# 2. Justification for the Project

This Section provides background to the Project and sets out the following:

- The need for the Ara Tūhono P-W RoNS and the Project;
- The development of the Project;
- The strategic context of the Ara Tūhono P-W RoNS and the Project; and
- The benefits of the Project.

## 2.1 Need for the Ara Tūhono P-W RoNS

Over the last decade, the NZTA has carried out a series of studies on the State highway network connecting the Auckland and Northland Regions. These studies have considered the role of the State highway network in relation to the wider transport system between Auckland and Northland.

As the main inter-regional route connecting the Auckland and Northland regions, SH1 provides a vital lifeline connecting the Far North to Whangarei, Auckland and beyond. SH16 provides an alternative route between Auckland and Wellsford.

A reliable, secure and efficient State highway network is required to provide local, regional and national transport connections.

The NZTA's strategic studies and investigations of the State highway network, including the 'SH1/SH16 Auckland to Wellsford Strategy Study'[1], 'Auckland to Whangarei Strategic Assessment: Strategic Context Report'[2] and the 'Draft Auckland to Whangarei Network Plan'[3], have identified a number of key issues in relation to the State highway network connecting Auckland and Northland including:

- Limited network resilience;
- Safety of the network;
- The efficient movement of freight;
- Accessibility; and
- The capacity of the existing network to accommodate anticipated population growth.

In order to outline the need for the Project, the following discussion also considers the wider Ara Tūhono P-W RoNS context.

### 2.1.1 Current resilience

From north of the NGTR to south of Warkworth, SH1 is primarily a single carriageway, two-lane rural highway with some passing lanes. The SH1 corridor follows the undulating landform of the surrounding area, with some particularly winding and steep sections. The terrain through which the existing highway passes includes numerous areas of instability, particularly at Schedewys Hill (shown in Photo 2-1) and along Windy Ridge.

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[1] NZ Transport Agency 2008, *SH1/16 Auckland to Wellsford Strategic Study*, prepared by Sinclair Knight Mertz

[2] NZ Transport Agency 2010a, *Auckland to Whangarei Strategic Assessment*, prepared by Sinclair Knight Mertz

[3] NZ Transport Agency 2010b, *Draft Auckland to Whangarei Network Plan*, prepared by Sinclair Knight Mertz


Photo 2-1: SH1 – Schedewys Hill

The existing SH1 route experiences closures several times a year as a result of events, such as crashes, flooding or slips blocking the road. Sections of the network that experience regular closures due to serious or fatal traffic incidents are outlined in the Traffic and Transport Assessment Report and Section 2.1.2 below. The section of the SH1 extending northwards from the base of Schedewys Hill over a distance of approximately 5km has been subject to landslips following periods of sustained rainfall. A number of landslips to affected SH1 in 2008 and 2009[4]. In the event of a natural disaster affecting the current SH1, Northland could be isolated from Auckland for an extended period of time.

SH16, which is located approximately 20km to the west of the existing SH1 between Pūhoi and Warkworth, provides an alternative route for traffic on SH1 between Auckland and Wellsford. It extends from the Port of Auckland in the central city to the west coast then north-east to Wellsford, where it connects to SH1. The North Western Motorway (historically the Auckland – Kumeu Highway) forms part of the SH16 route.

Like SH1, SH16 provides limited resilience and route security for the wider State highway network between Auckland and Northland. SH16 is, in general, a single carriageway route and prone to instability and flooding issues similar to SH1. SH16 is generally of lower geometric standard than SH1 between Auckland and Warkworth, and over 20km longer between Pūhoi to Warkworth than the current SH1. SH16 typically carries small volumes of longer distance traffic.

North of the NGTR, SH1 serves Pūhoi, Warkworth, and the beach communities located east of Warkworth, including Leigh, Omaha, Sandspit, Snells Beach and Mahurangi East. The additional

[4] NZTA, 2010, *Pūhoi to Wellsford Scheme Assessment Pūhoi to Warkworth Preliminary Geological and Geotechnical Appraisal*

settlements of Ahuroa (west of Pūhoi) and Mahurangi West also access SH1. SH16 does not serve communities, but instead predominantly provides access for development near the highway and acts as a strategic relief route in the event of an incident on SH1 and an alternative northbound route during peak holiday periods.

### 2.1.2 Safety of the network

Several sections of the existing SH1 corridor north of the Johnstone's Hill tunnels have a poor safety performance. Serious incidents on the network, such as fatal head-on collisions, can result in SH1 being temporarily closed and traffic being required to use extensive detours.

The section of SH1 between the NGTR and Warkworth intersects with a number of local roads. Not all of these intersections are provided with adequate acceleration and deceleration lanes on SH1, which increases the potential for conflicts between traffic on SH1 and traffic on local roads. Such conflicts, combined with the steep grades, tight corners and restricted sightlines along SH1 contribute to a crash rate higher than the national average on the State highway network.

The section of SH1 between Valerie Close and McKinney Road (approximately 1.6km in length) is an identified crash black spot[5] with the greatest number of serious and fatal crashes along the network between Pūhoi and Warkworth (two fatal and two serious crashes between 2008 and 2012 as outlined in Section 3.5 of the Transportation and Traffic Assessment Report). The Schedewys Hill section of SH1 (shown in Photo 2–2), to the north of Mahurangi West Road, is another crash black spot[6] and the road between Mahurangi West Road and Hungry Creek Road has also experienced two fatal crashes from 2008 to 2012.


Photo 2-2: Looking south towards Schedewys Hill along Windy Ridge

[5] NZTA, 2010, Auckland Region State Highways Road Safety Report 2005 to 2009

[6] New Zealand Crash Analysis System (CAS) database

A total of 65 injury crashes have occurred during the past five years (2008 to 2012) over the section of SH1 between Pūhoi and Warkworth, with a further 174 accidents classified as non-injury (as noted in Section 3.5 of the Transportation and Traffic Assessment Report). The New Zealand Road Assessment Programme KiwiRAP[7] ranks the section of SH1 between the NGTR and Warkworth 16th riskiest in terms of collective risk across the national State highway network for the 2007-2011 period.[8]

With anticipated population growth along the SH1 corridor between Pūhoi and Warkworth and increased traffic volumes in the future (discussed below), accident exposure rates and the likelihood of crashes will also increase. While the NZTA has made some safety improvements along the route in recent years, the NZTA's ability to achieve reductions in the frequency and severity of crashes along this section of SH1 is constrained by the geometry of the route.

### 2.1.3 Traffic volumes and travel time reliability

The 2012 Average Annual Daily Traffic (AADT) volume is approximately 17,400vpd for SH1 between Pūhoi and Warkworth (refer to Section 3.2.1 of the Transportation and Traffic Assessment Report). There are pronounced peaks in traffic flows coinciding with weekends and public holidays, particularly in the summertime when the beach settlements east of Warkworth attract people from Auckland and beyond.

Congestion resulting in increased travel times and reduced travel time reliability is already a problem along the SH1 corridor north of Auckland, particularly at Warkworth where congestion regularly occurs during weekday evening commuter peak periods. More severe congestion is experienced when incidents such as crashes or slips occur, or during weekends or holiday periods, the latter due to an increase in both long distance through trips and local traffic travelling within and through Warkworth resulting in in higher traffic volumes.

If no capacity improvements are provided on the State highway network between Pūhoi and Warkworth, travel times in the corridor as a whole are forecast to increase significantly as traffic volumes on SH1 increase in the future. Traffic volumes on the existing section of SH1 between Pūhoi and Warkworth are anticipated to grow by approximately 4% per annum to the year 2026 and be in the order of approximately 25,000vpd (refer to Section 3.2.1 of the Transportation and Traffic Assessment Report). Increasing travel times have an adverse impact on the efficiency of general traffic and freight movements along the corridor.

Travel time variability or journey time reliability affects both individuals and businesses. With higher levels of traffic demand, travel times, along with the variability of travel times, increase. Under such conditions, the consequences of any incidents or disruptions to traffic flow are magnified, with greatly increased travel times. In addition, if there is a high degree of variability, people are not able to plan their travel with certainty.

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[7] A road safety partnership between the Automobile Association and New Zealand's main transport agencies: the NZTA, Ministry of Transport, Accident Compensation Commission and New Zealand Police

[8] 2012 KiwiRAP Risk Mapping National Summary, from www.kiwirap.org.nz

In such situation, commercial traffic must allow longer times in journey planning, which reduces the number of movements that can be made by each driver and vehicle, in turn increasing fleet requirements and impacts on the efficient movement of freight.

The variability or uncertainty of travel times in the SH1 corridor is likely to become a significant issue in the future as traffic volumes and travel times increase.

### 2.1.4 Efficient movement of freight

As the main inter-regional route between Northland and Auckland, the existing SH1 has an important function in providing freight access between Auckland and Northland, and as such, carries a significant volume of freight movements.

The Northland Region is a major producer of basic commodities, including milk and dairy products, meat, logs and timber products, aggregates and other building materials. In addition, a number of consumer goods and inputs to manufacturing in Northland and north Auckland are sourced from the Auckland Region.

Whangarei contains the country's most northern deep water port (Northport), which handles the movement of bulk products, the import of crude petroleum for use in the adjacent oil refinery (Marsden Point) and the export of refined petroleum products for distribution across New Zealand. The port also handles timber logs for international markets.

These industries are heavily reliant on an efficient transport network to provide reliable access for people and freight to markets in the Auckland Region and beyond. As such, the provision of reliable freight links is an integral part of servicing the economies of the Northland and Auckland Regions.

SH1 currently carries a significant volume of freight traffic, (as can be seen in Photo 2-3 below) with an average of 7% heavy commercial vehicles (HCVs) along the route between Pūhoi and Warkworth. This proportion of freight traffic is similar to that seen on Auckland's Southern Motorway between Manukau and the SH2 interchange[9]. Movement by road is the main means of transport for freight between Auckland and Northland. The National Freight Demands Study (NFDS)[10] attributes 86%[11] (or 4.2M tonnes) of the freight volume crossing the Auckland-Northland regional boundary to road transport. The volumes moved by rail and coastal shipping being small at 3% and 11% respectively, and these are unlikely to increase significantly in the future. The movement of freight, and the activities it supports, is therefore highly dependent on the quality and reliability of SH1.

[9] HCV volumes taken from NZTA's Traffic Monitoring System (TMS) database

[10] Ministry of Transport, NZ Transport Agency and Ministry of Economic Development, 2008, *National Freight Demands Study*

[11] Includes only transport related modes and excludes the 24% of the total interregional freight market transported via oil pipeline

The NFDS expects that by 2031, freight volumes between Northland and Auckland will increase by 84% to 9M tonnes[12]. It also predicts that freight movements originating or terminating in Northland will increase by 34% to 41M tonnes.

One of the key issues with the current SH1 is the variable and generally low standard of SH1 north of Pūhoi. The number of steep and windy sections along the current State highway, particularly the section between Pūhoi and Warkworth, inhibits the effective and efficient movement of vehicles, particularly HCVs. The slow movement of HCVs, combined with limited passing lanes, can cause long delays between Pūhoi and Warkworth for all users, affecting travel time reliability and the efficient movement of people and goods.

With the predicted increased in road freight volumes, the current State highway network will be under pressure if the NZTA does not provide capacity improvements on the existing SH1.

Movement of freight north of Auckland by rail is constrained by the low standard system of the North Auckland Line (NAL). Rail lines north of Auckland must operate at low speed due to the configuration of the existing infrastructure, thus reducing the efficiency of transporting goods inter-regionally via rail. The proposed Marsden Point branch linking the NAL to Northport may increase the amount of freight transported by rail, though the use of this branch would still be constrained by the existing configuration of the NAL.


Photo 2-3: Traffic on SH1 near Pohuehue Scenic Reserve

### 2.1.5 Economic development

Economic growth and development is particularly important to the Northland Region due to its historically poor economic performance. Northland's economy has grown more slowly than the

[12] Figures adapted from Table 4.5 and 9.20 of the NFDS

national average over the last 10 years and the gap between Northland's GDP per capita and the national GDP per capita has widened over this 10 year period. Northland lags behind average national economic indicators and is often one of the poorest performing regions in areas such as wage levels, employment rates, labour participation rates and economic growth rates.

The Northland Regional Land Transport Strategy 2010 (NRLTS) indicates that the Northland Region has relatively poor access to Auckland and other parts of New Zealand. One of the key strategic outcomes NRLTS is to ensure that the Region is well connected to Auckland and the rest of New Zealand.

The provision of additional freight capacity on the State highway network will allow the Northland Region to accommodate more development, particularly increased processing activities that can substantially increase revenue associated with timber production, which is expected to grow substantially over the next 20 years. The northern part of the Auckland Region will also benefit from additional freight capacity on the State highway network.

Tourism is a key industry for Northland and areas of north Auckland. Public buses between Auckland and Whangarei are operated by Intercity and Nakedbus, which each run three services daily in both directions, with an additional service on weekend days. These buses stop at Warkworth, Wellsford and Kaiwaka for pre-booked passengers. In addition, a large number of tourist shuttle services run between Auckland and destinations to the north. All bus and shuttle services use the existing SH1 and are therefore subject to the same poor road performance conditions as general and freight traffic.

Providing reliable uncongested routes for tourist travel between the Regions will contribute towards increasing economic development at a local and regional level.

Te Rūnanga-Ā-Iwi-O-Ngāpuhi, which represents all people of Ngāpuhi descent (whose rōhe comprises much of the Northland Region), identifies sustainable economic growth and development as a key strategic direction for the iwi.[13] The Government's Regional Economic Activity Report[14] recognises that Northland has a significant Māori population and the lowest employment rate in the country. It identifies the Ara Tūhono P-W RoNS as a business growth agenda action particularly relevant to Northland, which will accentuate Northland's relationship with Auckland and help to improve Northland's economic potential for upskilling local people and enabling them to participate more fully in the economy.

### 2.1.6 Population growth

The Auckland Region has experienced rapid growth in recent decades and this trend is predicted to continue. Half of New Zealand's population growth between 2001 and 2006 was in the Auckland Region and the population continues to grow at a faster rate than other regions.[15] Given Auckland's history of rapid population growth, a high growth model used in the Auckland Plan predicts "a

[13] Te Rūnanga-Ā-Iwi-O-Ngāpuhi, *Strategic Plan 2009-2014*

[14] Ministry of Business, Innovation and Employment, 2013, *Regional Economic Activity Report*.

population of 2.5 million in 2041"[15] (an increase of approximately 1 million people from the current population).

Both the Northland and Auckland Regions have been identified as areas of existing and anticipated future growth in regional growth strategies and planning documents, including the Auckland Plan 2012, the Whangarei District Growth Strategy 2010, and during discussions with Northland Regional Council, Rodney District Council and Kaipara District Council.[16]

Table 2-1 outlines areas of anticipated growth in the north of the Auckland Region and the Northland Region based on the aforementioned sources.

Table 2-1: Anticipated growth in the northern Auckland area and Northland

| Area | Summary of anticipated growth |
|---|---|
| **Pū**hoi/ Ahuroa/ Mahurangi/ Warkworth | Warkworth is a rural service town offering a range of retail, commercial, community, industrial and recreational services to a population of approximately 4,400 residents and the surrounding rural and coastal communities. Warkworth and its surrounds are highly dependent on the State highway network for the movement of people, goods and services.<br><br>The Auckland Plan identifies Warkworth as a Satellite Town, suitable for substantial residential and employment growth, subject to appropriate infrastructure being available, and an important area of future rural growth[17]. Satellite Towns are envisaged as being able to "function independently of the main metropolitan area, provide a range of services to the surrounding rural areas, and develop quality transport links"[18]. The Plan anticipates the population of Warkworth will grow to 20,000 over the next 30 years. |
| Wellsford and Snells Beach | Wellsford and Snells Beach are both identified in the Auckland Plan as a Rural and Coastal Town. While these areas are "less independent from the main metropolitan area"[18] than the Satellite Towns, and will be less of a focus for substantial intensification or development, they are anticipated to grow substantially in the future to up to 10,000 people. |
| Kaipara District | The Kaipara District extends from north of Wellsford to the Brynderwyn Hills and has a population of 18,500 people. Mangawhai is the key area of residential growth in the district with access to Kaiwaka, Wellsford and Whangarei. Demand for coastal residential lifestyle opportunities in the District will likely continue and Mangawhai is projected to grow rapidly based on predictions in the Mangawhai Structure Plan. Due to its close proximity, there is potential for Kaiwaka to become a main town servicing Mangawhai and also for growth in niche industries such as cheese making, arts and crafts. |

[15] Auckland Council 2012, The Auckland Plan: 26

[16] The Northland region is yet to produce a regional growth strategy. In its absence, advice was provided by Council officers.

[17] Auckland Council 2012, Auckland Plan

[18] Auckland Council 2012, Auckland Plan 2040:235

| Area | Summary of anticipated growth |
|---|---|
| Whangarei District | The Whangarei District extends from the Brynderwyn Hills to north of Whangarei and has the greatest concentration of population in the Northland Region at 74,430 people (2006 census), predicted to increase to 110,000 people by 2041[19]. Northland has seen significant growth in coastal development due to its popularity as a holiday destination. The Marsden Point-Ruakaka area is experiencing unprecedented land development, particularly in the subdivision of land for residential, commercial and industrial purposes.<br><br>Significant population growth can be accommodated in the inner Whangarei City area with major residential, commercial and industrial land developments proposed for the next 30 to 50 years. The rate of development or take up of subdivided land will depend on global, national and local economic factors, together with the ability of Council to provide adequate infrastructure and services. |

Future population growth will likely result in economic and social benefits at the local, regional and national levels. However, this level of predicted growth and additional demand needs to be appropriately managed and provided for to avoid significant adverse impacts on the efficiency of the existing State highway network, which has limited capacity.

Increased population growth in areas accessed from the SH1 corridor between Auckland and Northland will result in increased transport demand along the route, which will increase future congestion unless additional capacity is provided.

## 2.2 Development of the Project

Development of the Ara Tūhono P-W RoNS and the Project has occurred within the last four years. Key stages in the development of the Project are shown in Figure 2-1.

[19] Whangarei District Council, *Whangarei District Growth Strategy: Sustainable Futures 30/50*

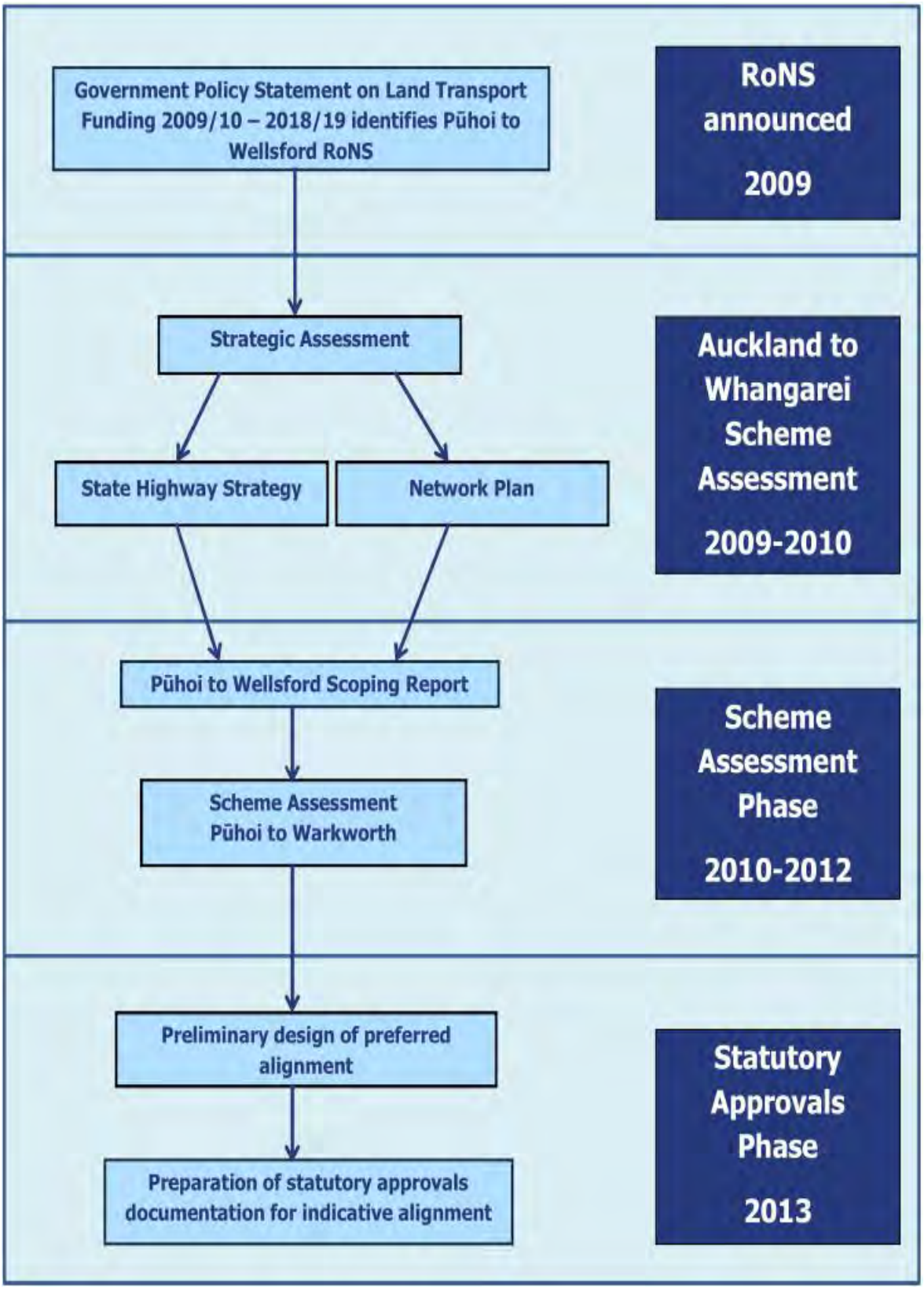


Figure 2-1: Development of the Project

### 2.2.1 Relevant strategic studies and investigations

In 2006, the NZTA commissioned a strategic assessment of SH1 and SH16 between Auckland and Wellsford: the SH1/SH16 Auckland to Wellsford Strategy Study[20]. The purpose of the Study was to identify the future function and form of SH1 and SH16, and to provide guidance on what level of transport investment would be required on each of those State highway corridors.

The study concluded that the SH1 corridor was the preferred route for future development to meet the long-term inter-regional transport needs of Auckland and Northland. Furthermore, SH1 should be developed to four lanes to accommodate anticipated future demand.

As part of the study, a number of potential corridors were considered for a future upgrade of SH1 to four lanes between the northern terminus of the NGTR and Warkworth. Two broad corridors were considered suitable for the purpose identified in the study given the land use constraints in the area. These two corridors included a western route heading north-west of SH1 from Pūhoi, before broadly following the North Auckland Line railway north to Wellsford, and a route broadly following the existing State highway corridor.

The NZTA commissioned a strategic assessment of land transport needs between Auckland and Whangarei in support of the decision to declare SH1 between Pūhoi and Wellsford a RoNS. The Auckland to Whangarei Strategic Assessment: Strategic Context Report[21] concluded that by 2021, SH1 between Pūhoi and Wellsford would experience significant congestion during the peak traffic periods as a result of the current network capacity.

That Report identifies and confirms the importance of the State highway network to the economic growth and sustainability of the Northland Region and that travel demand arising from planned growth in the Auckland and Northland Regions must be supported by an efficient, safe and economic State highway network.

Subsequent to the Auckland to Whangarei Strategic Assessment, the NZTA developed a Network Plan for SH1 between Auckland and Whangarei for the long-term future (2050). The key purpose of the Network Plan is to support on-going integrated planning, optimisation of benefits and decision making for the local network and activities and infrastructure associated with the P-W RoNS and wider Auckland and Northland Regional networks.[22]

The Network Plan provides clear guidance on the proposed route configuration for the Ara Tūhono P-W RoNS and supports a four lane off-line[23] route as being preferable to an on-line upgrade of the existing highway. The Network Plan considers that a four lane off-line route is most appropriate to meet the strategic objectives set down by the LTMA and the Government Policy Statement on Land Transport Funding penultimate 2009/2010 to 2018/19, as well as the objectives for the P-W RoNS adopted by the NZTA.[24]

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[20] NZ Transport Agency 2008, *SH1/16 Auckland to Wellsford Strategic Study*, prepared by Sinclair Knight Mertz

[21] NZ Transport Agency 2010a, *Auckland to Whangarei Strategic Assessment*, prepared by Sinclair Knight Mertz

[22] NZ Transport Agency 2010b, *Draft Auckland to Whangarei Network Plan* (Draft Network Plan), prepared by Sinclair Knight Mertz

[23] Off-line means that the road is completely separate and follows a different path than the existing road.

[24] See page 33 of the Draft Network Plan.

The LTMA has been amended since the Network Plan was developed, however the broad principles adopted in the Network Plan are not contrary to the LTMA amendments. The Network Plan is a living document and at its next review will incorporate the latest amendments of the LTMA.

### 2.2.2 Scheme Assessment

The Scheme Assessment for the full length of Ara Tūhono P-W RoNS was undertaken in two sections (Pūhoi to Warkworth and Warkworth to Wellsford), with early investigative work undertaken on both sections. From this initial work it became clear that the Warkworth to Wellsford section will be more challenging from a cost and consenting perspective than originally anticipated. As a result, the NZTA decided to split the Ara Tūhono P-W RoNS into two sections, and subsequent reporting of the Scheme Assessment focused on the Pūhoi to Warkworth section.

The Pūhoi to Warkworth Scheme Assessment focused on determining concept road alignment options in order to identify the preferred alignment. The process involved development of a range of corridor options, including assessment of an on-line upgrade of the current SH1 corridor. The development and assessment of the options lead to the selection of a preferred option.

The Scheme Assessment process is outlined in detail in Section 7 of this report.

## 2.3 Strategic context of the Ara Tūhono P-W RoNS

### 2.3.1 National context

As discussed below, increasing capacity and improving the function of the SH1 corridor between Pūhoi and Warkworth is consistent with the national policy framework, including:

- The Government Policy Statement on Land Transport Funding 2012/13 – 2021/22 (GPS);
- National Land Transport Programme; and
- The NZTS.

#### (a) The Government Policy Statement on Land Transport Funding 2012/13 – 2021/22

The GPS aims to improve New Zealand's economic performance by investing in infrastructure and services that enhance transport efficiency and lower the cost of transportation. The GPS outlines the Government's funding and strategic priorities for the land transport network. These priorities are implemented through the NLTP and the National Land Transport Fund (NLTF).

The current GPS has three key focus areas; economic growth and productivity, value for money, and road safety. It demonstrates continued investment in the national RoNS programme and refers to Auckland as a key investment Region, which is critical to the nation's economic growth.

The Project will contribute to the goals of the GPS by improving the efficiency of freight and traffic movements, and enhancing economic efficiency within the Auckland Region.

### (b) The National Land Transport Programme 2012 -2015

The NLTP establishes a funding structure and allocation rationale for delivering transport solutions during a three year period and is consistent with the strategic objectives outlined in the GPS. The key drivers in the current NLTP are supporting economic growth, improved productivity, contributing to a high performing transport system, freight, and road safety. The total investment in the current 2012 – 2015 NLTP is $12.28 billion and State highway projects account for $5.14 billion.

The current NLTP expresses the Government's commitment to the delivery of the Ara Tūhono P-W RoNS and states that approximately $40 million is committed by the Government for property acquisition and investigation work. The NLTP acknowledges the benefits of the Ara Tūhono P-W RoNS as supporting regional economic growth opportunities in Northland and the northern Auckland area, reducing congestion, improving safety, and more reliable journey times.

### (c) The NZ Transport Strategy

The NZTS is the Government's primary long-term strategy for the transport sector and sets its vision for transport to 2040 and guides national transport policy. The strategy seeks to ensure that *"*people and freight in New Zealand have access to an affordable, integrated, safe, responsive and sustainable transport system*".*[25]

The Strategy's objectives are:

- Assisting economic development;
- Safety and personal security;
- Access and mobility;
- Protecting and promoting public health; and
- Ensuring environmental sustainability.

The NZTS forms the context for the development of the GPS and provides a focus for the Government's actions over the duration of the Strategy.

The Project will support the key objectives of the NZTS.

## 2.3.2 Regional context

Regional policy documents contain a number of objectives important to the strategic direction of the P-W corridor.

The key regional policy documents are discussed below while other regional policy documents are outlined in Section 3.4.2 of this AEE (statutory and policy context).

[25] Ministry of Transport, 2008, *The New Zealand Transport Strategy 2008*:5

The Auckland Plan 2012 is a requirement of the Local Government (Auckland Council) Amendment Act 2010 and sets the long-term strategic direction for Auckland over the next 30 years. The overarching objective of the Plan is to "create the world's most liveable city". [26]

The Auckland Plan anticipates that by the year 2040 Auckland's population will grow by approximately 1 million and an additional 400,000 homes will be required to support the population growth.

The Plan seeks to integrate land use, transport planning, environmental protection, housing growth and economic development with a view to ensuring that future growth is accommodated in a manner that ensures the natural environment is not harmed. The majority of growth is proposed within the existing and new greenfield urban areas, with limited development outside the rural urban boundary.

The Ara Tūhono P-W RoNS is identified in the Plan as a key inter-regional connection between Auckland and Northland with benefits relating to safety, journey times from freight, opportunities to revitalise the Northland economy and improving accessibility.

The Auckland Plan identifies Warkworth as a Satellite Town with anticipated population growth of up to 20,000 over the next 30 years (refer Figure 2-2). The Plan's vision is for Satellite Towns to be "strong, accessible, diverse and enhanced centres"[27] and operate independently from urban Auckland. To enable this growth in Warkworth, the Ara Tūhono P-W RoNS is referred to as an integral inter-regional connection with multiple benefits.

[26] Auckland Council, 2012, *Auckland Plan 2040*:10

[27] Auckland Council 2012, Auckland Plan 2040:235


Figure 2-2: Auckland's rural strategy[28]

[28] Auckland Council, 2012, *Auckland Plan*, map 9.1

### (a) Regional Land Transport Programme 2012-2015 and Regional Land Transport Strategy 2010

The Regional Land Transport Programme (RLTP)[29] was developed in accordance with the LTMA requirements[30] and outlines all land transport activities undertaken in the Auckland Region. The Programme sets out Auckland Transport's funding priorities over a three year period and is also intended to provide the basis of requests for government funding through the NZTA (through the NLTP).

The Regional Land Transport Strategy 2010 (RLTS)[31] was developed by Auckland Transport in alignment with the RLTP and in accordance with the LTMA requirements[32]. The document is a 30 year strategy and establishes Auckland Transport's desired outcomes for the land transport system in Auckland.

The Ara Tūhono P-W RoNS is identified in the RLTP and RLTS. The RLTP refers to the Ara Tūhono P-W RoNS as having inter-regional significance. A key emphasis in the RLTS is reducing congestion for freight vehicles and the Project will improve journey times for freight.

## 2.4 Objectives for the Ara Tūhono P-W RoNS and the Project

The NZTA objectives for the Ara Tūhono P-W RoNS, which reflect the economic, safety and transportation outcomes of the RoNS, are as follows:

- To enhance inter-regional and national economic growth and productivity;
- To improve movement of freight and people between Auckland and Northland;
- To improve the connectivity between the medium to long-term growth areas in the northern Rodney area (Warkworth and Wellsford); and
- To improve the reliability of the transport network through a more robust and safer route between Auckland and Northland.

The Project is the first of two stages of the Ara Tuhono P-W RoNS, and to give effect to the Ara Tūhono P-W RoNS objectives, the objectives for the Project are to:

- Increase long-term corridor capacity, improve route quality and safety (eg gradient, alignment, overtaking), improve freight movement and provide resilience in the wider State highway network through the addition of a 4 lane route;
- Increase travel time consistency and decrease travel times to and from the north end of the Johnstone's Hill tunnels and the north end of Warkworth;
- Alleviate congestion at Warkworth by providing a Warkworth bypass for through traffic; and
- Ensure the Warkworth to Wellsford section of the Pūhoi to Wellsford Project is not compromised.

A discussion of how the Project achieves these objectives is contained in Section 2.5 below.

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[29] Auckland Transport, 2012, *Regional Land Transport Programme*.

[30] RLTPs are no longer a requirement under the LTMA (as amended), but existing RLTPs continue through to 2015.

[31] Auckland Regional Council, 2010, *Regional Land Transport Strategy*.

[32] RLTSs are no longer a requirement under the LTMA (as amended), but existing RLTSs continue through to 2015.

## 2.5 Benefits of the Project

The Project will provide a number of benefits as outlined in the Transportation and Traffic Assessment and in consideration of the wider economic benefits (WEBs) (refer Appendix C). The anticipated benefits from the Project include:

- Improved route security and resilience of the State highway network north of Auckland through reducing the reliance on one main route (the current SH1);
- Improved safety performance compared to the existing SH1 between Pūhoi and Warkworth with the indicative alignment designed to RoNS standards;
- Reduced travel times and improved travel time reliability along the State highway network north of Auckland increasing accessibility across many parts of the Region's road network; and
- Potential for economic development as a result of travel time savings, improved trip time reliability and improved inter-regional accessibility between Auckland and Northland.

Each of these benefits is discussed below.

### 2.5.1 Route security and resilience benefits

The indicative alignment is separate from the existing SH1 and will employ RoNS design standards and current engineering and construction techniques. Once operational, the built motorway will become the main arterial road (SH1) between the Johnstone's Hill Tunnels and Warkworth. The existing SH1 will likely become a local road.

The Project will improve the security and resilience of the current State highway network in two main ways:

- The new motorway will have greater resilience to natural hazards, in comparison to the existing SH1 between Pūhoi and Warkworth; and
- The Project will provide an alternative route to the existing SH1 between Pūhoi and Warkworth. As traffic heading south will not be able to exit the alignment until south of NGTR the central median will contain breaks where practical to facilitate safe controlled manoeuvring for traffic backed up by a traffic incident to the south of Warkworth.

### 2.5.2 Safety benefits

The Project is expected to significantly improve the safety performance of the State highway network with better vertical and horizontal alignment on the new road, as compared to existing SH1. The Project will be designed, operated and constructed as a new motorway in accordance with RoNS standards and have an improved safety performance when compared with the existing SH1. The average annual number of injury crashes in the corridor is forecast to decrease by five (23%) in the year 2026 in comparison to the future traffic volumes on the existing SH1 route.[33]

[33] Refer to Section 5.2 of the Transportation and Traffic Assessment Report

The road safety performance that can be achieved for the Project is greater than would be possible through an upgrade of the existing SH1. The Project will also reduce the volume of traffic on the existing SH1, thereby improving safety for road users in that corridor.

### 2.5.3 Travel times

Through the provision of a new 100kph four-lane motorway, the Project will significantly reduce travel times outside peak hours and allow journeys to be planned with a greater level of certainty around travel times. The Project will also reduce congestion and travel times between Pūhoi and Warkworth during typical peak periods, but also during the summer weekend and holiday periods when large delays are currently experienced. This benefit will be received by both general and freight traffic.

By enabling reduced travel times with increased levels of certainty in relation to travel times during all time periods, the Project will remove deterrents to travel in the corridor and improve accessibility between Auckland, Warkworth and Northland.[34]

### 2.5.4 Economic development

The Project will provide a number of economic benefits for the local north Rodney area and the Auckland and Northland Regions, both during construction and operation (refer letter from M Copeland, Appendix C). In addition to direct economic benefits, a number of the traffic-related benefits of the Project will give rise to positive economic effects by increasing activity and facilitating commercial and residential growth in Warkworth. As noted in Mr Copeland's letter, although some existing businesses on SH1 may be bypassed by the Project, the redistribution of passing traffic will not necessarily result in adverse economic effects.

### 2.5.5 Construction

Mr Copeland notes that the construction of the Project (approximately five years from 2016-2020) will increase economic activity in Auckland and Northland as a consequence of:

- Additional expenditure;
- Employment and incomes directly generated by the Project's construction; and
- The indirect (or multiplier) expenditure, employment and incomes generated as a result of impacts on suppliers of goods and services to the Project and those employed on it.

### 2.5.6 Operation

The Project will better enable SH1 to deliver its local, regional, national and strategic functions of providing a safe, integrated, efficient and responsive route for the movement of goods and people. This improved function will result in travel time savings, reduced congestion and improvements to travel time reliability for local traffic, through traffic and freight movement. The improved function will in turn lead to reductions in vehicle operating costs for local residents and businesses with trip origins and destinations within the north Rodney area.

[34] Refer to Section 5 of the Transportation and Traffic Assessment Report

For vehicles travelling on the existing SH1 or on local roads that intersect with it, the consequent reduction in traffic (especially HCVs) as a result of the Project will result in less congestion on these parts of the network. Less congestion will lead to savings in travel time and vehicle operating costs, particularly during peak periods.

Savings in vehicle operating costs, travel times and accident costs, and improvements in trip time reliability will result in increased productivity and improvements in competitiveness for businesses. Traffic-related benefits for residents will include reduced expenditure (vehicle operating costs) and less unproductive “buffer time” allowances due to reduced journey times and improved travel time reliability, giving residents more free time for other productive or leisure activities.

Improving accessibility within north Rodney and the Auckland and Northland Regions will increase the attractiveness of these areas for commercial and residential development. Population and employment growth in these areas will result in increased levels of economic activity (increasing economies of scale for businesses and service providers); increased competition leading to more choices for residents; and improved efficiency and quality of services. The Project will provide opportunities for Auckland Council to facilitate its urban growth aspirations for Warkworth to become a Satellite Town (as reflected in the Auckland Plan) and achieve the critical mass necessary to achieve greater economic efficiencies.

A small number of businesses on the existing SH1 will be bypassed by the Project. However, we consider that the Project will not give rise to significant business redistribution effects, and that the removal of through traffic on SH1 may in fact enhance business opportunities by improving customer accessibility (refer to Appendix C).

Overall, the net economic effects of the Project will be positive and significant at a national, regional and local level.