6. INTRODUCTION - THE ROLE OF MODES

To achieve a balanced and effective transport network, it is important to understand the role of the different modes in our transport system. The strategic role that each mode provides in the transport network is described below.

6.1 PUBLIC TRANSPORT

The public transport system in the Wellington region needs to serve a dual strategic role.

- To provide peak period congestion relief and access to employment opportunities.
- To provide community access to services and facilities, particularly for people who do not have access to a private motor vehicle.

Public transport is an efficient way of moving people along core routes between common origins and/or destinations. This mode is particularly important during peak times when demand for space on the transport network is high and capacity is constrained. Providing alternatives to travel by car during these peak times provides congestion relief and efficient use of the available capacity, reducing the need for road investment. However, it is also crucial that we continue to invest in a reasonable level of service on a core all day network to provide community access to facilities and to support long term patronage growth.

Targeted services will provide access for groups for whom the regular public transport network is not adequate. This includes the Total Mobility service for people with disabilities, fare concession schemes and school bus services. In addition to its strategic roles, public transport has a number of wider benefits including being a relatively safe mode, and having energy efficiency benefits and reduced greenhouse gas emissions.

Passenger rail - In the Wellington region passenger rail provides services along core strategic corridors north of Wellington City CBD, primarily over medium to long distances, providing for access between regional centres and to and from the Wellington CBD.

Buses - Buses are able to connect people from many dispersed origins and destinations. In addition, buses provide core services along some strategic corridors. Buses form the backbone of the public transport system serving the southern, eastern and western Wellington City suburbs. Buses also have an important role in providing connector services to rail stations. Bus services cater effectively for trips over short to medium distances.

Harbour ferries - Harbour ferries provide another public transport option utilising the harbour to provide for quicker and more direct trips between some destinations and the Wellington CBD.

6.2 TAXI

Taxis provide a mobility alternative for those without access to a private vehicle where scheduled services or routes do not provide adequately for a particular trip. Taxis also complement public transport, walking and cycling by providing a back-up option for other modes in particular situations. The ‘drop-off’ and ‘pick-up’ nature of taxi trips can also help to reduce parking requirements.

Taxis play an important role in the GWRC Total Mobility scheme which provides subsidised door-to-door transport services for people who, because of a permanent disability, cannot use regular public transport services.

6.3 PRIVATE MOTOR VEHICLES

Private motor vehicles have an important role in the movement of people between many origins and many destinations at diverse times. Private vehicle may be the only practical choice for distances that cannot be easily walked or cycled, or where the trip is not well served by public transport.

1 Public transport covers scheduled services including the region’s trains, buses and ferries.
The flexibility and convenience of a private motor vehicle means it is often an attractive mode choice. Private vehicles are an important part of the transport network, and make up the majority of all trips. This mode is particularly suitable for off-peak trips for social and recreational purposes, when public transport alternatives may not be practical. Vehicles also provide for trips where goods or luggage need to be transported, for tradespeople, and where trips involve multiple destinations.

Unconstrained vehicle use, particularly at peak times, can however lead to severe congestion which adversely affects all road users, including buses and heavy freight vehicles, which share the same road space.

6.4 FREIGHT

The role of freight is to provide for safe and efficient movement of goods within, to, from and through the region.

The two primary land freight modes are road and rail. Sea based transport including the inter-island ferries and coastal shipping are not directly considered in this plan but do also play an important role. Road freight has a key role in the movement of goods (including smaller volumes of freight) between varied origins and destinations. Rail freight has an important role in the movement of high volumes of goods over longer distances between key production and distribution nodes.

The Wellington region has a number of existing key freight hubs and destinations including Seaview/Gracefield, Porirua/Tawa, CentrePort and the Wellington City CBD. SH1, SH2 and SH58 provide the vital road connections for road freight movements between these key origins/destinations.

The NIMT and Wairarapa railway lines also provide crucial rail freight access to and from CentrePort for high volume freight such as logs and containers from surrounding areas. The NIMT line and inter-island ferry is a key link between the North and South Islands, with high volumes of freight passing through Wellington from Auckland, Waikato and other regions to the north, bound for South Island locations such as Christchurch.

However, most freight journeys within the greater Wellington region tend to be relatively short (less than 20km) and not easily transferred to rail.

A growing element of freight delivery is ‘just in time’, which requires efficient networks and reliable journey times. Providing efficient and reliable access along key freight routes is a priority. Where these routes are also in high demand for commuter trips during peak periods, a conflict can result between these modes.

6.5 WALKING

Walking has two key roles in the Wellington transport network:

- An efficient way of making short local trips
- A means to connect between modes and at either end of longer journeys by other modes.

As a transport mode, walking is also affordable, relatively safe and has positive health, fitness, social and environmental benefits.

Ensuring walking networks provide a good level of service, including safe, pleasant, and direct facilities is important to maximise the number of trips made by walking.

Good quality walking networks are particularly important in and around key employment and activity centres, to/from public transport nodes and within a 10-15 minute radius of schools, where the highest potential for walking trips exists. Providing good walking facilities along core strategic routes linking regional centres and key destinations is also important.

6.6 CYCLING

Cycling provides an important transport option over short to medium distances for trips between many origins and many destinations.

Cycling also contributes positively towards an efficient and sustainable transport network as it reduces congestion, is energy efficient, has minimal environmental impacts, is affordable, and has associated health and fitness benefits.

Ensuring cycling networks provide a good level of service, including safe, pleasant, and direct facilities is important to maximise the number of trips made by cycling.

Providing safe and attractive routes for cyclists along core strategic transport corridors, both within urban areas and between centres is particularly important as these routes provide core connections for many cyclists and generally carry higher volumes of general traffic, often at higher speeds.

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1 Freight includes anything transported as part of a commercial arrangement from a small couriered document to the movement of logs, containers and heavy machinery.
7. PUBLIC TRANSPORT NETWORK

7.1 INTRODUCTION

The public transport network in Wellington region (the Metlink network) is an integrated network of bus, train and harbour ferry services. The Metlink network supports efficient land use and a compact, well designed and sustainable urban environment by providing an alternative to private car use, particularly for longer journeys where walking and cycling are less attractive. It also has a vital role in providing transport for people who do not own private vehicles, are unable to drive or cannot use walking or cycling to access the goods and services they need.

Investment in the public transport network is just one element of the wider plan for improving the region’s transport network, and needs to be considered as part of an integrated planning and investment approach.

7.2 WELLINGTON’S PUBLIC TRANSPORT NETWORK

The Wellington region has a high-quality, well used public transport network of bus, train and harbour ferry services (the Metlink network). It consists of four railway lines, more than 100 bus routes, more than 200 school bus services, and harbour ferry services. Discounted taxi services provide travel support and assistance for people who have difficulty using the regular services.

Over 80% of the region’s population live within 500 metres of a bus stop, train station or ferry terminal. Wellington residents are high users of public transport and Wellington has New Zealand’s highest number of public transport boardings per person per year. This strong culture of public transport use resulted in 35.8 million passenger trips being taken during 2013/14. The Wellington region has seen strong growth in public transport patronage over the past decade, although this has flattened off since 2011.

Figure 19. Regional trend of patronage by different modes of public transport

The average number of public transport boardings per person per year is...

- 72 in Wellington
- 47 in Auckland
- 20 in Christchurch

<table>
<thead>
<tr>
<th>Year</th>
<th>Bus</th>
<th>Rail</th>
<th>Ferry</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>5</td>
<td>10</td>
<td>2</td>
<td>17</td>
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<tr>
<td>2002</td>
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<td>65</td>
<td>70</td>
<td>14</td>
<td>59</td>
</tr>
<tr>
<td>2014</td>
<td>70</td>
<td>75</td>
<td>15</td>
<td>60</td>
</tr>
</tbody>
</table>
The Metlink network consists of three layers: core routes, local routes and targeted services.

**Core routes** are the urban rail network and frequent bus services that form the network’s backbone, linking areas of high demand with high-capacity, direct services with extensive operating hours.

- **Core rail routes** provide high-capacity, long-distance, time-competitive commuter services connecting key urban areas across the region. Their primary functions are to reduce severe road congestion on State Highways 1 and 2 and meet the demand for travel from key suburban and town centres to the Wellington CBD during peak periods.

- **Core bus routes** provide high-capacity, frequent, all-day services within urban areas, reducing congestion on the major transport corridors and meeting the all-day travel demand. They operate at least every 15 minutes during the day, and often more frequently during busy periods.

**Local routes** include all-day medium- to low-frequency services connecting town and activity centres along the lower-demand corridors, providing local access to town and activity centres within the suburban areas. These routes complement the core network by covering areas it does not serve and by collecting and distributing passengers to and from it.

Additional **Targeted services** are provided to meet demand, including peak-only services, school services, night bus services, and community services that provide access to areas or link destinations where there is not enough demand to justify core or local routes.

The Wellington region’s layered hierarchy of services is shown on Figure 20.
Local routes include all-day medium- to low-frequency services connecting town and activity centres along the lower-demand corridors, providing local access to town and activity centres within the suburban areas. These routes complement the core network by covering areas it does not serve and by collecting and distributing passengers to and from it.

Additional targeted services are provided to meet demand, including peak-only services, school services, night bus services, and community services that provide access to areas or link destinations where there is not enough demand to justify core or local routes.

The Wellington region’s layered hierarchy of services is shown on Figure 20.
7.3 THE NEED FOR INVESTMENT

It is not always affordable or desirable to continually increase the capacity of the road network in response to congestion and travel demand. Public transport is far more efficient at moving large numbers of people over long distances within the urban area than any other travel mode. It will therefore play an important role in providing for future travel demand. An effective and efficient public transport network will support future access to employment and markets with less impact in terms of land required for parking, and will be reasonably robust in the context of uncertainty over fuel costs, and other demographic and social changes.

Investment in the region’s public transport system complements investment in the roading network by providing an alternative to car travel on congested motorways and arterial roads, freeing up space for freight and commercial use and for other trips that cannot be made by public transport.

To achieve this, the Wellington public transport network needs to be attractive to users, both in terms of the convenience of the service that is offered and the relative cost to users compared to the alternatives available.

Key factors that are commonly identified in public transport perceptions surveys as reasons that people do not use public transport more often include:

- longer journey times and poor reliability
- fare cost
- frequency of services
- comfort of stops/stations and vehicles

Investment in the day-to-day operation of the existing public transport network is crucial to ensure that it operates efficiently and effectively. For example, a lack of prior investment in Wellington’s rail network up until around 2005 led to significant reliability issues, crowding, poor asset management, inadequate service frequency, and an uncomfortable travel experience for passengers. Significant catch-up investment in the rail network over more recent years has been focused on addressing these issues.

Results from perception surveys suggest that just over half of users believe that bus services are reliable. There has been a gradual decline in bus reliability over the six-year period to 2013. Buses use the road network and are affected by traffic congestion which impacts negatively on journey times and reliability. Investment in bus priority measures, particularly through congested urban streets, is crucial for improved bus journey times. Investment in a modern bus fleet, together with high quality stops and interchanges, is needed to provide comfortable and attractive public transport journeys.

A cost effective public transport system will help to keep public transport fares affordable and improve their competitiveness with the relative cost of car trips. Investing in network efficiency and integration improvements will be crucial to achieve this.

7.4 BENEFITS OF INVESTMENT

Public transport services are an essential part of Wellington’s transport network, and contribute significantly to the region’s liveability and economic productivity, primarily by:

- decreasing severe traffic congestion, particularly in the morning and afternoon peak periods, which in turn makes journey time reliable for other transport network users
- providing transport choices, including during off-peak periods
- contributing to reduction of CO2 emissions from transport
- enabling efficient land use and a compact, well designed and sustainable urban environment
- improving health and safety

Compared with single-occupant private car journeys, public transport trips are generally more energy efficient, generate fewer emissions and result in less congestion, particularly when the trips are well patronised and the public transport vehicles are well maintained. Public transport also has safety advantages over private cars, and provides health benefits by contributing to a more active lifestyle.

7.5 STRATEGIC RESPONSE

The long-term approach is to provide a modern, effective and efficient integrated public transport network that contributes to sustainable economic growth and increased productivity while also providing for the social needs of the community. This will require continued investment in and improvement of the Metlink public transport network so that services:

- go where people want to go, at the times they want to travel
- provide competitive journey times
- provide value for money
- are easy to understand and use
- are safe, comfortable and reliable
- provide flexibility, allowing people to change their plans.

In addition, investment is required to maintain the coverage of local and targeted services and in improving the accessibility of public transport by providing information, facilities and services that are available to all members of the public.
### 7.6 KEY NETWORK PRIORITIES

**Figure 21.** The key priorities for the public transport network are as follows:

<table>
<thead>
<tr>
<th>Area</th>
<th>Priorities</th>
<th>Timing</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| **Rail network**            | Rail Scenario 1        | Medium term        | Improving the efficiency of the metro rail system by redesigning service patterns so that capacity and frequency are provided to match peak demand, improving the utilisation of rolling stock and other resources. This will be achieved by:  
  • A new regularised (clock face) timetable with an enhanced morning peak-hour service  
  • A new service pattern based on an inner-metro-style service originating from Porirua, Waterloo and Johnsonville stations, and an outer-suburban-style service originating from Waikanae, Upper Hutt and Masterton  
  • Network hubs at the busiest stations – Waterloo and Porirua – and more metro services starting from these hubs (up to five trains per hour) during the morning peak period. More trains with fewer carriages in the peak period will give people more flexible travel options  
  • More express trains from stations on the outer network |
| Expand the Matangi fleet    |                        | Medium term        | 35 new Matangi trains will be purchased following the decommissioning and sale of the Ganz Mavag trains in 2016. This will provide a more modern, flexible and integrated electric rail fleet for the Wellington region. |
| Expand park and ride facilities and improve stations |                        | Ongoing            | Expanding park and ride facilities for the train network will enable growth in rail patronage and extend the reach of the rail network. Short term priorities include park and ride expansion at Tawa, Porirua, Petone, Paraparaumu and Waikanae stations.  
  An ongoing programme of railway station renewal and development will ensure that station facilities increasingly contribute to a better overall journey experience for people using the rail network. Short term priorities include a third platform at Porirua and station improvements at Waterloo and Upper Hutt stations. |
| Future rail upgrades        |                        | Long term          | Once Rail Scenario 1 is complete, the preferred option is to proceed to Rail Scenario 2 (increasing supply), then Rail Scenario A (improving journey times), followed by Rail Scenario B (network extensions). However, a different order for these different scenarios may be appropriate depending on levels of demand and future patronage forecasts. |
| **Bus network**             | Wellington City bus network | Short to medium term | Implementing the outcomes of the Wellington City Bus Review will provide a simpler network with more frequent services available to more people, with less service duplication and fewer buses on the Golden Mile. This should lead to increased patronage and improved cost effectiveness. New routes are expected to operate from 2017. |
| Bus Rapid Transit (BRT)     |                        | Medium term        | Implementation of a BRT network for Wellington City will be facilitated by the implementation of priority measures and high quality infrastructure along a public transport priority spine through central Wellington City (from Wellington railway station to Newtown and to Kilbirnie). It will also involve vehicle improvements.  
  This will enable fast and reliable journey times for public transport users on core routes, particularly through the Golden Mile and to the southern and eastern suburbs, with the goal of these trips becoming increasingly competitive with the same journeys by car.  
  The BRT network will be progressively introduced through:  
  • The construction of dedicated bus lanes and priority measures, starting with the public transport priority spine  
  • The introduction of a new bus network for Wellington City bus services (see above)  
  • The rollout of a new fleet of bus vehicles that are modern, low emission, and high-capacity to meet future demand. |
| Signage, bus stops and interchanges |                        | Ongoing            | Implementation of a programme of renewal and development for network signage, bus stops and interchanges.  
  A medium term priority will be improving key interchange nodes (Wellington railway station, Newtown and Kilbirnie) associated with the new BRT system along the Wellington City public transport priority spine. |
<p>| Area based bus service reviews |                        | Ongoing            | Rolling bus service reviews across the region will be ongoing to ensure that networks and services respond to changing needs over time. |</p>
<table>
<thead>
<tr>
<th>Area</th>
<th>Priorities</th>
<th>Timing</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bus network</strong></td>
<td>Network Operating Framework</td>
<td>Ongoing</td>
<td>The application of a Network Operating Framework to local road networks in all regional and sub-regional centres will enable the role and priority of transport modes, including buses, within the urban road network to be assigned. This will help to clarify the role of different routes, and will also assist with the consideration of trade-offs where re-allocation of road space for bus priority lanes or facilities is required.</td>
</tr>
</tbody>
</table>
| **Fares and ticketing** | Integrated ticketing                           | Short to medium term | Implementation of integrated fares and ticketing to provide an integrated way to pay across the whole Metlink network, allowing travellers to use the same payment system to buy single or multiple trips, or a journey using a number services.  
A simplified fare structure and new fare products will encourage more frequent use of public transport.  
The system will provide better information about the journeys people take, allowing better planning to meet travellers’ actual needs. Network efficiency will be improved by better planning, faster boarding times, and the introduction of free transfers between services. |
| **Service procurement** | Implement the ‘Public Transport Operating Model’ (PTOM) | Short to medium term | Implementation of a new approach to procurement of services that make up the Metlink bus and rail network through performance-based partnering contracts.  
This is expected to create an environment where goals and objectives are aligned through collaborative planning, joint investment, performance incentives, and shared risks and rewards. |
8. STRATEGIC ROAD NETWORK

8.1 INTRODUCTION
The strategic road network forms the backbone of the region’s transport network. It comprises the state highways and some higher volume local roads. It serves an important role for both inter-regional long distance trips and short to medium distance trips within the region, and provides access and connectivity for people and goods to key regional destinations (such as Wellington CBD, CentrePort, the regional hospital and international airport) as well as links between key regional centres.

Investment in the strategic road network is just one element of the wider plan for improving the region’s transport network, and needs to be considered as part of an integrated planning and investment approach.

8.2 WELLINGTON’S STRATEGIC ROAD NETWORK
The strategic road network has been defined as those routes meeting the criteria for the top three tiers of the One Network Road Classification – ‘National High Volume Roads’, ‘National Roads’, and ‘Regional Roads’.

To be included in a particular category a road must meet the agreed criteria and thresholds which include a combination of:

- Movement of people and goods - vehicle flows, heavy commercial vehicles, buses, and active modes
- Economic and social functions - links to key destinations such as ports, airports, hospitals, top tourist attractions, or provides the key link to adjacent regions

National roads are those that make the largest contribution to the social and economic wellbeing of New Zealand by connecting major population centres, major ports or international airports and have high volumes of heavy commercial vehicles or general traffic.

To be considered a ‘National High Volume Road’ a road must meet one of the high volume criteria for typical daily traffic or heavy commercial vehicles.

Regional roads are those that make a major contribution to the social and economic wellbeing of a region and connect to regionally significant places, industries, ports or airports. They are also major connectors between regions and in urban areas may have substantial passenger transport movements.

What is the One Network Road Classification (ONRC)?
The ONRC involves categorising roads based on the primary function(s) they perform

The ONRC is a nationally consistent classification system for the state highway and local road network

It has been formally adopted by NZ Transport Agency for use in the development of the NLTP 2015-18

It helps inform decisions about the associated customer level of service that a particular category of road should offer.

The existing strategic road network comprises:

- SH1 from Wellington Airport to just north of Otaki
- SH2 from Ngauranga Interchange to north of Masterton
- SH58 between SH1 and SH2
- SH53 between Featherston and Martinborough
- Adelaide Road, in Wellington between the Basin Reserve and John Street (Wellington Hospital)
- Aotea Quay and Waterloo Quay, in Wellington between SH1 and Hinemoa Street (CentrePort)
- Petone Esplanade and Waione Street, in Lower Hutt between SH2 and Seaview Road

These strategic roads are shown on Figure 22. Also shown are some of the existing challenges and planned new roads that will form part of the future strategic road network.
Figure 22. Wellington Region Strategic Road Network

Key
- National high volume road
- National road
- Regional road
- Future road
- Future road
- Future state highway revocation

Existing challenges
- Community severance
- High crash risk
- Variable travel times
- No alternative route

Airports: Wellington

Port: Wellington

Hospital: Wellington
8.3 THE NEED FOR INVESTMENT

Managing the region’s transport issues (identified earlier in this plan) and achieving the broad outcomes envisaged, requires an integrated multimodal response. An important part of this overall approach is investment in improvements to the strategic road network – both in terms of infrastructure and operation.

The key areas which require future investment are set out below.

Sub-standard road design

Some sections of the strategic road network were not designed to accommodate the traffic flows they now carry and are no longer fit for purpose. At-grade, signal controlled intersections on some parts of the network (e.g. SH2 through the Hutt Valley and SH1 through Kapiti) can no longer safely accommodate the traffic demand. Some parts of network are undivided, have inadequate shoulders or poor road alignment and inconsistent road design.

These factors all increase the chances of road users being involved in a serious or fatal crash. This is illustrated by the large proportion of the strategic highway network rated as high or medium to high collective safety risk\(^1\) as shown in the section 12 ‘Road Safety’ of this plan.

Congestion and travel time variability

Roads which were designed for lower traffic volumes than those they carry operate inefficiently and create congestion issues. Key pinch points in the network that require vehicles to merge or involve conflict between different traffic movements can also significantly affect traffic flows.

Congestion on the strategic road network results in traffic delays and travel time variability during peak times on weekdays and on weekends and public holidays. While the long term trend in average congestion rates has been fairly consistent over time, severe congestion is occurring on some key sections of the network and is expected to continue due to future growth pressures. The morning peak period has consistently experienced the highest level of road congestion over recent years, and also has the highest levels of variability.

Congestion and journey time variability increases the cost of freight operations and delays commuters travelling to work by car or by bus, reducing the productivity of the region’s economy. Unreliable travel times also affect visitors travelling to the inter-island ferry or international airport. Unexpected delays may cause people to miss travel connections which have reputational as well as economic impacts for the commerce and tourism sectors.

Lack of alternative routes

In many parts of the Wellington region the strategic road network also provides the function of a local road because there are no viable alternatives for making local trips within a district.

For example:

- SH1 through Porirua (linking Porirua city centre with suburbs to the east and north)
- SH1 through Kapiti (linking Paekakariki, Paraparaumu and Waikanae and Otaki)
- SH2 through Wairarapa (linking Featherston, Greytown and Carterton)

This can place additional pressure on those parts of the network, and result in modal conflicts between local trips made by foot, bike or horseback and longer distance vehicle trips.

The Wellington region’s strategic road network also suffers from a limited number of route options between districts and key centres.

\(^1\) Annual average fatal and serious injury crashes per kilometre.
For example:

- SH2 between Ngauranga and Petone
- SH2 between Upper Hutt and Featherston
- SH2 between Masterton and destinations north of the region
- SH1 between Pukerua Bay and Raumati South
- SH1 between Waikanae and Levin
- SH53 between Featherston and Martinborough

This lack of route alternatives leaves the region vulnerable to disruption as a result of unplanned events such as a major traffic incident, natural hazard event or earthquake.

There are also limited connections between SH1 (Western Corridor) and SH2 (Hutt Corridor). The only strategic connections between these corridors are via Ngauranga (using SH1 and SH2) or via SH58, and there are constraints with both of these routes:

- SH2 between Ngauranga and Petone is susceptible to congestion. People travelling this route at peak times experience delays and unreliable travel times. This part of the network is also vulnerable to natural events such as storm surges, landslips and earthquakes.
- SH58 provides links for traffic between the Hutt Valley and SH1 (Porirua and to the north). However, it is located further north than the key employment and freight generating centres of Hutt City and Seaview and does not provide for efficient trips between these areas and centres in North Wellington/Porirua.

This lack of connectivity increases the cost of moving goods between these parts of the region, limits employment opportunities and economic activity and reduces the resilience of the transport system to unplanned events.

### 8.4 BENEFITS OF INVESTMENT

The benefits of investment in the strategic road network will be:

- support for regional economy growth and improved productivity
- improved journey time reliability, and freight efficiency
- reduced risk of death and serious injury
- significantly improved resilience and quicker recovery following an unplanned event.

### 8.5 STRATEGIC RESPONSE

The strategic response is to:

(a) Manage strategic roads to provide a level of service consistent with their role and function in the region’s road hierarchy, consistent with the One Network Road Classification.

(b) Develop new strategic roads to fill the identified strategic gaps in the transport network. The primary network gap is the lack of an effective east-west connection between Lower Hutt and north Wellington/Porirua.

(c) Develop improvements to existing strategic roads or new strategic roads to:

- Improve design standards and safety
- Provide additional capacity – where necessary to reduce severe congestion and travel time reliability, and taking into account impacts on the wider multimodal transport network
- Improve resilience and reduce the risk of disruption
- Provide a high level of service for pedestrians and cyclists
- Connect effectively with local roads but reduce any overlap with local road functions on the strategic road network itself
- Improve access to key destinations, including CentrePort, Wellington International Airport, the Wellington CBD, and the regional hospital.

(d) Maintain local roads to provide a level of service consistent with their role and function, including the role of local freight and tourism routes in supporting regional economic growth.

(e) Apply a Network Operating Framework to local road networks in all regional and sub-regional centres to enable the role and priority of modes within the different urban transport networks to be assigned. This will help to clarify the role of different routes and corridors, and will assist with the consideration of trade-offs where re-allocation of road space is required.
**8.6 KEY NETWORK PRIORITIES**

**Figure 23. The key network priorities for strategic roads are as follows:**

<table>
<thead>
<tr>
<th>Strategic Road</th>
<th>ONRC Priority</th>
<th>Regional Priority</th>
<th>Timeframe</th>
<th>Priority Focus</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| SH1            | National high volume | High            | Short to medium | • Reducing congestion (primary)  
• Faster and more reliable journeys (primary)  
• Effective and efficient freight network (primary)  
• Enhanced road safety (primary)  
• Increased resilience (primary) | The Wellington RoNS programme between Wellington Airport and Otaki is the current focus of the Government’s state highway funding for the Wellington region through the NLTP and will be central to delivering these outcomes.  
Along SH1 north of Tawa an alternative north-south strategic route will be constructed (Transmission Gully and the McKays to Peka Peka Expressway). This is expected to provide increased capacity, remove pinch points and will avoid conflicts with local urban areas. It will also contribute to significantly improving everyday transport network resilience and enable access to/from the region to be recovered much more quickly after a major natural event. Safety will be significantly improved through a range of factors including improved road alignment and design, median barriers and improved safety of intersections (e.g. through grade separation).  
South of Tawa freight access to CentrePort from the north is significantly impacted by traffic congestion between Ngauranga and Aotea during peak periods. The focus is on optimising capacity from the existing state highway corridor (e.g. through use of the shoulder to increase lane capacity and traffic management systems) to keep traffic moving smoothly during peak times. However, to significantly improve access to CentrePort additional southbound capacity through this section is required and options will be investigated as part of the Wellington RoNS programme.  
South of CentrePort the focus is to provide a strategic through route for trips to the Wellington International Airport and the eastern suburbs, and a ‘ring route’ around the city centre. Improvements are already planned for this part of the road network that focus on addressing capacity issues and pinch points through the city, which are currently preventing SH1 from effectively performing this role. These include optimising the SH1 Inner City Bypass, putting SH1 Buckle Street underground, addressing conflicting transport demands at the Basin Reserve, widening the Terrace Tunnel and providing additional capacity through the Mt Victoria Tunnel, Ruahine Street and Wellington Road. This will also have safety and local access resilience benefits, as well as enabling improved access and priority for public transport. |
<table>
<thead>
<tr>
<th>Strategic Road</th>
<th>ONRC Priority</th>
<th>Regional Priority</th>
<th>Timeframe</th>
<th>Priority Focus</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SH2 Ngauranga to Melling</strong></td>
<td>National</td>
<td>High</td>
<td>Medium</td>
<td>• Reducing congestion (primary)</td>
<td>Between Ngauranga and Petone the options for addressing capacity constraints are limited, and the preferred approach is to:</td>
</tr>
<tr>
<td></td>
<td>high volume</td>
<td></td>
<td></td>
<td>• Faster and more reliable journeys (primary)</td>
<td>• Develop a new link road between SH2 at Petone and SH1 at Grenada to remove a percentage of trips from SH2, reducing congestion, as well as providing an alternative and more resilient route option.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Enhanced road safety (primary)</td>
<td>• Enhance the level of service for public transport and active modes along this corridor, to provide additional capacity and reduce demand along the strategic road corridor. This will include completing a current gap in the strategic cycling and walking network through the provision of a new cycling/walking route alongside the rail corridor. This would also provide significant resilience benefits to the rail network and key lifelines (critical services, infrastructure, and utilities such as transport routes, gas, electricity, water, wastewater, fuel supply and telecommunications).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Effective and efficient freight network (primary)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Increased resilience (primary)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Reducing congestion (primary)</td>
<td>Along the remainder of this section of SH2 through to Melling, the priority is to improve intersections to achieve greater efficiency and safety. This should result in all intersections being grade-separated (i.e. a bridge/flyover type interchange).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Faster and more reliable journeys (primary)</td>
<td>Improvements are already planned along this part of the corridor, including a new grade separated interchange at Petone as part of the Petone to Grenada Link Road package, short term improvements at Melling intersection to improve flows and safety by reconfiguring lane layouts and restricting some turning movements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Enhanced road safety (primary)</td>
<td>The focus is on improving existing intersections to ensure that they can safely accommodate the traffic carried along this route. This should include grade-separating the SH2/SH58 intersection, and improving high risk intersections between SH2/SH58 and Upper Hutt and those north of Upper Hutt that have seen increased use as a result of new subdivision and development. Investment should also focus on measures to reduce the risk of head-on crashes north of Upper Hutt where the traffic travels at high speeds along non-divided sections of SH2.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Medium to long</td>
<td>• Faster and more reliable journeys (secondary)</td>
<td>A secondary priority is ensuring reliable journey times. Congestion and travel time delays occur at key pinch points in the network at peak times, affecting commuters and freight. This part of the network also forms a section of a HPMV freight route.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Effective and efficient freight network (secondary)</td>
<td>Improving the safety of SH58 is an important regional priority. This should include improvements to road geometry, design and intersections. Upon completion of the Transmission Gully (TG) motorway, traffic volumes on the section of SH58 between TG motorway and SH2 are expected to increase – the design of any safety upgrades need to take this into account.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Short to medium</td>
<td>• Enhanced road safety (primary)</td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Strategic Road</th>
<th>ONRC</th>
<th>Regional Priority</th>
<th>Timeframe</th>
<th>Priority Focus</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| Petone to Grenada link road | National (proposed) | High | Medium | • Strategic connections (primary)  
• Increased resilience (primary)  
• Effective and efficient freight network (secondary)  
• Faster and more reliable journeys (secondary)  
• Reduced congestion (secondary) | A new strategic road link is planned to improve the connectivity between SH2/Lower Hutt and SH1/ north Wellington. This is a high priority for the region as it will provide an alternative route between corridors when SH2 or SH58 are blocked or closed, reduce congestion along the constrained section of SH2 between Petone and Ngauranga and along SH1 Ngauranga Gorge, provide improved freight connectivity within the region, and enable improved access to employment opportunities, markets and a major industrial hub at Seaview. |
| SH2 north of Upper Hutt to north of Masterton | Regional | Medium | Ongoing | • Enhanced road safety (primary)  
• Effective and efficient freight network (secondary)  
• Reducing transport and land use conflicts (secondary) | This is a particularly hazardous section of road, with a high collective safety risk. SH2 Rimutaka Hill road traverses mountainous terrain, resulting in a narrow road cross section, unforgiving roadside environment and susceptibility to slips. The horizontal geometry makes the road difficult to negotiate at speed and difficult for larger heavy commercial vehicles to pass each other in opposite directions. SH2 Rimutaka Hill road forms part of an identified HPMV freight route and is the only road link between Wairarapa and the rest of the region. North of Featherston the focus is on improving the safety of the road network at identified high risk locations. Existing freight efficiency and community severance issues associated with heavy commercial vehicles travelling through the centre of Wairarapa townships will be exacerbated by expected freight growth and longer term solutions such as investigation of heavy vehicle bypasses may also need to be considered. |
| SH53 Featherston to Martinborough | Regional | Medium | Medium to long | • Enhanced road safety (primary)  
• Increased resilience (secondary) | While SH53 carries low traffic volumes, it provides a key regional connection between the town of Martinborough and SH2. Addressing any identified safety issues along this high speed, undivided route will be important to reduce serious and fatal crashes. Replacing the Waihenga Bridge over the Ruamahanga River will improve the resilience of the network. Major flood events affecting this river can close the bridge, severing access via SH53 to Martinborough which has limited alternative routes. Seismic strengthening of bridges along this route and alternative local road access routes may also be important for resilience. |
<table>
<thead>
<tr>
<th>Strategic Road</th>
<th>ONRC</th>
<th>Regional Priority</th>
<th>Timeframe</th>
<th>Priority Focus</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| **Petone Esplanade and Cross-Valley link**                                   | Regional | Medium | Short term (Petone Esplanade) Medium to long (Cross Valley Link) | • Increased capacity (primary)  
• Faster and more reliable journeys (primary)  
• Effective and efficient freight network (primary)  
• Reducing transport and land use conflicts (primary)  
• Enhanced road safety (secondary)  
• Increased resilience (secondary) | In the shorter term, the focus for investment will be on improving traffic flows along Petone foreshore. Longer term, the objective is to relocate traffic from the Petone Esplanade to a new inland Cross Valley Link which will improve the effectiveness of access to Seaview, address local access and amenity issues, and provide a more resilient route. Petone Esplanade is a local road that meets the volume and functional criteria for a regionally significant route. This route provides an important strategic link between the major industrial hub at Seaview and SH2. It is affected by significant congestion at peak times, causing delays to both freight and commuters. The location of this strategic link along the Petone foreshore has associated community severance and amenity issues. It is also very vulnerable to natural hazards and seismic events. The proposed Cross Valley Link will connect directly to the proposed Petone to Grenada Link Road. |
| **Aotea Quay and Adelaide Road**                                             | Regional | High | Short to medium | • Increased capacity – multimodal (primary)  
• Faster and more reliable journeys (primary)  
• Effective and efficient freight network (primary)  
• Reducing congestion (secondary) | The priority for these routes will be improvements to provide effective and reliable access to important regional destinations of CentrePort and Wellington Hospital. Improvements will also need to reflect the role of these routes as urban roads within the local road hierarchy including provision of safe and connected facilities for pedestrians and cyclists, and priority for public transport services. |
9. FREIGHT NETWORK

9.1 INTRODUCTION
Freight includes anything transported as part of a commercial arrangement — from a small couriered document carried by cycle messenger to the movement of bulk goods like logs and containers.

The reliable, timely and safe movement of freight to and through the region is critical to support the region’s economic growth and productivity.

9.2 WELLINGTON’S FREIGHT NETWORK
The region’s freight network consists of roads, railways and port infrastructure. The two primary freight modes in the Wellington region are road and rail.

Road-based freight is comparatively flexible, there are fewer route constraints and goods can be moved between many origins and many destinations. Road-based freight is generally the most cost effective option over short to medium distances.

Rail is primarily used to move bulk commodities where timing is less critical and trip distances are longer. Rail predominantly moves:

- bulk and containerised goods to and from ports and key freight producers
- long distance containerised goods between major cities
- shorter distance freight shuttles between inland ports and wharves

Other parts of the freight network, outside the scope of this plan, include air freight and sea freight. The land transport network play an important role in providing access to these other freight modes.

Air freight plays a relatively minor role in this region but may increase as a result of planned investment by Wellington International Airport. From the Wellington port, freight also continues onwards by sea.

Domestic sea freight can fit into three different categories:

- Inter-island ferry
- Coastal shipping
- International trans-shipments

Ferries provide a connection for road and rail freight between Wellington and Picton with services running throughout the day. Coastal shipping carries domestic freight on routes between multiple New Zealand ports. Trans-shipments carry international-bound freight to an intermediate New Zealand port before being loaded onto an international container vessel.

Figure 24 shows the regionally strategic freight routes and core feeder routes. The plan also shows the main freight interchanges, network constraints and locations where the movement of freight affects local communities.

Wellington acts as a freight hub within New Zealand, serving the movement of road and rail freight between the two islands. KiwiRail has developed the Wellington Freight Terminal close to the Interislander ferry terminal, which functions as an intermodal (rail, road, ferry) freight transfer hub.

Seaview is important nationally for the distribution of fuel oil. Approximately 80% of fuel used in New Zealand is imported and refined at Marsden Point, in the Northland region. The remaining 20% of fuel used in the country is imported through the major terminals of Mt Maunganui, Wellington (primarily Seaview) and Canterbury. Each year 340,000 tonnes of fuel is barged to Wellington from Marsden Point and 374,000 tonnes is imported from overseas. Refined fuel is then distributed from Wellington by road within the region and to other regions as far away as Hawke’s Bay, Nelson and Canterbury.

Freight traffic volumes on the strategic road network vary across the region. Heavy vehicle flows are greatest in the southern parts of the region. Over 2,000 heavy vehicle trips per day occur on:

- SH1 between Paremata and the Terrace Tunnel
- SH2 between Haywards the Ngauranga Interchange

SH1 generally carries a greater proportion of inter-regional freight trips both to the north and to the south. SH2 provides access to the industrial, warehousing and distribution areas in the Hutt Valley.

The most significant road freight movement in the region occurs between SH2 Petone and the port, and between SH1 north Wellington/Porirua and the port. Heavy vehicle traffic flows between SH2 and Seaview along the Petone Esplanade are also high. This core ‘freight triangle’ is shown on the map in Figure 24. These sections of the strategic road network also provide the key road connection into Wellington City for other types of trips and are affected by heavy congestion levels at peak times as a result of commuter traffic.
Figure 24. Wellington Region Freight Network

Key
- Strategic freight route
- Freight feeder routes
- Railway line
- Future road
- Significant intra-regional freight movement area

Existing challenges
- Community severance
- High crash risk
- Variable travel times
- No alternative route
- Rail capacity constraint

Wellington City
Basin Reserve
Bluebridge ferry (road)
Wellington freight terminal
CentrePort
Interisland ferry (rail and road)

Inter-regional freight link
Strategic freight route
Freight feeder routes
Railway line
Future road
Significant intra-regional freight movement area
Community severance
High crash risk
Variable travel times
No alternative route
Rail capacity constraint
Airport
Port
Train station
Freight interchange

Wellington
Seaview
Porirua
Foppa-kara
Pukaru-i-Ray
Waikanae
Paekakariki
Lower Hutt
Upper Hutt
Martinborough
Featherston
Greytown
Otaki
Paraparaumu
Featherston
Masterton
Carterton
Paraparaumu
Wellington
Wellington Region Freight Network

Future road
Significant intra-regional freight movement area
Strategic freight route
Freight feeder routes
Railway line
Future road
Significant intra-regional freight movement area
Community severance
High crash risk
Variable travel times
No alternative route
Rail capacity constraint
Airport
Port
Train station
Freight interchange

Wellington
Seaview
Porirua
Foppa-kara
Pukaru-i-Ray
Waikanae
Paekakariki
Lower Hutt
Upper Hutt
Martinborough
Featherston
Greytown
Otaki
Paraparaumu
Featherston
Masterton
Carterton
Paraparaumu
Wellington
Wellington Region Freight Network

Future road
Significant intra-regional freight movement area
Strategic freight route
Freight feeder routes
Railway line
Future road
Significant intra-regional freight movement area
Community severance
High crash risk
Variable travel times
No alternative route
Rail capacity constraint
Airport
Port
Train station
Freight interchange
Freight demand

In 2012:¹

- The amount of freight transported throughout New Zealand had grown slowly over the 7 year period 2008 to 2014, with a slight decrease in 2009 that can be directly attributed to the global financial crisis.

- 56% (6.37 million tonnes) of the freight tonnage was internal and did not enter or leave the Wellington region.

- The Wellington region was a net importer of freight bringing in 1.51 million tonnes more freight than was exported (2.04 million tonnes).

- Road transport was the dominant mode of transport accounting for around 70% of freight tonne kilometres nationally.

- Rail freight accounted for around 16% of freight nationally in terms of tonne kilometres. This was an increase of 1% since 2006/07.²

- Coastal shipping accounted for 14% of freight nationally in terms of tonne kilometres. This mode share was significantly less in volume (tonnage) than road and rail nationally (2% of total freight task).

Figure x shows the 2012 mode share of freight task (total tonnage) for the Wellington region.

Figure 25. 2012 Freight Mode Share, Wellington Region³

<table>
<thead>
<tr>
<th>Mode</th>
<th>From</th>
<th>To</th>
<th>Within</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road</td>
<td>92.6%</td>
<td>74.4%</td>
<td>97.8%</td>
</tr>
<tr>
<td>Rail</td>
<td>5.4%</td>
<td>13.2%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Coastal Shipping</td>
<td>1.5%</td>
<td>12.4%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

9.3 THE NEED FOR INVESTMENT

The Wellington region’s economy and population is expected to continue growing at a modest rate, driving an increasing demand for the movement of freight to, from and within the region. This poses both challenges and opportunities associated with accommodating this growth.

Projected freight growth (2042):

- New Zealand’s freight task (tonnage) is projected to increase by about 58% over the next 30 years to 2042, with freight volumes in the Auckland and Canterbury regions projected to grow by 78% and 73% respectively.

- Freight tonnage to Wellington is expected to increase by around 75%, from about 8 million tonnes to 14 million tonnes by 2042.⁴

- Although both imports and exports are expected to grow by 2042, it is expected that the Wellington region will continue to be a net importer.

- In general the modal shares are likely to be much the same as in 2012. Coastal shipping is expected to see the greatest increase in tonnage, although it will continue to carry only a small proportion (2%) of the freight task.

Network capacity

Goods moved by road are affected by the same challenges identified for the strategic roads network. Traffic congestion at peak times leads to travel time variability which in turn affects the efficiency of just-in-time freight operations and increases costs. Congestion of particular relevance to road-based freight movements is on SH1 south of Tawa, SH2 south of Petone, and between SH2 and Seaview.

Infrastructure constraints

Limited connectivity between SH1 and SH2 affects the efficiency of intra-regional freight movements between regional centres as well as the options available for longer distance inter-regional freight movements. This will improve when the Transmission Gully Motorway and Petone to Grenada Road are operational.

In some locations physical constraints such as topography and road geometry affect the ease of freight access and journey times. For example, road freight travelling between Wairarapa and CentrePort in Wellington City must use the Rimutaka Hill road which is steep, narrow and winding. There are some points along this route where it is not possible for two heavy vehicles travelling in opposite directions to pass each other comfortably. This has safety implications for those vehicles and other general traffic.

In some parts of the regional rail network, freight must compete for track time with commuter services. Where rail capacity is limited, commuter services are prioritised ahead of rail freight. Sections of single track, such as the north-south junction between Pukerua Bay and Paekakariki on the NIMT railway line and between Trentham and Upper Hutt on the Wairarapa Line, limit the times when rail freight may be moved and reduce the freight capacity of these parts of the rail network.

¹ Ministry of Transport, National Freight Demand Study March 2014
² Ministry of Transport, National Freight Demand Study March 2014, Table 5.1, page 203
³ Ministry of Transport, National Freight Demand Study March 2014, extracted from Tables 4.4 - 4.7
Access to CentrePort and the ferry terminals
Access to CentrePort and the Interislander ferry terminal is currently constrained. At peak times road-based freight accessing the port also becomes caught up in traffic congestion on SH1, Aotea Quay and Waterloo Quay. This congestion is primarily associated with the volume of motorists commuting to and from Wellington CBD, and causes unreliable travel times for freight. Rail freight is similarly constrained as frequent rail commuter services are prioritised ahead of freight movements. Increasing congestion will restrict the port’s ability to grow. The level crossing on Aotea Quay also creates a conflict resulting in delays for road-based freight travelling to CentrePort and the Strait Shipping ferry terminal.

Ferry capacity
The main domestic rail-based containerised freight movement is between Auckland and Christchurch. All rail freight moved between these destinations moves between the North and South Islands by ferry. Demand for this movement is expected to grow considerably in future. The Interislander and Strait Shipping ferries also carry road-based freight. While there are around 80 truck exchanges with each ferry voyage, the Interislander terminal has limited space for trucks to park (23 spaces total). Greater capacity at the ferry terminals will be needed to support the growing freight business.

Port capacity
Storage capacity at CentrePort is constrained, particularly given its location adjacent to the Wellington City CBD. Growing freight demand and a possible move to larger ships is likely to require more efficient use of existing CentrePort land and possible development of offsite freight storage points or inland hubs.

Access to Seaview/Gracefield
Plans to increase the development intensity of industrial uses at Seaview / Gracefield are constrained by the capacity of local road links to SH2. The high levels of congestion along the Petone Esplanade create reliability issues for freight. The movement of heavy commercial vehicles along the Petone Esplanade also affects the amenity of the foreshore recreational area and limits the opportunity to maximise the recreational and development potential of this area.

Airport capacity and access
Wellington International Airport currently handles a low volume of freight and, whilst expected to grow, it will continue to be a relatively minor part of the overall freight task. However, the time-critical nature of airfreighted goods means that effective and reliable road access to the airport for freight is important. The Wellington Airport Masterplan identifies a series of infrastructure improvements at the airport to increase airfreight capacity including a possible future extension of the runway. These improvements need to be coordinated with improvements to the state highway around the airport, part of the Wellington RoNS project. The introduction of regular domestic flights to Kapiti Airport provides an opportunity for freight to come into the region via this airport as well.

Impacts on communities and the environment
Freight movements can have a range of impacts on communities including contributing to congestion, noise, vibration, air pollution, and amenity. These impacts are accentuated where key freight routes travel through urban centres or residential areas. Heavy commercial vehicles are also perceived as creating safety hazards for other road users including pedestrians and cyclists. Concern about environmental or safety impacts relates primarily to road-based freight. However, where railways pass close to residential dwellings they also have the potential to create noise and vibration disturbance.

Limited information about freight
Several recent studies have been conducted on the movement of freight throughout New Zealand. These include the Ministry of Transport’s National Freight Demand Study 2014, NZ Transport Agency’s Central New Zealand Freight Story and the freight matrix upgrade for GWRC’s Wellington Transport Strategic Model. Information is also available from the HPMV route studies and sea freight import/export monitoring through the Ministry of Transport’s online Freight Information Gathering System. However, information gaps remain around the use of local roads for freight, the movement of light commercial vehicles, and the land use and policy mechanisms that support efficient freight supply chains.

9.4 BENEFITS OF INVESTMENT
The benefits of investment in the transport network which focuses on improving freight efficiency and reducing the impact of freight will be:

- support for regional economic growth and improved productivity
- reducing the cost of doing business and improving the attractiveness of the region for new businesses
- building Wellington’s role as a freight hub given its central location within New Zealand
- support for liveable communities and reduced environmental impacts

1 http://www.wellingtonairport.co.nz/corporate/2030-masterplan/
2 http://www.nzta.govt.nz/about/newsletters/keeping-connected/3288/news.html
3 http://www.transport.govt.nz/sea/figs/
9.5 STRATEGIC RESPONSE
The strategic response is to:

a) Improve the strategic road network

b) Improve access to key freight hubs and freight infrastructure

c) Provide for increased use of HPMVs

d) Remove rail freight constraints

e) Support the development of inland port facilities

f) Reduce the impact of freight movement on communities and the environment

g) Encourage industry collaboration to improve freight efficiency

h) Address freight information gaps

9.6 KEY NETWORK PRIORITIES

- **Figure 26. The key network priorities for freight are as follows:**

<table>
<thead>
<tr>
<th>Priority area</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Improve the strategic road network</strong></td>
<td>The Strategic Road Network chapter of this plan outlines the planned improvements to the road network that affect road freight. From a freight perspective, the priority is improvements that will address severe traffic congestion and journey time reliability on the strategic network on SH1 south of Tawa and SH2 south of Petone, where the highest levels of congestion and highest volume of heavy commercial vehicle movements occur. A new link between SH2 and SH1 (Petone to Grenada) will provide more direct connections for freight and remove some traffic from SH2 south of Petone. Addressing congestion and journey times in the above areas will benefit both shorter trips between centres and longer trips to/from Wairarapa, Kapiti or other regions.</td>
</tr>
<tr>
<td><strong>Improve access to key freight infrastructure</strong></td>
<td><strong>Freight access to CentrePort</strong>, the Interislander ferry terminal, and Wellington freight terminal in Wellington City CBD is crucial as these form part of a crucial ‘economic gateway’ for the region and a major freight hub for freight movements between the two islands and for coastal shipping (domestic and international). However the current port area access is sub-optimal and the transport network at this location is showing multiple signs of stress. In relation to freight, the key problems in this area are: the operational conflicts between road and rail along Aotea Quay; poor connectivity between SH1 and the Interislander ferry terminal; poor quality of the Hutt Road bridge and Aotea Quay off-ramp; and minimal stacking capacity for vehicles using the Interislander services. Progressing solutions to address these issues is a regional and national priority. The impact of poor performing port access could potentially impact on inter-regional freight attractiveness and significantly constrain regional economic growth. <strong>Freight access to Seaview</strong> is also very important. Seaview is a significant industrial hub for the region, has an important national role in the distribution of fuel oil. Addressing significant congestion issues along Petone Esplanade and along SH2 between Petone and Ngauranga are a regional priority.</td>
</tr>
<tr>
<td><strong>Provide for increased use of HPMVs</strong></td>
<td>HPMVs are vehicles that carry greater loads and/or are longer than standard heavy commercial vehicles, allowing more goods to be carried by fewer vehicles. This will increase productivity and minimise the environmental impact of road freight operations. All of the state highways in the Wellington region are suitable for HPMVs, however most freight trips start or end on local roads, connecting freight generators or destinations with the strategic road network. Measures to accommodate HPMVs on the main local road feeder routes have been identified although some improvements are yet to be implemented. The full potential of HPMVs will not be realised until infrastructure constraints on local routes are removed. In the short term, the priority focus will be on the local feeder routes identified in Figure 24 of this plan.</td>
</tr>
<tr>
<td>Priority area</td>
<td>Explanation</td>
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<td>--------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Remove rail freight constraints</td>
<td>Rail infrastructure improvements that support rail freight are generally funded and implemented by KiwiRail. The Wellington Regional Rail Plan identifies infrastructure improvements as part of its future development pathway that will have benefits for both passenger rail and rail freight to address current rail network constraints.</td>
</tr>
<tr>
<td></td>
<td>• Double tracking from Trentham to Upper Hutt is identified in ‘Rail Scenario 1’, and is signalled to be addressed in the medium term.</td>
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<tr>
<td></td>
<td>• Addressing the single track section between Pukerua Bay and Paekakariki (known as North/South Junction Stage 2-3) involves removing one tunnel and building a bridge around the others and is identified in ‘Rail Scenario A’ to be addressed in the longer term.</td>
</tr>
<tr>
<td>Support the development of inland port facilities</td>
<td>The main opportunity within the region for an inland port is the continued development of a log transfer and storage site at Waingawu just south-west of Masterton. This has significant potential given that around 80% of logs arriving at CentrePort come from Wairarapa.</td>
</tr>
<tr>
<td></td>
<td>Increased use of this inland port will assist with relieving pressure on CentrePort operations to some extent, as well as reducing the number of heavy vehicles using the strategic road network (SH2 Rimutaka Hill road in particular). Ensuring safe and effective access to this site from both state highways and local roads will be crucial to support its continued development.</td>
</tr>
<tr>
<td>Reduce the impact of freight movement on</td>
<td>Reducing the impact of freight on local communities and the environment, while still maintaining or enhancing freight effectiveness, will involve the following:</td>
</tr>
<tr>
<td>communities and the environment</td>
<td>• Development of alternative routes, ring routes or bypasses for strategic roads carrying heavy commercial vehicles to minimise the occurrence of heavy freight vehicles passing through the centre of towns/cities or residential areas. This is a particular issue in Kapiti and Wairarapa.</td>
</tr>
<tr>
<td></td>
<td>• Supporting more freight being moved by rail where this is viable.</td>
</tr>
<tr>
<td></td>
<td>Modernisation of the heavy commercial vehicle fleet is also likely to reduce the impact of freight on communities and the environment in relation to noise, emissions and safety.</td>
</tr>
<tr>
<td>Encourage industry collaboration to improve</td>
<td>Wider opportunities to improve freight efficiency (in addition to network development measures) - should be investigated. For example, reducing ‘empty running’ to improve efficiency. The import-export imbalance in Wellington and the specialised containers used to transfer fuel and logs could limit efficiency gains. Benefits in this area are usually achieved through industry collaboration and as a result of changing logistics practices.</td>
</tr>
<tr>
<td>freight efficiency</td>
<td></td>
</tr>
<tr>
<td>Address freight information gaps</td>
<td>Addressing information gaps will allow better planning and integration of freight movements as part of regional and local transport planning. This will enable the freight benefits associated with particular projects to be more clearly identified as well as provide valuable information for measuring against strategic freight outcomes. Greater awareness of the freight sector will also contribute to several other key network priorities including improvements to the strategic road network, roll-out of HPMVs, development of inland port facilities, reducing the impact of freight movement on communities and the environment and encouraging industry collaboration.</td>
</tr>
</tbody>
</table>
10. WALKING NETWORK

10.1 INTRODUCTION

A safe, attractive, integrated and well-connected walking network is a key component of an efficient, effective and safe transport system. This network plan outlines the context for walking in the region, describes the main challenges and issues facing walking as a mode of transport, the need for and benefits of investment, and the strategic response and priority areas for improving the walking network.

Investment in the walking network is just one element of the wider plan for improving the region’s transport network, and needs to be considered as part of an integrated planning and investment approach.

10.2 WALKING IN THE WELLINGTON REGION

A walking network consists of anything from footpaths in urban areas to separated walkway facilities parallel to strategic roads. It includes crossing facilities across roads, rivers and rail corridors. Walking forms part of almost every trip, whether it is to/from a carpark or bus stop/train station or as a primary mode.

This plan focuses on walking for transport purposes, rather than recreational purposes. However, there is a significant crossover, and recreational walking tracks often form part of the walking network for utility trips.

Data from the New Zealand 2013 census show that 11.7% of journey to work trips\(^1\) across the region were on foot, an increase from 9.8% in 2001. The chart below shows the journey to work mode share over three census years for the region as well as by district.

Wellington City has the highest walking/jogging mode share at 20% - it also has the highest population and employment density within the region with a high proportion of people that live within walking distance of work. This highlights the importance of where people live and work as an influence on mode choice.

The Ministry of Transport’s Household Travel Survey records the active mode share of total trip legs by residents of main urban areas in the Wellington region. Active mode share

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1 Excludes ‘did not work’ and ‘worked from home’ categories

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Figure 27. Walking / Jogging Travel to Work Mode Share from Census Data
of all trips within urban areas in the region was 27% in the 2008-12 survey period; an increase from 23% in the 2003-07 period. The majority of active mode trips in the region are walking trips.

People generally choose to travel on foot for shorter journeys, often less than 2km in length. The percentage of trips less than 2km carried out on foot has gradually increased from 41% in 2004-08 to 48% in the 2008-12 Household Travel Survey period.

The most recent Household Travel Survey found that 31% of children aged 5 – 12 and 35% of those aged 13 – 17 walked to school in Wellington region. Nationally the proportion of children walking to school has gradually increased from 2008-12.

The average number of pedestrians walking into the Wellington CBD cordon is also increasing. In the 2013 morning peak there was an average of 14,754 pedestrians crossing the CBD cordon. This was a 12% increase from the numbers recorded in 2002.

10.3 THE NEED FOR INVESTMENT

The following section outlines the main challenges and issues in relation to walking in the region.

Lack of adequate walking facilities between key destinations

In some locations the existing environment makes walking unattractive or difficult. There are also locations where the design and/or maintenance of existing pedestrian facilities provide a poor level of service, making walking feel uncomfortable and/or unsafe.

When this occurs between communities or between significant destinations, this can significantly limit the number of walking trips that would otherwise be generated. Key strategic locations in the region where suppressed walking demand suggests the need for an improved pedestrian level of service have been identified and are shown on Figure 28. These are:

- Along SH1 between Hataitai and the Basin Reserve, Wellington – poor level of service for pedestrians through the Mt Victoria Tunnel
- Along SH2 between Petone to Ngauranga – poor pedestrian level of service limiting the number of walking trips between the Hutt Valley and Wellington
- Along Middleton Road between Tawa and Churton Park - the absence of pedestrian infrastructure limits walking trips between these neighbouring suburbs

A low level of demand for walking trips in some locations means that the provision of dedicated pedestrian facilities cannot always be justified alongside strategic roads, particularly in rural locations. This may limit the use of walking for trips in these areas as people may not feel safe or comfortable walking along the road shoulder or the verge. Along some sections of the rural road network, no shoulder/verge is available and many of the bridges carrying strategic roads over rivers or railways make little or no provision for pedestrians.

Lack of safe and direct pedestrian crossing points

The lack of crossing points for pedestrians across strategic roads is also a significant challenge that can lead to community severance as a result of reduced pedestrian connectivity within and between communities. This is a particular problem where strategic roads pass through urban centres where pedestrian demand is greatest.

Key strategic locations in the region where a lack of pedestrian crossing facilities is leading to severance and reduced pedestrian connectivity have been identified and are shown in Figure 28. These are:

- SH1 Cobham Drive at Evans Bay, Wellington – between Kilbirnie and Miramar
- SH1 Ruahine Street at Goa Street and/or Wellington Road, Wellington – between Hataitai and Mt Victoria (Hataitai Park)
- Along Aotea Quay between the Interisland Ferry Terminal and CentrePort – the lack of a pedestrian crossing at its northern end also creates a barrier to crossing this road
- SH1 at Waikanae – between the town centre and the railway station
- SH2 at Comish Street, Lower Hutt – between Petone and Belmont Regional Park
- SH2 at Dowse Interchange, Lower Hutt – between Lower Hutt and Maungaraki
- SH58 Haywards Hill Road, Lower Hutt – between Manor Park and Belmont Regional Park.

Future strategic roads including the SH1 Kapiti Expressway and Transmission Gully motorway have the potential to create new severance issues if pedestrian links over/under the new road are not appropriately designed as part of the design and construction stages.

Railway lines and rivers can also create a major physical barrier affecting the convenience of walking. While pedestrians may attempt to cross railway lines without a formal facility, this is discouraged for safety reasons. Rivers present a barrier forcing people to walk for longer or choose a different form of transport. Strategically significant locations where railway lines or rivers create a barrier to walking are shown in Figure 28 and listed below:

- Hutt Valley Railway Line, Lower Hutt – between Naenae and Wingate
- Hutt River at Manor Park, Lower Hutt
- North Island Main Trunk Line, Paraparaumu – between Tutukieki Street carpark and Buckley Grove linking Paraparaumu Domain and Lindale
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Figure 28. Wellington Region Pedestrian Network
Poor walkability within urban centres and town centres

‘Walkability’ is a measure of how friendly an area is to walking – it includes factors such as footpath quality and width, connectivity, level of pedestrian priority, street furniture, safety, lighting, and shelter. In our key urban centres walkability is often compromised by the competing demands of other transport modes and other infrastructure in the street environment.

Adequate footpath widths to accommodate high volumes of pedestrians can be difficult in locations such as Wellington City CBD or Lower Hutt city centre where the road corridor is constrained and competing demands for traffic lanes, bus lanes, cycle lanes and parking must all be considered.

Long wait times at signalised crossings as a result of high traffic volumes can result in pedestrians crossing against the signals or between formal crossing points, with associated safety risks. Large urban blocks sometimes create severance issues and reduced pedestrian connectivity within city centres.

In rural townships, such as through Wairarapa, the amenity and connectivity for pedestrians is negatively affected by the joint role of the state highway as both the main shopping street and the strategic through route for traffic, including heavy freight vehicles.

Land use development patterns that constrains walking opportunities

Distance is a key factor influencing whether a trip is walkable. Most walking trips are less than 2km. For longer distances, issues such as travel time, fitness and weather conditions start to become barriers. Compact urban form, mixed use developments, and residential development close to local centres, public transport and employment are all land use patterns that support walking as a viable travel option.

While some parts of the region’s urban form are relatively compact with good walking access to bus or rail services, other areas have been developed in locations that have poor accessibility and with poor subdivision layouts, so that walking opportunities are constrained.

Pedestrian safety issues

The perception of pedestrian safety in the region is very good (72% of respondents to the 2012 GWRC transport perceptions survey felt safe when walking around the Wellington region). The relative risk of pedestrians being injured is low nationally and within the region, compared to other transport modes.

Therefore, while safety is unlikely to be a barrier preventing the uptake of walking, pedestrians are very vulnerable when they are involved in a crash with a motor vehicle, and pedestrian safety is an important issue that needs to be addressed.

Over the last 15 years the number of fatal and serious injury pedestrian casualties in the region has fluctuated, but with minor injury casualties generally decreasing.

Pedestrian casualties tend to be clustered in urban centres, predominantly on local roads. The largest number of pedestrian casualties occurs in Wellington City. This reflects locations where high levels of pedestrian activity occurs and often conflicts with high volumes of vehicle traffic on busy urban streets.

Pedestrians in Wellington City face a higher personal risk level of death and serious injury compared to pedestrians in other parts of the country. Wellington City is ranked as the third highest city/district in New Zealand for pedestrian risk in the 2014 Communities at Risk Register.

Safety is a commonly identified concern for parents participating in surveys as part of school travel plans, in relation to children walking to school. In addition, school age children are over-represented in the region’s road safety casualty statistics.

10.4 BENEFITS OF INVESTMENT

Walking is the most efficient mode choice for short trips from a transport network perspective. It is very energy efficient, involves no harmful emissions, is relatively safe, requires no parking space, and requires a relatively small infrastructure footprint. It is also an affordable and healthy choice for individuals. Investment in a good walking network will also contribute significantly to the liveability and attractiveness of a city and region for residents and visitors.

The key benefits of investment in the walking network will be:

- Improved transport choices and resilience
- Improved road safety
- Reduced congestion
- Reduced transport energy use and emissions
- Transport cost savings
- Healthier communities
- Improved liveability
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- Improved road safety
- Reduced congestion
- Reduced transport energy use and emissions
- Transport cost savings
- Healthier communities
- Improved liveability

**10.5 STRATEGIC RESPONSE**

The strategic response is to:

a) Develop improvements to the existing pedestrian networks to provide a level of service consistent with their role and level of use and to remove barriers to pedestrian safety and connectivity

b) Construct new pedestrian facilities or solutions to address identified gaps in the walking network

c) Ensure that land use planning documents encourage urban form and land use patterns that support walking as a feasible option and require new land use development to provide safe, attractive and connected facilities for walking

d) Support an increase in walking trips through promotion and education
10.6 KEY NETWORK PRIORITIES

Figure 30. The key network priorities for investment in the walking network are as follows:

<table>
<thead>
<tr>
<th>Priority area</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Network Development</strong></td>
<td><strong>Who develops the network?</strong></td>
</tr>
<tr>
<td>Improving the existing pedestrian network and addressing significant infrastructure gaps</td>
<td>Walking is predominantly a local activity for short trips. Local councils therefore have an important role in improving conditions for pedestrians. They maintain and improve their local walking networks in response to community needs. Local walking strategies should be developed to identify priorities and to ensure a process is in place for the ongoing review and improvement of local walking networks. The NZ Transport Agency is responsible for maintaining and improving walking facilities along and across the state highway network. GWRC and KiwiRail manage different elements of the railway network. These agencies need to continue to look at ways to remove barriers to walking along or across strategic transport infrastructure. It is important that all organisations responsible for walking networks work together to address issues of connectivity between communities and to key regional destinations.</td>
</tr>
<tr>
<td><strong>Level of service</strong></td>
<td>Consideration of pedestrian needs should be an integral part of street design. Improvements to the walking network will be constructed in accordance with best practice guidance and will include consideration of: directness and connectivity; crossing facilities and wait times; amenity, shelter, lighting; safety and personal security; footpath quality and widths; signage and information; integration with public transport. The appropriate pedestrian level of service for any area will depend on its role/function and degree of use. Development of the pedestrian network should take account of all types of pedestrians.</td>
</tr>
<tr>
<td><strong>Priorities for improving walking infrastructure</strong></td>
<td>The priority for investment in walking networks will focus on the following key areas: walkable centres connecting key destinations addressing significant network gaps Investment in walking infrastructure should be targeted towards improving the safety and convenience of walking where there are already high levels of pedestrian activity, such as local and city centres. Investment should also be targeted towards enhancing routes that provide access to key destinations such as employment centres, public transport stops and interchanges, recreational facilities, education and healthcare facilities. Another investment focus should be addressing significant gaps in walking infrastructure level of service or significant barriers which are considered to be limiting the potential walking trips in those locations. In large city centres such as the Wellington CBD, the development of a transport hierarchy, such as a Network Operating Plan, is encouraged as a way of clarifying priorities along particular streets within the transport network. This can assist with the issue of competing demands and ensure that appropriate pedestrian priority is provided for. In rural town centres, the dual and often conflicting role of the main street as a destination to shop, eat, work and a strategic transport through route for freight and general through traffic needs to be considered in the design of the network. Street design and speed limits that improve pedestrian amenity and ensure safe crossing opportunities will be important. However, these need to be balanced with the needs of providing for effective movement of through traffic. Longer term it may be necessary to consider bypass options for these towns, particularly for heavy freight vehicles, if these conflicting needs cannot be adequately addressed.</td>
</tr>
</tbody>
</table>

1 Refer NZTA Pedestrian Planning and Design Guide
2 A localised plan developed under the Network Operating Framework concept developed by the NZ Transport Agency
<table>
<thead>
<tr>
<th>Priority area</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land use planning</strong></td>
<td>Local councils regulate land use activities through the development of district plans and processing resource consent applications. They therefore have a key influence on the way land is developed and the ability to ensure that new development supports walking and can sometimes facilitate development that addresses existing network deficiencies. Land use planning documents should include provisions to guide the location of new development to areas that can provide a high degree of accessibility, and to ensure new subdivision and development is designed to support walking as a viable option to access shops, education, employment and public transport.</td>
</tr>
</tbody>
</table>
| **Promotion and education** | There are good opportunities to increase the uptake of walking by promoting the personal benefits of walking for individuals. Education programmes and campaigns will also be needed to support improved pedestrian safety. Education and promotional activities should also be designed to target particular groups or audiences. For example:  
  - road safety skills in schools as part of school travel programmes  
  - promoting walking when a person’s circumstances change (such as a new home or job)  
  - promoting walking as part of active transport programmes and events aimed at travel to work  
  - promoting use of new pedestrian facilities.  
  Education and promotional activities around the benefits of walking and pedestrian safety should be targeted at children and young people at a time when habits are formed, and should be maintained as children progress into adulthood to support a walking culture. School travel programmes are an important tool to understand and address some of the barriers to children walking to school – these are discussed in more detail in section 14 of this plan titled ‘Travel Demand Management’.  
  Campaigns aimed at reminding adults about safe walking behaviours, particularly in relation to crossing roads, are also an important element to support pedestrian safety.  
  Improving information for walking will also support an uptake in use of walking for trips – for example, ensuring that good journey planning tools, maps and information are available. Forums that provide opportunities for organisations to share information about walking are also important. These provide for improved coordination and collaboration on walking projects, events, and campaigns throughout the region and for the sharing of ideas, information and best practice. |
11. CYCLING NETWORK

11.1 INTRODUCTION
Cycling provides an efficient and affordable transport option for short to medium distance trips. However, ensuring cycling is a safe and attractive option can be challenging in the context of many competing demands for road space. This network plan outlines the strategic context for investing in cycling and provides direction and priorities for development of the cycle network.

Investment in cycling is one element of the wider plan for improving the region’s transport network and needs to be considered as part of an integrated planning and investment approach.

11.2 CYCLING IN THE WELLINGTON REGION
All roads within the region form part of the overall cycle network, however along key routes more specific cycle facilities are often provided. The length of cycle facilities within the Wellington region has been increasing over the last decade. In 2012, there were approximately 44km of on-road cycle lanes and 68km of off-road sealed cycle paths (shared and dedicated). There are also extensive lengths of unsealed off-road paths predominantly used for recreational cycling.

Figure 31. Cycling Mode Share 2001, 2006, 2013, by District and for Wellington Region

Compact, fully folding cycles can be carried on buses and trains in the region. Other cycles can be carried free of charge on a first come, first served basis on the region’s passenger train services with the exception of specified peak services on the Kapiti and Hutt Valley lines. A limited number of cycles can also be carried on harbour ferry services and the Kelburn cable car. The number of cycle parking spaces provided at railway stations has doubled from 132 in 2009 to 294 by 2013.

Almost half of all households in the region have access to at least one bicycle. The New Zealand Household Travel Survey showed that between 2007 and 2011 the proportion of adults indicating they have cycled at least once in the last year increased from 27% to 34%.

The Household Travel Survey also indicates that cycling trips are getting longer and faster which reflects the increasing trend of cycling for fitness and reduction in cycling for shorter utility trips. The 2013 census showed that 2.9% of journeys to work in Wellington region1 were by bicycle, up from 2.3% in 2001.

1 Mode share excludes “Did not work on census day” or “Worked from home” to emphasise the differences between each census year.
All local council areas, with the exception of Upper Hutt, South Wairarapa and Masterton had a greater cycling mode share for trips to work in 2013 compared to 2006. Cycling to work appears to be more popular in cities and larger urban areas than in rural districts. This may indicate that traffic congestion, slow motorised travel and higher parking costs in urban areas increases the relative appeal of cycling. Figure 31 shows this overall increase and highlights the large change within Wellington City. The number of cyclists observed crossing the Wellington CBD cordon in the morning peak grew incrementally by more than 70% between 2001 and 2013.

School travel plan data collected within the region indicates that the proportion of children that cycle to school is less than 4%. The Ministry of Transport\(^1\) reports that nationally the proportion of children travelling to school by bicycle is significantly less than 20 years ago.

Figure 32 shows the aspirational network of regionally significant cycling corridors for the Wellington region. The regional cycling network has been identified based on the key corridors linking the region’s communities, both commuter/utility routes and recreational focused routes.

There are two nationally significant recreational routes within Wellington region which form part of the NZ Cycle Trail. These are the Rimutaka Cycle Trail and the Wairarapa Valley Cycleway. In addition, the Makara Peak Mountain Bike Park is a nationally significant destination for recreational cycling. A regionally significant recreational route is the Great Harbour Way/Te Aranui o Poneke, from Fitzroy Bay in the east to Sinclair Head in the west. Sections of both the Rimutaka Rail Trail and the Great Harbour Way have a dual utility/commuter and recreation role. Providing opportunities for recreational cycling will help to encourage the long term growth of cycling for transport.

Figure 32 also highlights a number of existing gaps in the regional network. In general, these network gaps or deficiencies have been identified as those sections of the regional cycling network:

- that do not have either an on-road cycle lane or an off-road cycle path
- that have a cycling facility that is significantly sub-standard (for example, the very narrow path shared with pedestrians along SH1 between Pukerua Bay and Paekakariki)

Some exceptions were identified where no facility is provided but where the adjacent traffic environment/speed or low level traffic volumes would make a dedicated cycle facility a lower priority in the context of the wider regional cycling network. For example:

- Around the Miramar Peninsular and south coast from Shelley Bay Road to Island Bay
- Martinborough – Masterton road
- Lake Ferry Road
- Western Lake Road (except the section between Featherston and Cross Creek)

Pinch points on the cycling network are identified in Figure 32 where bridges force cyclists to share a narrow lane with high speed traffic.

The gaps and deficiencies identified in the map below are not intended to be comprehensive, but to give an indication of the most significant network gaps that currently exist. There are other parts of the regional cycling network where the level of service should be improved to provide a safer and more attractive cycling route. The expected level of service and priorities are outlined under the ‘key network priorities’ section of this plan.

Network Plans

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Figure 32. Wellington Region Cycling Network
11.3 THE NEED FOR INVESTMENT

This section outlines the main challenges and issues in relation to cycling in the region.

Cyclists are relatively vulnerable to death and serious injury

Cycling has a number of associated health and wellbeing benefits. However, the relative risk of cyclists being injured is high compared to other transport modes and cyclists are relatively vulnerable to death or serious injury when a crash occurs. A cyclist fatality is more likely to result from a crash involving motor vehicles.

Over the last 15 years the number of fatal and serious injury cyclist casualties in the region has shown an increasing trend up to 2008, then a generally decreasing trend to 2013. Despite this trend, the number of serious and fatal cyclist casualties is still relatively high. Figure 33 shows the number of cyclist casualties recorded in the Crash Analysis System (CAS), but it should be noted that this only includes crashes where a motor vehicle is involved, whereas the majority of cycling crashes do not involve a motor vehicle.

Cyclists in the Wellington region have a greater than average1 risk of being killed or seriously injured whilst cycling. The Communities at Risk Register 2014 identifies the Wellington region as having the second highest level of personal risk after the Auckland region. Wellington City is the part of the region where cyclists statistically have the highest risk of injury, the third highest area in New Zealand. There is also greater than average risk in Kapiti Coast and Hutt City.

Cycling is perceived as being unsafe, limiting the potential growth in cycling numbers

There is a strong correlation between the public perception of safety and uptake of cycling. People’s motivations and barriers to cycling are relatively universal and perception of safety is a more important determinant of uptake than the real risk of injury.2

In 2012, a survey found that around half of respondents (49%) felt that cycling around the Wellington region was unsafe.3 Only 22% thought it was safe cycling in the Wellington region.

In some parts of the Wellington region, cyclists are forced to mix with high traffic flows and/or traffic moving at high speeds, and to travel through busy intersections. Research into the type of cycling infrastructure needed to attract new cyclists found that high traffic volumes and proximity to fast moving traffic were key contributors to safety concerns and feelings of stress when cycling. It found that cyclists perceived that some level of separation from other traffic improved safety.4

Poor perceptions of safety are limiting the uptake of cycling and mean that the benefits of cycling for the community are not being fully realised. Cycling investment should seek to address the actual safety of cycling, which will in turn improve the perception of cycling safety and increase participation. Increasing the numbers of cyclists to develop a critical mass will contribute to greater visibility and awareness of cyclists by other road users, making it safer to cycle.5

An increasing number of inexperienced cyclists using the network in urban centres

In 2013 there were significantly more adult cyclists recorded than in 2006.6 This means it is likely that there has also been an increase in inexperienced cyclists using the region’s roads and cycling network. The increase in cycling is noticeable in our cities and larger urban areas where there is greater conflict with other road users. This combination of novice cyclists at locations with greater exposure to risk contributes to the overall safety risks associated with cycling.

The increased availability of electric bikes may open up cycling as an option for older and less fit people, and people who live in hill suburbs. With this increase come some additional safety issues relating to other road users accurately judging a cyclist’s speed on an electric bike, and potential conflict on shared paths with pedestrians. Education, training and infrastructure improvements will need to respond to this evolving issue.

Providing for different types of cyclists7

Cyclists prefer different types of riding environments depending on their trip purpose, age, and their level of experience.

Cycle commuters vary in skill, fitness and risk tolerance. Some are highly skilled and able to handle a variety of traffic conditions while others prefer off-road paths or low-stress roads and are willing to take longer routes to get to their destination. This can make development of the cycling network difficult and requires cycle facilities to be designed to take account of these differing needs.

Cyclists of all skill levels desire routes that are safe, convenient and pleasant. Convenience includes directness but also aspects such as the ability to pass through congested areas without delay and secure parking at trip ends. More experienced cyclists may prefer to use the road system regardless of traffic conditions as this provides a smooth riding surface and speed environment that they prefer. In some cases, parallel on-road and off-road options will be needed to cater for these different needs.

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1. Compared to the New Zealand mean average of people killed or seriously injured per million cycling hours.
6. NZ Census data
11.4 BENEFITS OF INVESTMENT

There is an immediate need to invest in cycling for trip making or utility purposes to support the desired strategic outcome of more people cycling. Investment in cycling for recreation uses is also needed to grow cycling in the long term, as recreational cycling provides a gateway to utility cycling. Investing in recreational cycling routes provides opportunities for people to develop their cycling skills, to exercise and to keep fit. These benefits are realised over a longer period (i.e. as children grow up). Investing in recreational cycling will also help to support the growth of the regional tourism sector.

The key benefits of investment in the cycling network will be:

- Improved transport choice
- Improved road safety
- Greater transport system resilience
- Reduced congestion
- Reduced harmful transport emissions
- Healthier communities
- More recreation opportunities
- Increased tourism revenue

11.5 STRATEGIC RESPONSE

Addressing the key challenges requires investment in both cycling infrastructure and education/behaviour change programmes. A regional approach should be taken to addressing cycling needs and developing the cycling network, recognising that many cycling trips cross city and district boundaries.

The strategic response is to:

a) Develop improvements to the identified strategic cycle network to provide an appropriate level of service consistent with its role, function and level of use (including suppressed demand).

b) Develop improvements to local road networks to improve the safety and level of service for cyclists travelling to/from the strategic cycle network and other key local destinations such as shops, health, education and recreational facilities.

c) Support an increase in cycling trips through promotion, education and skills training.

d) Ensure that land use plans encourage urban form and land use patterns that support cycling as a feasible option and require new land use development to provide safe, attractive and connected street layouts for cycling.
### 11.6 KEY NETWORK PRIORITIES

#### Figure 34. The key network priorities for investment in the cycling network are as follows:

<table>
<thead>
<tr>
<th>Priority area</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network development</td>
<td><strong>The regional cycling network</strong></td>
</tr>
<tr>
<td></td>
<td>Regionally significant routes/corridors provide a core network for cycling and need to be fully integrated with local cycling networks. The regional cycling network should provide for inter-district travel connecting the main urban cycling networks, and should be developed to be safe, convenient and pleasant.</td>
</tr>
<tr>
<td></td>
<td>A combination of the regional cycling network and key local cycling corridors should provide safe and easy access to destinations such as CBDs, hospitals, public transport nodes, healthcare and major education and recreational facilities.</td>
</tr>
<tr>
<td>Level of service</td>
<td><strong>Level of service of the regional cycling network</strong></td>
</tr>
<tr>
<td></td>
<td>Cycling corridors that make up the regional cycling network should be developed to provide options for less experienced or lower skilled riders. However, these corridors must also provide options for more experienced cyclists who may wish to travel at greater speeds.</td>
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<td>The regional cycling network should ideally have some degree of separation from traffic. Where full separation is not achievable, partially separated lanes, on-road cycle lanes or quieter parallel routes should be provided. Ultimately the choice of facility will be subject to practical constraints and best-practice guidance.</td>
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<td>Priorities</td>
<td><strong>Priorities for staged development of the regional cycling network</strong></td>
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<td>The regional cycling network will be developed incrementally by local councils and the NZ Transport Agency. Priority should be given to:</td>
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<td>• addressing personal risk of death or serious injury on the regional cycle network and other key commuter corridors in urban areas</td>
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<td>• addressing major gaps or deficiencies in the regional cycle network to provide greater route consistency and unlock greater benefits from the wider cycling network (e.g. between Ngauranga and Petone)</td>
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<td>• flagship routes, including nationally and regionally significant recreational routes that provide opportunities for positive media and promotional activities</td>
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<td>• providing for utility journeys less than 12km in length</td>
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<td></td>
<td>• commuting or utility routes with low gradient that involve less than 200m of climbing</td>
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<td></td>
<td>• providing separated cycling facilities on or adjacent to high volume, high speed highways and roads (e.g. between Peka Peka and Otaki)</td>
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<td>• routes that link up communities not well served by public transport</td>
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<td>Integration</td>
<td><strong>Integration with public transport</strong></td>
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<td>Improving the integration between public transport and cycling will support the uptake of both modes. For example:</td>
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<td>• Improving key cycle routes to/from train stations and providing good bicycle parking options will encourage more people to cycle to stations. This has the additional benefit of increasing the reach of public transport.</td>
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<td>• The ability to carry bicycles on public transport vehicles enables cyclists to make part of their journey by public transport. This also provides a safety net for when cyclists have a break down or face stormy conditions, and can help to overcome challenging distances or topography.</td>
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<td>The short term focus will be on enhanced integration with the rail network. Integration with the bus network is more challenging, but remains a longer term objective.</td>
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<td>Those railway stations that are strategically located on a regional cycle route are shown on Figure 32. These are stations particularly important from a cycling integration perspective. They have been identified based on their location at the end of commuter railway lines, where good cycle integration will significantly extend the reach of rail for adjacent communities, or where they provide a point of access to regional cycle trails. These stations will generally have good provision of secure cycle parking facilities.</td>
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</tbody>
</table>
**Priority area**  | **Explanation**  
---|---
**Promotion, education and skills training**  
Promoting the benefits of cycling to increase uptake and supporting cyclist safety through improved education, training and awareness.  
**Promoting the benefits of cycling**  
Behaviour change programmes and campaigns will be used to encourage new cyclists by highlighting the benefits of cycling to the individual including:
- improved health/fitness
- saving money
- convenience

These programmes should be designed with an understanding of the different parts of society and with recognition that there may be different barriers for different ages, ethnicities or socioeconomic groups. Existing cyclists may have different information needs to new cyclists or those contemplating taking up cycling.

To achieve a long term increase in cycling levels it is important to target not only people who are ‘ready for action’ but also people that may contemplate cycling in future. These people require greater information, motivation, or incentives to start cycling. People may also try cycling for a time and then stop for a time. Behaviour change programmes therefore need to be ongoing and continuous.

Promotion of cycling will be carried out through school travel plans, cycling events, marketing campaigns, and promotion linked to the provision of new safe cycling facilities or targeted at people’s change of circumstances (such as a new home or job). More details are provided in the travel demand management chapter of this plan.

**Education and training**  
Education programmes are important to raise awareness of safety issues for existing and new cyclists, and awareness of other road users (drivers of cars, trucks, buses). Examples include driver/cyclist awareness and cyclist visibility education campaigns.

Cycle skills training programmes (e.g. ‘Pedal Ready’) are an important priority to ensure that cyclists (new and existing) have the skills to ride safely when using the road network and cycling network.

Education and training programmes should target issues specific to cyclists on electric bikes, including driver perception of travel speed and safe use of shared paths.

**Improving information for cycling**  
Ensuring that good journey planning tools, maps and information are available for existing and new users of the region’s cycle network will assist to increase the use of cycling for trips.

Other information to improve cycling safety will be identified and made available, such as the assessment of bike lights.

**Land use planning**  
New land use development supports cycling as a feasible option and includes a safe, attractive and connected street layout for cycling.

Local councils regulate land use activities through the development of district plans and processing resource consent applications. They therefore have a key influence on the way land is developed and the ability to ensure that new development supports cycling and can sometimes facilitate development that addresses existing network deficiencies.

Land use planning documents should include provisions to guide the location of new development to areas that can provide a high degree of accessibility, and to ensure that new subdivision and development is designed to support cycling as a viable option to access shops, education, employment and public transport.

**Network Operating Framework**  
The application of a Network Operating Framework to local road networks in all regional and sub-regional centres will enable the role and priority of modes, including cycling, within the different urban transport networks to be assigned. This will help to clarify the role of different routes, and will also assist with the consideration of trade-offs where re-allocation of road space for cycle lanes or facilities is required.