# Contents

## Chapter 8 – Ferry terminal infrastructure

# 8.1 Introduction

## 8.1.1 Overview of the Ferry terminal infrastructure chapter

The Ferry terminal infrastructure chapter is a referenced component of the overarching *Public Transport Infrastructure Chapter (PTIM).*

This Ferry terminal infrastructure chapter is to be used in conjunction with:

- ***PTIM, Background and application*,** which establishes the rules for application of the entire *PTIM*
- ***PTIM, Planning and design*,** which provides the overarching design guidelines and principles for public transport infrastructure across Queensland
- ***PTIM, Supporting access and infrastructure*,** which details the supporting access infrastructure required to support public transport stops, stations, and related facilities
- ***PTIM, Branding, theming and signage*,** which provides branding, theming and signage that should be used for identifying coherent public transport infrastructure throughout Queensland.

For information on further resources to support the planning and design of ferry terminals, including specifically the integration with other modes please refer to *PTIM, Background and application* for reference materials and supporting information as well as *PTIM, Planning and design*.

# 8.2 Purpose and objectives

The Ferry terminal infrastructure chapter will inform infrastructure design by providing a clear and consistent set of principles and guidelines for ferry terminals across the TransLink and the greater Qld Government network.

Ultimately, high-quality and consistent infrastructure will provide customers with a transport system that is coherent, functional and encourages passenger use.

The objectives of this chapter are to:

- ensure best practice infrastructure design is applied across the State
- establish guiding principles for the planning and design of ferry terminal infrastructure
- ensure a consistent approach to the provision of high-quality customer access to ferry services, convenience, safety and comfort
- provide an overview of available standards for ferry terminal design.

# 8.3 Application of the Ferry terminal infrastructure chapter

## 8.3.1 Intended audience

This chapter is intended for use by professionals in the transport planning and delivery industry, and those specifically engaged with the marine passenger transport infrastructure.

This generally involves, but is not limited to, designers, planners, engineers, architects and other professionals involved in the planning, design and delivery of public transport infrastructure in Queensland.

## 8.3.2 Application of this chapter

This chapter is to be used in conjunction with overarching applications of the *PTIM*.

This chapter details TransLink requirements for planning and design, and should be referred to before starting to plan new or upgrades to existing ferry terminals.

TransLink, in partnership with Local Government and in collaboration with relevant stakeholders and delivery partners, should be consulted on the design for new infrastructure and the upgrade of existing terminals.

# 8.4 Principles of ferry terminal planning

Ferry facilities form a key component of the overall transport network. This water-based mode offers an efficient link for customers to access their destination as a transport mode on its own or in combination with land based modes, including active transport.

Given the locations of ferry terminals in Queensland, this mode often presents as a convenient mode to access community services, employment and higher education, cultural and tourist destinations.

The planning of ferry terminals, particular their location, should take into account the relevant land use and planning framework applicable to the area. This allows for strategic planning to be considered in addition to the existing land uses and built form, as part of enabling a 'whole-of-journey' approach to an integrated public transport service. Legislation particularly relevant to the planning and design of ferry terminals include:

- *Coastal Protection and Management Act 1995 (Coastal Act)*
- *Disability Discrimination Act 1992 (DDA)*
- *Disability Standards for Accessible Public Transport 2002 (Transport Standards)*
- *Environmental Protection Act 1994 (EP Act)*
- *Fisheries Act 1994 (Fisheries Act)*
- *Land Act 1994 (Land Act)*
- Local Planning Scheme
- *Marine Parks Act 2004 (Marine Parks Act)* and *Marine Parks Regulations 2006 (Marine Parks Reg)*
- *Nature Conservation Act 1992 (NC Act)*
- *Planning Act 2016* and *Planning Regulation 2017*
- Port Land Use Plan
- Priority Development Area – PDA Development Scheme or Interim Land Use Plan
- Priority Port Masterplan
- *Transport Operations (Passenger Transport) Act 1994*
- *Vegetation Management Act 1999 (VM Act).*

The exact triggers that may need to be assessed in detail for the proposed works will need to be determined on a project specific basis.

*The Whole Journey: A guide for thinking beyond compliance to create accessible public transport journeys* (Australian Government, 2017) assists in enabling people with disability to genuinely participate in the community by promoting the importance of considering the acessibility of the whole of the passenger transport journey. The Department of Transport and Main Roads (TMR) sees this guide as a very important document and application of the principles presented in the guide will help to improve the accessibility of our customers' passenger transport journeys. [1]

For a full list of relevant legislation, policy and guidelines, refer to *Appendix 8-A* and *PTIM, Background and application*.

[1] *Department of Transport and Main Roads (2018) Disability Action Plan 2018-2022 pp. 6*

## 8.4.1 What is a ferry terminal?

A ferry terminal (jetty, pontoon, or landing) is a structure, which enables passengers to safely and efficiently board or disembark a scheduled ferry service, where a ferry is defined as a ship, boat, barge and hovercraft. Refer *Transport Operations (Passenger Transport) Act 1994*.

For the purpose of the *PTIM*, ferry terminals and marine transport relate to those providing a specific passenger transport role, as opposed to freight or vehicle movement.

## 8.4.2 Ferry terminal categories

Unlike other public passenger transport facilities (e.g. bus stops) ferry terminals have not typically been categorised based on the infrastructure function and configuration. Generally, terminals have been tailored to the specific needs based on expected passenger demands and locality.

TransLink, through the *PTIM*, proposes to categorise ferry terminals to assist with their future provision within the network, and any upgrade of such terminals to ensure customer functional needs are met. See Table 8.1 for details of TransLink's categorisation of ferry terminals.

The categorisation of a ferry terminal will also need to respond to expected climatic conditions such as weather, tidal conditions and water wave patterns. Furthermore, guidance on level of patronage, or frequency of service, may need to be considered specific to the local government area where a service operates, due to the variance in patronage or service levels across the state.

**Table 8.1:**
Ferry terminal categories

| Ferry terminal category | Description | Generally located |
|---|---|---|
| **Local** | • low usage or remote terminal<br>• specific types of services | • very low patronage facility<br>• low density residential areas<br>• low no. of attractors<br>• remote locations<br>Examples include:<br>• Thursday Island<br>• Horn Island |
| **Intermediate** | • commuter role<br>• moderate frequency transport services<br>• moderate customer boarding<br>• primary point of community access (e.g. for utilitarian trips) | • low to medium density residential areas<br>• some attractors (retail, commercial)<br>• minor tourist locations<br>Examples include:<br>• Victoria Point Jetty ferry terminal<br>• North Stradbroke Island ferry terminal (Dunwich) |
| **Premium** | • regular services<br>• interchange with other modes<br>• high customer boarding demand requiring significant passenger waiting facilities, including significant coverage and canopy<br>• management of customer movement/s during peak operations | • major destinations and tourist sites<br>• major attractors and centres<br>• multi modal interchange<br>Examples include:<br>• North Quay, Riverside, South Bank ferry terminals<br>• Redland Bay Marina Wienam Creek ferry terminal |

## 8.4.3 What is a ferry service?

A ferry service is a scheduled passenger service provided by a ferry on or over water, and includes a service provided by a water taxi. Refer *Transport Operations (Passenger Transport) Act 1994*.

There are several existing ferry services across the State that are currently operated by the local authority or private contractors. These provide a much needed service for:

- residents of island communities
- tourists accessing the islands
- customers of across/along-river public transport in Brisbane
- recreational travel.

See Figure 8.1 and 8.2 highlighting the location of ferry terminals across Queensland.

## 8.4.4 Who uses the ferry services?

TransLink customers using ferry services across the network include residents, tourists (domestic and international), commuters, school students, and customers using the service for recreational purposes or as part of other utilitarian trips (e.g. weekly shopping for island residents). How TransLink's customers access this mode of travel varies by location, adjacent land use, and trip purpose and may be predominantly by car in regional locations, and by foot in urban situations.

## 8.4.5 Roles and responsibilities

TransLink's role with respect to the planning and delivery of ferry terminals across the state is to provide guidance on:

- planning and designing terminals that meet passenger demand and capacity requirements
- integrating with other services
- designing accessible terminals that are easy to access and use by all
- achieving a consistent look-and-feel for all terminals across the network
- meeting specific needs of customers particularly those residing across the State's island communities.


***Figure 8.1 –***
*Location of ferry terminals across Queensland*


***Figure 8.2 –***
*Inset maps of ferry terminals across Queensland*

# 8.5 Ferry terminal environment

The process of planning and design for ferry terminals should focus on responding to surrounding land use, environmental constraints, passenger functions, current and future capacity requirements, and stakeholder engagement. As such, the planning process should:

- understand current and potential future vessel requirements
- understand the planning context specific to the site and specific triggers for assessment of the proposed works
- determine and understand proposed ferry route(s), terminal need and passenger demand
- understand both up-front and ongoing supporting infrastructure or works (such as dredging and seawall repairs)
- identify ferry terminal location including customer catchments and land value
- establish ferry terminal infrastructure requirements taking into account passenger functions and capacity requirements
- consult with community and key stakeholders.

Due to the geography of Queensland, the travel across water bodies (from commuter travel within cities to tourists accessing islands) is a factor of public transport planning. Ferries are generally linked to public and private transport networks, providing continuous routes and more options for passengers.

Given that an established ferry network is already in place for Queensland, the majority of ferry terminal works are anticipated to relate to upgrades of existing infrastructure for:

- interchange functions
- wharves as part of large development proposals on waterfront land
- changing passenger demands and requirements
- access improvements, including for people with disabilities
- local government, asset owner and service operator requirements
- new or upgraded vessels
- flood/cyclone mitigation and damage
- maintenance and end-of-life replacement
- to address specific community needs.

## 8.5.1 Understanding existing and future customers

### *8.5.1.1 Customer outcomes*

TMR is focussed on achieving the following customer outcomes:

1. ***Accessible, convenient transport:*** access and use of the public transport network should be accessible, convenient, direct and legible
2. ***Safe journeys for all:*** customers should feel comfortable and safe when using and accessing the public transport network
3. ***Seamless, personalised journeys:*** ferry terminals are to be designed for the customer and need to be convenient and responsive to their individual needs and expectations. Design of ferry terminals to consider all modes of access to ensure a seamless interchange and journey for the customer
4. ***Efficient, reliable and productive transport for people and goods:*** ensures local access and integration with all modes is achieved and customers are able to move efficiently through the terminal. The terminal design balances in-service efficiency and on time running with customer needs
5. ***Sustainable, resilient and liveable communities:*** providing a balance between movement and place can create vibrant places for the community. Ferry terminals should be designed as sustainable, long term assets that are fit-for-purpose now and into the future, and adaptable to change.

### *8.5.1.2 Customer needs*

The ferry terminal needs to provide an appropriate mix of functional elements to meet the needs of customers (not only using this mode, but interchanging/interfacing with other modes and the precinct). In addition the planning of a ferry terminal should address requirements for those users who may use the terminal for purposes other than for passenger transport (taking into consideration the location/context of the terminal).

As a minimum, all users, regardless of their ability or how frequently/infrequently they use the public transport network, require the following:

- short and direct paths to and within ferry terminal
- minimal physical barriers between ferry terminal and each access mode
- ease of circulation to/through ferry terminal
- Crime Prevention Through Environmental Design (CPTED)/personal safety
- legible, clear and consistent wayfinding and information.

Additional specific expectations and needs of customers using the ferry service is provided in Table 8-2.

**Table 8.2:**
Customer expectations and needs

| Customer | Example(s) | Customer expectations and needs |
|---|---|---|
| **Regular peak hour commuters** | Customers who travel every business day to work or education frequently using the TransLink network including ferry services. These users have strong familiarity with the ferry terminal and routes through/via development. | • efficient entry and exit<br>• short and direct access to connecting modes<br>• information on service disruptions and ability to access alternative modes. |
| **Off-peak travellers** | May include retired passengers, university students, employees working shift or outside of regular business hours. May include families travelling with children on weekend. | • comfortable waiting areas<br>• infrastructure supporting lower service frequency (e.g. seating, shelter)<br>• personal safety in unmanned locations. |
| **Infrequent users/first-timers** | May include tourists, business travellers, parents travelling with children, interstate guests visiting family (e.g. typically includes discretionary travellers).<br>Customers might have luggage, prams or items unable to move easily. | • wayfinding and information on surrounding area<br>• easy to navigate<br>• comfortable waiting areas including luggage facilities<br>• convenient retail/food and drink facilities |
| **Interchange/ transferring customers** | Regular peak-hour commuter switching between modes.<br>Might need to accommodate customers impacted due to a service disruption. | • easy, legible interchange<br>• multi-modal real-time information and wayfinding<br>• relationship between modes minimises delay, diversions, the need to cross roads. |
| **People with a disability** | Customers who are deaf, hard or hearing, blind or have low vision, customers with cognitive disability or permanent or short-term mobility issues. | • system that ensures equitable and direct access<br>• minimum difficulty or stress to reach destination<br>• ability to access services provided by different vessel types (e.g. pontoon design). |
| **Recreational users** | May include users that are mostly like to travel on the weekend, with little knowledge of the ferry network and may be purely a trip for enjoyment or sight-seeing. These users may account for a substantial component of ferry patronage. | • wayfinding and information on surrounding area<br>• retail opportunities and activities |
| **Visitors/ passers-by** | May include non-travellers who use or pass through the ferry terminal/ interchange, where the terminal is a focal point supporting other activities. These users encourage beneficial passive surveillance and activate the terminal area. | • sufficient passing areas and use of gates to prioritise needs of travelling customers<br>• designated areas adjacent to the terminal<br>• comfortable waiting areas and meeting points<br>• retail opportunities and activities |

## 8.5.2 Understanding location selection

When choosing a site/location for a ferry terminal, the following should be considered:

- Integration with land use:
  - practical links to landside infrastructure and intermodal connections
  - proximity and connectivity to origin/destinations/ attractors.
- Environmental conditions:
  - vessel size and requirements
  - water/river tidal levels and extreme water levels
  - flood/tidal currents
  - wave climate
  - wind climate
  - presence of habitats including sea grass, coral, mangroves
  - location of navigation channel
  - location of other berths
  - assessment of other vessel traffic.
- Geotechnical conditions such as:
  - presence of ground material affecting constructability (e.g. very deep and soft soil requiring deep foundations or stiff rock requiring drilling or blasting).

- Local site constraints such as:
  - above and below ground services
  - external stakeholders
  - cultural heritage
  - planning impacts.
- Long term maintenance requirements.

Ferry terminals are recommended to avoid the following locations, where possible:

- Within a navigation channel/waterway, due to increased risk of impact by other vessels. The berth can be located adjacent to the edge of the channel.
- Where exposed to significant waves, currents and flooding. Due to:
  - passenger safety embarking and disembarking from the ferry
  - high design loading requirement, which is likely to mean high cost
  - inherent risk of damage in a large extreme event (not designed for).
- Where dredging may be required as part of construction and maintenance works, resulting in impacts to environmentally sensitive areas.
- Near practical links to landside infrastructure and intermodal connections, due to increased transit requirement for passengers.

### 8.5.2.1 Integration with land use

As with other public passenger transport infrastructure, integration with land use is critical. This includes integration with active transport routes and other public transport infrastructure to enable community access to services and reduce dependency on cars. The location of the terminal should also consider the value of the land for use for such a specialised form of public transport particularly when terminals are being considered as part of private development proposals or access is for exclusive communities. On the other hand, a ferry terminal may create or enhance development or redevelopment opportunities.

The provision of a ferry terminal may encourage other unwanted activities such as fishing, climbing on structures, vandalism, risky behaviour (for example, jumping from structures into the water), and loitering to name a few. The design and management of the terminal should take into account the likelihood of such activities to ensure access for ferry customers is not impeded or made unduly unsafe, in addition to reducing ongoing maintenance costs (i.e. cleaning). In addition, due consideration should be given to adjacent marine businesses and their needs when locating the terminal.

Refer to *PTIM, Planning and design* for further information on integration with land use. The overarching design guidelines within the PTIM need to be applied giving consideration to site-specific characteristics to create an attractive, seamless integration with the surrounding environment, with regard for the value and use of waterfront land.

The planning of customer focussed ferry terminal infrastructure should consider feedback from all stakeholders (e.g. asset owner, operators, users and so on) and the local community to reflect the specific needs of location and land use of the area.

TransLink should be consulted with, regarding any proposals that seek to introduce additional ferry terminal infrastructure. An assessment of the most appropriate form of public passenger transport may need need to be carried out to ensure customer level of service can be addressed, and to confirm the service/ facility contributes to the wider network operations.

### 8.5.2.2 Integration with other modes

When interchanging, customers should be able to do so with minimal difficulty. The land side design of ferry terminals should allow for seamless passenger movement between access modes to encourage public transport use and to maximise the quality of the cusomter experience.

Existing and future active transport demand to from adjacent land uses, nearby attractors and events should inform the design integration of the land side fixed structure with that of the local and surrounding networks.

All interface points between local active transport networks and ferry terminal infrastructure should be functionally seamless and focus should always be on integrating with existing infrastructure. Connections must be direct, and legible with safe and convenient crossings.

For detailed guidance refer to PTIM, Supporting access infrastructure.

### 8.5.2.3 Integration with other services

The coordination with other public transport service providers/operators should also aim to achieve the best outcome for customers by reducing wait and transfer times, and should consider:

- integrated timetabling
- providing information about service changes, both scheduled and unscheduled
- developing late night travel solutions for customers.

### 8.5.2.4 Environmental conditions

Tidal range, extreme weather conditions and other environmental factors may compromise ferry operations and the safe use of a terminal for customers and operators. The planning and design of ferry terminals therefore needs to appropriately consider all environmental factors as well as alternate or/and complementary modes of travel for customers.

The siting of a ferry terminal should also seek to avoid locations that require capital and/or maintenance dredging or reclamation to be feasible. TMR in partnership with local government can assist in providing basic information where available including water-specific data such as tides, weather, water depth, need for dredging, environmental impacts and seawall information.

Habitat protection should also be considered in site selection. The presence of marine seagrass, coral, fish habitats, vegetation, mangrove, and movements paths should be determined with disturbance avoided.

## 8.5.3 Ferry terminal operational considerations

There are numerous factors that influence the planning and design for ferry terminal infrastructure.

Table 8.3 provides more detail on some key requirements for consideration, for the planning and design process.

In addition to the locational and operational considerations specific to ferry terminals discussed in this chapter, other relevant considerations are provided in *PTIM, Planning and design*.

**Table 8.3:**
Operational considerations for planning and designing ferry terminal infrastructure

| Factors influencing planning and design | What to consider |
|---|---|
| **Capacity and design life** | The design of new and/or upgraded public transport infrastructure needs to consider current and future capacity requirements. This is particularly important for ferry terminals and services, which have higher infrastructure, fleet and operating costs than land public transport. Also:<br>• Assess local passenger profile and their requirements, with a focus on access mode and trip purpose.<br>• Incorporate the ferry terminal components applicable based on terminal category (refer Table 8.6). |
| **Alternative transport modes and wider implication** | • During early planning, there is a need to consider alternative transport modes that could meet access objectives. As this mode is typically considered a specialised service, an assessment should be undertaken to understand the wider network and customer opportunities as well as impacts from adding ferry facilities as part of developments. |

| Factors influencing planning and design | What to consider |
|---|---|
| **Access area and infrastructure** | • **Personal comfort** – terminal access areas (e.g. walkways, gangways and pontoons) should be designed to be within the range of personal comfort during peak operational periods. These must accommodate passenger movements when waiting, queuing and accessing services. Passengers boarding and alighting should not be inhibited by waiting passengers. Sufficient space also needs to be provided for passengers to move to and away from loading and waiting areas.<br>• **Safety and security** - early planning and design consideration needs to incorporate measures such as provision of adequate sight lines, passive and active surveillance, security infrastructure and use of gates etc. to enhance passenger safety.<br>• **Design space** – consideration should be given to an appropriate Fruin Level of Service for the design of the terminal waiting areas, walkways, gangways and pontoon. For pedestrian horizontal travel and platform waiting areas, TransLink typically prefers that a LOS C be achieved as a minimum during peak periods. Seating and waiting areas should ideally be separated so that they do not interfere with boarding and alighting, information points or other pedestrian circulation points.<br>• **Inclusive** – all public transport infrastructure must be designed to accommodate all public transport users and comply with relevant access and design standards. Priority should be given to providing for independent access in accordance with the *Disability Standards*. Where the provision of independent access is not practical, the *Disability Standards* makes allowance for provision of 'direct assistance' as an alternative means of achieving full access – this is defined as constituting help given by an operator or provider [2].<br>• **Supporting access infrastructure** – planning and design should consider how passengers will access the terminal and incorporate appropriate supporting access infrastructure. For detailed guidance refer to the *PTIM, Supporting access infrastructure Table 3.1.* |
| **Operator requirements** | • **Mooring Vessel** – depending on the ferry service and agreement with operator, consideration may need to be given in the planning and design of where the vessel is moored outside of operational periods.<br>• **Operator Amenities** – subject to agreements with operators, access to toilet facilities may need to be provided and should be considered.<br>• **Operations manager** - liaison with operations manager to understand requirements of ongoing management and maintenance of the asset.<br>• **Design vessel particulars** – ferry terminal infrastructure needs to consider a diverse range of design vessel particulars that may use the terminal. Refer to section *Design considerations for ferry terminals* in this chapter for further detail. |
| **Emergency response vessels** | • Ferry terminal design may need to consider the need to accommodate berthing and mooring of emergency response vessels required to respond to specific needs for a community (e.g. fire, ambulance, police). |

# 8.6 Ferry terminal formation

## 8.6.1 Understanding terminal layouts

This section provides guidance on a typical ferry terminal layout. It is noted that the layout of a terminal should address site-specific constraints and operational requirements, and as such a site specific response needs to consider:

- the surrounding environment and general accessibility to land use
- functional and operational capacity requirements
- surrounding catchment demand from the wider transport network.

Ferry terminal design shall be undertaken in conjunction with a number of key stakeholders, including TMR, Maritime Safety Queensland, local government and ferry operators.

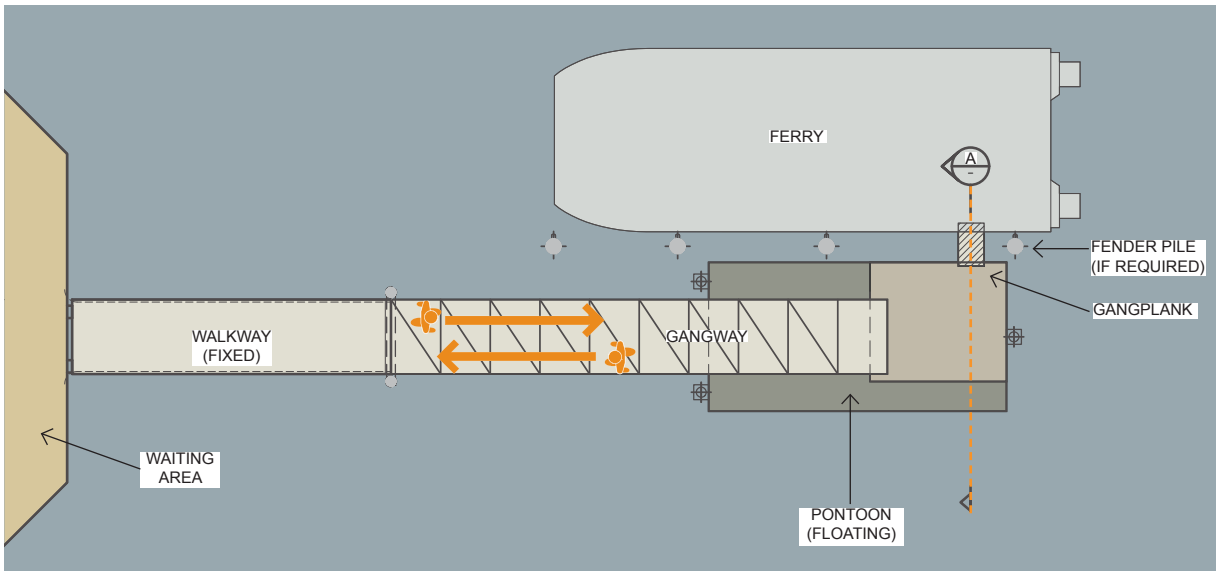
## 8.6.2 Ferry terminal elements

TransLink has not specifically defined a set of generic ferry terminal layouts, as the layout configuration is very much linked to the understanding of the environmental factors (such as wind direction) of the water to be crossed or traversed along and the ferry vessel.

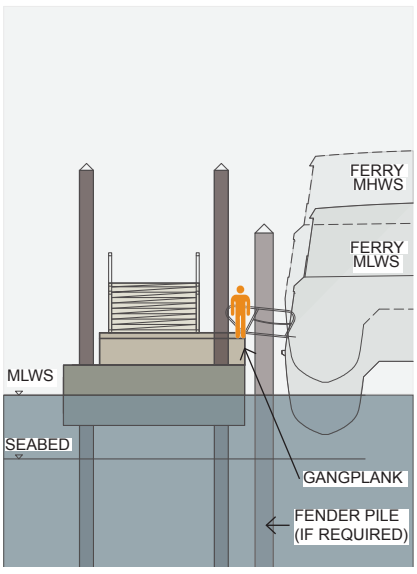
However, a typical terminal layout includes:

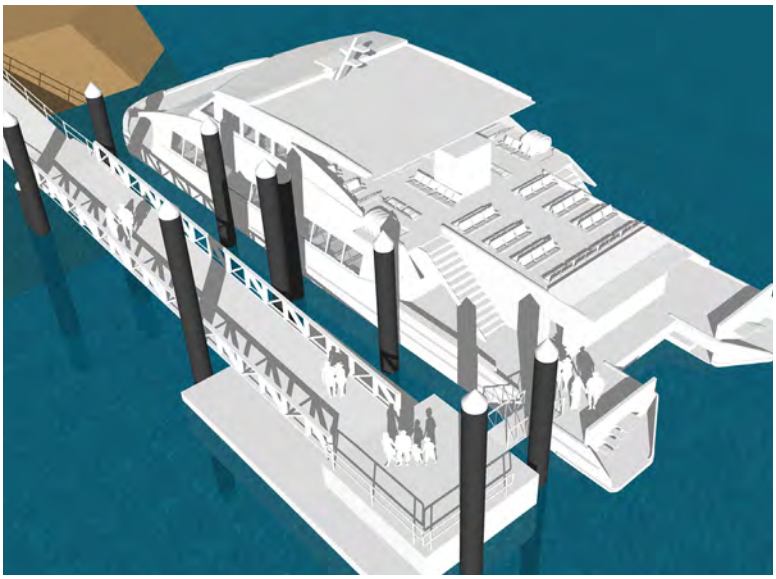
- access paths to/from broader precinct
- land side fixed structure waiting area
- walkway (fixed structure)
- gangway (floating)
- pontoon (floating)
- gangplank bridge (if required).

In addition to the layout itself of the terminal, as with other public transport modes, a range of supporting access infrastructure (for example, walk and cycle components, kiss 'n' ride or park 'n' ride) should be considered to complement the functionality of the terminal and delivery of an integrated and seamless transport network. Refer to *PTIM, Supporting access infrastructure*.




*GENERAL ARRANGEMENT*



*SECTION*

***Figure 8.3 –***
*General arrangement and section of a typical ferry terminal layout*

### 8.6.2.1 Land side fixed structure

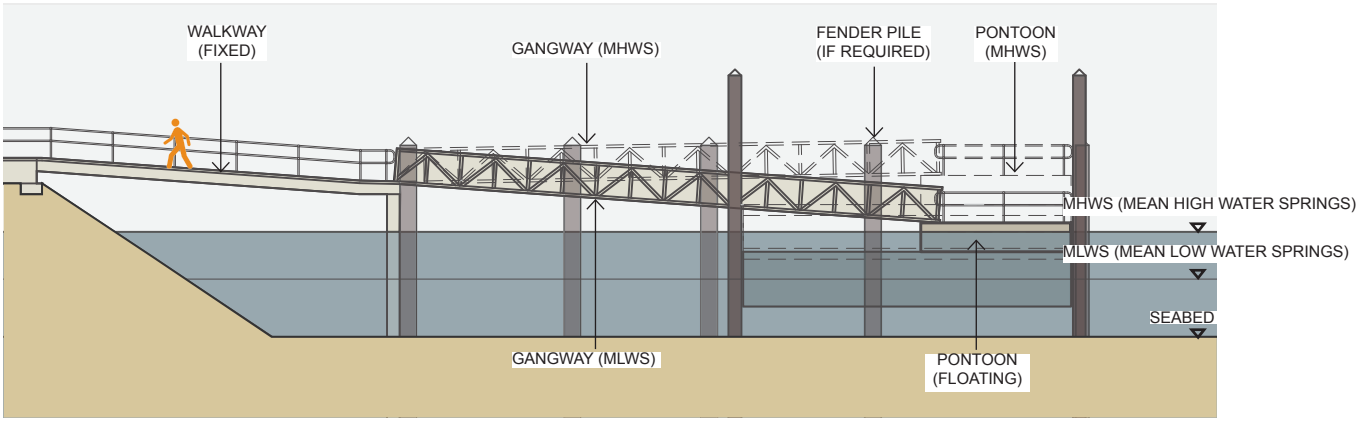
- Design and layout of this structure will need to take into consideration its specific transition into the surrounding environment, nearby/adjacent land uses, and associated activities. This should include the consideration of an accessible path of travel from surrounding precinct through to the pontoon for boarding the vessel.
- A waiting area as a minimum should include a shelter within appropriate seating and allocated spaces, service information and fares, and ticketing facilities where applicable. The shelter should provided to maximise protection from the elements for customer comfort and be positioned to commuters can easily see approaching vessels.
- This structure should offer a safe holding area for passengers away from the movement of embarking and disembarking passengers, particularly for less mobile passengers or younger passengers/families.
- Offer shelter from the elements, as well as appropriate level of seating including allocated spaces (to meet specific customer requirements and the *Disability Standards)*.
- Accommodate any proposed terminal building or ticket office (or other ancillary, retail or commercial uses where appropriate). It is noted that customers have the option to purchase or validate fares on board the vessel. Contact TransLink for preferred fare payment options when determining design.
- May consider facilities to support and enhance the use of bicycles as a means of access to/from the ferry terminal.
- May include features, or space to accommodate non-passenger users (for example, recreational uses).

### 8.6.2.2 Walkway

- The walkway typically provides a fixed connection between the land side structure and the gangway.
- It provides for the movement of passengers to and from the ferry vessel, as well as the movement of goods (as required based on customer type, location, site context).
- Width of walkway and its orientation/arrangement should be such that it meets objectives for the efficient movement of passengers as well as meeting the requirements of the *Disability Standards* (particularly with respect to the provision of ramps and resting landings). This may see wider walkways to accommodate both unloading and loading movements simultaneously (two-way flow) or where required due to luggage requirements (for example, associated with tourists, resorts or island communities).

### 8.6.2.3 Gangway

- The gangway connects with the fixed walkway and that of the terminal pontoon, and is designed to move according to tidal conditions. As with the walkway it provides for the movement of passengers to and from the ferry vessel, as well as the movement of goods. It should meet the requirements of the *Disability Standards*.
- The gangway should not be encouraged to be used for the queuing/waiting of passengers.




*ELEVATION*

***Figure 8.4 –***
*Elevation of a typical ferry terminal layout*

### 8.6.2.4 Pontoon

- The orientation, location and layout of the pontoon needs to consider the specific context of the site (for example, environmental factors, tidal conditions, wave/wind climate), vessel size and turning movements, operations, and number of berths. The height difference between the pontoon and the vessel (freeboard) also needs to be considered, with particular attention given to the slope of ramps for passengers with disabilities.
- Where the layout of the terminal sees passenger queuing and waiting proposed to occur on/at the pontoon, it needs to be sized to ensure sufficient stability, to meet passenger demand and movements, as well as providing seating, shelter and safety/service equipment.
- If space is available, it is encouraged to consider designing a terminal with passenger queuing and/or waiting to occur on land, supported by visible passenger information displays (e.g. real-time).
- Consideration should also be given to the storage of the gangplank (see below).

### 8.6.2.5 Gangplank

- To be sized to address passenger flow, cargo requirements, and the range of vessels servicing the terminal.
- Needs to provide safe and equitable transition for passengers from the pontoon to the vessel and should meet the requirements of the *Disability Standards.*
- Ideally the gangplank needs to be designed to enable manual handling, and the layout of the terminal should ensure it can be safely stowed when not in use.

### 8.6.2.6 Accessibility and compliance

It is important that the relevant standards and guidelines for disability access are followed, along with the engagement of relevant disability reference groups, where required. The legislative requirements of the Commonwealth *Disability Discrimination Act 1992 (DDA),* sets out the responsibilities of providers with regards to access to public transport, with the requirements identified in:

- *Disability Standards for Accessible Public Transport 2002 (Transport Standards)*
- *Disability (Access to Premises – Buildings) Standards 2010 (Premises Standards).*

TransLink also recognises the importance of providing appropriate accessibility for customers as part of their door-to-door journey. Enabling a customer to navigate a continuously accessible path as part of the 'journey' helps create an accessible network.

- The large tidal nature of some coastal locations can impact the accessibility of ferry terminals by changing ramp gradients for gangways. This may see the need for assisted access for people with a disability.
- The motion of ferry vessels on the water can cause gangplank movements, which may affect the accessibility of ferries. This may see the need for assisted access for people with a disability.
- The use of ferry terminals for fishing and other recreational uses can also present hazards and amenity impacts.
- Storm and flood resilience as well as other ferry-specific concerns should be considered in the design of terminals to ensure they remain accessible.

# 8.7 Functional design guidelines for ferry terminals

***Ensuring that the arrangement of key components is correctly incorporated will contribute towards quality outcomes for the overall terminal design.***

Each of the following principles described in this section should be incorporated into the design of public transport infrastructure.

## 8.7.1 TransLink architectural theme

***Passengers find it easy to recognise, interpret and navigate public transport infrastructure***.

Public transport infrastructure should be designed to:

- be legible within the built environment
- be contemporary
- consistent inclusion of components
- address climatic conditions
- meet customer needs.

Infrastructure is one of the most recognisable parts of the TransLink network. A consistent 'look and feel' across the network will increase passenger confidence, with customers having clear expectations. Design elements can be tailored to meet specific community, operational and functional requirements at individual sites.

The TransLink architectural theme provides the framework for establishing a coherent network of public transport infrastructure across the state. Infrastructure planning and design should:

- reflect the relative importance of the infrastructure in the overall public transport hierarchy
- align with network standards for components such as land side structures, pavements, signage and wayfinding particularly where integrated with other transport modes
- be based on the use of modular components to reduce cost, as well as for ease of maintenance and future capacity enhancement
- use common materials that emulate a lightweight appearance to deliver a modern, open and safe environment
- comply with applicable standards and regulations, including:
  - *Disability Standards for Accessible Public Transport 2002 (Cth)*
  - *Crime Prevention Through Environmental Design (CPTED)* guidelines
  - relevant *Australian Standards* (see *Section 8.11* in this chapter for relevant design references).

## 8.7.2 Arrangement of space

***Customers enjoy free flowing movement within the terminal.***

Public transport infrastructure may include public and private spaces. Public spaces form the pathway from the point of entry to the point of departure. Private spaces should not obstruct paths of travel, sightlines to points of entry, information and decision points, and waiting and seating areas. Private spaces can include:

- retail and commercial areas
- maintenance and management terminal areas
- communications and electrical cupboards.

## 8.7.3 Sequence of movement

The layout of a transport facility should provide for the sequence of passenger movement – which is in response to the progressive sequence of actions and decision points along the path of travel. Movement should be in a forward direction from the entry to the pontoon boarding point, as illustrated in Figure 8.5.

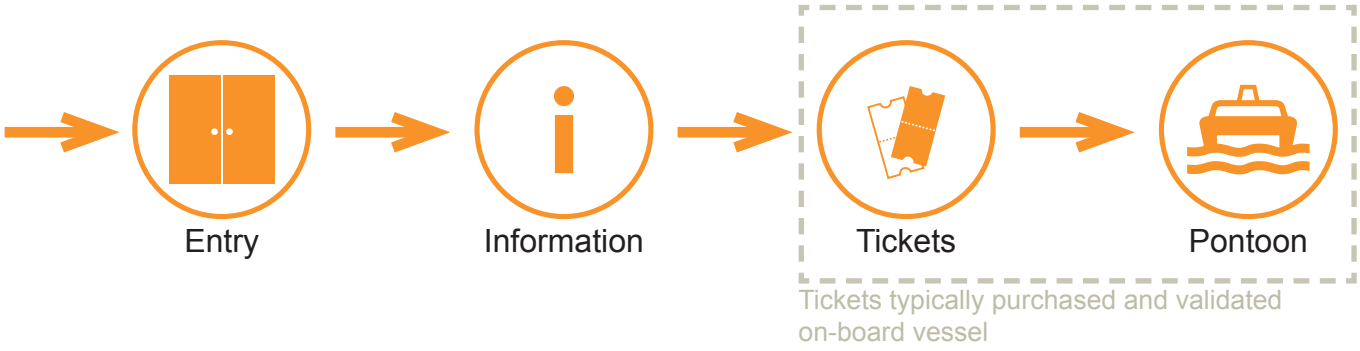



***Figure 8.5 –***
*Sequence of Movement*

## 8.7.4 Circulation within public transport infrastructure

**Table 8.4:**
Principles of circulation

| Types of Circulation | Principles |
|---|---|
| **Direct Circulation** | • Route between entry and boarding points should be as direct as possible.<br>• Minimise turns in the path of travel and avoid turns greater than 180 degrees.<br>• Changes of level should be through ramps, or continuous straight flights of stairs.<br>– If turning is required, landings are to be provided with necessary room for appropriate separation and manoeuvring.<br>– Stairs circulating at 90-degree turns must adopt suitable measures to provide good sightlines for ascending and descending.<br>See Figure 8.6. |
| **Cross-path circulation** | • Provide simple and clearly defined paths of travel that avoid conflict and maximise capacity.<br>• Paths of travel should be clearly established to meet the requirements of passengers on the dominant side of the pathway, away from the opposite flow path.<br>• Avoid circulation systems that have people crossing the paths of others to access information, ticketing, amenities, platforms, ranks, seating, rubbish disposal and other requirements.<br>See Figure 8.7. |
| **Left-hand circulation** | • Dominant movement pattern of pedestrians is based on the majority of travel undertaken on the left-hand side.<br>• Circulation within the terminal (including around components and amenities) should follow this convention for predictability and efficiency. |
| **Vertical Circulation** | • Vertical circulation components such as stairs, ramps and lifts should be assembled together centrally.<br>• Centralised location of components assists with convenient placement of public information.<br>• All access components must comply with the relevant *Disability Standards* to the maximum extent possible. |

| Types of Circulation | Principles |
|---|---|
| **Changing direction** | • Changes in direction within circulation should only occur where there is sufficient space to allow passengers to maintain a sense of direction (use of transparent materials to enable views is preferable).<br>• Appropriate space should be provided at information and decision points for people to avoid conflict with the flow path of travel to ensure comfortable and efficient movement. |
| **Emergency evacuation circulation** | • Emergency evacuation considerations, including appropriate circulation paths, exits and assembly points, should cater for the maximum volume of people using the terminal at any one time.<br>• Effective signage and wayfinding is a key consideration for public circulation in an emergency situation.<br>• Facilities which are structurally at-grade, elevated or below grade present complex emergency and safety requirements that warrant project specific design investigation.<br>• A Safety in Design review of the above should be undertaken with all relevant stakeholders.<br>Note: The *Premises Standards* and the *National Construction Code* including the *Building Code of Australia* provide technical emergency and safety requirements for passenger transport facilities, as well as cross referencing to the relevant *Australian Standards* for design guidance. |

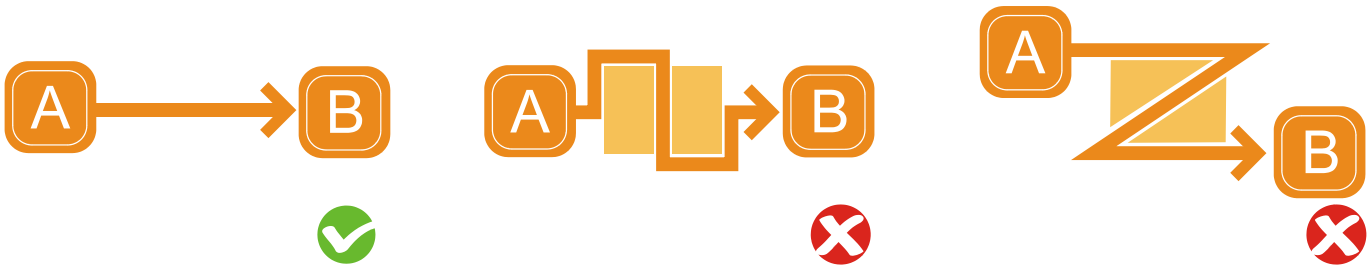



***Figure 8.6 –*** *Direct circulation*

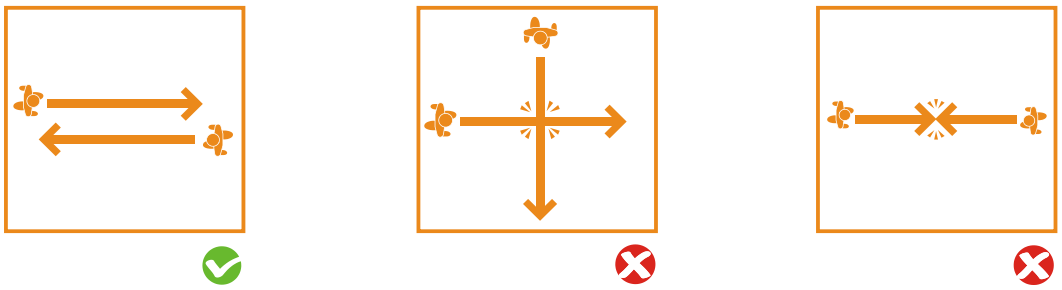


***Figure 8.7 –*** *Cross-path circulation*

## 8.7.5 Density of occupation

Specific to ferry terminals, the management of the use of walkways and gangways for passenger flow to/from the vessel should be considered, either through appropriate scale of design (i.e. wider walkways and gangways), or management/holding of passengers whilst other passengers alight (disembark) the vessel. Refer to *PTIM, Planning and design* for further guidance.

## 8.7.6 Identifiable terminal entry and exit

***Entry and exit points are clearly defined and highly legible to customers.***

Clearly defined entry and exit points are essential; not only providing points of access, but also defining the ferry terminal/infrastructure boundaries and where access infrastructure needs to link to the facility (for example, terminal building, or ferry walkway) from the surrounding built environment.

Design considerations should include where applicable, the provision of entry plazas, information areas, ticket office or terminal building, fare gates, or gates between recreational users and access to the pontoon.

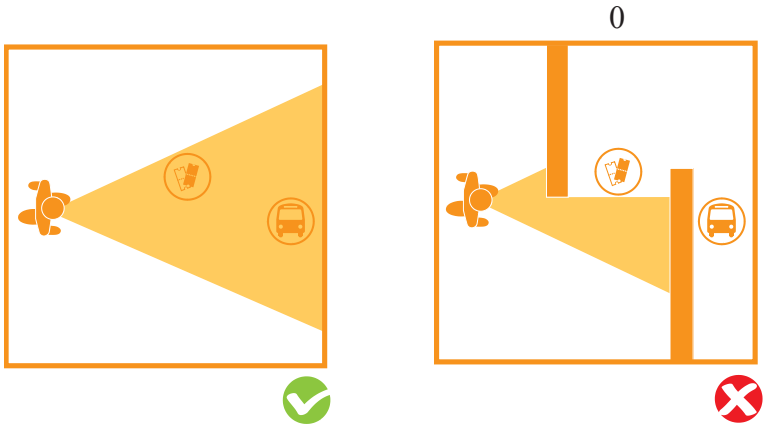


***Figure 8.8 –***
*Identifiable entry/facility*

## 8.7.7 Safety and security

Safety and security of customers and other users of the terminal, particularly at night may see the need to consider in addition to appropriate lighting levels, well monitored waiting environments, and access paths to and from the terminal that offer sufficient active and passive surveillance.

The need for 'gates' on the walkway of the terminal to close off access to the pontoon outside of operational hours, or to segregate recreational users of the terminal from waiting customers might also need to be considered and planned for early as part of the ferry terminal design.

### *8.7.7.1 Active surveillance*

The safety and security measures employed to maximise actual and perceived safety for customers may consider the use of the following:

- security cameras in operational areas
- adequate lighting appropriate to the type/category of terminal
- visual monitoring of the terminal (or interchange).

### *8.7.7.2 Passive surveillance*

***Infrastructure is designed to provide passive surveillance and deter undesirable behaviour.***

The physical environment of public transport facilities must be designed to minimise the possibility of crime, property damage and anti-social behaviour associated with people gathering in public spaces. Creating defensible spaces that allow for surveillance from outside and within the terminal will promote safe environments and will attract greater public use. Refer to the current version of the Queensland Government's *CPTED* guidelines.

***Figure 8.9 –***
*Passive surveillance*

## 8.7.7.3 Anti-social behaviour, graffiti deterrents and treatments

***Components are durable and resistant to graffiti and vandalism.***

Public transport facilities are vulnerable to unwanted offences such as vandalism, abuse and careless use of infrastructure components. In line with specifying durable, self-cleaning and easily maintainable materials and finishes, all infrastructure components—furniture, lighting equipment, information devices, walls, floors, ceilings, balustrades, glass panels, screens, elevators, escalators and other components—coming into contact with the public must be resilient to acts of vandalism and graffiti. This may involve terminal components being protected with anti-graffiti coatings or constructed from non-porous graffiti-resistant materials.

Other options include specific design and arrangement of waiting areas and structures to maximise natural surveillance in order to minimise the incidence of graffiti and anti-social behaviour. In some instances, appropriate planting of vegetation may be used, adjacent to structures or walls, to prevent access by vandals. Furthermore, the moderate application of artwork that complements the terminal architecture and theming can also be used to deter graffiti.

Ferry terminals in particular may attract certain anti-social and risky behaviour which can be problematic for customers and operators, as well as potential of injury.

Measures to discourage the climbing of the ferry structure (e.g. shelter/roof) such as eliminating hand/foot holds, use of materials or curvature in the design should be considered. The use of gates and barriers to prevent access out of operational hours is recommended to deter risky behaviour.

## 8.7.8 Climatic comfort and weather protection

Sun and weather protection is to be considered for customers in both the waiting and walkway areas at ferry terminals.

In developing the design of terminals the following should be considered:

- structures must provide sufficient physical width, length and height to achieve high-quality climatic comfort and waves, spray, sun and weather protection for passengers to occupy this space
- passengers should be provided with appropriate protection with enclosed or covered access points, public information and decision points, seating and waiting areas, and boarding and alighting areas
- consideration must be given to the management of sun, wind, rain, waves, heat, glare and humidity.

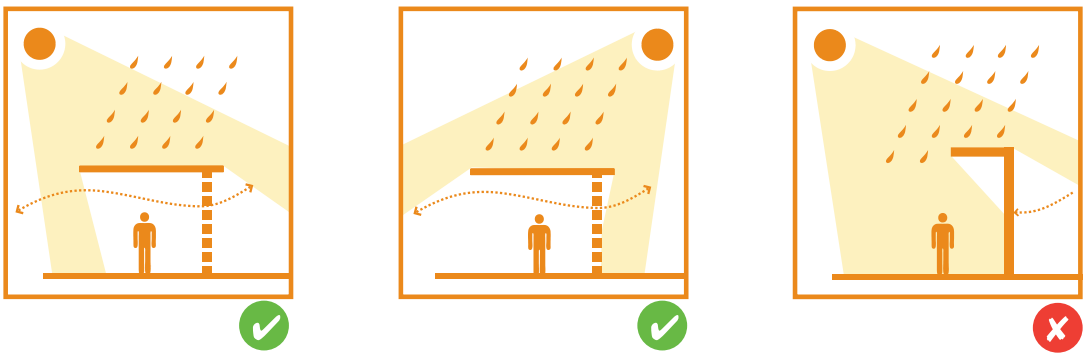


***Figure 8.10 –***
*Climatic comfort and weather protection*

## 8.7.9 Functionality and simplicity

Maintain simplicity and provide a functional ferry terminal design that passengers can easily interpret and use.

The design of structures, pontoons, seating, signage, pavements and other components must be incorporated within the overall design process to achieve highly functional design outcomes.

The design should provide a legible and pleasant environment that is uncluttered, with minimal concealed spaces.

## 8.7.10 Sustainable design

***Sustainability is to be considered in developing all public transport infrastructure.***

Design and delivery of public transport infrastructure will focus on sustainability through:

- terminal design that is fit for purpose now and into the future, and adaptable to change
- contributing to attractive community spaces and a local sense of place
- commitment to a low environmental footprint and whole-of-life approach through all design, construction and maintenance activities
- increasing visibility of sustainable features, and undertaking a participatory approach to design to improve community awareness and support.

Impact on the environment should be avoided and minimised in early planning stages such as during the site selection process. Design should seek to minimise its footprint and impact on environmental features in and adjacent to the site. For details of TransLink sustainability requirements, refer to *PTIM, Planning and design*.

# 8.8 Specific considerations for ferry terminals

A ferry terminal has complex marine and civil engineering design requirements as it is located in the harsh marine environment. To ensure that the terminal is fit for purpose, safe and provide for vessel operations there are a number of aspects to consider carefully in the design (this also includes upgrades and rehabilitation of existing terminals).

Specific design considerations to assist with the upgrade of or design of a new ferry terminal are summarised in Table 8.5.

**Table 8.5:**
Functional design elements for ferry terminals

| Item | Example considerations (not limited to) |
|---|---|
| **Design life** | • return periods for various design events (e.g. annual recurrence intervals of 50, 100 years or more) and corresponding risk profile to be acceptable to owner<br>• design environmental factors<br>– tides<br>– waves and spray<br>– currents<br>– flooding<br>– erosion & scour allowance<br>– siltation<br>• climate change design approach<br>• durability requirements due to harsh environments<br>• maintenance requirements. |

| Item | Example considerations (not limited to) |
|---|---|
| **Ferry operator requirements** | • loading/unloading of passengers (including for people with disabilities, mobility devices, prams etc., as well as potential for gates to control passenger movements)<br>• loading/unloading of cargo or other items<br>• requirements for mooring vessel (access to securing mooring ropes)<br>• vessel operation requirements (i.e. limits for waves, current, wind and passing vessel effects)<br>• overnight mooring of vessel<br>• maintenance of vessel<br>• access to power, water or other services. |
| **Berthing and mooring of the ferry vessels** | • Note that different ferry vessels may use the terminal (with differing passenger and cargo requriements etc.) and thus the design shall be for the most adverse of all design vessel particulars (minimum dimension may govern some design aspects such as fender spacing). |

| Item | Example considerations (not limited to) |
|---|---|
| **Berthing and mooring of the ferry vessels (continued)** | • Vessel Particulars:<br>– loaded and unloaded displacement (not to be confused with Dead Weight Tonnage as DWT is loading capacity in volume based on density of water and does not include selfweight)<br>– length<br>– beam (width)<br>– loaded and unloaded draft<br>– loaded and unloaded freeboard<br>– mooring requirements<br>– berthing velocity.<br>• fender selection and spacing<br>• design safety factors<br>• safety issues with the zone between moving vessel moving and terminal (if pontoon)<br>• vessel operation requirements (i.e. limits for waves, current, wind and passing vessel effects)<br>• emergency response vessels (e.g. ambulance, police) requirements. |
| **Gangplank** | • freeboard range of design vessels (loaded/unloaded)<br>• surge, sway, heave, roll, pitch and yaw range of design vessels<br>• freeboard range of pontoon (loaded/unloaded)<br>• surge, sway, heave, roll, pitch and yaw range of pontoon<br>• wave action<br>• assessment of type of boarding for people with disabilities, mobility devices, prams etc.<br>• health and safety issues (e.g. manual lifting/handling). |
| **Pontoon** | • passenger requirements including seating and adjacent allocated spaces for mobility devices, signage, information etc.<br>• cargo requirements<br>• gangplank geometry requirements<br>• gangway operation requirements<br>• tidal range<br>• environmental climate during ferry operations (incl. assessment of water overtopping onto pontoon and if operations will be compromised in certain conditions)<br>• environmental climate in extreme event (survival of pontoon in extreme storm event)<br>• functional requirements. |

| Item | Example considerations (not limited to) |
|---|---|
| **Pontoon (continued)** | • stability requirements<br>• strength requirements<br>• maintenance requirement (incl. considering how pontoon can be removed for maintenance)<br>• construction methodology such as logistics of prefabrication, transport and installation<br>• safety issues with floating structure and movements<br>• egress from water body (e.g. safety ladder)<br>• requirements for power, water and other services<br>• freeboard range of design vessels (loaded/unloaded)<br>• surge, sway, heave, roll, pitch and yaw range of design vessels<br>• freeboard range of pontoon (loaded/unloaded)<br>• surge, sway, heave, roll, pitch and yaw range of pontoon<br>• wave action. |
| **Gangway** | • loading/unloading of passengers (including for people with disabilities, mobility devices, prams etc.)<br>• loading/unloading of cargo or other items<br>• requirements for power, water or other services<br>• tidal range and sea level rise<br>• movement joint/end of gangway (including sliding plate and tactile indicators)<br>• slip resistance<br>• recreational use. |
| **Walkway (fixed structure)** | • loading/unloading of passengers (including for people with disabilities, mobility devices, prams etc.)<br>• loading/unloading of cargo or other items<br>• requirements for power, water or other services<br>• tidal range and climate change factors<br>• connection for end of gangway (including tactile indicators)<br>• recreational use. |
| **Waiting area** | • passenger requirements, including seating and adjactent allocated spaces for mobility devices, signage, information, fare machine etc.<br>• transition into adjacent environment (such as a road, bus stop, cycleway or other)<br>• bicycle parking<br>• health and safety issues<br>• recreational use. |

| Item | Example considerations (not limited to) |
|---|---|
| **Site specific studies to inform design** | • passenger and cargo profile<br>• study of marine traffic at the proposed location<br>• geotechnical conditions<br>• topographic and hydrographic survey (note that different datums may be used such as Australian Height Datum on land and Chart Datum to sea)<br>• study of design environmental factors<br>– tides<br>– waves<br>– currents<br>– flooding<br>– erosion & scour<br>– siltation.<br>• study of climate change design factors<br>– sea level rise<br>– increase in storm activity<br>– increase in salinity<br>– other. |
| **Weather cover/roof** | • extent of cover required<br>• guttering<br>• anti-climb and egress if risk of climbing onto structure<br>• safety issues<br>• movements of floating parts. |
| **Lighting** | • minimum required lighting to facilitate early morning and evening operations<br>• appropriate lighting lux level [3]<br>• hours of operations<br>• *Disability Standards* requirements [4]<br>• potential impacts on marine life and habitats<br>• potential impacts on neighbouring residents. |

3 *Liaise with TMR in partnership with local government to determine the appropriate level of lighting.*

4 *Refer Section 8.11. Note that effort should be made to comply with the Disability Standards to the maximum extent possible.*


NORTH QUAY

# 8.9 Ferry terminal components

This section details the components that need to be included at ferry terminals. The use of quality components (including materials and furnishing) will support effective ferry terminal operation by:

- providing a comfortable and safe passenger environment
- delivering robust infrastructure that minimises the need for maintenance.

All building and construction components of ferry terminal design are to comply with relevant building codes and *Australian Standard* requirements.

TransLink in partnership with Local Government and stakeholders shall be consulted on infrastructure component inclusions for each terminal.

The correct level of design components making up a terminal will depend significantly on the role of the facility in the TransLink network (that is, TransLink's hierarchy of transport facilities).

These are detailed in Table 8.6 where:

- **M** is mandatory (component must be included, that is if it is a statutory requirement and/or a requirement from TransLink)
- **P** is preferred (components will be included unless justification is provided and approved by the provider of the ferry terminal in response to site constraints)
- **S** is site-specific response (component may be required or desirable subject to specific terminal function and/or site requirements)
- **–** is not applicable (component does not apply to the terminal type/category).

**Table 8.6:**
Ferry terminal components

| Category | Component | Minor terminal | Intermediate terminal | Premium terminal |
|---|---|---|---|---|
| **Information** | | | | |
| **Stop marker** | Stop identification sign (including location, name) | M | M | M |
| **Ferry terminal specific information** | Fare information | S | M | M |
| | Site specific timetable | P | M | M |
| | Routes serving the terminal | S | M | M |
| | Route destination map | P | M | M |
| | Real-time passenger information | S | S | P |
| | Customer public address system (including hearing augmentation) | S | S | P |
| | Terminal/interchange wayfinding signage | S | S | S |
| **Network information** | Network map | S | P | M |
| | Locality map | S | S | M |
| **Regulatory signage and line marking** | Landside road access (e.g. Bus zone, taxi zone) | S | S | S |
| | Navigation aids | S | S | S |
| **Supporting access infrastructure** | Cycle enclosures/ parking | S | S | P |
| | Kiss 'n' ride and taxi facilities | S | S | S |
| | Park 'n' ride | S | S | S |

| Category | Component | Minor terminal | Intermediate terminal | Premium terminal |
|---|---|---|---|---|
| **Accessibility** | | | | |
| **General access** | Manoeuvring area for wheelchairs [5] | M | M | M |
| | Clear path of travel | M | M | M |
| | TGSI | M | M | M |
| | Allocated space | M | M | M |
| | Ramp Access | M | M | M |
| **Ferry access** | Gangway (one way flow) | S | S | - |
| | Gangway (two way flow) | P | P | M |
| | Gang plank on pontoon | P | P | P |
| | Pontoon | P | P | P |
| **Stop/terminal furniture** | | | | |
| | Shelter | P | M | M |
| | Seating and lean rails | M | M | M |
| | Bin | M | M | M |
| **Fare collection** | | | | |
| | Fare machine | S | S | S |
| | Fare gates | S | S | S |
| | Ticket window/customer Service/Information kiosks | S | S | S |
| **Safety and security** | | | | |
| | Security camera | S | S | S |

5 *Refer to Transport Standards Part 3.1 and 3.2 for detail regarding the provision of circulation space and access for wheelchairs to turn when boarding*

| Category | Component | Minor terminal | Intermediate terminal | Premium terminal |
|---|---|---|---|---|
| | Call point (coinciding with security cameras) | S | S | S |
| | Lighting [6] | M | M | M |
| | CPTED Principles | M | M | M |
| **Ferry specific** | Anti-climbing measures | P | P | P |
| | Gates | S | S | P |
| **Optional enhancements** | | | | |
| **Terminal furniture** | Drinking fountain | S | S | P |
| | Shopping trolley bay(s)/ storage | S | S | S |
| **Customer facilities** | Toilet | S | S | S |
| | Parenting/carer facilities | S | S | S |
| | Fishing on structure management | S | S | S |
| **Wayfinding** | Precinct wayfinding signage | S | S | S |
| **Landscape treatment** | Landscape treatment | P | P | P |
| **Commercial** | Vending machine (third party) | S | S | S |
| | Advertising panels | S | S | S |
| | Retail | S | S | S |
| | Customer wireless internet access solutions | S | S | S |

6 *Liaise with TMR in partnership with local government to determine the appropriate level of lighting*

| Category | Component | Minor terminal | Intermediate terminal | Premium terminal |
|---|---|---|---|---|
| **Operational facilities** | | | | |
| **Overnight mooring** | On buoy away from terminal | S | S | S |
| | At terminal | S | S | S |

## 8.9.1 Choosing ferry terminal components

Table 8.7 provides an overview of TransLink requirements in choosing ferry terminal components. All components must comply with the relevant *Disability Standards and Australian Standards*. Consideration should be made to achieving an accessible outcome for the identified customers of the terminal.

For detail regarding TransLink requirements for other public transport infrastructure components not listed below refer to *PTIM, Planning and design* and *PTIM, Supporting access infrastructure,* or relevant modal chapter.

**Table 8.7:**
TransLink requirements for Ferry terminal components.

| Element | Considerations |
|---|---|
| **Materials and furnishing** | • Common visual appearance by aligning structures, pavement, signage wayfinding and other infrastructure with the TransLink architectural theme (where agreed with local government/ asset owner).<br>• Design elements to be tailored to meet site-specific operational and functional requirements within the overarching TransLink theme.<br>• Components are suitable for the harsh environmental conditions, and easy to use and maintain.<br>• Modular and consistent terminal components are used to facilitate future maintenance and expansion of infrastructure.<br>• Comply with all applicable standards and regulations. |

| Element | Considerations |
|---|---|
| **Signage and wayfinding** | • Signage should comply with TransLink's signage guidelines where provided in the TransLink network, with agreement with local government/asset owner.<br>• Provide logical timetable displays, wayfinding signage and overall terminal signage.<br>• Use universal icons, international symbols where possible and indicators, and consider signage height, colour contrast and orientation.<br>• Location of signage to consider line-of-sight to nearest decision point, multi-modal integration, maps and landmark information for wider precinct.<br>• Consult TransLink on the general inclusions and arrangement of signage at public transport infrastructure facilities to assist with coordinating with wider precinct wayfinding and messaging to aid a user with their door-to-door journey.<br>• For further information on TransLink's infrastructure signage refer to the *PTIM, Supporting access infrastructure* Table 3.5 and *PTIM, Branding, theming and signage*. |
| **Shelter/Roof** | • Shelters and all terminal structures should project a consistent design language that:<br>– appears modern, light and spacious<br>– is of a high quality and standard<br>– is reflective of the Queensland sub-tropical climate<br>– is reflective of TransLink's infrastructure theming and architectural design .<br>• Shelter structure to be designed in accordance with the proposed terminal layout and location of where passenger/customer waiting is proposed to occur, with good sight lines to approaching vessels. This may include waiting areas, walkways and pontoons.<br>• *Transport Standards* provides guidance on the provision of appropriate allocated space at infrastructure. Waiting areas should incorporate seating and allocated space for wheelchair users.<br>• Structures must provide appropriate weather protection as far as reasonably practical.<br>• Passenger information displays, signage and wayfinding can be attached to the structure providing they do not obscure sightlines.<br>• Shelter structures should include high-quality finishes with modern, durable, and easily maintained materials that are reflective of the overall terminal environment and climatic conditions (that is, sun, rain, natural light and airflow).<br>• For the prevention of anti-social/risky behaviour the shelter should consider an open design with appropriate anti-climbing features/measures. |

| Element | Considerations |
|---|---|
| **Seating and lean rails** | • Must be provided in quantities reflective of the expected waiting times and levels of anticipated patronage for the terminal.<br>• Seating should be provided at all waiting areas, including allocated spaces for wheelchair and mobility device users, without impeding free flowing access paths and walkways.<br>• Less seating may be provided at high-frequency service locations due to minimal passenger waiting times and high passenger volumes.<br>• Seating and lean rails should be provided where passengers can easily see approaching public transport vehicles/vessels, typically where there is complete weather protection and where the environment is safe and well lit.<br>• Seats should include backrests and armrests and be constructed from durable, easily cleaned and maintained materials that allow drainage from liquids.<br>• Seating may be cantilevered to a wall or shelter structure to allow easier platform maintenance.<br>• All furniture must offer appropriate luminance contrast in colour with the immediate background (as per the *Disability Standards*).<br>• Lean rails provide passengers with a convenient waiting option by allowing passengers to perch or lean, rather than be seated, when waiting for brief periods or where waiting space is limited. Lean rails generally consist of a horizontal beam supported at either end by vertical posts, or the beam may be attached directly to a wall or station structure. Various heights of lean rails to be considered to accommodate differing customer needs. |
| **Lighting** | • Ambient lighting is to be provided for a safe, comfortable and functional station.<br>• Feature lighting may highlight architectural features.<br>• For day-time use, consider translucent materials to allow natural lighting.<br>• For night-time, bright white artificial lighting should ensure a safe and visually attractive environment.<br>• High quality light fixtures and fittings should be robust, corrosion-proof, tamper-proof, and discrete and complement the ferry terminal/interchange environment.<br>• Use of common fixtures will improve maintenance and lower ongoing costs.<br>• Provide lighting on pedestrian areas, roadways and terminal information.<br>• Luminance contrasts will be consistent with terminal/interchange areas including paths and must comply with a minimum contrast with background as per *Disability Standards*.<br>• Design should minimise 'glare' particularly to ensure safe ferry operations (i.e. driver approach to terminal and docking) and to minimise obtrusion for nearby residents/ surrounding properties.<br>• Lighting must comply with the applicable requirements of lighting subcategory P6 within *AS/NZ 1158.3.1 – Lighting for roads and public spaces.*<br>• For additional disability compliance lighting requirements refer to the *Disability Standards for Accessible Public Transport 2002 (Transport Standards).* |

| Element | Considerations |
|---|---|
| **Security and Safety** | • Security infrastructure refers to security cameras and other items used for the creation of safe and well-monitored waiting environments.<br>• Details on the specifications and management schedules for these systems will be established in collaboration with the terminal owner and/or asset manager.<br>• Appropriate construction and installation requirements must be considered when planning for the inclusion of security infrastructure. The use of signage informing people of the presence of security infrastructure within a terminal can further enhance personal safety, and highlight the perceived risk of detection to potential offenders.<br>• Security help points are typically located in key waiting areas. Ultimately, the location of all these elements should be the subject of terminal specific design, as each site is likely to have a range of differing sightlines and movement patterns.<br>• Counter-terrorism design considerations should be explored where possible on a site-specific basis, depending on the location, level-of-service and potential security risk. Where applicable, terminal design should strive towards universal standards for security and counter-terrorism measures. Liaise with the appropriate division in TMR for advice on including security and counter-terrorism measures at the earliest phase in the terminal planning.<br>• Gates – should the terminal be located adjacent to land uses where the structure of the ferry terminal could be used by the general public (recreational users) out of operational hours, or for activities that impede the day to day use and capacity for customers boarding and alighting from the ferry vessel, the use of a "gate" may need to be considered to close off access to the gangplank and pontoon. This may need to be considered and planned for early as part of the terminal design. |
| **Drinking fountains** | • Drinking fountains may be considered at the terminal or as part of an interchange/integration with other modes.<br>• They are generally located close to waiting or congregation areas, seating, information displays, cycle storage areas, and station entries and exits. |
| **Trolley bays/ storage** | • Where the terminal co-exists with specific commercial/retail outlets, or where the service is used for the transport of cargo, or goods (for example, residents' weekly shop), there may be the requirement to include appropriate, discreet, and easy to maintain trolley bays or storage within or close to the terminal.<br>• The siting of trolley bays/storage needs to take into account potential conflict with other modes of transport and where applicable trolley collection vehicles.<br>• An agreement from the retail or other operators to collect trolleys on a regular basis is also required. |
| **Bins** | • Rubbish bins, of type/specification agreed by asset owner/maintainer, should be provided at all terminals.<br>• The location of rubbish bins should consider positioning close to waiting or congregation areas, seating, information displays, boarding points, cycle storage areas, and interchange/ terminal entries and exits.<br>• For ferry terminals, consideration needs to be given to a location appropriate for access for collection arrangements. |

| Element | Considerations |
|---|---|
| **Operational facilities** | Overnight mooring of vessel – operator requirements with regards to the berthing or mooring of a vessel are to be incorporated in the design of the terminal.<br>• Mooring at the terminal:<br>– Consider need for gates on terminal to restrict access outside of operational hours.<br>– Consider provision of additional mooring equipment for night mooring in potential onerous conditions.<br>• Mooring on/off shore mooring point:<br>– Consideration of practical location and time for vessel to access terminal at commencement of operations.<br>– Consider environmental factors for mooring point design. |

# 8.10 Asset management

Ferry terminals are major elements of passenger transport infrastructure and they need to be managed and maintained to sufficient operational conditions suitable for passenger comfort and safety. These terminals are located in areas of extreme corrosion potential and are susceptible to tidal and flooding impacts which should be addressed in design life planning and asset management.

The terminal components need to be inspected, maintained and managed on an ongoing basis to ensure the effective operation of a terminal. The framework for how a terminal will be managed after the delivery of infrastructure needs to be considered within the planning and design process.

The following must be considered when planning and designing ferry terminal terminals:

- the increased requirements for marine durability, cleaning and maintenance schedules of infrastructure components
- surveillance and access control of the terminal
- cost-effectiveness, commonality and replacement of components
- approved suppliers of the materials and components
- access to water, electricity and other resources, for cleaning and maintenance purposes
- general operating costs (such as electricity, water and staff)
- statutory requirements for buildings and terminals
- Requirements for staff.

The above is not a definitive list and other considerations may be required depending on site-specific circumstances.

Relevant operational stakeholders should be engaged in the planning and design process to ensure that the requirements of asset management by operators and/or owners have been considered.

All components of ferry terminal infrastructure should use materials and finishing consistent and compatible with existing infrastructure and of an approved high quality standard and durability appropriate for a marine environment.

In consultation with relevant operating and maintenance stakeholders, detailed maintenance manuals should be developed for all components and operation schedules within a ferry terminal. These should be prepared as a part of the ferry terminal project.

## 8.10.1 Operations and mantenance

The components and materials that make up a public transport facility should be durable and meet their intended marine operational requirements.

For further details on general operations and maintenance requirements refer to *PTIM, Planning and Design* Section 2.3.4 in addition to *Section 8.11* of this chapter which provides design reference guidance.

## 8.10.2 Decommissioning and demolition

Where an existing ferry terminal is to be decommissioned or demolished (either as part of the provision of new infrastructure, or due to end of life), the following should be considered:

- Reuse of materials as marine habitat – to create an artificial reef.
- Consultation with community on opportunities for the sustainable reuse of materials, for example as public art.
- Disposal as land fill – when all other uses/avenues have been exhausted.

The timing of the decommissioning or/and demolition of ferry terminal infrastructure should where applicable consider the program for commissioning new infrastructure to ensure customer transport needs are met and the transition managed.

# 8.11 Technical details

Appendix 8-A provides further detail on the relevance of specific Planning legislation, policies and guidelines for ferry terminal planning and design. Reference should be made to *PTIM, Background and application* Section 1.4.

Contact TMR for general advice with the planning and design of ferry terminal infrastructure and to assist with site specific component selection and location within the terminal design.

## 8.11.1 Design references

The following outlines relevant design references specific to ferry terminals. The *PTIM* notes that the exact design criteria has to be assessed in detail on a project specific basis. Refer to *PTIM, Background and application Section 1.4* for other specific design references.

- Accessibility Standards:
  - *Disability Standards* and guidelines. See *PTIM, Background and application* Section 1.4 for details.
  - Various referenced *Australian Standards*, in particular *AS 1428 – Design for access and mobility* suite of standards.
- *AS 4997-2005 – Guidelines for the Design of Maritime Structures*. This standard is intended to cover the design of near-shore coastal and estuarine structures (including ferry terminals):
  - Berthing and mooring of vessels
  - Jetties
  - Wharves
  - Dolphins
  - Floating berths
  - Seawalls
  - Breakwater structures
  - Boat and barge ramps
  - Building substructures above water
  - Structural design (reference to relevant AS)
  - Piling
- *AS 4997* makes reference to other specific applicable standards such as:
- *AS 2159 – Piling – Design and installation*
- *AS 4100 – Steel structures*
- *AS 5100 – Bridge design*
- *AS/NZS 1158 – Lighting for roads and public spaces*
- *AS 3600 – Concrete structures*
- *AS 2312 – Protective coatings*
- *AS 3962-2001: Guidelines for Design of Marinas.* This *Australian Standard* is intended to cover the design of near-shore coastal and estuarine structures (including ferry terminals), namely: Floating pontoons; and Berth layout (marina Scale).

# Appendix 8-A

## Legislation, policies and guidelines

| Legislation, policies, and guidelines | Purpose and relevance |
|---|---|
| ***Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*** | The *EPBC Act* applies to actions which are likely to have a significant impact on matters of National Environmental Significance (NES). The eight (8) matters of NES protected under the *EPBC Act* are:<br>• world heritage properties<br>• national heritage places<br>• wetlands of international importance (listed under the RAMSAR Convention)<br>• listed threatened species and ecological communities<br>• migratory species protected under international agreements<br>• Commonwealth marine areas<br>• the Great Barrier Reef Marine Park<br>• nuclear actions (including uranium mines).<br><br>Works carried out within an NES area (e.g. wetland area) will need to be assessed with regards to their impact on the matters of NES. The project may require referral to the Australian Department of Environment to determine whether it would be a 'controlled action', and if any approval under the *EPBC Act* would be required. |

| Legislation, policies, and guidelines | Purpose and relevance |
|---|---|
| ***Planning Act 2016* and *Planning Regulation 2017*** | The *Planning Act 2016* and *Planning Regulation 2017* are administered by the Department of State Development, Manufacturing, Infrastructure and Planning (DSMIP) and are the primary State legislation for land use planning, development assessment and related matters. Under section 6 of the *Planning Regulation*, government supported transport infrastructure is exempt from local planning approvals. The Planning Regulation defines government supported transport infrastructure as infrastructure for transport that is for public use and is:<br>• funded, wholly or partly, by the State or Commonwealth; or<br>• provided by a person, other than under a development approval or infrastructure agreement, on conditions that<br>– are agreed to by the Government; and<br>– are intended to support the commercial viability of the infrastructure. |
| ***Transport Infrastructure Act 1994 (TI Act).*** | This Act provides a framework for integrated planning and management of an efficient transport infrastructure network. This Act sets out the provisions for creating port authorities and identifying strategic port land to be regulated by a port authority. Section 285 of the *TI Act* requires each Port Authority to prepare Land Use Plans (LUP) for approval by the Minister of Transport. Development located in the Strategic Port Land is assessed against the Land Use Plan, and the Port authorities are considered the assessment manager for development undertaken wholly on strategic port land. |
| ***Environmental Protection Act 1994 (EP Act)*** | The objective of the *EP Act* is to protect Queensland's environment while allowing for development that improves the total quality of life, in a way that maintains the ecological processes on which life depends. The *EP Act* nominates environmental protection policies which deal with Air, Noise, Waste Management and Water. They provide guidelines and quality objectives including environmental indicators, ambient and emission standards for contaminants and outline management practices to enhance and protect environmental values. During the construction phase, mitigation measres to protect the receiving environment, including adjacent residents, will be relevant. These may include measures to reduce erosion and protect receiving water quality, mitigate construction noise and air quality impacts and reduce construction waste. |
| ***Coastal Protection and Management Act 1995 (Coastal Act)*** | The objectives of the *Coastal Act* are to protect the environmental, heritage and recreational values of Queensland's coasts. Development within coastal areas is regulated under the *Planning Act* and associated regulations. It is likely that ferry terminals will be located within a Coastal Management District. They may also be located within erosion prone areas and storm tide hazard areas. These matters will need to be addresses as part of any permit applications. |

| Legislation, policies, and guidelines | Purpose and relevance |
|---|---|
| ***Fisheries Act 1994 (Fisheries Act)*** | This act provides for the management, use, development and protection of fisheries resources and fish habitats and the management of aquaculture activities for related purposes. Fish habitat areas and marine plants are protected under this Act. Where the development of ferry terminals require the disturbance of fish habitat or marine plants, the need for a permit is triggered under the *Planning Act* and *Planning Regulation*. |
| ***Vegetation Management Act 1999 (VM Act)*** | The *VM Act* regulates the clearing of 'remnant' and 'regulated regrowth' vegetation (however it is noted that exemptions under the *Nature Conservation Act 1992*, the *Lane Act 1994* and the *Forestry Act 1959* exist). Whilst clearing of remnant and regulated regrowth vegetation will generally require a permit, Schedule 21 of the *Planning Regulation 2017* provides for exempt clearing work. This includes government supported transport infrastructure. Schedule 24 of the *Planning Regulation* provides the definition for government supported transport infrastructure. Depending on the activities that are required and interpretation of the definitions, clearing for government support transport infrastructure is exempt from the *Vegetation Management Act*. |
| ***Marine Parks Act 2004 (Marine Parks Act)* and *Marine Parks Regulations 2006 (Marine Parks Reg)*** | The *Marine Parks Act* provides for the declaration, zoning, management and permit requirements within marine parks. Works that involve the installation and/or operation of structures within a Queensland Marine Park will require a permit to be issued from the Department of National Parks, Recreation, Sport and Racing (DNPRSR). |
| ***Nature Conservation Act 1992 (NC Act)*** | The *NC Act* provides for the dedication, declaration and management of protected areas, protection of wildlife and its habitat in association with ecologically sustainable use of such wildlife. The *NC Act* and associated regulations define flora and fauna species that are endangered, vulnerable or near threatened and provide for the protection of these species and their habitats and/or breeding places. Where such species or their habitats require removal, those impacts must be managed through fauna spotter-catcher surveys during clearing works, in accordance with the Species Management Program (SMP). |
| ***Land Act 1994*** | This Act provides a framework for the allocation of State land as either leasehold, freehold or other tenure. Permits may be acquired under this Act for the occupation of a reserve, road or unallocated State land. Development undertaken in, on, or over tidal land generally requires authorisation under this act to occupy/use State land. The Act also regulates the opening and closing of State and local roads and land dealings relating to changes in land tenure. Permits to occupy or other tenure instruments for the use or occupation of unallocated State land, reserves or roads. |
| **Local Planning Scheme** | The local planning scheme documents the local government's strategic plans for and identifies development provisions that apply to specific developments and areas.<br><br>Development permits may be required under the local planning scheme and will require assessment the planning scheme or specific codes within the planning scheme. |

| Legislation, policies, and guidelines | Purpose and relevance |
|---|---|
| ***Local Government Act 2009*** | Section 28 of the *Local Government Act 2009* and section 29 of the *City of Brisbane Act 2010* provides the power for local governments to make and enforce local laws that are necessary or convenient for the good rule and government of their local government area. The *Local Government Act* empower local governments to make local laws that are suitable to their particular needs and resources and that achieve the purpose and principles of local government. |
| ***City of Brisbane Act 2010*** | This act provides a framework for the City of Brisbane's day to day operations and long-term plans. It provides for the way in which the Brisbane City Council is constituted and its responsibilities and powers.<br><br>The act states that the council has the exclusive right to provide a ferry service across a watercourse if the land that forms both banks of the watercourse is in Brisbane. The council may lease the right to provide this ferry service and can make local laws for managing and regulating the use of ferries operated or leased by it. |
| **Port Land Use Plan (if any)** | Port authorities of Strategic Port Land are required to prepare Land Use Plans in accordance with the *TI Act*. Development wholly within a Strategic Port Land area is assessed against the Port Land Use Plan instead of the local government planning scheme. |
| **Priority Development Area (PDA) Development Scheme or Interim Land Use Plan (if any)** | PDAs are declared by the Queensland Government. Once an area is declared, an Interim Land Use Plan is effective. Development located within a PDA is assessed against the Interim Land Use Plan instead of the local planning scheme. A Development Scheme for the PDA is required to be implemented within 12 months of the declaration. The adoption and implementation of the Development Scheme superseded the Interim Land Use Plan.<br><br>The Interim Land Use Plan or Development Scheme identifies assessable and exempt development, and development provisions that apply to various works located within the PDA. |
| **Priority Port Masterplan** | Abbott Point, Brisbane, Gladstone, Hay Point/Mackay, and Townsville Ports have been identified as priority ports. The Queensland Government is leading the preparation of masterplans for the priority ports. The objective of the port masterplanning is to optimise existing infrastructure whilst addressing issues beyond strategic port land including marine and land-based impacts, port and supply chain capacity and connectivity, and environmental and community values. |

# Appendix 8-B

## Stakeholders

TransLink shall work in partnership with and assist the asset owner, local government authority, and other agencies with the implementation of the *PTIM, Ferry terminal infrastructure* by the following actions:

- reviewing the Chapter to ensure it remains up to date and relevant
- supporting and communicating the importance of customer focussed features, including accessibility and wayfinding at ferry terminals
- providing recommendations to ensure compliance with the Chapter where this contributes to consistent customer outcomes for the TransLink network.

Stakeholders involved in the planning, design, approvals, operation and maintenance of ferry terminals in Queensland include:

| Organisation | Key public transport responsibilities |
|---|---|
| **Maritime Safety Queensland** | A branch of TMR within Customer Services, Safety and Regulation Division, which are responsible for:<br>• improving maritime safety for shipping and recreational craft through regulation and education.<br>• minimising vessel-sourced waste and responding to marine pollution.<br>• providing essential maritime services such as aids to navigation and vessel traffic services.<br>• encouraging and supporting innovation in the maritime industry. |
| **Department of Environment and Heritage Protection** | A department of the Queensland Government responsible for:<br>• protecting and managing parks, forests and the Great Barrier Reef for current and future generations<br>• enhancing Queensland's ecosystems<br>• protecting significant heritage places<br>• aim to avoid, minimise or mitigate impacts to the environment. |

| Organisation | Key public transport responsibilities |
|---|---|
| **Public Transport Operators** | • Operators are responsible for ensuring safe passenger transport and are allocated a specific contract area within Queensland to operate services |
| **Department of State Development, Manufacturing, Infrastructure and Planning (Economic Development Queensland)** | Economic Development Queensland<br>• Declares Priority Development Areas (PDA) (e.g. Toondah Harbour) and provides assessment frameworks and development standards.<br>• Articulates a vision for an integrated public transport system for the PDA<br>• Delegates development assessment and relevant administrative powers to council.<br>State Assessment and Referral Agency<br>• Assesses (or provides advice on) development applications which include matters where there are state government interests. This includes development within coastal management districts, development impacting on marine plants, etc. |
| **Local Government** | • owns and maintains ferry terminal infrastructure in most circumstances.<br>• plans and delivers ferry terminal infrastructure in some circumstances as part of other local government capital works projects<br>• provides input and feedback to State Government departments on projects and programs. |
| **TMR** | • responsible for the coordination of transport services, infrastructure and management, transport policy and planning in Queensland<br>Translink's role within TMR is to:<br>• plan and design an accessible, efficient and connected passenger transport network that is simple for customers to understand and identify<br>• responsible for enhancing customers' experience, ticketing, public transport information and infrastructure<br>TransLink has State-wide responsibility for:<br>• trains, buses, ferries and trams across South East Queensland<br>• active transport, such as walking and cycling<br>• taxi regulation<br>• long distance rail, coaches and regional air services<br>• buses in Cairns, Mackay, Toowoomba and Townsville<br>• regional services<br>• demand responsive transit |