06. GROUND TRANSPORT PLAN

Perth Airport is working hard to ensure road infrastructure provides easy access for all customers.

06

06. GROUND TRANSPORT PLAN

6.1 Introduction

Ground transport planning is a critical component for the efficient operation of Perth Airport. The journey to and from the airport often creates the first and last impression for people visiting Western Australia.

Perth Airport is surrounded by a number of major arterial roads that provide transport links within Perth and to the regional areas. As shown in Figure 6.1, Perth Airport is bounded by Great Eastern Highway to the north and Tonkin Highway to the west, with Roe Highway running just outside Perth Airport's Eastern boundary. Leach Highway connects to Tonkin Highway and provides access from Perth Airport to Fremantle. Orrong, Abernethy and Kewdale roads provide key arterial links between the highways and surrounding suburbs.

The ground transport plan is focussed on the developments which will occur in the next five year period. Refer to Figure 6.12.

The development and implementation of the Ground Transport Plan is based on a core principle of seeking to provide multiple options and streamline the efficiency and customer experience for people coming and going to the Airport. This is achieved through integrated planning and adopting a collaborative approach with the State and Local governments in ensuring that the road, rail, shared path and public transport network and services are developed and operated to provide a suitable level of service.

The key factors informing the Ground Transport Plan and access to Perth Airport are:

- the modes of transport used and how they will change over time,
- meeting the demands of forecast passenger numbers,
- the consolidation of all commercial air services into Airport Central,
- the anticipated level of commercial development and associated employment on the airport estate,
- the growth in traffic on the roads surrounding Perth Airport that is generated by city activities unrelated to Perth Airport,
- integration of the Forrestfield Airport-Link project into the transport and built form planning,
- the preference to reduce the confluence of passenger vehicle and freight vehicle traffic,
- integration of the airport's ground transport network into the wider local and statewide networks, and
- providing a safe, secure and sustainable solution.

The key agencies involved include:

- the State Government Department of Transport, which sets policy and strategic direction for transport throughout Western Australia,
- the State Government Department of Planning which develops planning policies related to land use and the transport network,
- the Public Transport Authority which manages and operates public transport with Perth and the regions,
- Main Roads WA, who is responsible for planning and construction of the major State roads to the airport,
- Local governments, who are responsible for the planning and construction of local and regional roads adjacent to and connecting to Perth Airport,
- Perth Airport, which is responsible for the planning and construction of internal roads within the airport estate, and
- the Commonwealth Minister of Infrastructure and Regional Development who is responsible for the approval of the Ground Transport Plan, as part of the Master Plan 2014. As well as the approval of any subsequent Major Development Plan prior to the construction of the road network.

Perth Airport will continue to work with State and Local governments to ensure that the changing demands of Perth Airport operations are reflected in their strategic network modelling and planning. Perth Airport will also ensure that developments on the airport estate have due regard for the State and Local infrastructure capacity.

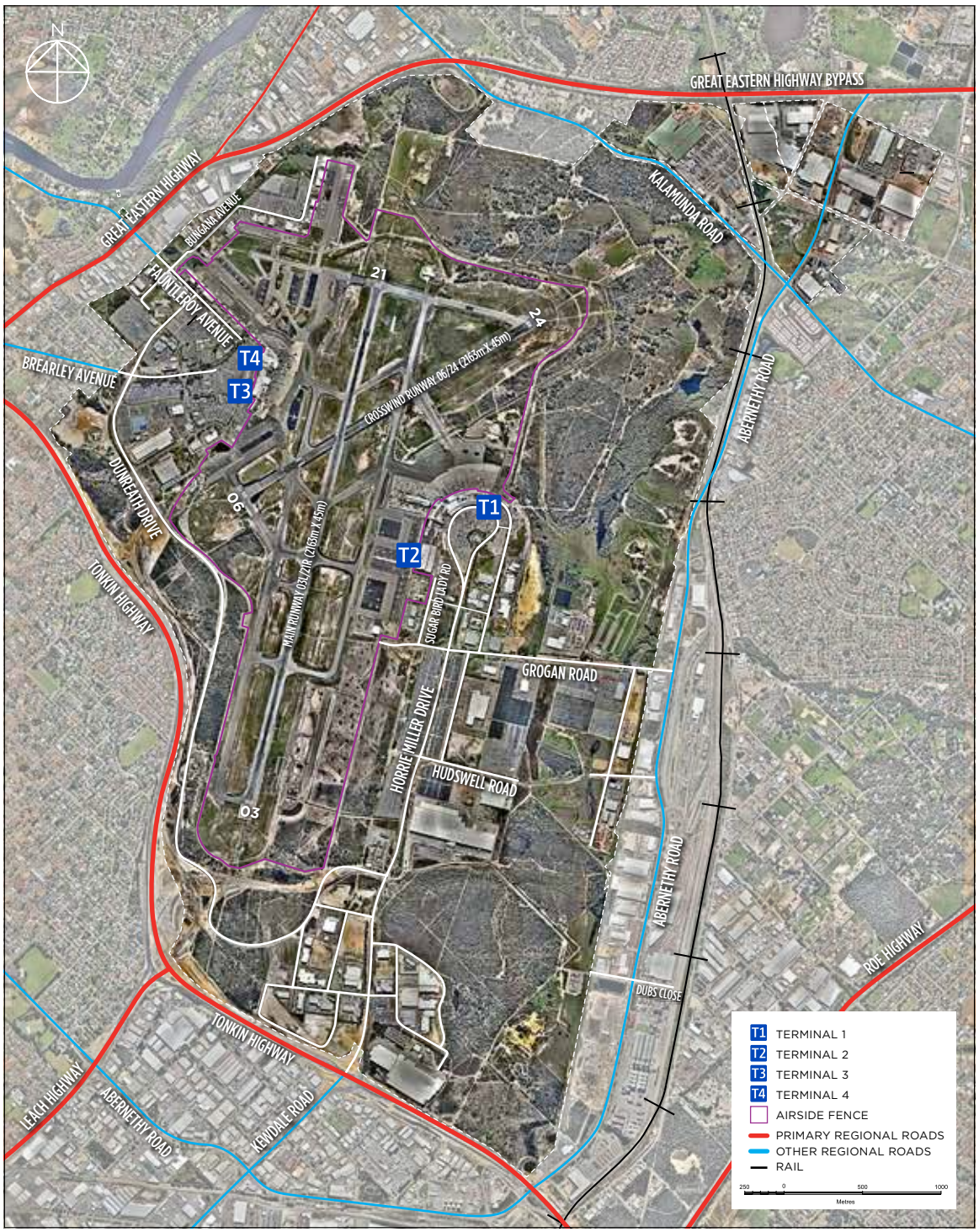

Figure 6.1 *Existing road network on and around Perth Airport (2014)*
Source: Perth Airport Pty Ltd

6.2 State Planning

The State government is both the regulator and operator of public transport services including bus and rail for the Perth metropolitan area including servicing Perth Airport. Additionally the State Government is the regulator for taxi and small charter operations which service Perth Airport.

The State Government, as the lead and in conjunction with local governments, also sets the policy framework to determine mode share targets for the Perth metropolitan transport network.

Perth Airport is committed to working with the State and Local governments in achieving their desired targets for sustainable transport options and mode share targets.

State and Local governments are responsible for the road network that surrounds and provides access to Perth Airport. The Ground Transport Plan considers and incorporates the key State government land-use and transport strategies which directly impact Perth Airport.

6.2.1.1 Draft Public Transport Plan for Perth in 2031

The State Department of Transport document 'Draft Public Transport Plan for Perth in 2031' provides direction for public transport planning for the Perth area till 2031. The plan identifies the need to provide a rail service from Bayswater Station to Perth Airport by 2031, with a bus rapid transit system connecting the Airport stations to the Belmont Forum interchange.

Perth Airport understands that the final document will be updated to reflect the recent announcement that the rail line will be open in 2020 and extended beyond the Airport to a station at Forrestfield.

6.2.1.2 Draft Perth Airport Transport Master Plan (2012)

The Perth Airport Transport Master Plan was commissioned by the Commonwealth Government and has been prepared by the State Department of Transport in liaison with other government stakeholders. The plan recognises Perth Airport and the Kewdale Primary Freight hub as two of the most important transport hubs in metropolitan Perth and Western Australia. The Plan contains Commonwealth and State Government infrastructure commitments, and the Gateway WA project was proposed as an outcome of the plan.

6.2.1.3 Western Australian Regional Freight Network Plan (WARFNP)

The Western Australian Regional Freight Network Plan (WARFNP) identifies that the inner-metropolitan area and the growing Kewdale, Forrestfield, Perth Airport and Kwinana areas support Western Australia's freight activities, and that these areas will continue to represent convergence points for both metropolitan and regional freight and logistics activities. The plan identifies the need for the State Government to continue to implement the Gateway WA Project to ensure growth in regional traffic does not constrain the freight performance of the Kewdale and Forrestfield intermodal terminals, Perth Airport and adjacent industrial precincts.

6.2.1.4 Eastern Metropolitan Regional Council (EMRC) Regional Integrated Transport Strategy Action Plan (RITS)

The Eastern Metropolitan Regional Council (EMRC) Regional Integrated Transport Strategy Action Plan (RITS) forms part of the land use and transport planning for the eastern region of the Perth metropolitan area. It translates the high-level, whole of metropolitan area land use and transport planning undertaken by the State Government, and applies it to the regional network. This includes the roads that directly integrate with and impact the Perth Airport estate.

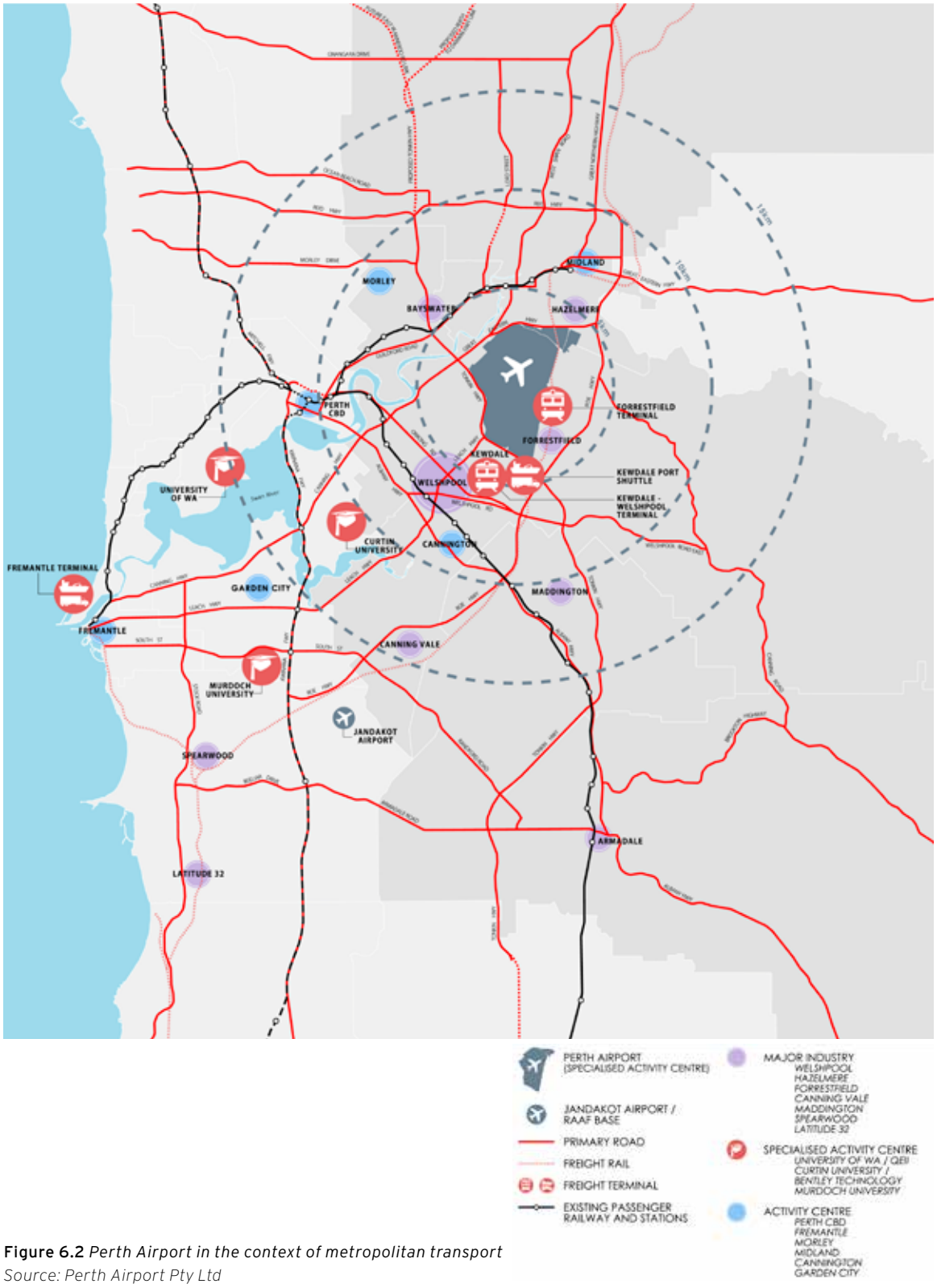

Figure 6.2 *Perth Airport in the context of metropolitan transport*
Source: Perth Airport Pty Ltd

6.3 Gateway WA Project

Perth Airport's close proximity to the CBD enables good off-peak access via the arterial road network. During morning and evening peak periods, the road network surrounding Perth Airport facilitates significant volumes of traffic and a number of intersections are currently operating beyond their capacity. The resulting congestion is primarily due to a mix of the regional freight network task and the metropolitan commuter peak periods, and is largely unrelated to airport travel.

The peak periods for passengers using the Perth Airport passenger terminals differ to the traditional metropolitan commuter peak periods. Although commuter peak periods and Perth Airport peak periods do not coincide, many passengers travelling to and from the airport during metropolitan commuter peaks suffer major inconvenience.

The Commonwealth and State governments recognised the impact that congestion was having on traffic movement around Perth Airport and in the Kewdale and Forrestfield industrial areas, as well as future freight transport in the area. In response to this congestion issue and as part of a Perth Airport Transport Master Plan review, in 2008 the State Government proposed the Gateway WA project to upgrade Tonkin Highway and its intersections with the Roe, Leach and Great Eastern Highways and Horrie Miller Drive, Kewdale and Abernethy roads. The majority of the Gateway WA project works are external to the airport estate. On 13 March 2013, the then Commonwealth Minister for Infrastructure and Transport approved The New Access Roads – Gateway WA MDP, which covers the components located within the airport estate boundary.

The Gateway WA project is substantially progressed with the major interchanges for access to Perth Airport programmed for completion by early 2017. Perth Airport is responsible for connecting the new Gateway development into the internal road network.

This includes:

- construction of Airport Drive connecting the new interchange of Leach Highway and Tonkin Highway through to both the T1 and T2 terminals, and
- construction of a roundabout connecting the new off-ramp with Dunreath Drive and servicing Airport West.

The Gateway WA project includes:

- a major freeway-to-freeway interchange at Tonkin Highway/Leach Highway, including a new primary access road to Airport Central (currently the location of the International Terminal (Terminal 1) and Terminal 2,
- a new interchange at Boud Avenue leading to Terminal 3 and 4,
- a new interchange at Tonkin Highway/ Horrie Miller Drive-Kewdale Road,
- a new interchange at Leach Highway/ Abernethy Road,
- a new on-ramp to Tonking Highway from Abernethy Road,
- upgrading Leach Highway between Orrong Road and Tonkin Highway to an expressway standard, and associated upgrades to local roads and intersections in the Kewdale area,
- a cycling path along Tonkin Highway and Leach Highway,
- upgrading of the existing Tonkin Highway/ Roe Highway interchange to a partial freeway to freeway interchange, and
- upgrading Tonkin Highway between Great Eastern Highway and Roe Highway to six lanes.

Following the development of Gateway WA it is acknowledged that over time the traffic generated by the industrial and commercial development in the Airport West and Airport South Precincts will add to the commuter peaks. Perth Airport modelling currently indicates this impact will not be significant over the planning period. Perth Airport will continue to assess the impact as the entire estate develops over time.

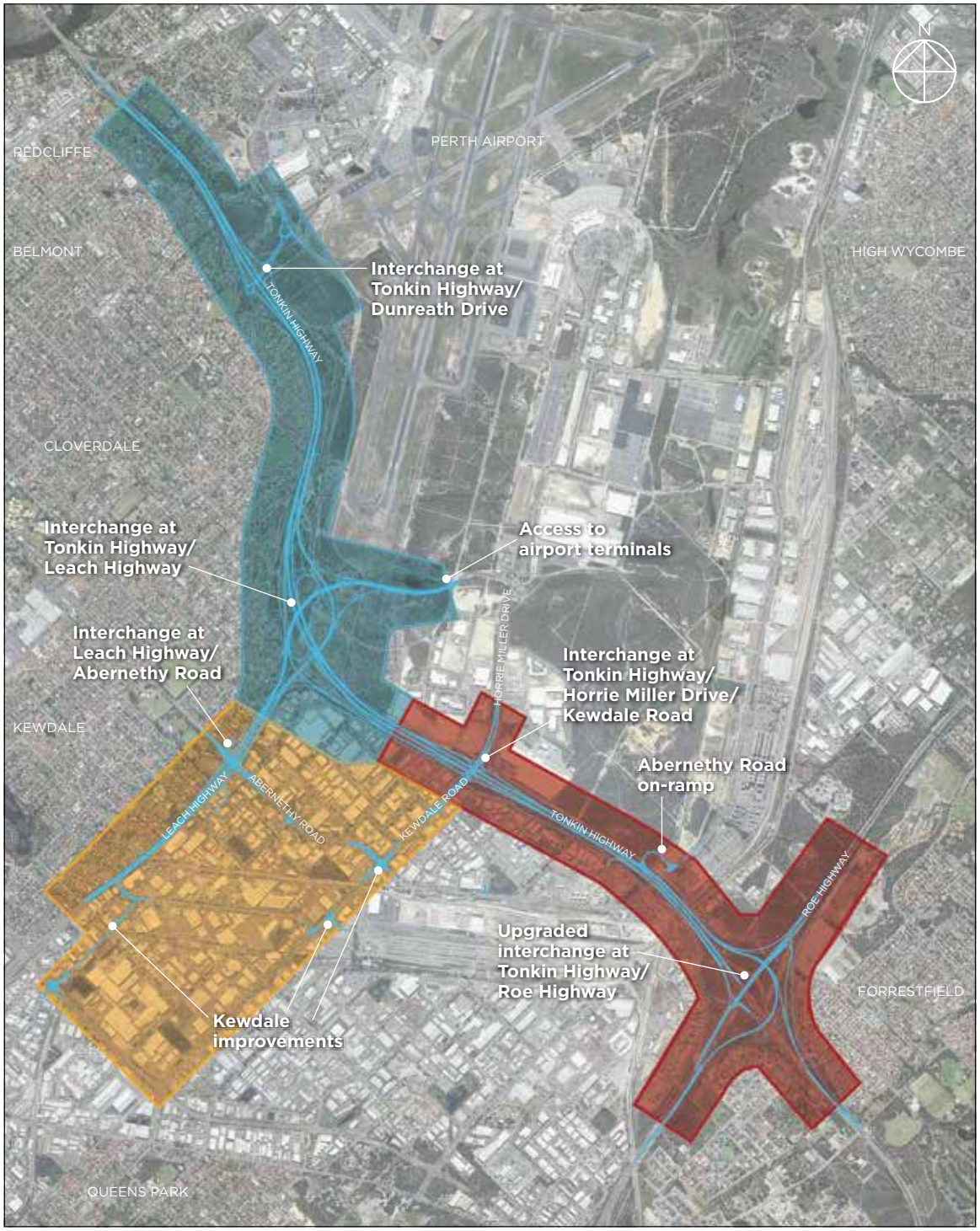

Figure 6.3 *Gateway WA overall concept plan*
Source: Gateway WA Alliance

OVERVIEW OF THE GATEWAY WA PROJECT

PROJECT

Tonkin Highway, Leach Highway and Airport Drive Interchange

The Tonkin Highway, Leach Highway and Airport Drive Interchange is a major freeway-to-freeway interchange connecting into Airport Central via a new Airport Drive.

This interchange is the access point for Airport Central and will become the primary access point for all passenger terminal-related traffic upon full consolidation in the early 2020s.

PROJECT

Tonkin Highway, Horrie Miller and Kewdale Road Interchange

The Tonkin Highway, Horrie Miller and Kewdale Road Interchange is a grade-separated interchange. Tonkin Highway will operate as a through-flow freeway at this intersection with access to Horrie Miller Drive and Kewdale Road controlled by traffic signals. This intersection will be the primary access point for Airport South.

PROJECT

Leach Highway and Abernethy Road Interchange

The Leach Highway and Abernethy Road Interchange is a grade-separated interchange. Although this interchange does not have any direct connection to Perth Airport, it is a focal point of the regional freight traffic that materially impacts the road network around Perth Airport.

PROJECT

Tonkin Highway and Roe Highway Interchange

The Tonkin Highway and Roe Highway Interchange will be a partial freeway-to-freeway interchange. This interchange does not have any direct connection to Perth Airport, however it is a focal point of commuter traffic flows and the regional freight traffic that materially impacts the road network around Perth Airport.

PROJECT

Tonkin Highway and Dunreath Drive Interchange

The Tonkin Highway and Dunreath Drive Interchange is a new grade-separated interchange. Tonkin Highway will operate as a through-flow freeway at this intersection. This intersection will be the primary access point for Airport West.

Source: Gateway WA Alliance

6.4 Rail

There is currently no rail service to Perth Airport. Perth Airport welcomed the announcement and budget commitment by the State Government that it will develop the Forrestfield-Airport Link that will extend through and include stations servicing Perth Airport. The State Government has advised it plans to have the rail service operational in 2020.

6.4.1 Network Context

The Perth urban rail network is based on a hub-and-spoke model focused on the Perth Central station, located in the CBD and which radiates with five separate passenger rail services, identified in Figure 6.4.

The State Government has been investigating options to enhance the overall metropolitan rail network and concurrently service Perth Airport. These investigations have identified that the Midland line presents the most suitable line to provide the linkage to Perth Airport.

6.4.2 Proposed Routes and Stations

Perth Airport and the State Government are working to finalise the route and the preferred locations for rail stations to be developed on the Commonwealth land controlled by Perth Airport.

6.4.2.1 Proposed Routes

In August 2014, the State Government approved the alignment and timing of the proposed Forrestfield-Airport Link project. The principle of the routes is to provide a rail service connecting the Bayswater Station to a new station at Forrestfield via Perth Airport. The State Government have advised construction will start in 2016 with completion expected in 2020.

6.4.2.2 Proposed Stations

The State Government is investigating a series of stations on the proposed route. These include:

- Airport West / Redcliffe,
- Airport Central, and
- Forrestfield.

The State Government is assessing the feasibility of a rail station in the Airport West Precinct (on airport land) or the Redcliffe area (on State controlled land). The off airport solution is currently the preferred option. A station in this area would include a public transport interchange (providing links to local bus services) and as such would focus on general metropolitan commuter passenger demand. The station would also serve the current T3 and T4 aviation needs and the general Airport West business park users.

The station is proposed to be located in the core of the Airport Central Precinct and provide connectivity to the existing T1 and T2 terminal forecourts and ultimately to the New Terminal forecourt. Planning for Airport Central has demonstrated that integrating the rail station into the terminal and forecourt areas is an important component in ensuring both an effective ground transport system and a high-quality passenger and visitor experience.

The rail link will provide an alternative to the current car-based access to the airport. Perth Airport will work with the PTA to improve services to the airport and to seamlessly link the stations with the surrounding facilities. This will ensure that a high quality pedestrian experience is created for transitioning between the rail stations and the terminals. Should the Airport West Station be constructed, the associated bus interchange will significantly improve the catchment for public transport serving the area.

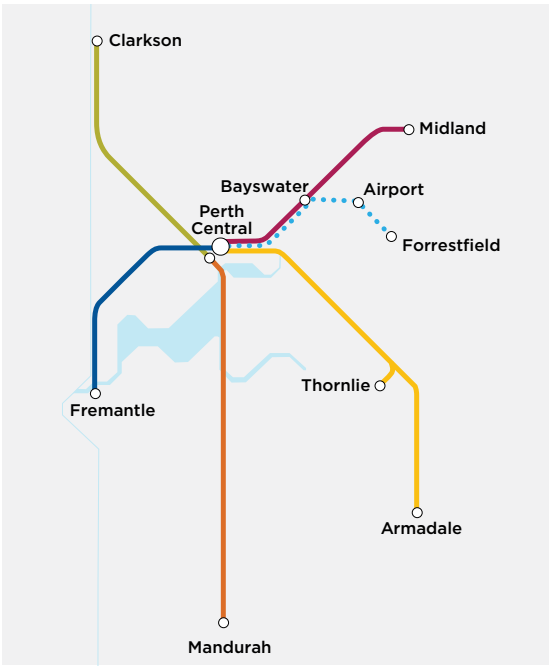

Figure 6.4 *Perth rail network with proposed Forrestfield-Airport Link*
Source PTA.

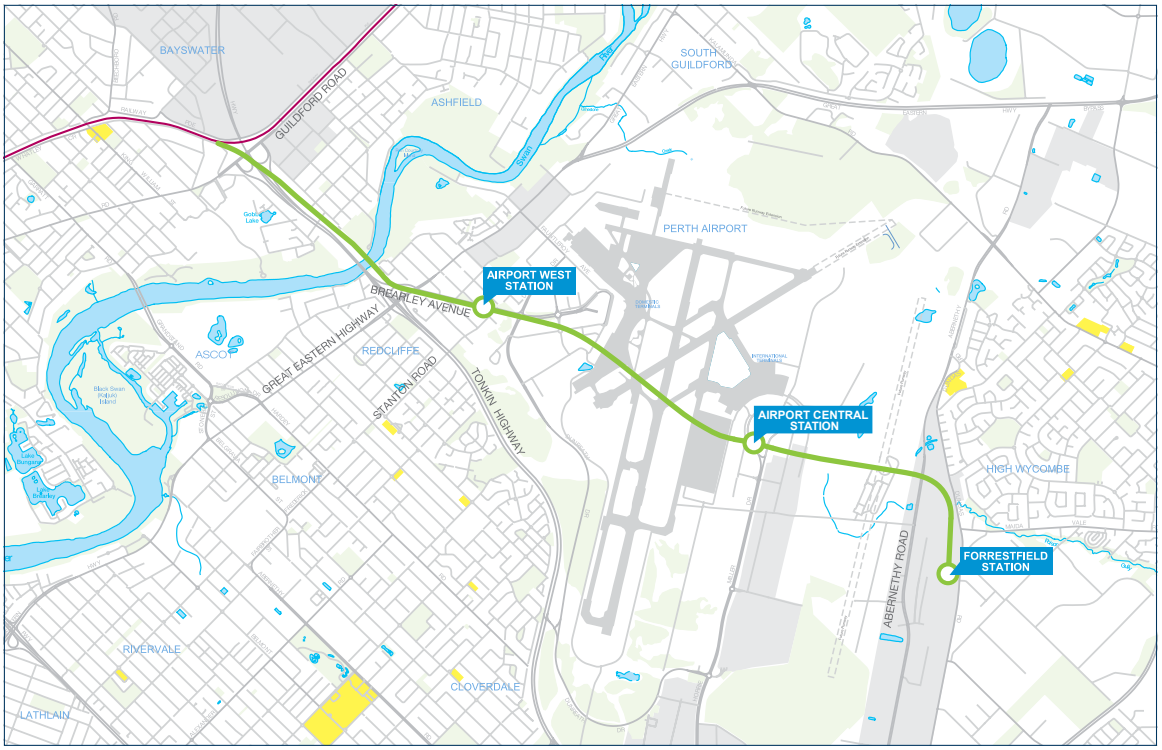

Figure 6.5 *Proposed corridor of Forrestfield-Airport Link*
Source: PTA.

Note: Station locations to be finalised by the State Government.

6.4.3 Project Tenure

The Forrestfield-Airport Link project is proposed to be delivered by the State Government. To enable construction and operations of the infrastructure into the future, there will be commercial negotiations between the State government and Perth Airport to provide appropriate tenure arrangements for the placement of the required infrastructure through either a sub-lease or licence, in accordance with provisions under the Perth Airport lease with the Commonwealth and the *Airports Act 1996*.

6.4.4 Proposed Infrastructure Form

To avoid adverse impacts to the operation and safety of airfield and terminal infrastructure, the Forrestfield-Airport Link will be built in its entirety as underground infrastructure in the form of tunnelled rail lines and underground rail station(s) within the airport estate.

Detailed assessments and conditions will be developed and apply to the development phase and the ongoing operations of the Forrestfield-Airport Link project to prevent adverse noise, vibration, electromagnetic and settlement impacts caused by the Forrestfield-Airport Link project on any Perth Airport airfield or terminal infrastructure.

6.4.5 Rail Approval Process

Within the Commonwealth controlled land of Perth Airport, the Forrestfield-Airport Link project will require the relevant approvals, including a Major Development Plan approval under the *Airports Act 1996* (Cth) and a Section 18 Approval under the *Aboriginal Heritage Act 1972 (WA)*. These processes will require public consultation, including presentation of detailed information relating to the impacts and benefits of the project.

Source: PTA.

6.5 On Airport Traffic

The Ground Transport Plan must cater for all activities on the airport estate including:

- passengers,
- employees,
- commercial development, and
- freight.

Over 70 per cent of traffic on the airport estate is directly related to aviation activities, and the predominant mode of access to and from Perth Airport is road-based transport, both public and (primarily) private. As shown in Figure 6.6, road based transport is expected to remain the predominant mode for the next five years and throughout the planning period.

The projected passenger travel modes to and from Perth Airport for the periods 2013-2019, 2020-2026 and 2027-2034 are shown below in Figure 6.6 (see over the page).

State and Local governments are planning for and identifying opportunities to balance the transport mode share, which is currently dominated by car-based private vehicles in the Perth metropolitan area, towards more sustainable alternatives through initiatives including:

- investing in new infrastructure and services in road, rail and public transport,
- encouraging travel demand management for employees and contractors around key activity centres, and
- the provision of additional public transport options for both aviation passengers, and employees and contractors at Perth Airport.

Perth Airport is committed to working with the State and Local governments to develop sustainable transport options which work towards achieving network wide mode share targets. This may be progressed through the provision of new infrastructure such as paths, shelters, end-of-trip facilities, and improved access to public transport.

As detailed in Section 2 of this Master Plan 2014, Perth Airport is identified in Directions 2031 as a 'specialised centre' and in the Economic and Employment Lands Strategy for non-heavy industrial development. As outlined in Section 5, non-aviation commercial developments will be progressed in the following precincts:

- Airport North,
- Airport West, and
- Airport South.

A significant consideration for the planning of ground transport is the current and future employment on the airport estate and associated transport needs. Currently there are over 17,800 full-time employees on the airport estate in both aviation and non-aviation industries. It is anticipated that this will grow to approximately 23,860 full-time employees by 2019 and 42,220 full-time employees by 2034. Appropriate transport infrastructure will be provided across the airport estate to meet employment demand.

YEAR	MILLION PASSENGERS PER ANNUM (MPH)	TOTAL TRAFFIC		AVIATION-RELATED VEHICLE TRAFFIC (VEHICLES PER DAY)
		AIRPORT DRIVE (VEHICLES PER DAY)	HORRIE MILLER DRIVE (VEHICLES PER DAY)	
2011	3	0	25,500	13,500
2015	6.5	35,000	15,000	27,500
2021	18	80,000	18,000	69,000
2031	26	98,000	21,000	91,000

Table 6.1 *Aviation related vehicle traffic using Airport Drive and Horrie Miller Drive*
Source: Main Roads-Gateway WA and Perth Airport Pty Ltd

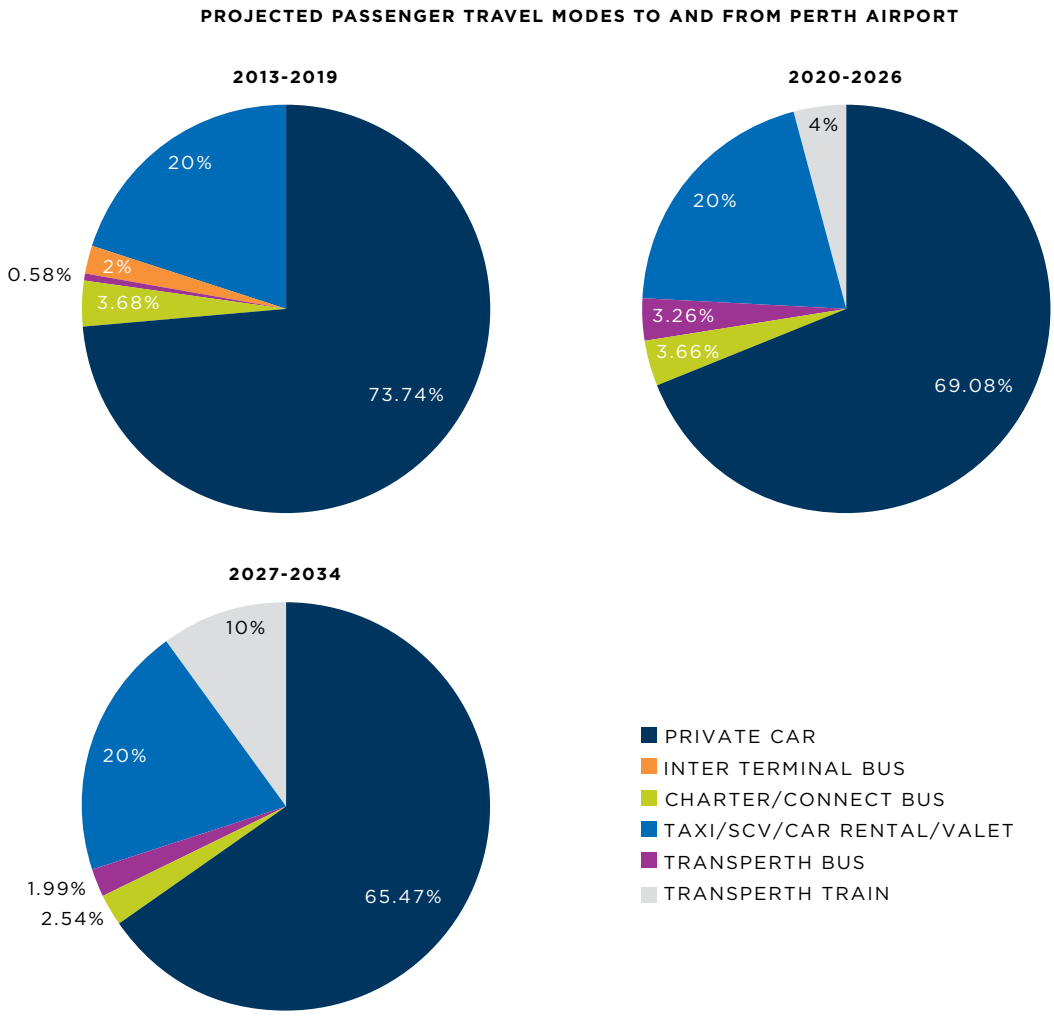

Figure 6.6 *Projected passenger travel modes to and from Perth Airport*

Note: (a) Private vehicles using short and long-term car parking and pickup/drop off. (b) Small Charter Vehicle. Source: Arup. Projected rail patronage figure as advised by PTA.

6.6 Airport Central Precinct

The primary access to the Airport Central Precinct is currently via Horrie Miller Drive. As outlined in Section 4, all commercial air services are projected to be consolidated into Airport Central in the early 2020s. Consolidation of all commercial air services to Airport Central will dramatically alter where and how vehicles and people access Perth Airport. Once completed, the new Tonkin Highway, Leach Highway and Airport Drive Interchange will be the primary access for commercial passenger terminal-related traffic.

With the consolidation of airport activities and growth in passenger demand, vehicle traffic volumes associated with the relocation of air services will experience a step change in demand. Aviation-related traffic in Airport Central is projected to increase from 13,500 vehicles per day in 2011 to 69,000 vehicles per day in 2021 following terminal consolidation, and to 91,000 vehicles per day by 2031 (refer to table 6.1).

During 2014, Perth Airport commenced construction of a new road, Airport Drive, which will connect to the Tonkin Highway, Leach Highway Interchange. Initially, Airport Drive will be located to the west of, and run parallel to, Horrie Miller Drive, until it connects with Horrie Miller Drive north of the existing Grogan Road roundabout. Sugarbird Lady Road will continue to provide access solely to T2 and facilities adjacent to the terminal.

Long term modelling undertaken has identified that with the consolidation of commercial passenger services to Airport Central traffic volumes will approach 100,000 vehicles per day during the planning period on the principle access road. To avoid congestion and ensure free flow to future terminals within Airport Central, the proposed internal road network will be reconfigured to provide self-contained circulating roads for each terminal as shown as a concept in Figure 6.7. This will allow traffic to be divided into manageable flows and segregated for each terminal.

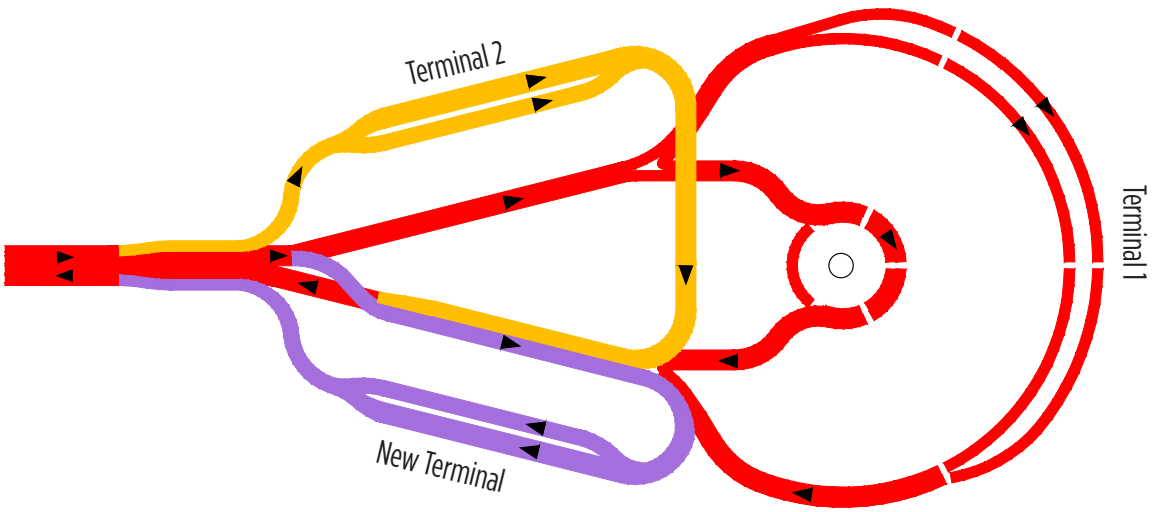

Figure 6.7 *Airport Central terminal access concept*

6.6.1 Automated People Mover (APM)

Within the planning period of this Master Plan 2014, an automated people mover is planned for Airport Central to transfer passengers and employees between the terminals, transport modes and other facilities in the precinct.

The APM is expected to be required because the number of vehicle movements in the vicinity of the terminals in Airport Central will grow to a level at which some modes will need to be dispersed within the wider precinct to avoid congestion.

The APM will enhance the airport experience for passengers, visitors and employees, while providing excellent comfort and convenience. Benchmarking studies have shown that the use of APMs for such purposes at large airports contributes to a superior overall customer experience and avoids congestion.

ARTISTIC IMPRESSIONS OF THE CONCEPT FOR THE AUTOMATED PEOPLE MOVER

Figure 6.8 *Five year ground transport plan concept for Airport Central*
Source: Gateway WA Alliance and Perth Airport Pty Ltd

6.7 Airport West Precinct

Airport West Precinct currently supports the majority of domestic commercial air services using T3 and T4 and includes some office commercial buildings. Perth Airport anticipates the final stage of consolidation of all commercial air services to Airport Central will occur in the early 2020s, when new facilities are constructed in the precinct for Qantas Airways Group operations.

The Airport West Precinct is currently serviced by Brearley and Fauntleroy avenues, with Brearley Avenue providing the main access to T3 and T4 passenger terminals. Brearley Avenue carries approximately 36,000 vehicles per day. It also provides good access to the local freight network and forms the freight route into the precinct. Fauntleroy Avenue, while having signal-controlled access onto the Great Eastern Highway, has traffic demands at peak times which exceed the capacity of the intersection.

As part of the Gateway WA project a new interchange will be constructed on Tonkin Highway connecting to Dunreath Drive and Airport West. Upon the opening of the new Tonkin Highway and Dunreath Drive Interchange, the State Government has advised that this will allow Brearley Avenue to be closed.

The Tonkin Highway and Dunreath Drive Interchange will have the capacity to meet the traffic demands until the time that the remaining commercial air services relocate to Airport Central (planned to in the early 2020s), after which vehicle traffic volumes to and from Airport West will substantially decline.

Perth Airport has held discussions with Main Roads WA regarding the upgrading of the intersection of Great Eastern Highway and Fauntleroy Avenue as turning vehicles at the intersection restrict the flow of through traffic on the highway. Intersection improvements could also accommodate the public bus routes that would approach the airport and the proposed Airport West railway station from the east. This intersection upgrade would also improve access to the General Aviation Area located in Airport West.

The internal road network in Airport West will be modified to meet the needs of the aviation-related traffic until full consolidation. As the precinct uses change, the roads will be modified to maintain an efficient network.

6.7.1 Dunreath Drive

On completion of the Gateway WA project, the remaining section of Dunreath Drive will become an airport service road. It is expected to be used as a future car park access road and for internal airport traffic. Public access between T3 and T4 in Airport West and Airport Central, will be via the new Dunreath Drive Interchange, Tonkin Highway and Airport Drive (all part of the Gateway WA project).

6.7.2 Forrestfield-Airport Link

The State Government's planned introduction of a station in Redcliffe (on State controlled land) adjacent to Airport West by 2020 will provide improved public transport access for visitors/ employees within the Airport West Precinct and residents in Redcliffe and surrounding suburbs, with an estimated 15 minute travel time into the Perth CBD and three minute travel time to the planned Airport Central Station.

The Redcliffe Station is centrally located within the City of Belmont's Development Area 6 (DA6). The vision plan for DA6 promotes development of a vibrant and active mixed use precinct and employment destination. The future railway and bus services will support a stronger public transport service to and from the area and enabling development of higher residential densities.

Figure 6.9 *Five year ground transport plan concept for Airport West*
Source: Gateway WA Alliance and Perth Airport Pty Ltd

6.8 Airport North Precinct

The Airport North Precinct currently supports industrial and mixed-use businesses and is serviced by Kalamunda and Abernethy roads, both of which form part of the metropolitan regional road freight network.

The portion of land to the south and west of Kalamunda Road, within Airport North, is currently undeveloped. Perth Airport is planning to commence developments in this area within the next five years as outlined in Section 5.

As shown in Figure 6.14, the planned access points off Kalamunda Road will include:

- a central signalised intersection connecting to Bungana Avenue,
- a signalised intersection located approximately 500 metres from the Kalamunda Road and Abernethy Road intersection, and
- a left in-left out access off the Bungana Avenue connection, approximately 300 metres from the Great Eastern Highway intersection.

The extension of Bungana Avenue to form a new intersection with Kalamunda Road will provide access to Airport North Precinct as well as improve the traffic flow in the General Aviation Area and reduce demand on Fauntleroy Avenue and its intersection with the Great Eastern Highway within Airport West. The attractiveness of this route to provide an alternative through route for non-airport traffic is recognised and will be factored into the ultimate design and road layout. This access point will be complemented by two additional access points off Kalamunda Road that will be required for the long-term development of the Precinct.

Access to the precinct will be further improved by the planned Lloyd Street southbound extension from Midland by the City of Swan which will intersect with the Great Eastern Highway Bypass at Abernethy Road to ultimately form a diamond interchange in line with current State Government planning. This will provide a new northern access to the airport estate.

An important consideration for ground transport infrastructure for this precinct is the location of the residential areas of Hazelmere and High Wycombe, and in particular, access to future developments. Perth Airport has worked with the State Department of Planning, Main Roads WA, the City of Swan and the Shire of Kalamunda, as well as local interest groups, to establish a road layout plan that meets the needs of all stakeholders. This is important in minimising the exposure of the nearby residential communities of Hazelmere and High Wycombe to through-traffic. Perth Airport will continue to support the role of Adelaide Street (as identified in the State Government's Hazelmere Enterprise Area Structure Plan) to provide a separation function between future industrial and existing residential/rural-residential areas, subject to an appropriate arrangement being agreed.

The Midland freight line currently runs along the eastern boundary of the airport estate. This allows for the opportunity to provide a private rail access for the direct delivery of freight by rail into the eastern portion of Airport North.

Other than intersections as per Figure 6.10 or existing access points as approved by the local government or Main Roads Western Australia, there will be no additional direct lot access from Kalamunda or Abernethy Roads, which are designated as 'Other Regional Roads' in the Metropolitan Region Scheme, without prior approval.

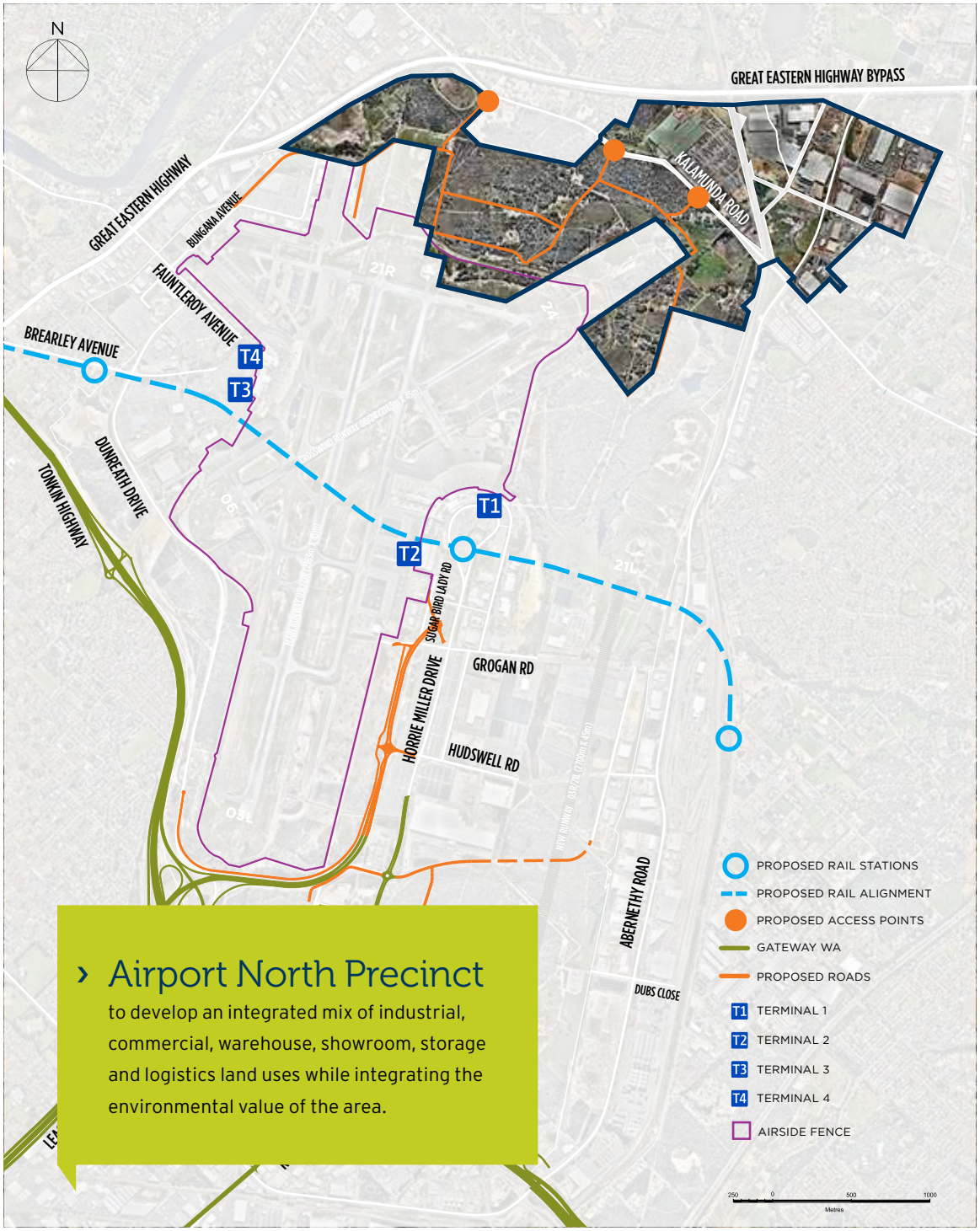

Figure 6.10 *Five year ground transport plan concept for Airport North*
Source: Gateway WA Alliance and Perth Airport Pty Ltd

6.9 Airport South Precinct

The Airport South Precinct is primarily accessed via Horrie Miller Drive off the intersection with Tonkin Highway and Kewdale Road, with secondary access via Grogan Road which connects off Abernethy Road.

Horrie Miller Drive currently provides access for both the terminal and passenger-related traffic in addition to non-aviation commercial developments located within Airport South. In accordance with the 'Development Agreement' between the State Government and Perth Airport, upon the opening of Airport Drive, Horrie Miller Drive will primarily service traffic accessing Airport South and it is expected that Airport Drive will principally be used by passenger-related traffic.

In the eastern portion of Airport South, Grogan Road, Hudswell Road and Dubs Close will continue to provide freight vehicle access from Abernethy Road.

Perth Airport is working with the State Government and the Shire of Kalamunda towards an agreement for an Abernethy Road access strategy, to ensure that continued and coordinated access is provided to the airport estate. In the long term, road connectivity between Abernethy Road to Airport Central is an important consideration. The design and construction of the new runway (03R/21L) will either provide for continuation of a connection from Abernethy Road to Airport South, or make provision for its future re-establishment.

Figure 6.11 *Five year ground transport plan concept for Airport South*
Source: Gateway WA Alliance and Perth Airport Pty Ltd

06. GROUND TRANSPORT PLAN

Figure 6.12 *Perth Airport estate five year ground transport plan concept*
Source: Gateway WA Alliance and Perth Airport Pty Ltd

6.10 Car Parking

During the past five years, the number of car parking bays has been significantly expanded, while also improving the standard of facilities provided across the airport. Car parking options currently at Perth Airport include:

- airline valet parking,
- fast track,
- short term, and
- long term.

Perth Airport now has more than 17,000 car parking bays for passengers, visitors and staff across the airport estate, as shown in Figure 6.12.

Passenger growth, new and improved car parking facilities, and the ongoing promotion of car parking have driven an increase in car park usage, particularly for long-term parking.

It is expected that by 2034 around 35,000 car parking bays will be required across the airport estate. This requirement is based on the current projections of mode share. Increased use of the improved public transport servicing the airport may reduce the demand for car parking.

The Airport Central Precinct development plans include a combination of car parking facilities. Car parks servicing the precinct will be located broadly in the same locations as the existing at-grade car parks. It is envisaged that these existing at-grade car parks will be progressively replaced with multi-storey car parks over time to meet demand. These buildings may also provide facilities for ground transport service operators as well as hotel and commercial office floor space, subject to market demand. Where feasible, they will be linked directly to the terminal buildings with aerial walkways. A Major Development Plan for multi-storey car parking and office accommodation is expected to be released for public comment in 2015.

It is likely that the number of multi-storey buildings will increase over time to meet demand and that the amount of new at-grade car parking is expected to diminish over time. Multi-storey car parks will service T1, the new domestic pier, T2 and terminal(s) constructed for the final stage of consolidation. A premium long-term car parking product will continue to be available proximate to terminals, with (non-premium) long-term parking to be located further from the terminals serviced by connecting buses and the APM.

Car rental facilities will initially be located proximate to the terminals, and it is expected that these will be provided within the multi-storey car parks. In the long term, traffic levels and demand for car parking may trigger relocation of car rental pick-up and drop-off facilities to a location closer to the Gateway WA interchanges, at which point they may also be serviced by the APM system.

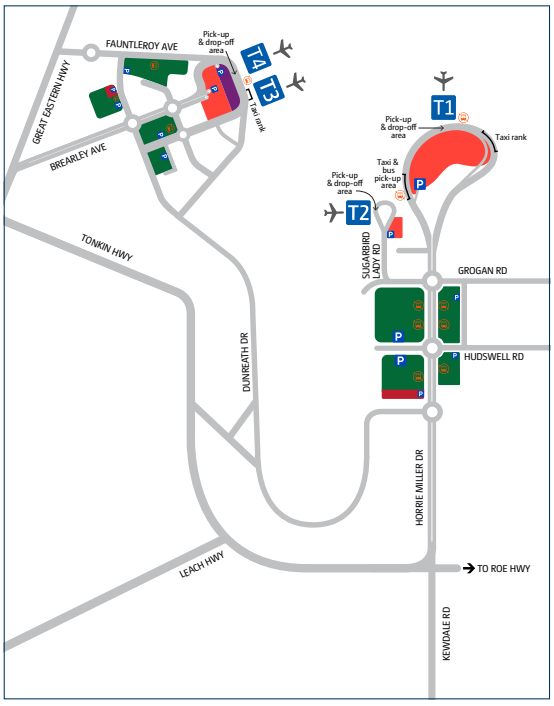

Figure 6.13 *Current car parking across the Perth Airport estate*
Source: Perth Airport Pty Ltd

06. GROUND TRANSPORT PLAN

The Airport West development plans include the continuation of at-grade car parks within the precinct. It is also expected that at-grade car parking will expand in the area along Dunreath Drive.
After consolidation of passenger services to Airport Central, it is expected that the demand for car parking proximate to T3 and T4 will be reduced.
The extent to which existing car parks are decommissioned will depend on:

- activities that will ultimately be located in this area as Airport West develops,
- the impact that the rail link has on the private car travel mode share, and
- the demand for car park sites for car parking from Airport Central.

Perth Airport will continue to develop and provide a range of car parking products to meet passenger, visitor and employee needs and preferences. This range of car parking products will continue to include short term, premium long term, and long-term car parking bays.

6.11 Bus Service and Facilities

T3 and T4 are currently serviced by a public bus service that connects Perth Airport to the Perth Central Business District (CBD). Route 37 operates through the suburb of Belmont and has a journey time of approximately 45 minutes between the airport and the Perth CBD. Commencing in March 2014, Route 40 runs from T3 and T4 along the Great Eastern Highway to the Perth Busport, with a journey time of approximately 45 minutes.

There are currently no public transport services to Airport Central. Access is by private vehicle, taxi, shuttle bus services or small charter vehicle. Perth Airport is working with the PTA to provide a new public bus service (Route 930) with a direct, limited stops from the Perth CBD. This is expected to be in operation when Virgin Australia's domestic services relocate to Airport Central in 2015.

06

CURRENT BUS ROUTES

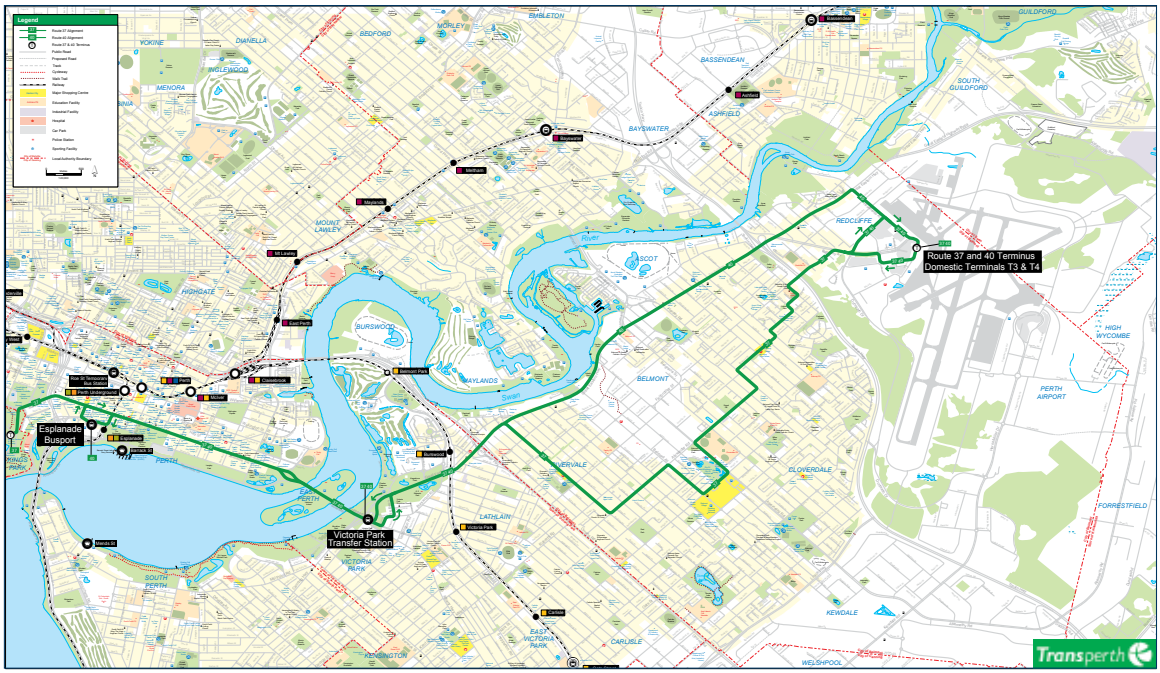

Figure 6.14 *Current bus routes*
Source: PTA

PROPOSED BUS ROUTES

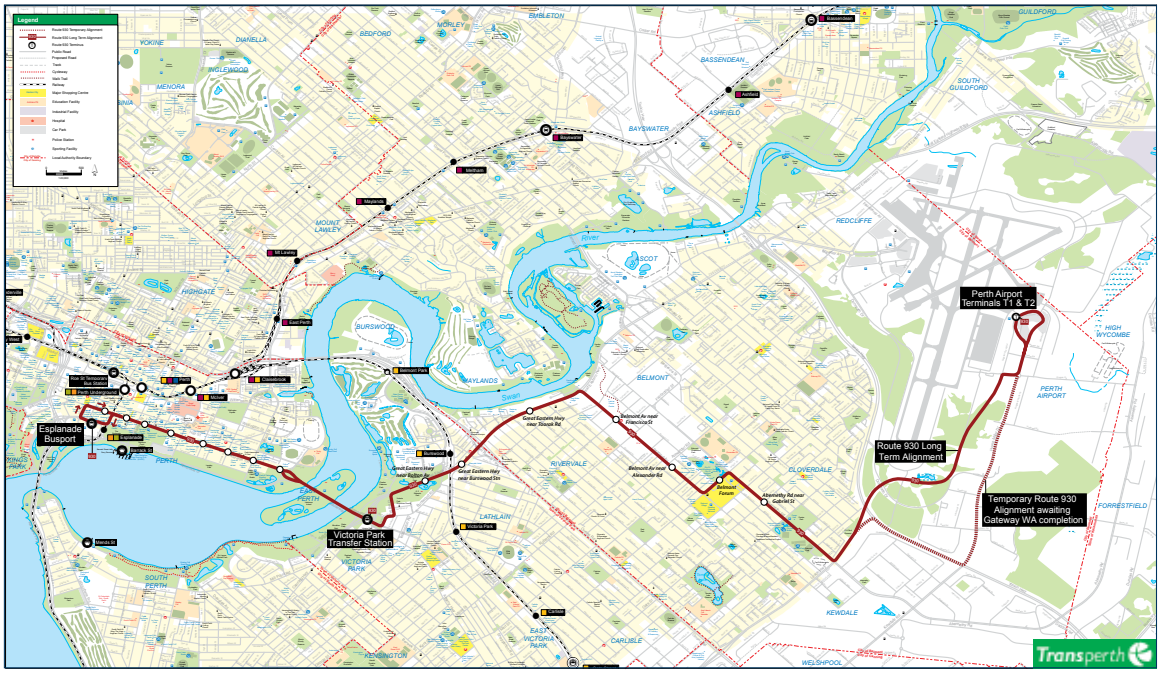

Figure 6.15 *Proposed bus route 930 (subject to community consultation)*
Source: PTA

6.12 Small Charter Vehicle Facilities

Separate areas of the short term car parks, proximate to each of the terminals, are currently provided for Small Charter Vehicles (SCV's).

Construction of the multi-storey car parks serving T1 and T2 in Airport Central will allow upgraded dedicated SCV areas.

Facilities will also be provided to serve the future terminal in the precinct when it is constructed.

The reconfiguration of the T3 and T4 forecourt and short term parking being considered for construction in 2015, will provide the opportunity to increase SCV facilities in Airport West to serve passengers for these terminals until full consolidation of commercial air services.

6.13 Taxi Facilities

T3, T4 and Airport Central are serviced by taxis and airport shuttle bus services operating between the terminals, and to and from the airport and the Perth CBD. Taxi facilities continue to be improved at T1 and T2, including pick-up ranks, dedicated traffic lanes, and staging and assembly areas. The planning principles for the taxi facilities are to provide:

- taxi ranks servicing T1, Virgin Australia and T2, and the future terminal,
- taxi forward staging areas, and
- remote taxi holding areas.

The taxi facilities required in Airport Central will undertake a significant change when consolidation occurs, with new taxi pick-up ranks to be constructed serving T1 and the future terminal.

6.14 Shared Path and Cycleway Facilities

It is recognised that cycling and walking are uncommon for air travel passengers when accessing the airport, with cycling facilities expected to be predominantly used by employees working within the airport estate. Cycling facilities will continue to be provided, including end-of-trip facilities in commercial developments. Progressive development of bicycle routes along Horrie Miller and Airport drives is planned which will link into the Principal Shared Path network being constructed as part of the Gateway WA project. T3, T4 and Airport West will be served by bicycle routes connecting the new Dunreath Drive and Tonkin Highway Interchange into the existing bicycle lanes on Brearley Avenue and through to Fauntleroy Avenue and Great Eastern Highway.

> Perth Airport will continue to work closely with industry groups to plan and deliver appropriate facilities to support taxi, bus and SCV demands.

6.15 Wayfinding

Wayfinding forms an important element in ensuring the effective movement of vehicles, pedestrians and cyclists within the airport estate as part of a passenger's journey. Wayfinding will continue to be provided across the airport estate.

Within the airport estate, Perth Airport will review opportunities to install advanced car park vacancy signs on key roads to allow passengers to select the most appropriate car park. The car park bus service will continue to have active signs at bus stops to advise passengers the arrival time for the next bus.

In conjunction with the Gateway WA project and Main Roads WA, Perth Airport will review opportunities for intelligent traffic signage on Airport Drive and Horrie Miller Drive to inform traffic leaving the airport of any incidents off airport to allow them to modify their journey if required.

Perth Airport will continue to work with the PTA to explore opportunities to provide similar information for the public bus and the future train services.

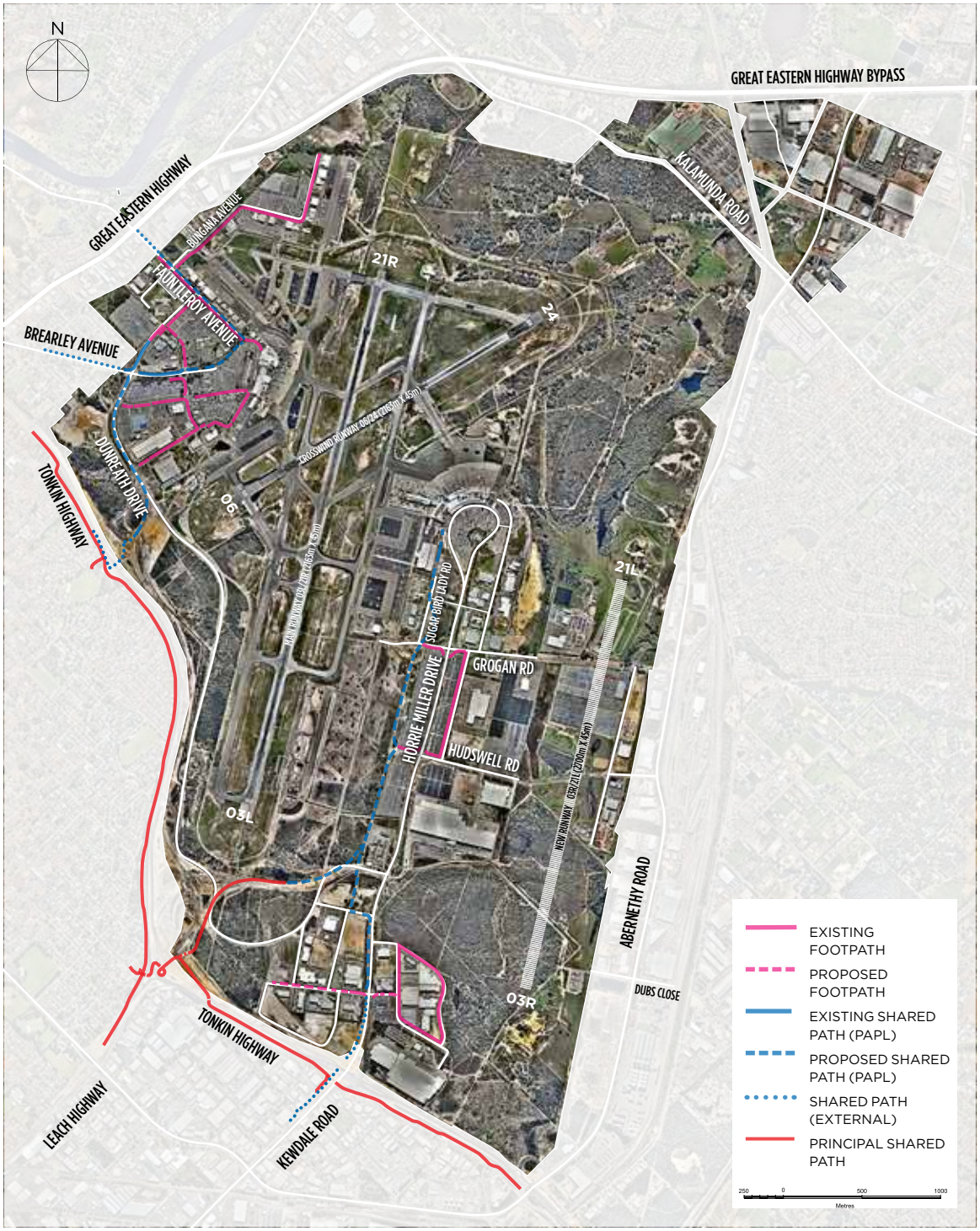

Figure 6.16 *Proposed Pedestrian and Cycle Access*
Source: Perth Airport Pty Ltd

6.16 Perth Airport Five Year Ground Transport Implementation Plan

PROJECT	RESPONSIBLE AUTHORITY	DELIVERY PERIOD
AIRPORT CENTRAL		
Reconfigure T1 forecourt	Perth Airport	0-5 Years
Construct Airport Drive	Perth Airport	0-5 Years
Construct the Southern Aviation Support access road	Perth Airport	0-5 Years
Expand at-grade car park	Perth Airport	0-5 Years
Construct multi-storey car parks	Perth Airport	0-5 Years
Shared path connecting to Gateway WA project	Perth Airport	0-5 Years
Bus and taxi facilities at T1	Perth Airport	0-5 Years
Plan, prepare approvals and commence construction for Forrestfield-Airport Link	PTA	0-5 Years
Close section of Dunreath Drive	Perth Airport	0-5 Years
Leach Highway, Tonkin Highway and Airport Drive interchange	Gateway WA Alliance	0-5 Years
Investigate a new Bus Route (930) to T1 and T2 to coincide with the opening of T1 Domestic Pier	PTA	0-5 Years
AIRPORT SOUTH		
New internal commercial development road	Perth Airport	0-5 Years
Planning for the Grogan Road (alternate traffic alignment/tunnel)	Perth Airport	0-5 Years
Shared paths connecting to Gateway WA project	Perth Airport	0-5 Years
Horrie Miller Drive and Tonkin Highway Interchange	Gateway WA Alliance	0-5 Years

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PROJECT	RESPONSIBLE AUTHORITY	DELIVERY PERIOD
AIRPORT WEST		
Dunreath Drive and Tonkin Highway Interchange roundabout	Perth Airport	0-5 Years
Additional at-grade car parking	Perth Airport	0-5 Years
T3/T4 forecourt upgrade	Perth Airport	0-5 Years
New internal commercial development roads	Perth Airport	0-5 Years
Internal road adjustments to reflect new interchange off Tonkin Highway	Perth Airport	0-5 Years
Investigation feasibility and preferred location for station, as part of the Forrestfield-Airport Link	PTA	0-5 Years
Amendment to Brearley intersection	Main Roads WA	0-5 Years
Upgrade of Great Eastern Highway and Fauntleroy Avenue Intersection	Main Roads WA	0-5 Years
AIRPORT NORTH		
New internal commercial development roads	Perth Airport	0-5 Years
Lloyd Street Extension	City of Swan	0-5 Years
New intersections with Kalamunda Road	Perth Airport	0-5 Years

6.17 Perth Airport Twenty Year Ground Transport Implementation Plan

PROJECT	RESPONSIBLE AUTHORITY	DELIVERY PERIOD
AIRPORT CENTRAL		
Grade separation of key intersections of Airport Drive	Perth Airport	6-20 Years
Upgrade T2 Forecourt	Perth Airport	6-20 Years
New forecourt and parking for New Domestic Terminal (final consolidation)	Perth Airport	6-20 Years
Expand at-grade car park	Perth Airport	6-20 Years
Construct additional multi-storey car parks	Perth Airport	6-20 Years
Automated people mover	Perth Airport	6-20 Years
Additional bus and taxi facilities	Perth Airport	6-20 Years
Construction completed of the Forrestfield-Airport Link	PTA	6-20 Years
AIRPORT SOUTH		
New internal commercial development road	Perth Airport	6-20 Years
Delivery of the Grogan Road (alternate traffic alignment/tunnel)	Perth Airport	6-20 Years
AIRPORT WEST		
Additional at-grade car parking	Perth Airport	6-20 Years
New internal commercial development roads	Perth Airport	6-20 Years
AIRPORT NORTH		
New internal commercial development roads	Perth Airport	6-20 Years
Upgrades of Abernethy Road	City of Swan	6-20 Years
Upgrade of Kalamunda Road	City of Swan / Shire of Kalamunda	6-20 Years
Additional intersection with Kalamunda Road (servicing Airport North)	Perth Airport	6-20 Years
Shared paths	Perth Airport	6-20 Years

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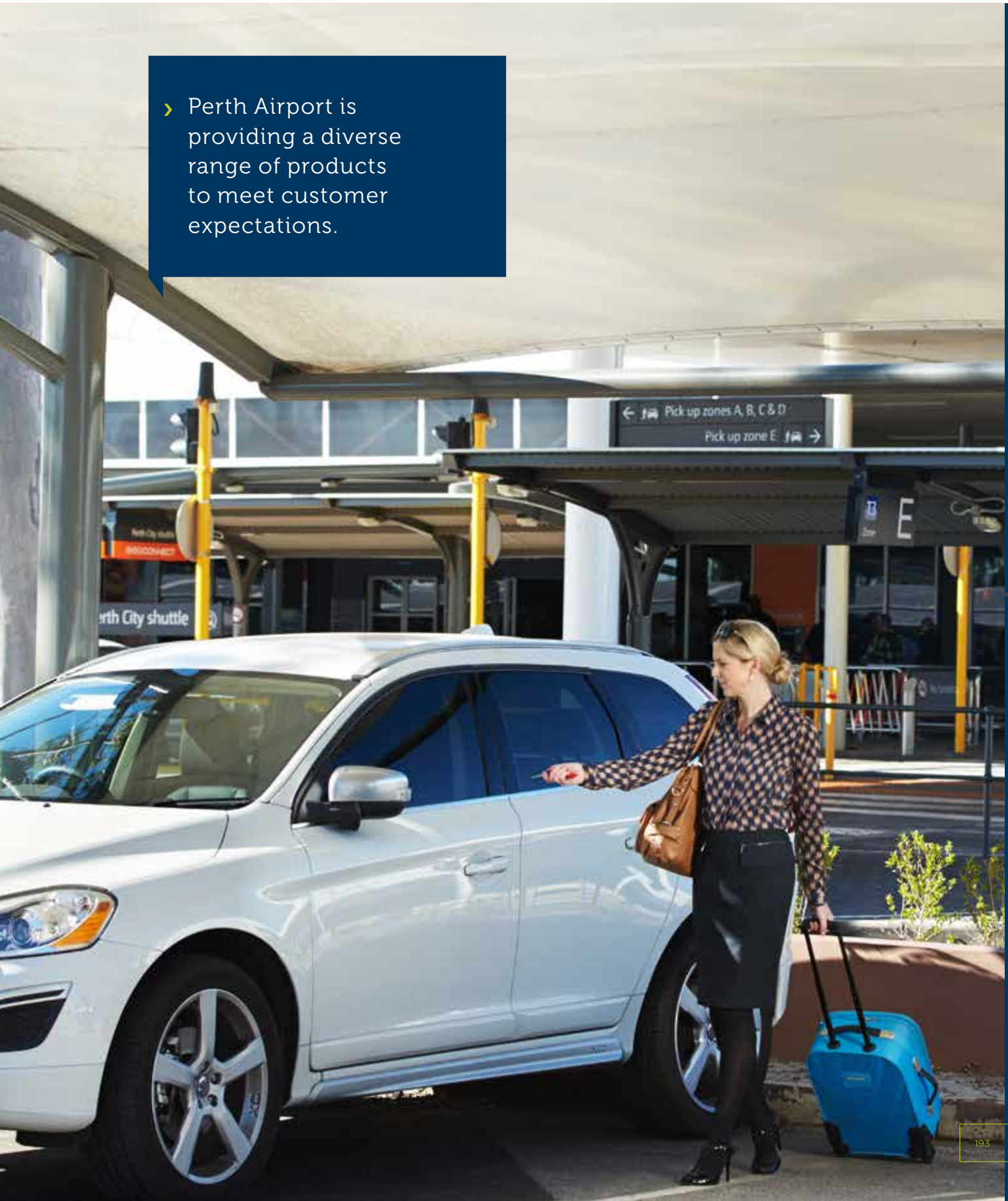

› Perth Airport is providing a diverse range of products to meet customer expectations.