

AIRPORT TO BOTANY RAPID TRANSIT AND 20CONNECT

SINGLE STAGE BUSINESS CASE

SOUTHWEST GATEWAY PROGRAMME

Supplementary Information

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JASMAX



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1 Purpose of this document

The purpose of this Supplementary Information document is to provide further information supporting the Airport to Botany Rapid Transit and 20Connect Single Stage Business Case (SSBC). This document is therefore not intended to be a standalone report and is designed to be read in conjunction with, and where specifically referenced in, the SSBC.

2 Programme partners and stakeholders

Table 2-1 contains a full list of programme partners, treaty partners and key stakeholders.

Table 2-1 – Programme partners, treaty partners, and key stakeholders

Programme partners	
Waka Kotahi New Zealand Transport Agency (Waka Kotahi)	Waka Kotahi is the road controlling authority (RCA) for the state highways within the study area. Waka Kotahi is also an investment partner for the SWGP.
Auckland Transport (AT)	AT is the RCA for local roads, co-ordinates road safety and community transport initiatives such as school travel and plans and contracts for bus, train and ferry services across Auckland. AT is also an investment partner for the SWGP.
Auckland Airport	Auckland Airport is a private sector company and an RCA of the airport precinct network, and is responsible for strategic planning, ongoing operation and development of the transport network within the airport precinct. Auckland Airport is also an investment partner for the SWGP.
Te Ākitai Waiohū	Te Ākitai Waiohū are the owners of Pūkaki and Waokauri Creeks (which includes areas of Māori Reservation). Those areas are highly significant to Te Ākitai Waiohū. Te Ākitai Waiohū also has a longstanding involvement in the area's development, including in the Puhinui Structure Plan and as a signatory party to the significant Eastern Access Agreement (1991).
Treaty partners	
Mana Whenua	Mana Whenua are represented by multiple local and regional iwi, with representation via AT's Southern Table.
Key stakeholders	
Wider government agencies¹	Multiple central and local government agencies including Kāinga Ora, Panuku Development Auckland (Panuku), Kāinga Ora, Ministry of Education and Counties Manukau District Health Board are cooperating to promote the transformation of central Manukau.
Auckland Council	Consenting authority – administers the Auckland Unitary Plan (AUP) and undertakes strategic planning and policy functions. Responsible for producing the Auckland Plan.
Local Boards	Part of Auckland Council's governance, representing and making decisions for local communities.
Heritage New Zealand Pouhere Taonga (HNZPT)	HNZPT is charged with conserving historic heritage and archaeological sites across New Zealand.
Aviation industry associations	Articulate the views of their members and provide an advocacy function for the aviation industry. Associations include the Board of Airline Representatives and the New Zealand Airports Association.
Civil Aviation Authority (CAA)	The CAA is the government agency tasked with establishing and monitoring civil aviation safety and security standards in New Zealand.
Freight and road user groups	Associations and groups including the Automobile Association, Road Transport Association, National Road Carriers and NZ Heavy Haulage Association. Advocate the views and interests of their members.
Union	E tū Aviation provides information to stakeholders who are represented by the union including the aviation industry associations and airport employees.
Advocacy and interest groups	Advocate the views and interests of their members. Groups include Bike Auckland, CCS Disability Action, Planetruth, Manukau Harbour Restoration Society, Save Our Unique Landscape, Aircraft Noise Community Consultative Group, and The Onehunga Enhancement Society.

¹ Partners for the Transform Manukau Programme Business Case

Business associations	Business associations support, encourage and promote business activities within the study area
Network utility operators (NUO)	NUO's plan, develop, and operate network utility services. They include Auckland Council, Wiri Oil Services, Refining NZ, Watercare, Vector, Transpower, Spark, Vodafone and Chorus.
Emergency services	Ensure emergency vehicle access and safety
Directly affected property owners, lessees, and tenants	Property owners, lessees and tenants who are directly affected by any proposed works as part of this SSBC.
Customers	The customer group includes all people and entities that have an interaction with the study area.
Community stakeholders	Provide feedback and advocate for specific outcomes. They include local residents, the general public, local schools and educational institutions, community group and ratepayer and resident associations.

3 Study area context

3.1 Transport context

3.1.1 Walking and cycling network

The area surrounding the Airport is relatively flat, however there is very little cycle infrastructure close to and within the Airport environs. There are three RCAs that own and operate the road network in this part of Auckland. These are Waka Kotahi, AT and Auckland Airport.

The state highway network comprises strategic routes, surrounded by or connecting to local or collector roads that carry heavy volumes of traffic including relatively high proportions of heavy good vehicles. Furthermore, there are plans for airport redevelopment and scheduled commercial development within the airport environs which, without feasible alternative transport options, will lead to additional vehicle trips on an already constrained network. The existing walking and cycling facilities and routes around this area are described below.

Transport Agency - state highway connections

As part of the SH20A upgrade undertaken during works associated with Kirkbride interchange grade separation, a shared cycling and pedestrian path alongside SH20A from the Kirkbride Road Interchange to Landing Drive was completed. No dedicated walking or cycling facilities are located alongside SH20B or SH20 and there are currently no strategic metro grade cycling facilities to access the airport and its surrounds from the south-east. Vehicle speeds and volumes on SH20B are not considered appropriate for safe walking and cycling (although these activities are permitted), given the current lack of protection for these vulnerable users on the road.

AT – local road connections

There are very limited cycling facilities provided on the AT road network around the airport, particularly when approaching from the south and south-east. Figure 3-1 outlines existing and planned cycling facilities, with the new shared walking and cycling path shown alongside SH20, SH20A, SH20B, and the A2B route along Puhinui Rd. The facilities provided are intermittent and do not currently provide a continuous cycle route to the airport precinct from surrounding areas such as Onehunga, Māngere East, Favona, Ōtāhuhu, Papatoetoe and Puhinui.

Potential short-term improvements

A range of potential options to improve walking and cycling infrastructure aimed at supporting journeys by active modes to and around the airport and its environs have been investigated by Waka Kotahi and AT as part of the SWGP, and in particular the Short-term SSBC recommendations include a shared walking and cycling path along SH20B from the airport to Puhinui (shown in blue in Figure 3-1).

Auckland Airport - land transport network connections

There are currently minimal facilities for people travelling by bicycle on the airport road network. Auckland Airport have however, identified cycling projects within the airport's land transport network.

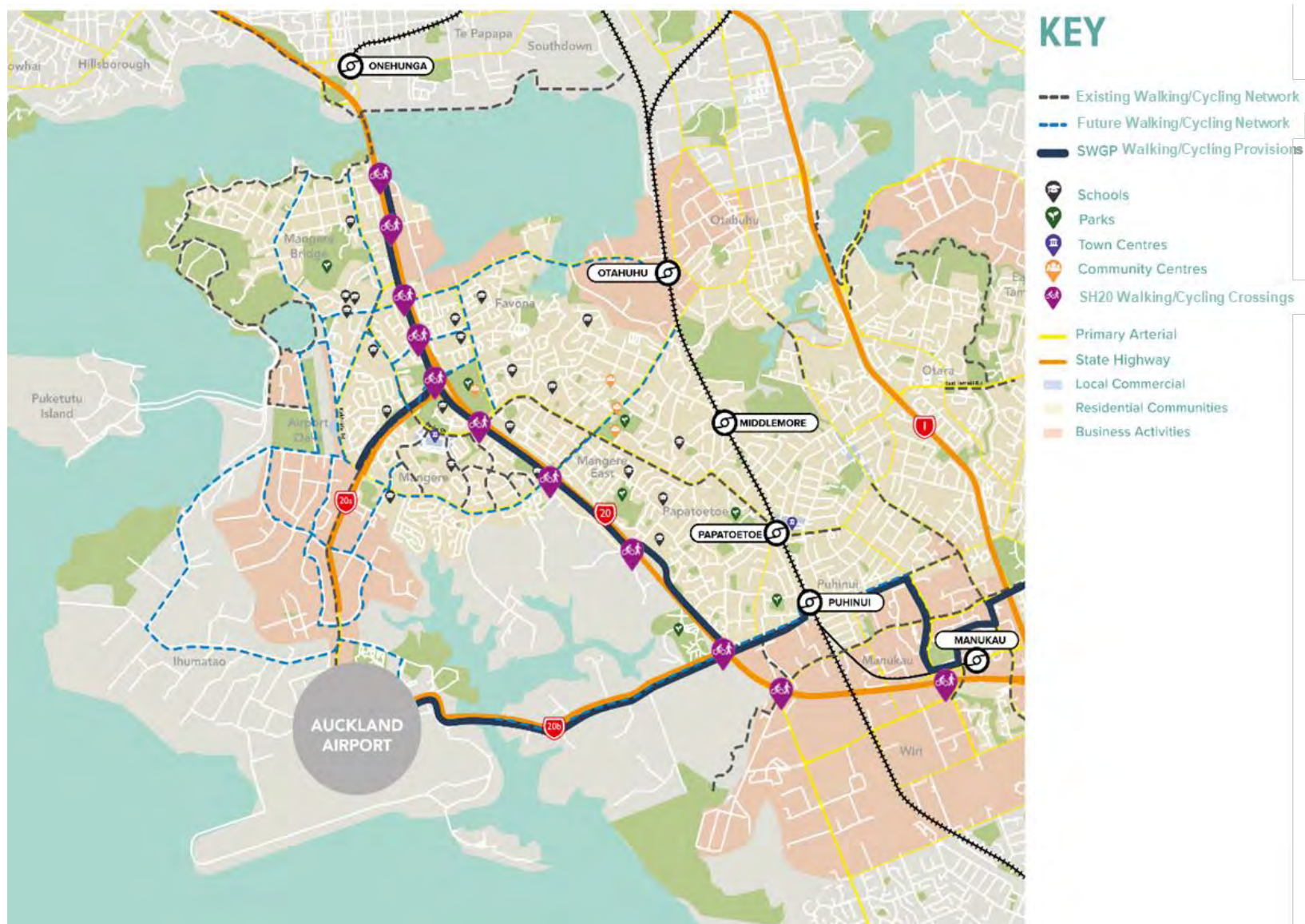


Figure 3-1: Auckland Cycle Network – Existing and Proposed



3.2 Physical context

The corridor from the airport to Botany passes through various urban and rural areas each of which present their own set of opportunities and challenges when developing the transport network.

At the western end of the corridor the airport is bounded by Manukau Harbour to the west and south, and the large industrial zone of Airport Oaks to the north. To the east the airport is partially separated from the Puhinui Peninsula by the Pūkaki and Waokauri Creeks. Each of these creeks has Māori reservation status.

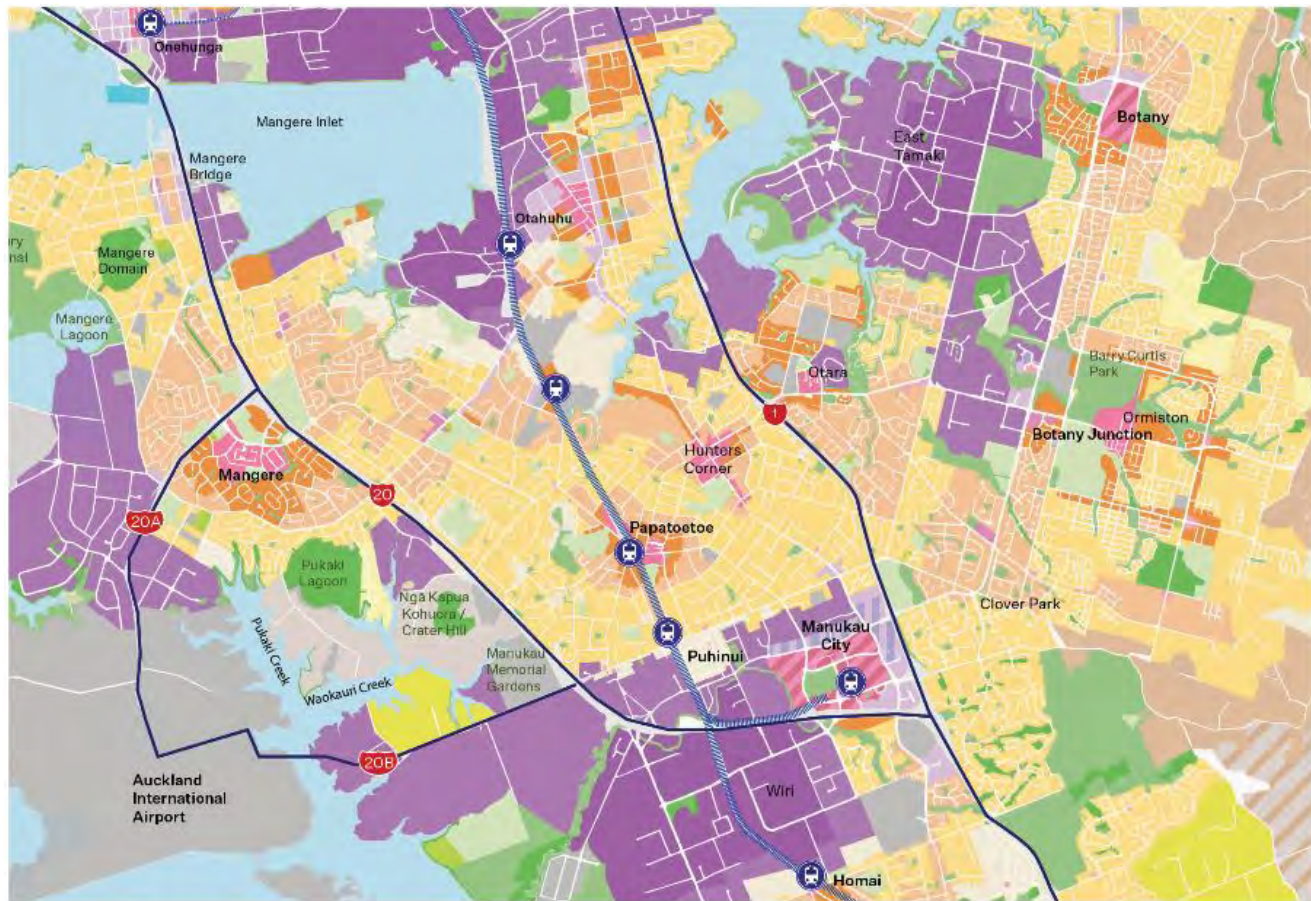
SH20B connects the airport to the Manukau central area via Puhinui Road which crosses the Pūkaki Creek on the two lane Pūkaki Bridge. This section of the corridor then travels onwards through largely open zones and light industry zones before the land becomes densely urban at the intersection with SH20A.

Taking a line along Puhinui Road from SH20A to Manukau city centre the urban environment is roughly divided into two zones with low density residential to the north including the suburb of Papatoetoe, and the industrial zones of Wiri and Manukau to the south. This section of the corridor is bisected by the North Island Main Trunk (NIMT) railway line. Puhinui Station is located centrally within this section of the corridor at the north-eastern corner of the Wiri industrial zone. A 2.5 km line off the NIMT railway line south of Puhinui station, passes through the commercial zone to Manukau city centre.

Central Manukau marks an approximate halfway point between the airport and Botany. The commercial centre sits on the north western side of the intersection of the Southern and the South-Western Motorways.

From Manukau the corridor heads in a straight line through to Botany town centre. This section of the route has few notable geographical features except several streams and creeks. Taking Te Irirangi Drive as a central reference line, the eastern half of this section of the corridor is predominately residential, a zoning only broken by a small commercial zone at Botany Junction and Sancta Maria College. On the western side the area is dominated by the large industrial zone of East Tāmaki.

The land use and community and civic features are shown in Figure 3-2 and Figure 3-3 respectively. From a land use perspective, the A2B route is varied and includes business and residential zones, including provision of some density in Ormiston. Of critical importance is the Metropolitan Centre zoning at Manukau and Botany which are highly permissive in terms of densities and mixed uses. The 20Connect routes provide access to the Auckland International Airport and major business zones.



KEY UNITARY PLAN ZONES

Not to scale

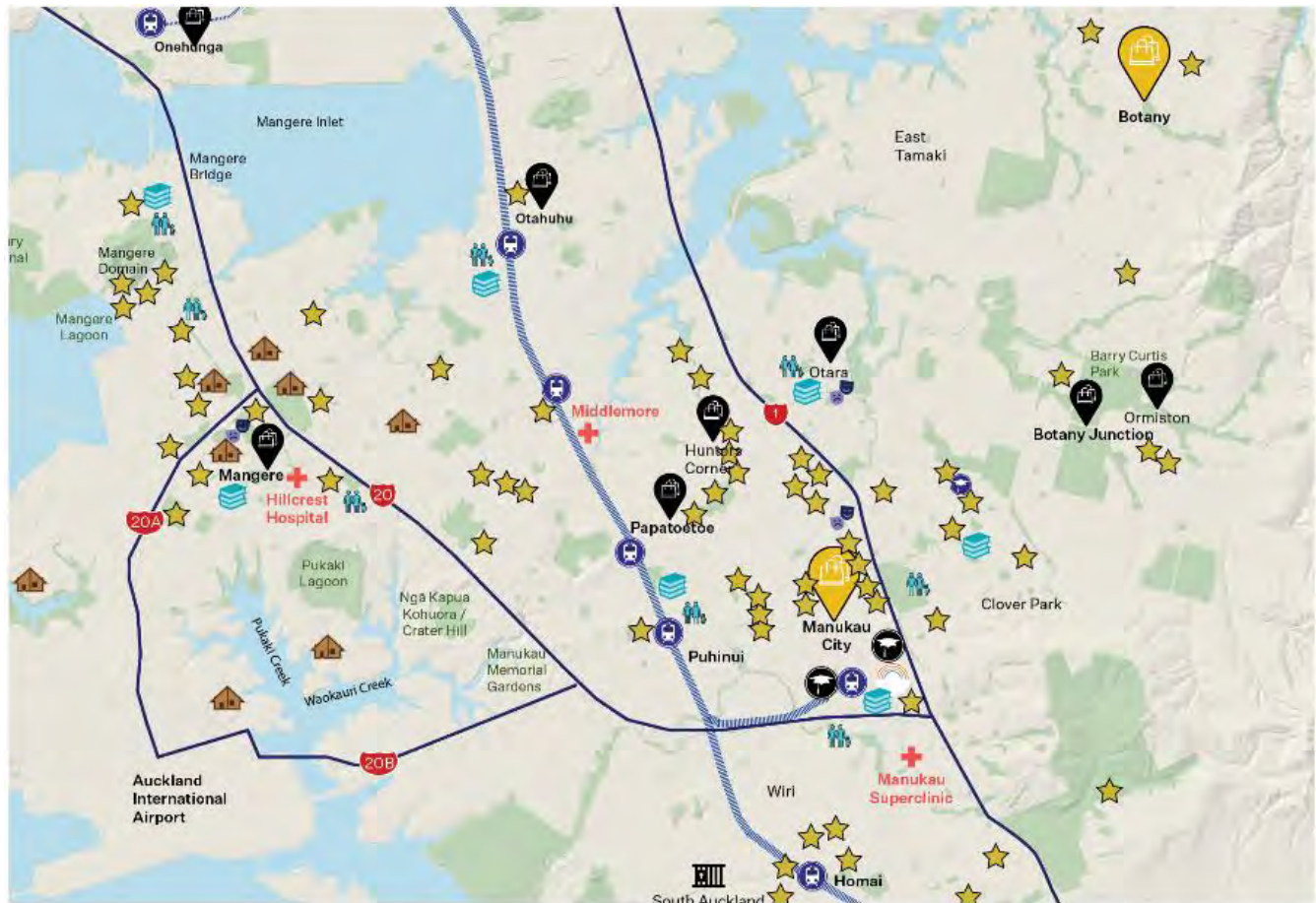
- | | |
|--|------------------------------|
| Residential - Large Lot Zone | Business - City Centre Zone |
| Residential - Single House Zone | Business - Town Centre Zone |
| Residential - Mixed Housing Suburban | Business - Local Centre Zone |
| Residential - Mixed Housing Urban | Business - Mixed Use Zone |
| Residential - Terrace House and Apartment Bldg | Special Purpose Zone |
| Open Space - Conservation Zone | |
| Open Space - Informal Recreation Zone | |

EXISTING

- State Highway
- Rail

Figure 3-2 Land use context

The study area contains a wide range of community, civic, health, educational and privately owned amenities and facilities. Primarily concentrated at Manukau and Mangere, there are also concentrations in Ormiston and Botany.



LEGEND

Not to scale

- 1000m Ped-sheds around A2B Stations
- Rail Stations
- Major Retail Centres
- Other Retail Centres
- Tertiary Education
- Primary and Secondary Schools
- Hospitals

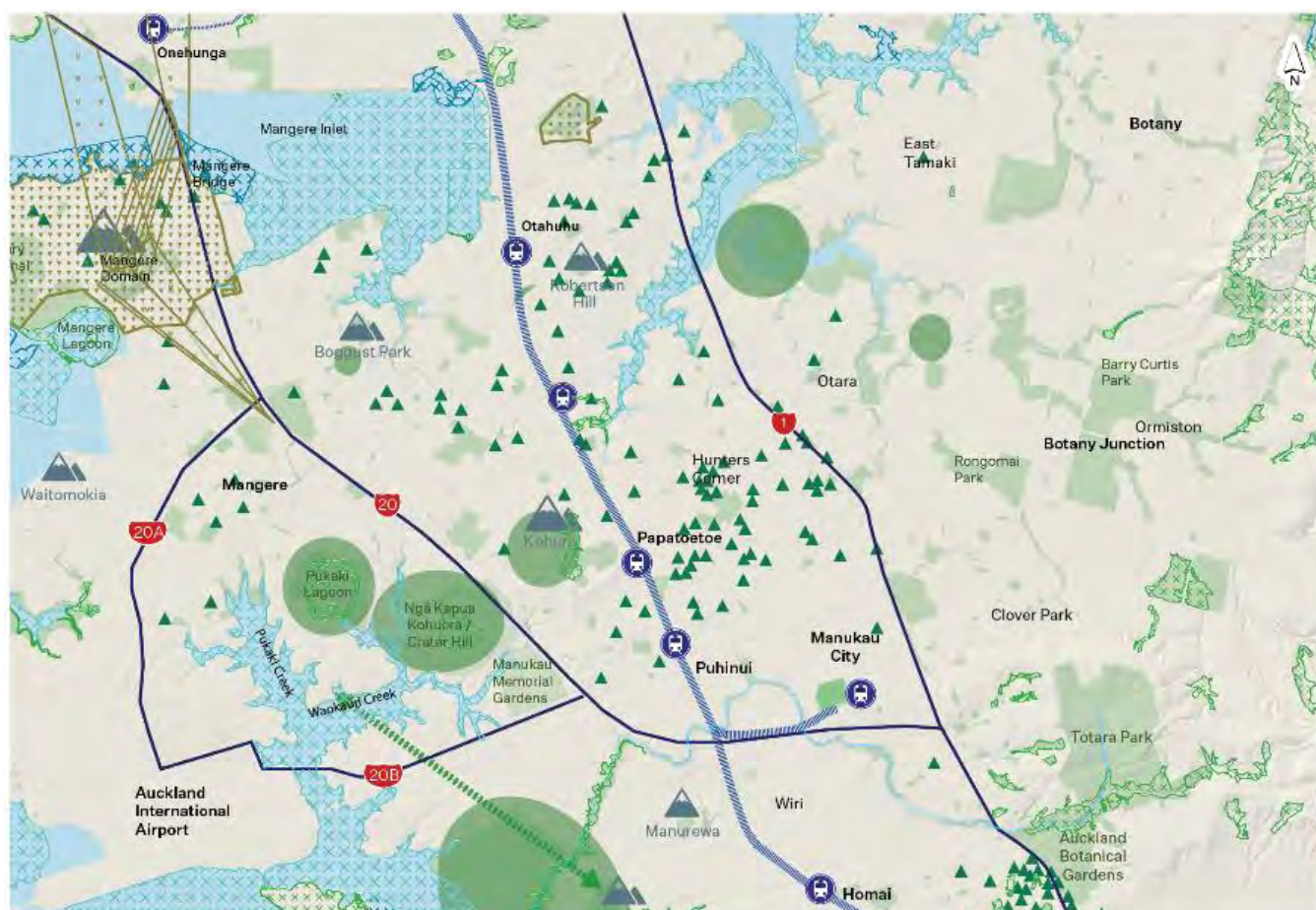
- Corrections Facility
- Rainbow's End
- Marae
- Library
- Community Centre
- Arts Centre

EXISTING

- State Highway
- Rail

Figure 3-3: Community and civic context

The western part of the study area has a high concentration of natural features and highly sensitive areas including volcanic cones, natural landscapes, viewshafts and ecological areas. The eastern section has less natural features of significance, but major parks including Totara Park and Barry Curtis Park.



LEGEND

Not to scale

- Pukaki Marae Matukutureia Cultural Viewshaft (as identified in Puhinui Precinct Plan - Auckland Unitary Plan)
- Outstanding Natural Landscape Protection
- Volcanic Cones
- Regional / Major Parks
- Regionally significant volcanic viewshafts and height sensitive areas overlay (Auckland Unitary Plan)
- Significant Ecological Areas Overlay (Auckland Unitary Plan)
 - Terrestrial
 - Marine 1
 - Marine 2
- EXISTING State Highway
- Rail

Figure 3-4: Environmental context

3.3 Demographic context

The study area is located within the Māngere-Ōtāhuhu, Ōtara-Papatoetoe, Manurewa, and Howick local board areas of Auckland Council. The information below provides a comparison between the local boards and the region as a whole of three of the basic measures of deprivation.

The information in Table 3-1 comes from the 2013 census² and data held by Auckland Council.³

Table 3-1 - Local board demographics

² Latest data available has been used

³ Demographic and economic statistics from <https://ecoprofile.infometrics.co.nz/Auckland>



Local Board	Population	Median Household Income (\$)	Unemployment (%)	No formal qualifications (%)
Māngere-Ōtāhuhu	81,590	59,900	15.5	31
Ōtara-Papatoetoe	89,610	60,800	14	29
Manurewa	96,200	67,800	13.3	28.2
Howick	150,200	84,500	6	14
Auckland avg.	NA	76,500	6	17

The table above shows that wealth and opportunity are not shared equally throughout the local boards within the study corridor. When compared against the Auckland average, the three local boards closest to the airport, Māngere-Ōtāhuhu, Ōtara-Papatoetoe, and Manurewa all compared unfavourably across all of the three measures. Māngere-Ōtāhuhu, in particular, had high rates of unemployment, low levels of educational attainment, and the lowest median household income (MHI) in the study area.

For these reasons these three local board areas, along with Papakura, were included in the Southern Initiative (TSI). TSI was one of two major initiatives in the first Auckland Plan of 2012 and continued in the Auckland Plan 2050 of 2018⁴.

The purpose of TSI is to plan and deliver a long-term programme of co-ordinated investment and actions to bring about transformational social, economic and physical change in this area. It was set up with six priorities:

- early childhood intervention and strong family attachment
- education, training or employment for all young people leaving school
- an outstanding international gateway and destination area
- economic development and jobs for local people
- increased public transport services
- housing development.

It is apparent that the TSI priorities are strongly correlated with the purpose of this business case.

By contrast the Howick local board area which includes Botany, and East Tāmaki compared favourably with the Auckland average having both a higher MHI (\$8,000 above the Auckland average), and a lower percentage of residents without formal qualifications.

3.3.1 Employment in local board areas

As employment is one of the key determiners of deprivation it is worth understanding more about the nature of employment across the relevant local boards.

In the Māngere-Ōtāhuhu Local Board area the structure of the employment sector reflects the area's proximity to the airport. In 2017 almost 30% of jobs in the board area were in the transport, postal and warehousing sector. Manufacturing was the second most significant employer with almost 12%, followed by wholesale trade with 9%.

In Ōtara-Papatoetoe employment is structured very differently with the leading sector being 'health care and social assistance' at 20%, followed by retail trade and 'education and training' both at almost 10%.

⁴ Auckland Plan, op cit, The Southern Initiative.



In Manurewa the sector is again very different with manufacturing accounting for almost 21% of jobs followed by 'education and training' at 12% and wholesale trade at 10%. The dominance of manufacturing jobs in the area is mostly due to the fact that the area encompasses the southern part of the Wiri industrial area.

Lastly, in the Howick local board area manufacturing is again the predominant employer with nearly 20% of jobs being in this industry. Construction is second at almost 11% which may reflect the significant number of development projects that have been happening at Flat Bush and Ormiston. Retail trade is third in this area with close to 11%.

3.4 Main centres

The south and east Auckland area has many of the essential services people require within it, along with significant employment opportunities.

Major employment areas are located at Highbrook, East Tāmaki, Manukau as well as the airport and its surrounding business areas. Major health facilities exist including Middlemore Hospital and the Manukau Superclinic. Several local town centres (Otara, Ormiston, Botany Junction, Papatoetoe, Hunters Corner and Māngere among others) provide day-to-day needs.

Further commentary on the airport precinct is followed by discussion of the two Metropolitan Centres in Manukau and Botany.

3.4.1 Airport precinct

Airports are a very special form of infrastructure, being critical to an advanced economy. The airport plays an important role in New Zealand's international tourism industry, with 30 airlines operating to serve 70 destinations worldwide as of 2018 at the time of developing this business case. More than three-quarters of all international visitors arrived via the Airport in 2018.

As stated in a recent report by PwC:

"...an economy that is heavily driven by high value added services requires connectivity between urban-based employees and firms. This is most efficiently delivered by mass public transport and aviation links. Failure to meet these needs in a timely manner stifles economic potential, reducing competitiveness and suppressing standards of living." ⁵ (emphasis added)

Similarly, an analysis of the role that airports play in a modern economy emphasised the catalytic effects:

"While a large part of airports' economic impact is associated with those that work within the sector and its wider supply chains, it is the wider catalytic impacts which set aviation apart from other industries. These are the wider economic activities which occur beyond the aviation sector, but which are facilitated and supported by the connectivity that aviation delivers between localities, countries and world regions. Tourists can spend money in previously unreachable locations. Businesses can produce goods to be consumed in far corners of the world. Investors can set up new offices, call centres and factories exactly where they are needed." ⁶

The airport is a major operation, as well as the catalyst for wider economic effects, being the second largest airport in Australasia for international passengers and the second largest cargo port in New Zealand by value. In the year to 30 June 2018, there were 20.5 million international and domestic passenger movements, up 5.7 percent from the year to 30 June 2017, driven predominantly by capacity additions.

The airport's role at a national level is significant. The generated and facilitated impact on Gross Domestic Product (GDP) is expected to grow from 18.9 billion dollars in 2006 to between 30.2 and 44.1 billion dollars by 2031. Auckland has an economy that is heavily dependent on the service sector – including tourism – making an efficiently operating airport with good access critical.

⁵ Better public transport. Better productivity. The economic return on public transport investment, PwC for (Australian) Tourism & Transport Forum.

⁶ Importance of airports to a national economy: Airport Business, April 2015.



Auckland Airport and its surrounding area is a nationally significant economic driver and regionally significant employment zone, providing 29,000 jobs (or around 3.6% of total jobs in Auckland) in 2019, with just over 12,000 of these located within the Airport precinct itself. It is also New Zealand's main gateway to international trade and commerce and New Zealand's third largest port behind Ports of Auckland and Tauranga. The ability for employees, visitors and freight to travel efficiently to/from the area is an important consideration for economic productivity.

The land surrounding the airport itself which is owned by Auckland Airport is called 'The District'. This area is growing into a hub which includes business, shops, accommodation and recreation facilities. The District is made up of The Landing Business Park, The Quad Office Campus and Cargo Logistics and Freight Hub. In the airport's master plan, there are 308 hectares (ha) of land to be developed in The District. The Landing and The Quad have developments underway. Changes to the programme may be required owing to the Covid-19 impacts.

3.4.2 Manukau

Manukau is a business-dominated suburban area located at the intersection of the Southern Motorway (SH1) and the South-Western Motorway (SH20). It is an important economic centre within the region and is Auckland's main industrial hub. The Manukau Metropolitan Centre, located within the Ōtara-Papatoetoe Local Board area, serves almost half a million residents in the south Auckland catchment.

While land within the Manukau Metropolitan Centre and wider Manukau area is used for a variety of residential, commercial and industrial activities, certain types of industrial and commercial businesses dominate. The largest industry sector is manufacturing (though it is declining), closely followed by the other growing commercial and assistance sectors.

The major employers in Manukau are various industrial and commercial businesses and healthcare services, reflected in zoning in the AUP. For instance, approximately 49ha of land to the south of Manukau Metropolitan Centre, a central location, is zoned for the Manukau Superclinic, which highlights the functional and economic importance of the facility to the local and wider community. The Manukau Institute of Technology and Auckland University of Technology are two notable tertiary education providers, attracting approximately 10,000 students.

The largest contributors to growth between 2008 and 2018 were Healthcare and Social Assistance services (3,156 new jobs), followed by Construction services (1,122 new jobs), and Central Gov Admin, Defence & Safety (1,017 new jobs). Overall growth was offset by a reduction in jobs in manufacturing and printing.

Manukau has large lot sizes and agglomerated land ownership, particularly in the public sector and is a key focus for public and private sector investment in housing, education, retail and employment.

3.4.3 Botany (and East Auckland)

The Auckland Plan notes the growing importance of major centres including Botany and the need for higher quality public transport to serve them.⁷ Whilst the Eastern Busway is addressing the radial requirement it will not help to serve other desire lines.

For the last 30 years, the East Auckland area has experienced rapid population and economic growth, changing from a greenfield area to the residential suburb of Auckland it is today. The area currently has a population of 130,000 people and is projected to grow by approximately 20% by 2030 to roughly 160,000 people. The AUP allows for greater intensification in the area than previously forecast, so the growth forecast is likely to be conservative.

The AUP designates Botany and Sylvia Park as Emerging Metropolitan Centres (second tier centres after the Central Auckland area). This indicates these areas are expected to experience significant change over time – developing into more mixed-use centres and catering for an increased residential population. There are two adjoining strategic priority growth areas: the Tāmaki Regeneration area and the Flat Bush Development area.

The Tāmaki Redevelopment Company is responsible for delivering a regeneration programme across Tāmaki, covering the suburbs of Glen Innes, Point England and Panmure. This includes working in partnership with Kāinga Ora to build new, high quality housing on existing Kāinga Ora land, as well as other projects such as creating

⁷ Auckland Plan, op cit, Rapid Transit Network

great neighbourhoods with quality open spaces. As part of this regeneration focus, the Tāmaki area's population is forecast to grow from 17,000 (2012) to 26,000 by 2031, which will be catered for by approximately 6,000 new homes over the next 20 to 25 years.

Flat Bush/Ormiston is a 1,700-ha greenfield development area lying between Manukau and Botany and is one of the country's largest and most comprehensively planned new suburb developments. The transformation project is led by the Council, in collaboration with the private sector. The area is forecast to be home to approximately 40,000 people by 2025 and includes a new town centre and five new schools.

3.4.4 Manurewa and Wiri Inland Port

In the southern part of the study area within the Manurewa Local Board area is the 15-hectare Wiri industrial estate, a prominent freight hub. Approximately 70 percent of all import and export containers handled by the Ports of Auckland (POAL) are delivered and collected within a 10-kilometre radius of the Wiri inland port. Import and export containers are shuttled by road and a dedicated rail line between the Wiri inland port and the Waitematā seaport.

Manurewa is a prominent suburban and industrial area with a thriving economy. Employment and economic growth rates have historically been higher than the national average, with the area experiencing sustained economic growth of 4.6 percent from 2013 to 2018 compared to the national average of 3.3 percent. The largest industry sector in the area is Manufacturing (24 percent of GDP in the Manurewa Local Board area) followed by Wholesale Trade (13 percent) and Rental, Hiring & Real Estate Services (8 percent).



Figure 3-5: Wiri Inland Port within Manurewa Local Board area

Employment in Manurewa grew by 24 percent from 2008 to 2018, adding 5,127 employees to the workforce (compared to 14 percent growth across New Zealand). The largest contributors to growth between 2008 and 2018 were in Healthcare & Social Assistance (736 new jobs), followed by Education & Training (724 new jobs) and Central Gov Admin, Defence & Safety (673 new jobs).



While many residents have historically worked locally such as in the Wiri Business District, large neighbouring employment areas, such as Manukau, Auckland International Airport, Highbrook and East Tāmaki are attracting more residents, generating longer commuter trips in the region.

3.5 Existing designations of multiple requiring authorities

A substantial number of designations for major and bulk infrastructure, schools and a cemetery are held by requiring authorities in the study area which are located directly adjacent to, or overlap Waka Kotahi's state highway designations, including (but not limited to):

- Auckland Airport – airport precinct (adjoining SH20A and SH20B)
- Auckland Airport – Airspace Restriction Designation - Protection of aeronautical functions - obstacle limitation surfaces (includes height limitations for structures within this designation)
- Te Kura Kaupapa Maori o Māngere - kura kaupapa māori years 0-13 - Ministry of Education (south-west of SH20A and SH20 interchange)
- Sir Douglas Bader Intermediate School - primary school years 0-8 and may include early childhood education preschool - Minister of Education (south-east of SH20A and SH20 interchange)
- Petroleum Pipeline - Urban Section - New Zealand Refining Company Limited (crosses SH20A)
- Airport Jet Fuel Pipeline - Wiri Oil Services Limited (portion of SH20B/ Puhinui Road)
- Manukau Memorial Gardens (cemetery) - Auckland Council (north of SH20B)
- Hunua No. 4 Watermain - Watercare Services Limited (north of SH20B)
- Southwestern Interceptor Line - Watercare Services Limited (SH20B Bridge and portion of SH20B/ Puhinui Road).

3.6 Built-up urban form along SH20A

The SH20A corridor and designation are located within a developed urban environment. Several commercial buildings are located in close proximity to the adjacent Transport Agency designation boundary, which constrains potential increases to the width of the existing corridor.

- Height and depth constraints for new structures in the area along and near to SH20B
 - Auckland Airport's Airspace Restriction Designation and the presence of critical bulk infrastructure underground, including the Hunua No. 4 Watermain impose height and depth constraints.
- Land acquisition and risk profile
 - Constraints may include potential negotiations associated with land acquisition, lease agreements, body corporates and severance/ property access (both temporary arrangements during construction and permanent reconfiguration).
- Access considerations
 - Access to existing properties along SH20B and proposed developments (eg Southern Gateway) requires consideration. In particular, maintaining access arrangements to the Memorial Gardens, which includes a cemetery, chapel and crematorium is necessary. In addition, many protected trees are identified within the Memorial Gardens
- Existing environment and geographical constraints
 - The most significant geographical constraint is the Puhinui Peninsula, concentrating land corridors and making it more likely that the options could affect the Coastal Marine Area. Other geographical constraints within the study area include the presence of numerous volcanic cones and other protected features

- Geological, hydrogeological and geotechnical

Potentially relevant matters in relation to ground conditions and hydrogeology have been identified in the study area⁸ (through Auckland Airport's proposed northern runway project), which may influence future design and construction processes (as relevant) proposed as part of this SSBC, including:

- Geotechnically challenging soils - the upper Puketoka Formation unit comprises compressible silts/clays and organic silts/clays together with isolated layers of amorphous and fibrous peat. Loose silty sand layers are also present within the Upper Puketoka Formation and occasionally in the Lower Puketoka Formation units and these have been calculated to have susceptibility to liquefaction under seismic shaking
- There is the potential for acid sulphate soils to be present within the Auckland Airport Precinct, which if present, require careful management during design and construction
- Soil compressibility and settlement - the placement of new fill over compressible natural soils present within the Upper Puketoka Formation unit may result in consolidation and long-term settlement. Depending on the height of any fill placed, the period of consolidation may take between 12 and 24 months to occur. If applicable to any proposed options, this may impact overall future construction programmes.

⁸ Tonkin and Taylor Limited. The Auckland Airport Proposed Second Runway Geotechnical Environmental Baseline Report, October 2015.

4 Strategic alignment

4.1 Alignment with the policy framework

Table 4-1 details how the Southwest Gateway Programme aligns with several national and regional policies and plans.

Table 4-1 - SWGP alignment with policy framework

Type	Strategy/Plan	Description	SWGP Alignment
National	Government Policy Statement on Land Transport ⁹ (GPS)	The GPS sets the national context for the business case. Its priorities are safety, access, environment and value for money.	This business case is especially important to improve access. In GPS 2018, <i>Access</i> is defined “as people’s ability to connect with people, goods, services and opportunities and thereby engage in economic and social activity.”¹⁰ Access Objective¹¹: A land transport system that provides increased access to economic and social opportunities. This transport access priority is about improving access to social and economic opportunities so that: • urban areas are well connected, safe, accessible and liveable • nationally important freight and tourism connections are safe, efficient, resilient and minimise greenhouse gas emissions • regional development supports thriving and connected regions. GPS 2018 explains the expected <i>Result</i> as being that: Metropolitan and high growth urban areas are better connected and accessible. Well-connected and accessible urban areas are critical to our economic and social prosperity. It is about creating liveable cities that support economic productivity and access to opportunities. People in liveable cities have improved health and personal well-being and increased social inclusion as a result of enhanced access and transport choice. In this context, given the economic significance of the airport and the southern Auckland growth areas, including for tourism and high value freight ■ The SWGP SSBC will improve access to economic centres and communities ■ The SWGP option assessment includes consideration of environmental issues and taonga in consultation and design

⁹ Government Policy Statement on Land Transport 2018/19 – 2027/28, June 2018

¹⁰ GPS, p. 14

¹¹ *ibid*

Type	Strategy/Plan	Description	SWGP Alignment
Regional	Auckland Transport Alignment Project (ATAP)	ATAP sets a clear direction for the development of Auckland's transportation system over the next 30 years. The 2018 iteration – the ATAP Package – provides a preferred direction and the priorities for how the project may be developed and the need for strong integration with land-use.	- Value for money – is addressed through careful staging and assessing economic outcomes in the preferred option evaluation - The SWGP project is specifically referenced within ATAP. - The outcomes of the proposed project align with the overall aims of the ATAP. This includes helping to achieve improvements in transportation connectivity, acceleration in the development of Auckland's rapid transit network and unlocking housing/urban development opportunities. - The early stage of 20Connect is explicitly included in ATAP (p.26). - Eastern Airport Access (State Highway 20B): - The State Highway 20B corridor, which provides access to Auckland Airport from the east, was identified as a high priority in earlier ATAP work. This corridor currently experiences severe congestion and because there are no bus lanes, buses also experience substantial delays and poor reliability. Further significant development in the corridor is also included in land use plans. - This upgrade will provide an additional lane in each direction between Puhinui and the Airport, which is likely to be a bus/carpool/freight lane to maximise the productivity of the corridor and provide reliable travel for the most critical users. An upgrade to the SH20/SH20B interchange is also likely to be required. - It is important for improvements along this corridor to be progressed as quickly as possible. Integration with the planned Puhinui bus/rail interchange is important to provide for reliable travel to and from the airport for parts of Auckland served by the rail network.
Regional	Auckland Regional Land Transport Plan (RLTP) 2018 – 2028	The RLTP is a ten-year plan which outlines how transport delivery agencies intend to respond to growth and other challenges facing Auckland in the immediate future.	- The RLTP specifically mentions investigation of a rapid transit route from Auckland Airport to Botany and the positive outcomes that may be generated from this project. - The RLTP has a section (p. 38) on the Airport. It states that: "Activities in this RLTP to improve access to and from Auckland Airport include: - Provision of progressively enhanced rapid, high frequency bus services taking advantage of bus/high-occupancy lanes on State Highway 20B - Upgrade of Puhinui rail station to provide high quality connections between rail and buses serving Auckland Airport

Type	Strategy/Plan	Description	SWGP Alignment
			■ Implementation of bus priority measures between Auckland Airport and Botany ■ Eastern Airport Access – upgrade to provide an additional lane in each direction between Puhinui and Auckland Airport to support bus, carpool, and freight movements, and an upgrade to the State Highway 20/State Highway 20B Interchange. ■ These will complement developments undertaken by Auckland Airport to improve pedestrian facilities, bus lanes and stops, lighting and cycling facilities within the Airport precinct.” ■ [REDACTED] ■ [REDACTED] ■ [REDACTED] ■ [REDACTED] ■ Funding for the Airport to Botany RTN was included within the RLTP for an amount of \$80m over a period of three years from 2018-2021
Regional	Transform Manukau Business Case – 2019	Government agencies with Panuku Development Auckland, have developed a whole of Government investment business case for Manukau.	■ The SWGP is directly referenced as a key enabler for prosperity and growth with improved access to Manukau central and developing more Transit Oriented Development (TOD) to take advantage of the enhanced levels of public transport with rapid transit in place.
Regional	Auckland Council - The Auckland Plan 2050 (2018)	The Auckland Plan sets strategic direction of Auckland and is required by legislation to contribute to Auckland's social, economic, environmental and cultural well-being. The Auckland Plan identifies three major challenges facing Auckland: population growth, sharing of prosperity and environmental degradation.	■ The SWGP is listed as a 'Decade 2 Enabling Infrastructure Project'. ■ The rapid transit component project aligns with most focus areas highlighted within the Auckland plan; this includes helping to service growth areas and make them viable, developing a sustainable and resilient transport system and making public transport the preferred transport mode for Aucklanders. SWGP is particularly targeted at helping more people from areas suffering disadvantage prosper through having better access to jobs and education.
Regional	Auckland Council - Future Urban Land Supply Strategy (FULSS)	The purpose of the FULSS is to identify the sequencing and timing for future urban land for development readiness over the next 30 years. A significant amount of land is planned to be released in South Auckland.	■ The proposed project will help accommodate the increased transport demand generated from new developments in the south principally through the interchange at Puhinui. ■ SWGP will encourage a modal shift to public transport and active modes.

Type	Strategy/Plan	Description	SWGP Alignment
Regional	Auckland Airport - Airport of the Future	The 2014 30-year vision/ master plan for the 'Airport of the future' involves a significant expansion of the airport's facilities in response to forecast passenger growth. The 'transport vision' in the plan includes a wide variety of transport modes to provide greater choice and flexibility.	The SWGP supports the Auckland Airport's masterplan, relating to the overall outcomes that are sought, and those relating to transport by improving access to the Southern and Eastern suburbs of Auckland.
Regional	Auckland's Regional Public Transport Plan (RPTP) 2018-2028	The RPTP describes the public transport network that AT proposes for the region. It identifies the services that are integral to the network over a 10-year period and sets out policies and procedures that apply to those services.	The RPTP places focus on improving access to and from the airport while also improving the bus network across Auckland – directly aligned to the objectives and benefits of the SWGP.
Regional	Auckland Unitary Plan (AUP) – Operative in Part	The AUP establishes the regulatory framework for land use and development in the Auckland region. The Plan influences where, when and how population and employment growth will occur in the area surrounding the Airport.	- The effect of the growth and intensification provisions within the AUP will add significant pressure on the Southern and Eastern transport systems where customers travelling on state highways in cars or by bus may experience delays, congestion and unreliable travel times. These effects emphasise that the SWGP is necessary to support Auckland's rapid growth. - Of particular importance to the SWGP, is the Puhinui Precinct which has a primary purpose to enable a transition from rural to urban development, while recognising the cultural, spiritual and historical values and relationships that Te Ākitai Waiohū have with the land and sea in Puhinui as part of the Maori cultural landscape.
Regional	Vision Zero for Tāmaki Makaurau: A Transport Strategy and Action Plan to 2030	Planning quality land-use and high-quality public transport are two of the priority safety actions in the Vision Zero for Tāmaki Makaurau Transport Safety Strategy to 2030 for reducing road deaths and serious injuries (DSI). Along with design that prioritises safe mobility, more safe active modes and end-to-end public transport journeys.	The proposed A2B route presents an opportunity, through Vision Zero planning and design, to significantly reduce existing road deaths and serious injuries by implementing AT Safe System Assessments for corridors, intersections and bus interchanges that produce Safe and Appropriate Speeds and protection for vulnerable road users (people walking and cycling, including Bus passengers).



4.2 Organisational outcomes, impacts and objectives

4.2.1 Auckland Transport

The AT Statement of Intent for 2019/20-2021/22 discusses the Auckland Plan 2050 as the core guiding document, in addition to delivering on the RLTP.

AT has the following priorities:

- Help people to travel safely
- Improve access to frequent and attractive public transport
- Encourage walking and cycling
- Make the best use of existing transport networks
- Support growth, urban redevelopment and regeneration
- Manage the impacts of the transport system on the environment
- Ensure value for money.

The SWGP is expected to help deliver these priorities through supporting growth, urban development and regeneration especially with its links to Manukau and, indirectly, the southern growth areas. A central role of the rapid transit component is to improve access to frequent and attractive public transport, both directly and through its connections to the radial network. It will improve travel choices and access to social and economic opportunities through providing RTN quality services in an area that is poorly served. It will also have specific walking and cycling provision. The SWGP will, by definition, improve access to frequent and attractive public transport. Mitigating impacts on the environment will be a specific requirement at the design phase. Value for money is being addressed through careful project staging as well as the economic appraisal of the preferred option.

4.2.2 Waka Kotahi

The Waka Kotahi Statement of Intent 2018 (SOI) includes eight Position Statements that represent challenges to be addressed and the role of the agency in addressing them.

Inclusive Access is defined as “more accessible, frequent and affordable multimodal transport choices, including walking and cycling, public transport, mass transit – including transformative light rail - and a reduction in single private vehicle use.

- The SWGP is an example of mass transit designed to reduce the need for private vehicles.

Liveable communities, defined as “the kinds of communities people want through people-centred planning for city and community transformation.

- The aim of the complementary Transforming Manukau business case is to help develop such communities. The SWGP is seen as having an important role for the business case.

4.2.3 Auckland Airport

As discussed in earlier sections, Auckland Airport is a programme partner and land-owner within the study corridor. The airport is one of the largest economic hubs in New Zealand. Alignment of the benefits of A2B to Auckland Airport as an organisation is effectively shown through the alignment with its Master Plan.

Table 5-1: Transform Manukau¹²

¹³ Figures based on Transform Manukau Enhanced Business Case Programme Overview, 21 August 2019, pg 60 reported to Board.

¹² Source: Panuku, October 2020

¹³ Figures based on Transform Manukau Enhanced Business Case Programme Overview, 21 August 2019, pg 60 reported to Board.

6 Highway component assessment summary

This chapter provides a brief overview of the highway component long and short list assessments. For the corresponding A2B rapid transit component long and short list assessments please refer to Appendix B1¹⁴ and Appendix C1¹⁵.

6.1 Highway long list options assessment summary

Table 6-1 gives the scoring of evaluation criteria that applies to the **investment objectives criteria** and **environmental, planning and social feasibility criteria** only and has not been used to score the engineering design feasibility criteria. Table 6-2 details how the **engineering design feasibility criteria** have been scored.

Table 6-1: Investment objectives and feasibility (environmental, planning & social) scoring

Rating	Description
3	Significantly positive
2	Moderately positive
1	Minor positive
0	Neutral
-1	Minor adverse
-2	Moderately adverse
-3	Significantly adverse

Table 6-2: Feasibility scoring – engineering design

Rating	Description
5	Minor works & operational cost. Low risk.
4	Moderate works. Low/moderate risk & operational cost.
3	Major works. Moderate/high risk. Moderate operational cost.
2	Uncommon works. High risk. Moderate/high operational cost.
1	Works not done before/often. Extreme risk. High operational cost.

For the engineering design assessment, no surveys, investigations or detailed site visits were undertaken. For each of the criteria, including estimated construction cost, a high-level desktop assessment was undertaken for the purpose of comparing the options however no specific cost ranges were used at this stage.

Table 6-3 indicates the scoring of each long list option against the agreed evaluation criteria. Further detail regarding evaluation criteria measures and methodology for each discipline is included in Appendix B.

¹⁴ Long List Assessment and Short List Recommendation technical note (Appendix B1)

¹⁵ Short List Options Assessment and Preferred Option technical note (Appendix C1)

Table 6-3: Long List MCA Scoring

Investment objectives		NI1	NI2A	NI2B	NI3	NI4
		SH20A widen & ramps	SH20B widen & SB ramps only	SH20B widen & all ramps	NI1 & NI2B combined	NI3 without NI2B ramps
Transport Planning	KPI 1: Capacity vs forecast demand	2	2	2	3	1
	KPI 2: Separation of movements and amount of system conflict	1		1	3	2
	KPI 3: Population access to jobs in airport precinct	1	1	2	3	1
	KPI 4: Jobs accessible	1	1	2	3	1
	KPI 5: Travel time and reliability for key routes (travel time)	2	2	3	3	2
	KPI 5: Travel time and reliability for key routes (reliability)	2	1	1	2	2
Cultural, Social	KPI 6: Transport system impact on air quality/emissions	1	3	3	3	2
	KPI 7: Transport system impact on water quality	-1	-1	-1	-1	-1
	KPI 8: Impact on places of heritage	-3	-2	-3	-2	-3
	KPI 9: Impact on Māori communities and wellbeing	-2	-2	-3	-2	-1
	KPI 10: Impact on Te Taiao (air, land, water, taonga)	-1	-1	-1	-1	-1
Feasibility	KPI 11: Opportunities to strengthen Māori culture and traditions	1	1	1	1	1
	Aquatic ecology	-1	-1	-1	-1	-1
	Terrestrial ecology	-1	-1	-1	-1	-1
	Marine ecology	-1	-1	-1	-1	
	Construction effects on CMA	-1	-1	-1	-1	-1
	Geomorphology, sedimentation, tidal flows	-1	-1	-1	-1	-1
	Sea-level rise, coastal climate change	-1	-1	-1	-1	-2
	Stormwater quality	-1	-1	-1	-1	-1
	Stormwater quantity	-1	-1	-1	-1	-1
	Natural character and landscape	-1	-1	-1	-1	-1
	Visual	-1	-1	-1	-1	-1
	Urban design	1	1	1	1	1
	Accessibility	1	1	1	1	1
	Community	-2	-2	-3	-2	-1
	Health and safety	-1	-1	-1	-1	-1
	Operational noise and vibration	-1	-1	-1	-1	-1
	Construction noise and vibration	-1	-1	-1	-1	-1
	Effects on Archaeology and built heritage	-3	-2	-3	-2	-3
	Construction management	-1	-1	-1	-1	-1
	Passive discharge		-1	-1	-1	
	Potential for new or cross contamination	-2	-2	-2	-2	-2

	Built environment risk	-1	-1	-1	-1	-1
	H&S of construction workers	-1	-1	-1	-1	-1
	Acid sulphate soil	-2	-3	-3	-3	-2
	Operational air quality	-1	-1	-1	-1	-1
	Construction air quality	-1	-1	-1	-1	-1
	Feasibility					
Engineering	Constructability	2	3	3	2	4
	Construction disruption	1	3	3	1	2
	Construction cost and risk	2	2	1	1	2
	Safety in design and construction	3	3	3	3	3
	Operation and maintenance	3	3	3	3	3
	Property	1	2	1	1	1
	Consentability	1	2	1	1	1

6.2 Highway component short list options assessment

6.2.1 Transport planning assessment

For the short list MCA, the same scoring system was applied as the long list MCA. The short list MCA is summarised in Table 6-4.

Table 6-4: Highway component short list MCA

KPI		20Connect Measure	1A	1B	2A	2B	3A	3B
Economic, Social, Cultural	Capacity and resilience of the option to meet forecast demand	Complementing public transport and Road investments	1	1	3	1	2	1
		Degree of saturation of key links and intersections	1	1	3	3	2	2
	Travel time reliability, including separation of road space and vehicle interactions	Number and performance of grade separations and at-grade junctions and intersections	2	2	3	3	2	2
		Assessment of travel time reliability for key journeys (SH20, SH20A, SH20B and Massey Road)	3	3	3	3	2	2
	Ability for high priority trips to be have reliable journeys	Length of separated rights of way for freights, PT, HOVs and special uses	2	2	3	3	1	1
		Volume/capacity of key routes and special purpose lanes	2	2	3	3	1	1
	Travel time for key journeys by public transport	Overall network travel times (Vehicle-Hours)	3	3	2	2	1	1
		Travel time for key journeys: City – Airport; Papakura – Airport; Botany – Airport; Albany – Airport; Westgate – Airport	3	3	1	1	1	1
	Population accessible	Population within 30 minute drive from the Airport (peak hours, 2048)	3	3	2	2	-1	-1
	Jobs accessible	Jobs within 30 minute drive from the Airport (peak hours, 2048)	3	3	2	2	-1	-1
	Air quality / emissions from transport system	Emissions assessment from Saturn	3	3	2	2	1	1
	Water quality effects of transport system	Change in quantity and quality of stormwater due to changes in paved area and stormwater management infrastructure introduced	-1	-1	-1	-1	-1	-1

KPI		20Connect Measure	1A	1B	2A	2B	3A	3B
	Effects on places of heritage	Extent of effects on sites, buildings and places of heritage value and sites and places of archaeological value	-2	-2	-2	-2	-2	-2
	Improve amenity function of activity areas and town centres	Reduction in through traffic and freight thus reducing conflicts on local roads	1	1	3	3	2	2
	Improve walking and cycling safety	Volume and speed appropriateness along walking and cycling corridors	1	1	2	2	2	2
Implementability	Constructability		4	2	2	2	2	2
	Construction Disruption		3	3	2	2	2	2
	Construction cost and risk		2	2	3	2	3	2
	Safety in design and construction		3	3	3	3	3	3
	Operation and maintenance		3	3	3	3	3	3
	Property		2	2	2	2	2	2
	Consentability		2	2	2	2	2	2
Assessment of environmental effects	Aquatic ecology		-1	-1	-1	-1	-1	-1
	Terrestrial ecology		-1	-1	-1	-1	-1	-1
	Marine ecology		-1	-1	-1	-1	-1	-1
	Construction effects on CMA		-2	-2	-2	-2	-2	-2
	Geomorphology/sedimentation & tidal flows		-1	-1	-1	-1	-1	-1
	Sea-level rise and coastal climate change		-1	-1	-1	-1	-1	-1
	Stormwater quality		-1	-1	-1	-1	-1	-1
	Stormwater quantity		-1	-1	-1	-1	-1	-1
	Natural character and landscape		-2	-2	-2	-2	-2	-2
	Visual		-1	-1	-1	-1	-1	-1
	Urban design		2	2	1	1	1	1
	Accessibility		2	3	2	3	2	3
	Community		-2	-2	-2	-2	-2	-2
	Health and safety		-1	-1	-1	-1	-1	-1
	Operational noise and vibration		0	-1	-1	-1	-1	-1
	Construction noise and vibration		-1	-1	-1	-1	-1	-1
	Extent of effects on sites and places of archaeological value and on heritage buildings and places.		-2	-2	-2	-2	-2	-2
	Construction management		-1	-2	-1	-2	-1	-2
	Construction management		-1	-1	-1	-1	-1	-1
	Passive discharge		-1	-1	0	0	0	0
	Potential for new or cross contamination		-2	-2	-2	-2	-2	-2
	Built Environment Risk		-1	-1	-1	-1	-1	-1
	H&S of construction workers		-2	-2	-1	-1	-1	-1
	Acid sulphate soil		-2	-2	-2	-2	-2	-2
	Operational air quality		0	-1	-2	-2	-2	-2
	Construction air quality		0	0	0	0	0	0

7 Road user benefits of the highway component of the recommended option

This section outlines the road user benefits arising from the state highway component of the recommended option.

7.1 Travel time

Summaries of modelled travel times for key routes with and without Horizon 3 and Horizon 5 interventions respectively can be found in Table 7-1 and Table 7-2. Travel time savings greater than 1 minute have been highlighted in green, while travel time increases greater than 1 minute have been highlighted in red.

Table 7-1 Travel Time Summary, Horizon 3 (MM:SS)

2048 Travel Time Summary, Horizon 3				
Morning Peak		Horizon 3 baseline	Horizon 3 with interventions	Difference
SH20B, general traffic	Eastbound	05:50	05:40	-00:10
	Westbound	18:10	15:35	-02:35
SH20B, transit lanes	Eastbound	-	04:30	-01:20
	Westbound	-	09:30	-08:40
SH20	Northbound	10:20	10:05	-00:15
	Southbound	09:20	09:25	+00:05
SH20A	Northbound	05:50	05:40	-00:10
	Southbound	10:10	09:05	-01:05
Inter Peak		Horizon 3 baseline	Horizon 3 with interventions	Difference
SH20B, general traffic	Eastbound	14:10	13:05	-01:05
	Westbound	12:50	11:30	-01:20
SH20B, transit lanes	Eastbound	-	06:35	-07:35
	Westbound	-	09:35	-03:15
SH20	Northbound	10:25	09:05	-01:20
	Southbound	23:15	20:05	-03:10
SH20A	Northbound	10:40	08:55	-01:45
	Southbound	08:30	09:00	+00:30
Evening Peak		Horizon 3 baseline	Horizon 3 with interventions	Difference
SH20B, general traffic	Eastbound	25:30	24:10	-01:20
	Westbound	08:55	11:30	+02:35
SH20B, transit lanes	Eastbound	-	05:00	-20:30
	Westbound	-	09:15	+00:20
SH20	Northbound	07:15	07:30	+00:15
	Southbound	07:30	07:55	+00:25
SH20A	Northbound	15:30	12:05	-03:25
	Southbound	06:30	06:35	+00:05

Table 7-2 Travel Time Summary, Horizon 5 (MM:SS)

2048 Travel Time Summary, Horizon 5				
Morning Peak		Horizon 5 baseline	Horizon 5 with interventions	Difference
SH20B, general traffic only	Eastbound	06:00	05:50	-00:10
	Westbound	14:10	10:35	-03:35
SH20	Northbound	10:00	06:45	-03:15
	Southbound	09:20	06:45	-02:35
SH20A	Northbound	05:40	05:25	-00:15
	Southbound	09:15	08:00	-01:15
Inter Peak		Horizon 5 baseline	Horizon 5 with interventions	Difference
SH20B, general traffic only	Eastbound	10:30	11:50	+01:20
	Westbound	14:45	12:45	-02:00
SH20	Northbound	10:40	07:05	-03:35
	Southbound	18:30	14:10	-04:20
SH20A	Northbound	09:45	06:55	-02:50
	Southbound	09:40	07:25	-02:15
Evening Peak		Horizon 5 baseline	Horizon 5 with interventions	Difference
SH20B, general traffic only	Eastbound	13:00	08:50	-04:10
	Westbound	11:45	11:35	-00:10
SH20	Northbound	07:25	06:25	-01:00
	Southbound	07:15	06:20	-00:55
SH20A	Northbound	12:00	11:10	-00:50
	Southbound	06:45	06:30	-00:15

7.2 Congestion

7.2.1 Horizon 3

Figure 7-1: presents a series of congestion plots taken from the project SATURN model, with Horizon 3 interventions compared with a baseline, during all modelled periods in 2048. Congestion levels are coloured as follows:

- Approaching capacity (volume / capacity 85% - 95%)
- Operating at capacity (volume / capacity 95% - 100%)
- Over capacity (volume / capacity >100%)

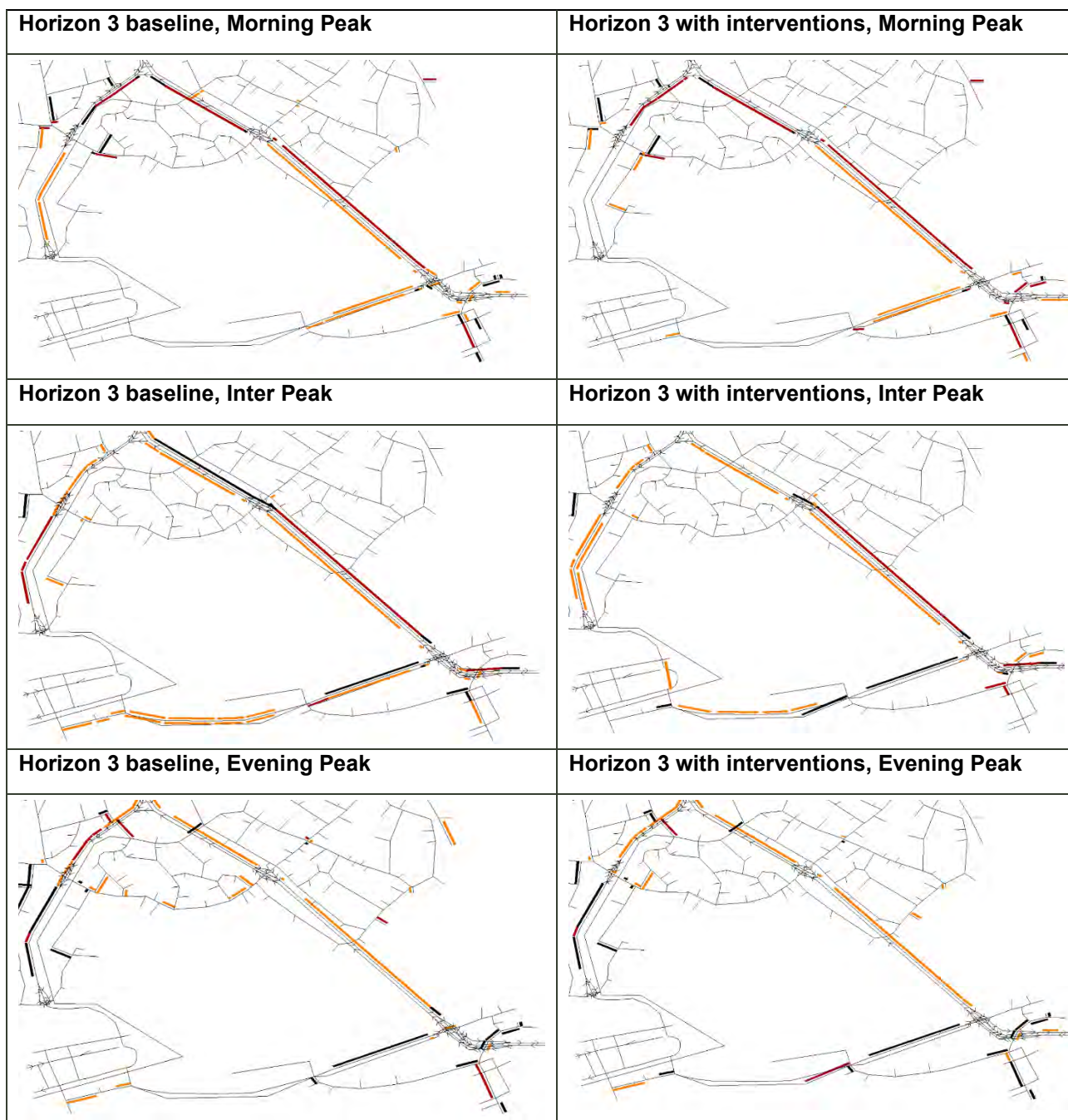


Figure 7-1: Predicted Congestion plots, Horizon 3, 2048

From the above plots, the following key points are noted:

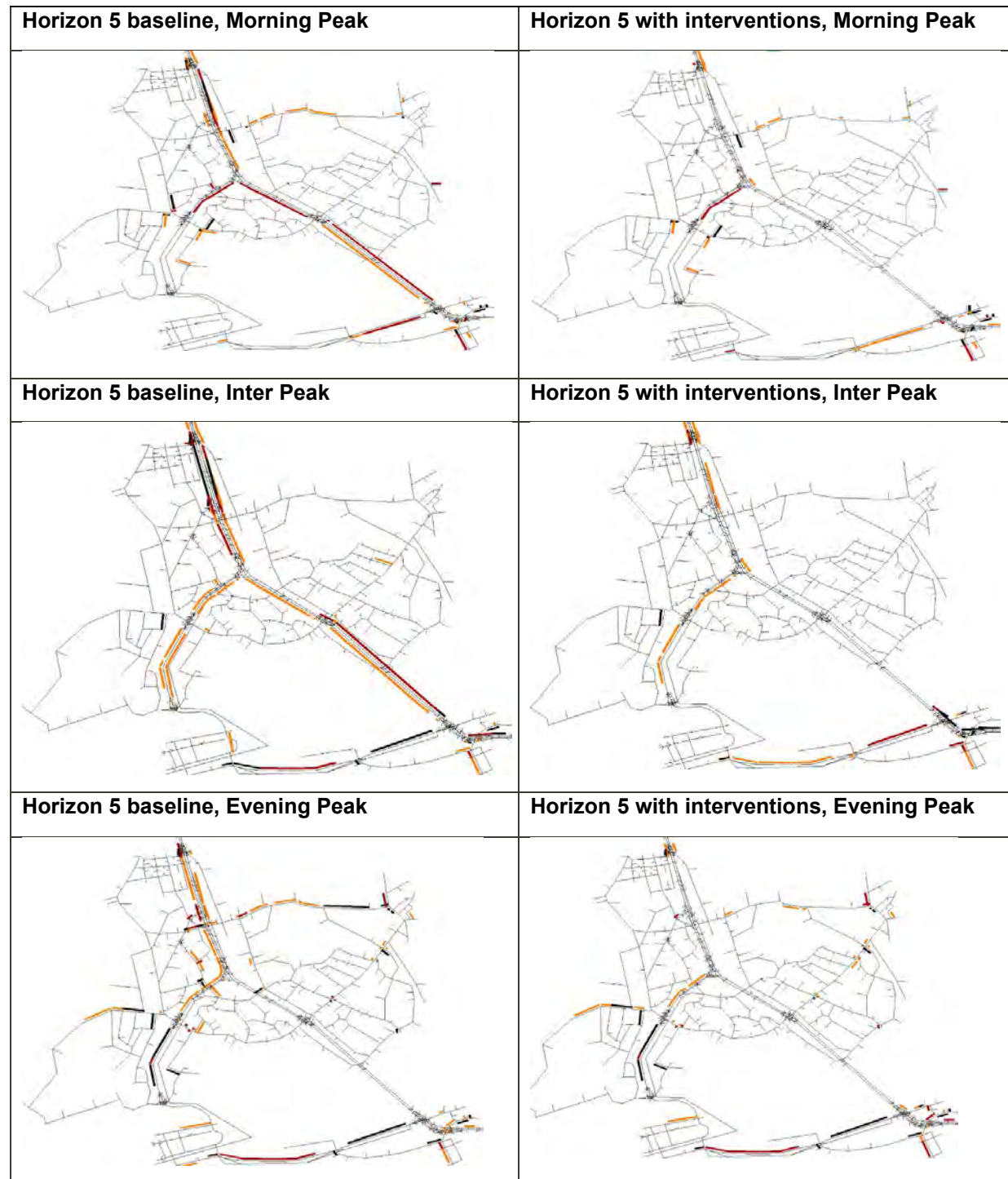
- In all three periods, SH20 between SH20A and SH20B is predicted to operate close to/at capacity
- The proposed SH20B improvements are predicted to improve operations along SH20B and at the SH20/Puhinui Road interchange.
- As a result of Horizon 3 interventions on the SH20B corridor, re-routing between SH20B and SH20/SH20A is predicted to improve performance on both SH20 and SH20A. However, the improvements will be limited due to the predicted high volumes of traffic generated by the proposed new land use developments adjoining SH20B.

7.2.2 Horizon 5

Figure 7-2: Predicted Congestion plots, Horizon 5, 2048 presents a series of congestion plots predicted by the SATURN traffic model with Horizon 5 interventions, compared with a baseline, in the forecast year 2048. Congestion levels are coloured as follows:

- Approaching capacity (volume / capacity 85% - 95%)
- Operating at capacity (volume / capacity 95% - 100%)
- Over capacity (volume / capacity >100%)

Figure 7-2: Predicted Congestion plots, Horizon 5, 2048





From the above plots, the following key points are noted:

- The proposed widening on SH20, between Mangere Bridge and SH20B, is predicted to improve operation along SH20 during all modelled periods.
- However, SH20 south of Puhinui interchange is predicted to be operating over capacity, with higher delays, with Horizon 5 interventions.
- No significant improvements are expected along SH20A and SH20B as well as intersections in the Wiri area with Horizon 5 interventions, during both 2048 morning peak and evening peak periods.