gate array.
7. The approaches to a gateline from both sides shall have a levelled floor of not less than 1300 mm in front of the gateline and a gradient that meets the following criteria:
   a. not steeper than 1 in 33 for asphalt
   b. not steeper than 1 in 40 for other surface materials
8. Gate arrays shall be protected from the weather. The extent of weather protection shall protect against wind driven rain and extend 30° horizontally from any part of the gate array.
9. For existing stations with significant increase of patronage level, gatelines shall be installed instead of FLRs.
10. Maintenance gates shall be provided where the gateline forms a part of the maintenance access route. The clear width of the maintenance gate shall accommodate the largest machinery or equipment kit.
11. Signage shall be installed to identify the wide access gate.

See Section 6.4 for concourse principles of spatial layout.

6.8.11 Emergency gate release buttons

The following requirements shall be achieved for EGRBs:

1. Each gate array shall have a minimum of two EGRBs, both on the paid side, one at each end of the gate array.
2. One EGRB with integrated indication LED shall be installed in a GAC hub or GAC booth.
3. EGRBs shall be installed in accordance with clause 11.1.2 of AS 1428.1:2001.
4. EGRBs shall not be installed in unpaid areas.

   Notes:

   1. An additional EGRB may be required for larger gate arrays in locations nominated by the operator and maintainer in consultation with TfNSW electronic ticketing system team.

   2. An additional EGRB may be required in other locations nominated by the operator and maintainer in consultation with TfNSW electronic ticketing system team.

6.8.12 Fixed location readers

FLRs are installed at all ungated stations. Some FLR devices may be required at gated stations. FLRs are available in short single reader, short double reader, tall single reader or tall double reader. FLRs may be independent fixtures or integrated with other building components, such as columns.

The following requirements shall be achieved for FLRs:

1. The number and type of FLRs shall be determined by station classification, patronage, station type and configuration, and pedestrian modelling.
2. FLRs shall be located outside of any safety zone, accessible path, required circulation space or critical sight lines. FLRs shall be located to cover all entrances and exits while promoting a two-way corridor aimed at separating passengers who are entering and exiting.
3. FLRs shall accommodate people with disability, customers with prams and customers with luggage and bulky items. FLRs located along the access paths shall provide sufficient spatial dimension of not less than 2070 mm in the path of travel and not less than 1540 mm wide to accommodate people with disability.
4. Sufficient queuing spaces in front of the FLRs shall be provided based on patronage and pedestrian modelling.
5. Where the FLRs are positioned near a wall, column or other fixtures, the following dimensions shall be applied:
   a. The minimum distance between the widest part of the FLR and the wall, column or other fixtures shall not be less than 50 mm.

b. The maximum distance between the narrowest part of the FLR and the wall shall not be more than 125 mm.

Notes:

1. At least one FLR should be located within 10 m of the SSM.

2. The recommended gap between the narrowest part of the FLR and the wall should be not more than 100 mm.

6.8.13 Drinking fountains and water refill stations

The following requirements shall be achieved for drinking fountains and water refill stations:

1. At least one drinking fountain or water refill station shall be provided within each new station or in the vicinity of each new station.
2. At least one outlet of drinking fountains or water refill stations that comply with clause 27.3 of 1428.2:1992 shall be provided. Sufficient circulation spaces around drinking fountains or water refill stations shall be provided to accommodate people with disability.
3. Heritage drinking fountains shall be retained where present in existing stations (and provide additional bubblers as required in Section 6.8.13 list item 2. where applicable).
4. Location of drinking fountains shall avoid opportunities for their use as a climbing aid. Refer to T MU SY 20001 ST for detailed requirements.

   Notes:

   1. Where existing services can accommodate new installation of drinking fountains or water refill stations in existing stations, at least one drinking fountain or water refill station should be provided within the vicinity of the station or within the station.

   2. The design of drinking fountains or water refill stations should consider providing a bowl for assistance animals.

   3. Where drinking fountains or water refill stations are located in paid areas, they should be located near toilets and other amenities.

   4. Where drinking fountains or water refill stations are located in unpaid areas, they should be integrated with the urban environment.

6.8.14 Automated external defibrillators

AEDs may be provided in staffed stations. TAOs shall consult and agree with TfNSW rail safety team and asset steward – operate or maintain to determine the provision of AEDs.

Where AEDs are provided, they shall be accompanied by identifying signage.

6.8.15 Automatic teller machines

Where ATMs are provided, they shall be located as follows:

1. within the unpaid concourse
2. within a cluster with other customer facilities.

Note: ATMs should be located within the waiting zone of the station.

TAOs shall consult and agree with TfNSW advertising and revenue team on the provision of ATMs that is appropriate to specific station and conduct the risk assessment.

Refer to T MU SS 80007 ST for building services requirements.

Security requirements for the ATMs shall be in accordance with T MU SY 20001 ST. In addition, a security risk assessment shall be conducted to inform all stakeholders on the risk of ATM operations and site-specific security and emergency management measures to be adopted. Overall risk of the ATMs shall reside with the owner of the ATM. This should be captured in relevant documentation.

6.8.16 Commercial vending machines

The following requirements shall be achieved for commercial vending machines:

1. Presence of commercial vending machines shall aim to enhance customer experience within station.
2. The machines and the standing area in front of vending machines shall not obstruct customer circulation, critical sightlines and station operations.
3. Restocking and servicing of vending machines shall not interfere with access paths.

   Notes:

   1. Vending machines should be recessed into wall cladding where practicable.
   2. Vending machines should be located within the waiting zone of the station.

TAOs shall consult and agree with TfNSW advertising and revenue team on the provision of vending machines that is appropriate to the specific station and conduct risk assessment in determining the location of vending machines.

Refer to T MU SY 20001 ST for security requirements relating to vending machines design, placement and operation.

Refer to T MU SS 80007 ST for building services requirements.

6.8.17 Retail facilities within stations

The following requirements shall be achieved for retail facilities within stations:

1. retail facility and its queuing zones shall not obstruct customer circulation, critical sightlines and station operations
2. retail facilities shall be architecturally integrated with station design where practicable
3. retail facilities shall be securely enclosed
4. retail facilities shall enable clear delineation for works of maintenance and cleaning between the retail operators and TfNSW.

   Note: Delivery of goods to, and removal of waste from, retail facilities should be out of sight of customers.

TAOs shall consult and agree with TfNSW advertising and revenue team to determine requirements of retail facilities.

Refer to T MU SS 80007 ST for additional requirements.

Refer to T MU SY 20001 ST for security requirements relating to retail facilities.

6.9 Signage, wayfinding and customer information systems

6.9.1 General

Signage, wayfinding and customer information systems in stations shall be designed and positioned to enable customers to easily identify, read, hear, feel and understand information as applicable and where required, to respond promptly.

Types and locations of signage, wayfinding and customer information systems are station-specific.

Signage, wayfinding and customer information systems shall not obstruct vision of, or conflict with, exit signage.

Note: Exit signage is a statutory requirement for safety and takes precedence over customer experience requirements.

Signage, wayfinding and customer information systems shall not diminish visibility of emergency lighting.

The hierarchy of signage, wayfinding and customer information systems within stations is as follows:

- Statutory – meets TfNSW's compliance obligations. Includes, but is not limited to, information and signage required under federal and state legislation, for example, Commonwealth disability requirements.

- Key – essential information for customer journeys. Includes, but is not limited to directional and service information and signage and operational messages, for example, TfNSW wayfinding. Wayfinding is a signage system that aims to make it easier for customers to navigate their journey and change between transport modes.
- Discretionary – non-essential information that may be helpful to customer journey and includes, but is not limited to, the following:
    - TfNSW promotional material – marketing material produced by TfNSW or TfNSW led promotions or campaigns and may be produced in conjunction with external parties.
    - Non-TfNSW promotional material – marketing material produced by external parties for community interest promotions or campaigns.
    - Non-TfNSW information and signage – may include locality information, retail signage, historical interpretation.
    - Commercial advertising – paid marketing material designed to promote products or services.

Refer to TS 04955.1 and T MU TE 61005 ST for specific requirements.

Refer to T HR SS 80003 ST for emergency sign and emergency lighting requirements.

6.9.2 Signage and wayfinding

The following requirements shall be achieved for signage and wayfinding:

1. The position of wayfinding signage is station-specific and shall align with the hierarchy in Section 6.9. The position of signage shall ensure legibility and unobstructed sightlines for customers. Where signage is co-located with other equipment such as CCTV, PAs and so on, signage shall be located to facilitate unobstructed sightlines, be legible and not impact on the functionality of the other equipment. The position of signage shall not be such that customers reading signage impede traffic flow.
2. Wayfinding signage shall have a consistent look and feel.

Note: Supporting structures of the signage should be integrated with adjacent supporting elements and architectural finishes where practicable.

Refer to the following documents for detailed guidance on wayfinding signage and supporting structure requirements, product types, placement principles, materials and finishes:

- *Wayfinding Planning Guide – Sydney Metro*
- *Wayfinding Planning Guide – Stations and Interchanges*
- *Guide to operational and door signs – Stations and Interchanges*
- *Wayfinding Planning Guide – Temporary Signs*

- *Wayfinding Kit of Parts – Metro, Train and Bus*
- *Wayfinding – Sign ID Placement Guide*
- *Station Wayfinding Product Catalogue*

Refer to T HR SS 80001 ST for signage lighting requirements.

Refer to T MU SY 20001 ST for signage security requirements.

Refer to T MU SS 90002 ST for height clearance requirements (refer to content of station canopy or attachments vertical clearance).

6.9.3 Customer information systems

Customer information n systems include PIDs, public address systems and audio, help points (where help points provide general transport service information) and hearing augmentation. Position of customer information systems are station-specific and shall align with the hierarchy in Section 6.9 and station tiering.

Refer to T MU TE 61005 ST for station tiering information, coverage and equipment requirements.

Refer to T MU SS 90002 ST for height clearance requirements (station canopy or attachments vertical clearance).

For metro station, refer to *Wayfinding Planning Guide – Sydney Metro* for location requirements.

Refer to T MU SY 20001 ST for security requirements.

> Note: Public address systems in the front of house areas should be recessed and aesthetically integrated with surrounding architecture, where practicable.

6.10 Station operations and facilities

The requirements for station operational facilities are station-specific and based on station category and operational requirements.

Sections 6.10.2 to 6.10.13 provide general requirements for station operational facilities.

6.10.1 General

TAOs shall collaboratively engage with the asset custodian, asset steward – operate or maintain and asset steward - delivery during the early stage of the works and agree on the provision of station operations and facilities.

The following general requirements shall be achieved for station operations and facilities:

1. access into station operational areas shall be controlled and access granted only to authorised personnel

2. back of house areas shall be accessible only to authorised personnel through a combination of the following:

    a. spaces available only to authorised personnel, such as back of house corridors

    b. operational measures such as electronic monitoring and access control, physical security or similar measures.

    Notes:

    1. Station operational facilities should be clustered together, where practicable.

    2. A sign-in desk or zone should be provided at the entry to station operational areas.

Refer to T MU SY 20001 ST for security requirements.

6.10.2 Office accommodation

6.10.2.1 General

Office space shall be provided to accommodate the specific operational purposes of the station. Each station has varying staffing numbers and requirements. The TAO shall consult and agree with the asset steward – operate or maintain on the detailed requirements of office accommodation.

The office accommodation may serve one or more of the following functions:

- desks and workstations for staff
- meeting spaces for staff
- first-aid rooms
- refuge and security of staff
- staff training.

The following requirements shall be achieved for office accommodation:

1. Desks and workstations shall be provided in accordance with staffing requirements. Office layouts shall facilitate efficient and healthy working environments.
2. Offices shall be capable of being physically secured when not in use with self-locking mechanisms.
3. Offices shall provide means to accommodate people with disability that is compliant with DSAPT and the *Disability (Access to Premises – Buildings) Standards 2010* if these offices may be accessed by customers or accommodate staff that are not rail industry workers.

6.10.2.2 Customer engagement

Customers may wish to interact with staff in the office if the customer does not find a member of staff in the public areas of the station. The following requirements shall be achieved to facilitate customer interaction:

1. provide means to facilitate efficient communication between customers and staff for general information and assistance
2. provide an accessible doorbell or intercom in accordance with AS 1428.1
3. provide a firm levelled surface in front of the office with sufficient wheelchair turning space in accordance with AS 1428.1.

6.10.3 Ticket sales

Regional stations that are attended by staff may sell tickets at the station. Where this service is provided, the following requirements shall be achieved:

1. a ticket counter or window and associated fixtures shall be provided with space in front of the counter or window to accommodate people with disability in accordance with DSAPT
2. a safe for storage of cash shall be located in the office in a concealed position out of sight of customers.

   Note: Where practicable facilities associated with ticket sales should be integrated or located adjacent to the office accommodations.

Refer to T MU SY 20001 ST for security requirements.

6.10.4 Gate attendant controller

GACs shall be installed on the paid side of the gate array, within the line of sight of the entire gate array or gateline.

At staffed stations, GACs should be positioned adjacent to the wide access gate.

Refer to TS 04955.1 for services requirements.

6.10.5 Staff toilets and lockers

The following requirements shall be achieved for staff toilets and lockers:

1. Staff toilets shall be provided based on the number of staff in a station. Refer to the NCC for requirements.
2. Staff locker rooms with changing space shall be gender specific and shall include one locker space for each permanent staff member and locker spaces for temporary or contract workers based on specific working arrangements.

3. The requirement for shower facilities shall be determined in consultation with the asset steward - operate or maintain.
4. At each bank of toilets, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1 shall be provided.
5. Where the station may accommodate staff that are not rail industry workers, the toilet and locker shall accommodate people with disability in accordance with the DSAPT and the *Disability (Access to Premises – Buildings) Standards 2010*.
6. Hot water shall be provided in staff toilets. Refer to TS 04955.1 for services requirements.

6.10.6 Staff kitchens and meal facilites

The following requirements shall be achieved for staff kitchens and meal facilities:

1. the configuration of staff kitchens and meal facilities shall provide sufficient floor area to accommodate demand for permanent and temporary staff
2. meal facilities shall provide seated meal areas equivalent of the maximum number of staff present at any given time
3. kitchen fit-outs shall provide space for the following:
    a. refrigerator
    b. kitchen sink
    c. microwave
    d. food preparation bench
4. Where the station may accommodate staff that are not rail industry workers, the kitchens and meal facilities shall accommodate people with disability in accordance with the DSAPT and the *Disability (Access to Premises – Buildings) Standards 2010*.
5. Hot water shall be provided to staff kitchens. Refer to TS 04955.1 for services requirements.

6.10.7 Lost property

Lost property storage should be provided within station operational areas.

6.10.8 Cleaning storerooms

The following requirements shall be achieved for cleaning storerooms:

1. cleaning tools, equipment and machines shall be stored in cleaning storerooms within the station area
2. building services of cleaning storerooms shall be provided in accordance with TS 04955.1
3. cleaning storeroom fit-outs shall include the following:

a. cleaners sink

b. cold water hose

c. battery charging point

d. space for storage of cleaning machines

e. wash-down areas for cleaning machines.

Refer to *Station Components Guide* for additional guidance.

6.10.9 Other storerooms

The following requirements shall be achieved for other storerooms:

1. maintenance equipment such as elevated walking platforms shall be stored in designated storerooms
2. chemicals shall be stored separately in designated chemical storerooms.

6.10.10 Waste storage facilities

The following requirements shall be achieved for waste storage facilities:

1. dedicated waste storage facilities shall be provided based on waste management analysis of the specific station
2. storage shall be provided for general waste and recycled waste
3. waste storage shall be located to enable the following:
    a. independent waste collection from the waste storage facilities (without requiring to move the bins on to the street)
    b. independent waste collection after hours without compromising station security
    c. independent waste collection during station operating hours without interruption to passenger flows, station amenity or safety.

    Notes:

    1. Waste storage facilities should be fully enclosed where practicable. Where garbage is stored externally, the storage facility should be fenced and concealed from public view.

    2. Wash down area should be provided.

Refer to T MU SY 20001 ST for security requirements related to bulk waste bin storage.

6.10.11 Guards indicators

Section 6.10.11 does not apply to metro stations.

Guards indicators are part of the signalling infrastructure and enable the safe operation of trains.

The following requirements shall be achieved for guards indicators:

1. an unobstructed view to the guards indicator from the guard's compartment shall be provided
2. guards indicators shall be mounted at a minimum of 2600 mm from the FFL
3. guards indicators shall be positioned so as to avoid interference and glare from direct sunlight.

   Notes:

   1. Support structure of guards indicators should integrate with the building fabric, canopy awning and structural columns where practicable.

   2. Multiple guards indicators may be installed at the same point on the platform for bi-directional train running and to provide clear sightlines for train guards in both directions.

   3. Conduit should be concealed where practicable.

6.10.12 Synchronised clocks

Section 6.10.12 does not apply to metro stations.

Synchronised clocks are required for staff reference in order to facilitate on-time station operations. The following requirements shall be achieved for synchronised clocks:

1. a double sided 100 mm high standard digital clock shall be mounted in approximately the centre of the platform, in relation to the platform length, mounted perpendicular to the running track and set back from the platform edge
2. a single sided 100 mm high standard digital clock shall be located within the information zone as described in Section 6.1 of the unpaid area near the station entry.

   Note: Where a visual electronic display is located nearby, a synchronised clock should be positioned on top of, or next to, the visual electronic display.

6.10.13 Miscellaneous requirements

Section 6.10.13 does not apply to metro stations.

One cold water hose tap shall be provided on platforms for general wash down cleaning of the platform. Taps shall be centrally located on the platform and located near the public toilet where public toilets are located on the platform. See Section 7.11 for anti-vandal treatment requirements.

6.11 Equipment, service rooms and delivery routes

The following requirements shall be achieved for equipment, service rooms and delivery routes:

1. equipment and service rooms shall have physical space to accommodate the current equipment demand of initial operational year and future proofing of equipment demand of ultimate design year
2. equipment and service rooms shall only be accessed by authorised staff
3. access and delivery routes to equipment and service rooms shall allow for regular maintenance and equipment replacement. Safe access and egress shall be provided to all areas
4. equipment replacement should be achieved without the removal of other equipment or permanent infrastructure, where practicable
5. equipment shall not be installed in staff accommodation rooms such as kitchen meals room
6. allowance shall be made to accommodate installation of third party equipment.

Refer to TS 04955.1 for equipment and service rooms layout requirements.

Refer to T MU MD 21001 ST for telecommunication rooms layout requirements.

Refer to T MU SY 20001 ST for security requirements.

6.12 Station context

The functional spaces should be designed to enhance the local built environment and achieve sustainable outcomes for TfNSW and local communities.

Sections 6.12.1 to 6.12.4 shall be applied in addition to the requirements of TS 04951.1.

6.12.1 Footpaths, station precinct and public domain

The following requirements shall be achieved for footpaths, station precincts and public domains:

1. Station precincts and public domains shall aim to provide safe and attractive public spaces that contribute positively to the local identity.
2. Walking and cycling infrastructure and facilities shall be integrated into station precincts and public domains. Refer to *Providing for Walking and Cycling in Transport Projects Policy*.
3. Stations precincts in built up areas shall include appropriate footpaths and cycleways that are consistent with the principles in *Walking Space Guide – Towards Pedestrian Comfort and Safety* and *Cycleway Design Toolbox – Designing for cycling and micromobility*.

4. Footpaths that form part of wider pedestrian and cycle networks shall comply with footpath requirements as outlined in respective planning documents.
5. Configuration of station precincts and public domains shall encourage access to and use of the station by simplifying and integrating connections with existing and future urban developments, surrounding paths and road networks.

   Notes:

   1. Stations should facilitate establishment of through site links as identified in local strategic planning documents or through urban design analysis.

   2. The design of station precincts and public domains should provide for the integration of security protection requirements into urban design elements.

   3. The design of station precincts and public domains should provide for the consolidation of services requirements, such as fire boosters, into urban design elements.

Refer to the following document for additional guidance:

- *NSW Guide to Activation – Public Spaces*
- *NSW Public Spaces Charter – Ten principles for public space in NSW*
- *NSW Smart Public Spaces Guide*
- *Around the Tracks – urban design for heavy and light rail*

Refer to T MU SY 20001 ST for physical security requirements.

6.12.2 Station entries

The following requirements shall be achieved for station entries:

1. the number and location of pedestrian entries to stations shall be determined as needed to achieve the following:
   a. maximisation of walking and cycling catchments
   b. provision of secure station environments
2. station entries and exits shall meet the following requirements:
   a. be safe, secure and easily identifiable for customers entering and exiting the station
   b. accommodate patronage requirements based on pedestrian modelling and emergency egress requirements
3. provide intuitive flow for:
   a. customers entering the station to navigate to customer facilities, information points, amenities, gatelines and FLRs, concourses and platform

b. customers exiting the station to navigate to other modes of transport and destinations.

4. station entries shall provide signage and wayfinding in accordance with *Wayfinding Planning Guide – Stations and Interchanges* and *Wayfinding Planning Guide – Sydney Metro*

5. station entries shall provide clear delineation of station environments and where required, provide a means to secure stations outside operating hours

6. where station entry is integrated with retail shops, station enclosures (such as roller shutters or doors) shall allow retail shops to operate independently where practicable.

   Note: where station enclosures (such as roller shutters or doors) are provided, it should be concealed when stored (when station is operational) and should be integrated with surrounding architectural elements where practicable.

6.12.3 Vehicle access

Station precincts shall establish controlled access areas that prohibits access of private vehicles. Controlled access areas may include, but are not limited to, the rail corridor, station plazas (in front of station entries), footpaths and cycleways.

The following requirements shall be achieved for station vehicle access:

1. vehicle access to controlled access areas shall be controlled by physical, operational and technological measures (such as card readers or registration plate readers) to ensure the safety and security of station staff, customers and property

2. vehicle access to controlled access areas shall be limited to areas of the station requiring access by fire appliance, maintenance vehicles and waste collection vehicles

3. the number of vehicle entries to controlled access areas shall enable access by fire appliances, maintenance vehicles and waste collection vehicles

4. the hardstand and pavement shall be designed to accommodate the heaviest vehicle loading of the area for the particular vehicle types.

   Note: Hostile vehicle risk assessment in compliance with T MU SY 20001 ST may be required based upon the protective security category of the station.

6.12.4 Transfer between unpaid and paid areas

The following requirements shall be achieved for transfer between unpaid and paid areas:

1. Stations with gatelines shall provide clear delineations of paid and unpaid areas by a combination of gate-lines, FLRs, barriers, paving or other architectural expressions. See Section 6.4 for concourse requirements.

2. Where a part of the station circulation paths forms a broader walking or cycling network, it shall be within the unpaid areas and facility unimpeded access.

6.13 Interchange facilities

Interchange facilities are provided to assist customers to change from one mode of transport to another. Such facilities may be simple or complex depending on the patronage and demand for services. Interchange facilities should not be treated in isolation but integrated with the station precinct to provide customers with the experience of continuity of journey.

The configuration of interchange facilities should take into account the following:

- give priority in the following hierarchy, with the higher priorities located closer to the station entries and prioritised where customer movements intersect or conflict:
    - walking
    - cycling
    - other modes of public transport such as light rail, bus, ferry, on-demand services, rail replacement buses, scheduled coach services
    - drop-off and pick-up such as kiss and ride, rideshare, taxi
    - commuter parking such as on-street parking and commuter carparks.
- be conveniently located with clear lines of sight between customer waiting areas in front of station entrances and the pick up and drop off zones of the interchange facilities
- minimise interchange times and walking distances between services where practicable
- minimise complex layouts that may make customers hard to navigate
- facilitate intuitive wayfinding between the station entry and interchange facilities
- provide weather protection that is appropriate to the specific site.

The following requirements shall be achieved for interchange facilities:

1. Interchanges shall facilitate access for people with disability by providing continuous access paths between the different modes of transport.
2. Seating shall be provided based on patronage analysis. Where practicable, seating shall be integrated into landscaping design.

6.13.1 Bicycle parking facilities

Bicycle parking facilities enhance customer experience by providing easy, comfortable and convenient usage of the facilities. The following requirements shall be achieved:

1. Bicycle parking facilities, which include racks, shelters, and lockers shall be installed in accordance with T MU SS 90007 ST.

2. The number of bicycle parking spaces shall be based on the forecast patronage and target cycling access mode share. The proposed number of bicycle parking spaces shall be reviewed and confirmed by the TfNSW active transport team.

Note: Bicycle parking facilities should be located at least 1.5 m away from major throughfares to minimise obstruction and congestion.

Refer to T MU SY 20001 ST for security requirements.

Refer to *Cycleway Design Toolbox – Designing for cycling and micromobility* for additional design guidance and guides on future proofing of provisions for micromobility devices.

6.13.2 Rail replacement bus stops

Rail replacement bus stop spaces shall be provided to enable train replacement bus stops depending on station-specific operational strategies. Rail replacement bus stop spaces may be used for other purpose on a regular basis (such as standard bus stops). Rail replacement bus stop spaces shall be easily reconfigurable without the need to relocate equipment or structures or service.

The implications of presence of large crowds during transfer from train to rail replacement bus service shall be taken into account in stations where trains can terminate.

6.13.3 Kiss and ride, and taxi zones

The following requirements shall be achieved for kiss and ride, and taxi zones:

1. at least one kiss and ride space shall be provided in close proximity to each station entry
2. at least one kiss and ride space shall be accessible
3. accessible kiss and ride spaces located off street shall comply with the following:
    a. be in accordance with clause 2.2, 2.3, 2.4 and 2.5 AS/NZS 2890.6:2009
    b. where required, pavement marking shall be in accordance with clause 3.2 of AS/NZS 2890.6:2009
    c. if the accessible kiss and ride space is at the same grade as the adjacent footpath, then bollards and warning TGSIs in accordance with clause 2.5 and Figure 2.5 (B) of AS/NZS 1428.4.1:2009 shall be installed for the length of the same grade section.
4. accessible kiss and ride spaces located on street shall comply with the following:
    a. be designed by traffic engineers and certified by road safety auditors

    Note: Refer to 4.5.2 (a), (b), (c) and (f) of AS 2890.5:2020 for configuration.

b. if a kerb ramp is installed, it shall be located at the rear of the accessible vehicle space

c. if the accessible kiss and ride space is at the same grade as the adjacent footpath, then bollards and warning TGSIs in accordance with clause 2.5 and Figure 2.5 (B) of AS/NZS 1428.4.1:2009 shall be installed for the length of the same grade section.

Additional taxi ranks may be provided based on forecast patronage and mode share. Where additional taxi ranks are provided, at least one taxi ranks shall be accessible with the same requirement as nominated under item 3 and 4 for section 6.13.3.

Refer to *Wayfinding Planning Guide – Stations and Interchanges* for signage requirements.

6.14 Pedestrian underpasses and footbridges

6.14.1 General

Pedestrian underpasses and footbridges shall provide safe, secure and comfortable environments for customers and pedestrians.

For shared pedestrian and cyclist underpass, refer to *Cycleway Design Toolbox – Designing for cycling and micromobility* and *Guide to Road Design*.

Refer to T MU SY 20001 ST for physical security requirements.

6.14.2 Pedestrian underpasses

The following requirements shall be achieved for pedestrian underpasses:

1. Underpasses shall have clear widths that satisfy the following:
   a. accommodate station patronage requirements based on pedestrian modelling and emergency egress requirements
   b. be not less than 3.0 m
   c. where underpasses form part of the wider walking network, width shall comply with the recommended width in the *Walking Space Guide – Towards Pedestrian Comfort and Safety*.
2. The minimum clear height of underpasses between the FFL floor level and any soffit or ceiling shall not be less than 2.7 m.
3. Where the path of travel in the underpass exceeds 60 m, seating shall be provided within the underpass in accordance with the DSAPT. See Section 6.8.5 for more information.
4. Where recesses are required within the underpass for seating, fixtures such as bins, poster stands, control boxes, configuration shall be in accordance with CPTED principles and prevent concealment.

Notes:

1. For suburban, community and outer region stations, an underpass configuration should not be used unless it is part of a larger more active underground concourse.

2. Underpasses should provide access to natural light where practicable.

3. Underpasses should facilitate passive surveillance by means of direct line of sight between the entries of the underpass.

5. Where the length of the underpass is greater than 10 m, the minimum clear height of underpasses between the FFL floor level and any soffit or ceiling should not be less than 3.5 m.

6. Handrails should be provided on both sides of the underpass where there is sufficient clearance space. Position of handrails should be coordinated with signages, fixtures and furniture to avoid any clashes.

Refer to T HR CI 12020 ST for underbridge requirements.

6.14.3 Footbridges

Footbridges shall have clear widths that satisfy the following:

1. accommodate station patronage requirements based on pedestrian modelling and emergency egress requirements
2. be not less than 3.0 m
3. where footbridges form part of the wider walking network, width shall comply with the recommended width in the *Walking Space Guide – Towards Pedestrian Comfort and Safety*.

Handrails should be provided on both sides of the footbridge where there is sufficient clearance space. Position of handrails should be coordinated with signages, fixtures and furniture to avoid any clashes.

Refer to T HR CI 12030 ST for bridge requirements.

Refer to T HR EL 08001 ST for protection requirements.

6.15 Level crossings

Where a station precinct or public domain includes a level crossing the design shall be in accordance with ESC 520.

6.16 Surrounding amenities and integrated station developments

6.16.1 General

The following requirements shall be achieved for surrounding amenities and integrated station developments:

1. facilitation of activation of vibrant public domains and station precincts
2. coordination of architectural language between stations and integrated station developments
3. provision of intuitive wayfinding of passageways to station entries
4. integrated station development shall not adversely impact station operations.

6.16.2 Integrated station developments

TAOs shall consult with the asset steward – delivery and asset steward – operate or maintain at the early stage of the works to confirm the delineation of assets between the station and the development.

The delineation shall be configured in such way that:

1. independent egress routes for the station and the development are provided
2. means to access the station when the development is shut are provided.

Refer to T HR CI 12090 ST for civil requirements.

6.17 Public artwork

Consideration should be given to the adoption of public artwork. The need for the inclusion of public artwork may be as a result of, without limitation, the following:

- heritage interpretation
- prevention of vandalism
- activation of station precincts
- enhancement of spatial quality based on the architectural intent.

Where the requirements of public artwork have not been determined, the TAO shall consult and agree with TfNSW to determine the requirement of public artworks specific to the site.

The content and placement of public artwork shall take into account the safety and security of persons who have line of sight to the proposed installation location as well as customers at the proposed installation location.

Public artwork shall not obstruct vision of, or conflict with, exit signage, passive surveillance or CCTV.

Refer to *Creativity Guidelines – for transport systems* for additional information.

Refer to T MU SY 20001 ST for physical security requirements.

6.18 Weather protection

The following requirements shall be achieved to provide weather protection at stations:

1. shelters and weather protection shall be designed in accordance with T MU SS 90002 ST
2. design shall take into account customer experience, urban character, architectural built form, whole-of-life cost and maintainability to provide the best balanced outcome
3. weather protection shall be provided based on equitable access principles to all customers.

   Note: Sheltered areas for the platform should be developed on the basis of providing a weather protection area of 0.5 m² per person for a maximum number of passengers waiting in a 15 minute peak period.

Refer to T MU SY 20001 ST for physical security requirements.

6.19 CCTV

CCTV shall be provided in accordance with T MU SY 10001 ST.

CCTV in the public areas should be integrated with surrounding architectural finishes where practicable.

6.20 Vermin and bird proofing

The following requirements shall be achieved for vermin and bird proofing:

1. station buildings and structures shall provide protection from vermin and bird infestation
2. vermin protection and management strategies shall be developed and include the following:
   a. identification of local vermin, bird or bat species
   b. negative impact of each species on the station
   c. measures to prevent access to stations and control each species
3. station architecture, equipment and fixtures shall not have elements that promote bird nesting.

6.21 Future proofing of equipment upgrades

Where practicable, spatial allowance should be made for future services and equipment in the public area to facilitate organised and consolidated layout.

6.22 Interface to station tunnels

Where concrete surfaces of tunnels are exposed in the front of house area of the station, concrete shall be class 2 or better in accordance with AS 3610.

7 Materials and finishes

The following general requirements shall be achieved for materials and finishes:

1. Materials and finishes shall be consistent, co-ordinated and fit for purpose with a focus on meeting the needs of customers and asset steward – operate or maintain within station environments.
2. Materials and finishes for stations and station precincts shall be selected to take into account the following:
    a. enhancement of spatial quality, visual surveillance and permeability
    b. coordination with surrounding urban environments
    c. coordination with public artwork, signage and advertising
    d. minimisation of discoloration, leaching, corrosion, mould growth and deterioration due to wildlife, weathering and UV light
    e. minimisation of hazards to customers such as slip, trip and falls, rips and cuts, heat and glare
    f. easily cleanable and maintainable without disruption to operations or material performance
    g. capability for spot repairs in the case of minor damage and easy replacement without the removal of adjacent materials and components
    h. discouragement of vandalism through appropriate materials and coatings with high level of vandal resistance
    i. minimisation of dirt and dust build up from the surrounding environmental conditions
    j. minimisation of horizontal surfaces and ledges that collect dust, dirt and soiling
    k. achievement and maintainability of accessibility requirements for customers and employees
    l. resistance to damage from train-generated vibrations.

3. Materials shall be selected based on balance of performance, management of risk and whole of life cost.
4. Materials shall be in accordance with design life requirements as outlined in Section 11.
5. Materials other than those listed in Sections 7.1 to 7.15 may be used, provided the material achieves the relevant requirements including, but not limited to, the following:
    a. legislative compliance
    b. code compliance (for example, NCC)
    c. performance characteristics (for example, design life).

The TAO should endeavour to comply with requirements in Sections 7.1 to 7.15 for materials and finishes in retail facilities, SFAIRP, within the station environment. Where deviations are required to provide a better architectural outcome, the TAO shall seek endorsement from the asset steward – operate or maintain.

Sections 7.1 to 7.15 apply to public areas only unless stated otherwise.

Refer to T MU EN 00003 GU for information regarding sustainability in design.

Refer to T MU SY 20001 ST and station-specific security risk assessment for security requirements.

7.1 Floor finishes

The following requirements shall be achieved for floor finishes:

1. selection of floor finishes shall provide coherent architectural language throughout the front of house areas of the station
2. design loads shall be designed to comply with equipment loading in accordance with the maintenance requirement of the specific station
3. performance characteristics of floor finishes shall comply with clause 9 of AS 1428.2:1992, T MU SS 90001 ST and recommendations in HB 197; where conflict exists between these standards the more stringent requirement shall take precedence
4. vertical tolerances shall be in accordance with clause 4.2 of AS 1428.1:2021
5. floor finishes shall withstand differential surface temperatures so that changes in temperature do not result in permanent deformation
6. floor finishes shall resist staining, be easily cleanable and maintainable, water resistant and be hard wearing and durable
7. floor finishes shall facilitate easy replacement due to damage

8. the replacement product shall match the surrounding floor finish including colour, texture, orientation, level and jointing
9. junctions between floors and walls or columns shall facilitate convenient cleaning methods without damaging the floor, wall or column
10. pavers shall not be applied to ramps on access path surfaces due to their susceptibility to develop undulations
11. pavers applied to public areas shall be laid over a mortar bed and not result in movement or excessive undulation
12. drainage shall comply with the following requirements:
    a. drainage covers shall be flush
    b. drainage shall have slip resistance equivalent to the adjacent flooring
    c. drainage shall not cause hazard for high heels, bicycle wheels or wheelchair wheels

    Note: Drainage should be located away from main pedestrian paths.
13. floor access hatches shall comply with the following requirements:
    a. materials and finishes shall match the adjacent material
    b. hatches shall be set flush with the adjacent finished level
    c. hatches shall comply with the slip resistance requirements of T MU SS 90001 ST and have slip resistance levels consistent with adjacent surfaces
    d. hatches shall include a locking mechanism.

    Note: Hatches should be located away from main pedestrian paths where practicable.

The design of floor finishes should provide integration between street paving, public domains, station precincts and station entrances to create a seamless connection to the adjacent urban environment and existing infrastructure.

7.2 Tactile ground surface indicators

The following requirements shall be achieved for TGSIs:

1. TGSI on access paths to indicate stairways, ramps, changes of direction, overhead obstructions below height of 2.0 m and hazards within a circulation space and adjacent to a path of travel shall be installed in accordance with AS 1428.4:1992.
2. TGSI colour and luminance contrast shall be in accordance with the minimum requirements of clause 2.2of AS/NZS 1428.4.1:2009.

Note: While AS 1428.4:1992 is currently in force under the DSAPT, TfNSW has adopted the higher requirement under AS/NZS 1428.4.1:2009 as the minimum requirements for TGSI colour and luminance contrast.

3. TGSIs shall be the truncated cone type, not the dome type.
4. TGSI colour shall be consistent throughout each station, station precinct and public domain. Where it is impracticable, due to difference in floor surfaces, the TAO shall seek approval from the asset steward – operate or maintain.
5. Slip and wear resistance shall be tested in accordance with T MU SS 90001 ST.

7.3 Wall and column claddings

The following requirements shall be achieved for wall and column claddings:

1. The selection of wall and column claddings shall facilitate easy replacement required due to damage. Replacement cladding shall match the surrounding surface including colour, texture, orientation and jointing. The replacement of cladding shall be achieved without track possession.
2. Cladding finishes in locations where routine cleaning cannot be easily undertaken shall have surface characteristics that do not show accumulated dirt and dust.
3. Where deemed applicable, acoustic treatments shall be integrated and capable of withstanding ambient conditions. Acoustic treatments shall be positioned at least 2.4 m above the FFL.
4. Cladding shall be coordinated with lighting design to provide bright and comfortable station environments, and provide reflectance and diffuse reflectance in accordance with lighting design requirements.
5. For new works, finishes around wayfinding signs shall have minimum 30% luminance contrast to the background colour of the sign panel.
6. Cladding finishes from the FFL up to 2.4 m in public areas shall be suitably robust to resist impact deformation, abrasion from cleaning methods and maintenance systems as well as having anti-vandal treatments applied.
7. Selection of cladding finishes above 2.4 m above the FFL shall take into account replacement strategies appropriate to site constraints and the application of anti-vandal measures based on risk analysis.
8. Skirting material shall be resistant to vandalism, heavy impacts and abrasion from cleaning methods and maintenance systems.
9. Wall access panels shall comply with the following requirements:
    a. materials and finishes shall match the adjacent cladding where practicable

b. be set flush with the adjacent wall

c. include a locking mechanism.

Notes:

1. Access panels should be located away from main pedestrian paths.

2. Cladding should facilitate integration of station operational equipment including signage, door hardware, PA speaker where practicable.

3. Cladding finishes should avoid using distracting or disorientating patterns or textures.

4. Louvres, grilles, access panels and other elements should be recessed into walls and be flush where practicable.

Refer to *Wayfinding Kit of Parts – Metro, Train and Bus* for finishes and colours of signages.

7.4 Barriers, balustrades, screens and handrails

The following requirements shall be achieved for barriers, balustrades, screens and handrails:

1. design shall be in accordance with T HR SS 90002 ST
2. for the protection of customers with vision impairment and neurological conditions such as epilepsy, enclosures and materials which throw confusing or strobing shadow patterns on to the main circulation routes shall not be used.
3. tensioned wire systems shall not be used for barriers of stairways and ramps.

7.5 Doors

Doors used by customers for access between public areas should be minimised and avoided. Where doors are present, they should be automated.

The following requirements shall be achieved for public doors:

1. be not less than 850 mm in clear width
2. provide luminance contrast in accordance with AS 1428.1

Note: Doors should be flush with adjacent wall cladding on the public facing side.

Public and back-of-house external doors shall be solid core.

Refer to T MU SY 20001 ST for additional requirements for door frames, hardware, viewing panels and security controls.

7.6 Ceilings and soffits

The following requirements shall be achieved for ceilings and soffits:

1. Design shall facilitate integrated systems of jointing, services and acoustic treatments. Ceiling joints shall be coordinated with the placement of lighting, signs and access to mechanical and electrical systems and other equipment, as well as acoustic treatments.
2. Where suspended ceilings are used, services shall be concealed.
3. Where suspended ceilings are used, they shall have suitable structures and mechanical fixings to withstand air uplift and downdrafts.
4. Ceiling systems shall provide access to concealed services for regular maintenance and repairs.
5. Surface finish shall be coordinated with lighting design to facilitate bright and comfortable environments, provide reflectance and diffuse reflectance in accordance with lighting design requirements.
6. Acoustic treatments shall be integrated with ceiling types and colours.
7. Ventilation grilles shall be integrated with ceiling types and colours.
8. Ceiling access panels shall comply with the following requirements:
    a. access panels materials and finishes shall match the adjacent ceiling where practicable
    b. access panels shall be set flush with the ceiling
    c. access panels shall include a locking mechanism.

Refer to T MU SY 20001 ST for additional security requirements for voids, vents and accessible cavities in the ceiling.

7.7 Roofs, canopies and awnings

The following requirements shall be achieved for roofs, canopies and awnings:

1. utility services placed on roofs shall not be visible and be consolidated within discreet enclosures and integrated into the roof design
2. flashings and edge trims on roofs and canopies shall be discreet
3. gutters, sumps and downpipes shall comply with the following:
    a. be aesthetically integrated with the roofing structures, building structures and facade design
    b. provide leaf guards to gutters and sumps where it is impacted by vegetation

c. minimise bends in downpipes

d. be easily replaceable when damaged

e. provide discrete maintenance access to junctions for inspection and maintenance (such as removable sleeves at bottom of downpipes).

Refer to T MU SY 20001 ST for security requirements relating to roof spaces (such as linked roof space between retail and station environment).

7.8 Customer toilets

The following requirements shall be achieved for the finishes of customer toilets:

1. floors finishes shall be tiled with antimicrobial coatings and comply with Section 7.1
2. skirtings shall be coved to the floor finished
3. walls shall be tiled with antimicrobial coatings from the floor to ceiling and comply with Section 7.3
4. ceiling finishes shall be moisture resistant and comply with Section 7.6.

Note: For toilets with multiple partitions, partitions should be full height.

7.9 Exposed structures

The following requirements shall be achieved for exposed structures:

1. Corrosion protection systems and finishes to structural elements such as steel and concrete shall be capable of being recoated in situ to match adjacent finishes, sheen, textures and colours.

   Note: Cathodic protection should be provided for critical structural elements.

2. Any exposed structural connections shall be configured in composition and detail to compliment the architectural language of the station.
3. Exposed concrete surfaces shall be uniform in colour and texture with no discolouration and comply with AS 3610.
4. Formed finishes of exposed concrete in areas that are visible to the general public shall be class 2X or better as defined in AS 3610 in locations more than 1 km from the coast and class 2 or better as defined in AS 3610 in locations within 1 km of the coast. Works on heritage stations shall be class 2 or better as defined in AS 3610.
5. Stainless steel structure and cladding finishes shall comply with the following:

   a. unless otherwise specified by the TAO, be 316L grade, and meet the general requirement of stainless steel in accordance with ASTM–A480

b. 316L grade shall not be used in marine atmospheres

c. cladding sheets shall be fully bonded with suitable substrate to prevent oil canning

6. Steel work finishes shall comply with the following:

a. be painted, galvanised or pre-finished; however, steel work shall not be painted and galvanised

b. corrosion protection coatings shall be in accordance with B220.

7.10 Glazing

Use of glazing can enhance customer safety and experience, including but not limited to, providing access to natural light, improving perception of space and providing passive surveillance.

The following requirements shall be achieved for glazing:

1. Glazing design shall comply with AS 1288 and AS 2047.
2. The determination of dimensions of each glazing panel shall comply with following:

a. shall not have an area greater than 1.44 m2, unless the benefits of larger glazing panels have been analysed and their use endorsed by the asset steward – operate or maintain

b. enable installation, removal and transport to or from the point of installation by means of manual handling and, or, mechanical handling equipment, without track possession

c. not have any side greater than the access route between the point of installation and the access to the station, unless an alternate means of access (such as access by crane) is approved by the asset steward – operate or maintain

d. weight of glazing panels shall take into account the handling of panel in accordance with replacement methodology

3. Glass shall be laminated and in combination with annealed, heat strengthened, or toughened as required by specific applications. Laminated toughened glass shall be used where glass is below 2.4 m from the FFL.
4. Glazing shall withstand the maximum load combinations including, but not limited to, dead-load, live-load (including crowd loading), wind-load and incidental load (during manufacturing, transportation and installation) in accordance with AS 1170 and AS/NZS 1170.
5. Thickness of glass shall comply with AS 1288 and minimum thickness specified in T MU SY 20001 ST. Where conflict exists between these standards the higher requirement shall take precedence.

6. Areas below 900 mm from the FFL shall have solid non-glazed and vandal resistant construction, unless where slight lines are required to facilitate passive surveillance as indicated by the risk assessment. Refer to T MU SY 20001 ST for additional requirements.
7. Where glazing is used externally, it shall comply with the following:
    a. Limit solar heat gain and UV penetration where it forms shelters and enclosed or semi-enclosed spaces.
    b. Minimise dirt and litter build-up and streaking.
    c. Be self-cleaning glass where the glass is subjected to sunlight and rainfall on a regular basis to enable self-cleaning to perform effectively. Self-cleaning glass shall have minimum pitch of 10 degrees measured horizontally.
    d. Be low iron or solar control glass.
    e. Have low visible light reflectance (VLR) to minimise risk of glare to train drivers.
8. Where glazing is used internally, it shall be low iron glass.
9. Framing design shall facilitate easy replacement of broken panels.
10. All glazing shall be fully framed around four sides. Where such framing is impracticable or diminishes the heritage or aesthetic appeal, then framing around three sides may be considered. For three-side-framed glazing to be permitted, structural silicone shall be used at the mid-span joint between two glazing panels. The structural performance of the glazing shall not be diminished.
11. Patch fittings shall not be used for the fixing of glazing panels.
12. Glazing shall be designed to meet blast resistant requirements in accordance with T MU SY 20001 ST (per station category) where required, or where a risk assessment determines that blast resistance is required.
13. Where applicable glazing shall be designed to meet acoustic performances based on requirements of the acoustic engineer. Glazing shall be designed to meet bushfire protection requirements in AS 3959 in land identified by the local government authority as bushfire-prone land.
14. Glazing colour shall match the existing glazing colour, heritage requirements or complement the surrounding elements.
15. Design requirements for glass used in protection screens shall comply with T HR CI 12030 ST.

    Note: Glazing panels on lift shafts should be sized consistently to limit the number of different sizes of panels being used per lift. Where there are two or more lifts at a site, panel sizes should maintain consistency between lift shafts where practicable.

Refer to T MU SY 20001 ST for physical security requirements of glazing and frames.

7.11 Anti-vandal treatments

The following requirements shall be achieved for anti-vandal treatments:

1. Design of all public areas shall take into account measures of vandal and tamper resistance.
2. Operating panels and removable elements shall only be accessible or removable using specialist tools or machinery.
3. Anti-graffiti treatments shall be applied to the surfaces of all painted elements, concrete, GRC and prefabricated metal panels to a minimum height of 2.4 m above the adjacent finished surface level or any accessible foothold or area of the structure that is accessible from above.
4. Graffiti shall be able to be removed without damage to the wall finishes.
5. The application of an anti-graffiti coatings shall have a consistent appearance and minimise any difference in the visual appearance of the treated and untreated parts of the structure.
6. The anti-graffiti coating shall be capable of being reapplied when required to maintain the performance characteristics of the coating.
7. Where anti-graffiti films are provided on glass, TAOs shall consult and seek approval from the asset steward – operate or maintain. Anti-graffiti films shall resist peeling or decolourisation.
8. Water taps located in the public areas shall be protected from vandalism by housing the taps within secured cabinets or by using vandal resistant taps.

Refer to T MU SY 20001 ST for additional requirements.

7.12 Back of house areas and plantrooms

Finishes to back of house shall be in accordance with specific requirements of the individual rooms.

The following may be considered for back of house office accommodations:

- office flooring materials and finishes may be carpet, vinyl, rubber or epoxy
- office wall lining materials and finishes may be plasterboard sheet lining with paint finish, cement render with paint finish, concrete or blockwork with a clear sealant or paint finish
- office ceiling materials and finishes may be plasterboard sheet lining with paint finished, off-form class 2 concrete in accordance with AS 3610 with a penetrating oil resistant

sealer, fibre cement or compressed fibre cement, or prefinished acoustic grid ceiling system.

7.13 Waterproofing

Above grade external waterproofing shall comply with AS 4654.1.

Below grade external waterproofing shall comply with BS 8102.

7.14 Boundary fencing and perimeter enclosures

The following requirements shall be achieved for boundary fencing and perimeter enclosures:

1. fencing or other forms of perimeter enclosures shall provide secure boundaries around station precincts to stop unauthorised entry
2. fencing or other forms of perimeter enclosures shall be integrated with the surrounding design and contribute positively to the urban environment
3. boundary fencing design shall comply with T HR CI 12160 ST.

Refer to TMC 511 for additional information on the selection, installation and maintenance of boundary fences.

7.15 Advertising

The following requirements shall be achieved for advertising:

1. Advertising shall not distract from statutory and wayfinding signage. See Section 6.9 for details.
2. Advertising shall not be placed on vertical faces of stair risers.
3. To reduce the risk of fire in an advertising screen blocking egress, digital advertising screens on platforms and concourses shall be located at least 5 m away for areas that are along the path of direct travel, measured from fire stair entry doors.
4. Fire safety assessments shall be conducted where digital advertising screens are proposed within 5 m from the following locations:
    a. either ends of escalators
    b. ends of open circulation stairs
    c. entrances to concourses.

Where the scope and type of advertising has not been determined, the TAO shall consult and agree with TfNSW advertising and revenue team on provision of advertising that is appropriate to the specific station.

Refer to T MU SY 20001 ST for addition requirements for physical security.

Refer to the *State Environmental Planning Policy No 64 – Advertising and Signage (2001 EPI 199)* for legislative requirements.

8 Temporary works

8.1 Overview

The following requirements apply to temporary works:

1. Safety and security during temporary works shall be maintained to the same levels as required for permanent works, including clearances to track during the installation of such temporary facilities during station upgrading works.
2. All requirements for accessible paths, lift and escalator run off zones, queuing zones and access to all operational facilities shall be maintained during temporary works.
3. Temporary works shall ensure that all required egress routes and egress travel distances are maintained during temporary works. Where it is impracticable, alternative compliant egress path shall be provided. The alternative egress path shall be certified by a Crown certifier.
4. Sight lines to platforms, train operating signals, signage, platform furniture, side roads, vehicle accesses, traffic lights and CCTV shall not be disrupted during temporary works.
5. Temporary works shall avoid obstruction to advertising or ancillary revenue assets. Where it is impracticable, the TAO shall seek early engagement with TfNSW advertising and ancillary revenue team for guidance.

8.2 Risk assessment

A risk assessment shall be completed to identify the risks for crime and other threats that can impact the safety of customers and staff or that can cause disruption to the operation of the station due to the temporary works. A corresponding risk treatment plan shall be developed to implement the approved treatment strategies.

Refer to T MU SY 20001 ST for risk assessment requirements.

8.3 Hoardings

Temporary hoardings shall be provided for all construction works. Refer to *Work Health and Safety Regulation 2017* and *Code of Practice – Construction Work (SafeWork NSW)* for legislative requirements.

Temporary hoardings around construction zones shall provide the following:

1. a secure and stable barrier around the construction zone
2. an exclusion zone to ensure that unauthorised persons are prohibited from entering the construction zone
3. protection against objects falling outside the construction zone.

Temporary barriers associated with testing, maintenance, or repair work in stations are not covered by this standard.

Refer to T MU SY 20001 ST for security requirements.

8.3.1 Types of hoarding

Solid, overhead protection or mesh fencing or the like, appropriate to the construction environment, local conditions and specific site may be used. The types of hoarding and proposed positioning of hoarding shall be approved by relevant asset steward – operate or maintain.

8.3.2 Performance requirements

Hoardings shall achieve the following:

1. Height, material and configuration of hoarding shall comply with relevant standards, codes of practice and manufacturers' instructions. Relevant sources of requirements include, but are not limited to, the following:
    - *Work Health and Safety Regulation 2017*
    - *Code of Practice – Construction Work (SafeWork NSW)*
    - *Code of Practice – Construction Work (Safe Work Australia)*
    - *Code of Practice – Managing the Work Environment and Facilities*
    - *Code of Practice – Overhead Protective Structures*
    - AS 1170
    - AS/NZS 1170
    - AS 1720
    - AS 4100
    - AS 4687
    - Local government guidelines for hoardings.
2. Protect against the transmission of dust from the construction zone.
3. Protect against debris and loose material being transmitted beyond the construction zone.

4. Protect the public from welder flash.
5. Be low maintenance.
6. Be free from sharp edges and finishes.
7. Not provide a climbing foothold.
8. Be free of protruding element or trip hazard.
9. Be solid from the floor surface up to 150 mm to provide a detectable surface for customers with vision impairment.
10. Be designed and installed to remain erect and structurally sound. Hoarding design shall be certified by structural engineer to confirm structural adequacy.
11. Be capable of supporting crowd load and accidental loads arising from maintenance equipment as deemed appropriate by risk assessment.
12. Be appropriately designed to mitigate earthing and bonding issues.
13. Footing or structural support erected on paved surface shall be separated with waterproofing membrane to prevent rust staining.
14. Take into account noise, dust, light and vibration impacts that are specific to the construction work and provide mitigation and control measures.
15. Satisfy all performance, spatial and other relevant requirements as specified in Section 8.3 for the duration of the works.

8.3.3 Spatial requirements

The following requirements shall apply to spatial configuration of hoardings:

1. Hoardings shall be positioned within the TfNSW site boundary. Where such a position is impracticable and hoardings are required to be positioned outside of the site boundary to ensure safety, agreement from adjoining property owners or government authorities shall be obtained.
2. The position of hoardings shall comply with CPTED principles and avoid creation of concealed areas.
3. The position of hoardings shall meet the clearance requirements in accordance with relevant standards for OHW equipment and transmission line equipment.
4. Where the construction zone is positioned below a stairway, bridge or other space accessible to the public, the risk of falling objects shall be taken into account and adopt appropriate mitigation strategies.
5. The swing of doors and gates shall not obstruct or encroach into egress routes.

6. Hoarding that may adversely impact the rail corridor shall be designed and certified by the TAO.

Refer to ESC 215 for spatial requirements of transit spaces.

8.3.4 Material and finishes

The following requirements shall be achieved for material and finishes of hoardings:

1. Solid hoarding shall be painted, with a colour that is selected taking into account customer experience, resistance to graffiti and other relevant factors.
2. Where the hoarding is planned to be in place for twenty-six weeks or more, public artwork and graphical material shall be incorporated to eliminate blank surfaces and discourage graffiti.
3. All public artwork and graphic material shall be submitted to TfNSW for approval. Public artwork and graphics shall cover a surface area approved by TfNSW.
4. Public viewing windows shall be provided for sites involving excavation works where the worksite has heritage, cultural or significant aesthetic appeal.

   Note: Public viewing windows should also be incorporated where the provision of views of the worksite would enhance customer experience.
5. Hoarding finishes shall facilitate the rapid repair of vandalism and removal of graffiti.

   Note: Other forms of hoarding finish that improve, enrich and vitalise the space should also be considered.

8.4 Temporary signage

The following requirements shall apply to temporary signage:

1. Additional signage shall be provided for temporary detour or any other work impacting customers due to temporary works. Signage shall be in accordance with *Wayfinding Planning Guide – Temporary Signs*.
2. All use of NSW Government branding shall be approved by the asset steward – delivery before erection.

Refer to *Infrastructure Project Signage – Style Guide* for additional guidance on temporary signage.

9 Lift collision protection and robustness

Collision protection requirements are specified in T HR CI 12020 ST, T HR CI 12030 ST and T HR CI 12090 ST. Lift structures shall not be designed to support overbridge structures. Lift structures shall be structurally independent of any adjacent overbridge or underbridge structures.

9.1 Lift structures

The following requirements shall apply to lift structures:

1. Where a lift structure is wholly within earth filled platform walls (including end wall) complying with T HR CI 12065 ST, the lift structure shall be designed for the following robustness load cases which are applied separately:
    a. A force of 200 kN applied in the horizontal direction and at a level (between adjacent rail level and 2 m above rail level) to produce the greatest effect.
    b. A force of 100 kN applied in the horizontal direction and at a level (between platform level and 3 m above platform level) to produce the greatest effect.
2. Where a lift structure is outside (either wholly or partially) the platform walls, or at a non-fully earth filled platform structure and:
    a. is within 10 m of the centreline of the nearest track, then the lift structure shall be designed for a minimum collision load of 500 kN in accordance with clause 11.4.3 of AS 5100.2:2017
    b. is further than 10 m from the nearest track centreline, then no collision load shall be applied
    c. the lift structure location or position is such that the risk of damage to an adjacent overbridge, to the extent that the overbridge could collapse, by a derailed train is increased by installation of the lift structure, then collision deflection walls shall be provided for the lift structure and the overbridge structure supports, as is required for bridge support protection in accordance with AS 5100 (all parts), including lateral distance provisions. Where the overbridge currently complies with the collision protection requirements of AS 5100 (all parts) and applicable TfNSW standards, then no further protection of the overbridge is required and the requirements of item 2. a. or b. shall apply to the lift structure.

9.2 Lift structure within the rail corridor

A lift structure that is located in the rail corridor, such that it can be struck by machinery or vehicles such as those carrying out maintenance or similar activities, shall be designed for a robustness load of 100 kN applied in the horizontal direction and at a level (between ground level and 3 m above ground level) to produce the greatest effect.

The lift structure should also be protected by bollards or collision protection barriers positioned to ensure that the lift structure is protected from accidental damage arising from corridor maintenance activities.

The design loads in Section 9.1 and 9.2 shall be applied as separate load cases.

9.3 Application of robustness loads

The robustness loads are notional (ultimate) loads applied to an area of one square metre, or a linear load of 2 m length acting on the shear centre of individual structural elements forming the primary steel frame (that is, not to be taken as an eccentric load applied to just one flange of a beam, for example). The ultimate capacity of the individual structural element and the primary steel frame shall not be exceeded under a 'permanent effect (PE) + robustness load' load combination.

Failure of the impacted structural element (where the robustness load exceeds the ultimate capacity of the individual structural element) is permitted, if the structure has alternative load paths, such that the ultimate capacity of the elements of the primary steel frame forming the alternative load path will not be exceeded with the impacted element removed, under the PE load combinations.

10 Operations and maintenance

10.1 Access for cleaning, inspection and maintenance

The following requirements shall be achieved for access for cleaning, inspection and maintenance of stations and station components:

1. Spatial configuration shall comply with the maintenance requirements as identified in the maintenance standards, technical maintenance plans and manufactures’ requirements. Maintenance programs shall ensure that assets are fit for purpose for the whole-of-life of the asset.
2. General inspection and maintenance shall be conducted without track possession or traction power outage.

3. Roofs and vertical cladding shall be readily accessible by either moveable ladders, elevated working platforms, cradles, building maintenance units, or fixed installations including platforms, ladders.
4. Height safety system data plates of ladder brackets or other roof access systems shall be visible from the ground or be visible from easily accessible location for the purpose of confirmation of currency of certification.
5. Fall restraint and facade access systems shall be unobtrusive and comply with AS/NZS 1891.
6. Ceilings and soffits shall be readily accessible by either moveable ladders, elevated work platforms or by fixed installations comprising walkways, platforms, stairs or ladders.
7. Means to access, ceiling, lighting and services above stairways, escalators and light wells for regular inspection and maintenance shall be provided.
8. Access or inspection panels to voids and ventilation shafts shall be provided where practicable.
9. Baseplate connections of structural columns that are exposed to the weather shall take into account the risks of corrosion and the requirement for visual inspections. Where the columns are not located on the platforms or along main circulation routes, configuration of the baseplate shall enable visual inspection (such as by having exposed baseplate connections). Where the baseplate connections are located on the platforms or along main circulation routes within the public areas, the proposed solution shall provide the best balanced outcome between spatial quality, resistance to corrosion and ease of maintenance. Baseplate connections shall not constitute trip hazard, and any risks associated with trips and falls shall be mitigated SFAIRP.

See Section 7 for cleaning, inspection and maintenance requirements of materials and finishes.

10.2 Replacement and repairs

The following requirements shall be achieved for replacement and repairs of station components:

1. Maintenance access routes to accommodate the largest machinery, equipment kit, replacement panels, or finishes shall be provided.
2. The replacement and transportation into and out of the station of equipment kit, replacement panels, or finishes shall be carried out without track possession.
3. Cladding and glazing panels below 2.4 m shall be sized such that they can be easily removed without the aid of any mechanical handling equipment, unless the benefits of material size and selections have been analysed and their use endorsed by the asset

steward – operate or maintain. Hazardous manual handling shall be identified and be eliminated SFAIRP.

4. Cladding and glazing panels above 2.4 m shall be replaced with the aid of mechanical handling equipment.
5. Replacement and repair strategies shall not assume that spare cladding panels are stored on site.
6. Pulling and hoisting anchors in back-of-house area for transportation and replacement of equipment shall be provided.
7. Where glass panels are used at lift shafts, each panel shall be replaceable from either the outside or inside (but not both sides) of the lift shaft without causing undue interruption or inconvenience to customers, operations or other stakeholders such as nearby tenants (including where access equipment may be required).

11 Design life

The design life is provided on the basis that stations are operated and maintained in environmental conditions that are compliant with the manufacturer's recommendations and maintained in accordance with the requirements of relevant Australian standards. The design life guides the minimum durability requirements for each asset item. Design life of new assets shall not be less than that specified in Table 4.

Table 4 – Design life requirement

Component	Design life
General building structures	120 years
Retaining walls	120 years
Support structures	50 years
Non-load bearing masonry elements	50 years
Architectural internal cladding	20 years
Architectural external cladding	30 years
External paving	30 years
Internal floor finishes	20 years
Roofing	30 years
Signage (excluding advertising signage)	20 years
Public artwork	20 years
Station fixtures	20 years

The TAO shall provide documented evidence confirming that the design life of the selected product and finishes is achievable. Where the design life nominated in Table 4 cannot be

achieved due to constraints or external factors on site, for example, the expected life estimation together with considerations of available alternative options shall be consulted with stakeholders and approved by asset steward – delivery and asset steward – operate or maintain.

Refer to T HR CI 12002 ST for civil infrastructure design life requirements.

Refer to TS 04955.1 for building service design life requirements.

Refer to TS 00008.2 for fire services design life requirements.

12 Station classification

12.1 Overview of different methodologies

Station classification is used to determine the operational, customer and spatial configuration requirements. The classification schemes use the physical attributes and function of the station as the basis for classification.

TfNSW currently provides station classifications as follows:

- class – consist of Sydney Trains, NSW TrainLink and Sydney Metro
- intercity or regional – consist of intercity or regional for NSW TrainLink stations
- station class – Table 5 contains descriptions of station class categories
- customer information system tier – refer to T MU TE 61005 ST for additional information for the following:
    - audio, hearing augmentation, and electronic visual displays by journey stage for each tier,
    - classification of public transport buildings by decision points with dynamic information for each tier
- heritage – Table 6 contains descriptions of heritage status
- protective security – for access to this information contact AMB at standards@transport.nsw.gov.au
- operational security – for access to this information contact AMB at standards@transport.nsw.gov.au

Table 5 – Description of station class

Class	Description
City	Demographic or geographic drivers – concentration of workplaces, commercial buildings and specialised shops. Recreation and entertainment destinations. Network function – major origin and destination point for journeys. High frequency of services to multiple destinations. Typically, a rail interchange and high modal transfers.
Major	Demographic or geographic drivers – centres of significant commercial and residential importance. Significant retail and community services nearby. Network function – major origin and destination point for journeys High frequency of services to cities and other destinations. Possible rail interchange.
Suburban	Demographic or geographic drivers – localised residential centres with some retail services nearby. Typically located within one hour of a city. Network function – strong one-way flows to and from cities and major centres. Regular, frequent services to cities and major centres. Possible rail interchange.
Community	Demographic or geographic drivers – local community centres outside the greater metropolitan area. Typically, some retail and light commercial services nearby. Network function – semi-regular, infrequent services to cities, major centres and other destinations.
Outer urban	Demographic or geographic drivers – typically serving a sparsely distributed community rather than a localised residential centre. Network function – limited services to major centres and other destinations. Possibly a request stop. Typically, short platforms.

Table 6 – Description of heritage status

Status	Description
S170	Stations listed in S170 registers.
SHR	Stations listed in the State Heritage Register, which are considered to be of heritage significance and protected under the *Heritage Act 1977*

12.2 Station classification table

Table 7 contains list of all operational passenger train stations within NSW.

Table 7 – Station classification

Station name	Organisation	Intercity or regional	Station classification	Customer information tier	Heritage status
Aberdeen	NSW Trainlink	Intercity	Outer urban	NA	NA

Station name	Organisation	Intercity or regional	Station classification	Customer information tier	Heritage status
Adamstown	NSW Trainlink	Intercity	Community	NA	S170
Albion Park	NSW Trainlink	Intercity	Suburban	NA	SHR
Albury	NSW Trainlink	Regional	Community	NA	SHR
Allawah	Sydney Trains	NA	Suburban	2	NA
Armidale	NSW Trainlink	Regional	Community	NA	SHR
Arncliffe	Sydney Trains	NA	Suburban	2	SHR
Artarmon	Sydney Trains	NA	Suburban	3	S170
Ashfield	Sydney Trains	NA	Major	2	S170
Asquith	Sydney Trains	NA	Suburban	3	S170
Auburn	Sydney Trains	NA	Major	2	NA
Austinmer	NSW Trainlink	Intercity	Community	NA	SHR
Awaba	NSW Trainlink	Intercity	Outer urban	NA	NA
Banksia	Sydney Trains	NA	Suburban	2	S170
Bankstown	Sydney Trains	NA	Major	2	S170
Bardwell Park	Sydney Trains	NA	Suburban	3	S170
Bargo	NSW Trainlink	Intercity	Community	NA	S170
Bathurst	NSW Trainlink	Regional	Suburban	NA	SHR
Beecroft	Sydney Trains	NA	Suburban	3	S170
Bella Vista	Sydney Metro	NA	Suburban	NA	NA
Bell	NSW Trainlink	Intercity	Outer urban	NA	S170
Bellambi	NSW Trainlink	Intercity	Suburban	NA	NA
Bellata	NSW Trainlink	Regional	Outer urban	NA	NA
Belmore	Sydney Trains	NA	Suburban	3	SHR
Berala	Sydney Trains	NA	Suburban	3	S170
Beresfield	NSW Trainlink	Intercity	Suburban	NA	NA
Berowra	Sydney Trains	NA	Suburban	2	S170
Berry	NSW Trainlink	Intercity	Community	NA	SHR
Beverly Hills	Sydney Trains	NA	Suburban	3	SHR
Bexley North	Sydney Trains	NA	Suburban	3	S170
Birrong	Sydney Trains	NA	Suburban	3	NA
Blackheath	NSW Trainlink	Intercity	Suburban	NA	SHR
Blacktown	Sydney Trains	NA	City	1	NA
Blaxland	NSW Trainlink	Intercity	Suburban	NA	S170
Blayney	NSW Trainlink	Regional	Outer urban	NA	SHR

Station name	Organisation	Intercity or regional	Station classification	Customer information tier	Heritage status
Boggabri	NSW Trainlink	Regional	Outer urban	NA	S170
Bomaderry					
(Nowra)	NSW Trainlink	Intercity	Suburban	NA	SHR
Bombo	NSW Trainlink	Intercity	Outer urban	NA	SHR
Bondi Junction	Sydney Trains	NA	City	1	S170
Booragul	NSW Trainlink	Intercity	Community	NA	NA
Bowral	NSW Trainlink	Intercity	Suburban	NA	S170
Branxton	NSW Trainlink	Intercity	Outer urban	NA	SHR
Broadmeadow	NSW Trainlink	Intercity	Major	NA	S170
Broken Hill	NSW Trainlink	Regional	Outer urban	NA	SHR
Bullaburra	NSW Trainlink	Intercity	Community	NA	S170
Bulli	NSW Trainlink	Intercity	Suburban	NA	SHR
Bundanoon	NSW Trainlink	Intercity	Outer urban	NA	SHR
Bungendore	NSW Trainlink	Regional	Outer urban	NA	SHR
Burradoo	NSW Trainlink	Intercity	Outer urban	NA	NA
Burwood	Sydney Trains	NA	City	2	SHR
Cabramatta	Sydney Trains	NA	Major	3	NA
Campbelltown	Sydney Trains	NA	Major	1	S170
Campsie	Sydney Trains	NA	Major	2	S170
Canberra	NSW Trainlink	Regional	Community	NA	NA
Canley Vale	Sydney Trains	NA	Suburban	3	NA
Canterbury	Sydney Trains	NA	Suburban	3	SHR
Cardiff	NSW Trainlink	Intercity	Suburban	NA	NA
Caringbah	Sydney Trains	NA	Suburban	3	S170
Carlton	Sydney Trains	NA	Suburban	2	S170
Carramar	Sydney Trains	NA	Suburban	3	S170
Castle Hill	Sydney Metro	NA	Major	NA	NA
Casino	NSW Trainlink	Regional	Community	NA	SHR
Casula	Sydney Trains	NA	Community	3	NA
Central	Sydney Trains	NA	City	1	SHR
Chatswood	Sydney Trains, Sydney Metro	NA	City	1	NA
Cheltenham	Sydney Trains	NA	Suburban	2	NA
Cherrybrook	Sydney Metro	NA	Suburban	NA	NA

Station name	Organisation	Intercity or regional	Station classification	Customer information tier	Heritage status
Chester Hill	Sydney Trains	NA	Suburban	3	S170
Circular Quay	Sydney Trains	NA	City	1	SHR
Clarendon	Sydney Trains	NA	Community	3	NA
Clyde	Sydney Trains	NA	Suburban	2	S170
Coalcliff	NSW Trainlink	Intercity	Outer urban	NA	NA
Cockle Creek	NSW Trainlink	Intercity	Outer urban	NA	NA
Coffs Harbour	NSW Trainlink	Regional	Community	NA	NA
Coledale	NSW Trainlink	Intercity	Outer urban	NA	S170
Como	Sydney Trains	NA	Suburban	3	NA
Concord West	Sydney Trains	NA	Suburban	2	S170
Condoblin	NSW Trainlink	Regional	Outer urban	NA	S170
Coniston	NSW Trainlink	Intercity	Suburban	NA	S170
Coolamon	NSW Trainlink	Regional	Outer urban	NA	S170
Cootamundra	NSW Trainlink	Regional	Community	NA	SHR
Corrimal	NSW Trainlink	Intercity	Community	NA	NA
Cowan	NSW Trainlink	Intercity	Outer urban	NA	S170
Cringila	NSW Trainlink	Intercity	Outer urban	NA	S170
Cronulla	Sydney Trains	NA	Suburban	2	SHR
Croydon	Sydney Trains	NA	Suburban	2	SHR
Culcairn	NSW Trainlink	Regional	Outer urban	NA	SHR
Dapto	NSW Trainlink	Intercity	Suburban	NA	S170
Darnick	NSW Trainlink	Regional	Outer urban	NA	NA
Denistone	Sydney Trains	NA	Community	2	S170
Domestic Airport	Sydney Trains	NA	Major	1	NA
Doonside	Sydney Trains	NA	Suburban	3	S170
Dora Creek	NSW Trainlink	Intercity	Outer urban	NA	NA
Douglas Park	NSW Trainlink	Intercity	Outer urban	NA	NA
Dubbo	NSW Trainlink	Regional	Community	NA	SHR
Dulwich Hill	Sydney Trains	NA	Suburban	3	S170
Dungog	NSW Trainlink	Intercity	Community	NA	S170
East Hills	Sydney Trains	NA	Suburban	2	NA
East Maitland	NSW Trainlink	Intercity	Community	NA	SHR
East Richmond	Sydney Trains	NA	Community	3	NA
Eastwood	Sydney Trains	NA	Major	2	NA

Station name	Organisation	Intercity or regional	Station classification	Customer information tier	Heritage status
Edgecliff	Sydney Trains	NA	Major	2	S170
Edmondson Park	Sydney Trains	NA	Suburban	3	NA
Emu Plains	Sydney Trains	NA	Suburban	3	SHR
Engadine	Sydney Trains	NA	Suburban	3	NA
Epping	Sydney Trains, Sydney Metro	NA	City	1	S170
Erskineville	Sydney Trains	NA	Suburban	2	S170
Euabalong West	NSW Trainlink	Regional	Outer urban	NA	S170
Eungai	NSW Trainlink	Regional	Outer urban	NA	NA
Exeter	NSW Trainlink	Intercity	Outer urban	NA	SHR
Fairfield	Sydney Trains	NA	Major	2	SHR
Fairy Meadow	NSW Trainlink	Intercity	Community	NA	NA
Fassifern	NSW Trainlink	Intercity	Suburban	NA	S170
Faulconbridge	NSW Trainlink	Intercity	Community	NA	S170
Flemington	Sydney Trains	NA	Suburban	3	S170
Gerringong	NSW Trainlink	Intercity	Community	NA	NA
Geurie	NSW Trainlink	Regional	Outer urban	NA	NA
Glenbrook	NSW Trainlink	Intercity	Suburban	NA	S170
Glenfield	Sydney Trains	NA	Major	2	NA
Gloucester	NSW Trainlink	Regional	Outer urban	NA	NA
Gordon	Sydney Trains	NA	Major	2	SHR
Gosford	NSW Trainlink	Intercity	City	NA	S170
Goulburn	NSW Trainlink	Intercity	Suburban	NA	SHR
Grafton	NSW Trainlink	Regional	Community	NA	SHR
Granville	Sydney Trains	NA	Major	1	S170
Green Square	Sydney Trains	NA	Major	2	NA
Greta	NSW Trainlink	Intercity	Outer urban	NA	SHR
Griffith	NSW Trainlink	Regional	Outer urban	NA	S170
Guildford	Sydney Trains	NA	Suburban	3	S170
Gunnedah	NSW Trainlink	Regional	Outer urban	NA	SHR
Gunning	NSW Trainlink	Regional	Outer urban	NA	SHR
Gymea	Sydney Trains	NA	Suburban	3	S170
Hamilton	NSW Trainlink	Intercity	Major	NA	SHR

Station name	Organisation	Intercity or regional	Station classification	Customer information tier	Heritage status
Harden	NSW Trainlink	Regional	Outer urban	NA	SHR
Harris Park	Sydney Trains	NA	Suburban	2	NA
Hawkesbury River	NSW Trainlink	Intercity	Community	NA	SHR
Hazelbrook	NSW Trainlink	Intercity	Suburban	NA	S170
Heathcote	Sydney Trains	NA	Community	3	NA
Helensburgh	NSW Trainlink	Intercity	Suburban	NA	SHR
Hills Showground	Sydney Metro	NA	Suburban	NA	NA
Henty	NSW Trainlink	Regional	Outer urban	NA	SHR
Hexham	NSW Trainlink	Intercity	Outer urban	NA	S170
High Street	NSW Trainlink	Intercity	Outer urban	NA	NA
Hilldale	NSW Trainlink	Intercity	Outer urban	NA	NA
Holsworthy	Sydney Trains	NA	Suburban	2	NA
Homebush	Sydney Trains	NA	Suburban	2	SHR
Hornsby	Sydney Trains	NA	City	1	S170
Hurlstone Park	Sydney Trains	NA	Suburban	3	S170
Hurstville	Sydney Trains	NA	City	2	NA
Ingleburn	Sydney Trains	NA	Suburban	2	S170
International Airport	Sydney Trains	NA	Major	1	NA
Ivanhoe	NSW Trainlink	Regional	Outer urban	NA	S170
Jannali	Sydney Trains	NA	Suburban	3	S170
Junee	NSW Trainlink	Regional	Outer urban	NA	SHR
Katoomba	NSW Trainlink	Intercity	Major	NA	SHR
Kellyville	Sydney Metro	NA	Suburban	NA	NA
Kembla Grange Racecourse	NSW Trainlink	Intercity	Outer urban	NA	S170
Kempsey	NSW Trainlink	Regional	Community	NA	S170
Kendall	NSW Trainlink	Regional	Outer urban	NA	S170
Kiama	NSW Trainlink	Intercity	Suburban	NA	SHR
Killara	Sydney Trains	NA	Suburban	3	S170
Kings Cross	Sydney Trains	NA	Major	1	S170
Kingsgrove	Sydney Trains	NA	Suburban	3	S170
Kingswood	Sydney Trains	NA	Suburban	2	NA

Station name	Organisation	Intercity or regional	Station classification	Customer information tier	Heritage status
Kirrawee	Sydney Trains	NA	Suburban	2	NA
Kogarah	Sydney Trains	NA	Major	1	NA
Koolewong	NSW Trainlink	Intercity	Community	NA	NA
Kootingal	NSW Trainlink	Regional	Outer urban	NA	NA
Kotara	NSW Trainlink	Intercity	Outer urban	NA	NA
Kyogle	NSW Trainlink	Regional	Outer urban	NA	S170
Lakemba	Sydney Trains	NA	Suburban	3	S170
Lapstone	NSW Trainlink	Intercity	Community	NA	NA
Lawson	NSW Trainlink	Intercity	Community	NA	SHR
Leeton	NSW Trainlink	Regional	Outer urban	NA	SHR
Leightonfield	Sydney Trains	NA	Community	3	S170
Leppington	Sydney Trains	NA	Suburban	3	NA
Leumeah	Sydney Trains	NA	Suburban	3	NA
Leura	NSW Trainlink	Intercity	Suburban	NA	S170
Lewisham	Sydney Trains	NA	Suburban	3	NA
Lidcombe	Sydney Trains	NA	Major	1	S170
Linden	NSW Trainlink	Intercity	Outer urban	NA	S170
Lindfield	Sydney Trains	NA	Suburban	2	S170
Lisarow	NSW Trainlink	Intercity	Community	NA	NA
Lithgow	NSW Trainlink	Intercity	Suburban	NA	SHR
Liverpool	Sydney Trains	NA	City	1	SHR
Lochinvar	NSW Trainlink	Intercity	Outer urban	NA	NA
Loftus	Sydney Trains	NA	Community	3	NA
Lysaghts	NSW Trainlink	Intercity	Outer urban	NA	NA
Macarthur	Sydney Trains	NA	Major	2	NA
Macdonaldtown	Sydney Trains	NA	Suburban	3	NA
Macksville	NSW Trainlink	Regional	Outer urban	NA	SHR
Macquarie Fields	Sydney Trains	NA	Suburban	3	NA
Macquarie Park	Sydney Metro	NA	Major	NA	NA
Macquarie University	Sydney Metro	NA	Major	NA	NA
Maitland	NSW Trainlink	Intercity	Suburban	NA	SHR
Marayong	Sydney Trains	NA	Suburban	3	NA

Station name	Organisation	Intercity or regional	Station classification	Customer information tier	Heritage status
Marrickville	Sydney Trains	NA	Suburban	2	SHR
Martin Place	Sydney Trains	NA	City	1	SHR
Martins Creek	NSW Trainlink	Intercity	Outer urban	NA	S170
Marulan	NSW Trainlink	Intercity	Outer urban	NA	SHR
Mascot	Sydney Trains	NA	Major	2	NA
Meadowbank	Sydney Trains	NA	Suburban	3	NA
Medlow Bath	NSW Trainlink	Intercity	Outer urban	NA	SHR
Menangle	NSW Trainlink	Intercity	Outer urban	NA	SHR
Menangle Park	NSW Trainlink	Intercity	Community	NA	NA
Menindee	NSW Trainlink	Regional	Outer urban	NA	S170
Merrylands	Sydney Trains	NA	Suburban	3	S170
Metford	NSW Trainlink	Intercity	Community	NA	NA
Millthorpe	NSW Trainlink	Regional	Community	NA	SHR
Milsons Point	Sydney Trains	NA	Major	2	SHR
Mindaribba	NSW Trainlink	Intercity	Outer urban	NA	NA
Minnamurra	NSW Trainlink	Intercity	Community	NA	NA
Minto	Sydney Trains	NA	Suburban	3	NA
Miranda	Sydney Trains	NA	Suburban	3	S170
Mittagong	NSW Trainlink	Intercity	Community	NA	SHR
Moree	NSW Trainlink	Regional	Outer urban	NA	S170
Morisset	NSW Trainlink	Intercity	Major	NA	S170
Mortdale	Sydney Trains	NA	Suburban	3	S170
Moss Vale	NSW Trainlink	Intercity	Suburban	NA	SHR
Mount Colah	Sydney Trains	NA	Community	3	NA
Mount Druitt	Sydney Trains	NA	Major	2	NA
Mount Kuring gai	Sydney Trains	NA	Community	3	S170
Mount Victoria	NSW Trainlink	Intercity	Suburban	NA	SHR
Mulgrave	Sydney Trains	NA	Community	3	NA
Murrurundi	NSW Trainlink	Regional	Outer urban	NA	SHR
Museum	Sydney Trains	NA	Major	2	SHR
Muswellbrook	NSW Trainlink	Intercity	Suburban	NA	SHR
Nambucca Heads	NSW Trainlink	Regional	Outer urban	NA	S170

Station name	Organisation	Intercity or regional	Station classification	Customer information tier	Heritage status
Narara	NSW Trainlink	Intercity	Suburban	NA	NA
Narrabri	NSW Trainlink	Regional	Outer urban	NA	S170
Narrandera	NSW Trainlink	Regional	Outer urban	NA	SHR
Narwee	Sydney Trains	NA	Suburban	3	S170
Newcastle Interchange	NSW Trainlink	Intercity	City	NA	NA
Newtown	Sydney Trains	NA	Major	2	SHR
Niagara Park	NSW Trainlink	Intercity	Community	NA	NA
Normanhurst	Sydney Trains	NA	Suburban	3	NA
North Ryde	Sydney Metro	NA	Suburban	NA	NA
North Strathfield	Sydney Trains	NA	Suburban	3	S170
North Sydney	Sydney Trains	NA	City	1	NA
North Wollongong	NSW Trainlink	Intercity	Major	NA	NA
Norwest	Sydney Metro	NA	Major	NA	NA
Oak Flats	NSW Trainlink	Intercity	Suburban	NA	NA
Oatley	Sydney Trains	NA	Suburban	3	SHR
Olympic Park	Sydney Trains	NA	Major	2	NA
Orange	NSW Trainlink	Regional	Community	NA	SHR
Otford	NSW Trainlink	Intercity	Outer urban	NA	NA
Ourimbah	NSW Trainlink	Intercity	Suburban	NA	S170
Padstow	Sydney Trains	NA	Suburban	2	S170
Panania	Sydney Trains	NA	Suburban	3	S170
Parkes	NSW Trainlink	Regional	Outer urban	NA	SHR
Parramatta	Sydney Trains	NA	City	1	SHR
Paterson	NSW Trainlink	Intercity	Outer urban	NA	S170
Pendle Hill	Sydney Trains	NA	Suburban	2	S170
Pennant Hills	Sydney Trains	NA	Suburban	2	NA
Penrith	Sydney Trains	NA	City	1	SHR
Penrose	NSW Trainlink	Intercity	Outer urban	NA	S170
Penshurst	Sydney Trains	NA	Suburban	3	S170
Petersham	Sydney Trains	NA	Suburban	3	SHR
Picton	NSW Trainlink	Intercity	Community	NA	SHR
Point Clare	NSW Trainlink	Intercity	Community	NA	NA

Station name	Organisation	Intercity or regional	Station classification	Customer information tier	Heritage status
Port Kembla	NSW Trainlink	Intercity	Suburban	NA	NA
Port Kembla North	NSW Trainlink	Intercity	Outer urban	NA	NA
Punchbowl	Sydney Trains	NA	Suburban	3	S170
Pymble	Sydney Trains	NA	Suburban	3	S170
Quakers Hill	Sydney Trains	NA	Suburban	3	NA
Queanbeyan	NSW Trainlink	Regional	Outer urban	NA	SHR
Quirindi	NSW Trainlink	Regional	Outer urban	NA	SHR
Redfern	Sydney Trains	NA	City	1	SHR
Regents Park	Sydney Trains	NA	Suburban	3	S170
Revesby	Sydney Trains	NA	Suburban	2	S170
Rhodes	Sydney Trains	NA	Suburban	2	SHR
Richmond	Sydney Trains	NA	Suburban	3	SHR
Riverstone	Sydney Trains	NA	Suburban	3	SHR
Riverwood	Sydney Trains	NA	Suburban	3	S170
Rockdale	Sydney Trains	NA	Major	1	SHR
Rooty Hill	Sydney Trains	NA	Suburban	3	S170
Roseville	Sydney Trains	NA	Suburban	3	S170
Rouse Hill	Sydney Metro	NA	Major	NA	NA
Rydal	NSW Trainlink	Regional	Outer urban	NA	SHR
Sandgate	NSW Trainlink	Intercity	Outer urban	NA	NA
Sawtell	NSW Trainlink	Regional	Outer urban	NA	NA
Scarborough	NSW Trainlink	Intercity	Outer urban	NA	SHR
Schofields	Sydney Trains	NA	Suburban	3	NA
Scone	NSW Trainlink	Intercity	Outer urban	NA	SHR
Sefton	Sydney Trains	NA	Suburban	3	S170
Seven Hills	Sydney Trains	NA	Suburban	2	S170
Shellharbour Junction	NSW Trainlink	Intercity	Outer urban	NA	NA
Singleton	NSW Trainlink	Intercity	Suburban	NA	SHR
Springwood	NSW Trainlink	Intercity	Major	NA	SHR
St James	Sydney Trains	NA	Major	2	SHR
St Leonards	Sydney Trains	NA	Major	1	NA
St Marys	Sydney Trains	NA	Suburban	2	SHR

Station name	Organisation	Intercity or regional	Station classification	Customer information tier	Heritage status
St Peters	Sydney Trains	NA	Suburban	2	SHR
Stanmore	Sydney Trains	NA	Suburban	2	SHR
Stanwell Park	NSW Trainlink	Intercity	Community	NA	NA
Strathfield	Sydney Trains	NA	City	1	SHR
Stuart Town	NSW Trainlink	Regional	Outer urban	NA	SHR
Summer Hill	Sydney Trains	NA	Suburban	3	S170
Sutherland	Sydney Trains	NA	Major	2	S170
Sydenham	Sydney Trains	NA	Major	1	SHR
Tahmoor	NSW Trainlink	Intercity	Community	NA	SHR
Tallawong	Sydney Metro	NA	Suburban	NA	NA
Tallong	NSW Trainlink	Intercity	Outer urban	NA	SHR
Tamworth	NSW Trainlink	Regional	Community	NA	SHR
Tarago	NSW Trainlink	Regional	Outer urban	NA	SHR
Tarana	NSW Trainlink	Regional	Outer urban	NA	SHR
Taree	NSW Trainlink	Regional	Community	NA	SHR
Tarro	NSW Trainlink	Intercity	Outer urban	NA	NA
Tascott	NSW Trainlink	Intercity	Community	NA	NA
Telarah	NSW Trainlink	Intercity	Community	NA	NA
Tempe	Sydney Trains	NA	Suburban	2	SHR
Teralba	NSW Trainlink	Intercity	Outer urban	NA	NA
The Rock	NSW Trainlink	Regional	Outer urban	NA	SHR
Thirroul	NSW Trainlink	Intercity	Major	NA	SHR
Thornleigh	Sydney Trains	NA	Suburban	3	NA
Thornton	NSW Trainlink	Intercity	Community	NA	S170
Toongabbie	Sydney Trains	NA	Suburban	2	S170
Town Hall	Sydney Trains	NA	City	1	S170
Towradgi	NSW Trainlink	Intercity	Community	NA	NA
Tuggerah	NSW Trainlink	Intercity	Major	NA	NA
Turramurra	Sydney Trains	NA	Suburban	2	S170
Turrella	Sydney Trains	NA	Suburban	3	S170
Unanderra	NSW Trainlink	Intercity	Suburban	NA	NA
Uralla	NSW Trainlink	Regional	Outer urban	NA	SHR
Urunga	NSW Trainlink	Regional	Outer urban	NA	NA
Valley Heights	NSW Trainlink	Intercity	Community	NA	SHR

Station name	Organisation	Intercity or regional	Station classification	Customer information tier	Heritage status
Victoria Street	NSW Trainlink	Intercity	Suburban	NA	SHR
Villawood	Sydney Trains	NA	Suburban	3	S170
Vineyard	Sydney Trains	NA	Community	3	NA
Wagga Wagga	NSW Trainlink	Regional	Community	NA	SHR
Wahroonga	Sydney Trains	NA	Suburban	3	SHR
Waitara	Sydney Trains	NA	Suburban	3	S170
Walcha Road	NSW Trainlink	Regional	Outer urban	NA	SHR
Wallarobba	NSW Trainlink	Intercity	Outer urban	NA	NA
Warabrook (University)	NSW Trainlink	Intercity	Suburban	NA	NA
Waratah	NSW Trainlink	Intercity	Suburban	NA	NA
Warnervale	NSW Trainlink	Intercity	Community	NA	NA
Warrawee	Sydney Trains	NA	Suburban	3	S170
Warrimoo	NSW Trainlink	Intercity	Community	NA	S170
Warwick Farm	Sydney Trains	NA	Suburban	3	S170
Waterfall	Sydney Trains	NA	Suburban	3	NA
Wauchope	NSW Trainlink	Regional	Community	NA	NA
Waverton	Sydney Trains	NA	Suburban	2	SHR
Wellington	NSW Trainlink	Regional	Outer urban	NA	S170
Wentworth Falls	NSW Trainlink	Intercity	Suburban	NA	S170
Wentworthville	Sydney Trains	NA	Suburban	2	S170
Werrington	Sydney Trains	NA	Suburban	2	NA
Werris Creek	NSW Trainlink	Regional	Outer urban	NA	SHR
West Ryde	Sydney Trains	NA	Suburban	2	NA
Westmead	Sydney Trains	NA	Major	2	NA
Wiley Park	Sydney Trains	NA	Suburban	3	S170
Willow Tree	NSW Trainlink	Regional	Outer urban	NA	S170
Windsor	Sydney Trains	NA	Suburban	3	SHR
Wingello	NSW Trainlink	Intercity	Outer urban	NA	SHR
Wingham	NSW Trainlink	Regional	Outer urban	NA	NA
Wirragulla	NSW Trainlink	Intercity	Outer urban	NA	NA
Wolli Creek	Sydney Trains	NA	Suburban	2	NA
Wollongong	NSW Trainlink	Intercity	Major	NA	SHR
Wollstonecraft	Sydney Trains	NA	Suburban	3	S170

Station name	Organisation	Intercity or regional	Station classification	Customer information tier	Heritage status
Wombarra	NSW Trainlink	Intercity	Outer urban	NA	NA
Wondabyne	NSW Trainlink	Intercity	Outer urban	NA	S170
Woodford	NSW Trainlink	Intercity	Community	NA	S170
Woolooware	Sydney Trains	NA	Suburban	3	S170
Woonona	NSW Trainlink	Intercity	Community	NA	NA
Woy Woy	NSW Trainlink	Intercity	City	NA	NA
Wyee	NSW Trainlink	Intercity	Community	NA	NA
Wynyard	Sydney Trains	NA	City	1	SHR
Wyong	NSW Trainlink	Intercity	Major	NA	S170
Yagoona	Sydney Trains	NA	Suburban	3	NA
Yass Junction	NSW Trainlink	Regional	Outer urban	NA	SHR
Yennora	Sydney Trains	NA	Suburban	3	S170
Yerrinbool	NSW Trainlink	Intercity	Outer urban	NA	NA
Zig Zag	NSW Trainlink	Intercity	Outer urban	NA	SHR

Heritage status of stations are regularly updated. Refer to *ARTC Section 170 Heritage and Conservation Register, TAHE Section 170 Heritage and Conservation Register, UGLRL Section 170 Heritage and Conservation Register and NSW State Heritage Inventory* for current information.

Customer information systems tiers of intercity and regional stations shall be assessed with commencement of new works or station upgrades. Assessment of customer information systems tiers shall be based on the process described in T MU TE 61005 ST. TAOs shall consult and agree with signage and wayfinding team of TfNSW on the customer information systems tier of intercity and regional stations.

Protective security category has not been listed in Table 7. For access to this information, contact standards@transport.nsw.gov.au

Operational security category has not been listed in Table 7. For access to this information, contact standards@transport.nsw.gov.au

Appendix A Customer toilet spatial, fit out and fixtures requirements (normative)

Table 8 contains spatial, fit out and fixtures requirements for individual, self-contained customer toilets in new and existing stations.

Table 8 – Spatial, fit out and fixtures requirements for customer toilets in new and existing stations

No.	Item	Detailed requirements	Scope
1	Ambulant toilet size	An ambulant toilet shall contain enough space to fit a pram, large pieces of luggage or large items of sporting equipment such as a bicycle or a surfboard. Toilet configuration shall meet the requirements for an ambulant toilet in accordance with AS 1428.1. Note: The configuration of the ambulant toilets should comply with the dimensional requirements of super standard as nominated in *Toilet Guideline for Transport for NSW – Station New Builds and Major Upgrades* SFAIRP.	New and existing stations.
2	Accessible toilet size	Refer to relevant regulatory requirements	New and existing stations
3	Automatic or power-assisted doors	Automatic or power-assisted doors shall not require customer to grip or twist controls or apply constant pressure to operate opening devices.	Accessible toilets
4	Lock mechanism to close and lock the door	The status of the door lock shall be clearly visible to the customers inside and outside the toilet. Toilet doors shall be capable of being locked when toilets are not accessible to customers. For accessible toilet doors refer to relevant regulatory requirements for door opening or removal in an emergency.	Male, female, unisex and accessible toilets
5	WC pans and cisterns	WC pans and cisterns shall be vandal resistant. Flushing shall be sensor operated with manual override which shall continue to operate in the event of a power outage. The flushing of WC shall not use more than 4.5 litres of water, even if the button continues to be held. Cisterns shall be recessed behind the wall, unless it is impracticable to implement in heritage stations.	Male, female, unisex and accessible toilets
6	Toilet paper dispensers	Toilet roll dispensers shall hold jumbo toilet rolls. Toilet paper supply levels shall be visible. For accessible toilets, roll dispensers shall not have inbuilt breaks to allow for free dispensing of the toilet roll.	Male, female, unisex and accessible toilets

No.	Item	Detailed requirements	Scope
7	Hand washing basins	Basins shall be located to allow customers to easily shake excess water off their hands into the basin.	Male, female, unisex and accessible toilets
8	Taps	Taps shall be installed over hand washing basins for male, female and unisex toilets. Refer to relevant regulatory requirements for taps used in accessible toilets.	Male, female, unisex and accessible toilets
9	Soap dispensers	Auto sensor soap dispensers shall be provided and located over hand washing basins to minimise wet floors.	Male, female, unisex and accessible toilets
10	Mirrors	Mirrors shall be located over hand washing basins at a height so that people of short to tall stature are able to see their faces.	Male, female, unisex and accessible toilets
11	Hand drying facilities	Hand drying facilities shall be provided and comprise one or more of the following: • auto sensor hand dryer • paper towel dispenser and bin.	Male, female, unisex and accessible toilets
12	Waste bin	Waste bin shall be provided. Where paper-towel dispenser is provided, bin shall be co-located so that customers can drop the paper-towel directly into the rubbish bin below the paper-towel dispenser.	Male, female, unisex and accessible toilets
13	Sanitary bins	Auto sensor sanitary bins shall be provided.	Female, unisex and accessible toilets
14	Hooks	Two hooks, each capable of holding 12 kg, shall be installed at different heights, one at 120 cm and the other at 180 cm above FFL, on the back of each toilet cubicle door.	Male, female, unisex and accessible toilets
15	Shelves	Shelves shall be provided adjacent to hand wash basins.	Male, female, unisex and accessible toilets
16	Fold down baby changing tables	Fold down baby-changing tables shall be provided. Fold down baby-changing tables located in accessible toilets shall comply with requirements under clause 15.2.8.2 of AS 1428.1:2009.	Male, female, unisex and accessible toilets

No.	Item	Detailed requirements	Scope
17	Emergency call button	At least one emergency call button shall be installed in every accessible toilet. Where only one emergency help button is provided it shall be located so that a person who has fallen on the floor can reach it. If a secondary emergency call button is provided, it shall be within the reach of a person sitting on the pan. The emergency call button shall have luminance contrast of not less than 30% and be in accordance with clause 13.5.4 of AS 1428:2009. Emergency call button system shall be approved by the asset steward – operate or maintain for consistent back of house service operation and systems integration.	Accessible toilets
18	Grab rails	Refer to relevant regulatory requirements.	Male, female, unisex and accessible toilets

Refer to *Toilet Guideline for Transport for NSW – Station New Builds and Major Upgrades* for additional guidance and optional requirements.

Toilet Guideline

for Transport for NSW

Station New Builds and Major Upgrades

TfNSW Design for Customers and Place

Version 2.0
25.11.21

Note: Previous document versions named Bathroom Requirements

NSW GOVERNMENT | Transport for NSW

Document Control

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Version	Revisions Made	Approved By	Date
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1.8.1	• Appendix – guidance on implementation of requirements added • 4.4.3 Requirement for Assistance Animal Room removed		17.11.17
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- Toilet Design Principles pg. 8
- Toilet Requirements pg. 13
- Toilet Layouts pg. 67

1. Application, Background and Methodology

Application of Guideline

This Toilet Guideline has been written in response to station toilets being identified as a key customer pain point.

Drawing on customer research and insights this guideline takes a customer centred approach to toilet design and facility provision at stations with the aim of providing an improved customer experience, a consistent approach across modes and ultimately a more accessible Transport network by better meeting the needs of more customers.

The desired Customer Outcome is encapsulated in six Toilet Design Principles that can be considered as broad guiding thoughts as well as criteria against which each requirement can be assessed in future design and product specification processes.

Who should refer to Guideline

These Toilet Guidelines primarily apply to new build station developments and major station upgrade projects where opportunity exists to define toilet layout and types and provision of toilet facilities.

Where upgrade of existing stations is being undertaken but there is no opportunity to revise toilet layouts (due to scope or existing station infrastructure), then Toilet Guideline and Design Principles should be followed and adhered to where possible within existing toilet layouts (ie. finishes and fixtures).

This Toilet Guideline should be referenced by any Transport or Transport Operator staff involved in the writing of requirements for station developments or upgrades, associated tender evaluation and procurement processes and resultant design development phases. The Toilet Guideline should be provided to tender respondents and appointed Contractors for consideration in their proposals.

Transport Operator staff responsible for station toilet refreshes and product procurement should also refer to the Guideline and apply Design Principles in design and specification.

In applying Guidelines and Principles to Station Upgrades, project teams should consider factors such as the classification of station, whether the station is staffed and record of safety, security and vandalism to determine whether optional elements should be implemented.

The delivery agencies (Transport I&S, Sydney Trains, NSW Trains, Sydney Metro and other future operators as relevant) are responsible for assessing feasibility of adopting guidelines, or aspects thereof, for their specific projects with the objective of realising desired customer outcomes. TfNSW Customer Experience can provide advisory to projects on implementation and testing of these guidelines.

Background and methodology

Research Notations:

Throughout this document, various research sources are referenced. These are referred to as follows:

Abbreviation	Research Report
TCJA	*Station Bathrooms: Customer Journey Analysis*; CSD, Jan 2017
TPT	*Station Bathrooms Prototype Testing Report*, CSD, March 2017
GTSB	*Train Bathroom Toilets, Quantitative Research into current usage, attitudes and preferences*; GfK, May 2017
DTAP	*TAP3 Qualitative Research and Design Recommendations*, DesignInc, June 2017

2. Toilet Design Principles and Rationale

Toilets Are Important To Our Customers

Transport for NSW conducted both qualitative and quantitative research into the use of toilets on Sydney and NSW train stations in late 2016 and early 2017. This research confirmed that:

- **Almost half (46%) of train users use train station toilets regularly**, and 70% have used them in the last 3 months. One in thirty customers uses a station toilet every time they travel with us.
- **Almost half of train users say that the availability of train station toilets is important to the frequency of which they travel.** Those who say it is most important to them include:
  - Frequent travellers who travel with kids, carers, sporting equipment or luggage
  - Those with a long or short term medical condition
  - Those who are pregnant
- **One in five customers tell us that having appropriate toilet facilities readily available** to them when they travel impacts their decision as to whether or not they travel.
- **The most common complaint our customers have about our station toilets** is that they are locked or otherwise unavailable;

Creating Toilet Design Principles

Transport for NSW has **9 Customer Satisfaction Drivers:**

1 Timeliness	2 Safety & Security	3 Ticketing	4 Convenience	5 Accessibility	6 Comfort	7 Cleanliness	8 Information	9 Customer Service
Increased reliability of the journey time (including the time to navigate the space); reduced time to connect between services and modes; reduced trip and journey times.	A safe and secure customer environment arising from physical design features, service operation and presence of other people.	Ease of purchasing a ticket; ease of using a ticket including knowing how to use it, where to use it, how to top it up and fare rules.	Convenience of access to the transport service; convenience of interchanging between services	Arrangement and location of physical facilities to enable ease of entry and navigation through the transport system for all customers; clear and accessible signage that makes navigation easier.	A comfortable customer environment that is well-lit, temperature controlled, with sufficient personal space and amenities where needed.	A clean, well-maintained customer environment with particular attention to clean seats, amenities and absence of graffiti and litter.	Simple, accurate, effective communication of service and timetable information through multiple delivery channels including on-site, on-mode and mobile applications; information and signage that make navigation simpler.	Polite, knowledgeable and helpful service people and systems that engage promptly and respond effectively to service requests, issues and feedback.

Taking these drivers and incorporating our research leads to **6 Toilet Design Principles:**

1. Access & Availability
2. Safety & Security
3. Information
4. Comfort & Hygiene
5. Cleanliness
6. Quick & Easy

Toilet Design Principles – Detail

1 Access & Availability

Customers can readily locate and access toilet facilities that meet their specific needs.

Key components: sufficient toilets; unlocked toilets; toilets on the platform; toilets that provide for those with specific needs.

2 Safety & Security

Customers both *feel* safe and *are* safe when using our toilets.

Key components : toilets located close to where people congregate; toilets are individual style (rather than group style). Toilets have hand-rails & non-slip floors.

3 Information

Customers are readily able to identify what toilet facilities are provided before they travel and can easily locate a toilet that meets their needs when at the station.

Key components: detailed online info about toilet facilities; wayfinding that enables customers to easily locate our toilets; signage that enables customers to identify a toilet that meets their needs.

Toilet Design Principles – Detail

Comfort & Hygiene

4

Customer have a hygienic self-contained toilet which contains all the facilities they need to have a comfortable, private, safe experience.

Key components:
no-touch facilities; enough toilet-paper; effective hand-drying; garbage bins; hooks and shelves for storage; privacy.

Cleanliness

5

Customers use toilets which are clean, pleasant smelling and well-maintained.

Key components:
lack of unpleasant odours, no water on the floor, no paper (or other garbage) on the floor.

Quick & Easy

6

Customers want to be able to use our toilets quickly with no fuss.

Key components:
no queues, clean toilets, efficient hand-washing and drying, easy stowage of items, no fuss to use. .

3. Toilet Requirements

Reading these requirements

This section provides details of the core requirements for the provision of station toilets including the specific elements that comprise the different types of toilets to be provided by Transport for NSW.

These toilet types are:

- Super-Standard toilets
- Accessible toilets
- Male Urinal rooms; and
- Other rooms for City and Major stations.

A description of each of these toilet types is provided in Section 3 - Toilet type and number, and the layout is provided in Section 4 – Toilet Layout.

Adoption of the Super-Standard Toilet type supersedes the need for Family Accessible Toilets, an existing toilet type within the network, in stations where more than one toilet is provided.

With respect to Accessible Toilets, where any of the requirements in this document conflict with the relevant standard (DDA, DSAPT, ASA), then the standard should be followed unless it is an optional standard only.

Reading these requirements contd.

Understanding the requirement structure

Each of the requirements on the following pages has four columns. These contain the following:

- **Ref** – the numbering system used to enable easy reference to individual requirements.
- **Requirement** – details of the requirement to be applied. Any examples provided within individual requirements noted should be considered to be 'minimum quality' specifications. Alternative solutions can be provided as long as they are at the same or better quality as the example listed.
- **Rationale** – provides information about the research and logic driving the requirement as well as details of how each requirement delivers for desired customer outcomes by referencing the specific Toilet Design Principles it supports.
- **For** – details which stations and projects the requirement applies to. More specifically it notes whether the requirement applies to:
  - **All** stations
  - **City and Major** stations*
  - **Regular** stations*

  In limited instances, specific stations will be named – for example, Central Station.

  **See Station Classifications on next page for details on which stations this applies to.*

Station Classifications

Station Classifications

Each requirement details which classification of station it applies to. The Station Classification Scheme was issued in October 2007 and currently applies only to Railcorp Network. For the purposes of this document, we will apply the same classification framework to Sydney Metro stations.

The Station Classification Scheme has five classifications which are summarised in the following table:

Classification Name	Demographic/Geographic drivers	Network function	MOT Interchange Category (Sept 08)
City (Global/Regional)	Concentration of workplaces, commercial buildings and specialised shops. Recreation and entertainment destination.	Major origin and destination point for journeys. High frequency of services to multiple destinations. Typically a rail interchange. High modal transfer.	Global / Regional interchange Typically having pedestrian, bus, cycle and taxi access. Limited car access.
Major	Centres of significant commercial and residential importance. Significant retail and community services nearby.	Major origin and destination point for journeys High frequency of services to Cities and other destinations. Possible rail interchange.	Major interchange Typically having pedestrian, bus, cycle and taxi access. Limited car access.
Suburban	Localised residential centre with some retail services nearby. Typically located within 1 hour of a City.	Strong one-way flows to/from City/Major centres. Regular, frequent services to Cities and Major Centres. Possible rail interchange	Multi-access interchange Typically having pedestrian, bus, cycle taxi and car access.
Community	Local community centre outside the greater metropolitan area. Typically some retail and light commercial nearby.	Semi-regular, infrequent services to Cities, Major centres and other destinations.	Local interchange Typically having pedestrian, cycle and car access. Limited bus and taxi access.
Outer Urban	Typically serving a sparsely distributed community rather than a localised residential centre.	Limited services to Major centres and other destinations. Possibly a request stop. Typically short platform.	No interchange with other forms of public transport.

In addition to the demographic/geographic drivers applied above, an overlay relating to patronage also applies as shown on the following page.

Station Classifications (cont.)

The following patronage overlays are applied to the functional requirements noted on the previous page to determine a station's classification:

Future Patronage (Av. Weekday 24hr entries)	City	Major	Suburban	Community	Outer Urban
>30,000	A1				
10,000 – 30,000	A2	B1			
5,000 – 10,000		B2			
2,000 – 5,000		B3	C1		
500 – 2,000			C2	D1	
<500				D2	
<50					E1

For the purposes of this document, we will combine these five classifications into two:

- **City and Major stations** – will include City and Major stations as noted above
- **Regular stations** – will include Suburban, Community and Outer Urban stations. \

Note: Some existing stations are designated as Special Event stations or interchanges and special consideration should be given to toilet numbers and designation to ensure high patronage turnover in peak times.

3.1
Toilet types & numbers

Customers want quick access to a toilet that meets their specific needs.

Toilet requirements

3.1 Toilet types and numbers

Ref	Requirement	Rationale	For
3.1.1	**Provision of toilets at Stations** All stations provide the toilet facilities outlined in this document to customers on the paid-side of the built environment. Toilet facilities are open and directly accessible to customers as outlined in Section 3.5.	*Having access to station toilets is important to our customers:* • *Almost half of train users (46%) use train station toilets regularly, and 70% have used them in the last 3 months* • *One in five of our customers needs ready access to a public toilet when they travel on the train. If this is not provided for them, they choose another mode of travel (typically private car) or they choose not to travel at all.* *(Sources: TPT, GTSB)* ***Principles: Access & Availability, Comfort, Quick & Easy***	All Stations

Toilet requirements

3.1 Toilet types and numbers

Ref	Requirement	Rationale	For
3.1.2	**Main Toilet Types provided at all stations** There are two main toilet types: • **Accessible Toilets** – built according to Australian standards. (See section 4.2 for details); and • **Super-Standard Toilets -** these are a larger style self-contained Toilet which are big enough to accommodate a pram, accompanying young children or to go in with a carer. They also contain grab rails for people with mobility issues and are designed to meet the needs of those with short and long-term medical conditions which impact a customers' ability to use our toilets. (See section 4.1 for more details.) All main toilet types are self-contained units which contain a toilet, hand-washing and drying facilities and other facilities outlined in sections 3.5 through 3.12.	*Accessible toilets are designed to meet the needs of customers living with paraplegia who use a wheelchair but don't necessarily meet the needs of other customers travelling with a long or short-term medical condition.* *The super-standard toilet caters for the needs of customers travelling with* • *Babies and young kids;* • *Short or long-term medical conditions that impact their ability to use the toilet;* • *Luggage* • *Large sporting equipment such as bikes.* *This represents between 30% and 40% of our customers.* *Further, testing showed that customers who don't necessarily need this style of toilet preferred it to a small toilet cubicle as it gave them a greater sense of cleanliness, comfort and security.* *(Source: TPT, GTSB)* ***Principles: Access & Availability, Comfort, Quick & Easy, Safety & Security***	All stations

Toilet requirements

3.1 Toilet types and numbers

Ref	Requirement	Rationale	For
3.1.3	**Male Urinal Rooms** In addition to the two main toilet types noted above, City and Major stations also provide a Male Urinal room where patronage levels determine that 10 or more super-standard toilets are provided for males within an individual toilet bank. Male Urinal rooms contain two or more urinal facilities separated by privacy partitions plus group hand-washing and hand-dry facilities. Where Male Urinal rooms are provided, they make up 50% of the Male toilet quota (rounded down). For example, if patronage numbers determine that 12 toilets are provided, two of these will be Unisex, five would be female and five would be male. Fifty percent of the five male toilets would mean 2.5 urinals are provided in a single urinal room – but rounded down, this becomes 2 urinals within a single urinal room and 3 super-standard toilets. See Section 4.3 for a description of Urinal rooms.	*Urinals increase the speed with which our male customers can use our toilets. Further, just over half of our male customers say that they prefer to use a urinal when they urinate.* *While smaller stations do not warrant the provision of such facilities, the provision of urinal rooms at city and major stations will give customers quicker access to our toilets and reduce queues during peak times.* *(Source: TPT, GTSB)* ***Principles: Access & Availability, Comfort, Quick & Easy***	City and Major stations

Toilet requirements

3.3 Toilet types and numbers

Ref	Requirement	Rationale	For
3.1.4	**Lift & Change toilet** In addition to the two main toilet types noted above, Central and Circular Quay stations also provide Lift & Change facilities for customers living with severe disabilities (such as quadriplegia, cerebral palsy, MS, spina bifida or motor neurone disease) and their carers. Se Section 4.4 for a description of Lift & Change toilets.	*Customers living with quadriplegia are unable to use our accessible toilets, as they are unable to move. While the percentage of the population who suffers from this is fairly low, the provision of Lift & Change facilities at two major city stations will allow customers living with quadriplegia the ability to access toilet facilities within the city centre.* *(Source: Family & Community Services)* ***Principles: Access & Availability, Comfort, Quick & Easy***	Central and Circular Quay stations only

Toilet requirements

3.1 Toilet types and numbers

Ref	Requirement	Rationale	For
3.1.5	**Toilet numbers and type** **Number of toilets:** Each new build station provides customers with a **minimum** of four toilets: • **three Super-Standard Toilets** (one Unisex, one Male and one Female) ; and • **one Accessible Toilet** (Unisex). When patronage determines that more than four toilets are required, the split between toilet types is outlined in section 3.1.6. For existing City and Major stations the minimum toilet requirement and additional toilet modelling should be implemented where the physical and operational constraints allow in Station Upgrades. For Metro stations please refer to patronage modelling report for specific guidance on Toilet Numbers for Metro.	***Regarding toilet type:*** *Accessible toilets are necessary to provide for the needs of customers who are living with paraplegia (and to meet our obligations under the Disability Discrimination Act and Disability Standards for Accessible Public Transport requirements.) However, this style of toilet is not suitable for all customers who use a wheelchair or for customers living with other types of disabilities. As less than 1% of the population suffers from paraplegia, the demand for the facilities provided in this type of toilet is fairly low.* *The provision of Super-standard toilets meets a much broader set of customers needs and ensures that our customers can readily access the toilet facilities they need when they need them.* *(Source: TCJA, TPT, GTSB)* ***Principles: Access & Availability, Comfort, Quick & Easy***	All stations

Toilet requirements

3.1 Toilet types and numbers

Ref	Requirement	Rationale	For
3.1.6	**Toilet gender designation:** For banks of up to 12 super-standard toilets, the mix of toilet genders is as follows. Where more than 12 super-standard toilets are provided – broadly speaking 20% should be Unisex, 40% female and 40% male.	***Regarding gender:*** *While as a general rule, females and males prefer using a toilet designated for their gender, they will use a Unisex toilet when gendered toilets are unavailable.* *Approximately 20% of our customers need a Unisex toilet. Examples include parents travelling with young children of the opposite gender, carers who are the opposite gender to their caree as well as those who identify as transgender or intersex.* *(Source: TPT, TCJA, GTSB)* ***Principles: Access & Availability, Comfort, Quick & Easy***	All stations

Total no.	Unisex	Female	Male*
1	1	-	-
2	2	-	-
3	1	1	1
4	2	1	1
5	1	2	2
6	2	2	2
7	1	3	3
8	2	3	3
9	3	3	3
10	2	4	4
11	3	4	4
12	2	5	5

** Male toilet numbers may include urinals where ten or more super-standard toilets are provided (in total).*

In addition, all accessible toilets and lift-and-change facilities are unisex and all urinal rooms are male.

3.2
Trip planning

Customers who need ready access to a toilet want to know what toilets we provide at each station and where they are located prior to travelling or while they are en route.

Toilet requirements

3.2 Trip planning

Ref	Requirement	Rationale	For

3.2.1	**Digital information (online and apps)**
	Customers are able to go online and/or use an app to identify what toilet facilities are provided at specific stations and where those toilet facilities are located at the station before they leave.
	
	When customers go online – or use our apps – they are able to find the following information about a specific station's toilet facilities:
	• **Where** the toilets are located at the station;
	• **Directions** on how to get to the toilets both when entering the station and from each platform (including whether a lift is available)
	• **How many** toilets are available and the types of toilets available including:
	  • Male/Female/Unisex
	  • Accessible toilets (including the type of Accessible toilet – LH or RH)
	• **Facilities provided in the toilet** including things like sharpie bins and baby-change facilities
	• **Opening hours** of the toilets if they are not accessible at all times
	• **The location of the nearest alternative** public toilets in the event that station toilets are closed (Optional)
	• **The latest cleanliness rating** of the toilets (Optional)
		One in five of our customers tells us that they need to know what public toilet facilities are available to them before they travel with us, and that this impacts their decision whether or not to take the train.
		
		Customers also tell us that they need to know whether there is a toilet at a station while they are travelling on our train – and specifically where the toilet is located. They need to know this so that if they urgently need a toilet while on the train, they can safely alight at the next station and quickly locate the toilet.
		
		Further, research tells us that customers need to know what is included within the toilet, so they can see whether it meets their needs. For example, customers tell us they need information about facilities like baby-change facilities, family-friendly facilities, the type of accessible facilities (left-hand or right-hand) and proximity of toilets to the train.
		
		(Sources: TPT, TCJA, GTSB)
		
		Principles: Access & Availability, Information, Comfort, Quick & Easy
			All stations

Toilet requirements

3.2 Trip planning

Ref	Requirement	Rationale	For
3.2.2	**Other information channels for customer information** Customers are also able to get this information by: • Phoning 131 500 • Calling the station; and • Relevant printed materials such as timetables.	Customers want multiple channels so that they can get the information they need about our toilets.	All stations

3.3
Finding the Toilet

Customers want to be able to easily locate the nearest toilet from any point within the station environment.

Toilet requirements

3.3 Finding the toilet

Ref	Requirement	Rationale	For
3.3.1	**Easy to find** Wayfinding signage is placed throughout the station environment to enable customers to easily find a toilet at any stage of their journey by looking up for a sign. A variety of additional wayfinding tools are provided to customers such as station maps at the entry and on the platforms and online apps (see below).	*Roughly one third of customers look for a toilet when entering the station, another third while waiting on the platform – or in transit - and the final third when they alight from the train. This means they need to be able to locate the toilets from anywhere within the station paid-area.* *During our research, when we asked customers to locate the nearest toilet, all customers looked up for a cue as to its location.* *(Sources: TPT, TCJA, GTSB)* ***Principles: Access & Availability, Information, Quick & Easy***	All stations
3.3.2	**Digital information** When at the station, customers are able to locate a toilet suitable to their needs at the station through mobile and other digital interfaces. In addition, wayfinding and other information is provided through mobile and other digital technology in a form that is suitable for customers with vision impairment.	*Customers with accessibility needs are particularly reliant on mobile devices to help them to navigate when in public and want us to provide them with information to do this while out and about.* *(Sources: TCJA, GTSB, DTAP)* ***Principles: Access & Availability, Information, Quick & Easy***	All stations

Toilet requirements

3.3 Finding the toilet

Ref	Requirement	Rationale	For
3.3.3	**Information about nearest alternative toilets** (Optional) Information about the nearest bank of alternative public toilets – either within the station area or outside - is provided at all toilet banks in case of queues or other issues that impact availability (such as cleaning). For accessible toilets – details of the nearest accessible toilet is also provided, including information about whether it is Left-Hand or Right-Hand.	*Customers understand that from time to time our toilets may be unavailable, but want us to help them to locate an alternative facility when this happens.* *(Sources: TCJA, TPT)* ***Principles: Access & Availability, Information***	All stations

3.4
Toilet location and external area

Customers want to feel safe and secure when they are entering and exiting our toilet, particularly if they are required to wait.

Toilet requirements

3.4 Toilet location at station and external area

Ref	Requirement	Rationale	For
3.4.1	**Toilet Location** Where space in the built environment permits, toilets are on the station island (or islands) or side platforms. Where space or heritage restrictions do not permit the required number of toilets to be located on the station island (or islands) or side platforms, then: • at least one unisex Super-Standard toilets is located on each station island or side-platform; and • the balance of toilets are located in the paid area of the concourse. Entrances to all toilets should be in a location where people waiting for toilets are readily visible by passing pedestrian traffic – more specifically: • by other customers waiting on the platform (for toilets on the platform); or • from the gate line (for those on the concourse). Toilets should ideally not be accessed from a corridor (anything less than 3 metres wide) for safety reasons.	*Boarding customers who need a toilet feel more secure when they are located near other people.* *Alighting customers with an urgent need for a toilet, can quickly access our toilets after getting off the train. Research tells us that the ability to do this is necessary for some customers to travel with us.* *(Sources: TPT, DTAP, GTSB)* ***Principles: Access & Availability, Information, Safety & Security, Comfort, Quick & Easy***	All stations
3.4.2	**Privacy Screens (optional)** At some stations, privacy screens may be provided where toilets are located on the concourse area. Where a privacy screen is provided, it should enable customers to queue in relative privacy while still providing them with sufficient visibility to both feel and be safe.	*Providing our customers with a safe and secure environment is a critical customers satisfaction driver. Complying with CPTED* principles regarding proximity to other customers will help this.* ***Principles: Safety & Security***	All stations

*CPTED – Crime Prevention through Environmental Design

Toilet requirements

3.4 Toilet location at station and external area

Ref	Requirement	Rationale	For
3.4.3	**External information about each bank of toilets** At each bank of toilets at a station – where 'bank' is either an individual toilet (with no other toilets next to it) or multiple toilets in the same spot at a station – information is provided to customers about: - **The toilet designation** – signage that clearly communicates gender and/or special needs usage through use of universal symbols - **How to gain access to the toilets** – operating a controlled access entry system (refer to 3.6.1); - **The location of the nearest alternative toilets** – as outlined in section 3.3.3 (Optional). - **A braille map** showing the location and type of each toilet in the 'set' as well as all of the information above.	*Research showed that current toilet labels, while legally compliant, are confusing for customers. They don't know who can use which toilet, and may end up feeling guilty about picking a particular toilet to use.* *Customers tell us they want to be able to readily locate a toilet that meets their specific needs and feel comfortable using it.* *(Sources: TCJA, TPT)* ***Principles**: **Comfort, Information, Access & Availability, Quick and easy***	All stations

Toilet requirements

3.4 Toilet location at station and external area

Ref	Requirement	Rationale	For

3.4.4	**Digital Information Display external to each individual toilet** (optional)
	
	The entrance to each individual toilet clearly displays in digital format (such as an LED Screen):
	• whether the toilet is vacant or occupied through the use of:
	  • the words 'vacant' and 'occupied', in large text; (essential) ; and
	  • red and green indicators; (optional).
	• when the toilet was last cleaned. (optional)
	• other relevant data such as name of station, date, time.
	• how to enter the toilet (e.g. 'Tap here')
		Customers tell us that they:
		• *find digital information more reliable than paper information;*
		• *want to be able to reliably tell if a toilet is vacant or occupied;*
		• *value knowing when the toilet was last cleaned;*
		
		(Sources: TCJA, TPT, DTAP)
		
		Principles**: **Comfort, Information, Access & Availability, Quick and easy
			All stations

3.4.5	**Information for customers living with visual impairment** A braille map of each toilet is provided outside the toilet for customers living with visual impairment to orient themselves prior to entering. Additionally, digital content delivered through mobile technology provides an audio description of: a) The location and type of each toilet before they enter and lets them know which toilets are currently vacant; b) Once they enter – gives them a description of the layout and facilities of the toilet they have just entered	*Customers with blindness tell us that braille is not necessarily easy for them to use and they prefer to use digital content which walk them through their location.* *(Sources: DTAP)* ***Principles**: **Information, Access & Availability, Quick and easy***	All stations

Toilet requirements

3.4 Toilet location at station and external area

Ref	Requirement	Rationale	For
3.4.6	**Priority for accessible toilets** Accessible toilet are marked so that priority is given to customers in a wheelchair. The notification of priority gives primacy to the customers that such facilities are designed for, while still indicating to other customers that they are also welcome to use the facilities when priority customers are not using them.	*Customers who use a wheelchair tell us that when they need a toilet, their need is often urgent.* *Customers who don't use a wheelchair tell us that they want us to facilitate priority queueing for people in a wheelchair, as they believe they should have priority.* *(Sources: DTAP)* ***Principles: Access & Availability, Quick & Easy***	All stations
3.4.7	**Emergency help button** An emergency help button is located within close proximity to the toilets. For toilets located on the concourse, an emergency help button is located at concourse level within 50 metres of the toilets.	*Customers tell us that they want to be able to get emergency help readily if something happens when they, or someone they are caring for is in the toilet.* *(Sources: TCJA, TPT)* ***Principles: Access & Availability, Safety & Security***	All stations

Toilet requirements

3.4 Toilet location at station and external area

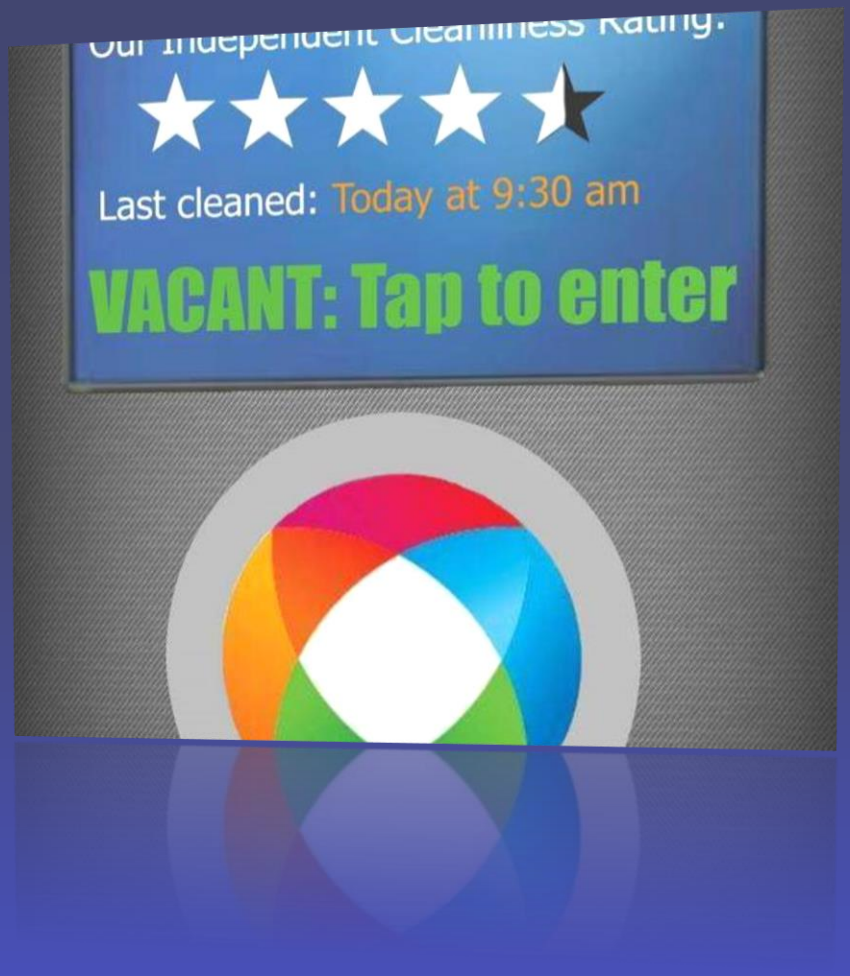
Ref	Requirement	Rationale	For
3.4.8	**Exterior lighting** Exterior lighting is provided using CPTED* principles at all times during hours that customers could be using the station whenever natural lighting is unavailable.	*Providing our customers with a safe and secure environment is a critical customers satisfaction driver. Complying with CPTED* principles regarding lighting will assist this.* ***Principles: Safety & Security, Comfort***	All stations
3.4.9	**CCTV Cameras** CCTV cameras are located outside toilets and positioned to capture the faces of all individuals who enter the toilet and to detect behaviours related to vandalism, graffiti and other anti-social behaviours.	*Customers tell us that they want us to take steps to deter vandals from destroying train station toilets so that they have ready access to clean toilets in good condition.* *In addition, we know our customers expect us to provide them with a safe and secure environment at the station. CCTV cameras contribute to their feeling of safety and security* *(Sources: TCJA, TPT)* ***Principles**: **Comfort, Safety & Security***	All stations

**CPTED – Crime Prevention through Environmental Design*

3.5
Access and Security (main toilets)

This section looks at how we provide ready access to our toilets while protecting them from vandalism so that customers can continue to use them.

(Customer personal safety and security is dealt with throughout the other sections.)



Toilet requirements

3.5 Access and Security (main toilet)

Ref	Requirement	Rationale	For
3.5.1	**Gaining access to standard and super-standard toilets** Customers are able to access our toilets during all operational hours via an electronically enabled controlled access system. At higher risk stations (as determined by the operator), the toilet opening hours may be restricted to staffed hours only as agreed in writing with Transport for NSW.	*The number one complaint that Transport for NSW receives about toilets is that they are locked and/or that customers have to find a station staff member to access toilets. (Source: Voice of Customer data)* ***Principles: Access & Availability, Quick & Easy***	All stations
3.5.2	**Accessible toilets** Customers living with disabilities are able to access the Accessible toilets at all hours. Accessible toilets are fitted with an MLAK key which can be used outside operating hours to access the Accessible toilet. (Note – an MLAK key is not required to unlock Accessible toilets during the standard hours noted above.)	*Customers who live with a disability tell us that they do not want MLAK keys to be used during normal operating hours. If they are used, it should only be where toilets would otherwise be locked.* *(Sources: TCJA, DTAP)* ***Principles: Access & Availability, Quick & Easy***	All stations
3.5.3	**Locks** Adequate locks and other security is provided so that the toilets can be safely locked at times that they are not accessible to our customers (e.g. if out of order).		All stations
3.5.4	**CPTED*** Crime Prevention through Environmental Design principles are followed. **CPTED – Crime Prevention through Environmental Design*	*Providing our customers with a safe and secure environment is a critical customers satisfaction driver. Complying with CPTED* principles regarding lighting will assist this.* ***Principles: Safety & Security, Comfort***	All stations

3.6
Entering and Exiting (main toilets)

This section outlines access requirements, including security and safety measures.

Toilet requirements

3.6 Entering and exiting (main toilets)

Ref	Requirement	Rationale	For
3.6.1	**Entering the toilet** Entry to toilets is via an electronic, controlled access system and is touch free. Entry is only enabled when the toilet is vacant and when the controlled access system is activated by customer. The controlled access touchpoint is integrated with other external digital information displays outside individual toilets and as such any necessary conduits should be provided for in toilet design. Vacancy and occupation status is clearly visible on the outside of the toilet .	*Customers want better access to our toilets and they want us to do more to stop vandals from attacking toilets.* *Research shows that customers felt using Opal cards would give them greater access and keep vandals out. They also liked that using their Opal card meant they didn't have to touch the door-handle with their hands.* *(Sources: TCJA, TPT)* ***Principles: Access & Availability, Quick & Easy, Safety and Security***	All stations
3.6.2	**Closing and locking the door** The mechanism to close and lock the door is touch free, able to be activated easily and designed to avoid accidental activation. The status of the door lock is clearly visible to the customer.	*Customers tell us that they want to be able to feel certain that the door to their toilet is locked when they are in there so that nobody can barge in on them.* *Customers also told us that they want to make sure any button to enter or exit from within the toilet needs to be located in a spot which is easy to reach from the toilet and will discourage any young kids they take in with them from accidentally hitting it.* *(Source: TCJA, TPT)* ***Principles: Access & Availability, Comfort, Information***	All stations

Toilet requirements

3.6 Entering and exiting (main toilets)

Ref	Requirement	Rationale	For
3.6.3	**Exiting the toilet** The mechanism to unlock and open the door is the same mechanism as is used to lock the door. It is touch free, able to be activated easily and designed to avoid accidental activation. The status of the door lock is clearly visible to the customer.	*Customers told us that they do not like to touch door handles after they have washed their hands.* *(Source: TCJA, TPT)* ***Principles: Access & Availability, Quick & Easy***	All stations
3.6.4	**Emergency access, power outages and malfunctions** Emergency access to the toilets should be provided to designated staff [as determined by the operator]. In the event of a power outage, and where electronically enabled controlled access system is installed, a backup power source is required to enable customers to exit or enter the toilet. In addition, a manual override function is provided for station staff to be able to open the doors in the event of an electrical malfunction.	*Customers tell us that they need to be able to readily access our toilets from outside with help from one of our staff when someone who is in their care is inside the toilet and may be in trouble.* *(Sources: TCJA)* ***Principles**: Safety & Security, Comfort, Access & Availability***	All stations
3.6.5	**Emergency alert for users who overstay** Where users have been in the toilet for longer than 15 minutes then staff will be notified by the digital control monitor so that they may then go to the toilet door and knock to see if the customer requires help.	*Customers tell us that they don't like waiting in queues and would like us to hurry up people who are taking too long.* *Station staff tell us that customers sometimes hurt themselves in the toilet, and they need an alert in order to know when this is happening.* *(Sources: TPT)* ***Principles**: Safety & Security, Comfort, Access & Availability***	All stations

3.7
Internal toilet experience
(Guiding principles)

Customers want their toilet experience to be clean, comfortable, quick and easy.

Toilet requirements

3.7 Internal toilet experience (guiding principles)

Ref	Requirement	Rationale	For
3.7.1	**Cleanliness** Customers are provided with toilets that they perceive to be clean prior to their arrival at the station and experience as clean when they use them. They perceive our toilets to be clean because: - Our toilets are odour free; - Floors are dry, paper-free and clean; - The toilet seat is clean and dry; - The toilet bowl is flushed and has no debris; - Walls are bright, light coloured and free from dirt; - All other surfaces are clean and rubbish free - Garbage bins are sealed; Further details of how this is achieved are provided in the following sections.	*Cleanliness is the most important thing to customers in a toilet. The perception that our toilets are not clean is the most common reason people don't use them.* *Customers tell us that their major issues with cleanliness include:* • *Water and paper on the floor* • *Liquid and dirt on the toilet seat* • *Bad odours* *(Sources: TCJA, TPT, GTSB)* ***Principles: Cleanliness***	All stations
3.7.2	**Comfort** Customers are provided with the following core requirements : • **'No touch' facilities** – customers are able to use our toilets without having to touch any toilet surfaces with their hands (including at entry and exit); • **Hygiene aids** – like toilet seat cleaner and toilet seat covers (see section 3.8) • **Adequate facilities** as outlined in section 3.1 For further details about how this is achieved, see later sections in this report.	*Customers have repeatedly told us that 'no touch is king' – and that the provision of touch free facilities may even drive increased patronage.* *Customers told us that providing them with aids like toilet seat cleaner and toilet seat covers helped them to feel like they were having a more hygienic experience.* *(Sources: TCJA, TPT, GTSB)* ***Principles: Comfort & Hygiene, Cleanliness***	All stations

Toilet requirements

3.7 Internal toilet experience (guiding principles)

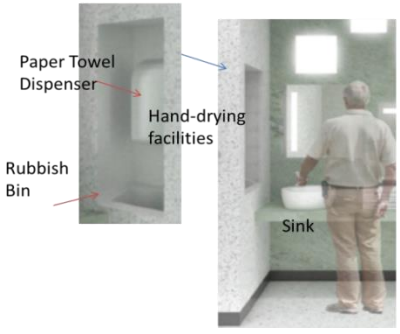
Ref	Requirement	Rationale	For
3.7.3	**Quick and easy** Customers are able to use our toilets as quickly as possible so that they can catch their train or get on with their day. Key aspects of our internal design which aid this are: • **Fixtures are easy to use** and don't require customers to stop and think about how they use them • **Clearly labelled** - so customers can readily identify what's what • **Fixtures are located in easy to find locations** – so customers don't waste valuable time locating them • **Hand-washing and drying is quick**	*Customers want to get into and out of our toilets as quickly as possible. Key things which prevent them from doing this are:* - *Facilities which aren't intuitive to use and require them to stop and work out how to use them;* - *Having to work out where something is* - *Slow hand-drying* *(Sources: TCJA and TPT)* ***Principles**: **Quick and easy***	All stations
3.7.4	**Other requirements** All fixtures are chosen for their: • **Durability** – materials are durable and resistant to vandalism and neglect so that they last and/or are easily and cheaply replaced or easily repaired; • **Anti-graffiti –**surfaces of walls, and doors use graffiti resistant materials; • **Quality feel** – to discourage vandalism; and • **Piping to be concealed** – all interior water supply and drainage piping connected to fixtures is concealed to protect against contact. Durable materials resistant to human impact are used for any exposed piping which is secured with sturdy fasteners, hangers and supports.	*Customers feel that we should we should not skimp on ensuring toilets are clean and vandalism free.* *(Sources: TCJA and TPT)* ***Principles**: **Quick and easy***	All stations

3.8 Cleanliness & hygiene

Customers want to both *feel* that our toilets are clean and *experience* them as being clean.

Toilet requirements

3.8 Cleanliness and hygiene

Ref	Requirement	Rationale	For
3.8.1	**Extraction fan above toilet to remove odours** Exhaust fans are provided above toilets to quickly pull out odours. To conserve electricity, these are set to turn on when the toilets is entered and turn off when the toilet has been vacated. Fan noise must be minimised to ensure customers feel a sense of safety and hearing comfort.	*Customers tell us that the absence of unpleasant odours is one of the most critical elements of cleanliness for them. (GfK pg. 27)* *International research has shown that the use of extraction fans located above the toilet is the most effective way to remove offensive odours.* ***Principles**: **Comfort, Cleanliness***	All stations
3.8.2	**Hand-washing and hand-drying facilities are co-located** The hand-washing and hand-drying facilities (ie. paper towel dispenser and bin) are co-located so that customers: - can easily shake excess water off their hands in the basin; - can reach directly from the sink – without turning – to reach for a hand-towel; - can drop the paper-towel directly into the rubbish bin below the paper-towel dispenser (see diagram below for example of how this works): Hand-washing/drying facilities  	*Customer research has told us that water on the floor is unsafe and makes them feel that the toilet is unclean and also unsafe (due to the potential to slip over). Research determined that the majority of water on the floor is caused by customers:* • *shaking wet hands over the floor;* • *moving from the basin to a hand-drying area that is placed across the room with wet hands;* • *using hand-dryers that blow water down onto the floor;* • *failing to provide paper-towers, causing customers who won't use hand-dryers to shake more water on the floor.* *(Sources: TPT, TCJA, GTSB)* ***Principles: Comfort, Cleanliness, Safety & Security***	All stations

Toilet requirements

3.8 Cleanliness and hygiene

Ref	Requirement	Rationale	For
3.8.3	**Ventilation fan below basin to dry floors** (optional) Ventilation fans are provided under the sink to blow air onto the floor to dry wet floors quickly. These under-basin vents have an external speed control which can be turned up immediately after they have been cleaned to speed drying time. Fan noise must be minimised to ensure customers feel a sense of safety and hearing comfort.	*Providing a clean dry floor is crucial for customers both in terms of safety – to avoid slips and falls – and because of the perception that a wet floor means the toilet is unclean.* *(Sources: TCJA, TPT)* ***Principles: Cleanliness, Comfort & hygiene, Safety & Security***	All stations
3.8.4	**Sealed Garbage Bins that extract rubbish** (optional) As shown in the diagram on the previous page, a garbage bin is provided immediately below the paper-towel dispenser and either immediately behind or next to the wash basin to minimise litter and water on the floor. This garbage bin 'seals' once rubbish is placed into it so that customers cannot retrieve anything they place into the bin. This also protects them from any unpleasant odours from anything placed in the bin. The bin opening is large enough to take a baby's nappy. When rubbish is placed into the bin it is suctioned to another central location both for odour protection, security and to ensure that the bin never overflows. Where the design of the station does not allow for the rubbish to be suctioned away, the bin is large enough that it will not overflow when it is not emptied.	*Research tells us that 83% of customers expect us to provide a bin in our toilets.* *Further, the provision of a bin will help to remove the problem of paper being left on the floor of our toilets.* *(Sources: TCJA, TPT, GTSP)* ***Principles: Cleanliness, Comfort & hygiene, Safety & Security***	All stations

Toilet requirements

3.8 Cleanliness and hygiene

Ref	Requirement	Rationale	For
3.8.5	**Sealed Walls and Floors** To prevent odours, mould and bacteria, all floors and walls are anti-microbial and completely sealed.	*When floors and wall tiling are not anti-microbial and completely seals unpleasant odours can be absorbed and become impossible to remove. Bad odours are one of the biggest complaints customers have about cleanliness.* *(Sources: TCJA, GTSB)* ***Principles**: **Cleanliness, Comfort & Hygiene, Safety and Security***	All Stations
3.8.6	**Keep it Clean poster** There is a small 'Keep it clean' or similar poster on the toilet wall which reminds customers what they should do to keep the toilet clean and lets them know the consequences of not doing so. For example:  	*Customers told us they want us to do more to encourage other customers to keep our toilets cleaner – and to bring them into line when they don't. They are aware that issues of access and lack of cleanliness are often the fault of other customers rather than lack of cleaning, and want Transport for NSW to do more to let customers know that this behaviour is not OK.* *(Sources: TCJA, TPT)* ***Principles**: **Cleanliness, Comfort & Hygiene, Safety and Security***	All stations

Toilet requirements

3.8 Cleanliness and hygiene

Ref	Requirement	Rationale	For
3.8.7	**Digitally enabled cleaning schedule** (optional) Utilising electronic counting of toilet patronage as well as problems reported (see 3.8.8), cleaning schedules respond accordingly to prioritise high use or problem facilities. When cleaning is in progress (as activated by cleaning staff - eg. by electronic card), external digital information displays outside individual toilets showing: - Cleaning is in progress - That the toilet is occupied - Where the nearest similar toilet is Once cleaning mode is electronically activated exhaust vents automatically respond by increasing power/speed to aid in quickly drying the floors after mopping. On completion, cleaning staff deactivate cleaning mode returning the external information display to normal (ie. vacant, last cleaned at XX) and electronic counting of toilet patronage resumes.	*Customers tell us that they expect our toilets to be cleaned regularly and that they do not believe that this is an area that Transport for NSW should cut costs on. For major stations, their expectation is that each toilet is cleaned at least every half hour to an hour. For smaller stations, there is still an expectation that toilets are cleaned at least once every couple of hours.* *Actually cleaning toilets based on number of uses or when a customer reports a problem with a toilet will ensure higher levels of cleanliness.* *(Sources: TPT, TCJA)* ***Principles: Cleanliness, Comfort, Information, Quick and Easy***	All stations
3.8.8	**Report a problem** In the event that a customer finds a problem with the toilets' cleanliness or supply of products such as toilet paper or paper towels – they know what to do in order to have this issue rectified. For example, a mobile number they can text to notify cleaning staff that there is an issue that needs fixing in a specific cubicle.	*Customers tell us that they want to be able to let us know when there is a problem with one of our toilets so that somebody can do something about it – but don't know how to do this.* *(Sources: TCJA)* ***Principles**: **Information, Cleanliness***	All stations

Toilet requirements

3.8 Cleanliness and hygiene

Ref	Requirement	Rationale	For
3.8.9	**Hygiene aids** Customers are provided with Toilet Seat Cleaner and Toilet Seat Covers so that they can feel they are having a hygienic experience when using our toilets. Note: Toilet seat cleaner should be secured from theft and provided in controlled doses. Utilisation of product should be monitored to ensure it is not being misused.	*Customers value being provided with materials that give them comfort that their toilet experience is hygienic. They told us that the two items they valued most were Toilet Seat Cleaner and Toilet seat covers.* *Sources: TCJA, TPT* ***Principles: Cleanliness, Comfort & hygiene, Quick and Easy***	All stations
3.8.10	**Sanitary bins** A 'touch-free' sanitary bin is provided between the toilet and the wall in the Female and Unisex super-standard toilets and the Unisex accessible toilet.	*Customers told us that they want the sanitary bin close to the toilet.* *Sources: TPT* ***Principles: Comfort & hygiene, Quick and Easy***	All stations
3.8.11	**Music** (optional) Speakers within the toilet pipe in classical music to the toilets which provides customers with audio privacy and a more relaxing experience. These speakers are also used for emergency announcements.	*Customers tell us that they want audio privacy in the toilet. Further, testing with background classical music received positive comments from customers who said that it was relaxing and improved their customers experience.* *Sources: TPT* ***Principles: Comfort & hygiene***	

3.9 Surfaces and Lighting

Customers want our toilets to be bright and light and clean.

Toilet requirements

3.9 Surfaces and lighting

Ref	Requirement	Rationale	For
3.9.1	**Floors** All floors are slip-resistant, antimicrobial and completely sealed. They are of a minimum or superior standard to seamless antimicrobial epoxy terrazzo as this avoids mould and bacteria build up and is easy to clean.	*Customers told us that light-coloured clean non-slip floors are important to them. Global best practice research shows that antimicrobial epoxy terrazzo is the best substance to meet these needs.* *Sources: TPT* ***Principle: Cleanliness***	All stations
3.9.2	**Walls** Walls are covered in large tiles that are ideally floor to ceiling. They have butt joints sealed with hairline thin epoxy resin – or material of a similar or better quality. There are no grout joints. Wall panels are light coloured and antimicrobial and are a of a minimum or superior standard to unengineered quartz.	*Customers told us that light-coloured clean walls that are odour-free give them the impression that the toilet is clean. Global research shows that unengineered quartz is best-placed to deliver this result and can be easily cleaned.* *Sources: TPT* ***Principle**: **Cleanliness***	All stations
3.9.3	**Skirting** There is a baseboard in a darker solid colour that contrasts with the walls and floor colour in all toilet areas to aid in navigation for customers who are vision impaired.	*Research shows that a different coloured baseboard helps customers living with visual impairment to move around the toilet.* *Sources: DTAP* ***Principles**: **Accessibility, Comfort, Information***	All stations

Toilet requirements

3.9 Surfaces and lighting

Ref	Requirement	Rationale	For
3.9.4	**Ceiling** Ceilings are made of materials that absorb the noise. The ceiling is insulated, again to dull sounds from within the toilet.	*Customers value audio privacy when they are using the toilet. In addition, customers living with hearing impairment struggle with tiled environments that reflect sound.* *Sources: TPT* ***Principles**: **Availability and Accessibility, Comfort***	All stations
3.9.5	**Counters/backsplash** Counters and splashbacks are completely sealed and are built using non porous materials that are of comparable quality to stone or quartz so as to provide a durable, clean and pleasant to look at finish.	*Customers told us they want surfaces that are easy to clean and pleasant to look at.* *Sources: TPT* ***Principles**: **Availability and Accessibility, Comfort***	All stations
3.9.6	**Lighting** Lighting provided is warm white lighting which creates a welcome and soft environment. Recessed downlights is provided in each toilet. Natural lighting is also provided where the station design permits this. Occupancy sensors switch off lighting when no one is present. Lighting at the sink is oriented to provide even vertical illumination (from the sides) onto the face, but somewhat softly to avoid glare into the eyes. Mirrors have side-lighting. Lighting from above the mirror supplement the vertical lighting. Vertical lighting is evenly balanced on both sides of the face.	*Customers told us that they need a warm well-lit toilet to have a comfortable experience and to feel safe in our toilets.* *Customers also told us that they don't like blue-light – particularly customers who are living with disabilities.* *Sources: TCJA, TPT* ***Principles**: **Availability and Accessibility, Comfort Safety and Security, Cleanliness***	All stations

Toilet requirements

3.9 Surfaces and lighting

Ref	Requirement	Rationale	For
3.9.7	**Kid-Designs** The unisex Super-Standard toilets (see Section 4.1) will employ design features (eg. Pictures, decals, stickers) adhered to wall finishes, as specified in 3.9.2, to provide engagement for babies and young children without making adult customers feel that they are in the wrong cubicle.	*Customers with young kids told us that they would value the provision of a wall-paper design on the wall or the ceiling to temporarily entertain young kids and babies either while their parents are using the toilet or the baby is having their nappy changed.* *Sources: TPT* ***Principles: Comfort, Quick and Easy***	All stations
3.9.8	**Advertising** A spot on the wall opposite the toilet is kept free for the placement of advertisements.	*Customers told us that they don't mind reading advertisements while in the toilet which may provide TfNSW with the income needed to provide customers with well maintained toilets.* *Sources: TPT* ***Principles: Comfort & hygiene; Cleanliness***	All stations

3.10 Space and stowage

Customers want to be able to:

- Ensure their bags and coats remain clean, dry and secure while they use the toilet;
- Accompany any dependants in their care into the toilet;
- Bring in any large items with them like luggage, prams or large sporting equipment (bikes).

Toilet requirements

3.10 Space and stowage

Ref	Requirement	Rationale	For
3.10.1	**Hooks** Two hooks are provided at different heights for the stowage of coats, shopping bags, handbags backpacks and similar. Each is able to hold a bag of at least 12 Kgs. Signage clearly indicates the maximum weight that the hook can support. The lower hook is 120 cm off the ground and the higher one around 180 cm off the ground. Hooks are a strong metal with secure mounting. There are no sharp edges. Hooks are long enough to hold bags with a strap that is 10cm wide and hook upward to hold a garment.	*Customers told us that it is important to them to have somewhere in the toilet to be able to put their bags and coats dry and clean while they are using the toilet.* *Sources: TCJA, TPT, GTSB* ***Principles: Comfort & hygiene; Cleanliness***	All stations
3.10.2	**Shelf** A shelf is provided adjacent to the basin for customers to place their belongings on while washing and drying. The shelf should be slightly higher than the basin top to remain dry but no higher than the bottom of the mirror. The shelf is minimum 20cm deep and 45cm in length.	*Customers told us that it is important to them to have somewhere in the toilet to be able to put their bags and coats dry and clean while they are using the toilet.* *Sources: TCJA, TPT, GTSB* ***Principles: Comfort & hygiene; Cleanliness***	All stations

3.11
Toilet facilities

Customers want a comfortable clean toilet that is safe and feels safe for them to use.

Toilet requirements

3.11 Toilet facilities

Ref	Requirement	Rationale	For
3.11.1	**Toilet placement** Toilets should not be set closer than 60 cm from its centre to the side wall. They should be wall hung, without leg support so as to facilitate cleaning. Note: In existing stations toilet placement may be dependent on existing floor waste locations.	*Customers told us that they don't want to feel claustrophobic when they use the toilet, that there should be plenty of space between them and the wall.* *Sources: TCJA, TPT* ***Principles: Comfort***	All stations
3.11.2	**Toilet cistern** The toilet cistern should be recessed behind the wall and should be low-flow.	*Customers tell us they want us to do more to stop vandalism and crime. Toilet cisterns are potential targets for both. Recessing them behind the wall eliminates a particular source of vandalism or crime.* *Sources: TPT, TCJA* ***Principles: Comfort, Safety & security***	All stations
3.11.3	**Toilet seat** Toilet seats are to specified by the operator. Due consideration to be given to product vandalism and maintenance.		All stations
3.11.4	**Toilet bowl** Toilet bowls are to be specified by the operator. Due consideration to be given to product vandalism and maintenance		All stations

Toilet requirements

3.11 Toilet facilities

Ref	Requirement	Rationale	For
3.11.5	**Toilet seat cleaner and covers** Customers are provided with liquid toilet seat cleaner by way of an embedded toilet spray that they can spray onto toilet paper to use to clean the seat. They are also provided with a toilet seat cover to cover the seat with which reduces the use of toilet paper to cover the seat with.	*Nearly 50% of our customers told us that they use Toilet Seat Cleaner when it is available and that this makes them feel better about using our toilets. Just over one in three customers told us they use toilet seat covers if available – and when we don't provide them, 40% of customers told us they will cover the toilet seat with toilet paper.* *Source: TPT, GTSB* ***Principles: Cleanliness, Comfort & Hygiene***	All stations
3.11.6	**Toilet paper dispenser** The receptacle for the toilet paper is embedded in the wall and should be large enough that toilet paper can be provided to last between cleaning schedules while making the theft of toilet paper an onerous and time consuming task. Where Digital Information Displays are present at the entrance to each toilet, toilet paper supply levels should be digitally monitored and communicated to customers via the display as well as on a station control monitor (that also tracks toilet cleaning). The toilet paper dispenser is placed on the wall next to the toilet, slightly forward from where the person is sitting and slightly up. It is easy to reach for people of all sizes, shapes and heights.	*Customers tell us that ensuring that they have enough toilet paper is critical to a good toilet experience – and they need to be able to identify this before they enter the toilet.* *The most likely item to be stolen from our toilets however is toilet paper, which exacerbates the above issue.* *Source: TCJA, TPT* ***Principles: Cleanliness, Comfort & Hygiene***	All stations

Toilet requirements

3.11 Toilet facilities

Ref	Requirement	Rationale	For
3.11.7	**Flushing** Our toilets are equipped with sensor operated flushing facilities that sense the level of the water and choose the appropriate level of flush to provide. A manual override is also provided to allow the user to manually flush the toilet by pressing the button. The manual override continues to operate in the event of a power outage. No more than 4.5 litres of water is flushed even if the button continues to be held.	*Customers tell us that they do not want to have to touch a button to flush the toilet due to the germs they believe might transfer onto their hands if they do this.* *Source: TCJA, TPT* ***Principles**: **Cleanliness, Comfort***	All stations
3.11.8	**Toilet Paper** [PRODUCT REQUIREMENTS TO BE DETERMINED BY THE OPERATOR]		

3.12 Hand-washing and drying area

Customers want a ‘no touch’, hygienic handwashing experience as well as convenient amenities.

Toilet requirements

3.12 Hand-washing and drying area

Ref	Requirement	Rationale	For
3.12.1	**Basin** Basins have a minimum size of 50 cm in length and 40 cm wide and are not flat bottom as they do not effectively allow dirt and debris to be washed away. All basins are installed into vanity tops and located beneath the vanity. All vanity tops have backsplashes. Note: for Accessible Toilets please refer to ASA standards for basin requirements.	*Customers value a clean wash-basin that will allow them to readily wash their hands and keep all the water in the basin.* *Source: TPT* ***Principles: Cleanliness, Comfort & Hygiene***	All stations
3.12.2	**Tap and soap dispenser** An auto-sensor tap and an auto-sensor soap dispenser are provided over the basin to minimise wet floors. The fixtures are reliable and easy for customers to figure out how to use them. The water flow is low-flow.	*Customers tell us that they want a no-touch experience on all toilet facilities, including the soap dispenser.* *Source: TPT, TCJA, GTSB* ***Principles: Cleanliness, Comfort & Hygiene***	All stations
3.12.3	**Soap** Foam soap is provided instead of liquid soap as it reduces water usage and discourages theft. .	*Customers want us to discourage other customers from doing the wrong thing.* *Source: TPT* ***Principles: Cleanliness, Comfort & Hygiene***	All stations
3.12.4	**Shelf** A shelf is provided adjacent to the basin (refer to 3.10.2).	*Customers want us to provide them a place to put their bags to keep them safe and dry.* *Source: TPT* ***Principles: Cleanliness, Comfort & Hygiene***	All stations

Toilet requirements

3.12 Hand-washing and drying area

Ref	Requirement	Rationale	For
3.12.5	**Paper towel dispenser** The paper towel dispenser is embedded in the wall above or immediately adjacent to the water basin with a large recessed paper towel supply so that it does not need to be topped up regularly. Paper towel supply levels should be digitally monitored and data sent to station control monitor to inform cleaning staff.	*More customers prefer to use paper-towels than electronic hand-dryers. Further, there are a group of customers who simply won't use electronic hand-dryers – such as the hard of hearing, young kids, the elderly. These customers may be responsible for the problems we have with water and toilet paper on the floor in our current toilet design. (TPT pg. xx, GTSB pg. xx)* ***Principles**: Cleanliness, Comfort*	All stations
3.12.6	**Garbage bin** See 3.8.4 on page 47	-	All stations
3.12.7	**Mirror** There is a mirror placed over the hand-basin positioned at a height so that people of short to tall statures are able to see their faces in it. Mirrors are covered with a film that can be easily replaced in the event that the mirror is vandalised. Mirrors are tempered so that if broken, they do not result in sharp shards. Edges and back are sealed and protected from any moisture penetration.	*Customers tell us that having a mirror is important to them to check their visual appearance, but also for practical issues such as being able to put in their contact lenses.* ***Principles**: Comfort*	All stations

3.13 Other specific needs

While not all customers will need the following, there are significant segments that do need:

- Sharpies
- Family-friendly facilities
- Mobility aids

Toilet requirements

3.13 Other specific needs

Ref	Requirement	Rationale	For
3.13.1	**Sharpies** A recessed sharpie bin is provided and co-located to the rubbish bin. [PRODUCT REQUIREMENTS TO BE DETERMINED BY OPERATOR]	*One in eight of our customers tell us that they want us to provide Sharpie contained in our toilets.* *Source: GTSB* ***Principles: Comfort & hygiene; Safety & security***	All stations
3.13.2	**Baby-changing table** A baby change table will be provided in all super-standard toilets (see section 4.1). If this is not possible then a baby change table will be provided in all unisex super-standard toilets. In the event that no unisex super-standard toilet is provided, then baby-change tables are provided in both male and female super-standard toilets. Durability is a key requirement for the changing table to ensure the safety of infants. Materials used should be easy to clean and antibacterial. [FURTHER PRODUCT REQUIREMENTS TO BE DETERMINED BY OPERATOR]		All stations

Toilet requirements

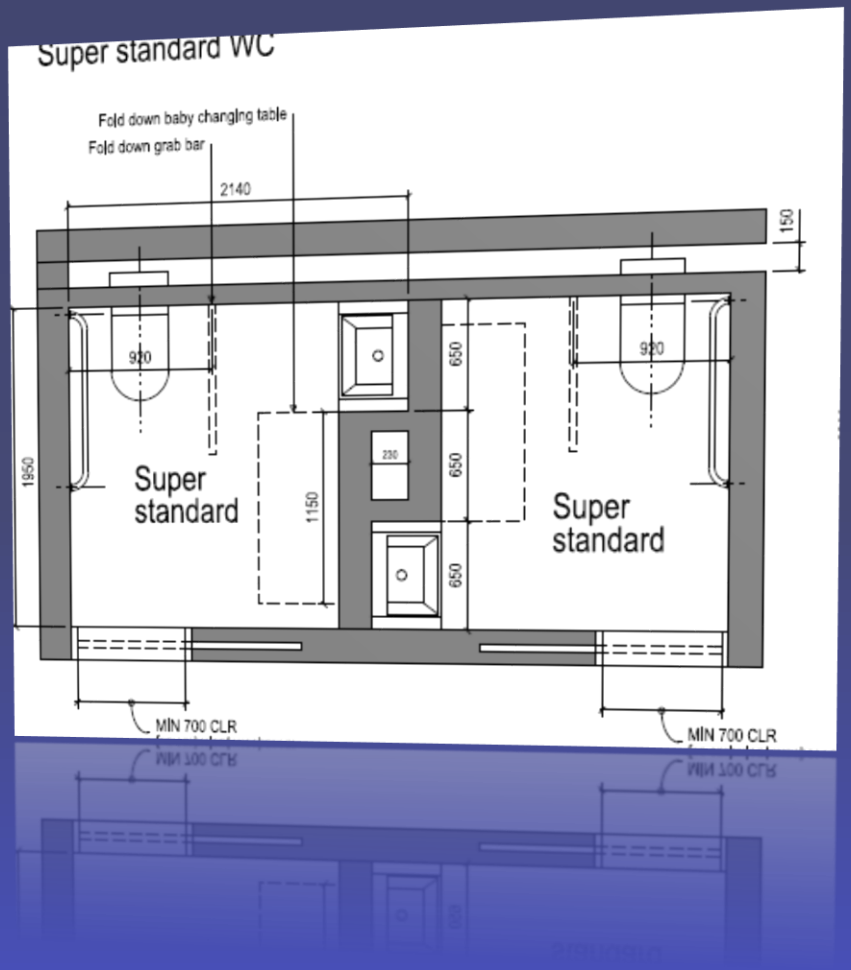
3.13 Other specific needs

Ref	Requirement	Rationale	For
3.13.3	**Grab bars** Grab bars are provided in both super-standard and Accessible toilets, however the placement varies depending on the toilet type. **For Super-Standard toilets** A horizontal and vertical grab bar are provided in each super-standard toilet on both the wall immediately: • Next to the toilet; and • Behind the toilet. See the diagram in section 4.1 for details of location. **For Accessible toilets** Grab bars are provided in accordance with the Australian Standards for Accessible toilets.	*Around one in five of our customers has a mobility issue of some sort. Further, elderly customers value the aid that grab bars give them in being able to get up off the toilet.* *Sources: TCJA, TPT, GTSB* ***Principles: Safety & Security, Accessibility, Comfort***	All stations

4. Toilet Layouts

4.1 Super-standard toilets

This section details the recommended layout of the Super-Standard toilet.



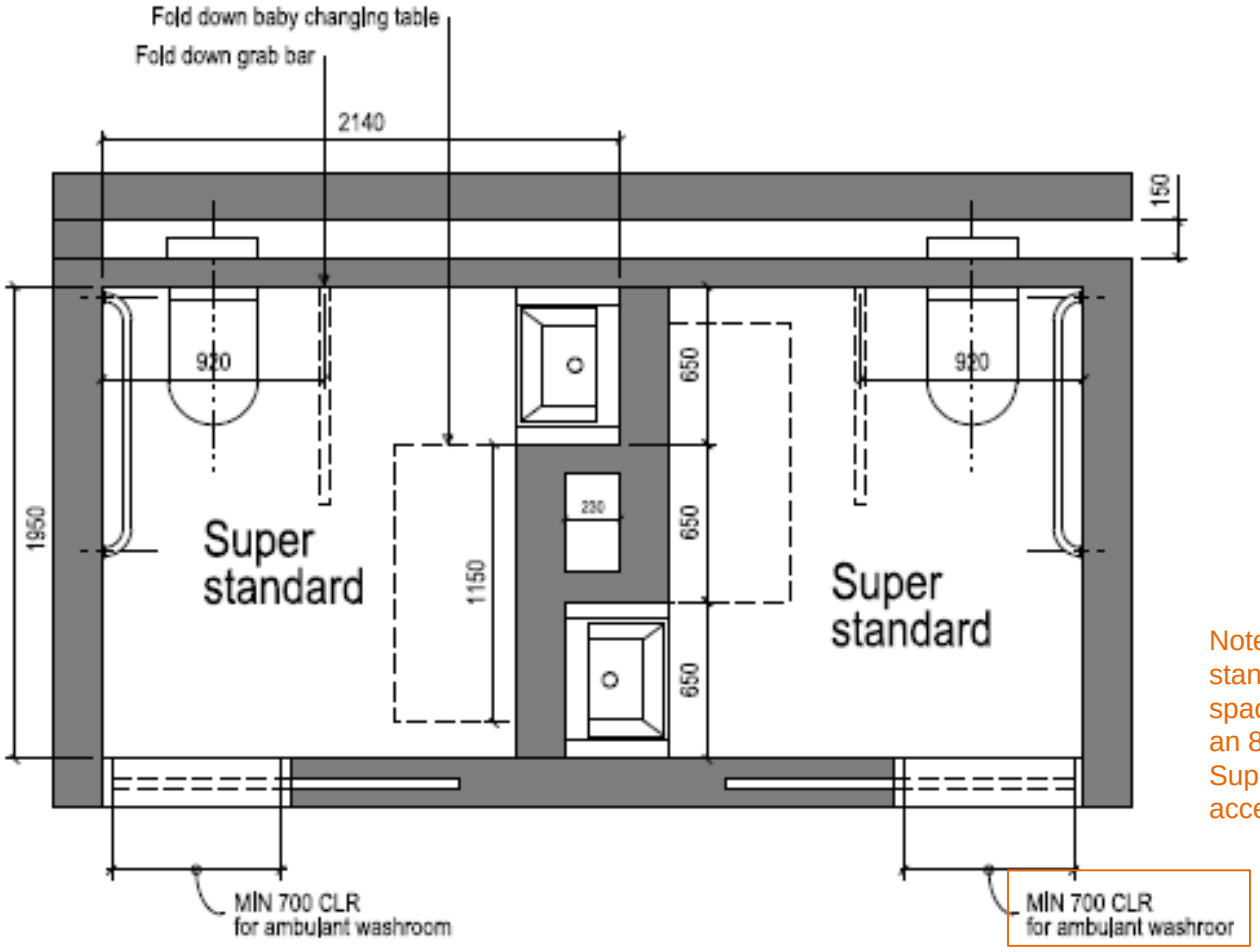
Toilet requirements

4.1 Super-standard toilets

Ref	Requirement	Rationale	For
4.1.1	Super-standard toilets are 2140mm x 1950mm and provide: • Enough space to fit a pram, large pieces of luggage and large sporting equipment such as a bicycle or a surfboard; • Meet the needs of those with mobility issues and short-long term medical conditions – not otherwise catered for by Accessible toilets. They are built to dovetail each other so that the centre of the shared wall contains the rubbish bin and paper towels. A diagram is provided on the following page.	*Standard toilets cater well for customers who are aged between 7 and 65, aren't travelling with young kids, luggage or other large items and don't have a medical condition. For customers who fall outside this range – which is between 30% and 50% of our customers – our toilets are too small and don't necessarily meet their needs.* *The super-standard toilet is designed for those customers for whom neither our standard nor our Accessible toilets meets their needs.*	

Architectural diagram

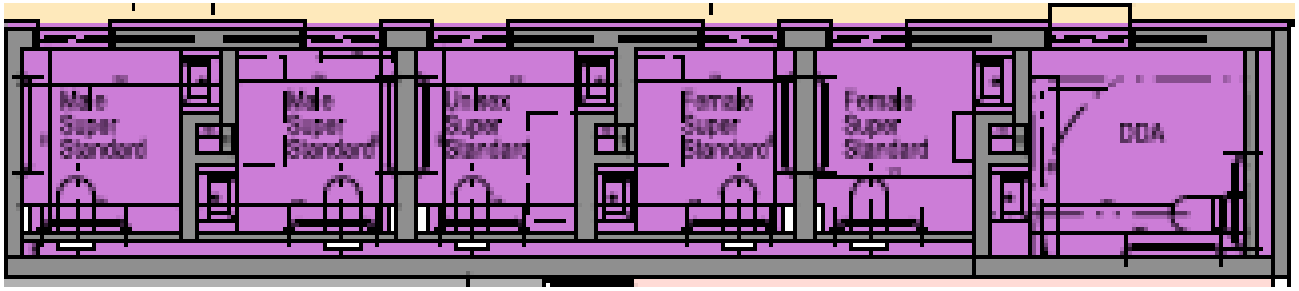
The following diagram illustrates the spatial planning and adjacency of two super-standard toilets and shows how they ‘dovetail’ each other.

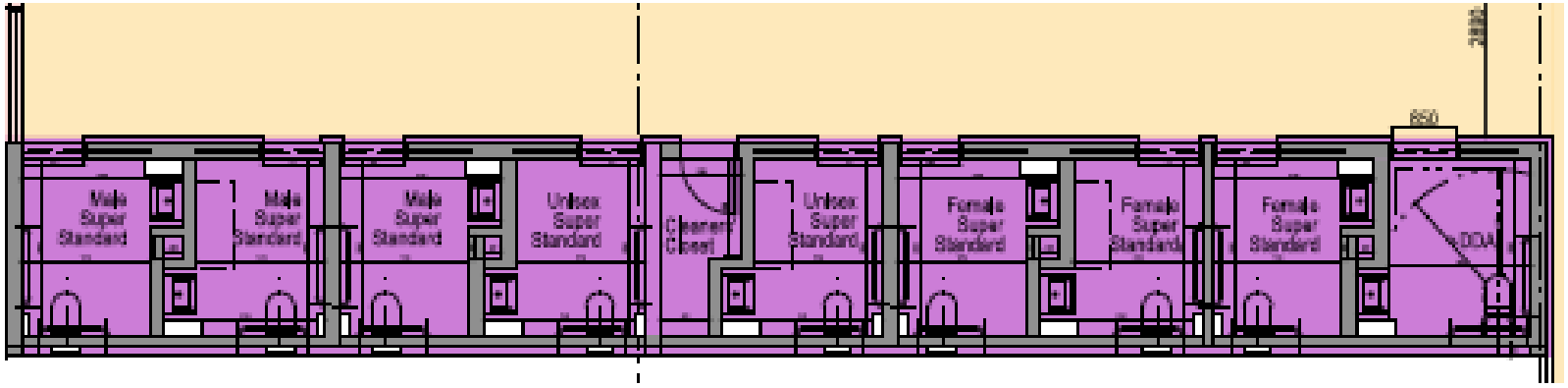


Note: 700 CLR based on minimum standard for ambulant toilets. Where space allows, recommendation is for an 850 CLR entrance to be provided in Super-Standard toilets to align with accessible requirements.

Toilet bank layouts

The following shows some examples of how super-standard toilets may be included in a toilet bank:



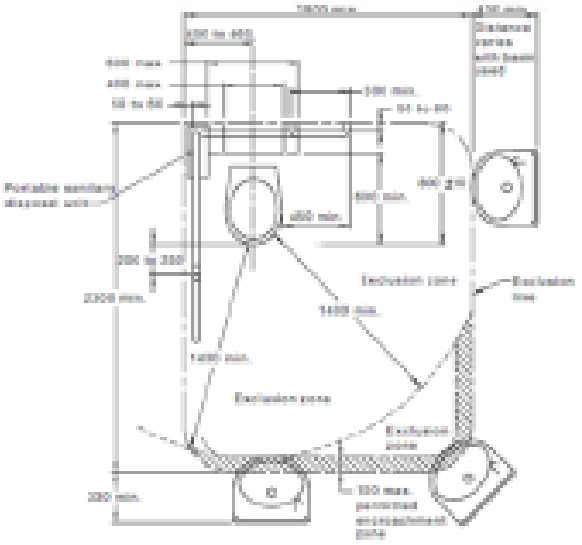


4.2 Accessible Toilets

This section provides details of the layout of Accessible toilets.

Toilet requirements

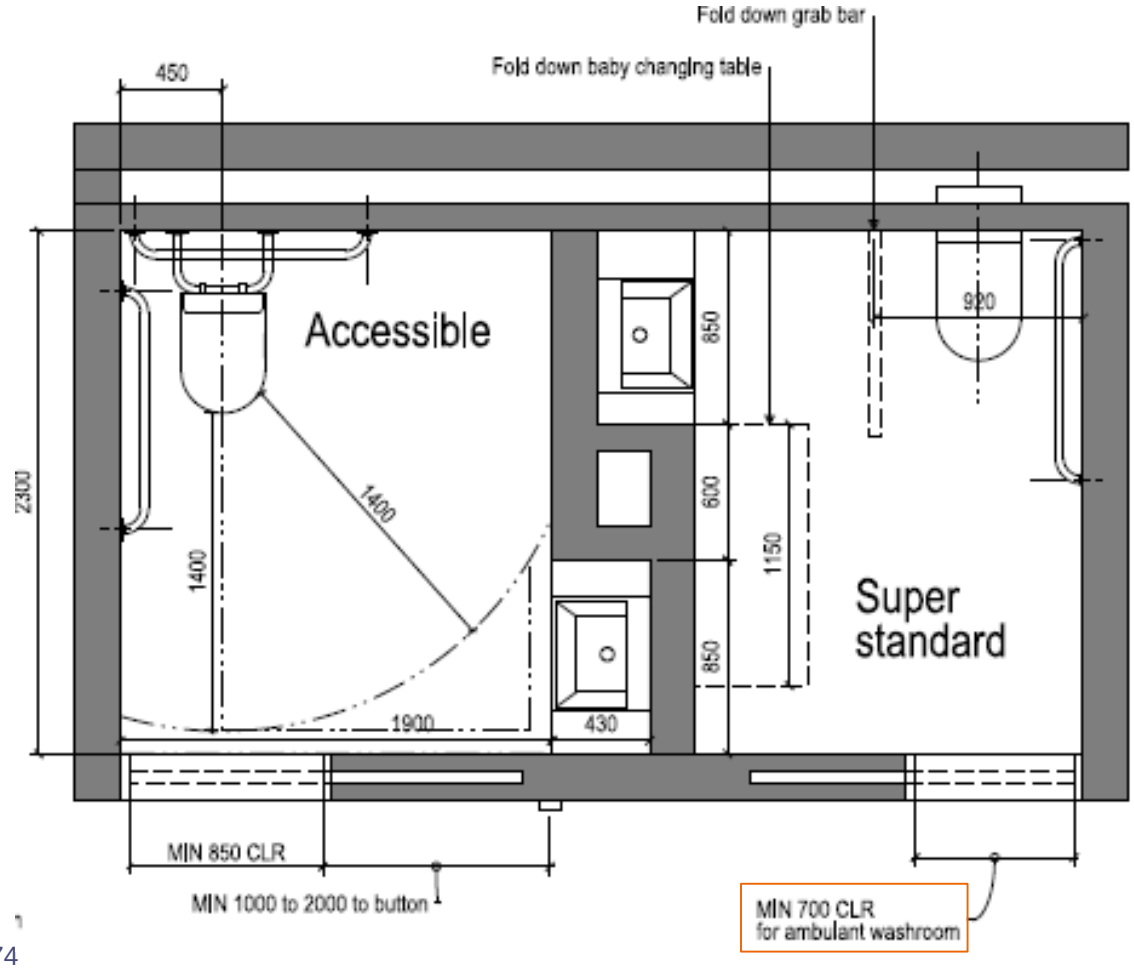
4.2 Accessible toilets

Ref	Requirement	Rationale	For
4.2.1	**Accessible toilets** The Accessible Toilets should meet Disability Discrimination Act and Disability Standards for Accessible Public Transport requirements and be a minimum of 1900mm by 2300mm (the 95th percentile of wheelchair sizes). Any station with two accessible toilets should provide one left-hand and one right-hand facility.		

Architectural diagram

The following diagram illustrates the spatial planning and adjacency of an accessible toilet next to a super-standard toilet and shows how they ‘dovetail’ each other.

Note: all building plans must be reviewed by a qualified access consultant to ensure compliance.



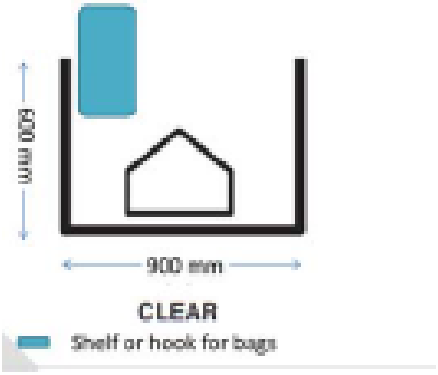
Note: 700 CLR based on minimum standard for ambulant toilets. Where space allows, recommendation is for an 850 CLR entrance to be provided in Super-Standard toilets to align with accessible requirements.

4.3
Urinal rooms

This section provides details for our Urinal rooms.

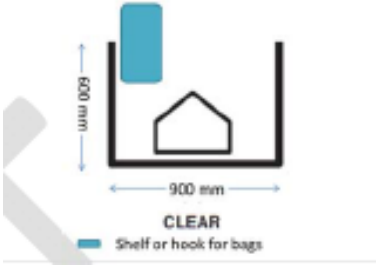
Toilet requirements

4.3 Urinal rooms

Ref	Requirement	Rationale	For
4.3.1	**Male Urinals** Urinals are longer in style and don't have a lip on them. They are installed so that customers of short stature (including kids) and tall people can use the same urinal. They are at least 300mm wide and are not set closer than 450mm from its centre to any side wall or partition. All urinals are fitted with an automatic sensor-operated flush valve coupled with manual override feature.  	*Male customers tell us that when they are at our larger stations – like Town Hall – they prefer to use a Urinal for speed and as they don't have to touch toilet surfaces.* *Sources: GTSB, TPT* ***Principles: Comfort & Hygiene; Quick & Easy***	All stations

Toilet requirements

4.3 Urinal rooms

Ref	Requirement	Rationale	For
4.3.2	**Privacy screens** In urinal rooms, security and privacy are paramount. Individual urinals are wall-hung and separated by wall-hung urinal privacy screens similar to those in the diagram below in height and depth and at least 60cm deep. Privacy screens are at least 15cm from the ground to allow for easy cleaning and are spaced 90cm apart. End support pilasters that match the stall pilaster are provided to support the depth. Privacy screens have a hook placed on the side for customers to readily hang a backpack on.  	*Male customers tell us that when they are at our larger stations – like Town Hall – they prefer to use a Urinal for speed and as they don't have to touch toilet surfaces.* *Customers also tell us that they value privacy when using a urinal, plus the ability to hand up a bag while they are using it so that it is not on the floor* *Sources: TPT, TCJA, GTSB* ***Principles: Comfort & hygiene, Quick & easy***	City and major stations

4.4
Other rooms

This section outlines the requirements for other room formats:

- Parents Room
- Lift & Change Room

Toilet requirements

4.4 Other rooms

Ref	Requirement	Rationale	For
4.4.1	**Parents Room** While customer research showed that space to breastfeed infants is desirable, there is no current quantifiable demand for provision of these facilities. Further research would need to be undertaken to inform this requirement.	*Customers told us that they don't wish to feed their children in the same room that they use the toilet – but they would like a space to breastfeed.* *(TPT pg. ; GTSB pg.)* ***Principles: Comfort & Hygiene; Cleanliness***	TBA
4.4.2	**Lift & Change Rooms** At Central and Circular Quay station, a separate room is provided for customers living with quadriplegia and other customers who use adult nappies and need to be physically lifted out of their wheelchair in order to have their nappies changed. While no ASA standards currently exist for these facilities they can be built according to the specifications provided by Changing Places organisation (endorsed by TfNSW Social Policy): https://changingplaces.org.au/build-a-toilet/designs/ (note: facility may also be referred to as Accessible Adult Change Facility – AACF)	*TfNSW is currently (as time of document issue) providing comment on the draft National Construction Code (NCC) 2019 which includes an amendment that would require unisex Accessible Adult Change Facilities in public transport buildings. The proposed change is an outcome emanating from the review of Disability (Access to Premises - Buildings) Standard 2010. The proposed change may extend to more than Central and Circular Quay stations.*	Central and Circular Quay stations only

End.