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Transport for Future Urban Growth

Recommendations

That the Board:

- i. Endorse the Transport for Future Urban Growth Programme Business Case developed by Auckland Transport, New Zealand Transport Agency and Auckland Council (shown in Attachment 5)
- ii. Endorse the Transport for Future Urban Growth preferred programme and transport network (shown in Attachment 2 section 11) and includes:
 - a. land use and travel demand plans that influence travel demand patterns and provides a flexible and adaptable future transport network
 - b. prioritised operational and safety enhancements to make the best use of the existing network.
 - c. Rapid and Frequent public transit network extensions connecting to metropolitan and employment centres
 - d. safe walking and cycling plans that connect with regional networks and local attractors (schools, local businesses, recreational facilities)
 - e. strategic and arterial road improvements to enable efficient movement of goods and people and provide access and connections throughout the future urban areas.
- iii. Request Management to:
 - a. progress the preferred transport programme (as shown in Attachment 1) to:
 - i. urgently target provision of infrastructure that will deliver new housing and employment in Unitary Plan live zone and Council structure plan areas including Warkworth, Wainui, Redhills, Whenuapai and Paerata.
 - ii. target provision of connecting infrastructure to address existing conditions and network impacts of greenfield development as identified through ATAP first decade priorities
 - iii. route protection for the entire transport for future urban growth network.
 - b. Following the support of the programme business case by NZ Transport Agency the programme business case be made public

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Executive summary

Auckland Transport has worked in partnership with New Zealand Transport Agency and Auckland Council to jointly develop a programme business case in response to the scale and pace of growth in the Future Urban Growth Areas identified in the Proposed Auckland Unitary Plan. The identified preferred programme provides an integrated multimodal way forward and local movement networks which integrates with high level land use planning.

The cost range of the preferred programme is approximately \$7.6b (50 percentile cost) to \$9.8b (95 percentile cost) over 30 years (current day costs) and has a regional indicative benefit cost ratio over 4. A 50 - 95 percentile cost range provides for the feasibility cost estimates undertaken and the 30 year timeframe of the programme. The proposed transport network will open up the greenfield future urban land to provide for housing development and address regional transport requirements. The proposed transport network is also able to accommodate the recent changes to the Unitary Plan identified in the Council decision on the Independent Hearings Panel which has led to an increase in future urban land by approximately 30% above the original 11,000 hectares.

In developing the programme business case two rounds of public consultation, stakeholder engagement and a series of hui with iwi across Auckland has been undertaken. The feedback from these engagements have been incorporated into the preferred programme.

The Transport for Future Urban Growth (TFUG) preferred programme and associated costs have been incorporated by the Auckland Transport Alignment Project (ATAP) in their investigations and prioritisation process over the next three decades. This has led ATAP to identify in the first decade the future urban area proposed networks as a high priority in the investment programme to open up greenfield land for housing in Auckland with an urgency to route protect the transport network.

The programme business case has been presented and supported by the NZ Transport Agency NLTP Advisory Committee and Value Assurance Committee. The preferred transport network was endorsed by the Auckland Council Development Committee in September and the programme business case will be presented to the NZ Transport Agency Board in October.

Priorities for delivery of elements of the preferred programme have been developed to incorporate the following (as shown in Attachment 1):

1. urgently target provision of infrastructure that will deliver new housing and employment in Unitary Plan live zone and Council structure plan areas including Warkworth, Wainui, Redhills, Whenuapai and Paerata.
2. target provision of connecting infrastructure to address existing conditions and network impacts of greenfield development as identified through ATAP first decade priorities
3. route protection for the entire transport for future urban growth network.

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A communication plan and public facing programme business case is being developed to progress engagement with the community and key stakeholders following the NZ Transport Agency October Board meeting.

The Capital Review Committee has been given regular progress updates since the project began

Strategic context

Population Growth

Up to an additional one million people are expected will live in Auckland by 2046 with approximately 250,000 - 300,000 living in future urban areas (shown in Attachment 2 sections 1-3). The Councils decision on the Independent Hearing Panel on the Auckland Unitary Plan identified over 12,000 hectares of rural land for future urban development through a future urban zone, with the potential to accommodate 150,000 dwellings over 30 years. In terms of employment potential, the future urban areas could provide approximately 1,400 hectares land for to support employment, around 50,000 jobs.

Changes in employment locations in Auckland

The addition of over one million people in Auckland over the next 30 years means an increase in the number of jobs from just under 600,000 to more than 850,000. Travel patterns during peak network use are generally set by where people live and where people work. Employment growth will be focussed on the existing employment centres, including the city centre and Albany with growth in emerging employment centres becoming greater after 2026 in locations such as Auckland Airport, Hobsonville / Westgate, Silverdale / Dairy Flat, Drury and Pukekohe (shown in Attachment 2 section 4).

Freight and Interregional links

Auckland is New Zealand's main "gateway" to international trade and commerce including tourism and is critical to New Zealand's economic welfare. Of significance to the transport network is the internal distribution of freight and other service trips which form the majority of business related trips within Auckland and inter-regional freight which requires road and rail movements between Auckland, Northland, Waikato and the Bay of Plenty (shown in Attachment 2 section 5). Population growth over the next 30 years within Auckland will see a growth in interregional movements between the ports in Tauranga, Auckland and Northland and an increase in internal freight demand by 78% in Auckland.

Current Transport Networks

The current transport network performance has experienced both historical growth and reliance on our strategic networks for intra and inter-regional travel. The future urban areas are located within close proximity to the strategic transport network but have few connections to the strategic road and rail networks and have predominantly a rural arterial and local transport network (shown in Attachment 2 section 6). Forecast population and employment growth between 2013 and 2046 in the future urban areas will see increases in demand on road transport corridors between 50 per cent to 300 per cent (eg Great South Road 11,100 vehicle trips a day in 2013 to 36,400 in 2046) as shown in Attachment 2 section 7. Population

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growth will also see significant increases on the public transport network in the morning peak period with an example showing public transport trips from Papakura are forecast to grow from 2.7 per cent of all trip demands in 2013 to increase to 17.5 per cent of trip demands in 2046¹.

Background

The TFUG project was commissioned following confirmation of the Auckland Council Future Urban Land Supply Strategy in November 2015 which identified the proposed sequencing of growth in greenfield areas.

The project aims were to develop a programme business case that identified a preferred strategic transport network to respond to the scale and pace of growth in these areas while supporting improved regional economic growth over the next 30 years.

The programme business case has been developed between Auckland Transport, the New Zealand Transport Agency and Auckland Council. A critical component of the business case was collaboration with ATAP to ensure alignment with proposed workstream, infrastructure investment proposals and sequencing of activities.

An Investment Logic Mapping (ILM) process was undertaken to confirm the focus of the programme business case identifying two core problems and benefits addressing the problems (shown in Attachment 2 section 8).

Evidence of the pace and scale of the growth was identified through the progression of Special Housing Areas, particularly in the North West and South, and expected pattern of 'live zoning' for future urban areas as per the Auckland Unitary Plan.

Evidence of the existing transport infrastructures' inability to accommodate increased demand without addressing significant deficiencies in local and national network performance or provide for modal shift to public transport, walking and cycling, was identified through ATAP regional modelling.

The project partners identified 5 investment objectives which were derived directly from the ILM benefits and their key performance indicators and measures that the programme business case could be measured against shown in Attachment 2 section 8.

In addition to the investment objectives, success factors were identified incorporating 'Reflecting Mana Whenua Values', deliverability, value for money and affordability.

¹ These figures exclude trips within Papakura and are taken from: Transport Assessment, Short list of Options, Flow, April 2016.

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Programme Business Case

Development of the Programme Business Case

The future urban areas were assessed as a regional programme but specific area based assessments were undertaken geographically to produce options, programmes and identification of a preferred programme and sequence shown in Attachment 2 section 9 - 10.

Key issues associated with each geographical future urban area were examined and a long list of options based on categories were developed for each area encompassing over 260 options.

Identification of a preferred programme

Following the consultation of the long list and short list of options programmes were developed incorporating community and stakeholder feedback utilising the category interventions shown in Attachment 2 section 11.

The programmes were assessed against the investment objectives through a multi-criteria assessment to differentiate and identify a preferred programme. Transport modelling assessments were undertaken against preferred programme and the do minimum to demonstrate the results of preferred programme as shown in Attachment 3. The executive summary of the programme business case is shown in Attachment 5.

Stakeholder engagement and communication

The programme business case was undertaken with engagement across key stakeholders and incorporating mana whenua as partners. Mana whenua were engaged for the following purposes:

- To seek feedback on the draft preferred transport networks
- To develop a set of mana whenua values that could be considered and further developed at the next phase of the project
- To provide information that will help to inform the project.

The project partners also identified and engaged with the following key stakeholders throughout the programme business case: local boards, KiwiRail Group, Transpower and other utility providers, Watercare, major developers, business associations, National Road Carriers, Bike Auckland, NZ Defence Force, Ministry of Education, Ministry of Transport, Ministry of Health, Ministry of Business, Innovation and Employment, Greater Auckland, Automobile Association and Auckland Business Forum.

Two stages of consultation were undertaken during the programme business case at the long list of options and at the preferred programme stage. These involved a series of community general public based open days, feedback sessions, online forms and a business owner/operator survey. These were redefined as the process progressed. Results of the consultation are shown in Attachment 4.

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Financial Allocation

Cost range of the preferred network is \$7.6billion (with a P50-P95 cost range of between \$7.6-\$9.8 billion). The Benefit cost ratio is over 4.

The next stage of business case development can be absorbed within existing operational budgets in the current RLTP 2016-2018 for Auckland Transport's component of investigations. NZTA will need to seek variations to RLTP to progress priorities.

There is an opportunity to progress funding of elements of the TFUG network through the Housing Infrastructure Fund. Auckland Transport is currently working with the Council and Watercare to progress Housing Infrastructure Funding opportunities.

Next steps

Following adoption of the programme business case a delivery programme will be undertaken and procured to confirm the prioritisation of the preferred network (as shown in Attachment 1) incorporating;

1. urgently target provision of infrastructure that will deliver new housing and employment in Unitary Plan live zone and Council structure plan areas including Warkworth, Wainui, Redhills, Whenuapai and Paerata.
2. target provision of connecting infrastructure to address existing conditions and network impacts of greenfield development as identified through ATAP first decade priorities
3. route protection for the entire transport for future urban growth network.

A communication plan and public facing programme business case is being developed to progress engagement with the community and key stakeholders following the NZ Transport Agency October Board meeting.

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Attachments

Attachment Number	Description
1	Next steps – priorities
2	Strategic Context and Programme Business Case– Maps and Tables <ol style="list-style-type: none">1. Auckland Population Growth projection2. Population growth forecast and Future Urban Areas3. Household and employment growth within Future Urban Areas4. Changes in employment locations around Auckland5. Proposed growth in freight and Interregional links6. Current Transport Networks7. Forecast Trip Demand for the Future Urban Growth Areas8. Programme Business Case – Problem, Benefits and Investment Objectives9. Programme Business Case – Process undertaken and key issues assessed to deliver a preferred programme10. Option development for programmes11. Identification of a preferred programme and preferred programme maps
3	Transport modelling results of preferred network compared to 2046 do minimum network
4	Public consultation results on the preferred network
5	Transport for Future Urban Growth - Programme Business Case Executive Summary

ATTACHMENTS 2 – 5 – saved in the Resource Centre in Boardbooks

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Document ownership

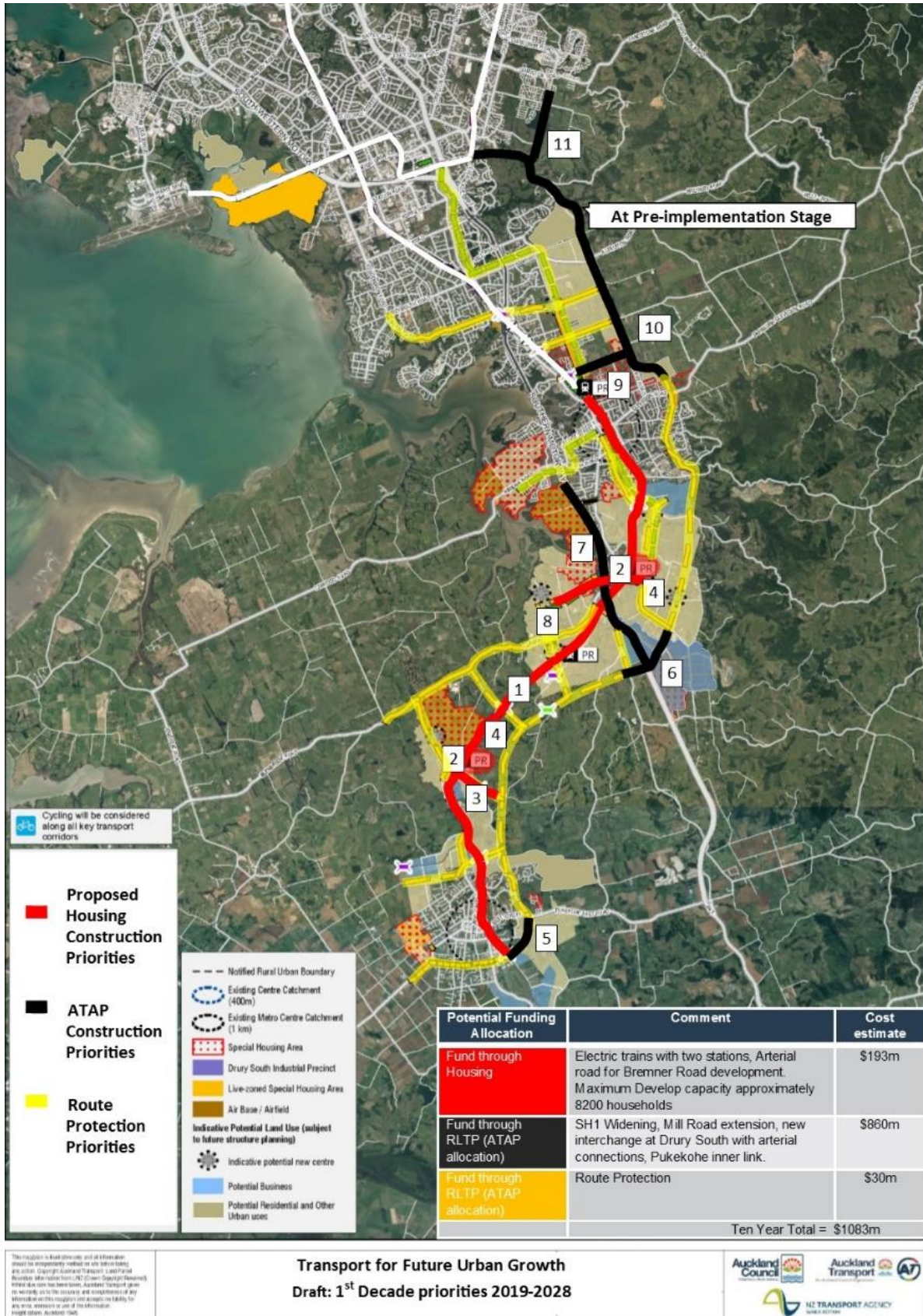
Submitted by	Matthew Rednall Strategic Growth Initiatives Manager	
Recommended by	Theunis Van Schalkwyk Project Director, Key Strategic Initiatives	
	Peter Clark, Chief Strategy Officer	
Approved for submission	David Warburton Chief Executive Officer	

Glossary

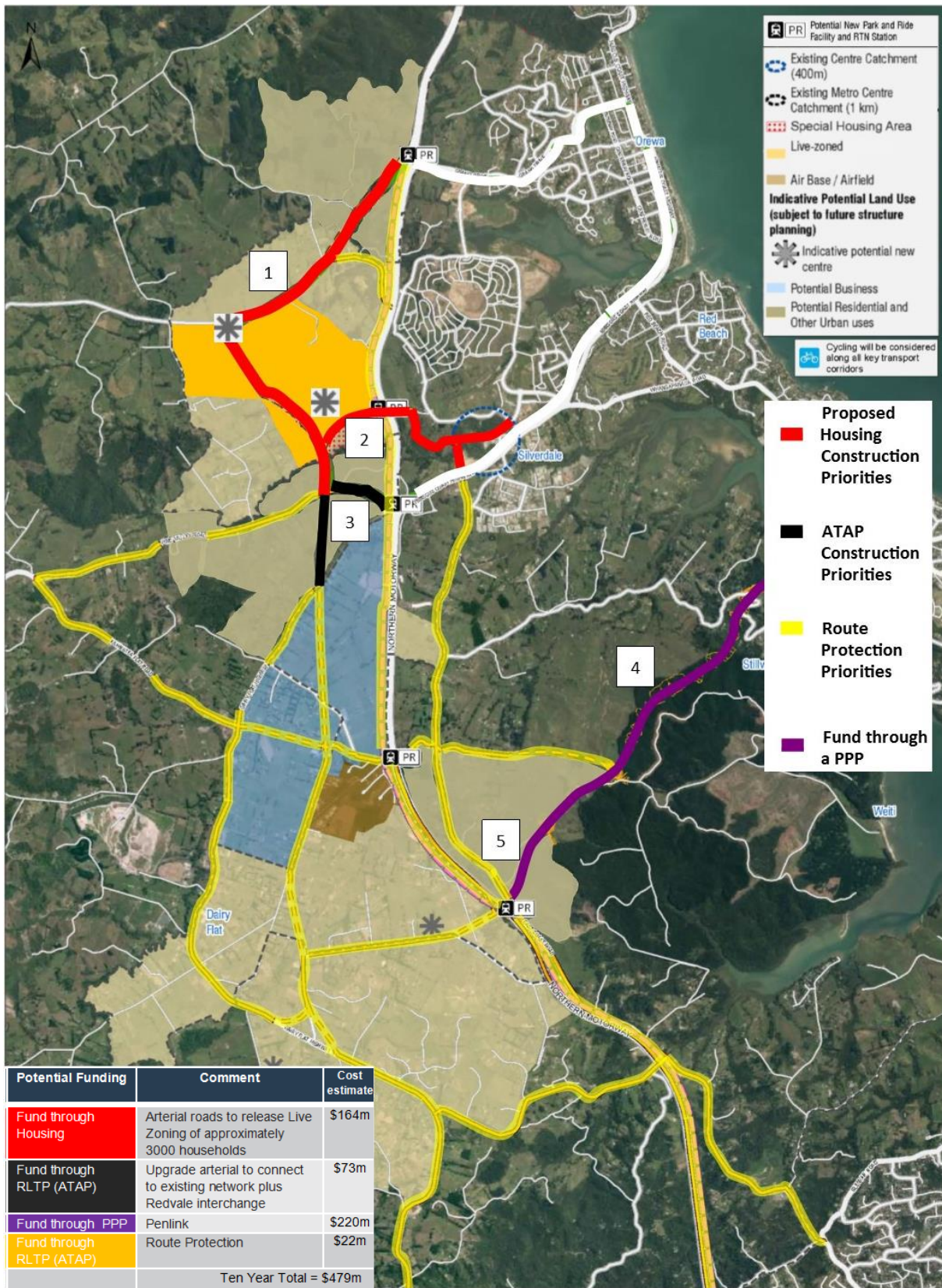
Acronym	Description
TFUG	Transport for Future Urban Growth
ATAP	Auckland Transport Alignment Programme
PBC	Programme Business Case
ILM	Investment Logic Mapping
RLTP	Regional Land Transport Programme
RTN	Rapid Transit Network
FULSS	Future Urban Land Supply Strategy
HLLUR	High Level Land Use Report

Attachment 1 – Next steps – Priorities

South



North

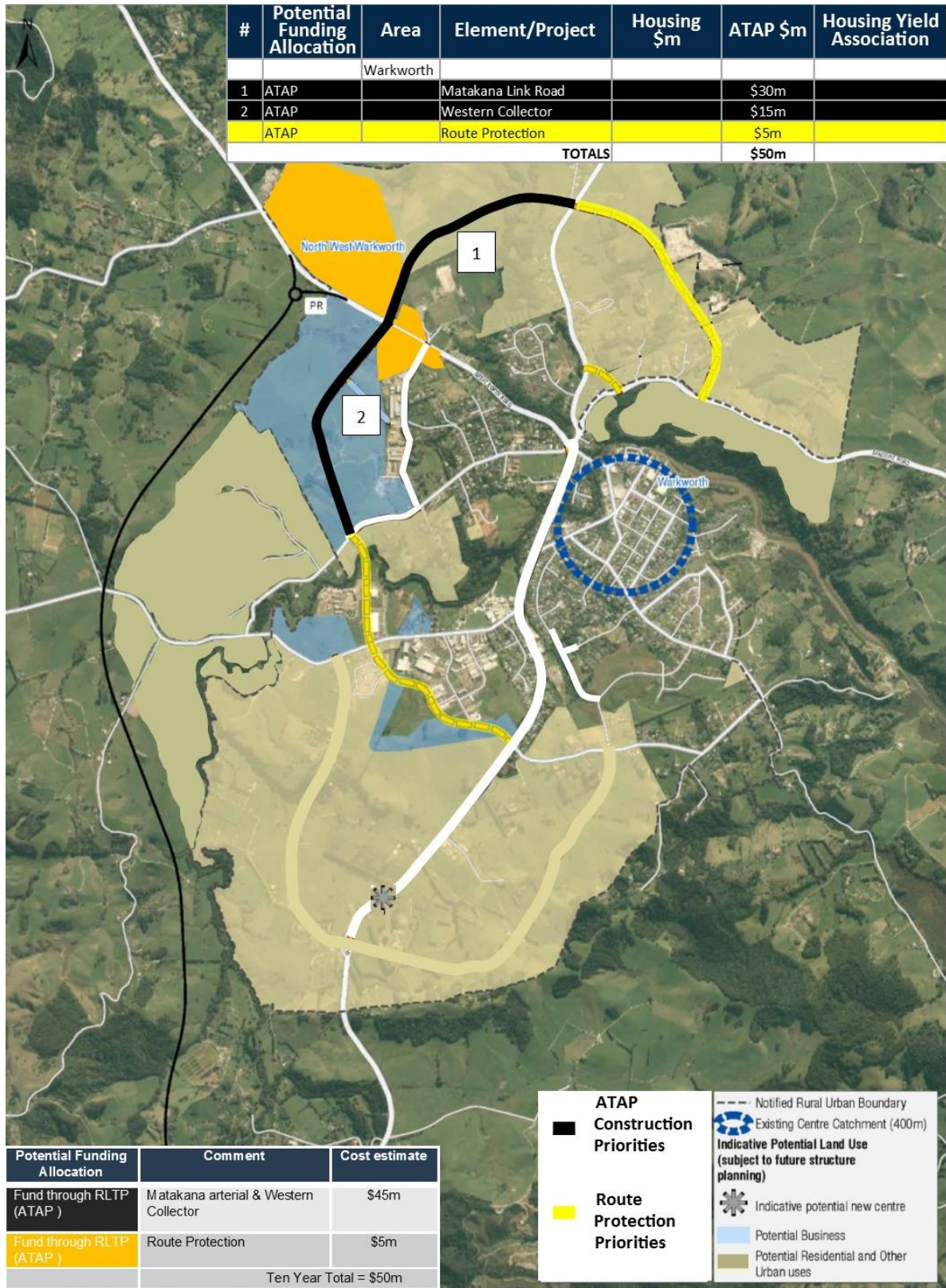


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Transport for Future Urban Growth Draft: 1st Decade priorities 2019-2028

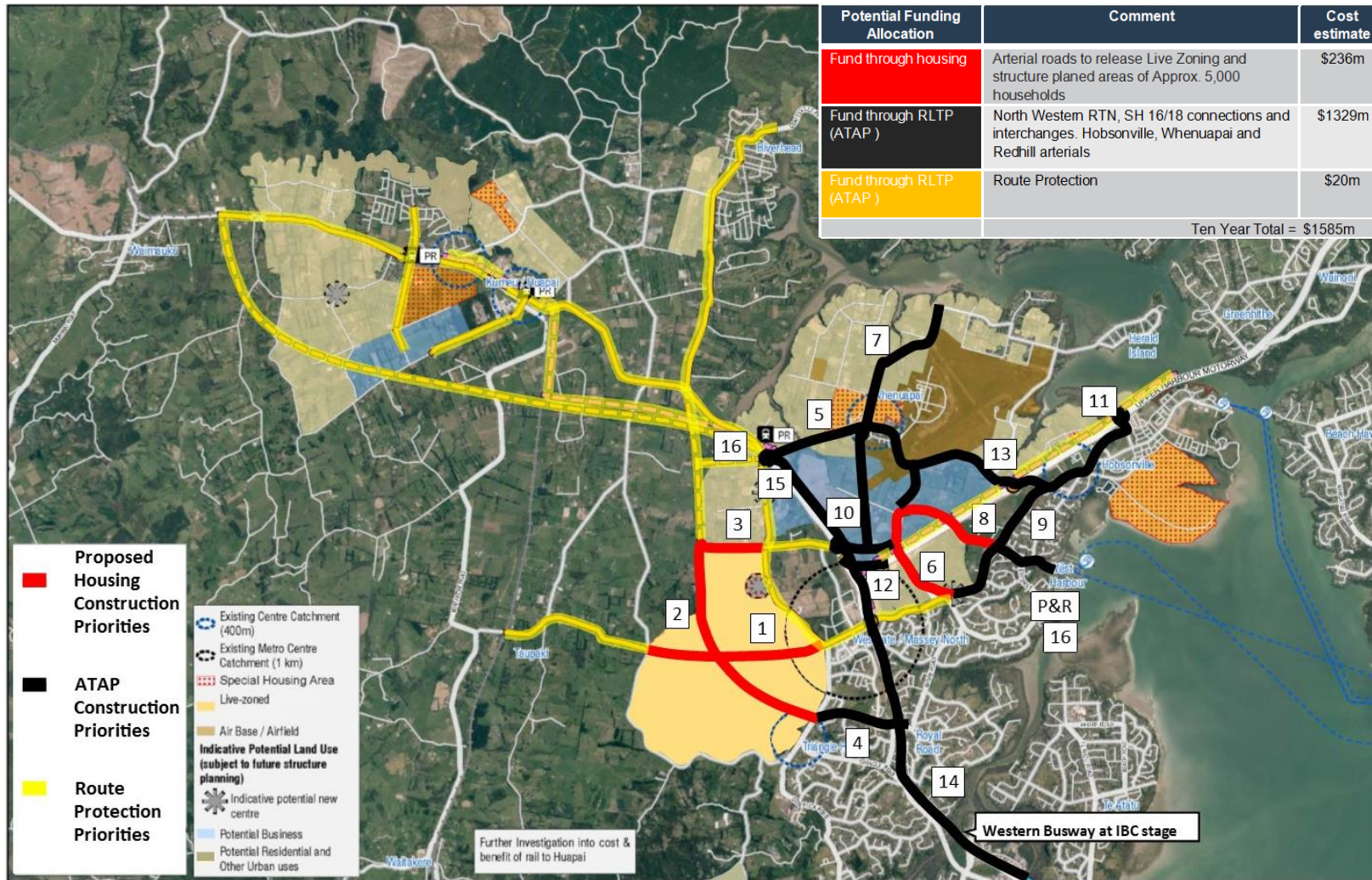


Warkworth



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North West



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Transport for Future Urban Growth Draft: 1st Decade priorities 2019-2028

Summary of proposed 1st Decade priority costs

Total Investment Proposal 1 st Decade	Transport Costs \$ (m)	Housing yield enabled by early infrastructure investment identified by Housing Infrastructure Project for 1 st Decade * Based on information prepared by Treasury in June 2016	Total Dwelling for Future Urban Areas over a 30 year period. Based on a high level estimate of yield by geographic clusters
North	\$487m	7,000 dwelling units (capped until further investment of \$300-400M duplication of water supply to the north)	36,000 dwellings
Warkworth	\$50m	None.	10,000 dwellings
North West	\$1,590m	14,600 dwelling units	30,000 dwellings
South	\$1,083m	10,000 dwelling units	50,000 dwellings
Total	\$3,210m	31,600 dwelling units	126,000 dwellings
		dwelling units enabled by early infrastructure investment identified for housing are subject to change (potential increase) once updated modelling received on the live zoning of Redhill's and Wainui.	
Potential Funding Sources 1 st Decade	Transport \$ (m)		
Proposed Housing			
North	\$164		
North West (Includes Whenuapai Structure Plan)	\$236		
South	\$193		
Total Proposed Housing	\$593m		
RLTP (assuming it allocates funding as per ATAP recommendation for greenfield areas)	\$1,800m		
RLTP (assuming it allocates funding for following projects as per ATAP recommendation):			
• Mill Road (Redoubt to Alfriston)	\$288m		
• North Western Busway	\$650m		
Total:	\$3,331m		

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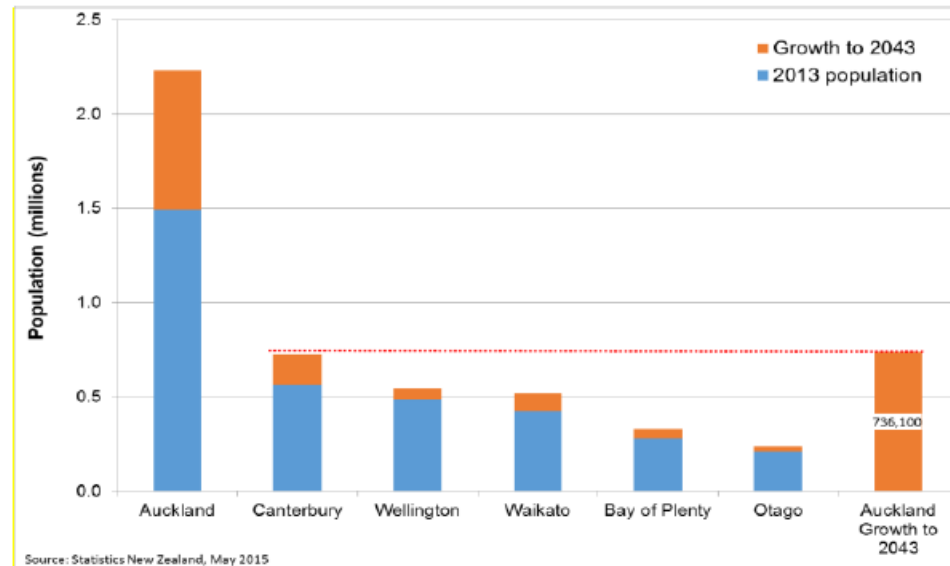
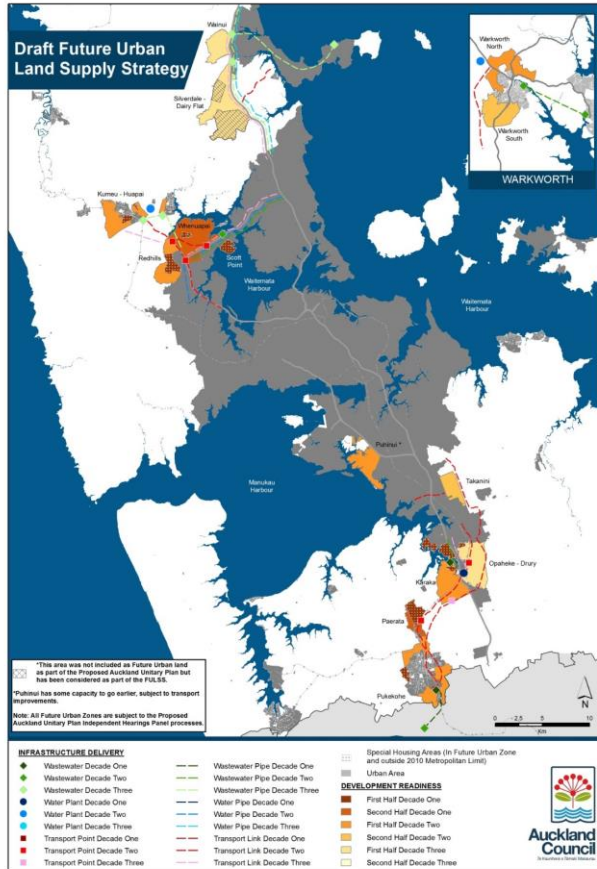
Attachment 2 - Strategic Context and Programme Business Case – Maps and Tables

1. Auckland Population Growth projection



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2. Population growth forecast and Future Urban Areas



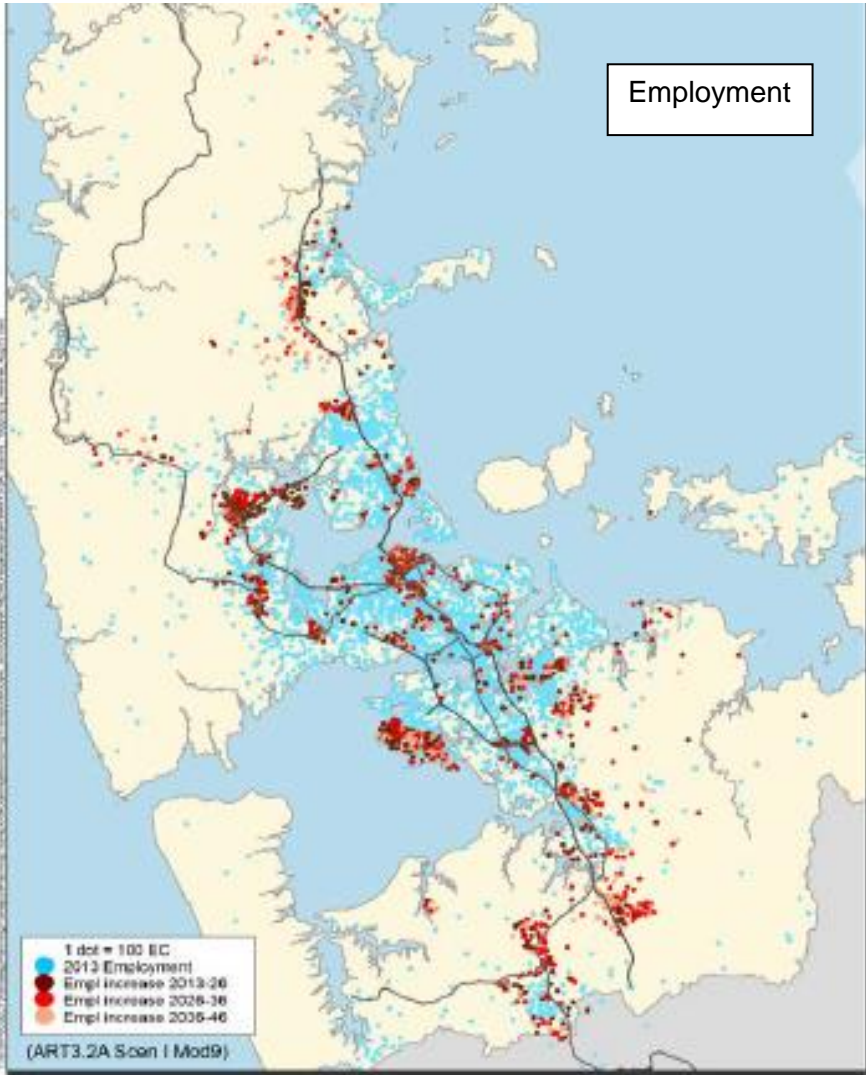
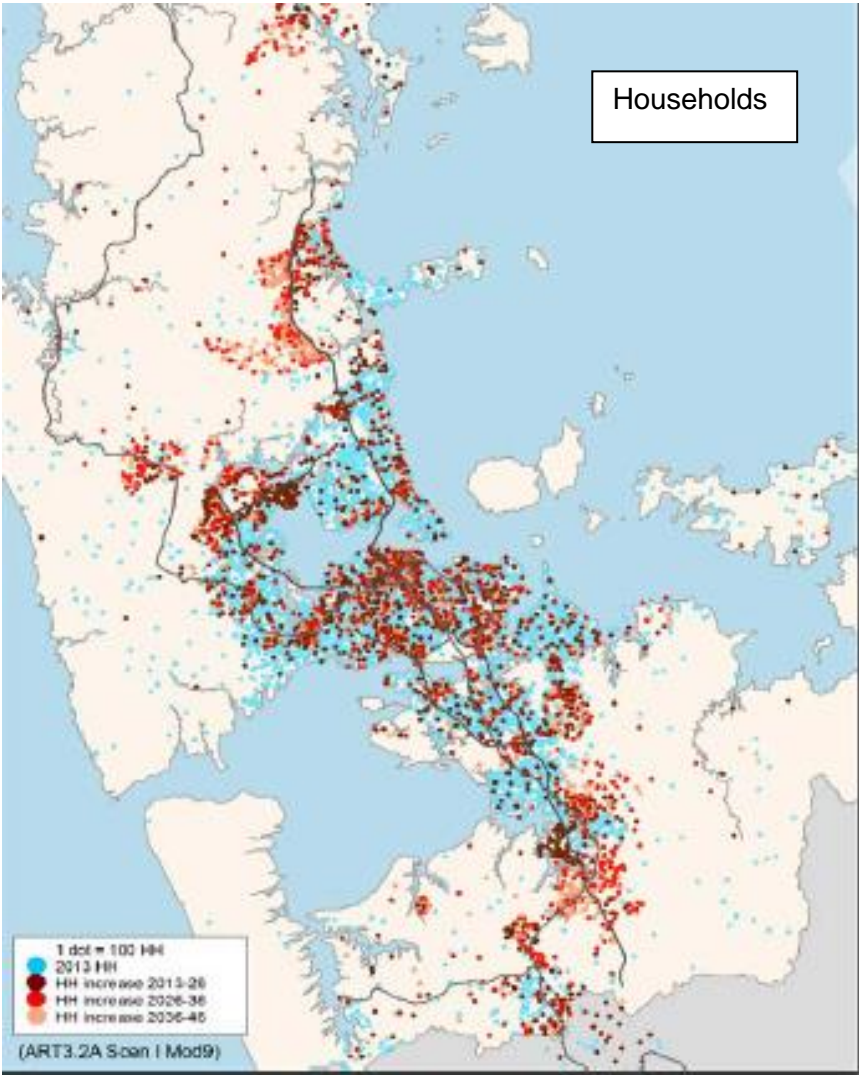
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3. Household and employment growth within Future Urban Areas

Growth Area	Description	Dwellings	Jobs	Land Area
South	Paerata	4,767 -5,476	1530	506ha
	Pukekohe	6,867 - 7,956	8,010	1,027ha
	Opaheke-Drury & Drury West	14,100 - 20,200	9270	2,192ha
	Takanini	1,100 - 4,400	600	469ha
Warkworth	Warkworth North/North East	3,200 - 3800	3,270	432ha
	Warkworth South	3,500 - 4,100	770	432ha
North	Wainui, Flat/Silverdale Dairy	25,500 - 30,000	13,100	2,646ha
North West	Whenuapai, Red Hills	16,400 - 20,500	9,740	2,033ha
	Kumeu/Huapai, Riverhead	8,140 - 9200	3,620	899ha

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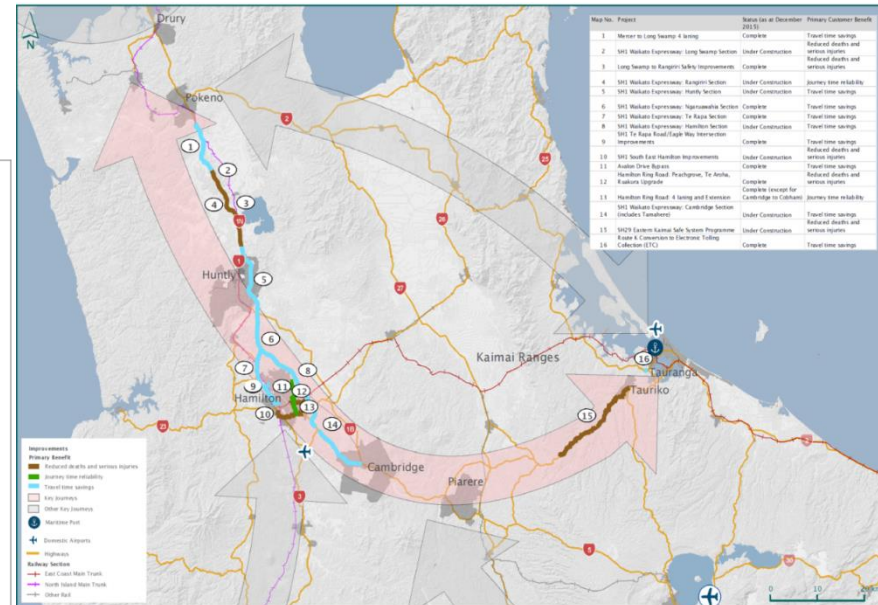
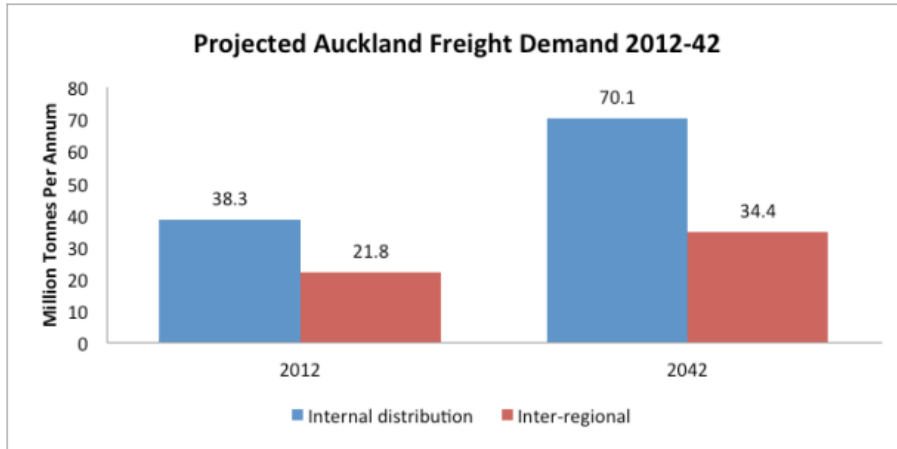
4. Changes in employment locations around Auckland



2013 -2046 Growth and Distribution in Household and Employment

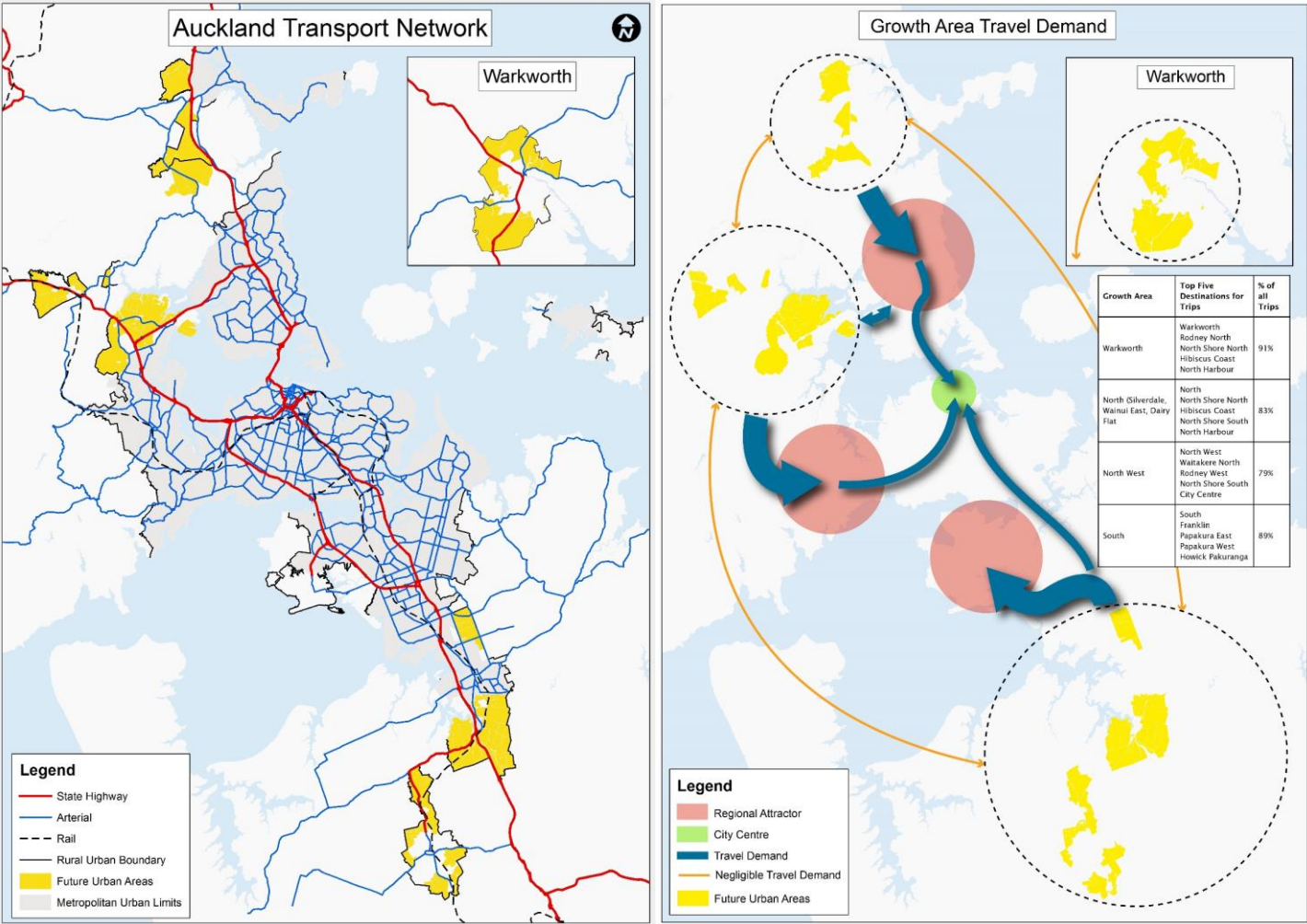
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5. Proposed growth in freight and Interregional links



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6. Current Transport Networks



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7. Forecast Trip Demand for the Future Urban Growth Areas

Future Urban Area	2013	2046	%age Increase
Warkworth	26,000	60,100	231%
Wainui, Dairy Flat	10,900	137,700	1263%
Kumeu, Huapai, Riverhead	15,900	53,400	336%
Hobsonville North	13,200	47,200	358%
Takanini, Opaheke, Drury, Karaka	27,600	173,200	628%
Pukekohe, Paerata	25,400	111,400	439%

Location	Vehicle trips per day 2013	Vehicle trips per day2046	% increase
SH16 (Northside to Brigham Creek)	16,500	35,500	115%
SH18 (Brigham Creek to Squadron)	35,200	71,100	102%
Linwood Road (Hingaia)	8,100	30,000	270%
Great South Road (Drury)	11,100	36,400	228%

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SH1 (Drury to Papakura)	62,000	118,800	92%
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8. Programme Business Case - Problem, Benefits and Investment Objectives

Problem		Benefit
1	Inability to respond in a timely way to pace and scale of greenfield development will restrict access to jobs, education and other core services in and around growth areas (60%)	Auckland's liveability is enhanced (40%)
2	Inability of regional transport system to cope with growing demand of greenfield expansion will reduce travel choice and efficient movement of people and goods (40%)	Auckland's connectivity is enhanced (35%)
		Improved national & regional economic growth (25%)

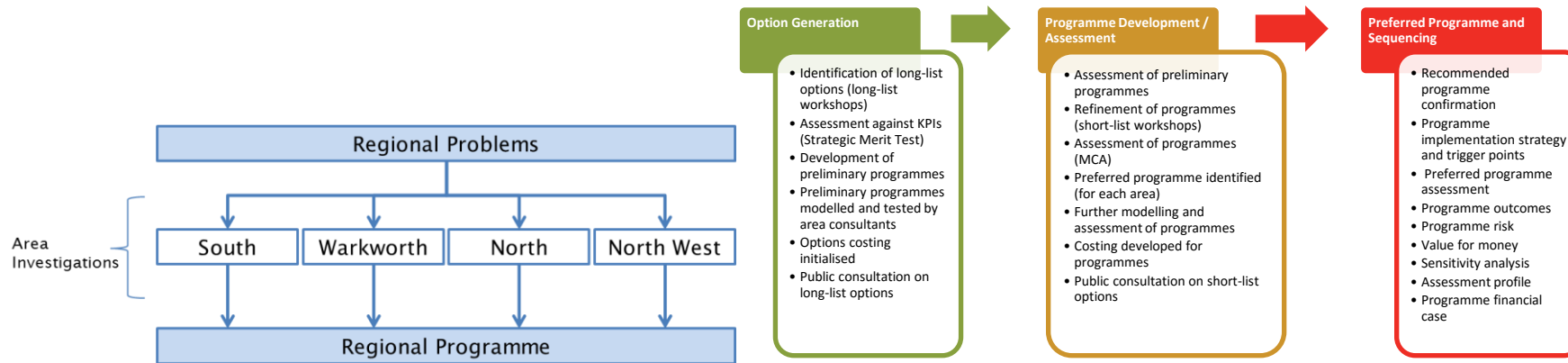
Benefit	KPI	Measures	Investment Objectives
Auckland's liveability is enhanced	Increased access to employment, town centres, and public transport network that delivers on the desired urban form	Proportion of people within walking distance (400m Frequent Transit Network, 800m Rapid Transit Network) and cycling (3km of RTN) distance of public transport network Proportion of people within 10 min walk or cycle of local centre Proportion of jobs accessible in 30 min by car, 30 min by cycle and 45 min by public transport	1 Enhance Auckland's liveability by providing a level of access to jobs and core services for each future urban area equal to the wider Auckland region by 2046

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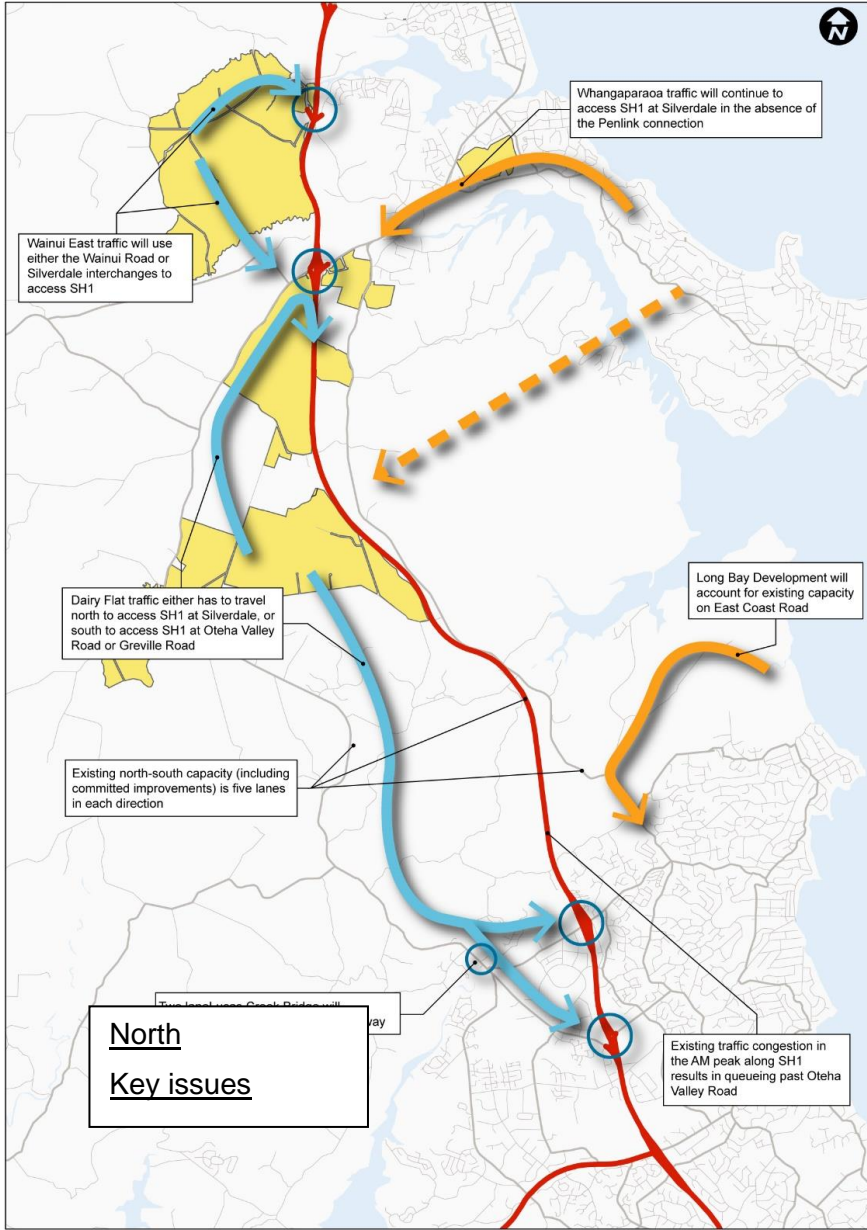
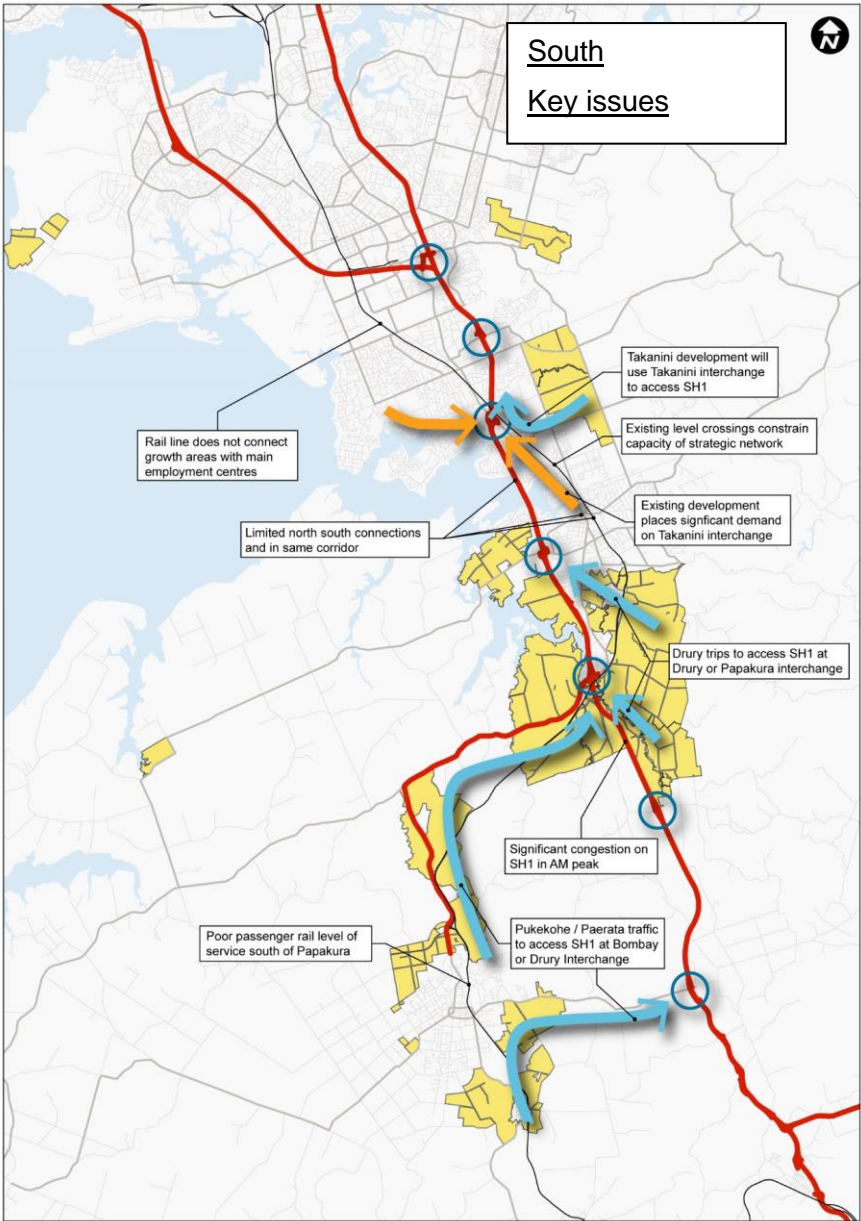
Benefit	KPI	Measures	Investment Objectives
Auckland's Connectivity is enhanced	<p>Minimise adverse natural environmental, cultural and community impacts of transport in greenfield areas</p> <p>Provide a safe future transport system addressing existing safety problems</p>	<p>Key qualitative environmental measures, including air and water pollution and biological impacts</p> <p>Key qualitative community and cultural measures, including reduced severance, noise and heritage site impacts and delivering on mana whenua values</p> <p>Deaths and serious injuries per capita and per distance travelled</p>	2 <p>Enhance Auckland's liveability through improved environmental, cultural and community outcomes (air and water quality, biodiversity, safety)</p>
	<p>Increased effectiveness of the transport network to and within the greenfield growth areas</p> <p>Increased efficiency of the transport network to and within the greenfield growth areas</p>	<p>Impact on traffic congestion (travel times and delays during peak periods)</p> <p>Local journey time reliability</p> <p>Proportion of trips made by public transport</p>	3 <p>Enhance Auckland's liveability and connectivity through achieving a morning peak mode share for walking, cycling and public transport in all future urban area of 45% by 2043</p>
Improved National and Regional economic growth	<p>Increased (maintained) performance of inter and intra-regional connections (across mode)</p>	<p>Regional journey time reliability</p> <p>Frequency</p>	4 <p>Support economic growth through maintaining travel time reliability for freight and inter-regional trips on strategic corridors at existing (2016) levels</p>
	<p>Transport enables land to be developed in line with the timeframes of FULSS</p>	<p>Multi-modal transport infrastructure in place when required for new housing and employment areas</p>	5 <p>Enable land to be developed in line with the Future Urban Land Supply Strategy by ensuring required transport infrastructure is delivered on time</p>

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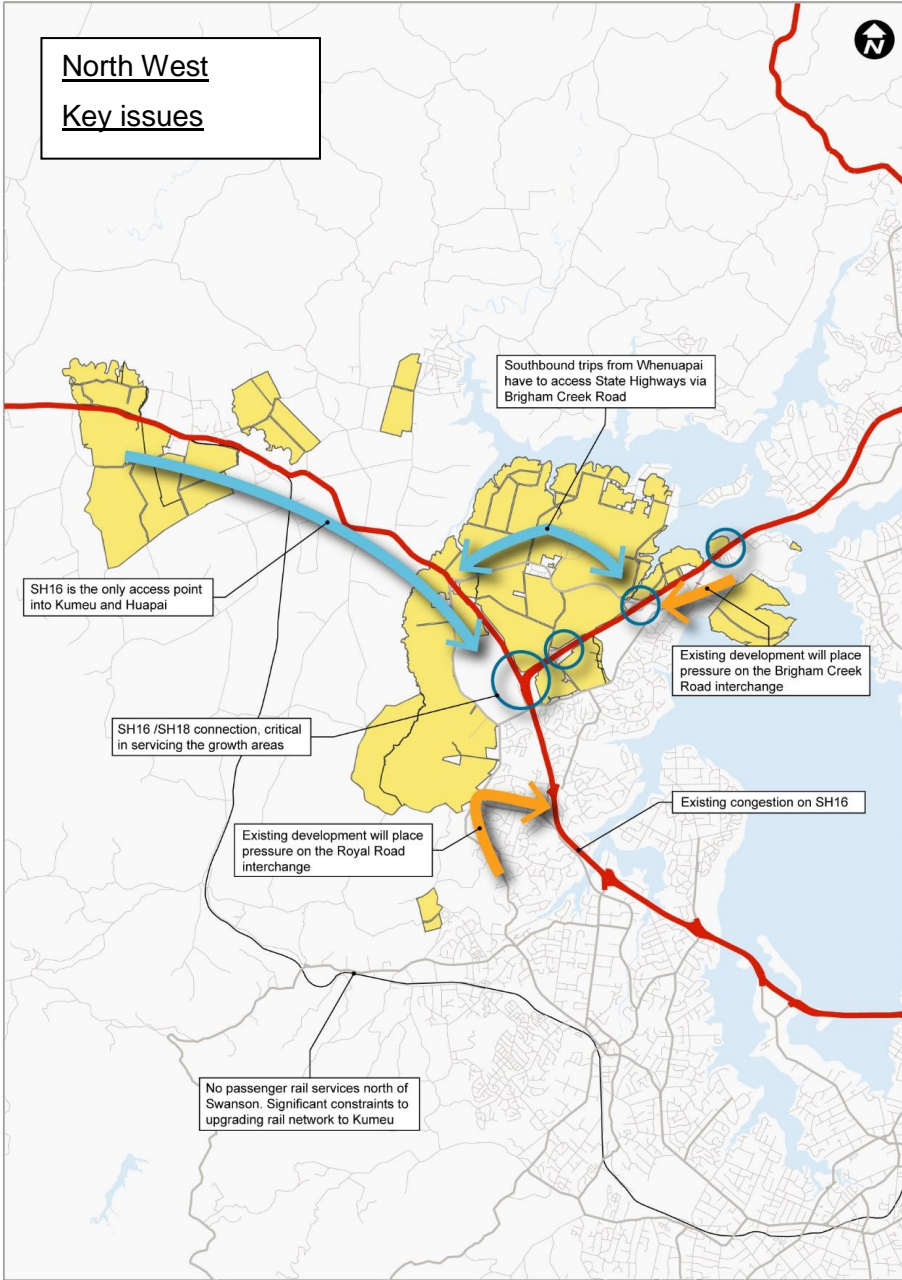
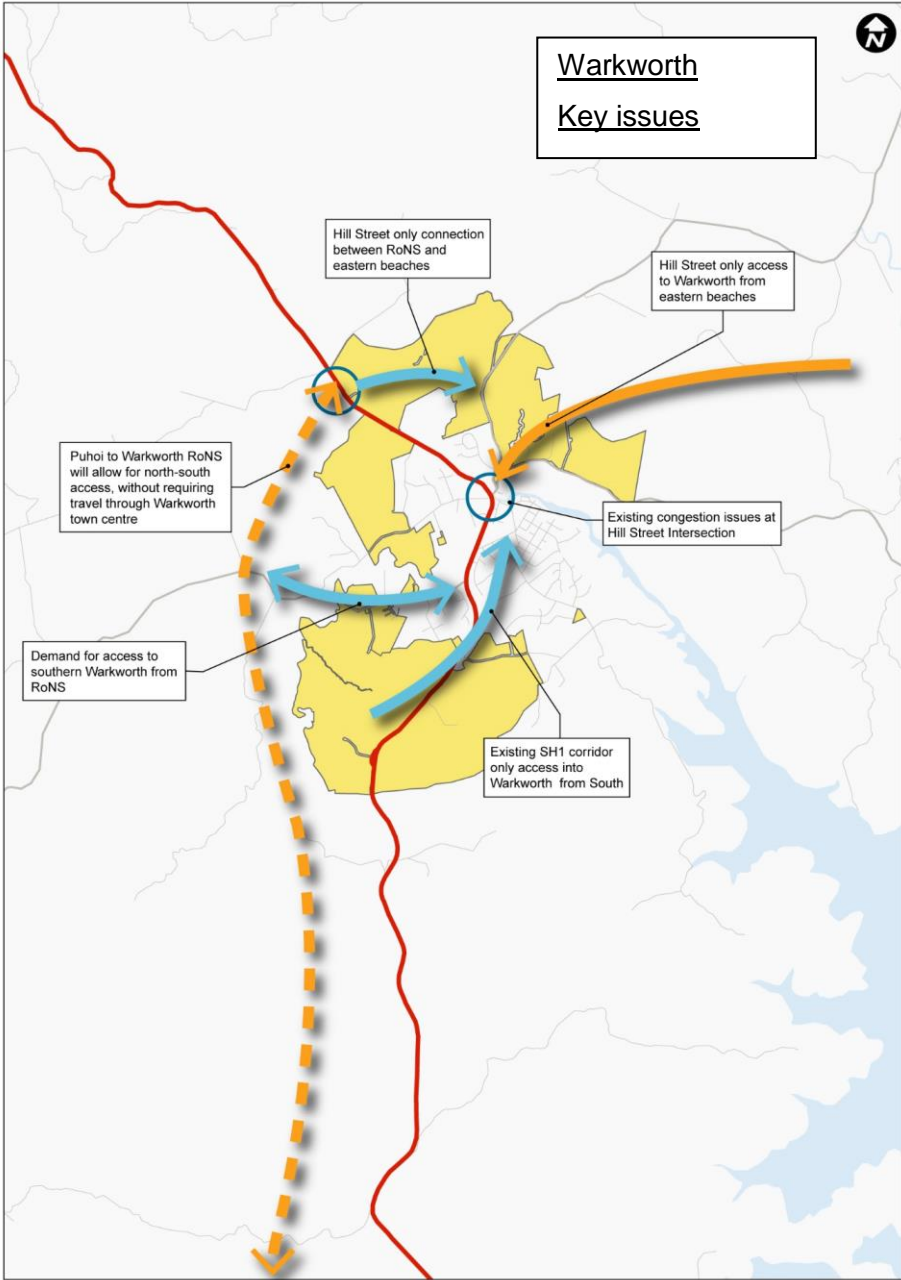
9. Programme Business Case – Process undertaken and key issues assessed to deliver a preferred programme



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10 Option development for programmes

Long list Intervention Categories	Long list Options	Regional Impacts
Land-use and Development (Demand)	Location and quantity of employment Location of development in relation to transport infrastructure and PT services Number and location of new centres	These options provide benefits through affecting the quantum and need for people to travel and the impact they have on the transport network, e.g. changing the amount of employment land can reduce the need to travel long distances and location of development in relation PT facilities can lead to a higher uptake of PT.
Operation and Management (Productivity)	Congestion charging, Motorway pricing, Managed lanes, ITS and infrastructure, Travel demand management, Network Operating Plan, Corridor and network optimisation	These options provide benefits through managing the network and trip demand either directly through optimisation of the network, management of the networks by cost or infrastructure based on defined outcomes, or indirectly through travel plans and other initiatives aimed at changing travel behaviour of individuals.
Walking/Cycling (Supply)	Walking and cycle networks and greenways New cycle infrastructure on existing roads Cycle infrastructure as part of new corridors	These options deliver benefits through reducing the reliance on cars for short trips, providing access to public transport and local services and providing health and recreation benefits through improvements to the walking and cycling environment. This will support other measures to address congestion in key urban areas and deliver a quality urban form
Rail (Supply) (Productivity)	Additional RTN rail capacity Freight vs commuter capacity Additional stations Additional park and ride Extension of the electrified network	These options maximise the capacity of the rail network for commuter and freight movement, improve access and connectivity to the rail network, increase frequency of services and reduce travel time for rail users. This provides rail as an attractive alternative to the car for travel and safeguards the movement of freight. Further benefits from improvements are reduced congestion due to increased rail patronage. These outcomes are key to the delivery of the investment objectives and addressing Problem 2.
Bus/Ferry (Supply) (Productivity)	New Bus RTN Extend existing RTN Additional stations and park and ride Local bus and ferry services	These options provide benefits through maximising the capacity of existing and new facilities and services for the bus network, increase frequency of services, reduce travel time for users and increase catchment size. Further benefits from improvements are reduced congestion due to increased rail patronage. These outcomes are key to the delivery of the investment objectives and addressing Problem 2
State Highway Network (Supply)	Additional lanes New alignments and corridors New interchanges	These options provide benefits through reinforcing the state highway network as the main movement corridor to/from and within the region, providing additional access and targeted capacity.

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Local and Regional Road Networks (Supply)	New arterials and connections Grade separation of rail and state highway Additional capacity & Safety improvements	These options provide benefits through providing for local access and movement, improving safety and reducing congestion. They are key to delivering on a good urban form and ensuring that there is a level of connectivity between the growth areas and strategic network.
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11. Identification of a preferred programme and preferred programme maps

Preferred Regional Programme Interventions	
Demand Interventions	<ul style="list-style-type: none"> • Delivery of integrated land uses and travel demand management that complement the infrastructure outlined below as identified through the Auckland Council High Level Land Use Plan and future recommendations regarding smarter transport pricing for demand management purposes from ATAP.
Productivity Interventions	<ul style="list-style-type: none"> • Development of a Network Operating Programme (NOP) for the future urban areas • Progression of safety enhancements across the future urban areas as part of business as usual • Ongoing optimisation of the network in line with the NOP and active management as the network develops • Adoption of 'smart' technologies which enhance journey experience and assist with addressing the programme problems
Public Transport Supply Interventions	<ul style="list-style-type: none"> • Extending the RTN system to provide access and connections from the future urban areas to key destinations such as the city centre and metropolitan centres • Expansion of the FTN to support the RTN and provide access and connections from the future urban areas to key destinations such as metropolitan centres and town centres
Roding Supply Interventions	<ul style="list-style-type: none"> • Provision of state highway improvements (capacity and connections) to enable the efficient movement of people and goods • Provision of strategic and arterial road improvements to provide access and connections to key destinations and within the future urban areas
Walking and Cycling Supply Interventions	<ul style="list-style-type: none"> • Establishment of safe local walking and cycling networks that expand and connect with the regional active mode networks

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Transport for Future Urban Growth

Draft Preferred Transport Networks in the South

Transport for Future Urban Growth

Draft Preferred Transport Networks in the South

Projects Click on Project headings to view.

VIEW AERIAL MAP

RAIL CORRIDOR UPGRADE

- Rail electrification from Papakura to Pukekohe
- Rail upgrade to provide additional capacity
- Additional stations at Drury, Drury West, Paerata and Tironui

NEW OR IMPROVED PUBLIC TRANSPORT CORRIDOR

- High frequency bus corridor connecting Drury West, Drury, Hingaiia, Papakura, Takanini and Manukau
- Park and Ride facilities

NEW OR IMPROVED ROAD CORRIDOR

- Improved connections around Pukekohe
- New north-south corridor between Manukau, Drury and Pukekohe
- Improved Takanini east-west routes and remove level crossings
- Capacity improvements on SH1
- Improved connections to Waikato

SAFETY IMPROVEMENTS

- Safety improvements on SH22

CYCLE STRATEGY

- Implement cycle network

LEGEND

- July 2016 Future Urban Zone (Potential Business)
- July 2016 Future Urban Zone (Potential Residential & Other Urban Uses)
- Live Zoned
- Future Urban Zone added as a result of Council decisions on the Unitary Plan
- Special Housing Area
- Existing Urban Area
- New Park & Ride
- Indicative Potential New Centre
- Road closures at rail level crossing
- State Highway
- Existing Rail Corridor
- Improved rail corridor
- New rail corridor
- Improved public transport corridor
- New public transport corridor
- Improved road corridor
- New road corridor
- Safety Improvements

Projects Click on Project headings to view.

VIEW AERIAL MAP

RAIL CORRIDOR UPGRADE

- Rail electrification from Papakura to Pukekohe
- Rail upgrade to provide additional capacity
- Additional stations at Drury, Drury West, Paerata and Tironui

NEW OR IMPROVED PUBLIC TRANSPORT CORRIDOR

- High frequency bus corridor connecting Drury West, Drury, Hingaiia, Papakura, Takanini and Manukau
- Park and Ride facilities

NEW OR IMPROVED ROAD CORRIDOR

- Improved connections around Pukekohe
- New north-south corridor between Manukau, Drury and Pukekohe
- Improved Takanini east-west routes and remove level crossings
- Capacity improvements on SH1
- Improved connections to Waikato

SAFETY IMPROVEMENTS

- Safety improvements on SH22

CYCLE STRATEGY

- Implement cycle network

LEGEND

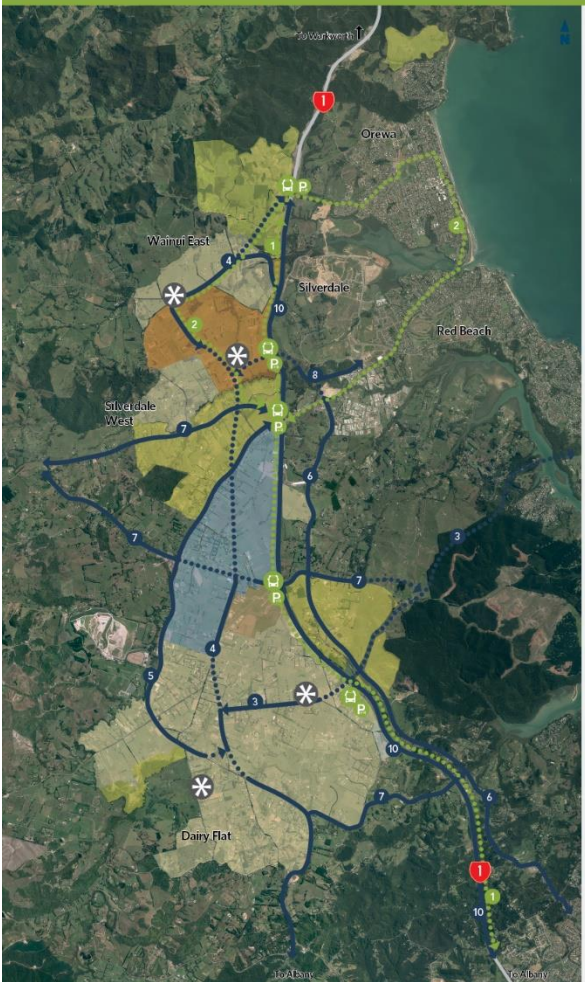
- July 2016 Future Urban Zone (Potential Business)
- July 2016 Future Urban Zone (Potential Residential & Other Urban Uses)
- Live Zoned
- Future Urban Zone added as a result of Council decisions on the Unitary Plan
- Special Housing Area
- Existing Urban Area
- New Park & Ride
- Indicative Potential New Centre
- Road closures at rail level crossing
- State Highway
- Existing Rail Corridor
- Improved rail corridor
- New rail corridor
- Improved public transport corridor
- New public transport corridor
- Improved road corridor
- New road corridor
- Safety Improvements

Subject to consideration by Auckland Transport and NZ Transport Agency Boards.
 Live zoning and Future Urban Zone from Unitary Plan decisions are yet to be made operative under the RMA. Indicative land use subject to further investigation.

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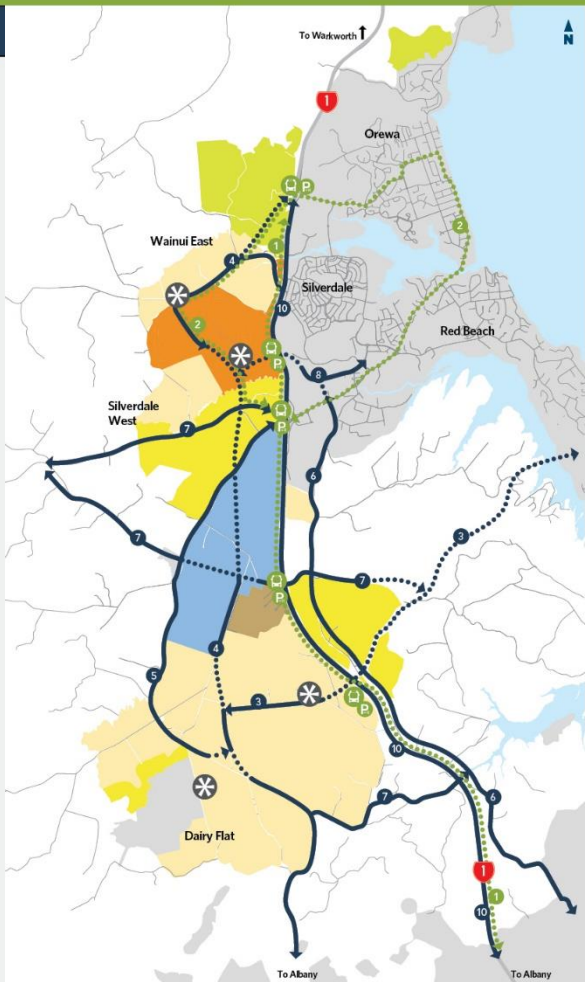
Transport for Future Urban Growth

Draft Preferred Transport Network for Silverdale, Wainui East and Dairy Flat



Transport for Future Urban Growth

Draft Preferred Transport Network for Silverdale, Wainui East and Dairy Flat



Projects Click on Project headings to view.

VIEW AERIAL MAP

NEW OR IMPROVED PUBLIC TRANSPORT CORRIDOR

- Rapid transit network (RTN) extending from Albany to Grand Drive
- A high frequency bus route connecting Orewa and Silverdale with the RTN

NEW OR IMPROVED ROAD CORRIDOR

- Penlink and new east west connection to Dairy Flat
- New north south connection between Albany and Orewa
- Upgraded Dairy Flat Highway
- Upgraded East Coast Road
- New and upgraded east west connections, including Wilks, Kahikatea Flat, Pine Valley and Awanohi Roads
- Curly Avenue extension east west connection
- New connection to Grand Drive
- Increased capacity on SH1

CYCLE STRATEGY

- Implement cycle network

LEGEND

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- Live Zoned
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- Special Housing Area
- Existing Urban Area
- New Park & Ride
- Indicative Potential New Centre
- State Highway
- New public transport corridor
- Improved road corridor
- New road corridor

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- New road corridor

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New Zealand Government



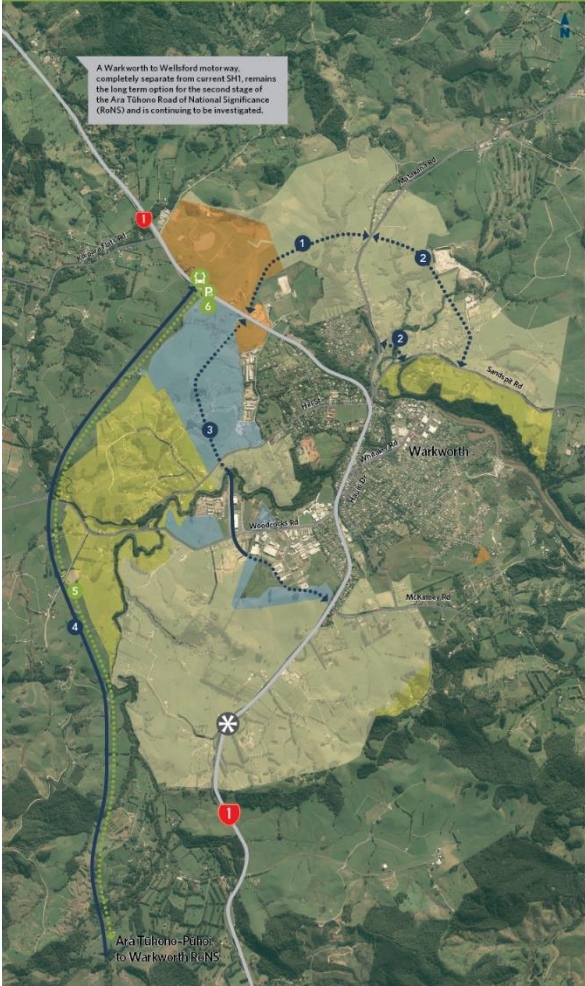
New Zealand Government



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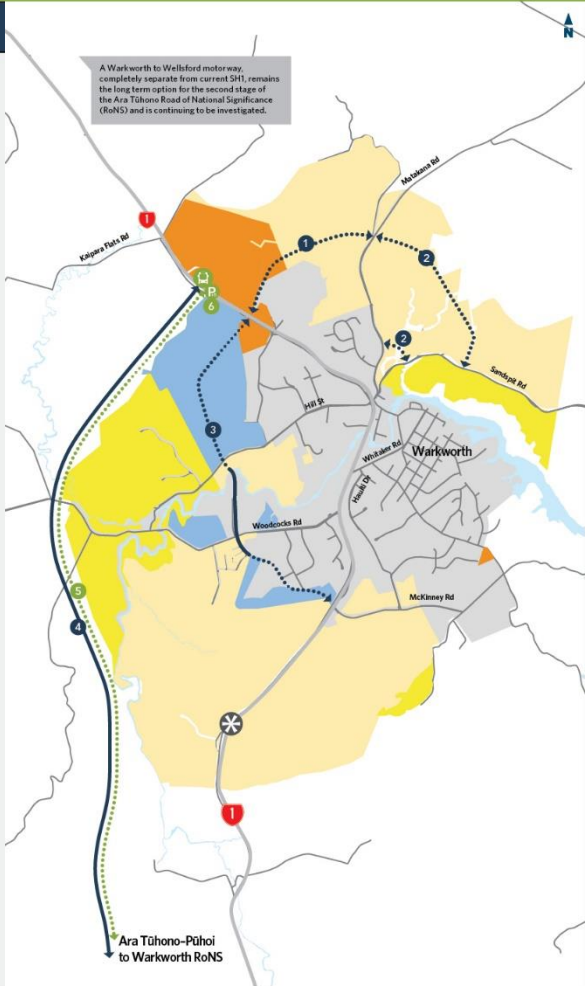
Transport for Future Urban Growth

Draft Preferred Transport Network for Warkworth



Transport for Future Urban Growth

Draft Preferred Transport Network for Warkworth



Projects Click on Project headings to view.

VIEW AERIAL MAP

NEW OR IMPROVED ROAD CORRIDOR

- Matakana Link Road
- Future Matakana Road extension to Sandspit Road
- Western Collector - Northern and southern connection to SH1
- Ara Tūhono-Pūhoi to Warkworth RoNS

NEW OR IMPROVED PUBLIC TRANSPORT CORRIDOR

- Ara Tūhono-Pūhoi to Warkworth RoNS (route for frequent bus services to Auckland)
- New Park & Ride

CYCLE STRATEGY

- Implement cycle network

LEGEND

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- New road corridor

Projects Click on Project headings to view.

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LEGEND

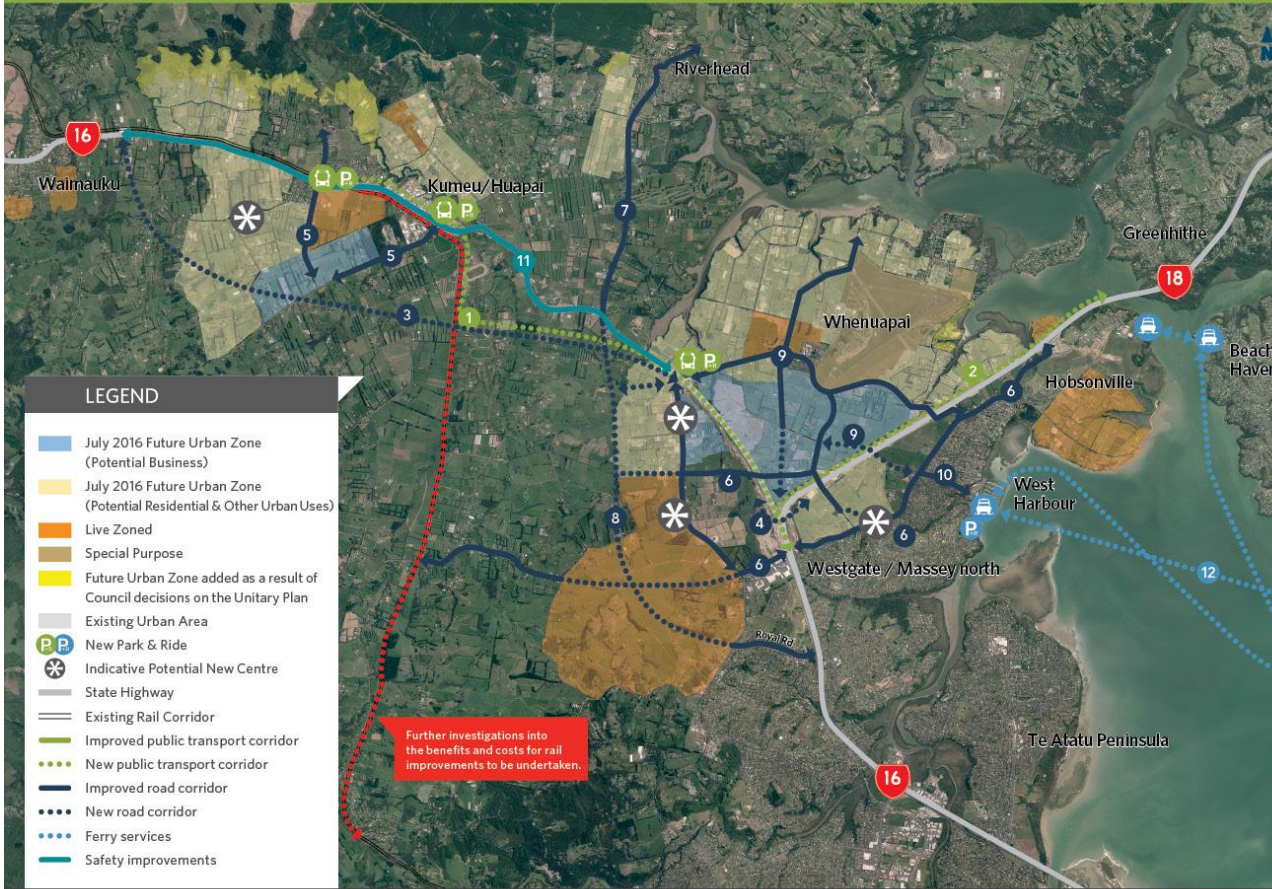
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Entered by Board Secretary

Transport for Future Urban Growth

Draft Preferred Transport Network for the North West



Subject to consideration by Auckland Transport and NZ Transport Agency Boards.
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Projects

Click on Project headings to view.

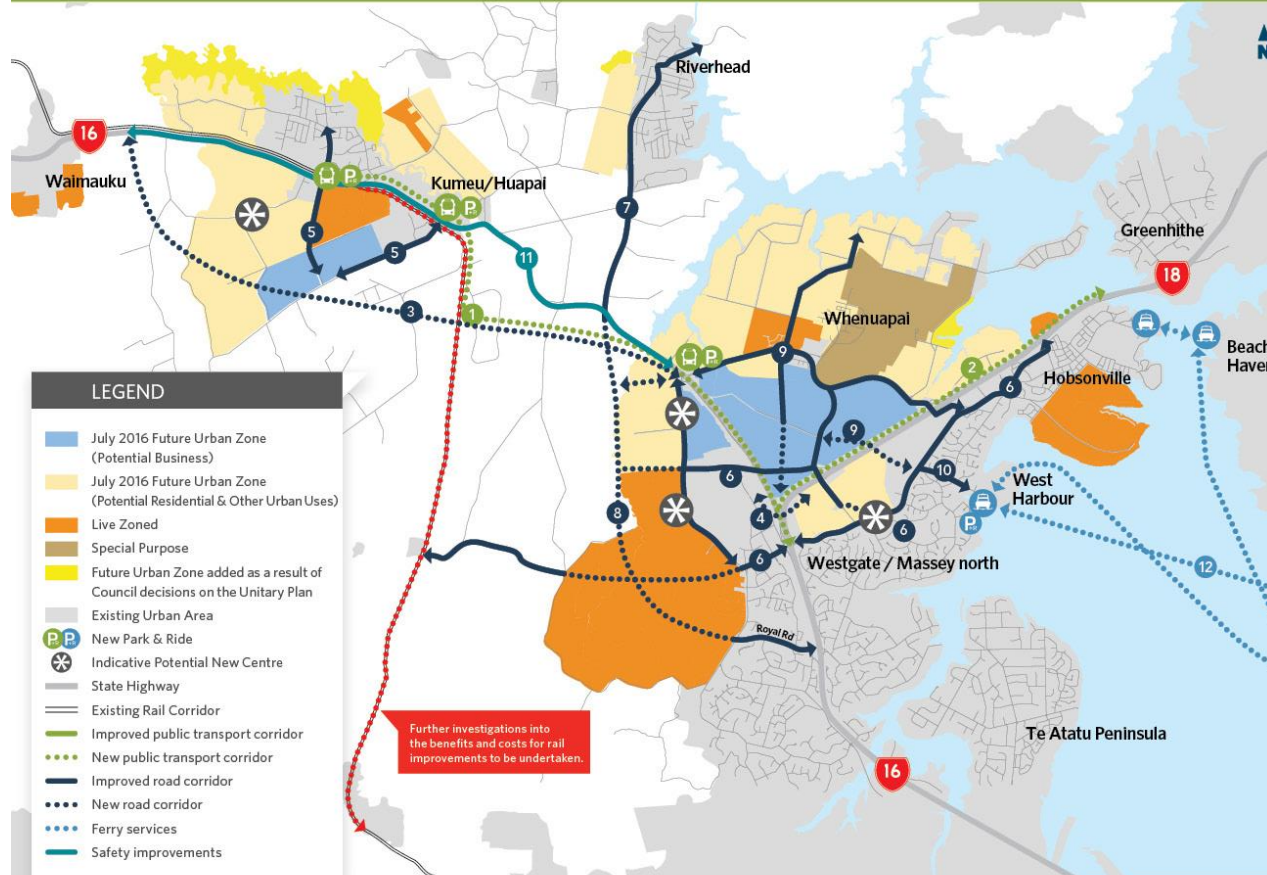
- VIEW AERIAL MAP**
- NEW OR IMPROVED PUBLIC TRANSPORT CORRIDOR**
 1. Rapid transit network (RTN) route connecting Huapai and Kumeu to Westgate
 2. RTN connecting Westgate to Albany
- NEW OR IMPROVED ROAD CORRIDOR**
 3. Alternative corridor parallel to SH16
 4. A more direct connection from SH16 to SH18
 5. Kumeu improved connections
 6. Improved east-west connections
 7. Improved connections to Coatesville, Riverhead and North Shore
 8. New Redhills north-south connection
 9. Whenuapai new and improved connections
 10. Improved connections to ferry services
- SAFETY IMPROVEMENTS**
 11. Safety improvements on SH16
- FERRY IMPROVEMENTS**
 12. Higher frequency on Hobsonville and West Harbour Ferries
- CYCLE STRATEGY**
 - Implement cycle network



Entered by Board Secretary

Transport for Future Urban Growth

Draft Preferred Transport Network for the North West



LEGEND

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- Indicative Potential New Centre
- State Highway
- Existing Rail Corridor
- Improved public transport corridor
- New public transport corridor
- Improved road corridor
- New road corridor
- Ferry services
- Safety improvements

Further investigations into the benefits and costs for rail improvements to be undertaken.

Subject to consideration by Auckland Transport and NZ Transport Agency Boards.
 Live zoning and Future Urban Zone from Unitary Plan decisions are yet to be made operative under the RMA. Indicative land use subject to further investigation.

Projects

Click on Project headings to view.

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CYCLE STRATEGY

- Implement cycle network



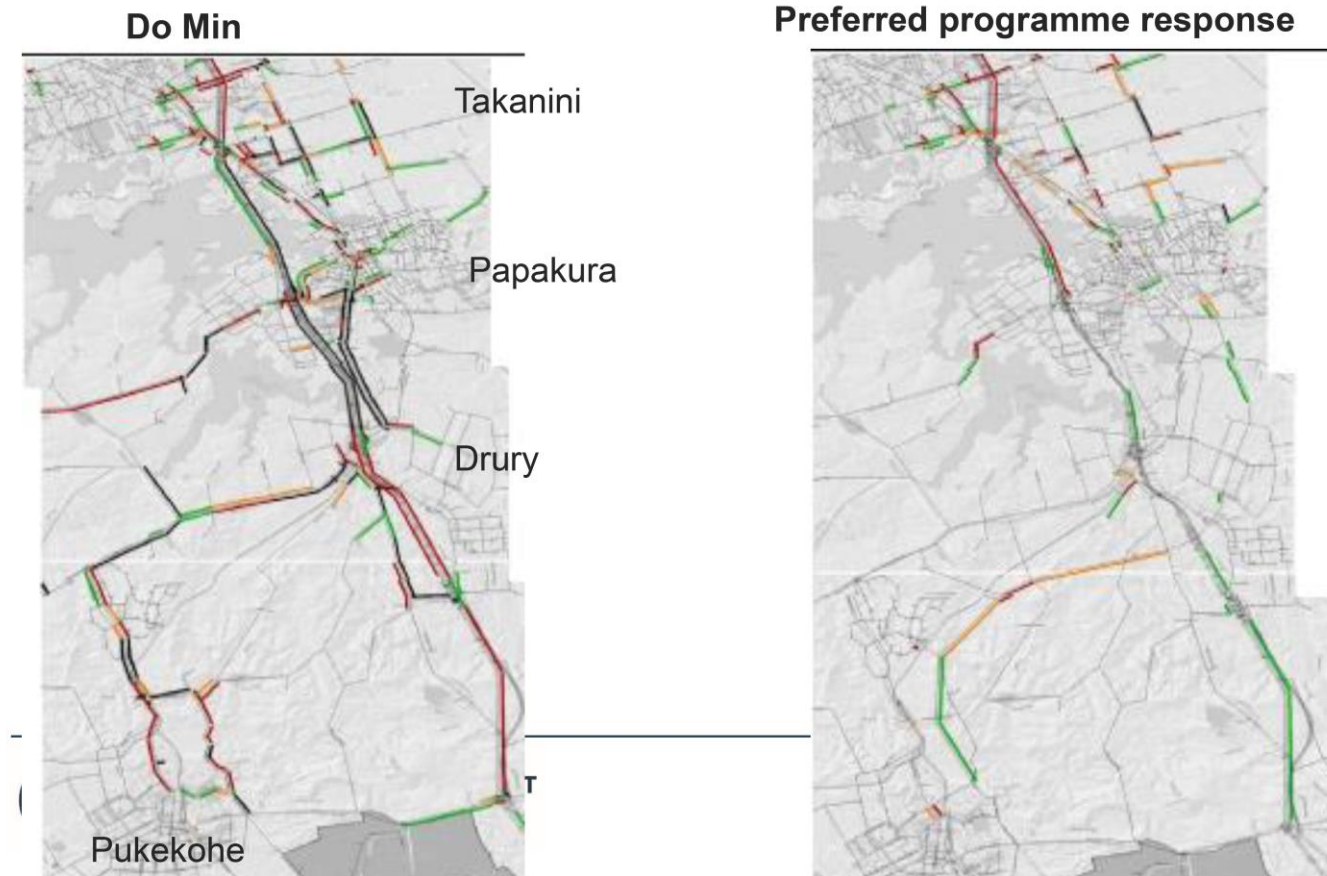
New Zealand Government



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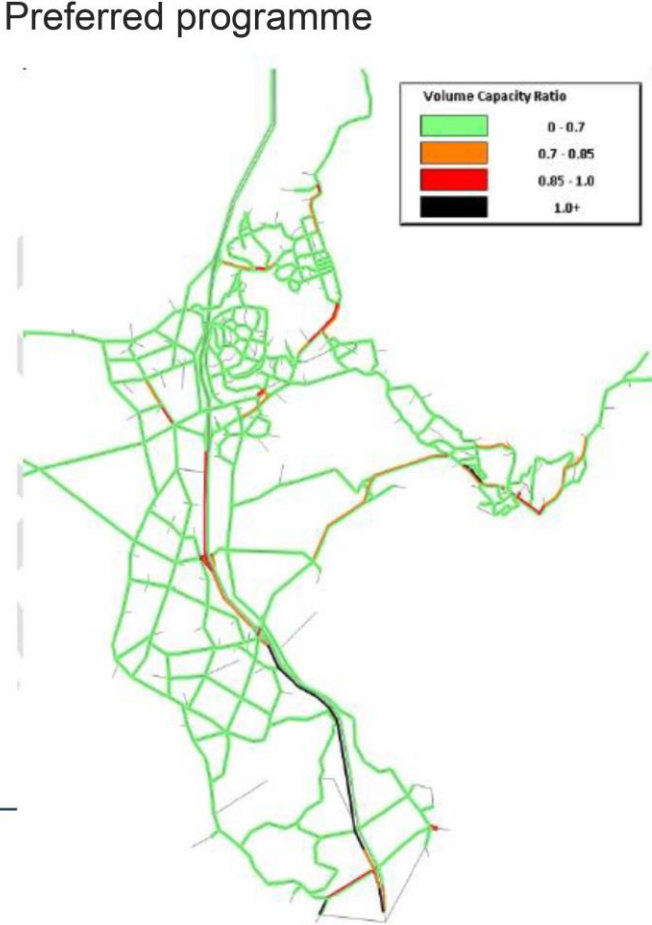
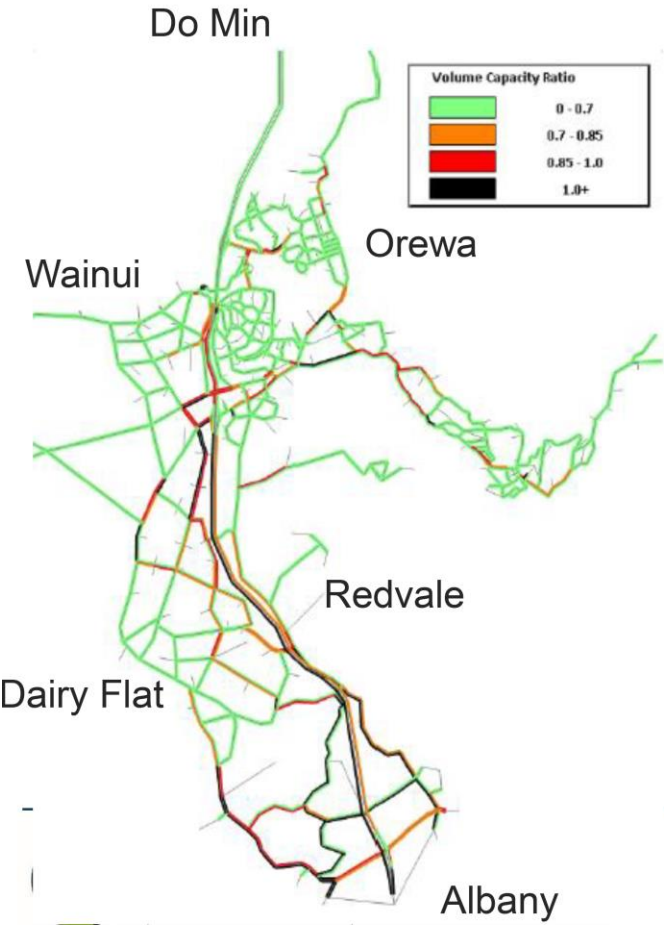
Attachment 3 - Transport Modelling volume / capacity results of preferred network compared to 20146 Do Min

South future urban area - 2046 pm peak Volume / Capacity¹



Entered by Board Secretary

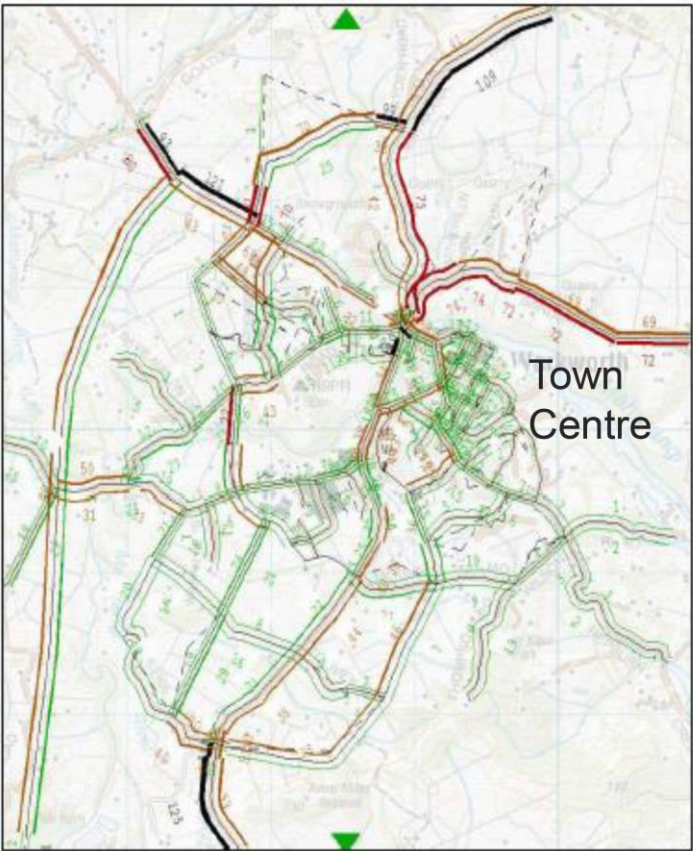
North future urban area - 2046 pm peak Volume / Capacity²



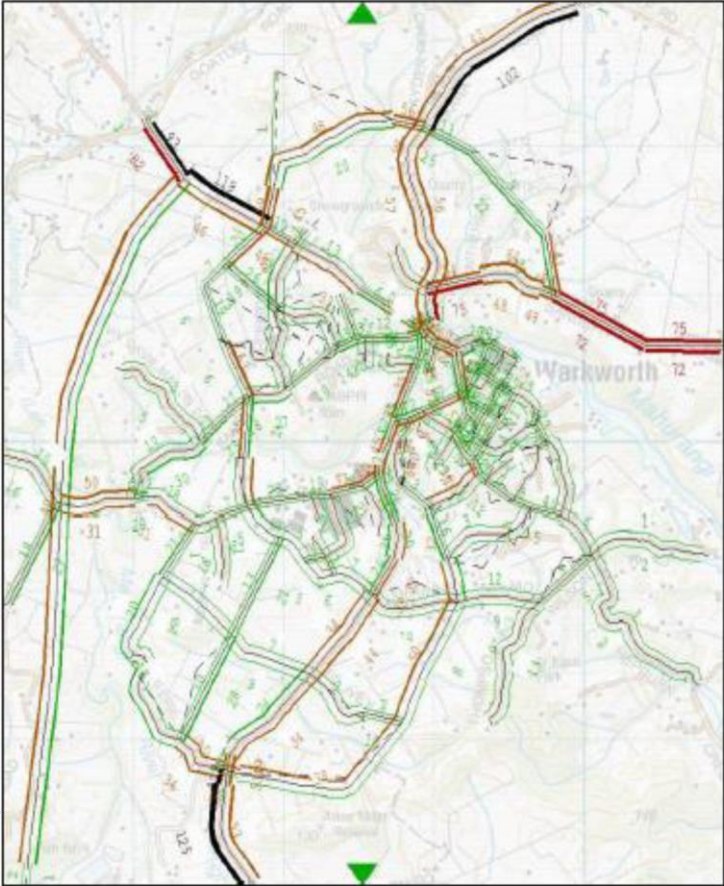
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Warkworth future urban area - 2046 pm peak Volume/ capacity³

Do Min



Preferred Programme response

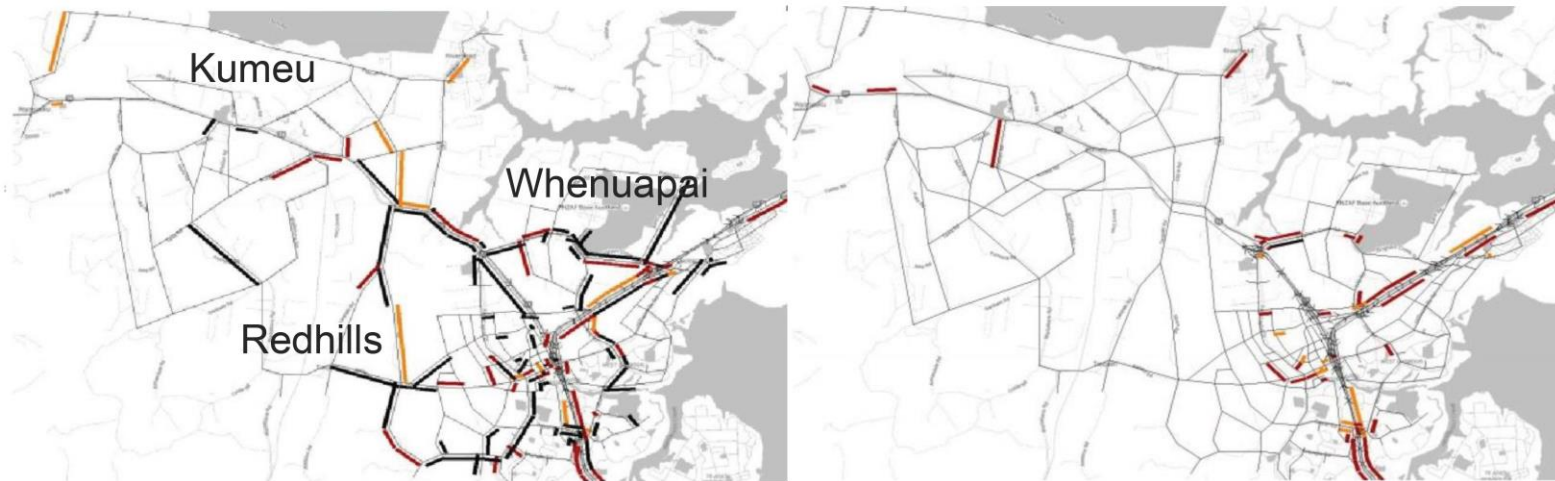


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North West future urban area - 2046 pm peak Volume /capacity

Do Min

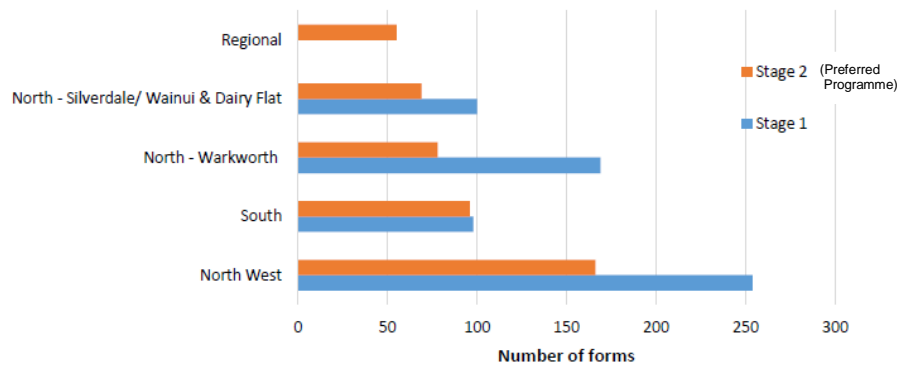
Preferred programme response



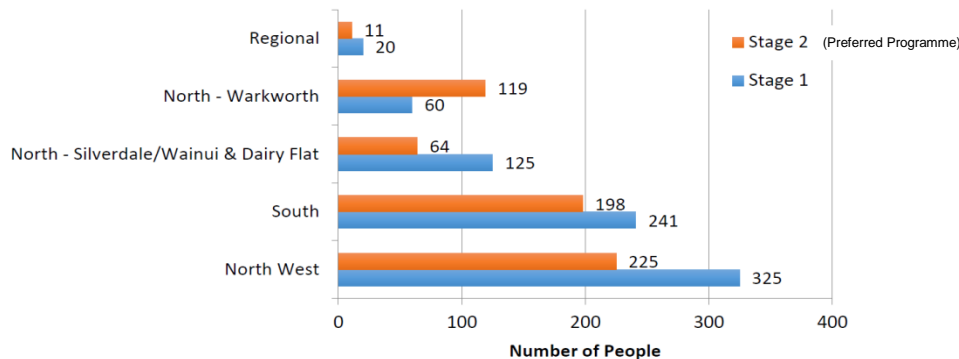
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Consultation – On preferred programme

Public Consultation Feedback Forms Received



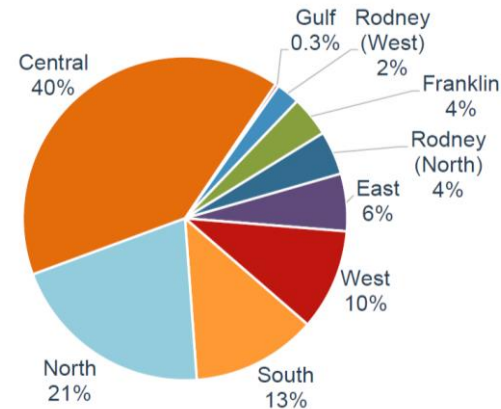
Information Day attendance



AT Commercial Operator Panel (n=300)

- Respondents selected the TFUG areas they wished to comment on
 - Warkworth (n=61)
 - Silverdale/Dairy Flat (n=93)
 - North West (n=130)
 - South (n=158)

Main operating location

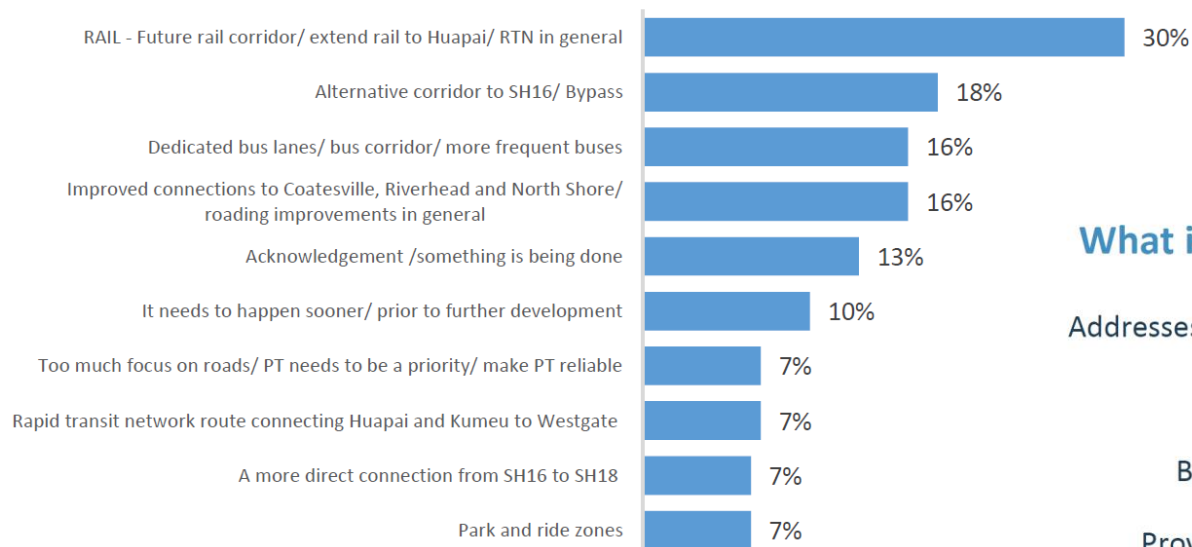


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North-West

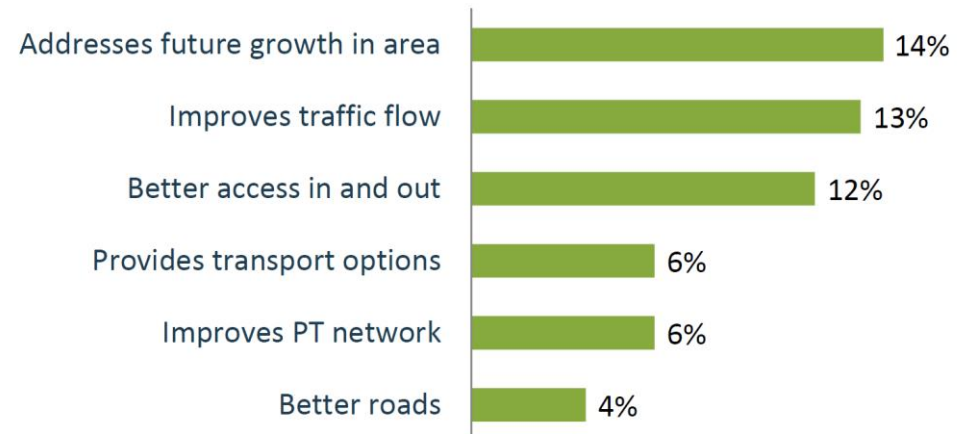
Public Consultation

What do you like about the proposed transport network for the North West Area?



AT Commercial Operator Panel

What is good about draft plan

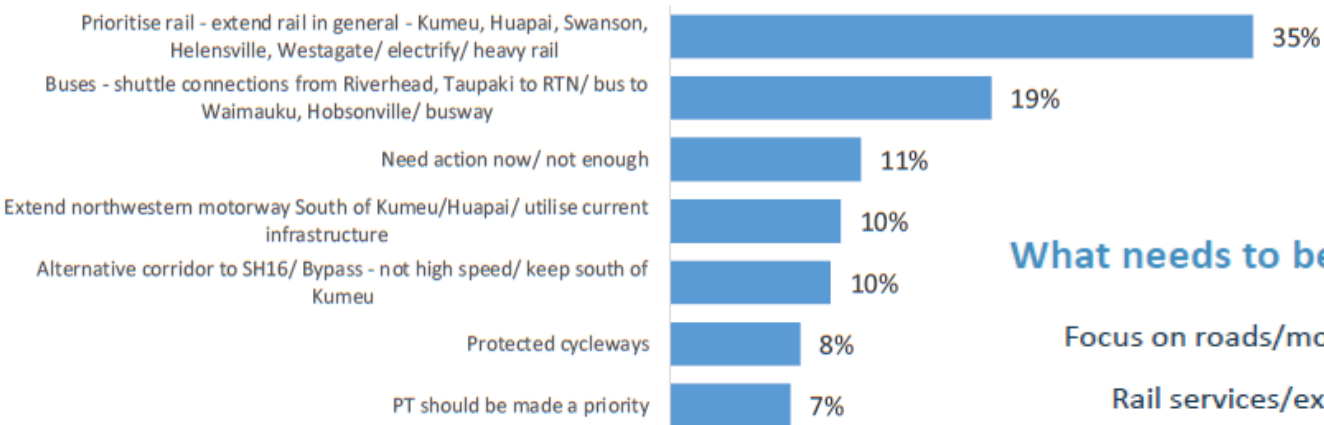


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North-West

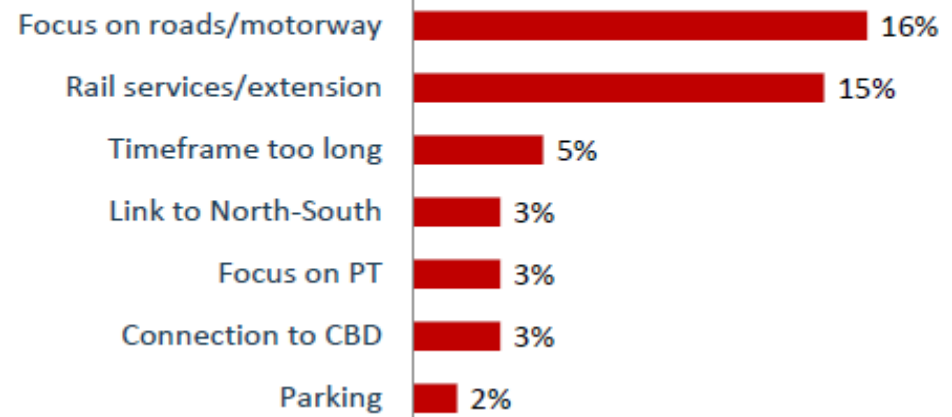
Public Consultation

What do you think could be improved in the proposed transport network for the North West Area?



AT Commercial Operator Panel

What needs to be improved

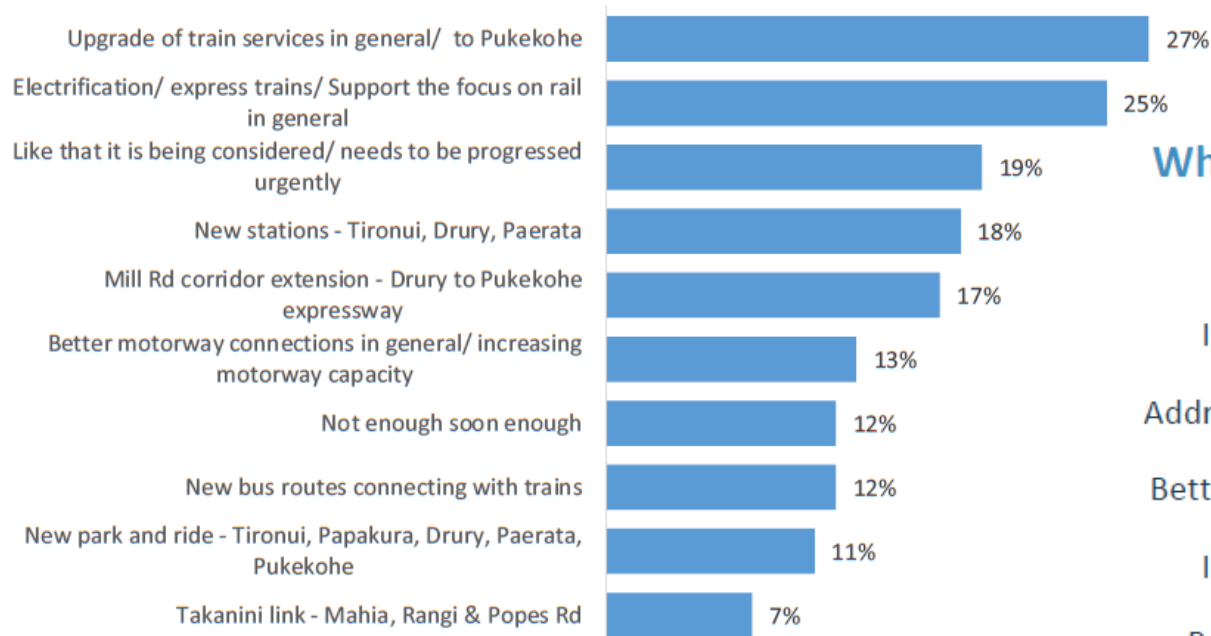


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South

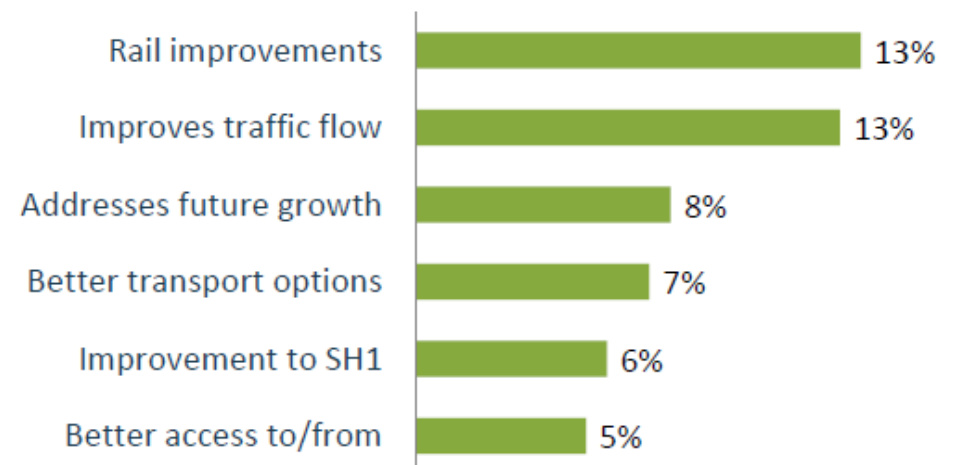
Public Consultation

What do you like about the proposed transport network for the Southern Area?



AT Commercial Operator Panel

What is good about draft plan

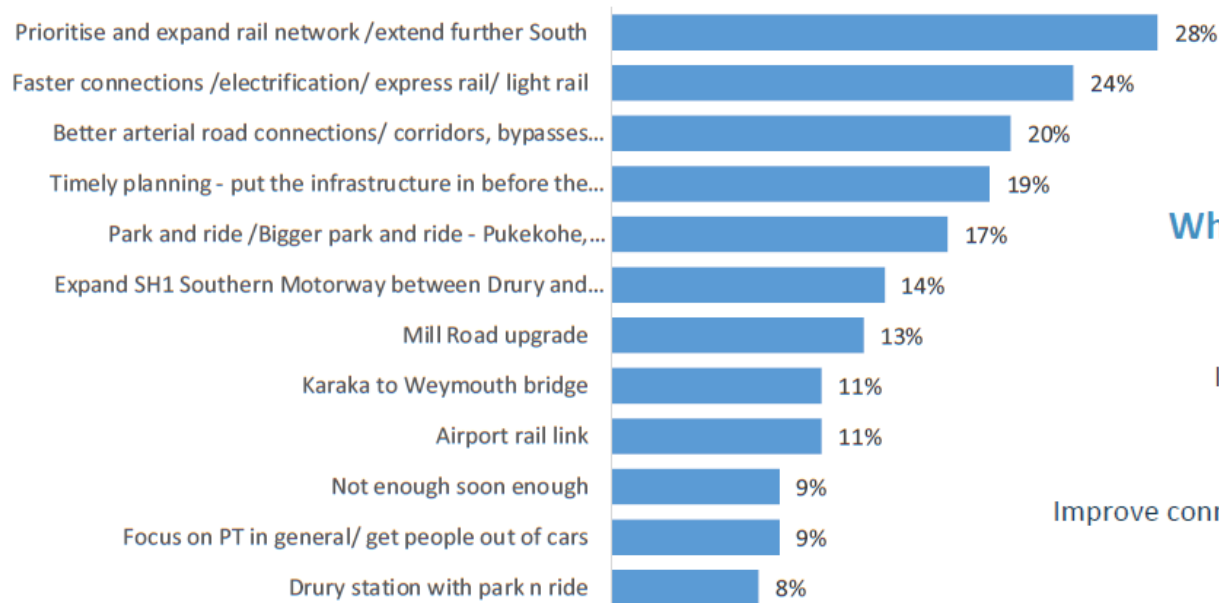


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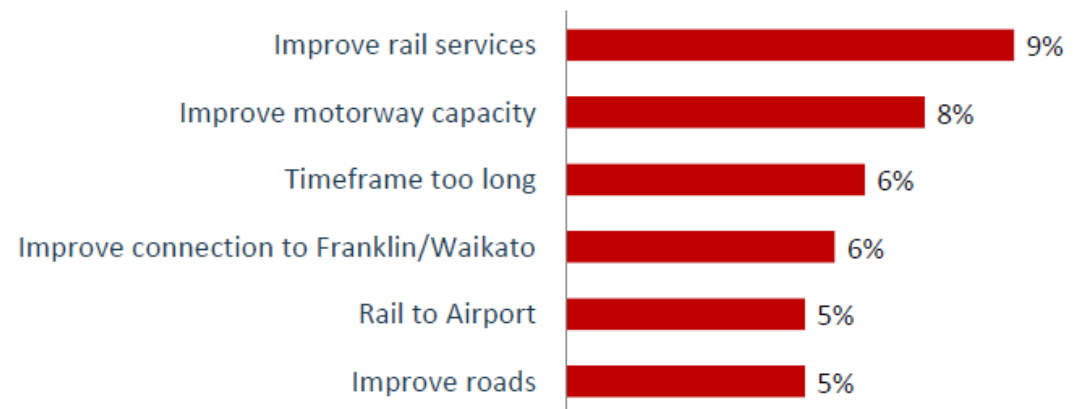
South

Public Consultation

What do you think could be improved in the proposed transport network for the Southern Area?



AT Commercial Operator Panel What needs to be improved

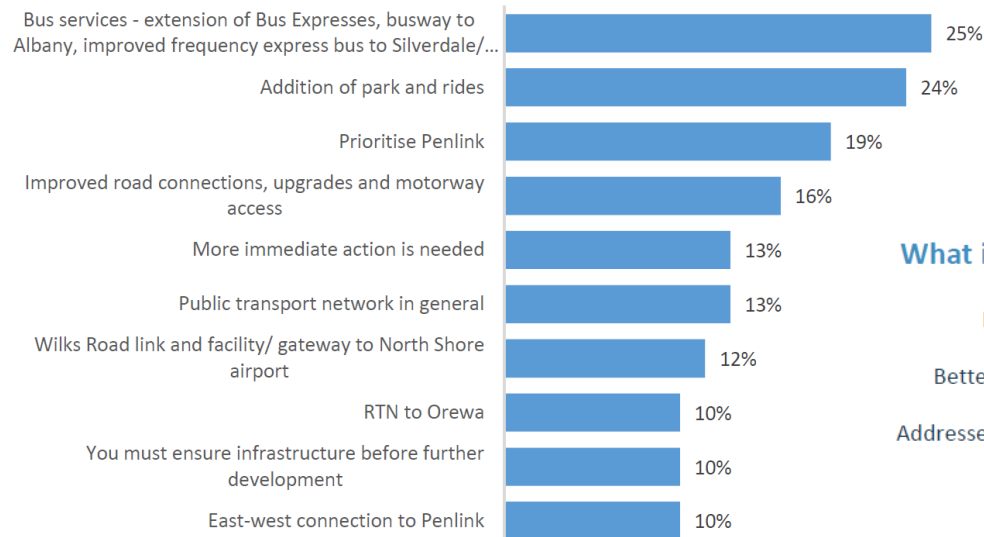


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North

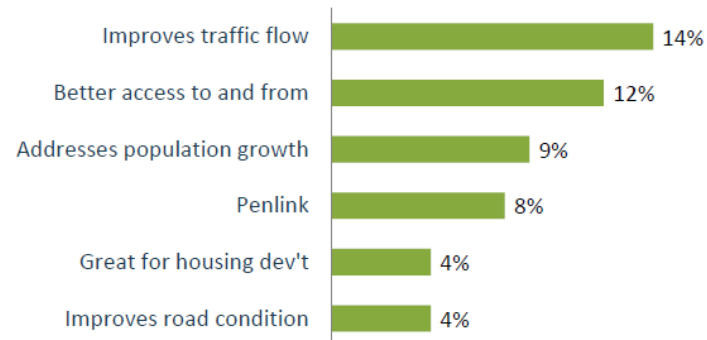
Public Consultation

What do you like about the proposed transport network for the northern area (Silverdale/Wainui/Dairy Flat)?



AT Commercial Operator Panel

What is good about the draft plan

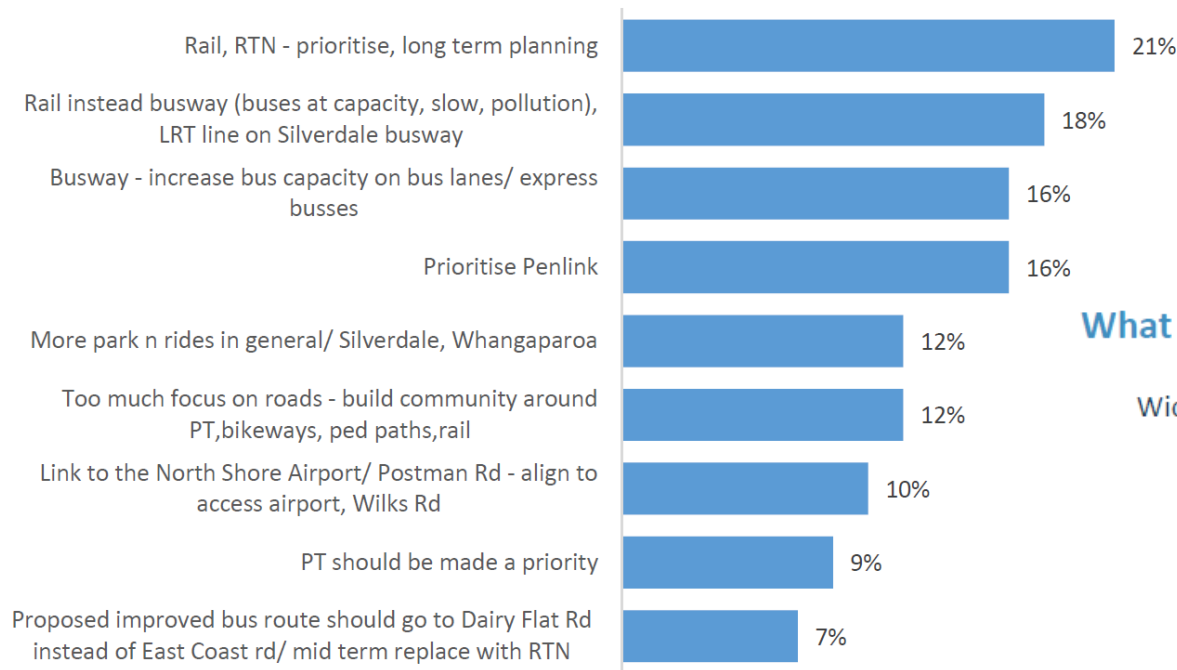


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North

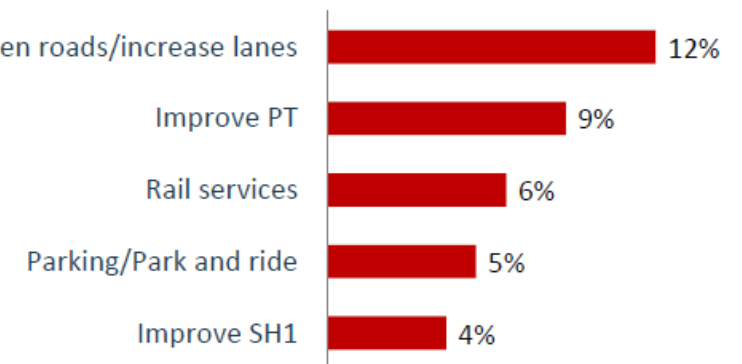
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AT Commercial Operator Panel

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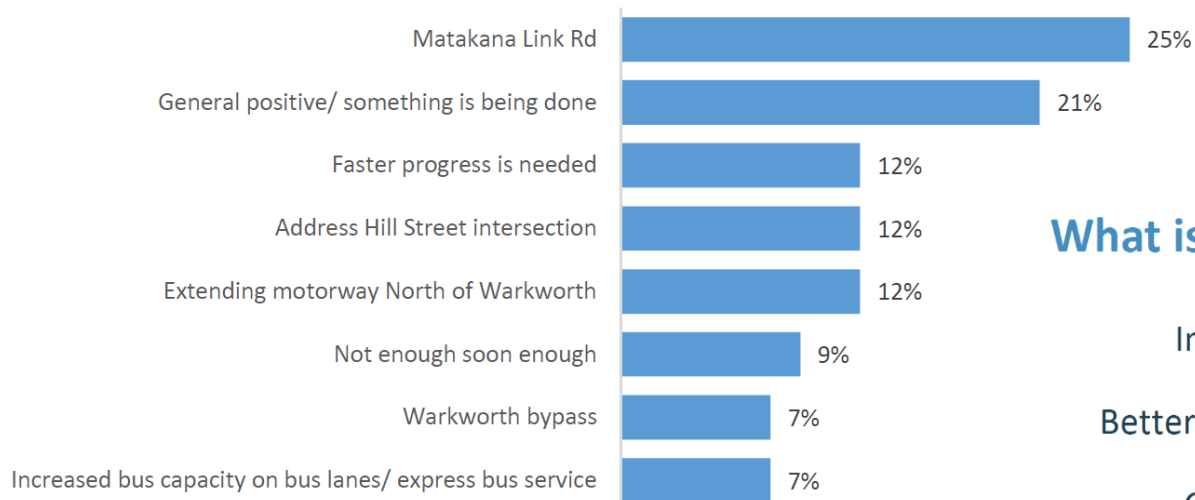


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Warkworth

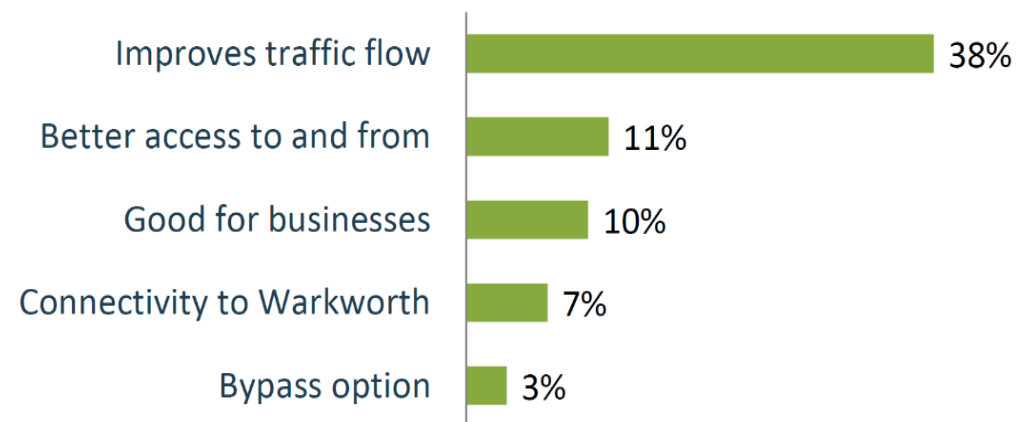
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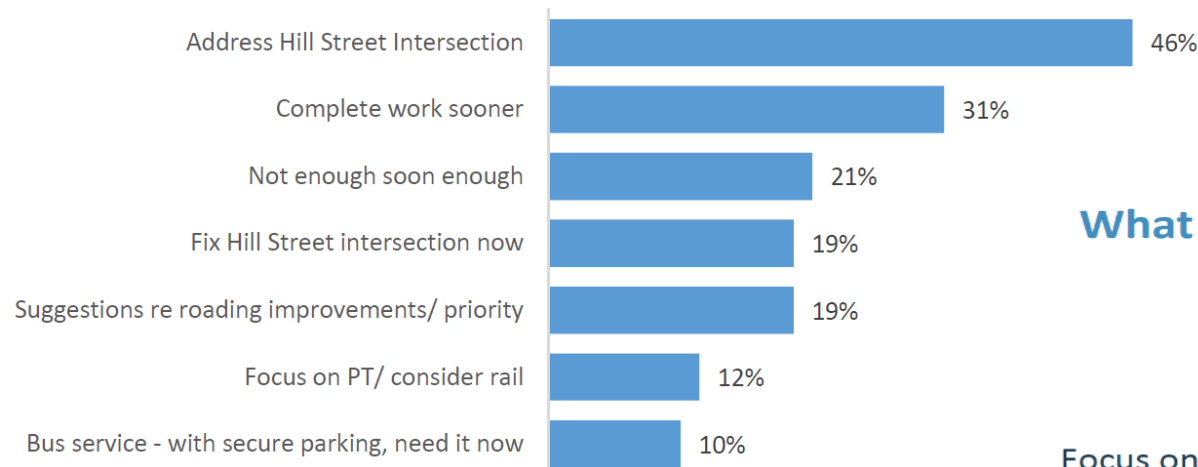


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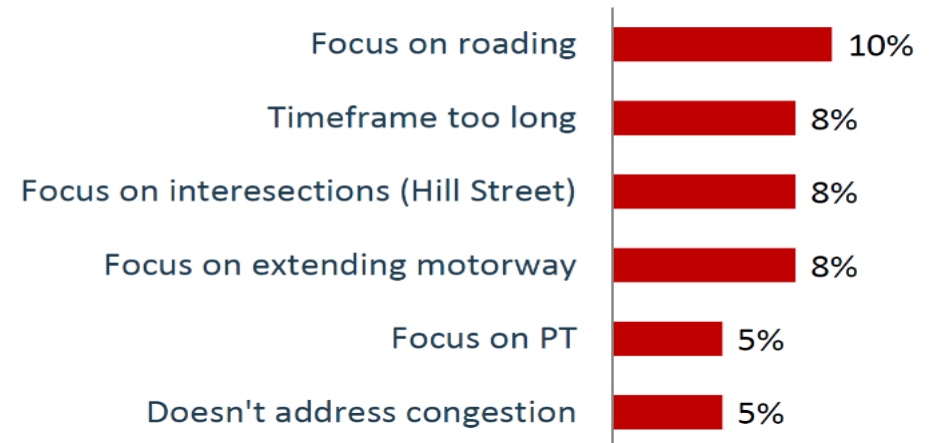
Public Consultation

What do you think could be improved in the proposed transport network for the Northern Area (Warkworth)?



AT Commercial Operator Panel

What needs to be improved



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Attachment 5

Transport for Future Urban Growth - Programme Business Case Executive Summary

This Transport for Future Urban Growth Programme Business Case has developed the case for investing in a transport programme with a transformational shift to extend rapid transit networks complemented by improved arterial and strategic networks. Over the next 30 years the programme will support approximately 25 per cent of Auckland's growth in future urban areas (110,000 households and 50,000 new jobs). This represents the greenfield component of growth in Auckland Council's overall strategy.

Preferred programme - Balanced Response plus Rapid Transit Network (RTN)

The preferred programme of a **balanced response plus Rapid Transit Network** addresses the following identified problems:

- The inability to respond in a timely way to the pace and scale of greenfield development will restrict access to jobs, education and core services in and around growth areas
- The inability of the regional transport system to cope with the growing demand of greenfield expansion will reduce travel choice and the efficient movement of people and goods.

The **Balanced Response plus Rapid Transit Network** has an emphasis on delivering a transformational shift to public transport and includes:

1. The Strategic Case reconfirms the case for change to identify and progress further transport investigations to respond to scale and pace of growth in the Future Urban Areas.
2. The Balanced Response plus Rapid Transit Network has been identified as the "Preferred" Programme - and is recommended for further investigation to provide for an integrated land use and transport outcome that enables growth and delivers:
 - land use and travel demand plans that influence travel demand patterns and provide a flexible and adaptable future transport network
 - prioritised operational and safety enhancements to make the best use of the existing network.
 - a transformational shift to the public transport network through rapid and frequent transit network extensions to connect to metropolitan and employment centres
 - safe walking and cycling plans that connect with regional networks and local attractors
 - strategic and arterial road improvements to enable efficient movement of goods and people and provide access and connections throughout the future urban areas.

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3. Progress the preferred transport programme by prioritising initiatives through the next stages of the business case process with an urgency in providing route protection.

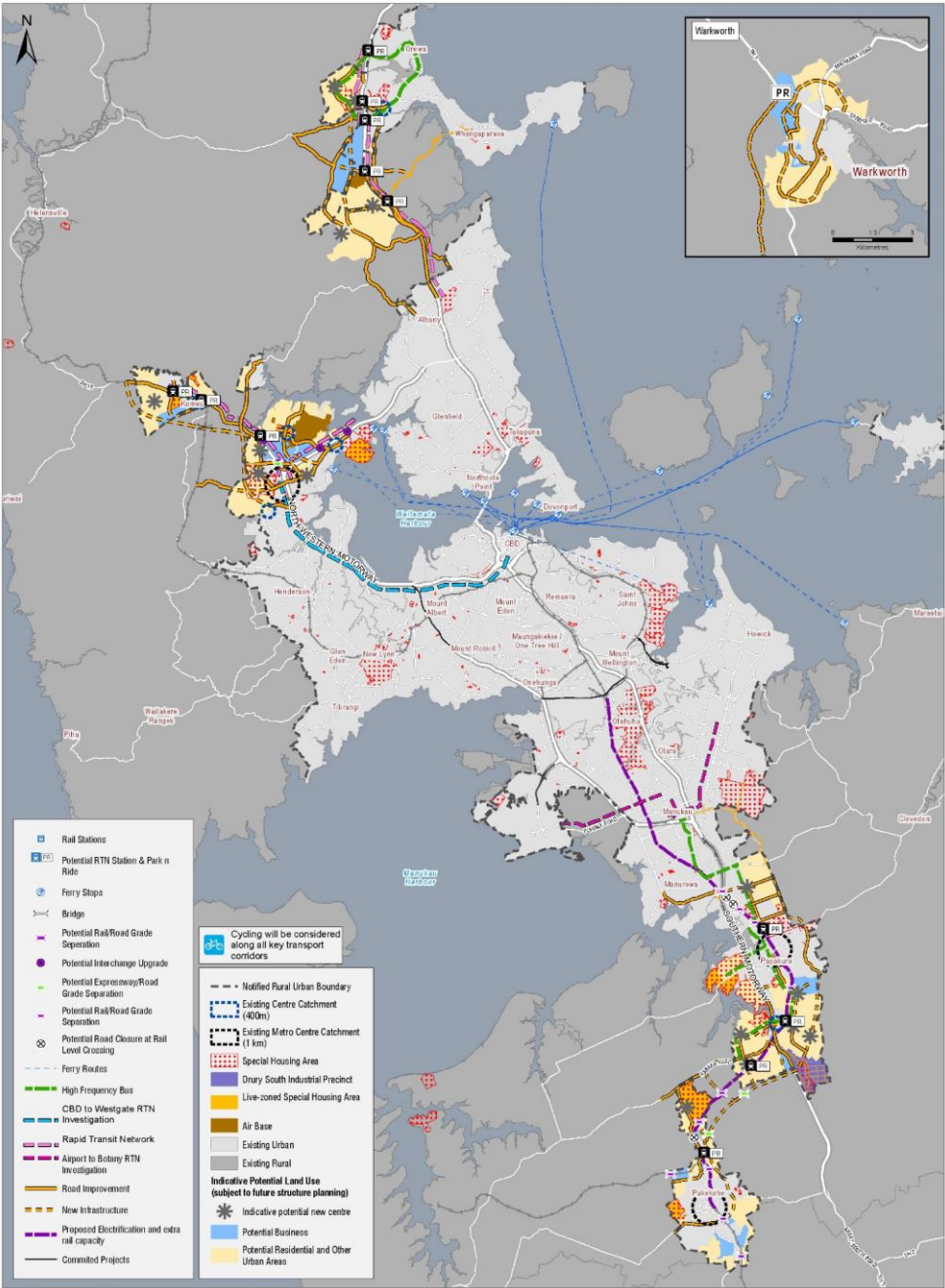
Implementation strategy

The development of the programme business case has identified that changes to the transport network to accommodate growth identified in the Future Urban Land Supply Strategy will require land outside the current ownership of Auckland Transport and NZTA. Following the identification of the preferred programme an implementation strategy has been developed that has identified:

- Prioritisation of route protection for the network over the next 10-12 years. This is to ensure certainty and help enable a higher quality land-use outcome.
- Prioritisation of delivery of RTN's, state highways and arterial roads, including laneway changes and cycling investments in the northwest, south and in Warkworth.

An implementation strategy of the preferred programme, including land use changes based on the FULSS and High Level Land Use Report (HLLUR), will need to be actively monitored by the project partners during the next phases of the business case to ensure the optimum network and integration with land use and development is achieved.

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Future Urban Area Preferred Transport Network

Outcomes of Preferred Programme

The outcome of the preferred programme will be:

- Contributing to housing supply in a manner that creates strong communities and centres with local jobs
- Providing the means to enhance Auckland's connectivity and liveability through increased mode share in non-private vehicles by providing high frequency, high quality RTN services and opportunities for mode choice through infrastructure provision and land use integration
- Improving access to employment and core services through the provision of an appropriate arterial network complemented with an enhanced state highway
- Minimising the negative environmental and community outcomes through the positive location of infrastructure
- Supporting the economic growth of Auckland in both the green and brown fields by maintaining the travel time reliability for freight and strategic trips to key industrial areas, ports and the airport through the provision of an appropriate arterial network complemented with an enhanced state highway
- Enabling the development of the greenfield areas in line with the Future Urban Land Supply Strategy by providing bulk infrastructure to enable growth consistent with the Auckland Plan.

Programme Urgency

Home to 1.6 million people, Auckland ranks on a global scale as an attractive place to live, work and play. With a population that has nearly doubled in the last 30 years, Auckland's growth challenges are not new. However, the rate of growth has increased. The high growth projections for Auckland envision a further one million people over the next 30 years¹, which amounts to 400,000 new dwellings and 277,000 new jobs. In the greenfield areas that this study relates to, the FULSS anticipates 110,000 new dwellings and 50,000 new jobs.

This scale and pace of population and employment growth presents a challenging future for these areas of Auckland, especially as 50 per cent of the projected greenfield dwelling growth (60,000 dwellings) and 60 per cent of the employment growth (30,000 jobs) is required to be development-ready over the next decade (to 2027/28).

For certain areas the urgency is even more pronounced with:

- the North West Auckland future urban areas anticipated to accommodate 29,700 households being development-ready within the decade. Special Housing Areas (SHAs) are expected to provide 50 per cent of first decade dwelling capacity.

¹Auckland Council Future Urban Land Supply Strategy, High Growth Projections

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- the South Auckland future urban areas anticipated to accommodate 42,500 dwellings, 33,000 of which are identified as being in areas that are development-ready over the next decade (starting 2017). Capacity will be enabled as a result of SHA development and through FULSS timeframes.

With Auckland playing a nationally significant role as a centre for business, innovation and knowledge and accounting for 36 per cent of the New Zealand economy, it is important that a timely response to greenfield growth is developed to prevent the growth negatively impacting on the economic performance of Auckland.

While growth was identified in the 2015 Regional Land Transport Strategy, the pace and scale of proposed greenfield growth was not. Approximately \$1.3 billion was identified to manage growth, much of which was identified to resolve existing brownfield transport issues – such as current construction improvement projects to the southern and northern SH1 corridors for approximately \$660 million.

Current transport system inefficiencies to accommodate future urban land uses

The future urban growth areas are currently serviced by a predominantly rural network with lower specifications, limited capacities, a lack of footpaths or cycleways and non-controlled intersections. In addition, these locations have limited travel choices to support local and inter-regional trips. Analysis completed through the options and programme assessments indicates that the existing local road network in these locations will not be able to cope with the demand proposed by the Future Urban Land Supply Strategy. Travel times will deteriorate significantly and there will be reduced resilience in the overall network.

The current networks are unable to cater for the level of growth identified by the FULSS and SHA applications in these greenfield areas, as evidenced by:

- around 90% of travel being undertaken by private vehicle²
- the total travel time in the southern PM peak traffic model increasing from 8,600 hours in the 2011 base model to 33,500 hours in the 2046 'Do Minimum' model (an increase of 300%)³
- journey times for SH16 from Waimauku to Westgate are predicted to increase for the respective peak direction by 25 minutes in the AM peak and 38 minutes in the PM - an increase of 178% and 340% respectively when compared against the base model.⁴
- the journey times for the northern model for the northbound traffic in the PM peak increase from 19 minutes in the 2013 base model to 195 minutes (3 hours and 15 minutes) in the 2046 'Do Minimum' model.
- the lack of high quality and frequent public transport services will reduce the likelihood of achieving the transformational shift onto public transport envisioned by the Auckland Plan.

² Stats New Zealand Census Journey to Work.

³ Transport for Future Urban Growth: Southern Area Short List Table 12.

⁴ Transport for Future Urban Growth: North West Area Short List Table 14.

Entered by Board Secretary

Programme Development and Options

To identify a preferred programme that has flexibility and agility as Auckland grows, a number of programmes were assessed. While the preferred network has been identified with a Rapid Transit Network at its core, a number of programmes were assessed which provide various levels of state highway, local arterial and public transport investment.

The following programmes were assessed and compared through workshops and technical assessments:

1. Do Minimum – a programme of minor infrastructure improvements that are committed and funded.
2. Reference Case – a programme of network improvements focused on utilising existing transport corridors and providing limited public transit improvements.
3. Balanced Response - provides a spectrum of demand, productivity and supply elements, incorporating the provision of local employment centres, upgrading existing routes, providing new connections and providing a level of priority for public transport.
4. Balanced Transport Network plus Rapid Transit Network - this programme builds on the Balanced Response programme and continues the transformational changes to Auckland's public transport system.

The **Balanced Transport Network plus Rapid Transit Network** was identified as the preferred programme.

A core component of the preferred - **Balanced Transport Network plus Rapid Transit Network** programme - is one that can accommodate changes to growth while maintaining the goals of the Auckland Plan. The programme provides either a lead RTN infrastructure programme or a stepping stone approach to RTN dependant on the uptake of development. An example of how RTN development has progressed in the Auckland network can be seen through the recent investment in rail electrification and the double decker bus fleet. This has resulted in an annual growth of 20 per cent in rail patronage and 15 per cent patronage on the Northern Busway.

Benefits of Investment and Alignment to Investment Objectives

The vision for the future urban areas is that they are places to live, work and play. This means residents must have good access to employment, core services and recreation through travel choice and connected and reliable transport networks.

Achieving a positive transport experience for residents and visitors to Auckland will help to establish a strong case for improving Auckland's global liveability ratings through improving social and economic outcomes.

Developing these future urban areas also requires consideration of the impact of this development on the values of mana whenua and their relationship with their ancestral lands and taonga. Development must occur in a way that aligns with these values and the views of mana whenua.

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Delivering the future urban areas at a rate that responds to the scale and pace of growth through achieving a balance of supply-side and demand-side interventions will complement all growth throughout the region. These interventions will form an adaptable programme that will address the problems confirmed through the strategic case.

The vision for the future urban areas is reflected in the three benefits of transport investment in future urban growth and the associated investment objectives for delivery and assessment as shown in the table below.

Problem	Benefit	Investment Objectives	Programme Performance
Inability to respond in a timely way to pace and scale of greenfield development will restrict access to jobs, education and core services around and in growth areas	Auckland's liveability enhanced	1 Enhance Auckland's liveability by providing a level of access to jobs and core services for each future urban area equal to the wider Auckland region by 2046	The percentage of jobs within 45 minutes of total trip time for PT ⁵ , versus Do Minimum is improved and becomes notably closer to the regional average (25.6%) as follows: <ul style="list-style-type: none"> • North West - from 12.9 to 20.3% • North - from 8.6 to 24.6% • South - from 5.2 to 6.7% Network vehicle travel times in and adjacent to growth areas is also improved, providing better access by car
	Auckland's connectivity enhanced	2 Enhance Auckland's liveability through improved environmental, cultural and community outcomes (air and water quality, biodiversity, safety)	The emphasis on alternatives to private vehicles will reduce the environmental impacts of the programme, while active mode improvements will have social and health benefits for communities The local area modelling shows that the levels of congestion, and total vehicle kms travelled under the preferred programme, are significantly less than the Do Minimum, resulting in fewer emissions

⁵ Travel time calculated as in vehicle time + wait time + access + transfer time extracted from ART model outputs and detailed in sub area shortlist reports.

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Inability of regional transport system to cope with growing demand of greenfield expansion will reduce travel choice and efficient movement of people and goods	Improved national & regional economic growth	3 Enhance Auckland's liveability and connectivity through achieving a morning peak mode share for walking, cycling and public transport in all future urban area of 45% ⁶ by 2046	Substantial improvement beyond Do Minimum scenarios. <ul style="list-style-type: none"> • 20%-35% PT mode share in three main growth areas • Along with cycling and walking improvement, the 45% target is likely to be achieved in the North, with North West and South slightly below
		4 Support economic growth through maintaining travel time reliability for freight and inter-regional trips on strategic corridors at existing levels	Comparison with existing: <ul style="list-style-type: none"> • South – SH1 approx. 1 to 5 mins slower than existing • North West – Western Ring Route (Royal Road to Upper Harbour Bridge) approx. 2-5 mins slower than existing and SH16 (Waimauku to Westgate) approx. 1 min better to 5 mins worse compared with existing • North – SH1 approx. 1 min to 9 mins slower than existing While performance on strategic network is predicted to be slightly reduced from existing, the preferred programme is a substantial improvement on Do Minimum or other alternative programmes
		5 Enable land to be developed in line with the Future Urban Land Supply Strategy by ensuring required transport infrastructure is delivered on time	The sequencing of interventions has been conducted in line with the timelines in the Future Urban Land Supply Strategy. Consequently, the programme will address growth by investing in transport infrastructure within the growth areas.

Public Consultation

Engagement with communities and businesses identified that similar aspirations and issues were identified for the growth areas. Key comments identified:

⁶ The 45% mode share figure is a stretch target based on modelled results, assuming a high growth scenario. It comprises 29.6% from PT and 15.8% from walking and cycling.

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- A strong push for significantly improved public transport provisions in particular, but also a range of improvements across the road and cycle network
- That while future urban areas were a few years away, changes need to happen to the transport networks in these areas now to resolve the current growth transport issues

The communities desire to see change occur now was clearly identified in the consultation for the draft preferred network. The community wanted to see the delivery of the preferred network elements, public transport improvements, state highway improvements, arterial roads and cycleways. This programme seeks to deliver these network elements for the community.

Mana whenua

A unique part of Auckland's identity is the presence of mana whenua. Engagement with Auckland iwi through the programme business case identified that in Auckland many of these groups are completing or have completed their treaty settlement negotiations with the Crown which provides opportunity for mana whenua to play a greater role in Auckland's Growth.

Auckland's Growth will have a significant impact on mana whenua cultural and commercial aspirations. The opportunity presented by Transport for Future Urban Growth is to manage this growth in a way that affords value to mana whenua and in turn will provide benefit to all communities by creating an Auckland that is globally unique. Mana whenua must play a strong role in the development of Auckland's growth.

Developing the future urban areas also requires consideration of the impact of this development on the values of mana whenua and their relationship with their ancestral lands and taonga. Development must occur in a way that aligns with these values and the views of mana whenua. Future development of business case will need to incorporate mana whenua values and involve iwi representatives in the early design of the next stage of this project.

Alignment with ATAP

The preferred programme identifies solutions to constraints identified in the ATAP foundation report including lack of accessibility to employment and public transport in south and northwest Auckland. The preferred programme aligns with one of ATAP's key findings of:

- Enabling growth in newly developing areas requires early investment in route protection and land acquisition, an early start is needed on key connections in the north-west and south including investment to support Special Housing Area development.

The preferred programme is: adaptable and agile to accommodate proposed investigations and outcomes of network demand pricing and technology initiatives currently being investigated by ATAP.

Aligned with the ATAP emerging strategic approach of:

1. Influence Travel Demand Patterns

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- Ensure land-use decisions support an efficient transport network
- Maximise opportunities from new technologies to increase vehicle occupancy and throughput
- Progressively introduce a variable network pricing system to encourage more efficient travel patterns and reduce the long-term need for investment.

2. Make Better Use of Existing Networks

- Better prioritise existing networks to more effectively deliver their required tasks
- Continue to improve efficiencies in maintaining, operating and renewing existing networks
- Accelerate the use of intelligent transport systems to provide real-time information and enable the benefits of emerging technologies.

3. Provide New Infrastructure and Services

- Tailor solutions to suit different circumstances
- Ensure transport enables and supports growth to address Auckland's housing challenge
- Strengthen strategic road, rail and public transport networks to ensure sufficient capacity, resilience and efficiency.

Programme risks and connections with existing transport business cases

Key risks associated with the delivery of the preferred programme align to:

- speed of growth of Auckland population
- impact of current growth on the urban environment
- impact of transport networks through and connecting to future urban areas
- Auckland Unitary Plan outcomes, including rural urban boundary
- community expectation to central and local government providing certainty to future strategic transport networks
- ability to route-protect the future transport corridors to minimise build-out
- community expectation for the development of rail in the northwest.

The development of the preferred programme has links to current Auckland-wide programme business cases and aligns to their current project or programme objectives including:

1. ATAP – focused on affordability and timings

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2. Central area programme – aligning rapid transit developments and access to CBD
3. SH20B and rapid transit programme (Airport – Manukau – Botany)
4. Rapid Transit business cases for the CBD to the northwest (Westgate) and to the north
5. Auckland to Northland Programme Business Case

The Preferred Programme Components

The table below provides a list of programme components.

Growth Area / Programme Component
South
Demand interventions (delivery of integrated land uses and TDM including travel planning, pricing, dynamic solutions)
Productivity interventions (NOP, safety enhancements, optimisation, smart technologies)
Pukekohe electrification and rolling stock
New stations at Drury, Drury West, Paerata and Tironui
Frequent Transit Network priority measures - Drury West to Manukau
3rd Main Rail Line Papakura to Pukekohe
Extend four-lane road from Drury to Bremner Road then down to Drury West Station
Mill Road extension - Alfriston Road to Drury South
Pukekohe Expressway
Drury South interchange between SH1 and Pukekohe Expressway/Mill Road upgrade
Pukekohe 'Inner Link'
SH22/Pukekohe Expressway rail crossings
Park and Ride (two Park and Rides, two Kiss and Rides)
Cycling improvements
SH1 widening - six lanes Papakura to Drury South
Four lane Rangī Road upgrade

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Growth Area / Programme Component
Closure of Spartan and Manuroa Road road/rail crossings
Grade separate road/rail crossings at Walters Road and Taka Street
Opaheke Road extended to Drury – four lanes
Programme Business Case investigations for improved connections to Waikato
North
Demand interventions (delivery of integrated land uses including travel planning, pricing, dynamic solutions that complement the infrastructure outlined below)
Productivity interventions (NOP, safety enhancements, optimisation, smart technologies)
Rapid Transit Network (RTN) from Oteha Valley Road to Grand Drive
Wainui North-South connections (Cemetery/ Young Access/Old Pine / Sidwell)
Wainui Road upgrade
Cycling improvements
Dairy Flat Highway upgrade
Upgrade/extend Postman Road
East Coast Road four-laning upgrade
East-West arterial improvements (Pine Valley Road, Wilks Road, Kahikatea Road, Jackson Way Link and Penlink west connections – four lanes)
Frequent Transit Network (FTN) route between Orewa and Wainui
Grand Drive extension road
New SH1 interchange at Redvale for Penlink
Penlink
SH1 widening - six lanes Oteha Valley Road to Wilks Road
South-facing Wilks Road ramps
Warkworth
Demand interventions (delivery of integrated land uses including travel planning, pricing, dynamic solutions that complement the infrastructure outlined below)
Productivity interventions (NOP, safety enhancements, optimisation, smart technologies)

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Growth Area / Programme Component
Cycling improvements
Matakana Road to Sandpit realignment
Matakana Link Road
Park and Ride
Western Collector
North West
Demand interventions (delivery of integrated land uses including travel planning, pricing, dynamic solutions that complement the infrastructure outlined below)
Productivity interventions (NOP, safety enhancements, optimisation, smart technologies)
RTN Westgate to Brigham Creek Road
RTN Westgate to Hobsonville
RTN Brigham Creek Road to Kumeu
RTN stations, including park and ride or kiss and ride infrastructure (x4)
Cycling improvements
Brigham Creek Road four-laning upgrade
New local crossing(s) of SH18
Totara/Trig Road extension
Coatesville Riverhead Highway – four lanes to Riverhead
Redhills network and Coatesville Riverhead Highway (including connection extension to SH16)
Improved Kumeu local connections
SH16 alternative corridor to Kumeu
Brigham Creek full interchange
SH16 to SH18 direct connection and Northside Drive interchange
Squadron Drive west-facing ramps

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Future Urban Area Preferred Transport Network

Value for money

An assessment profile of HMM has been determined for the programme. The regional benefit/cost ratio for the programme is over 4. The programme costs are spread over a 30-year period, estimated to cost in the order of \$7.6b to \$9.8b with:

- Rapid Transit Network investment, requiring \$2.7b - \$3.3b
- State highways investment, requiring \$1.9b - \$2.5b
- Local arterial and cycleway investment, requiring \$3.0b - \$4.0b

Delivery of route protection (IBC, DBC, NOR) for the network is assessed to cost in the region of \$80m over the next 10 years (without any consenting or land purchase costs).

Delivering the Programme

The recommended programme is large and complex with many interactions and interdependencies between elements over the 30-year time horizon. Successful delivery will require the continuation and evolution of the collaborative partnership and working arrangement that has been developed through the Strategic Case and the Programme Business Case.

It is proposed to continue with the current project structure to strategically guide, manage and monitor the programme and liaise with key stakeholders and other programme partners. It is anticipated that this will be undertaken through a continuation of the existing Memorandum of Understanding.

Given the scale, importance, cost and pace of development in the greenfield areas, it is proposed that a major step will be the route protection of the infrastructure identified through the programme development.

Recommendations

1. The Strategic Case reconfirms the case for change to identify and progress further transport investigations to respond to scale and pace of growth in the Future Urban Areas.
2. The Balanced Response plus Rapid Transit Network has been identified as the “Preferred” Programme - and is recommended for further investigation to provide for an integrated land use and transport outcome that enables growth and delivers:
 - land use and travel demand plans that influence travel demand patterns and provide a flexible and adaptable future transport network
 - prioritised operational and safety enhancements to make the best use of the existing network

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- a transformational shift to the public transport network through rapid and frequent transit network extensions to connect to metropolitan and employment centres
 - safe walking and cycling plans that connect with regional networks and local attractors
 - strategic and arterial road improvements to enable efficient movement of goods and people and provide access and connections throughout the future urban areas.
3. Progress the preferred transport programme by prioritising initiatives through the next stages of the business case process with an urgency in providing route protection.

The priority investigations to be advanced for funding for IBC (with IBC funding allocated out of the 2015 – 2018 RLTP) are:

Proposed Priority Workstreams	Description
Safety	Safety improvements on State Highway 22 and 16
Network Operating Programme Development	Prioritising existing routes in a Network Operating Plan for the future urban area networks to set Levels of Service and monitoring framework.
Rapid Transit Network (RTN) Westgate to Kumeu/Huapai	Rapid transit between Westgate and Kumeu/Huapai
RTN Westgate to Hobsonville	Rapid transit between Westgate and Hobsonville incorporating park and ride and stations providing ability to connect to future RTN to Albany
SH16 Alternative Corridor Kumeu/Huapai	New route parallel to SH16 between Brigham Creek Road and Kumeu/Huapai
SH16/SH18 Connections and Interchanges	SH16/18 motorway connections, SH16 Northside Drive and Brigham Creek interchanges and SH18 Trig Road, Brigham Creek and Squadron Drive interchanges
Whenuapai Arterial Roads	Brigham Creek Road, Trig/Totara Road, Northside Drive, new local road crossing over SH16
Red Hills Arterial Roads	Fred Taylor Road extension, Northside Drive extension, Riverhead-Coatesville Highway to Royal Road extension

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Papakura to Pukekohe Strategic Corridor	Mill Road extension, Pukekohe Expressway, Pukekohe 'Inner Link'
Takanini Road and Rail Links	Rangi Road/Marua Road, Walters Road, Taka St, Manuroa St, Spartan St, Turinui Station/Mill Road
Southern RTN	Paerata Station, Drury West Station, Drury Station and electrification between Papakura and Pukekohe
Frequent Transport Network - Drury West to Manukau	Bus FTN connecting north to south and rail stations with associated bus priorities
SH1 - Takanini to Bombay	Widening to six lanes and interchange improvements
Matakana Link Road	Urgency relates to timings with Puhoi to Warkworth RoNs

Future Investigations/Business Case:

North		
North	North Network Improvements	Cemetery/Young Access/Old Pine/Sidwell
		Dairy Flat upgrade/Postman Road
	North Network Improvements	East Coast Road - four-laning upgrade
	North Network Improvements	Grand Drive extension road
		Wainui Road upgrade
	North - east west Network Improvements	Curley Ave crossing over SH1
		East-West Pine Valley Road, Wilks Road, Kahikatea Road, Jackson Way Link and Penlink extension - four lanes
		Penlink west connections

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	PT	Frequent Transit Network (FTN) route for local buses
	North RTN	Rapid Transit Network (RTN) from Oteha Valley Road to Grand Drive
		Park and Rides at every station (x5)
	SH1 - Albany to Penlink	SH1 six lanes from Oteha Valley Road to Silverdale
		South-facing Wilks Road ramps
	Penlink	Penlink pre-implementation
		New interchange at Redvale for Penlink
Cycling		
Warkworth	Warkworth Improvements	Matakana Road to Sandpit realignment
		Park and Ride
		Western Collector
Waikato		Waikato Programme Business Case