

# INTRODUCTION AND BACKGROUND TO THE PROJECT



## 1.0 Introduction

The NZ Transport Agency (the Transport Agency) has lodged Notices of Requirement (NoRs) and applications for resource consent for the East West Link Project (the EWL or the Project).

### 1.1 The Requiring Authority / Applicant

The Transport Agency is a crown entity responsible for providing an integrated approach to planning, funding and delivering transport in New Zealand. The overarching objective of the Transport Agency, as set out in section 94 of the Land Transport Management Act 2003 (LTMA) is to “*undertake its functions in a way that contributes to an effective, efficient, and safe land transport system in the public interest*”.

The Transport Agency also has a strategic objective to provide significant transport infrastructure<sup>2</sup>. This includes the planning and delivery of the Accelerated Auckland Transport Programme, an accelerated a package of transport infrastructure improvements for Auckland focused on providing congestion relief, supporting economic growth and improving safety outcomes. The Project is part of that programme.

The Transport Agency is the requiring authority for the NoRs and applicant for the resource consents.

### 1.2 The East West Link Project

The Project addresses the heavily congested roads in the Onehunga, Penrose and Mt Wellington areas of Auckland. This area is one of the key economic drivers of Auckland – it is the main industrial, transport and distribution hub for the city and the upper North Island.

The Project will deliver a new four lane arterial road between State highway 20 (SH20) at the Neilson Street Interchange in Onehunga, and State highway 1 (SH1) at Mt Wellington (referred to as the Main Alignment), as well as an upgrade to SH1 between the Mt Wellington Interchange and Princes Street Interchange at Ōtāhuhu. It includes new local road connections to and within Onehunga and Penrose, as well as new or upgraded cycle and pedestrian facilities.

The Project will enhance connectivity to, within and around the Onehunga-Penrose commercial and industrial area, reducing travel times for all users, including freight, and enhancing walking and cycle paths.

The Project includes the naturalisation of the existing highly modified coastal edge, which provides opportunities for enhanced public access and water quality improvements, assisting to restore the mana of the Māngere Inlet.

### 1.3 Key Project components

The key components of the Project are shown on Figure 1-1 and summarised below. Further details of the Project are contained in *Part C: Description of the Project* of this Assessment of Effects on the Environment report (AEE).

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<sup>2</sup> Objective 9 in the *NZ Transport Agency Statement of Intent 2015-2019*, Page 25.

Figure 1-1: Key components of the Project



The Project will run between Neilson Street in Onehunga at its western end and Princes Street in Ōtāhuhu at its eastern end. Key features as indicated in Figure 1.1 include:

- A. A new four lane arterial road** between SH20 at the Neilson Street Interchange in Onehunga and the on and off-ramps on SH1 at Mt Wellington Highway;
- B. SH1 widened** in each direction between Mt Wellington Highway and Princes Street to increase capacity to allow connection to the Project. Several bridges will either be upgraded or widened to facilitate this;
- C. Major upgrades to the Neilson Street Interchange** to enable direct access between SH20 and EWL through free flow ramp connections in all directions;
- D. A full pedestrian and cycling link** between Māngere Bridge and Onehunga through to Sylvia Park Town Centre;
- E. Local road improvements** at Galway Street, Captain Springs Road, Hugo Johnston Drive and a new access road for the existing ports; and
- F. A grade separated intersection** of Great South Road and Sylvia Park Roads to provide improved reliability and future resilience.

In addition, the Project will:

- G.** Landscape and recontour the **coastal edge of Māngere Inlet** to reflect the original foreshore which existed before extensive historic reclamation; and
- H.** Incorporate **stormwater treatment wetlands** located within new headlands on the foreshore of the Māngere Inlet.

#### 1.4 The Transport Agency's environmental objectives

The Transport Agency has prepared a draft State Highway Environmental and Social Responsibility Environmental Plan for the period of 2016-2021 titled *Valuing our Future*. The document sets out how the Transport Agency will implement its Environmental and Social Responsibility Policy by identifying objectives, targets and actions to achieve the Plan.

These have been taken into account and have directly influenced the development of the Project.

The objectives of the Transport Agency in operating and improving the State highway network, and how these have been incorporated into the Project are summarised below.

**Table 1-1: The Transport Agency's environmental objectives and EWL Project response**

Objective	Comment	AEE Reference(s)
Enables kaitiakitanga	Mana Whenua have been consulted during the planning and design of the Project.	Section 9 Section 12.6
Recognises and values the natural environment	The natural environment is integral in the consideration of alternatives and in the development of the Project scope and details.	Section 8 Section 12
Responsibly manages human health and nuisance effects	Human health and nuisance effects were considered as part of the consideration of alternatives and have been taken into account in the design of the Project.	Section 8 Sections 12.11, 12.12 and 12.18
Enables connectivity, accessibility and multi modal transport	These are three very specific benefits of the Project.	Section 12.2

Objective	Comment	AEE Reference(s)
Contributes to the quality of the built environment, landscapes and to the road user experience	The built (industrial) and landscape (coastal) environments were integral components of the consideration of alternatives and taken into account in the design of the Project.	Section 8 Section 12.10
Recognises and values cultural and historic heritage	Cultural and heritage values are reflected in the Project urban and landscape design framework and in the design of the Project.	Section 15 Sections 12.6, 12.7, 12.8 and 12.9
Enables the reduction of greenhouse gas emissions	The EWL improves connectivity and accessibility for freight and enables a multi modal transport system reducing congestion and associated emissions.	Section 12.2
Is resource efficient	The Project approach is to minimise industrial land acquisition, recognising benefits of existing land resources. Minimise reclamation of the Coastal Marine Area and maximise opportunities for dual benefits where reclamation is proposed.	Section 6 Section 12.4
Continuously improves its management of environmental and social responsibility performance	Social and other effects on the environment were considered as part of the consideration of alternatives and taken into account in the design of the Project.	Section 8 Section 12.14

### 1.5 The NoRs and resource consents

The Project will traverse both land and the Coastal Marine Area (CMA). To enable the construction, operation and maintenance of the Project, new and altered designations are proposed and resource consents are sought.

There are two NoRs for the Project as listed in Table 1-2 and shown in Figure 1-2. The designation boundaries are shown in more detail in the designation plans attached to the NoR and in the drawings in *Volume 2: Drawing Set*.

**Table 1-2: NoRs for the Project**

NoR	Activities	RMA Section
NoR 1	New designation from SH20 at the Neilson Street Interchange to SH1 at the Mt Wellington ramps covering all land required to enable the construction, operation, occupation and maintenance of the Project.	168
NoR 2	Alteration to existing SH1 Auckland Unitary Plan (Operative in Part) (AUP (OP)) designation 6718 (State highway) to enable widening between Mt Wellington Highway and Princes Street and associated interchange upgrades and road widening works.	181

Figure 1-2: Notices of Requirement



There are various resource consents required for the construction, operation and maintenance of the Project as detailed in *Section 5.2: Applications for resource consent* of this AEE. The following types of consents are required:

- Land use in accordance with sections 9(1), 9(2), 9(3) and 89 of the Resource Management Act 1991 (RMA);
- Coastal permit in accordance with section 12 of the RMA;
- Water permit in accordance with sections 13 and 14 of the RMA;
- Discharge permit in accordance with section 15 of the RMA; and
- Land use consent in accordance with section 89(2) of the RMA.

The NoRs and consents are described in more detail in *Section 5.0: Designations and Consents* of this AEE.

## 1.6 Purpose and scope of this report

This AEE and the supporting documents (including *Volume 2: Drawing Set* and *Volume 3: Technical Reports*) have been prepared to support the NoRs and applications for resource consents (collectively referred to as “the Application”) which if confirmed and granted would authorise the construction, operation and maintenance of the Project under the RMA.



## 1.7 Structure of this report

This report, in conjunction with the technical reports, design drawings and supporting information, contains the information required by the RMA. This AEE is one component of the NoR and resource consent applications. The structure of the whole Application is set out in Table 1-3.

**Table 1-3: Structure of the Application**

Volume	Name	Contents
	Notices of Requirement	NoR forms including designation plans and schedules.
	Resource Consent Applications	Resource consent application forms.
1	Assessment of Effects on the Environment Report	AEE report.
2	Drawing Set	Design drawings for all aspects of the Project including the completed alignment, indicative construction drawings and landscaping.
3	Supporting Technical and Assessment Reports	Technical Reports assessing the effects of the construction and operation of the Project.
4	Urban and Landscape Design Framework	Urban and Landscape Design Framework for the Project.

### 1.7.1 Technical Report Supplementary Assessments - Great South Road Intersection

Technical reports supporting the Notices of Requirement and resource consent applications were completed in November 2016. Engagement with stakeholders and the wider community has continued in parallel, including design review in response to matters raised.

As a progression of the work to date, the design of the EWL/Great South Road/Sylvia Park Road intersection has been revised, from an at grade design originally proposed, to a grade separated design.

This AEE assesses the potential effects arising from the grade separated intersection at Great South Road. It incorporates information from supplementary technical assessments which were prepared in December 2016 to address the change from an at grade to a grade separated design at Great South Road. Grade separation of the east west through movements at this intersection will provide improved reliability and future resilience.

The AEE and all supporting drawings in *Volume 2: Drawing Set* describe or show the grade separated intersection at Great South Road. The intersection is described in further detail in Section 6.6.3 of this AEE.

Each technical specialist has reviewed their original assessment (November 2016) to determine if their original assessment, recommendations and conclusions have altered as a result of the revised design at the Great South Road intersection. Where the assessment has altered, a supplementary assessment (December 2016) is included with the relevant technical report in *Volume 3: Supporting Technical and Assessment Reports*<sup>3</sup>. Where the original assessment, recommendations and conclusions are not affected by the revised design, no supplementary assessment report has been prepared.

<sup>3</sup> Refer to Table 12-1 for a list of supplementary assessments.

### 1.7.2 Structure of the AEE

The structure of this AEE report is set out in Table 1-4.

**Table 1-4: Structure of this AEE**

Part	Sections	Name	Contents
A	1.0 – 3.0	Introduction and background to the Project	An outline of background to the Project, the Project area, the applicant and the Project objectives.
B	4.0 – 5.0	Statutory context	Identification of the legal framework that applies to the Applications.
C	6.0 – 7.0	Description of the Project	Description of the Project, including construction and operation.
D	8.0	Considerations of alternatives	The methodology by which alternative sites, routes and methods have been considered.
E	9.0	Engagement	Identification of affected persons and an outline of engagement that has occurred during preparation of the Applications and response to issues raised.
F	10.0 – 11.0	Description of the environment	Description of the existing and historic environment.
G	12.0	Assessment of effects on the environment	Outline of methodology and assessment of the actual and potential effects on the environment, including consideration of the measures proposed to avoid, remedy or mitigate the effects.
H	13.0	Management of effects on the environment	Proposed methods to manage the identified effects including proposed conditions for the designations and suggested conditions for the resource consents.
I	14.0 – 15.0	Statutory matters	An assessment of the Project against the matters set out in the RMA. An assessment of the Project against all relevant national, regional and local statutory and non-statutory documents.

The Project and assessments have been developed in an integrated manner. Whilst a single AEE report covers all aspects of the Project, some aspects of this report will only be relevant to:

- Specific geographical areas; or
- The NoRs and / or resource consent applications; or
- Specific components of the Project.

Forms 9 and 18 of the Resource Management (Forms, Fees, and Procedure) Regulations 2003 set out what information is relevant to resource consent applications and NoRs respectively<sup>4</sup>. The completed forms are contained in the *NoRs* and *Resource Consent Applications*.

<sup>4</sup> Regulations 9 and 11, Resource Management (Forms, Fees and Procedure) Regulations 2003.



## 2.0 Background

### Overview

The Project area is a significant employment hub, second only to the Auckland Central Business District (CBD) for number of employees, and it generates a large proportion of Auckland's Gross Domestic Product (GDP). It has been, and remains, a strategically important location, being at the convergence of two main State highways and the main trunk railway.

While activity in the area has been slowly transforming over time, with the growth of business services and an increased specialisation in transport and logistics, there is evidence that transportation constraints (and in particular poor accessibility into and out of the area) already are, and will continue to limit the growth in economic activity in this area. Such constraints are considered to be adversely impacting on the spatial and economic growth of Auckland, as set out in the Auckland Plan, which identifies the need for Auckland to improve its overall economic performance and the importance of addressing issues, such as infrastructure constraints, to enable this.

As the population, business and jobs grow, appropriate transport infrastructure and good connectivity to the transport networks will be critical to the success of the area. The Project is recognised in the Auckland Plan as a key strategic project to support the ongoing growth and economic development of Auckland in a manner supporting Auckland's spatial plan.

### 2.1 Introduction

This section provides information on the economic context of the area and the reasons for developing new transport infrastructure. The following sections are structured to provide context to the existing and future problems or needs that the Project seeks to address. In summary, the section provides:

- A description of the Project location and the economic history of the area;
- A summary of the growth and economic development anticipated in Auckland;
- The implications of growth on transport demand in in the Project area; and
- The contribution of the Project in the context of strategic planning in Auckland.

### 2.2 Historic context of the Project

Geographically, the Project is located at the narrowest isthmus of New Zealand, and approximately in the centre of the Auckland urban area. It is bound on the west by the Manukau Harbour and the east by the Tāmaki River. The geography of the area has shaped land use, economic activity and the movement/transmission of goods and utilities through this area over time.

#### 2.2.1 Historic context

The area has a long and significant economic history, both for Māori and since Pākehā colonisation. The Māori cultural landscape includes a rich history of settlement, trade and movement, described in more detail in *Section 12.6: Effects on values of importance to Mana Whenua*. A key element demonstrating

this socio-economic landscape is defined, by the connections provided between the Manukau Harbour and the Waitematā via the portages (e.g. the Kāretu and Ōtāhuhu portages) which traverse this area<sup>5</sup>.

While Auckland's CBD has always been the city's commercial centre, the Project area has also significantly contributed to economic activity in Auckland during the past 150 years.

From the early 19<sup>th</sup> century, industries such as timber milling and exporting flourished. Onehunga Port was a major timber trading point and dominated as the New Zealand shipping port between New Zealand and Great Britain and later between Auckland and Wellington<sup>6</sup>.

At the same time, Ōtāhuhu was developing for industrial use and its location at such a narrow point meant it was ideally placed for road and rail connections to the north and south of Auckland<sup>7</sup>.

Mt Wellington was established as a centre of heavy industry in the early 20<sup>th</sup> century. As transport, wholesaling and manufacturing grew between Mt Wellington and Onehunga, the greenfield space between them was rapidly taken over. The later reclamation of Māngere Inlet resulted in more capacity for industrial growth in Onehunga.

A detailed history is provided in *Section 10.0: History of the Area*.

### 2.2.2 Transport links supporting economic activity

As a result of the area's economic importance, transport into and out of the area has also been important. For example, the Onehunga Branch line was one of the earliest government-funded railways in New Zealand, connecting Auckland and Onehunga.

Core elements of the land transport network in the area were also established from the early 1900s. The rail lines (comprising the Onehunga Branch Line and the North Auckland Line) were established by 1925, and key local roads providing access between the Onehunga Wharf, and Penrose included Neilson Street (originally running along the foreshore) and Church Street. Great South Road provided access between these areas and the business areas to the north and south (e.g. Ōtāhuhu), while the 'Old Māngere Bridge' provided a connection between Onehunga and Māngere (in circa 1915).

As the city has grown, so too has the transport network to support it. In the early 1950s the first section of SH1 was constructed between Ellerslie and Wiri, and later, in the early 1980s, SH20 and the 'new' Manukau Harbour Bridge were built. Since this time, the State highway networks have been the 'backbone' of the regional economy, linking Auckland's main business district to the ports in Auckland City, Onehunga and the airport, as well as the port of Tauranga. Two full transport connections are provided on the State highway network from the north to the south of Auckland. The first of these is SH1 and the second the recently completed Western Ring Route (which will be finalised with the opening of the Waterview Connection project, in early 2017).

The need for transport connections between SH1 and SH20 to support economic activity in the area has also long been recognised. A connection to join the east of the city with the west was first proposed in the 1960s as part of the Auckland strategic road network. This part of the network was identified as being necessary by 1990 to accommodate the projected growth.

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<sup>5</sup> The function of the Kāretu portage in particular, mirrors the economic function sought to be provided by the Project

<sup>6</sup> NZ Herald 2010, Auckland: Soldiers of fortune

<sup>7</sup> The residential area of Ōtāhuhu further developed in the mid twentieth century.

## 2.3 Future growth and economic development in Auckland

Currently one of every three New Zealanders live in Auckland - it is home to about 1.4 million people. Auckland Council is forecasting that the proportion of New Zealanders living in Auckland will continue to increase, with the city reaching 42% of the national population by 2041<sup>8</sup>. Over the next 25 years, more than 60% of New Zealand's population growth is expected to occur in Auckland<sup>9</sup>.

Auckland is also now the country's largest commercial centre. It accounts for 35% of New Zealand's GDP and is growing at 2.9% a year. The Auckland Plan identifies Auckland's economic performance as 'critical' to achieving the Auckland Plan vision and for the prosperity of New Zealand as a whole.

Auckland is also interdependent with the rest of New Zealand (being both the major domestic market for national producers) and the distribution hub for goods into and out of the northern North Island cities and regions. As a result of this and given the growth forecast, there is expected to be a 70% increase in freight demand within and between regions in the upper North Island (primarily between Auckland, Northland, Waikato and Bay of Plenty) by 2042<sup>10</sup>.

The Auckland Plan cites the relatively poor economic performance of the city as a key issue and highlights strategies for the transformation of Auckland's economy (e.g. to achieve the goal for GDP growth to shift to 4% a year). Priority 1 of the economic development strategy of the Auckland Plan is to grow a business-friendly and well-functioning city. This priority specifically recognises the cost of traffic congestion, constraining the movement of goods and people at substantial cost to the productivity of businesses.

Roads cater for 86% of transport movements within Auckland, and the expected growth will place significant pressure on the existing road network, even with planned improvements to public transport. To meet the increasing demand, and to ensure people and freight can move around the city and the region quickly and efficiently, the Auckland Plan recognises that new capacity is needed (as set out in Chapter 6 and others of the Auckland Plan).

## 2.4 The economic context of the EWL area

The immediate 'Project area' includes the industrial and business areas of Onehunga, Southdown (Penrose), Mt Wellington (Sylvia Park) and Ōtāhuhu<sup>11</sup>. This area represents a major part of the city's employment 'picture', complementing the major commercial hub of the CBD (to the north) and other key employment areas such as East Tāmaki (which is accessed from SH1 just south of the Project area, at Highbrook Drive), Manukau (further south on SH1) and the emerging hub of the Auckland International Airport (to the south-west accessed by SH20).

### 2.4.1 Projected population and employment growth

Statistics New Zealand and Business and Economic Research Limited projections indicate strong population growth and some economic growth within and surrounding the Project area and surrounding suburbs, as illustrated in Figure 2-1 and Figure 2-2 below. These figures and projections are based on a fixed land use scenario 'without' the Project and as such, some figures of growth are likely to underestimate the opportunity that may be provided through the Project. This is discussed further in *Section 2.5.1: Transport context* of this AEE.

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<sup>8</sup> Auckland Council, the Auckland Plan, Chapter 6.

<sup>9</sup> Ibid.

<sup>10</sup> Ministry of Transport, National Freight Demand Study (2014).

<sup>11</sup> In most cases, the Project traverses through industrial and business areas in these suburbs. In contrast, in Ōtāhuhu, (which is a mix of industrial/business and residential) the Project traverses a largely residential area.



Figure 2-1: Predicted employment growth 2011-2041

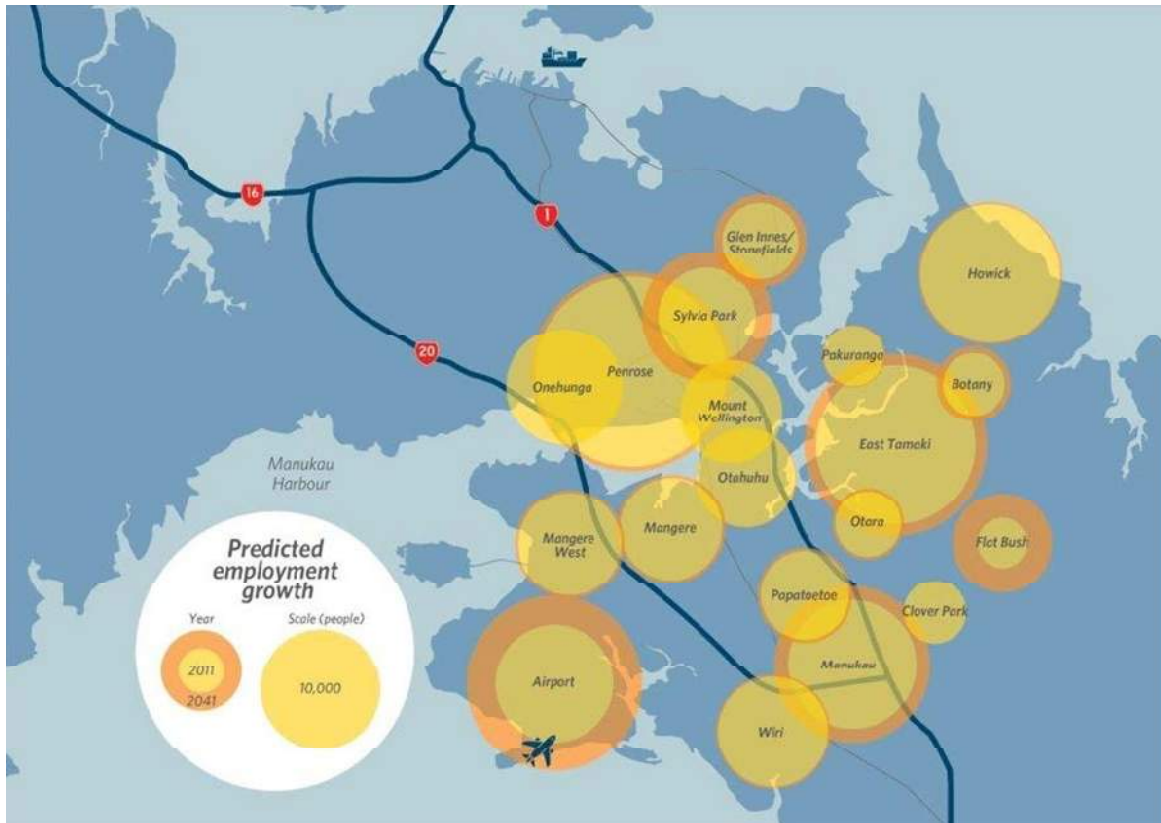
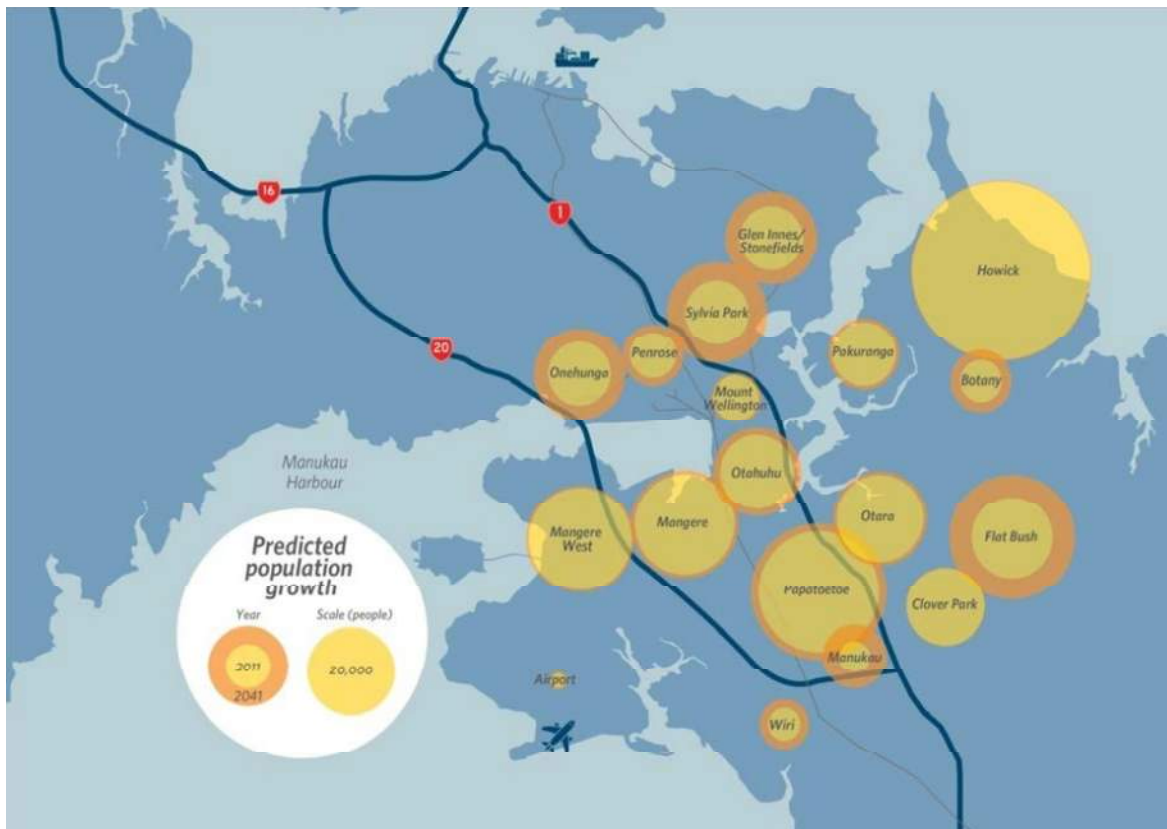


Figure 2-2: Predicted population growth 2011-2041



### 2.4.2 Economic Contribution of the Project Area

As set out above, the Project area has played and continues to play a unique and important role within the Auckland and upper North Island economy. It is a key industrial, transport and logistics hub for Auckland and the upper North Island. The GDP and jobs generated by the area are significant and in 2012, the direct Project area (Onehunga, Penrose, Mt Wellington and Ōtāhuhu) accounted for approximately \$4.7 billion of output, or 7.5% of Auckland's total GDP<sup>12</sup>. As evident in Table 2-1, while this area has grown, it has not grown at the same rate as the whole Region, meaning a slight decline in the contribution this area makes to the region's activity. This is not unexpected given the rapid growth and extensive size of the wider area.

The area also represents a significant proportion of the city's employment and it is one of Auckland's principal manufacturing locations, accounting for 17.9% Auckland's, and 5.9% of New Zealand's manufacturing jobs. It also acts as a major hub for transport and logistics for Auckland and the upper North Island with 19.7% of Auckland's and 9.1% of New Zealand's employment in transport and wholesaling. Although not labour intensive industries, manufacturing, transport and logistics activities are transport intensive industries. Transport requirements of these businesses will increase with the growth of internet based commerce and population.

**Table 2-1: EWL GDP (Output) by Sub Area (\$ billions)**

GDP (Output)	2001	2006	2012
Penrose Onehunga	2,219	2,421	2,298
Mt Wellington/Ōtāhuhu	1,976	2,110	2,392
<b>Total East West Link Area</b>	<b>4,195</b>	<b>4,530</b>	<b>4,690</b>
EWL % Auckland GDP	9.1%	8.0%	7.5%
Auckland	46,300	56,529	62,789

### 2.4.3 Economic trends in the Project area

While the Project area remains a stronghold of manufacturing and distribution activity, a change is gradually taking place as business services activity – such as construction, retail, professional services and healthcare – grows, while the dominance of transport, wholesaling and manufacturing has declined. The area's economy is becoming more service-oriented, which is reflected in the economic profile of the region in general. Business services has become a significant employment sector in the area; it now accounts for 17.5% of the area's jobs.

The area however, is retaining its distinctive character as an industrial and transport oriented stronghold, as the more transport intensive activities are growing too. Distribution activity is compensating for a decline in manufacturing, reflecting the area's function as a specialised regional distribution centre.

An increasing level of specialisation within the transport and logistics sector can be observed from the growing concentration of road and rail freight activities around Westfield and Southdown.

Logistics companies are investing in local facilities to take advantage of the unique attributes of a road/rail integration connecting to New Zealand's two major ports (Ports of Auckland and Port of Tauranga) in proximity to central Auckland.

<sup>12</sup> All data has been sourced from *Report 3: Economic Assessment* in *Volume 3*.

The economic function of the area is strongly influenced by the historically good level of accessibility offered by the transport system. This is particularly the case for transport and logistics activities, which benefit from the access to both rail and the strategic transport network.

The transport-intensive nature of logistics and distribution suggests that to meet growing customer needs, these movements will occur throughout the day, which for this sector may extend beyond 12 hours per day.

## 2.5 Transport and accessibility demands to support economic growth

### 2.5.1 Transport context

The Project area has a variety of roads ranging from two lane local streets to SH1 and SH20 which accommodate up to eight lanes of traffic. With the exception of SH1 and SH20, all roads have a posted speed limit of 50km/h. The majority of roads running through the residential and commercial areas are two-lane roads, however the key freight arterial routes are typically four lanes, including Great South Road, Mt Wellington Highway, and parts of Sylvia Park Road, Church Street and Neilson Street. These arterial roads are parts of the regional freight network and provide access to the adjacent and surrounding businesses. The high traffic flows mean there is often conflict between the turning movements associated with property access and the through traffic associated with their arterial function.

Given the land use is primarily industrial, it generates large volumes of traffic, including heavy vehicles. Specific sites generate much of this – e.g. MetroPort opened in 1999 and by 2012 generated 2,000 to 2,500 heavy vehicle trips per day. Currently, 19% of vehicle movements through the area are from trucks<sup>13</sup>.

The existing roads carry significant volumes of traffic and this is anticipated to increase, as illustrated in Table 2-2 below.

**Table 2-2: Existing and anticipated traffic volumes (vehicles per day)**

Key Road	2013 <sup>14</sup>	2026 Without Project	2036 Without Project
Church Street east of Neilson Street	43,300	48,400	51,200
Great South Road at Southdown Lane	31,900	32,900	33,000
Neilson Street east of Victoria Street	27,700	31,400	35,200
SH1 at Panama Road	123,600	137,900	145,900
SH20 Māngere Bridge	108,800	170,700	188,000

The local roads, particularly Neilson and Church Streets, are already heavily congested and do not provide reliable connections between businesses in the area or to SH1 and SH20. Getting on and off SH20 at Onehunga is particularly difficult due to the capacity constraint at the Neilson Street/Onehunga Mall intersection. The section of SH20 between Neilson Street and Queenstown Road is currently congested during peak periods. The current construction (due for completion in late 2016) of auxiliary lanes on this section of SH20 will help ease this congestion. It is anticipated that higher traffic flows will be on this section

<sup>13</sup> Whilst this figure was from a count taken on one day this is consistent with previous counts undertaken.

<sup>14</sup> The 2013 figures are modelled, rather than measured.



of SH20 after the Waterview connection opens in early 2017, including traffic wishing to access the Onehunga-Penrose area. The existing constraint on Onehunga Mall will therefore come under even greater pressure, with extended queuing likely to impact other movements on SH20.

A large proportion of roads within the area are classified as ‘Strategic Freight Network’, which links areas of generation (e.g. manufacturing or importing) with areas of attraction (e.g. the markets of urban Auckland and beyond). Within the immediate vicinity of the Project, the following roads are classified as strategic freight network:

- SH1 and SH20;
- Onehunga Mall;
- Captain Springs Road (north of Neilson Street only);
- Hugo Johnston Drive;
- South Eastern Arterial;
- Sylvia Park Road;
- Princes Street.
- Onehunga Harbour Road;
- Neilson Street;
- Church Street;
- Great South Road;
- Mt Wellington Highway;
- Panama Road;

A comparison of travel times shows variability as great as 12 minutes, and in some cases a maximum time four times the minimum time. This affects public transport and freight as well as other vehicles as illustrated in Table 2-3.

**Table 2-3: 2016 Existing journey times accessing the Project area (all day)**

From	To	Minimum (minutes)	Median (minutes)	95th Percentile (minutes)	Range (minutes)
SH20 south	Waikaraka Park	3.7	6.8	10.7	7
Waikaraka Park	SH20 south	2.9	5	9.6	6.7
SH1 south	MetroPort	6.1	9.8	18.1	12
MetroPort	SH1 south	7.1	11.8	17.5	10.4
Waikaraka Park	SH20 north	3.4	5.6	10.8	7.4
SH20 north	Waikaraka Park	2.5	4	5.6	3.13
SH1 north	MetroPort	4.5	6.7	9.7	5.2
MetroPort	SH1 north	2.7	6.1	10.8	8.1

Unreliable travel times affect all road users, including:

- **Public transport** - Unreliable journey times restrict the ability to use interconnecting services (e.g. transferring from buses to trains) and reduce the attractiveness of using public transport, especially relative to car use. For people using multiple forms of transport, lengthy travelling times can result from having to allow for the ‘worst case scenario’ journey. When trying to arrive at a place by a specified time, added time must be factored in to account for the potential variability in travel time. In addition, public transport timetabling is most accurate where travel times are consistent.
- **Freight** - Significant congestion including during the day at non-peak times affects the transportation of freight and other business activities. Delays to deliveries can reduce the number of journeys able to be completed by each truck in a day. In some cases, this can result in more vehicles and staff being required or longer working hours for affected staff. Shorter, regular journey times could enable more trips per vehicle per day and enable better planning for journeys.

The high level of predicted growth in the area and the wider upper North Island is expected to increase demand in the area. This is expected to exacerbate:

- Congestion on local roads surrounding the two State highways;
- Conflicts between the different transport users and traffic demands including pedestrians, cyclists, public transport, motorists and freight;
- High volumes of freight traffic and unreliable freight travel times;
- Demand for east to west travel between SH20 and SH1 and / or South Eastern Arterial;
- Poor resilience in the network between SH1 and SH20 leading to unreliable connections;
- Bus variability through sharing the roads and congestion with freight and general traffic;
- Vehicles increasingly using residential streets to avoid congestion on the strategic network; and
- Barriers to safe cycling and pedestrian access.

The priority issues for the Project area include:

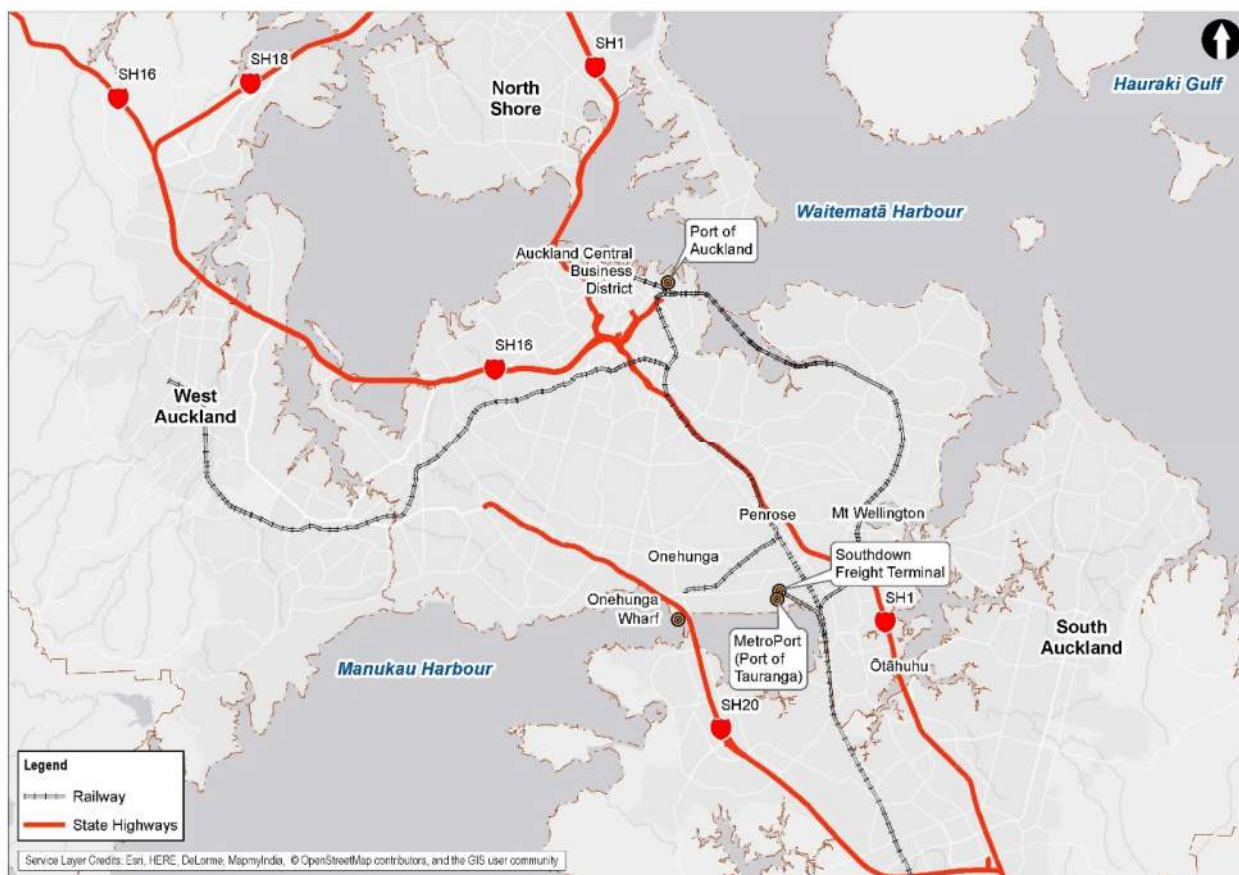
- Difficulty in accessing SH20 at Onehunga;
- High frequency of freight on Neilson Street and Church Street for the majority of the working day, conflicting with vehicles accessing properties and with through traffic;
- Indirect and congested southern connection on SH1;
- Poor cycle connections and conflict with high freight movements; and
- Unreliable public transport services accessing Onehunga due to congestion throughout much of the day, as well as congestion on other bus routes due to conflicts with general and freight traffic.

### 2.5.2 Strategic rail hub

The Project area provides the most important link between road and rail freight in Auckland. As illustrated in Figure 2-3, it contains:

- The MetroPort inland port serving the Port of Tauranga;
- The adjacent Westfield/Southdown KiwiRail and Toll freight terminals; and
- It is increasingly acting as a rail-served inland port for the Ports of Auckland.

Figure 2-3: Regional context



The area also accommodates a large number of other major distribution and logistics businesses serving Auckland and the upper North Island, taking advantage of proximity to key markets and suppliers and the access to not only rail but also the strategic road network – for transportation of goods by truck. The area also contains the Onehunga Wharf.

This rail and road link is vital as Northland, Auckland, Waikato and the Bay of Plenty together produce more than 50% of New Zealand’s GDP. Increased economic interaction between these regions will continue to drive economic growth in the upper North Island and throughout the country.

The Westfield/Southdown road and rail freight terminal will therefore become increasingly important for future freight movements as the key link within these regional supply chains. Supporting these activities is critical to the economic prosperity of the region and the potential for future growth.

There is increasing conflict between freight and passenger movements on the rail network due to the high levels of growth in both activities. The local capacity is being increased by KiwiRail with the addition of a third rail line through Wiri and through other improvements set out in the Auckland Rail Development Plan<sup>15</sup> including the potential to separate the North Island Main Trunk (NIMT) and the North Auckland Line so that crossing points are at different elevations.

<sup>15</sup> KiwiRail and Auckland Transport (2016) Auckland Rail Development Plan. The Auckland Rail Development Plan is a programme of proposed works over the next 30 years as agreed between KiwiRail and Auckland Transport.



### 2.5.3 Transport Demands / Accessibility Demands to Support Economic Growth

In summary, the potential for economic growth within the Project area is strong, but the ability of the existing transport network to accommodate this growth is limited. Without further investment in the transport network, the following problems or issues are expected to perpetuate:

- Demand for freight and logistics services are expected continue to grow strongly as the region's strong population and economic growth is expected to increase demand for consumable goods, resulting in increased transport activity. This will more than offset any effects of a decline in manufacturing activity in the area;
- The expected increase in employment within and surrounding the Project area is projected to place increasing pressure on the transport system. This would be most evident at peak times with greater conflict between freight and commuter traffic. However, given the strategic setting of this area, and the extensive freight distribution and logistics industries, it is likely to result in much heavier congestion at all times of the day;
- Conflicting transport pressures within the Project area are likely to continue to increase, due to the broad economic expansion locally and the growth of population and economic activity regionally; and
- An increase in longer-distance freight rail services is expected as transport and logistics operations become more multi-modal (i.e. relying on more than one type of transport), however the benefits and growth of this kind of efficiency is likely to be constrained if the freight cannot be distributed on the receiving road network.

In addition these issues or 'lost opportunities' were identified through the early planning work for the Project as likely to arise, if the current transport network is maintained but not expanded:

- Lack of response to changes in industry's supply chain strategies leads to greater congestion, unpredictable travel times and increased costs;
- Quality of transport choices is inadequate and hinders development of liveable communities. The constraints and barriers to efficient public transport, walking and cycling will further increase car-based commuting, again exacerbating the vehicle conflicts with freight and business activities; and
- The strategic transport network does not have the capacity to keep pace with growth and deliver economic benefits for Auckland as planned and sought in the Auckland Plan.

## 2.6 Conclusion

Growth of business, employment and residential development in Auckland are creating increasing demand for transport investment. Auckland Council (in their spatial plan for the city) have identified the critical importance of transport projects such as the Auckland-Manukau Eastern Transport Initiative (AMETI) and the East West Link as important projects to address this demand and provide for freight and east-west traffic movements.

The strategic transport corridor provided by the Project establishes improved accessibility for existing and future businesses in the areas of Onehunga and Penrose (including rail freight hub at Southdown), through to Mt Wellington and Ōtāhuhu. It provides for improved connectivity for these areas to other economic hubs in the city, including the Auckland Port and CBD, major employment areas such as East Tāmaki, and to connect to inter-regional hubs south of the city.

The Auckland Plan identifies that the Project will support the strategic growth of Auckland by addressing the existing economic inefficiencies resulting from high traffic and freight movements on congested local

roads, by providing for efficient freight movements between SH20 and SH1, and between industrial areas and the port and airport<sup>16</sup>.

The existing constraints and conflicts will require a multi-modal response to gain the economic efficiencies desired, including providing improved options and accessibility for walking, cycling and public transport, as well as improved road capacity.

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<sup>16</sup> See Directive 13.3 of the Auckland Plan, 2012.

## 3.0 Project Development

### Overview

This chapter outlines the development process for the Project and the basis for the Project Objectives. The Project Objectives are particularly relevant for NoRs as an assessment is required to consider whether the “work and designation” is reasonably necessary to achieve the Project objectives (Section 171(1)(c)) of the RMA.

The objectives for the Project are:

1. *To improve travel times and travel time reliability between businesses in the Onehunga–Penrose industrial area and SH1 and SH20;*
2. *To improve safety and accessibility for cycling and walking between Māngere Bridge, Onehunga and Sylvia Park, and access into Ōtāhuhu East; and*
3. *To improve journey time reliability for buses between SH20 and Onehunga Town Centre.*

The final part of this section provides a summary of the key transport outcomes and the wider benefits of these outcomes identified through the process of determining the scope of the Project.

### 3.1 The strategic context

The Project has been developed in accordance with key legislation and government transport policy (including Auckland’s spatial plan) which provides strategic direction and guidance<sup>17</sup>. The key relevant legislation and policies that have guided the development of objectives for the Project and the evaluation of the expected outcomes from it, include:

- The Local Government Act, which has informed regional spatial planning (the Auckland Plan) which in turn provides input to a number of other implementation Plans (including those set out below);
- The LTMA, which informs both the development of strategy (e.g. the Government Policy Statement and New Zealand Transport Strategy) as well as plans (e.g. the New Zealand and Regional Land Transport Plans and the Integrated Transport Plan); and
- The RMA. In particular, this Act is implemented through the National Policy Statements, AUP (OP) and Operative District and Regional Plans.

The Government Policy Statement on Land Transport 2015/16 – 2024/25 outlines the national priorities, outcomes and funding levels for the land transport sector until 2025. The three key priorities are economic growth and productivity, road safety and value-for-money. This Project specifically responds to the GPSLT identified priorities.

The 2015-2018 National Land Transport Programme (NLTP) developed under the Government Policy Statement on Land Transport focuses on economic growth and productivity, smart transport choices, making journeys safer and more effective and resilient networks. The NLTP contains all land transport

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<sup>17</sup> It is noted that the initial phases of the Project were defined and developed with Auckland Transport. The Transport Agency has been responsible for the development and identification of the preferred alignment for the Project.

activities that the Transport Agency anticipates funding between 2015 and 2018. EWL<sup>18</sup> is identified within the NLTP as a key investment route to provide more efficient, predictable and safe freight journeys and also improved movement of freight between road and rail.

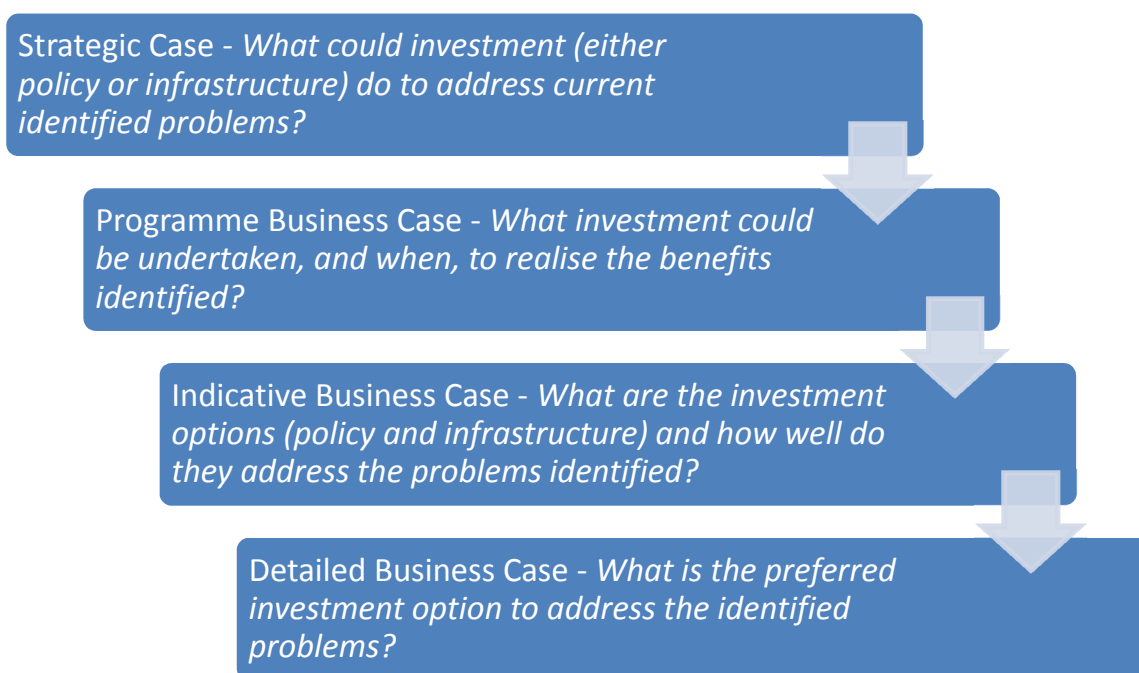
EWL was identified as a priority by the Government in June 2013<sup>19</sup> and reinforced in January 2016<sup>20</sup>. The Government recognised the importance of the economic contribution made by industrial and transport/logistics businesses within Onehunga, Mt Wellington to support the wider Auckland (e.g. East Tāmaki and CBD) and national economy (e.g. Hamilton and Tauranga).

The Auckland Regional Land Transport Plan 2015-2025 (ARLTP) outlines how transport priorities will be delivered for the next 10 years and implements the NLTP. The ARLTP identifies EWL<sup>21</sup> as an improvement project with inter-regional significance. EWL is an accelerated programme with funding provided in the capital programme from 2015-2018 for design, with construction scheduled primarily over the planning period 2019-2022.

### 3.2 Determining the need for transport investment

Figure 3-1 below provides an overview of the process undertaken to determine the need for the Project, following the business case approach.

**Figure 3-1: Summary of process to determine the need for transport investment**



<sup>18</sup> Referred to as East West Connections.

<sup>19</sup> Address to Auckland Chamber of Commerce by the Prime Minister, the Rt Honourable John Key, 28 June 2013.

<sup>20</sup> Address to Auckland Chamber of Commerce by the Prime Minister, the Rt Honourable John Key, 27 January 2016.

<sup>21</sup> Referred to as East West Connections.



### 3.2.1 Strategic Business Case

Following the directive in the Auckland Plan 2012 to undertake planning and implementation of an 'east-west' transport link, Auckland Transport, Auckland Council and the Transport Agency formed a team to develop a Strategic Case for the Project. This work commenced in late 2012.

The initial stage of this work focused on the high level transport problems within the wider 'east-west' area (being the areas of Onehunga, Penrose, Mt Wellington and East Tāmaki to Auckland International Airport). The outcome of the work was to classify the relative priority of transport and connectivity problems and the socio-economic benefits that could be accrued if these problems were addressed. This process was reported in the Multi Modal East West Solutions Strategic Case, which was completed in March 2013. This report confirmed that there was a case for progressing further investigations on specific priority 'problems'. This was supported by all parties.

### 3.2.2 Programme Business Case

Following the 'Strategic Case' above, Auckland Transport and the Transport Agency progressed to the development of a more detailed investigation of transport problems and potential 'interventions' (e.g. physical projects or policy changes to respond to the problems). The purpose of this phase was to investigate and clarify the problems identified during the Strategic Case (including input from wider stakeholders), and then outline a 30 year programme of works that would address these. From this work, the key outcomes relevant to the Project (reported in early 2014<sup>22</sup>) were:

- The confirmation that additional transport infrastructure would be required in the Project area (e.g. policy change would not be sufficient to address the problems identified); and
- That the priority for infrastructure connections to address transport problems in the area included:
  - A transport link in the Onehunga-Penrose area; and
  - A transport link between Māngere, Ōtāhuhu and Sylvia Park.

### 3.2.3 Indicative Business Case

During 2014, Auckland Transport and the Transport Agency continued to investigate specific options for the above priority infrastructure investments<sup>23</sup>. Investigation included:

- Evidence of the transport problems;
- Identification of investment options to address the problems (e.g. specific investment options of new infrastructure and corridors for infrastructure investment); and
- Quantification of potential benefits to be achieved from addressing these problems.

A recommended option for the two priority problems of the earlier Programme Business Case was outlined and a preliminary financial analysis undertaken. The outcome of this investigation was confirmation that new road capacity and access was needed to address the Onehunga-Penrose transport connection problem.

### 3.2.4 Detailed Business Case

The final step in the process to confirm the need for transport investment was the Detailed Business Case, which was completed in December 2015. The Detailed Business Case refined the scope of the

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<sup>22</sup> The outcome of this investigation is reported in the Programme Business Case, 2014.

<sup>23</sup> This phase of work is reported in the Indicative East West Connections Business Case, December 2014.

preferred approach from the Indicative Business Case, identified potential strategies for staging and implementing the preferred approach and identified potential funding sources. The outcome was a preferred road alignment along the Māngere Inlet foreshore and an overview of the process to proceed with implementation.

Engagement with stakeholders (including Mana Whenua, other government agencies, road users, businesses and local communities) was undertaken during all phases of the above investigation, this included work to identify the scope of transport problems in the area and to identify and evaluate the investment options to address these problems. The outcomes of this consultation are summarised in *Section 9.0 Engagement* of this AEE.

### 3.3 The Project objectives for East West Link

The objectives for the Project reflect the transport problems that the Project is seeking to address (e.g. they reflect the benefits or outcomes that the business case process identified as being needed<sup>24</sup>). These are:

- To improve travel times and travel time reliability between businesses in the Onehunga-Penrose industrial area and SH1 and SH20;
- To improve safety and accessibility for cycling and walking between Māngere Bridge, Onehunga and Sylvia Park, and accessing Ōtāhuhu East; and
- To improve journey time reliability for buses between SH20 and Onehunga Town Centre.

### 3.4 The outcomes to be delivered by the Project

In delivering the Project and the above objectives, the following benefits are expected to be delivered by the Project:

- Improved and more reliable travel times;
- Accessibility that supports businesses for growth and economic prosperity;
- Improving safety and connected communities; and
- Enabling and providing environmental improvements and social/community opportunities to the local area.

The technical and planning assessments in the AEE illustrate how these benefits are being realised in more detail. The following provides a brief summary of the key positive outcomes delivered by the Project.

#### 3.4.1 Improved and more reliable travel times

The Project will deliver reduced, more consistent and reliable travel times accessing the Onehunga-Penrose industrial area, as well as positive effects on the wider road network. For example:

- Trucks travelling from the Onehunga-Penrose industrial area to the State highways will be between four and 17 minutes faster;
- Journey times between MetroPort and East Tāmaki (Highbrook) will improve by up to 13 minutes; and

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<sup>24</sup> In particular see the key benefits that the Project could deliver as identified in the Indicative Business Case, December 2014.

- Public transport benefits including buses will be five to six minutes quicker when travelling from Māngere Bridge to Onehunga Town Centre.

There will also be more resilience in the local road network, providing a connection and alternative to the existing Neilson Street corridor. In addition, providing a link between the two State highways in case of an emergency event or closure on either one, will also provide wider network resilience.

These benefits are important for the movement of road-based freight, commercial traffic, and for the general public who will experience improved and more reliable journey times as they go about their day. Local communities will benefit as a result of the overall reduced traffic volumes on local roads, particularly those in town centres (e.g. Neilson Street in Onehunga Town Centre).

For people wishing to commute via walking or cycling, the Project will deliver increased transport choice through the improved walking and cycleway infrastructure, and improved connectivity between Onehunga and Sylvia Park. This complements other transport deliverables such as the Auckland Region walking/cycling network, and the Sylvia Park bus way and multi-modal interchange being developed by Auckland Transport.

An assessment of the traffic and transport effects of the Project is provided in *Section 12.2: Traffic and Transport*.

### 3.4.2 Supporting businesses for growth and economic prosperity

As set out in *Section 2.0 Background*, the area is strategically important due to its proximity to the SH1 and SH20 strategic roads and to the rail network, which provides the opportunity to continue to service the area with rail freight, and to grow movement of freight by rail. The rail network and Southdown area are designated for rail purposes, and will continue to be critically important as increased economic interaction between the North Island regions (Northland, Auckland, Waikato and Bay of Plenty) will continue to drive economic growth in the upper North Island. The Project specifically supports the integration of road/rail, particularly with the Southdown/port link road connection to EWL and through the improved connections between the Onehunga–Penrose areas to both SH20 and southbound SH1.

The Project adds a new strategic road to the State highway network, which supports businesses in managing their anticipated growth. The quicker and more reliable travel times (as set out above) means more efficient distribution of freight by trucks using the strategic road network and therefore increased productivity, and the opportunity to continue to grow movement of freight by rail due to more efficient road connections.

In addition, it is anticipated that businesses will continue to consolidate in this one, well-served area to leverage the infrastructure provided by the Project, thus reducing demand for smaller distribution hubs elsewhere in Auckland or further afield, and lessening the risk of economic fragmentation.

Enhanced connectivity and facilities for public transport, walking and cycling will also support business growth by providing improved transport choices for employees. The design of the Project does not preclude the future development of mass transit<sup>25</sup> to the airport which will provide opportunities for additional transport choice and service for workers and visitors from the south.

An assessment of the economic effects of the Project is provided in *Section 12.3: Economic Effects* of this AEE.

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<sup>25</sup> Moving large numbers of people on public transport.

### 3.4.3 Safer, more connected communities

Fewer cars and heavy vehicles using local roads such as the roads in the town centre (e.g. sections of Neilson Street and Onehunga Mall), Church Street and Mt Smart Road, which are commercial and/or residential (and an increased focus to residential in town centres), are considered to have a positive impact on the overall safety, amenity and liveability of Onehunga, to the benefit of the people who live there. The new access route will also significantly reduce the existing conflicts between through traffic and vehicles accessing properties on the key freight and arterial routes.

In addition, greater access to public transport (which will be more frequent and reliable, especially from Māngere to Onehunga) and access to new and improved walking and cycling networks will contribute to the connectivity of the community to each other and to community facilities such as schools, recreational centres and reserves. The Project will not preclude the development of a future mass transit link to the Manger and the airport employment area.

A direct, mostly protected cycle and pedestrian link from Māngere Bridge to Sylvia Park will also mean more recreational options are available, with the potential to enhance the overall health and wellbeing of the community.

Given the removal of freight vehicles from the roads and faster and easier public transport and walking/cycling options, it is anticipated that more people will visit and spend time in Onehunga Town Centre, contributing to a revitalisation of this key community meeting point and the local businesses within them.

The improved Princes Street Interchange and new and enhanced walking/cycling facilities will improve accessibility to the Ōtāhuhu community east of SH1. This will include new connectivity to the adjacent northern community at Panama Road, currently severed by both SH1 and the Ōtāhuhu Creek.

An assessment of the social impacts of the Project is provided in *Section 12.14: Social Effects* of this AEE.

### 3.4.4 Enabling and providing environment improvements and social/community opportunities to the local area

Central to the philosophy of this Project is integrating transport outcomes with environmental social/community benefits through restoring and rehabilitating the coast. This is identified as a component of the overall prosperity of Auckland (delivering to positive social, economic, environmental and cultural outcomes). This philosophy has influenced the overall design of the Project, particularly as it relates to the foreshore component. In particular:

- The Project provides for improved public access to the coast, including recreation and cycle/pedestrian through the provision of both shared paths and recreation walkways on the foreshore of the Māngere Inlet;
- The design includes restoration to a more natural coastal environment by referencing the historic coastal edge in the design of the reclamation;
- The design provides for improved stormwater and stormwater management from the wider Onehunga catchment. This will provide for improved water quality discharging into the Māngere Inlet from the urban and industrial areas of Onehunga (responding to the issue that historic development of this area has not required any, or has required only minimal<sup>26</sup>, stormwater treatment for this catchment); and

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<sup>26</sup> Some specific sites may have stormwater treatment.



- The construction design includes removal of parts of historic landfills along the Māngere Inlet foreshore and creation of a barrier between the remaining areas of landfill and the coastal environment. This will reduce the tidal/saltwater movement (and as a result leachate movement) from these areas to the coastal environment.

Collectively, it is anticipated that these works will refocus the attention of stakeholders and agencies operating in the Manukau Harbour on progressing improvements to this environment (e.g. assisting to restore the mauri of this environment to recognise and enhance its mana). These works refocus the community's attention on this currently neglected stretch of coast.

Mana Whenua particularly see these types of works drawing attention to the coast and engendering greater community ownership and interest in improving its health and vitality. This will provide the foundation for the long-term restoration of the mana of the Māngere Inlet.

*Part G: Assessment of Effects on the Environment* of this AEE provides further detail and assessment of these outcomes of the Project.