WAIMAKARIRI DISTRICT COUNCIL

RANGIORA EASTERN LINK

Single Stage Business Case

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Placeholder image

Prepared by

Waimakariri District Council

215 High Street

Private Bag 1005

Rangiora 7440

New Zealand

waimakariri.govt.nz

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Prepared by	Rob Kerr	REL Programme Manager		
Reviewed by	Don Young Joanne McBride	Senior Engineering Advisor Roading and Transport Manager		
Approved by	Gerard Cleary	General Manager, Utilities and Roading		
Adopted by	Council			

Executive Summary

Project Overview

The Rangiora Eastern Link (REL) is a proposed 2.88 km arterial road designed to relieve traffic congestion on Southbrook Road, enhance transport efficiency, and unlock new residential areas in East Rangiora and commercial development in Southbrook. With the town being a Priority Development Area in Greater Christchurch, this investment is essential to accommodate the region's rapid growth.

Strategic Need & Objectives

Rangiora's population is expected to grow significantly, with over 5,000 new homes planned in East Rangiora alone. Currently, Southbrook Road carries over 23,000 vehicles per day, leading to severe congestion, safety concerns, and inefficient freight movement. The REL will:

- Reduce travel time and congestion in peak periods.
- Improve access to residential and industrial zones.
- Enhance road safety, particularly for pedestrians and cyclists.
- Support economic growth by ensuring reliable transport links.

Alignment with Policy & Growth Plans

The REL aligns with key national, regional, and local strategies, including:

- New Zealand Government Policy Statement (GPS) on Land Transport 2024-34 – Prioritising economic growth, safety, and resilience.
- Canterbury Regional Land Transport Plan (CRLTP) 2024-34 – Addressing congestion, sustainability, and freight efficiency.
- Greater Christchurch Spatial Plan – Supporting intensification and urban expansion.
- Waimakariri District Transport Strategy – Ensuring connectivity for future development.

Preferred Option & Economic Case

Following a detailed multi-criteria analysis (MCA), the preferred option is to increase the capacity of the network through a new arterial route that runs west of the Wastewater Treatment Plant and connects with Northbrook Road, as it provides the best balance of cost-effectiveness, land-use benefits, and project feasibility. The project is expected to:

- Reduce vehicle travel time by 3-4 minutes per trip for those in East Rangiora.
- Decrease vehicle kilometers traveled (VKT) by 7,000 km/day, lowering emissions and fuel costs; and
- Improve intersection performance and freight movement efficiency.
- Deliver an excellent Benefit Cost Ratio of 4.8, with a Net Present Value of over $220 million and a government BCR of 7.7.

More with other three cases.....

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Introduction

The proposed investment

This business case explores the opportunity to relieve traffic congestion and unlock land for residential development through delivery of a major new collector road in East Rangiora.

Rangiora is a Key Activity Area[1] in Greater Christchurch and the fastest growing town in one of the faster growing districts in New Zealand[2]. The important regional role the town provides Greater Christchurch is reflected by being a Priority Development Area in the Greater Christchurch Spatial Plan (2023)[3]. This status is to facilitate coordinated regional investment and effort that is focused on accelerating and supporting significant growth in the township.

Southbrook is a key industrial and big box retail area on the southern edge of Rangiora which is accessed via Southbrook Road: the key arterial route to Rangiora. Southbrook Road carries in excess of 23,000 vehicle per day, and the mix of through and accessing traffic causes high levels of congestion during peak hours.

These high traffic volumes also sever the local community, with a number of schools and other social destinations, meaning many vulnerable users are forced to cross the busy road at peak times.

This growth has been enabled through significant investment by the Council and Waka Kotahi NZTA over the last number of decades, with further growth being enabled through the various planning instruments including the (Proposed) District Plan. This plan identifies a further 390ha of new residential land on the east side of Rangiora with capacity for over 5,000 homes as well as further commercial and industrial growth in Southbrook.

This growth provides the opportunity to reduce traffic volumes along Southbrook Road, and the district has been planning for this for some time, and the proposed investment was first identified in 2001 as part of the Rangiora Transport Study (Beca 2001). This study forecasted pressure on the transport network as the population grows, as well as identified the opportunity to unlock residential land as part of the solution to improving transport capacity.

The proposed investment is called the Rangiora Eastern Link and will divert traffic via a new 2.88 km long arterial road from the southern end of Rangiora (Lineside Road) to connect with recently constructed urban arterial road through new residential developments that will eventually link to Coldstream Road in the north. Coldstream Road connects to the northern route into/out of the town. On the way the proposed eastern link intersects with the major collector roads to enable traffic to move quickly and efficiently around the town. (Add Map showing route)

Approximately 35% of a new urban arterial road has already been constructed as part of the residential development process and funded through rates, development contributions and the Infrastructure

[1] Canterbury Regional Policy Statement
[2] https://enterprisenorthcanterbury.co.nz/invest/waimakariri-demographics/
[3] https://www.greaterchristchurch.org.nz/urbangrowthprogramme/greater-christchurch-spatial-plan/draft-greater-christchurch-spatial-plan

Acceleration Fund, with a further 15% to be constructed through development. The remaining section (50%) is remaining to be funded and proposed to be delivered through a combination of development contributions and public funding.

This business case sets out the case for investment and the preferred transport solution, along with how the project is proposed to be funded, procured and delivered to enable material reductions in travel time and unlock significant quantities of greenfield residential land and enable commercial growth.

Figure 1: Context Plan

The stakeholders in this proposal

The key partners in this proposed investment are:

- Waimakariri District Council – the sponsor and driver of this investment proposal as the road controlling authority;
- Waka Kotahi / NZTA – as co-funder with the Council of the business case and concept design and potential delivery funding partner;
- Waka Kotahi / NZTA – as owner and manger of the State Highway network, and specifically State Highway 71 (Lineside Road) and feeds into the southern end of Rangiora
- Te Ngāi Tūāhuriri Rūnanga – as mana whenua of the takiwa in which Rangiora is located
- Belgrove and Sparks – Land developers – as the major land developers in East Rangiora
- Kiwirail, as operator of the Main North Truck Railway;
- Southbrook Transport reference group – as a local community group established by the Council providing advice and input to management of traffic on Southbrook Road (being the main corridor into Rangiora from the south;
- Major freight movers, and Southbrook Industrial Park developer
- The Rangiora Ashley Community Board, representing the community of Rangiora, including residents and businesses; and
- Waimakariri District Council – as regulator under the Resource Management Act and as three waters infrastructure operator and manager of the adjacent Rangiora Wastewater Treatment Plant.

The sponsor organisation

The Waimakariri District lies to the north of the Waimakariri River in North Canterbury. The district covers around 225,000 hectares of land and extends from Pegasus Bay in the east to the Pukatea Range in the west and is bounded to the north by the Hurunui District.

Figure 2: Greater Christchurch

The Council is the road controlling authority for the district, with the role of managing the districts transport network. Our goal is *to provide a transport network which is affordable, integrated, safe, responsive and sustainable, and which contributes to the attainment of high quality natural, living and productive environments within the District and assists development of a strong sense of community*.

To deliver upon this goal, Council manages[4]

- *1,562 km of roads (979km sealed and 568km unsealed)*
- *157 bridges and 132 large culverts*
- *385km of footpaths and 25km of shared paths*
- *5,648 Street lights*
- *32 bus shelters*

[4] as at 1 July 2023

The Strategic Case

The Strategic Alignment

This section summarises the alignment of this investment with national, regional nd local priorities. A more detailed exploration is included as appendix xx

Introduction

The Rangiora Eastern Link (REL) is a proposed arterial road aimed at addressing severe congestion on Southbrook Road, unlocking land for residential and economic growth, and enhancing transport efficiency in Greater Christchurch. This project aligns with national, regional, and local strategic objectives by improving transport connectivity, reducing congestion, and facilitating sustainable urban development.

Alignment with National Policies

New Zealand Government Policy Statement (GPS) on Land Transport 2024-34

The project supports the GPS priorities:

- Economic Growth and Productivity: REL enhances the efficiency of people and freight movement, reduces travel times, and unlocks housing development.
- Safety: Addresses congestion-related safety issues, particularly for vulnerable road users crossing Southbrook Road.
- Resilience: Provides an alternative transport route, enhancing network reliability.
- Value for Money: Utilizes existing infrastructure and development contributions for cost-effective delivery.

National Infrastructure Strategy

The project contributes to:

- Net-zero carbon emissions: Reducing congestion and improving travel efficiency lowers vehicle emissions.
- Regional economic growth: Facilitates development and employment in Rangiora.
- Resilient infrastructure: Provides an additional transport lifeline for the township.

Regional and Local Strategic Fit

Greater Christchurch Spatial Plan

- Recognises Rangiora as a Priority Development Area, supporting intensification and development while ensuring infrastructure is in place to handle projected growth.
- Improves transport connectivity by reducing reliance on Southbrook Road and enhancing public transport efficiency.

Canterbury Regional Land Transport Plan (CRLTP) 2024-34

- Identifies REL as a regionally significant project, addressing congestion, access issues, and unlocking greenfield land.
- Supports sustainable transport modes, resilience, and economic growth.

Greater Christchurch Public Transport Futures

- Improves public transport journey times and reliability.
- Supports increased PT (public transport) usage by reducing congestion.

Waimakariri District Growth and Planning

Waimakariri District Transport Programme

- Enables over 5,000 new residential lots in East Rangiora.
- REL integrates with other planned arterial enhances, ensuring efficient freight movement and reliable access to Christchurch.
- Enhances walking and cycling connectivity to support sustainable travel.

Integrated Transport Strategy 2035+

- Ensures the growth does not hinder freight movement.
- Provides safe and efficient transport links for new residential areas.
- Supports multi-modal transport options, including improved pedestrian and cyclist infrastructure.

Proposed District Plan

- The Proposed Waimakariri District Plan plays a crucial role in enabling the Rangiora Eastern Link by setting the framework for extensive residential and commercial development in East Rangiora.
- The plan proposes to rezone over 615 hectares of greenfield land for residential expansion, including enabling more than 5,000 new homes in East Rangiora. Additionally, the district plan provides for the integration of transport infrastructure with urban development, providing essential connectivity through codifying Outline Development Plans.

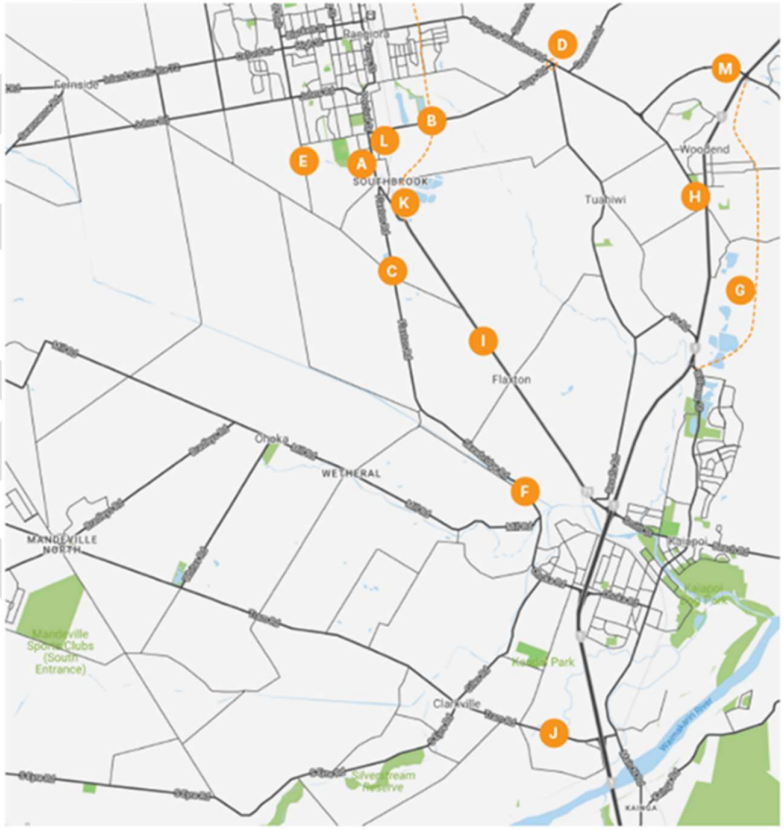


Figure 3: Map of major planned roading projects in the east of the District

The Council has been planning to address congestion and enable growth for over two decades

- The concept of an eastern link was first identified in 2001, and planning for growth has been long standing through various iterations of structure plans, district plans and outline development plans.
- During intervening years there has been continued to be substantial growth which is exacerbating congestion along Southbrook Road.
- The 2001 Rangiora Transport Study (Beca) identified a range of existing and future deficiencies in the transport network. The greatest issue identified was the increasing congestion on the Rangiora North-South strategic route. Also noted was the impact of housing growth, safety at the railway level crossings and the rural/urban fringe and the need for more direct bus routes.
- This study identified an eastern link road from Southbrook to the east of town as the second highest priority project after interim traffic signal improvements on the north-south route. In 2005, Opus (now WSP) completed a Scheme Assessment of a new road, called the Rangiora Eastern Link.
- In 2021, further technical work was undertaken to support a Notice of Requirement to include the route of the road as a designation in the Proposed District Plan. This designation became operative in xxx 2025.
- The proposed Eastern Link was included in the Canterbury Land Transport Plan (2024-2034) and co-funding for this business case work was included in the National land Transport Plan (2024-2034).
- Council has leveraged the land development on the east side of town to progressively advance development of the eastern link between Northbrook Road and Coldstream Road.
- Through major developments such as Belgrove, 35% of the road has already been constructed, with a further 15% to be completed in future subdivision processes, with contributions levied towards the section south of Northbrook Road.

A potted history of the Rangiora Eastern Link

The Investment Environment

This section considers the strategic environment that this investment is being considered, and what may influence the outcomes sought

Major risks and uncertainties

Main Risks	Conseq'ce (H/M/L)	Likelih'd (H/M/L)	Comments and Risk Management Strategies
Land development and growth does not occur as expected	L	L	The District Plan had established the land sue pattern and areas of future development for the next period, and this it is unlikely that this will change materially. Regardless, the benefits of the investment would accrue either slightly faster or slower depending on the place of growth. Investment in development (planning and associated services) are being made in all the major land holdings in east Rangiora.
Mass Rapid Transport is funded and delivered in the near term	L	M	Mass Rapid Transport is being planned for greater Christchurch, with the likely form of link to Rangiora via high frequency buses and park and ride systems. This is already largely in place and the investment would minimise travel time for public transport in rangiora.
Technological change away from private car use	M	L	Should an unknown technology that changes the type and volume of traffic, then this will result in a longer lifespan of the proposed investment.
Insufficient funding with the NLTP to support this investment	H	H	WDC has 75% of the funding in place for the proposed investment, however if it is not able to raise the balance of the funding then the current Long Term Plan, then the investment would not proceed, This was decided on the basis of community feedback as part of the Long Term Plan process.
The [Proposed] District Plan is made operative and not challenged to the Environment Court, affecting the designation for the land.	L	L	The time required to conclude the RMA proceedings are shorter than the development timeframe for this project. There is no objection in place to the designation.
Pressure on rates leads to deferral or removal of funding	H	L	Although the Waimakariri District is subject to pressure on rates as most local authorities in New Zealand, The Council have committed to this project through its LTP provided that NLTP funding is also secured.

Key Assumptions

Main Assumptions	Consequence if incorrect (H/M/L)	Likelihood of incorrect (H/M/L)	Comments and Issue Management Strategies
Traffic forecasts are correct	M	L	The thresholds for action have already been reached (poor level of service and rezoning of esidential land, and hence variation in forecasted traffic volume sis unlikely to make a material change to the benefits

The Case for Change

What are the problems

Growing traffic volumes *have caused severe congestion, leading to increased travel time and unreliability along Southbrook Road.*

New growth areas *on the eastern and south edges of Rangiora have insufficient capacity transport links, which will constrain housing growth and economic activity.*

Higher volumes across all travel modes are ***increasing conflicts and severance,*** *leading to an increased risk of death or serious injury.*

Evidence for these problems

The population has grown fast and will continue to grow growth

Waimakariri District is a member of the Greater Christchurch partnership, a high growth area under National Policy Statement direction. The approved Future Development Strategy, (FDS), for Greater Christchurch anticipates steady District growth from the current population of 67,900 to around 82,000 by 2033, and in the order of 102,000 by 2052. Up to 15,000 additional homes are expected to be required to accommodate population change over the next 30 years

As of 2023, Rangiora's population is estimated at around 21,400 and is projected to grow to approximately 26,200 by 2048 and is a local service centre for about 60% of the district's population. By 2031, it is expected to provide goods and services for around 50,000 people.

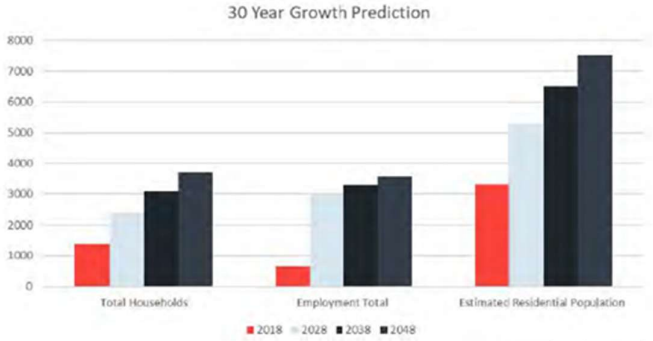


Figure 4 30 year growth forecasts

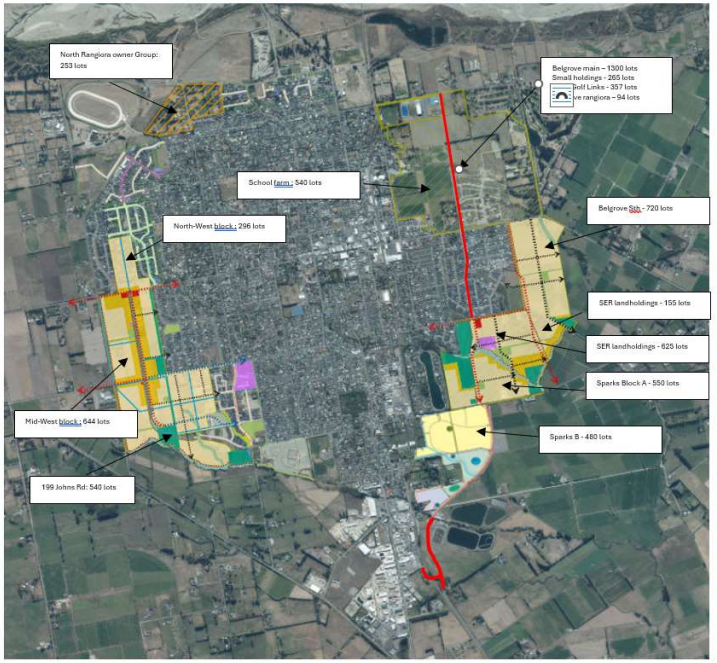


Figure 5: Rangiora Growth areas

The proposed District Plan identifies land for up to 5,086 new residential lots in East Rangiora and a further 1,733 lots in West Rangiora.

The map below shows the areas identified in the [proposed] District Plan for greenfield residential development. This encompasses 415ha to the east of Rangiora, of which approximately 25ha has already been developed, with a potential upper bound yield of 5,086 lots.

A further 200ha of land in West Rangiora is re-zoned with a potential yield of 1,733 lots.

Growing traffic volumes has already caused congestion and slowed travel times

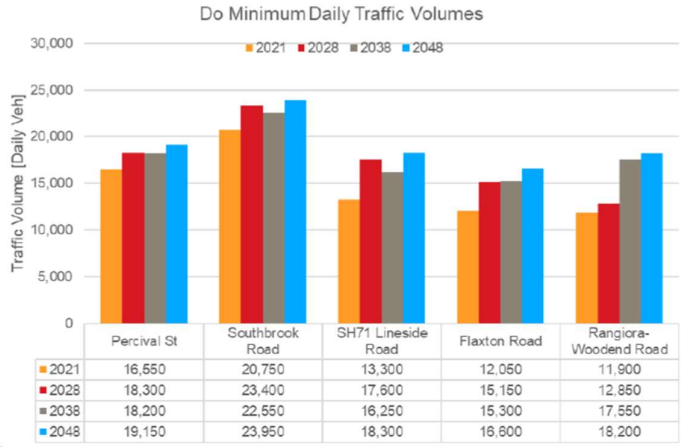
A Transport Assessment[8] has been completed to understand the impact of the growing traffic volumes with and without intervention. Figure xx shows that traffic volumes on Southbrook Road, Lineside Road and Flaxton Road plateau because Southbrook Road is at or near capacity. This is reinforced by the travel times presented in Figure xx and the delays at intersections in figure xx

As development progresses in the eastern growth areas, this also leads to an increase in traffic on the Rangiora-Woodend Road as drivers take alternative routes.

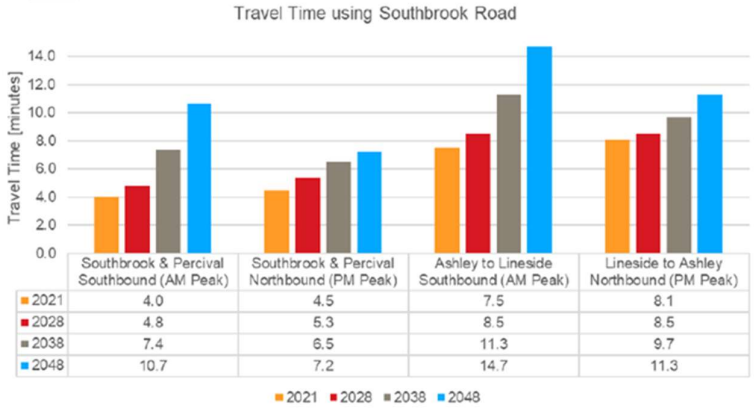
The modelling shows that the intersections along Percival Street and Southbrook Road show increasing levels of delay, meaning it is more difficult to access the north-south corridor. with minor approaches consistently at LOS E/F.

Intersection LOS for AM Peak	2028 Do Minimum			2038 Do Minimum			2048 Do Minimum		
	Veh	Delay	LOS	Veh	Delay	LOS	Veh	Delay	LOS
Ashley Street / Coldstream Road	857	11	B	1,058	13	B	1,304	24	C
Ashley Street / High Street	1,333	25	C	1,472	27	C	1,641	30	C
Ivory Street / Northbrook Road	1,309	23	C	1,566	91	F	1,601	141	F
Percival Street / Victoria Street	1,535	38	E	1,609	50	E	1,632	62	F
Percival Street / Johns Road	1,657	42	E	1,784	57	F	1,807	73	F
Percival Street / Charles Street	1,505	36	E	1,831	127	F	1,871	179	F
Southbrook Road / South Belt / Percival Street / Boys Road	2,045	46	D	2,066	56	E	1,953	24	C
Southbrook Road / Torlesse Street	1,873	7	A	1,944	31	C	1,912	27	C
Southbrook Road / Pak 'n Save supermarket	1,972	7	A	1,952	7	A	1,914	7	A
Lineside Road / Todds Road	1,866	79	F	1,828	113	F	1,810	243	F
Lineside Road / Flaxton Road	1,866	38	E	1,805	36	E	1,777	39	E
Kippenberger Ave / MacPhail Ave	781	11	B	1,156	12	B	1,422	13	B
Northbrook Road / MacPhail Ave	287	6	A	954	12	B	1,030	12	B

The intersection of Ivory Street and Northbrook Road is the southernmost access to the eastern development areas (without an eastern link in place). Here the LOS is forecast to degrade with the uptake of residential development.



	Percival St	Southbrook Road	SH71 Lineside Road	Flaxton Road	Rangiora-Woodend Road
2021	16,550	20,750	13,300	12,050	11,900
2028	18,300	23,400	17,600	15,150	12,850
2038	18,200	22,550	16,250	15,300	17,550
2048	19,150	23,950	18,300	16,800	18,200



	Southbrook & Percival Southbound (AM Peak)	Southbrook & Percival Northbound (PM Peak)	Ashley to Lineside Southbound (AM Peak)	Lineside to Ashley Northbound (PM Peak)
2021	4.0	4.5	7.5	8.1
2028	4.8	5.3	8.5	8.5
2038	7.4	6.5	11.3	9.7
2048	10.7	7.2	14.7	11.3

[8] Rangiora Eastern Link: Transportation Assessment of options. Stantec, 2024

East Rangiora development has been planned around a new arterial connection to enable development

The Outline Development Plans for East Rangiora show a north-south arterial road providing a core transport link

Outline Development Plans (ODP) in the proposed District Plan have been developed through multi-disciplinary processes included transport expertise to prepare viable and robust urban development strategies. This is supported by expertise evidence given at various hearings. An example is referenced[11].

As shown in the ODP to the right, a key element of the ODP is the provision of a new collector road through the development areas and to the south.

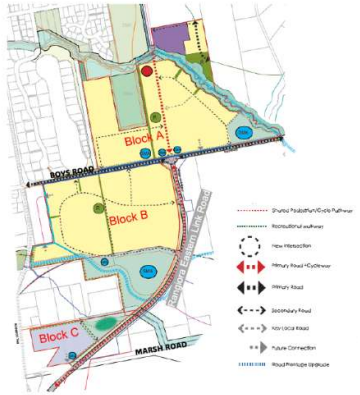


Figure 6 South east Rangiora DSraft Outline Developement Plan

A Transport Assessment (Rangiora Eastern Connection – Technical Assessment - Transportation, WSP 2021) used the CAST[12] traffic model to assess the impact of the likely best project and compared with the do-minimum option of retaining Southbrook Road as the only north-side transport corridor.

Comparing the travel times to/from four destinations in Rangiora show the 41-64% reduction in travel time as a result of the REL. This is in the context of the poorly performing (Level of Service F) intersections along Southbrook Road. The key diagrams from this study are reproduced below.

Without an alternative transport link, these development areas will have poor connection with the town and to Christchurch and travel times will be materially higher and even more unreliable than at present.

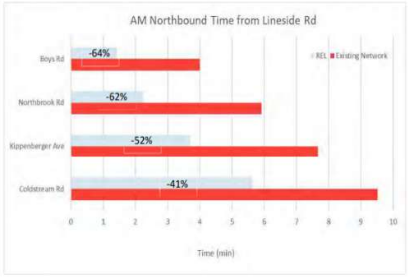
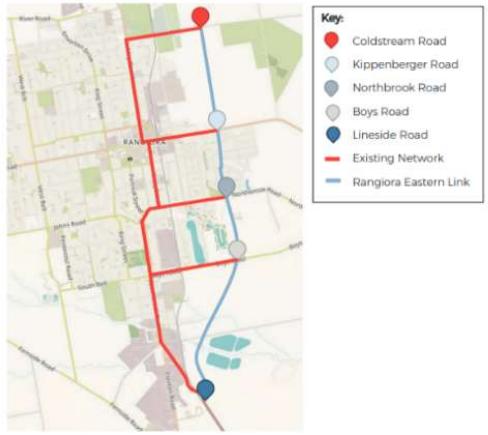


Figure 4-2. AM northbound travel time from Lineside Road.



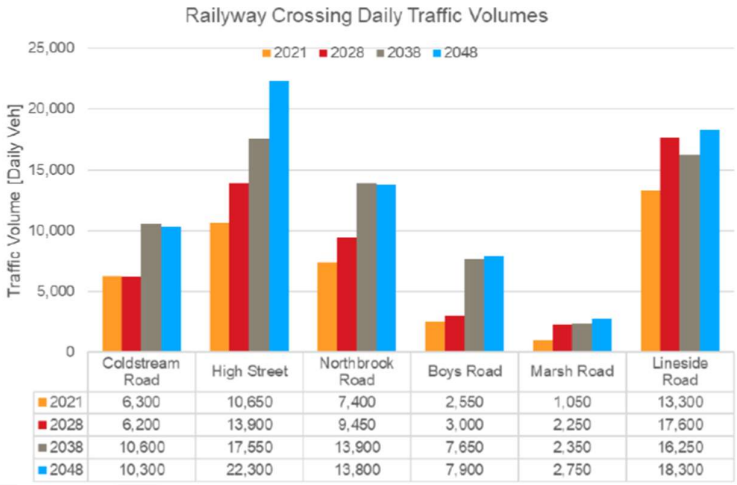
[11] https://www.waimakariri.govt.nz/__data/assets/pdf_file/0019/160732/Lisa-Williams-Transport.pdf

[12] This model is the strategic level traffic model used across Greater Christchurch

Railway Crossing safety

Daily traffic volumes travelling east-west across the level crossings are forecast to increase as a result of growth without intervention. The exception is the railway crossing on Lineside Road where the upstream effects of Southbrook Road limit the daily traffic increase past 2028.

A Level Crossing Safety Impact Assessment (LCSIA) has been completed on the Lineside Road and Marsh Road level crossings. The Level Crossing Safety Score (LCSS) has been assessed as follows:



	Coldstream Road	High Street	Northbrook Road	Boys Road	Marsh Road	Lineside Road
2021	6,300	10,650	7,400	2,550	1,050	13,300
2028	6,200	13,900	9,450	3,000	2,250	17,600
2038	10,600	17,550	13,900	7,650	2,350	16,250
2048	10,300	22,300	13,800	7,900	2,750	18,300

Lineside Road Level Crossing[13]

- LCSS = 40
  - increasing to 42 with growth
- Medium High Risk Band
- Fatal Return period 732 years
  - reducing to 630 years with growth

Marsh Road level Crossing[14]

- LCSS = 44
- Medium High Risk Band
- Fatal Return period 770 years

[13] Lineside Rd LCSIA, Stantec 2025

[14] March Rd and Dunlops Road LCSIA , Stantec 2023

What are the potential benefits

The key benefits and causal links are

The current congestion makes access to businesses difficult
AND
Vehicles trying to pass through are subject to high delays and variability

Benefit One:

Improve peak period travel time and reliability for people and freight

New commercial and residential developments with inefficient transport connections
AND
Deteriorating travel time and reliability on strategic routes for freight and people

Benefit Two:

Increased accessibility to East Rangiora Residential development area and Southbrook Industrial Area

Sub-standard and increasing traffic volumes over level crossings
AND
Severance along Southbrook Rd forcing vulnerable users to cross high volume traffic lanes

Benefit Three:

Reduced risk of death and serious injury

The Waka Kotahi NZTA Land Transport Benefits Framework is a consistent set of benefits and measures that makes it possible to consider, measure and report on all impacts of New Zealand's investment in land transport. They provide a consistent way of measuring benefits across all projects and across time.

The following table sets out which benefits from the framework are expected to accrue from this investment. Refer to Battachment B for the Benefits Map

Benefit cluster	Benefit	Measure
Healthy and safe people 1. Changes in user safety	1.1 Impact on social cost of deaths and serious injuries	1.1.2 Crashes by severity[#]
	1.2 Impact on a safe system	1.2.1 Road assessment rating

Benefit cluster	Benefit	Measure
Economic prosperity 5. Changes in transport costs	5.1 Impact on system reliability	5.1.2 Travel time reliability – motor vehicles[#]
		5.1.3 Travel time delay[#]
	6.2 Impact on network productivity	6.2.6 Access to key economic destinations
Inclusive access 10 Changes in access to social and economic opportunities	10.1 Impact on user experience	10.3.1 Access to key social destinations

The Investment Objectives

Objective One: *Reduce pm peak travel time between Lineside and Northbrook Road by 20% by 2038*

Objective Two: *Improve accessibility from East Rangiora development area to SH1 by 3 minutes by 2038*

Objective Three: *Improve the Infrastructure Risk Rating on strategic roads in South Rangiora to Medium or better by 2038*

Summarising the Case for Change

The fast growing town of Rangiora is an important component of the South Island's largest urban conglomeration, and is a Priority Development Area for greater Christchurch.

This fast growth over the last decades have led to the high levels of congestion currently seen along the major north-south strategic road, but on top of the high growth already experienced, the town is set to grow considerably further with over 6,700 greenfield residential lots enabled under the [proposed] District Plan.

New transport links are required to unlock these development areas and ensure than people and fright can move quickly. But this growth is hindered by the north south strategic corridor that connects business, freight and people to Christchurch that is already severely congested. The desired growth will make this congestion materially worse and cause significant travel time unreliability and delay.

The increasing traffic volumes also highlight existing weaknesses in the network that might otherwise be tolerable, and particularly the level railway crossings and severance created by Southbrook Road.

There is evidence for these problems through modelling, traffic survey and expert evidence as well as lived anecdotal experience of travel delays in peak times reported by residents and businesses.

Without intervention, traffic delay and reliability will continue to deteriorate, access to business and residential areas will worsen and severance and safety issues will increase due to increased volumes of conflict. With national priorities for land transport focused on economic growth and unlocking land for housing, there is a strong case for intervention to address these issues.

The Economic Case – Exploring the Preferred Way Forward

The purpose of the Economic Case is to identify the investment option that optimises value for money. Having determined the Strategic Context for the investment proposal and established a robust case for change, this part of the Economic Case assesses the best solution to address the objectives.

1. **What are we trying to achieve?**	• *Critical Success Factors*
2. **What are choices?**	• *Strategic interventions and response* • Long List and shortlist
3. **How do they stack up?**	• *Economic Assessment* • *Detailed Assessment of Shortlist*
4. **The preferred way forward**	• *The proposed solution*
5. What the solution will deliver	• *Key outcomes and benefits of the preferred solution*

What are we trying to achieve?

The following critical success factors have been developed:

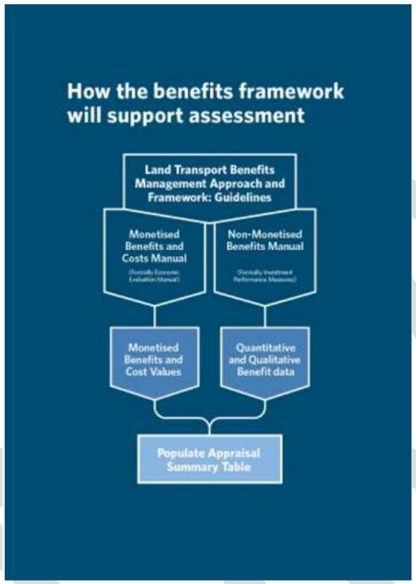
Critical Success Factors	Broad Description
Value for money	• optimises value for money i.e., the optimal mix of potential benefits, costs and risks • balances the cost of delivery and management with the financial and non-financial benefits
Affordable	• can be met from likely available funding • matches other funding constraints • avoids displacing other Island priorities
Achievable	• in the proposed timeframe • with the current resources and support • within the programme's control and influence • with continuity of operation maintained during the construction period

What are the choices?

Approach to option development

This business case takes a multistage approach to developing, sifting and assessing the options.

The initial optioneering developed the preferred strategic response, following the methodology in Victoria's Department of Treasury and Finance Investment Management Standard.



This process confirmed the need for new infrastructure, and so the next stage was to explore the long and short list of physical options (primarily routes) for the new infrastructure. This used the Early Assessment Sifting Tool (EAST) and then MCA analysis to develop the shortlist, and then detailed MCA assessment incorporating the monetised and non-monetised benefits and costs.

Step	Name	Key question
1	Strategic Interventions	What are the available strategic interventions that might be taken to address the problems identified?
2	Strategic response	What is the preferred strategic response, being a combination of interventions that best delivers the benefits
3	Very Long List of new infrastructure options	What are all the new infrastructure options available (very long list)
4	Early Assessment Sifting Tool (EAST) to determine Long List	What is the reasonable list of long list options to assess
5	Assessment of Long List to determine Short List	How does each options stack up against benefits, critical success criteria and impacts
6	Detailed Assessment of Short List	Which option provides the best value for money
7	Determination of the preferred way forward	Decision on the preferred route

The Do minimum

The do minimum is established as the existing range of projects in the Council's Long Term Plan, with the exception of the Rangiora Eastern Link. These include:

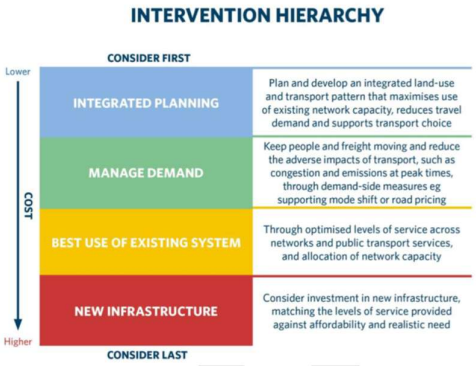
- Western route improvements
- Flaxton/Skew Corridor improvements
- Belfast to Pegasus SH1 Woodend bypass
- Five crossroads improvements
- Other minor works

Of note, it also includes the forecast growth outlined in the Strategic Case.

The Long List of options

Strategic Interventions

To enable value for money and prioritise more space efficient modes of moving people and goods, the NZTA Intervention Hierarchy recommends an approach that considers land use first and investment in new infrastructure last.



In this process, land use has been considered in detail through the district plan and related structure planning processes which are prior to and outside this business case. The optioneering in this Business Case seeks to enable this land use and achieve the best outcome against the objectives.

The table below sets out the schedule of strategic interventions and clusters these against a range of different strategic responses, ranging from Do Nothing, through to changing emphases on economic, safety and demand management. An additional strategy that considers a more radical change to land use and transport in Rangiora is also assessed.

The Preferred Strategic Response

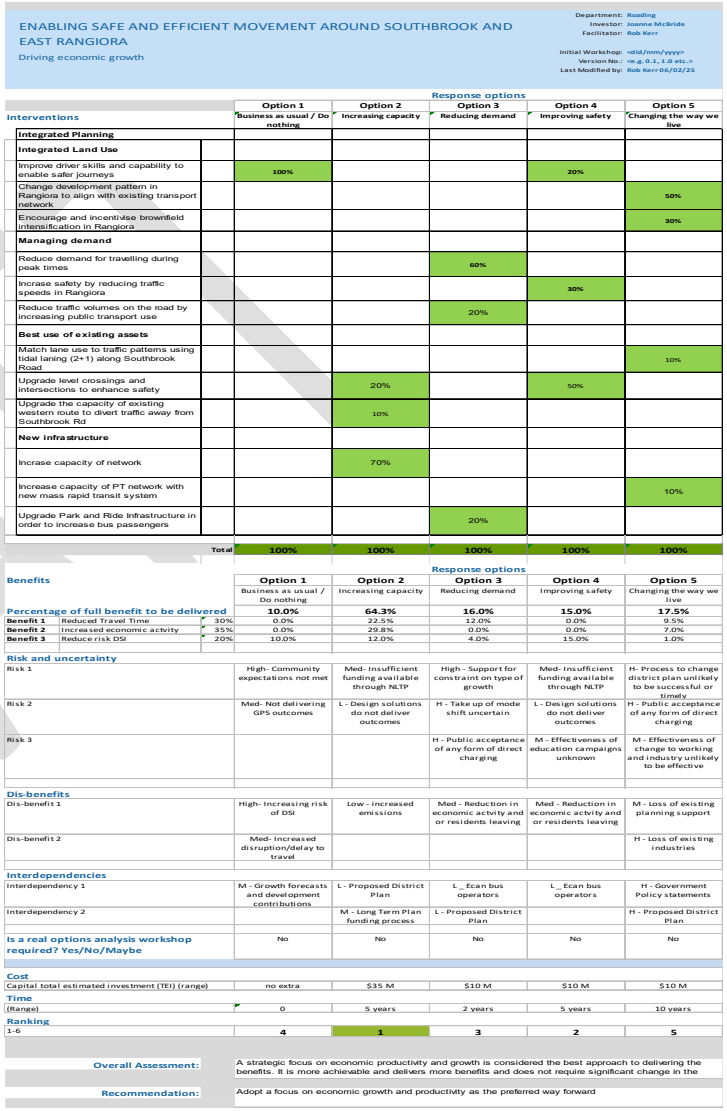
The analysis concludes that an emphasis on 'Driving economic productivity' is the preferred strategy to best deliver the benefits identified in the Strategic Case. This strategy involves:

- Matching pace of growth with availability of transport connections
- Improving safety at intersections and cycle facilities
- Increasing capacity of transport network in Rangiora
- Increasing capacity of connections to service new growth areas

The alternative approaches such as managing demand or focusing solely on safety improvements, is unlikely to address the key problems around congestion or unlocking land for housing and industry.

A more radical approach to adjust land use and employment patterns is considered inappropriate and not a realistic strategy.

It is noted that demand management and safety improvements are part of the Business as usual activities of the Council under the Transport Activity Management Plan and the Greater Christchurch PT Futures Business case and so subject to separate planning and funding processes.



ENABLING SAFE AND EFFICIENT MOVEMENT AROUND SOUTHBROOK AND EAST RANGIORA

Driving economic growth

Department: Roading
Investor: Joanne McBride
Facilitator: Rob Kerr
Initial Workshop: <dd/mm/yyyy>
Version No.: <e.g. 0.1, 1.0 etc.>
Last Modified by: Rob Kerr 06/02/25

Response options

Interventions	Option 1 Business as usual / Do nothing	Option 2 Increasing capacity	Option 3 Reducing demand	Option 4 Improving safety	Option 5 Changing the way we live
Integrated Planning					
Integrated Land Use					
Improve driver skills and capability to enable safer journeys	100%			20%	
Change development pattern in Rangiora to align with existing transport network					50%
Encourage and incentivise brownfield intensification in Rangiora					30%
Managing demand					
Reduce demand for travelling during peak times			60%		
Incrase safety by reducing traffic speeds in Rangiora				30%	
Reduce traffic volumes on the road by increasing public transport use			20%		
Best use of existing assets					
Match lane use to traffic patterns using tidal laning (2+1) along Southbrook Road					10%
Upgrade level crossings and intersections to enhance safety		20%		50%	
Upgrade the capacity of existing western route to divert traffic away from Southbrook Rd		10%			
New infrastructure					
Incrase capacity of network		70%			
Increase capacity of PT network with new mass rapid transit system					10%
Upgrade Park and Ride infrastructure in order to increase bus passengers			20%		
Total	100%	100%	100%	100%	100%

Response options

Benefits			Option 1 Business as usual / Do nothing	Option 2 Increasing capacity	Option 3 Reducing demand	Option 4 Improving safety	Option 5 Changing the way we live
Percentage of full benefit to be delivered			**10.0%**	**64.3%**	**16.0%**	**15.0%**	**17.5%**
Benefit 1	Reduced Travel Time	30%	0.0%	22.5%	12.0%	0.0%	9.5%
Benefit 2	Increased economic activity	35%	0.0%	29.8%	0.0%	0.0%	7.0%
Benefit 3	Reduce risk DSI	20%	10.0%	12.0%	4.0%	15.0%	1.0%
Risk and uncertainty							
Risk 1			High- Community expectations not met	Med- Insufficient funding available through NLTP	High - Support for constraint on type of growth	Med- Insufficient funding available through NLTP	H- Process to change district plan unlikely to be successful or timely
Risk 2			Med- Not delivering GPS outcomes	L - Design solutions do not deliver outcomes	H - Take up of mode shift uncertain	L - Design solutions do not deliver outcomes	H - Public acceptance of any form of direct charging
Risk 3					H - Public acceptance of any form of direct charging	M - Effectiveness of education campaigns unknown	M - Effectiveness of change to working and industry unlikely to be effective
Dis-benefits							
Dis-benefit 1			High- Increasing risk of DSI	Low - increased emissions	Med - Reduction in economic activity and or residents leaving	Med - Reduction in economic activity and or residents leaving	M - Loss of existing planning support
Dis-benefit 2			Med- Increased disruption/delay to travel				H - Loss of existing industries
Interdependencies							
Interdependency 1			M - Growth forecasts and development contributions	L - Proposed District Plan	L_ Ecan bus operators	L_ Ecan bus operators	H - Government Policy statements
Interdependency 2				M - Long Term Plan funding process	L - Proposed District Plan		H - Proposed District Plan
Is a real options analysis workshop required? Yes/No/Maybe			No	No	No	No	No
Cost							
Capital total estimated investment (TEI) (range)			no extra	$35 M	$10 M	$10 M	$10 M
Time							
(Range)			0	5 years	2 years	5 years	10 years
Ranking							
1-6			**4**	**1**	**3**	**2**	**5**

Overall Assessment:	A strategic focus on economic productivity and growth is considered the best approach to delivering the benefits. It is more achievable and delivers more benefits and does not require significant change in the
Recommendation:	Adopt a focus on economic growth and productivity as the preferred way forward

Sifting the Very Long List of new infrastructure options

The above preferred strategic response includes increasing the capacity of the transport network in Rangiora and to serve new growth areas. It also includes improving safety for cyclists and matching the pace of development.

Analysis of these options identified a very long list of options and these are shown in the table below. with key columns from the Early Assessment Sifting Tool (refer attachment XX for full EAST)

Intervention types	"Name of alternative/option"	Cost	Fatal flaws	Summary of decision made
Integrated planning	Change development pattern to align with existing network	$5-$50 million	Decisions already made. Mostly supports existing corridors now	Discontinue
Manage demand	Time of Use Charging	$5-$50 million	New technology in small town appears inappropriate but progress to test further	Progress
Manage demand	Congestion Charging	$5-$50 million	New technology in small town appears inappropriate	Discontinue
Best use of the existing system	Tidal laning (2+1)	$5-$50 million		Progress
Best use of the existing system	Four lane Southbrook Rd within existing road reserve	$5-$50 million		Progress
Best use of the existing system	Increase PT frequency	$1-$5 million	Unlikely to be effective in changing patterns	Discontinue
Best use of the existing system	Upgrade western route	$5-$50 million	Does not meet objective for East Rangiora growth	Discontinue
New infrastructure	Construct REL Sbk to Northbrook (West of WWTP)	$5-$50 million		Progress
New infrastructure	Construct REL Sbk to Northbrook (East of WWTP)	$5-$50 million		Progress

Intervention types	"Name of alternative/option"	Cost	Fatal flaws	Summary of decision made
New infrastructure	Construct REL Lineside to Northbrook	$5-$50 million		Progress
New infrastructure	Park and Ride upgrade	$1-$5 million	Unlikely to be effective in changing patterns	Discontinue
New infrastructure	Mass rapid transit	$50+ million	Unlikely to be effective in changing patterns sufficiently	Discontinue
New infrastructure	New western bypass	$50+ million	Does not meet objective for East Rangiora growth	Discontinue
New infrastructure	New eastern bypass - Fernside to Coldstream Rd	$5-50 million		Progress
New infrastructure	Widen and four lane Southbrook Rd			Progress

Assessment of Long List to determine Short List

Taking the long list from the previous section (Sifting), a Multi Criteria Assessment (MCA) was undertaken with rough order cost estimates with routes developed for each option. The map of each route is figure xx.

The full MCA is included as attachment XX, and the table below summarises the key findings.

The options were assessed against the

- Three investment objectives,
- Critical sucess factors, and
- Opportunities and Impacts

Observation from the assessment include:

- The cost of land acquisition and building demolition in order to widen Southbrook Road to 24m is both very high, very disruptive and will require significant use of compulsory acquisition powers in order to achieve which will be challenged and may be denied as there are viable alternatives.
- Time of Use Charging in a town would be expensive to establish and is likely to create significant community opposition, increasing the risk to delivery. It will also only be partially effective in delivering the investment objectives.
- Similarly, tidal flow laning of Southbrook Road is both very expensive to implement and carries a high delivery risk due to likely community opposition. It will also only be partially effective in delivering the investment objectives particular as

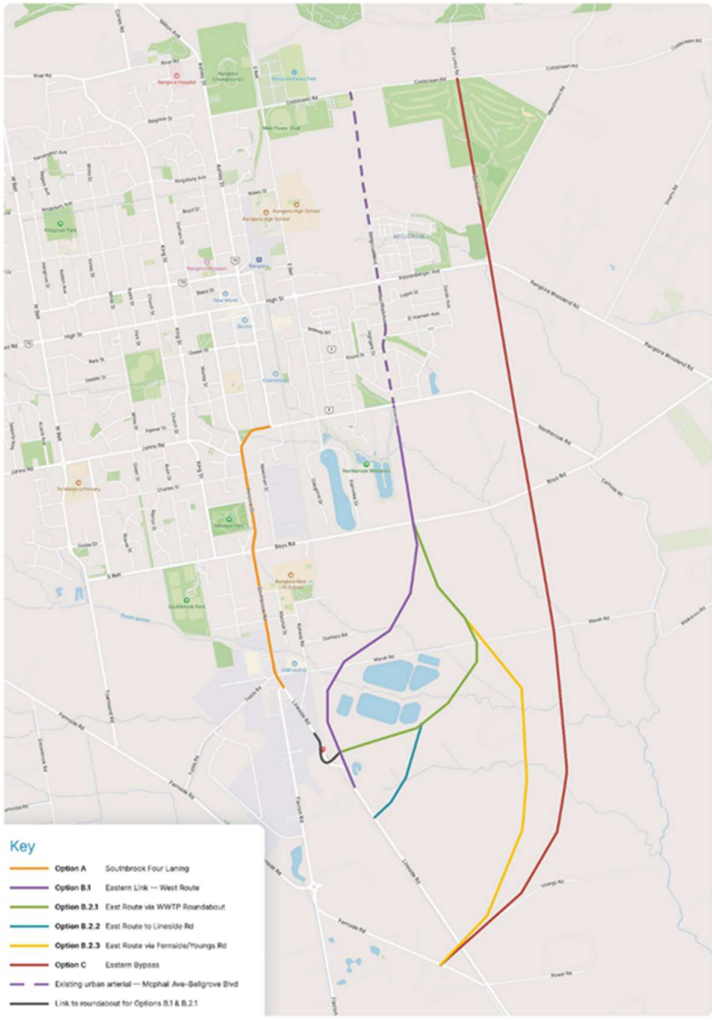


Figure 7 Long List of route options

evidence (reference required) is that crash rates increase by 30%.

- All the new routes to the east of the township score well in achieving the objectives, notwithstanding that all routes carry similar challenges in terms of ground conditions and watercourses.
- The routes that are outside the designation carry greater risk to delivery as a full consenting process and compulsory acquisition of the land will be required.
- The two options involving connection to Lineside Road at Fernside Road would assist in resolving a safety issue at the Fernside/Lineside intersection, but are materially more expensive and involve greater levels of land acquisition (and hence risk to delivery).
- The four laneing of Southbrook Road within the existing 20m road reserve is physically achievable and the lowest cost, however carries significant safety, severance and impacts on access to business and social destinations.

Options		RoC	Weighted score	Rank	Shortlist
DM	Do Minimum		0	4	Y
Southbrook Road					
A.1	Southbrook Four laning – within existing road reserve	$21.5 M	-0.68	6	Y
A.2	Southbrook Four laning – within wider road reserve	$38.9 M	-0.85	8	
A.3	Southbrook three laning – tidal flow 2+1 within existing road reserve	Not costed	-0.7	7	
A.4	Congestion charging / Time of Use	Not costed	-1.17	10	
Eastern Alignments					
B.1	Eastern Link - west route	$34.9M	1.1	1	Y
B.2.1	Eastern Link – east route to WWTP roundabout	$35.7M	0.98	2	Y
B.2.2	Eastern Link – east route to Lineside Rd	$32.9M	0.37	3	Y
B.2.3	Eastern Link – east route to Fernside/Youngs	$40.9M	-0.37	5	
C	Eastern Bypass	$44.6M	-0.97	9	

Sensitivity testing

To test the sensitivity of the assessment, the MCA was adjusted to weighted towards a) the investment objectives, or b) Economic productivity, or c) Social and Cultural impacts.

The results are shown in the table below. This shows

- the inclusion of the three variations on the Rangiora Eastern Link are not sensitive to the weightings of the MCA,
- The inclusion of four laning of Southbrook Road is somewhat sensitive to the weghtings.

			Base Ranking			What if Scenarios: if we weighted towards:					
						Investment Priorities		Economics		Social & Cultural	
	Options		Weighted scor	Rank	Shortlist	Weighted	Rank	Weighted	Rank	Weighted	Rank
DM	Do Minimum		0	4	Y						
	Southbrook Road										
A.1	Southbrook Four laning – within existing road reserve	$21.5 M	-0.68	6	Y	0.15	8	0.25	5	-1.35	7
A.2	Southbrook Four laning – within wider road reserve	$38.9 M	-0.85	8		0.35	6	0.25	5	-1.25	6
A.3	Southbrook three laning – tidal flow 2+1 within existing road reserve	-	-0.7	7		0.15	8	0.25	5	-1.14	3
A.4	Congestion charging / Time of Use	-	-1.17	10		0.35	6	-1	9	-1.24	5
	Eastern Alignments										
B.1	Eastern Link - west route	$34.9M	1.1	1	Y	3	1	1.75	1	-0.87	1
B.2.1	Eastern Link – east route to WWTP roundabout	$35.7M	0.98	2	Y	3	1	1.75	1	-0.87	1
B.2.2	Eastern Link – east route to Lineside Rd	$32.9M	0.37	3	Y	2.8	3	1.5	3	-1.18	4
B.2.3	Eastern Link – east route to Fernside/Youngs	$40.9M	-0.37	5		2.55	4	1	4	-2.04	8
C	Eastern Bypass	$44.6M	-0.97	9		2	5	0.25	5	-2.3	9

Selection of the Shortlist

The analysis dineries that the variations on an eastern link (options B.1 and B.2.x). all score the highest and are bought forward for more detailed assessment.

Option A.1 Southbrook Rd is being bought forward to the shortlist despite scoring lower than other eastern link options. The project team consider that it is important to continue to test this option as it forms a baseline to maximise the capacity of an existing asset, is a lower cost option and is sensitive to the weighting of the criteria.

As such, the preferred shortlist is:

- Do Minimum
- Option A.1 Four laning Southbrook Road witiin the existing road reserve
- Option B.1 Rangiora Eastern Link to Southbrook Road, West of the WWTP along the existing designation
- Option B.2.1 Rangiora Eastern Link to Southbrook Road, East of the WWTP outside the existing designation
- Option B.2.2 Rangiora Eastern Link to Lineside Road, East of the WWTP outside the existing designation

How do the shortlisted options stack up?

Understanding different view points

A drop-in session with Elected Members was held on 19th February. There was a range of views expressed at the session and written feedback received from 9 members only. Of those who provide written feedback, there was support for route directly to Lineside Road as well as the other options, with no support for four laning Southbrook Road. This is summarised in the table below:

	Option	Preferred	Support also	Oppose	Comment
A	Four laning Southbrook Rd				
B.1	REL, west of WWTP	2		1	Expected by community
B.2.1	REL, east of WWTP	2	2	1	
B.2.2	REL directly to Lineside Rd	4	1		Lowest cost
B.2.3	REL to Fernside Rd	1	3		Resolve issue at Fernside Rd also

The response from the neighbours along the southern boundary of the wastewater plant is varied, with three comfortable with all the routes (east or west of the plant), with one opposed to the eastern routes which would bring the road nearer to their property.

The Spark family, as landowners to the north of Marsh Road and to the east of the wastewater plant, support the eastern route options. This includes the better urban form created by an eastern route which leads to less impact on the farming operation and better support industrial land uses and future development to the east and allow creation of a more welcoming entrance centred around the values of the Southbrook and Middlebrook Streams.

Economic Modelling

An economic analysis[15] undertaken for the Rangiora Eastern Link (REL), aligning with the guidelines and procedures outlined in the Monetised Benefits and Cost Manual (MBCM, November 2024) and the Crash Estimation Compendium (CEC). Refer attachment xx.

Component	Option A (4-laning)	Option B1a (REL West)	Option B2.1 (REL East)	Option B2.2 (Lineside Rd)
TT Savings	$26.5	$227.7	$201.4	$218.0
VOC Savings	$39.9	$50.7	$48.5	$53.6
Active Modes	$3.8	$3.7	$4.1	$4.3
Safety	-	-	-	-
Total PV Benefits	$70.2	$282.0	$254.0	$276.0
Total PV Costs	$35.6	$58.2	$59.4	$54.8
Developer Contribution	$7.5	$24.7	$25.2	$23.2
BCR (National)	2.0	4.8	4.3	5.0
First Year Rate of Return (FYRR)	6%	5%	6%	3%

The key metrics for each shortlisted option are summarised in the table xx. Refer to appendix xx for more detailed information

[15] Rangiora Eastern Link - Economics Memorandum, Stantec, 12 March 2025

Traffic Modelling

Key findings from the traffic modelling undertaken to support this business case are outlined below with more detail in the appendices:

The shortlisted options all relieve the congestion on Southbrook Road

Route	AM Peak					PM Peak				
	DM	OptA	OptB1a	OptB21	OptB22	DM	OptA	OptB1a	OptB21	OptB22
2028										
Northbrook to Lineside SBD	4.8	3.5	4.0	4.0	4.0	4.3	3.3	4.0	4.0	4.0
Lineside to Northbrook NBD	4.1	3.2	3.7	3.7	3.7	5.3	3.7	4.6	4.7	4.6
Lineside Road SBD	6.2	6.5	6.6	6.6	6.7	5.7	6.0	6.0	6.0	6.1
Lineside Road NBD	5.2	5.4	5.5	5.4	5.6	7.3	8.6	8.0	7.9	7.9
Rangiora-Woodend EBD	8.3	8.3	8.3	8.3	8.3	8.4	8.5	8.5	8.4	8.4
Rangiora-Woodend WBD	8.6	8.6	8.6	8.6	8.6	8.9	8.8	8.8	8.8	8.8
Eastern Link SBD			6.1	6.3	6.5			6.0	6.3	6.5
Eastern Link NBD			5.8	6.1	6.2			5.9	6.2	6.4
2038										
Northbrook to Lineside SBD	7.4	3.8	4.0	4.1	4.0	4.3	3.3	3.9	3.9	3.9
Lineside to Northbrook NBD	4.2	3.4	3.7	3.8	3.7	6.5	4.7	5.0	4.9	4.8
Lineside Road SBD	6.8	7.6	8.6	8.5	8.6	5.7	5.9	6.1	6.0	6.2
Lineside Road NBD	5.2	5.4	5.5	5.5	5.7	7.8	8.4	9.0	8.7	8.8
Rangiora-Woodend EBD	11.6	9.4	8.8	8.8	8.8	8.8	8.9	8.8	8.8	8.8
Rangiora-Woodend WBD	9.0	8.9	8.8	8.8	8.8	10.2	9.7	9.7	9.6	9.6
Eastern Link SBD			7.0	7.0	7.4			6.5	6.7	6.9
Eastern Link NBD			6.1	6.4	6.6			6.4	6.7	6.9
2048										
Northbrook to Lineside SBD	10.7	4.3	4.2	4.3	4.2	4.5	3.4	3.9	3.9	3.8
Lineside to Northbrook NBD	4.4	3.4	3.9	3.9	3.8	7.2	5.9	5.5	5.2	5.2
Lineside Road SBD	6.9	9.0	11.0	10.4	10.7	5.9	6.1	6.5	6.3	6.5
Lineside Road NBD	5.2	5.5	5.6	5.5	5.7	9.2	10.0	10.8	10.1	10.3
Rangiora-Woodend EBD	14.9	12.0	10.9	10.4	10.5	9.1	9.1	9.1	9.1	9.1
Rangiora-Woodend WBD	9.4	9.4	9.1	9.0	9.0	12.5	11.9	11.5	10.7	10.7
Eastern Link SBD			7.2	7.2	7.5			6.8	6.9	7.1
Eastern Link NBD			6.1	6.4	6.6			6.5	6.7	6.9

All options will shift traffic away from Southbrook Road, rat running will reduce and better use is made of Flaxton Road

		Do Min	Opt A	Opt B.1a	Opt B.1a	Opt B.2.1	Opt B.2.2
2028							
Ivory Street	north of Northbrook Road	12,100	16,450	11,550	11,450	11,700	11,350
Percival St	north of South Belt	18,300	23,400	15,900	15,850	16,250	15,850
Southbrook Road	north of Station Road	23,400	28,050	20,400	20,300	20,750	20,150
Southbrook Road	at level crossing	17,600	20,550	15,250	12,700	14,550	13,350
SH71 Lineside Road	south of REL roundabout	17,600	20,550	19,250	18,800	18,800	18,150
Rangiora-Woodend Road	east of Golf Links Road	12,850	10,600	11,900	12,300	12,000	12,450
Fernside Road	south of Townsend Road	11,700	10,450	11,000	10,750	11,350	11,100
Flaxton Road	south of Lineside Road	6,800	7,950	7,250	7,850	7,400	7,950
2038							
Ivory Street	north of Northbrook Road	13,450	18,150	12,800	12,650	13,000	12,700
Percival St	north of South Belt	18,200	24,800	15,500	15,300	16,000	15,650
Southbrook Road	north of Station Road	22,550	28,900	19,800	19,400	20,050	19,600
Southbrook Road	at level crossing	16,250	20,800	14,700	11,250	13,650	12,650
SH71 Lineside Road	south of REL roundabout	16,250	20,800	20,700	18,550	20,050	19,800
Rangiora-Woodend Road	east of Golf Links Road	17,550	14,600	16,150	18,050	16,400	16,500
Fernside Road	south of Townsend Road	12,450	11,500	11,750	10,900	11,950	11,900
Flaxton Road	south of Lineside Road	6,700	8,350	8,000	8,750	8,150	8,500
2048							
Ivory Street	north of Northbrook Road	16,150	18,900	14,050	14,050	14,250	13,950
Percival St	north of South Belt	19,150	25,800	16,200	16,300	16,500	16,400
Southbrook Road	north of Station Road	23,950	30,300	20,450	20,300	20,400	20,100
Southbrook Road	at level crossing	18,300	21,600	15,200	12,700	14,200	13,100
SH71 Lineside Road	south of REL roundabout	18,300	21,600	21,550	21,300	20,900	20,750
Rangiora-Woodend Road	east of Golf Links Road	18,200	16,450	18,050	18,050	18,600	18,550
Fernside Road	south of Townsend Road	14,200	12,300	12,850	13,000	13,150	13,050
Flaxton Road	south of Lineside Road	6,700	8,800	8,250	8,550	8,150	8,600

Delays at intersections will be reduced materially, but still poor in some places

Intersection LOS for AM Peak	2038														
	Do Minimum			Option A			Option B.1a			Option B.2.1			Option B.2.2		
	Veh	Delay	LOS	Veh	Delay	LOS	Veh	Delay	LOS	Veh	Delay	LOS	Veh	Delay	LOS
Ashley Street / Coldstream Road	1,058	13	B	1,133	15	B	1,169	11	B	1,122	12	B	1,120	11	B
Ashley Street / High Street	1,472	27	C	1,688	30	C	1,345	26	C	1,380	26	C	1,382	26	C
Ivory Street / Northbrook Road	1,566	91	F	1,686	24	C	1,392	29	D	1,421	30	D	1,424	29	D
Percival Street / Victoria Street	1,609	50	E	1,967	54	F	1,473	36	E	1,502	37	E	1,504	34	D
Percival Street / Johns Road	1,784	57	F	2,131	57	F	1,611	39	E	1,642	39	E	1,647	38	E
Percival Street / Charles Street	1,831	127	F	2,203	79	F	1,397	36	E	1,451	35	D	1,453	33	D
Southbrook Road / South Belt / Percival Street	2,066	56	E	2,837	44	D	2,007	30	C	2,016	30	C	2,016	28	C
Southbrook Road / Torlesse Street	1,944	31	C	2,424	6	A	1,631	6	A	1,611	6	A	1,615	6	A
Southbrook Road / Pak 'n Save supermarket	1,952	7	A	2,462	5	A	1,736	6	A	1,686	6	A	1,688	6	A
Lineside Road / Todds Road	1,828	113	F	2,282	10	A	1,499	41	E	1,587	48	E	1,589	44	E
Lineside Road / Flaxton Road	1,805	36	E	2,271	13	B	1,656	23	C	1,699	24	C	1,700	22	C
Coldstream Road / REL	583	8	A	549	8	A	762	10	A	685	9	A	681	10	A
Kippenberger Ave / MacPhail Ave	1,156	12	B	1,245	12	B	1,519	13	B	1,419	13	B	1,420	13	B
Northbrook Road / MacPhail Ave	954	12	B	811	10	A	1,490	12	B	1,171	11	B	1,173	12	B
REL / Boys Road	96	11	B	154	11	B	1,293	12	B	1,037	11	B	1,037	12	B
REL / Marsh Road	156			144			1,015	16	C	1,090	13	B	1,088	16	C
Lineside Road / REL	1,367			1,615			1,941	14	B	1,703	13	B	1,707	13	B

Multi Criteria Analysis

A cross-agency group of senior staff from Council. NZTA and Whitiora (on behalf of Ngai Tuahururi) assessed the short-listed options against a series of criteria.

This assessment is summarised in the following table, with more detailed information in appendix xx.

Type of Criteria	Criteria	Considerations	Option A: Four Laning Southbrook Road	Option B.1 : REL west of WWTP (designated route)	Option B.2.1 REL east of WWTP	Option B.2.2 REL east of WWTP to Lineside Rd
Investment Objectives	Improve accessibility from East Rangiora development area to SH1 by 3 minutes by 2038 (30%)	Measure 1: Travel time improvement from Area of East Rangiora greenfield land to SH1 (Lineside Road) Measure 2: Proportion of population living within 10 mins (am peak) of Southbrook Industrial Area (%) Measure 3: Reduce sideroad delays accessing Southbrook Road (secs)	2	2	2	2
	Reduce am peak travel time between Lineside and Northbrook Road by 40% by 2038 (55%)	Measure 1 Proportion of population within 10 mins of Southbrook Measure 2 Time to travel from Southbrook to Northbrook Road (Mins) Measure 3 Improvement in travel time reliability (comparing peak to inter-peak) (%)	2	2	2	2
	Improve the Infrastructure Risk Rating on strategic roads in South Rangiora to Medium or better by 2038 (15%)	Measure 1: Number of deaths and serious injuries Measure 2: Infrastructure risk rating > medium Measure 3: Ease for locals to cross the road (and access)	-2	2	2	1
Critical success factors	Affordability	Current budget is $35 million	-1	-2	-2	-2
	Deliverability (achievability)	Note advice in slide pack, Consenting, schedule, construction and land acquisition key risks	2	2	0	0
	Value for money	Economic metrics below	1	3	3	3
Opportunities and Impacts	Te ao Māori	Workshop deliberations	-1	-1	-1	-2
	Environment and ecology	Workshop deliberations	-1	-1	-1	-2
	Social and Landscape	Workshop deliberations	-3	1	1	1
	Private Property and immediate neighbours	Workshop deliberations	-3	2	0	-1
Economic indicators	Benefit Cost Ratio	Stantec Economic Assessment	2	4.8	4.3	5.0
	BCR (Govt)	Stantec Economic Assessment	2.2	7.7	6.7	8.0
	Net Present Value ($millions)	Stantec Economic Assessment	33.6	223.8	194.6	221.2
	First year rate of return	Stantec Economic Assessment	6%	5%	6%	3%
Cost	Capital Cost (P_{50}-P_{95})	Programme Manager	$21.5 -$31 M	34.9 - 52.4 M	$35.7 - 53.6M	$32.9 - 49.4 M
	Public sector cost (P50-P95)	Programme Manager	$5.4 - $7.75	$17.5 - 26.2 M	$17.9 - 26.8M	$16.5 - 14.7M
		Raw unweighted sum	-4	10	6	2
		Investment Oujectives (weighted)	1.5	2.1	2.1	1.95
		Critical Success Factors (unweighted)	2	3	1	1
		Opportunities and impacts (unweighted)	-6	5.8	3.3	-4
		Rank	4	1	2	3

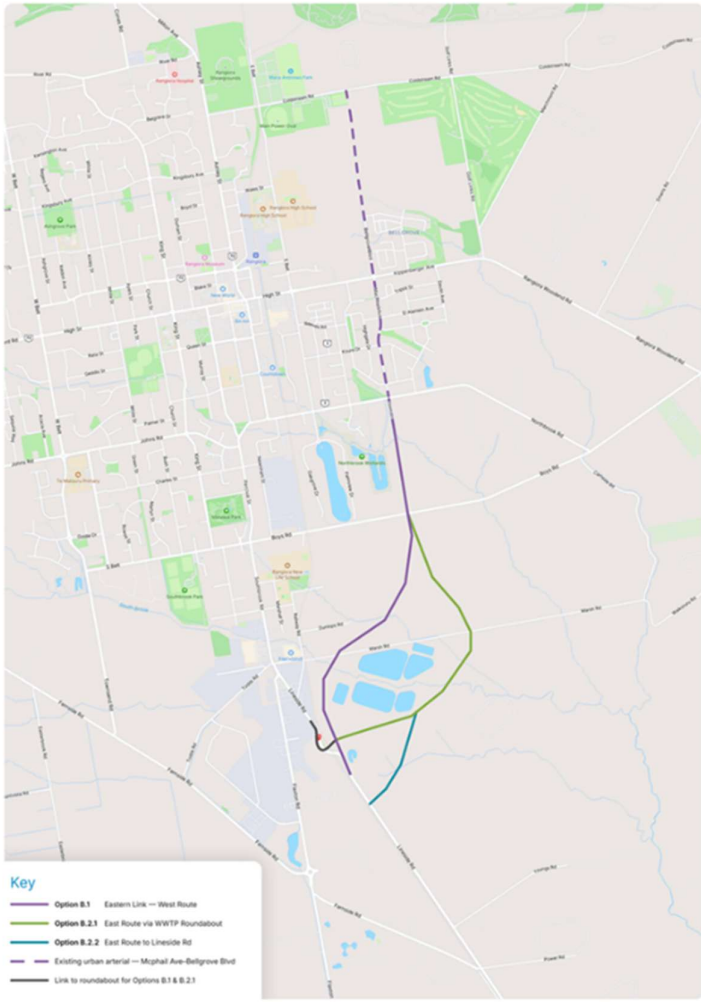


Figure 8 Short list of route options

Determining the preferred way forward

Discarding four laning of Southbrook Road

Option A: Four laning of Southbrook Rd is physically possible and would be able to be achieved within the existing road reserve. To assist understanding, this is similar to the design of Curletts Road in West Christchurch. However it does not deliver the full range of benefits and would result in increased severance, poor outcomes for cyclists, reduced accessibility for business and high risk for pedestrians, and particularly children crossing the road.

Despite Option A being the lowest cost option ($21 Million), it has a much lower benefit cost ratio (2.0) than the other options and hence is not considered to provide the value for money that investment in the REL would provide.

On that basis, this option is not considered further, and the remainder of this discussion focuses on the three shortlisted variations of the REL.

How well does each option achieve the objectives of relieving congestion, serving growth and improving safety

A Transport Assessment[16] with associated traffic modelling has been prepared for the project. This is included as an attachment along with a summary plan of the modelling outcomes. The analysis found that the Rangiora Eastern Link:

In summary, the analysis found that each of the shortlisted options provides good benefits in terms of travel time and reliability with some relatively minor variation in resulting traffic volumes and intersection delays. As such, the decision on which route to prefer should be based on the ability to deliver the project and the impact of each option.

Is the project likely to be funded and delivered?

Any project needs to be (1) affordable, (2) provide value for money, and (3) be able to be delivered. These are the critical success factors.

The three REL variation each have similar benefit cost ratios and total forecast costs and hence can be considered to provide value for money. Further, because they are similar to the current budget, they are affordable. Because 50% of funding is likely to come from development contributions, they each provide excellent value for money for public investment (ratepayer and taxpayer).

In terms of risks to delivery, a key difference between these options and the route to the west of the plant (along the designation in the proposed district plan) is the effect on people and property and related risk to delivery of the project.

Whereas the western route is distant from residential property and primarily passes through land owned by the Council or the Spark

[16] Rangiora Eastern Link Trasport Assessment of options, Stantec, March 2025

Family (with land likely rezoned), the eastern route passes immediately adjacent to several existing residential properties and, in the case of the route directly to Lineside Road, requires acquisition of land that has not previously been identified.

As noted above, one landowner opposes the eastern route, while all landowners are comfortable with the western route. The Spark Family prefer the eastern route and the landowner affected by the route directly to Lineside Road is likely to be a willing seller.

If Option B.1 is preferred, which follows the designation in the proposed District Plan, limited resource consents[17] are required, there is some distance to neighbours and land acquisition is more assured.

Conversely, a full consenting and land acquisition process will need to be advanced for work outside the destination. Further, the eastern route options pass close to existing homes and (for option B.2.2) require land acquisition on land not previously identified.

In other projects, this would be expected to raise the risk of drawn-out consenting and land acquisition processes that may not be successful due to the impact on neighbours and property owners. However, in this case, the feedback from neighbours indicates that there is support for all routes from most landowners, with one opposing.

Is there a difference in terms of impacts or opportunities?

The environmental impact and the impact on Te Ao Maori are similar across Options B.1 and B.2.1, with only the option B.2.2 (direct to Lineside Road) being scored lower due to crossing an additional high value waterway[18].

Option B.2.2 has a slightly lower safety score due to maintaining the existing level crossing rather than upgrading.

The two variations of eastern link that pass to the east of the wastewater plant offer benefits in terms of urban form as they open up more area immediately north of Marsh Road for industrial purposes (noting that land use is constrained due to proximity to the wastewater plant) and perhaps better support for any future urban expansion to the east.

While the western route passes through the existing operations area and would affect the pound, civil defence and water unit facilities, while eastern route would constrain the ability of the plant to be extended. As noted above, there is impact on the neighbours of the eastern route due to the proximity to homes, albeit that this is moderated somewhat by the support of some of these neighbours.

[17] An Outline Plan will need to be prepared and submitted, however provided that the proposal aligns with the notice of requirement then this is unlikely to be declined. Some consents may be required for the length of new road south of the dual roundabout (Lineside/Southbrook)

[18] South-Southbrook Stream

The Preferred way forward

It is fair to conclude that there are not strong reasons to prefer one shortlisted route option for the Rangiora Eastern Link over another. They each will deliver the transport benefits, provide value for money and are similar in cost. However there are differences between each option.

The two options which avoid crossing the South-Southbrook Stream to link directly to Lineside Road are slightly preferred as they lead to an upgraded level crossing, reduce impact on both the environment and Te Ao Maori and avoid the need to acquire and sever a large farm paddock.

The remaining two options (east or west of the wastewater plant) can be differentiated by the benefits to urban form provided by the eastern route and the lower risk to delivery provided by the western (designated) route.

If the impact on residential properties to the south of the wastewater plant and consequent risk to consenting requirements is considered to carry greater weight, them option B.1 West of WWTP would be preferred

If benefits to urban form and future development scenarios is weighted higher, then the route around the east of the wastewater pant would be preferred

With the designation in the Proposed District Plan, the benefits of the eastern route option would have to outweigh those of the designated route to be preferred. While there are real benefits to urban form of the eastern route, this is not sufficient to outweigh the impacts on people and property and subsequent risk to delivery. This is supported by the 10% lower benefit cost ratio (4.3) for the eastern route than the western route (4.8).

As such, option B.1 REL west of the Wastewater plant (designated route) is the preferred route.

What the solution will deliver

Rangiora grew up centred around a single north south strategic road (Southbrook Road).

This was sufficient when the town was small, but rapid growth over many decades has led to the development of a western route (Flaxton, Fernside. Merton/ Lehmans) which serves as heavy vehicle bypass and the residential growth in the west as well optimising the capacity of the single laned Southbrook Road.

The town will be mainly growing eastwards for the next decades, with up to 5,100 new homes enable by the Proposed District Plan. This rapid growth reflects the important role that the town plays in the greater Christchurch region and its status a Priority Development Area.

As any district grows, so must the infrastructure required to serve it, and the Council has developed an overall programme of physical and non-physical interventions to match the pace of that growth and ensure that the district keeps on moving.

The town has now reached a population and level of commercial activity where the bottleneck on Southbrook Road has become a drag on economic activity as well as making public and private transport unreliable and unattractive. Rail crossings which where tolerable when traffic volumes were low are becoming a greater risk to life, and this will be made substantially worse as the town grows further.

Modelling indicates very severe congestion will force traffic to take circuitous routes to minimise travel time, creating pressure on other parts of the network which were not built for it. The impact on the Southbrook Industrial Area will constrain freight movement and deter investment.

A solution that relieves the existing congestion and enable people and freight to move more quickly, as well as unlocks the land for housing is sought.

The preferred way forward involves creating a third north-south route through the town, spreading the traffic across multiple routes in order to improve travel time and reliability, improving safety and resilience and providing a connection to residential areas and industrial growth areas.

- Supports the growth of up to 5,000 new homes in East Rangiora
- Provides 3-4 minutes in shorter travel time from East Rangiora (300-400 veh. hours each day)
- Saves approximately 7,000 kms per day (VKT) in driving distance, leading to economic and emissions savings
- Reduces the traffic volume across Lineside Road level crossing down from 17,600 vpd to 14,000 per day
- Limits traffic volume to 19,200 vpd on Lineside Road instead of 23,000 vpd.
- And maintain a population of approximately 40,000 people within 10 minutes' drive of Southbrook and its employment and retail opportunities.

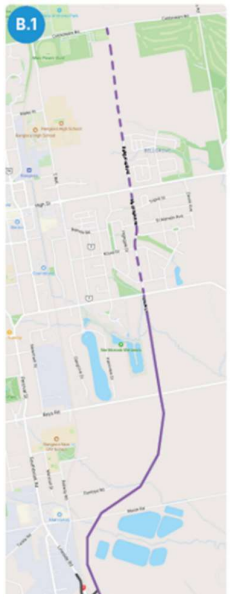
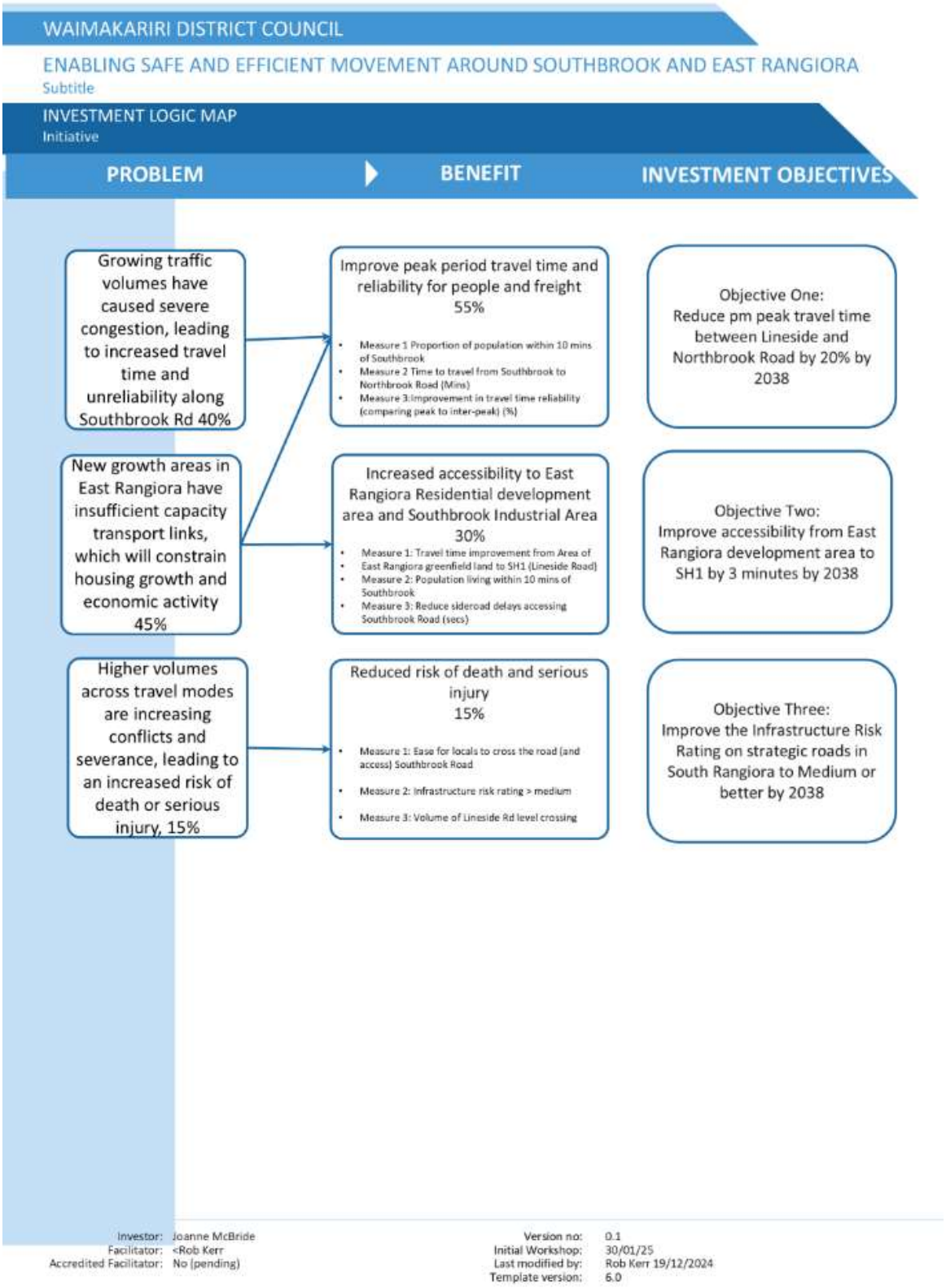
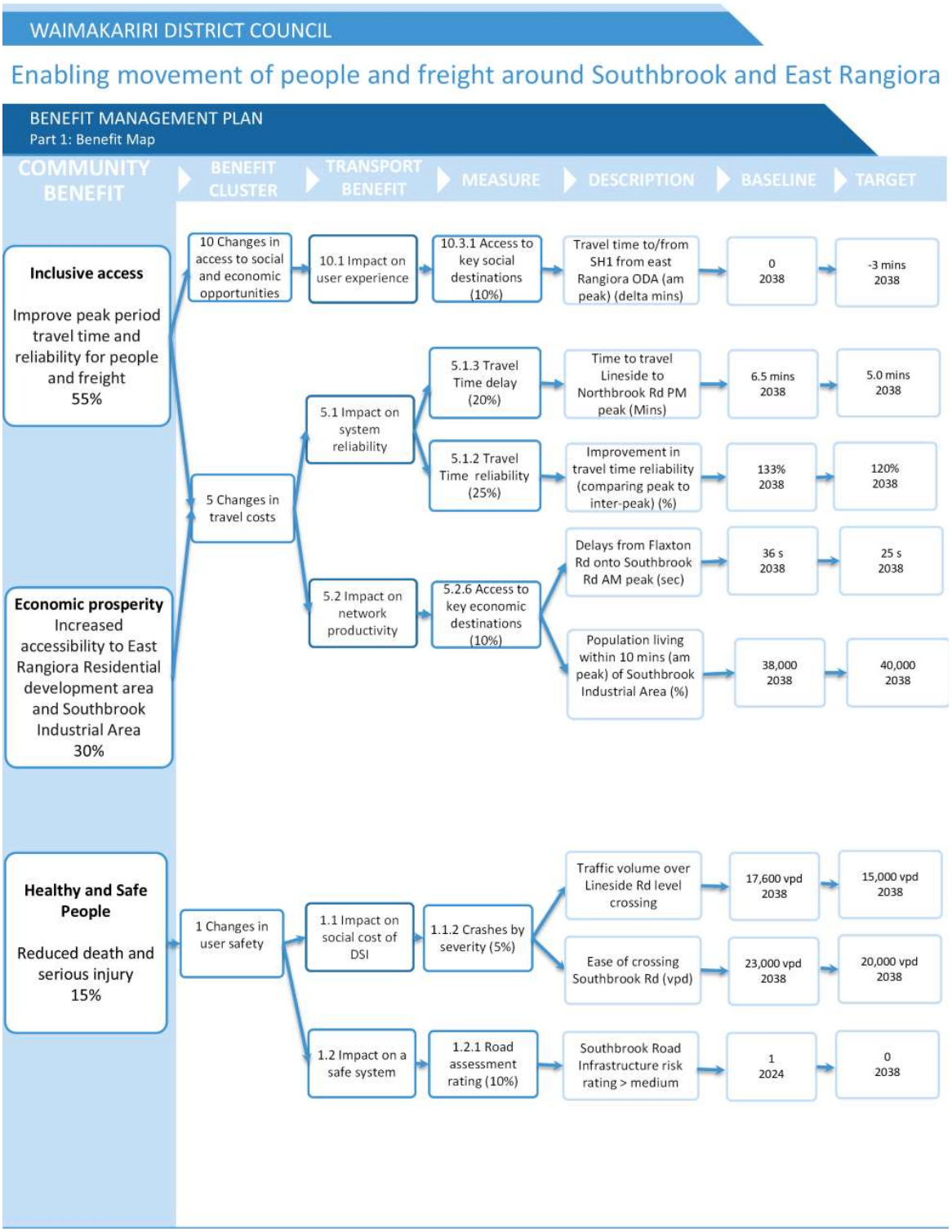


Figure 9 Reccomended route

Attachment A: Investment Logic Map



Attachment B: Investment Benefits Map



Attachment C Detailed strategic alignment

The Government Transport Policy prioritises economic growth and productivity as the overarching mission for land transport.

The *New Zealand Government Policy Statement (GPS) on Land Transport 2024-34* outlines the strategic direction and funding priorities for the country's transport system over the next decade. The strategic priorities are:

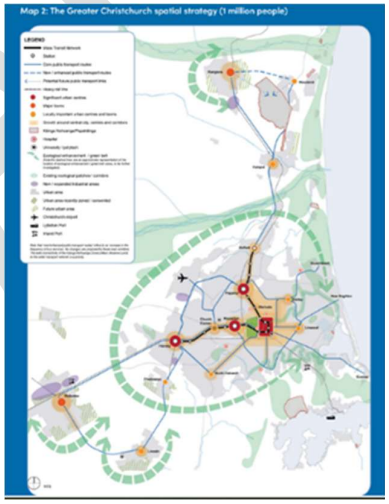
- *Economic Growth and Productivity*: Emphasising the importance of transport infrastructure in supporting economic development and productivity.
- *Increased Maintenance and Resilience*: Focusing on maintaining and enhancing the resilience of the transport network to withstand natural disasters and climate change.
- *Safety*: Aiming to reduce the number of deaths and serious injuries on New Zealand roads.
- *Value for Money:* Ensures that transport investments deliver the best possible outcomes for the money spent, with some emphasis on a 'no frills' perspective on project definition

The GPS says the major contribution that the transport sector can play in enhancing economic growth is by moving people and freight more quickly and unlocking land for housing.

There is a comprehensive set of plans to enable housing growth and economic development in Greater Christchurch

The *Greater Christchurch Spatial Plan* will help shape how Greater Christchurch grows as its population reaches more than 700,000 over the next 30 years and becomes home to possibly more than a million people in the decades that follow.

The Plan guides how greater Christchurch will accommodate new houses and businesses in a way that enhances the environment, integrates with transport and other infrastructure provision, builds greater community resilience against risks to natural hazards, and contributes to a sustainable future for Greater Christchurch.



Greater Christchurch – and the Waimakariri District - is thriving - and growing fast.

Over the past 15 years, Greater Christchurch has grown rapidly to a population of around half a million. By 2050, up to 700,000 people could be living in Greater Christchurch – 40% more than there are today, with the population potentially doubling to 1 million people in the future,[19]

Greater Christchurch is well placed for much greater population and economic growth. The latest projections from Stats NZ indicate Greater Christchurch's population could grow from a population of approximately half a million to around 700,000 by 2051.

The Greater Christchurch Spatial Plan anticipates steady growth in the Waimakariri District from the current population of 67,900 to around 82,000 by 2033, and in the order of 102,000 by 2052. Up to 15,000 additional homes are expected to be required to accommodate population change over the next 30 years.

If Greater Christchurch was to grow at the rate seen over the last 15 years, then it could reach a population of 700,000 within the next 30 years and in time one million, doubling the size of today's population.

Canterbury's priorities for transport investment are about economic growth, safety and resilience coupled with promoting more sustainable transport modes.

The *Canterbury Regional Land Transport Plan (CRLTP) 2024-34* outlines the strategic direction for land transport planning and investment in the Canterbury region over the next decade. The objectives are:

- *Sustainable Transport*: Promotes the use of sustainable transport modes to reduce emissions and environmental impact.
- *Safety*: Aims to reduce deaths and serious injuries on the roads.
- *Resilience*: Enhances the resilience of the transport network to withstand natural disasters and climate change.
- *Economic Growth:* Supports economic development through efficient and reliable transport infrastructure.

The Rangiora Eastern Link is a Regionally Significant Project in the Canterbury RLTP. Ranked 25 for addressing congestion and access issues along Southbrook Road, materially reducing travel time, and unlocking access to greenfield development land.

[19] Greater Christchurch Spatial Plan, 2023

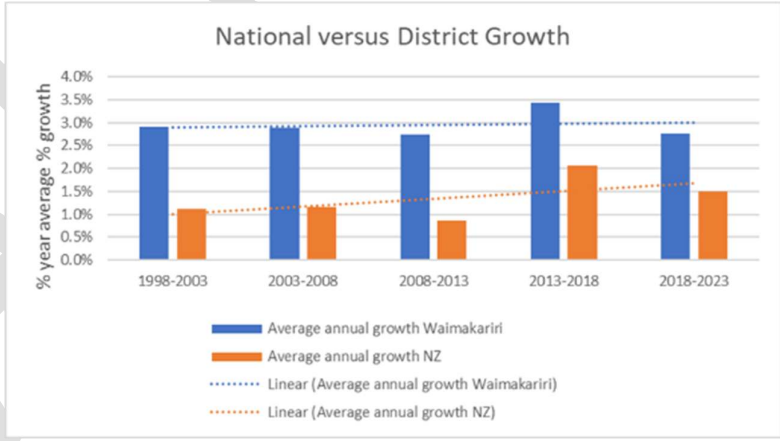
The major transport challenges for Canterbury are rapid population growth with growing urban boundaries while maintaining efficient freight routes and adapting to a changing climate.

Waimakariri District is growing fast and is a critical part of greater Christchurch

The Waimakariri district was one of the five fastest growing (measured as a percentage growth rate) local authorities in New Zealand in seven of the ten years between 2007 and 2016. At the 2018 census growth was 3.81%. In 2019, the national ranking dropped to 11th[th,] and growth now sits at around an estimated 2.7%, (67900-69,760) compared with an average estimated growth rate for New Zealand of 2.3% (5117100-5236300), from 2022-2023[20].

Rangiora plays a significant role in the urban form of Greater Christchurch, contributing to the region's economic, social, and infrastructural landscape. It is one of Greater Christchurch's Key Activity Centres which highlights its importance in clustering community, retail, residential, and business activities.

The town is well-connected to Christchurch via major transport routes,



including State Highway 1 with improved public transport options between Rangiora and Christchurch, reducing reliance on private vehicles and promoting sustainable transport. It is the largest centre in one of the fastest growing districts in New Zealand and has experienced significant economic growth and development in recent years.

While 41%[21] of spending by residents is outside the district (i.e. retail leakage) is not good news for local business, it reminds us of the strong

[20] Transport Asset Management Plan 2024 (WDC, 2024)

[21] Waimakariri Economic Development Strategy, 2024).

connection between Christchurch and the Waimakariri. The district also provides jobs for around 7% of Greater Christchurch's labour, the proximity to Christchurch provides an important way for businesses to access and attract skilled labour.

Rangiora is a Priority Development Area for growth and economic development in greater Christchurch

A strengthened network of urban and town centres is one of the five key moves identified in the *Greater Christchurch Spatial Plan* and, through Priority Development Areas, provide the opportunity to accelerate development in locations that support the desired pattern of growth.

Rangiora is one of these areas and the Plan supports the growth of Rangiora by:

1. **Intensification and Development**: Encouraging higher density residential and commercial development around Rangiora's town centre while retaining its character.
2. **Transport Connectivity**: Improving public transport connections to enhance accessibility and reduce reliance on private vehicles.
3. **Economic Hub**: Recognizing Rangiora as a key service and employment centre for surrounding areas, providing a mature offering of employment, retail, and community facilities.
4. **Infrastructure Investment**: Ensuring that infrastructure is planned and developed to support the anticipated growth and maintain the quality of life for residents.

Identifying Rangiora as a Priority Development Area means coordinated efforts and investments will be focused to accelerate and support significant growth.

The Proposed Waimakariri District Plan enables significant growth in East Rangiora

The Proposed Waimakariri District Plan is expected to be made operative in late 2025 (update when this BC finalised and add a plan of the ODPs). Its sets out areas for future growth in housing as well as protecting existing and proposed road corridors. Specifically for Rangiora, it includes:

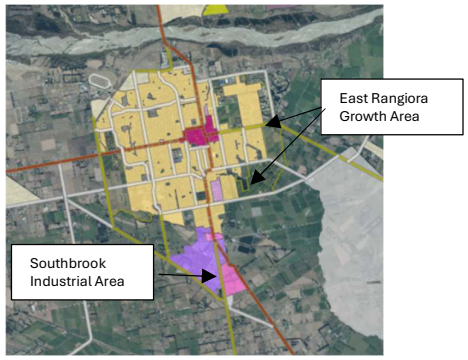


Figure 10 Proposed District Plan Zones

- Approximately 615 ha of new greenfield land for residential development is rezoned
- This includes East Rangiora, with over 5,000 new lots, forecast to see a doubling in population over the next 30 years.
- A designation for the proposed route of the Rangiora Eastern Link.

The (Proposed) District Plan enables further extensive residential development in East Rangiora and a new eastern arterial to service growth areas and address congestion

Figure 11: East Rangiora Outline Development Plan

The Integrated Transport Strategy supports greenfield expansion where the development will improve transport outcomes or is enabled by good multi-modal transport linkages.

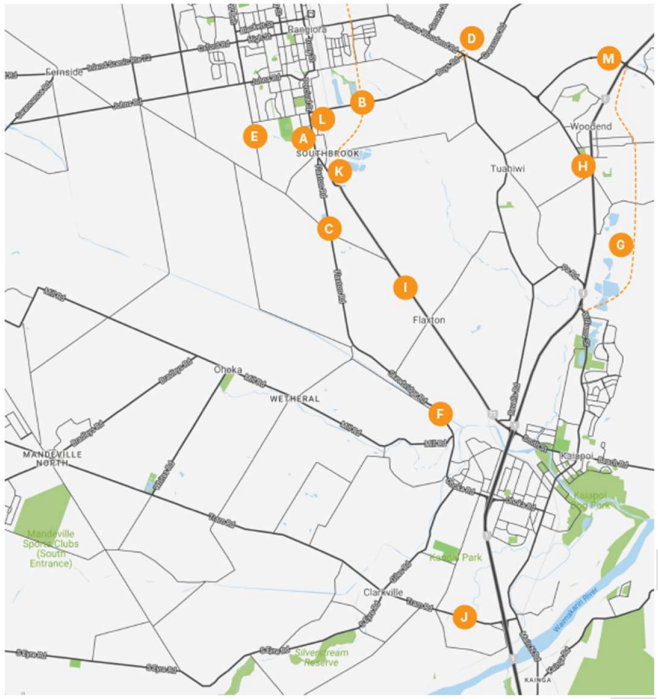
The Council's Integrated Transport Strategy seeks to ensure the impacts of growth do not hinder reliable and efficient movement of freight

This strategy, and the underlying Transport Asset Management Plan, seeks to a preferred freight route that bypasses Rangiora and Kaiapoi town centres and manages freight movements (e.g. safe stopping point locations) with destinations within our townships.

Along with other objectives, it also seeks to better connect the industrial areas and freight hubs to the arterial network and looks to upgrade strategic freight routes that service rural areas for primary industries.

The Council and Waka Kotaki NZTA have a programme of work across the east of the district to enable growth and remove constraints on efficient movement of freight and people

This package of projects is centred around the nodes of Kaiapoi, Woodend and Rangiora, and address the impacts of an increasing traffic volume that is inherent from a growing population and economic base. These projects are shown on the plan to the right and demonstrate the significant investment and long term strategic planning behind the management of the transport network in the district.



The Council has been planning to address congestion and enable growth for over two decades

The concept of an eastern link was first identified in 2001, and planning for growth has been long standing through various iterations of structure plans, district plans and outline development plans.

During intervening years there has been continued to be substantial growth which is exacerbating congestion along Southbrook Road.

The 2001 Rangiora Transport Study (Beca) identified a range of existing and future deficiencies in the transport network. The greatest issue identified was the increasing congestion on the Rangiora North-South strategic route. Also noted was the impact of housing growth, safety at the railway level crossings and the rural/urban fringe and the need for more direct bus routes.

This study identified an eastern link road from Southbrook to the east of town as the second highest priority project after interim traffic signal improvements on the north-south route. In 2005, Opus (now WSP) completed a Scheme Assessment of a new road, called the Rangiora Eastern Link.

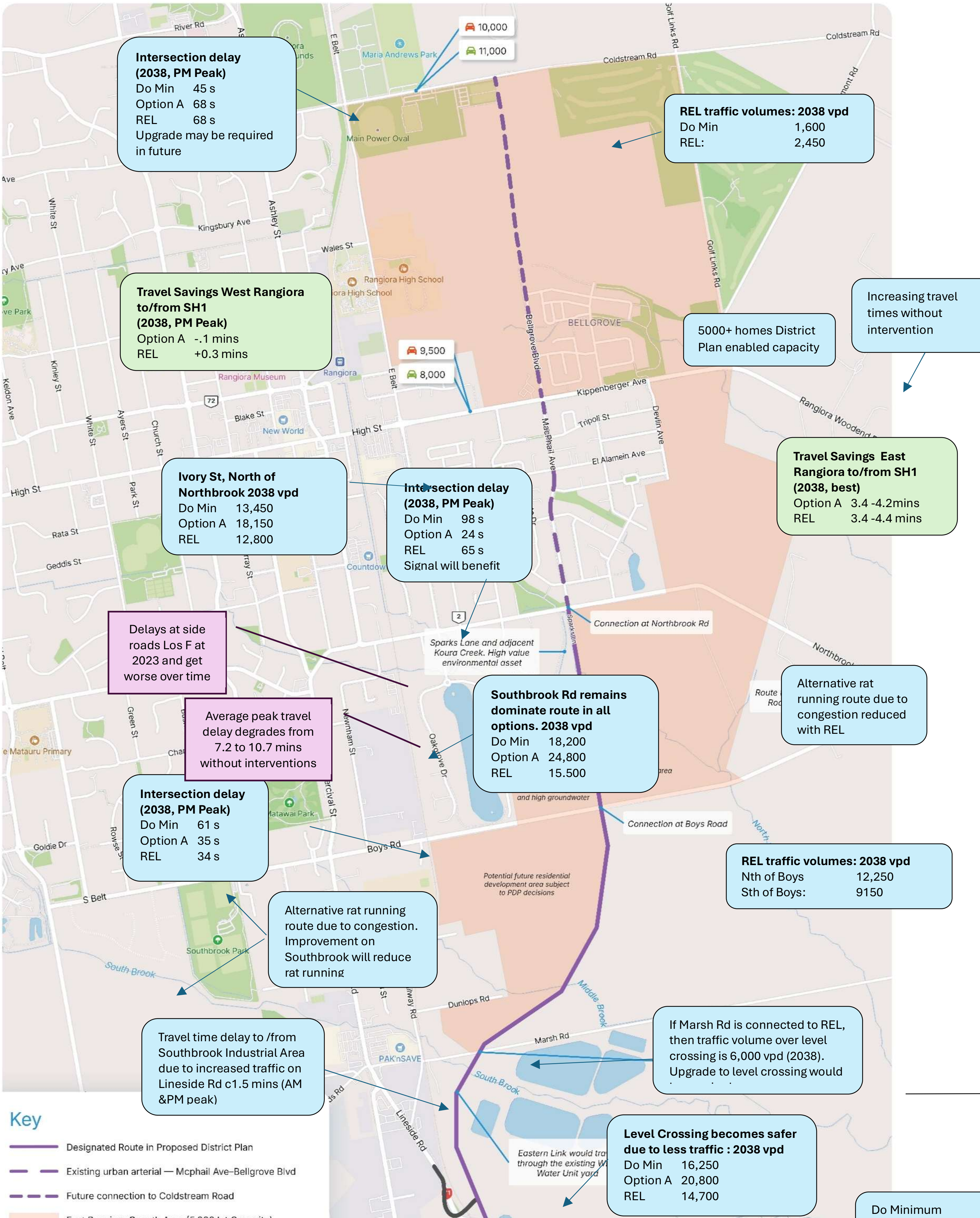
In 2021, further technical work was undertaken to support a Notice of Requirement to include the route of the road as a designation in the Proposed District Plan. This designation became operative in xxx 2025.

The proposed Eastern Link was included in the Canterbury Land Transport Plan (2024-2034) and co-funding for this business case work was included in the National land Transport Plan (2024-2034).

Council has leveraged the land development on the east side of town to progressively advance development of the eastern link between Northbrook Road and Coldstream Road. Through major developments such as Belgrove, 35% of the road has already been constructed, with a further 15% to be completed in future subdivision processes, with contributions levied towards the section south of Northbrook Road.

This Business Case is revisiting the Problems, clarifying the Investment Objectives and confirming the best way to achieve these outcomes.

Attachment D Summary of traffic modelling



10,000
11,000
Intersection delay (2038, PM Peak)
Do Min 45 s
Option A 68 s
REL 68 s
Upgrade may be required in future
REL traffic volumes: 2038 vpd
Do Min 1,600
REL: 2,450
Travel Savings West Rangiora to/from SH1 (2038, PM Peak)
Option A -.1 mins
REL +0.3 mins
9,500
8,000
5000+ homes District Plan enabled capacity
Increasing travel times without intervention
Travel Savings East Rangiora to/from SH1 (2038, best)
Option A 3.4 -4.2mins
REL 3.4 -4.4 mins
Ivory St, North of Northbrook 2038 vpd
Do Min 13,450
Option A 18,150
REL 12,800
Intersection delay (2038, PM Peak)
Do Min 98 s
Option A 24 s
REL 65 s
Signal will benefit
Connection at Northbrook Rd
Sparks Lane and adjacent Koura Creek. High value environmental asset
Delays at side roads Los F at 2023 and get worse over time
Average peak travel delay degrades from 7.2 to 10.7 mins without interventions
Southbrook Rd remains dominate route in all options. 2038 vpd
Do Min 18,200
Option A 24,800
REL 15.500
Alternative rat running route due to congestion reduced with REL
Intersection delay (2038, PM Peak)
Do Min 61 s
Option A 35 s
REL 34 s
Connection at Boys Road
REL traffic volumes: 2038 vpd
Nth of Boys 12,250
Sth of Boys: 9150
Potential future residential development area subject to PDP decisions
Alternative rat running route due to congestion. Improvement on Southbrook will reduce rat running
Travel time delay to /from Southbrook Industrial Area due to increased traffic on Lineside Rd c1.5 mins (AM &PM peak)
If Marsh Rd is connected to REL, then traffic volume over level crossing is 6,000 vpd (2038). Upgrade to level crossing would
Level Crossing becomes safer due to less traffic : 2038 vpd
Do Min 16,250
Option A 20,800
REL 14,700
Do Minimum
Key
Designated Route in Proposed District Plan
Existing urban arterial — Mcphail Ave–Bellgrove Blvd
Future connection to Coldstream Road

Attachment E Transport Assessment of Options

Bound separately Trim Ref

Attachment F: Economic Modelling

Bound separately Trim Ref

Attachment G: Early Assessment Sifting Tool

Early Assessment Sifting Tool template

Early Assessment Sifting Tool: Excel template

The Early Assessment Sifting Tool (EAST) supports an initial coarse screening of alternatives and options. The EAST is designed to quickly and robustly rule out alternatives and options, allowing for a more manageable subsequent multi-criteria analysis exercise.

Project overview

Date:	19/12/2024	**Business case phase:**	Single stage business case	**Do-minimum:**	Current scope of Long Term Plan projects
Project name:	Rangiora Eastern Link	**Problem/opportunity stat**	Enabling free movement of goods and people in South and East Rangiora		

Investment objective:	Reduce congestion along Southbrook Road to level of Service C or better
Investment objective:	Provide transport connections to enable development of 5,000 lots in East Rangiora
Investment objective:	Improve safety of network to IRR rating of medium or better

Note: Please copy the row above to add an additional investment objective.

Alternative or option details			Investment objective			Practical feasibility			Scheduling/ programming	Cost	Key risks and uncertainties	Impacts on te ao Māori	Environmental and social responsibility		Fatal flaws	Other impacts		Summary of decision made	
Intervention types sourced from the intervention hierarchy	Unique identifier	Name of alternative/option	Reduce congestion along Southbrook Road to level of Service C or better	Provide transport connections to enable development of 5,000 lots in East Rangiora	Improve safety of network to IRR rating of medium or better	Technical	Safety and design	Consentability					Identify	Mitigation Can these be avoided, remedied or mitigated?				Summary of decision made	Progress or discontinue this alternative/ option?
Integrated planning	1	Change development pattern to align with existing network	1. Low	3	1. Low	5. Red (difficult/complex)	1. Green	5. Red (difficult/complex)	5+ years	$5-$50 million	Partially achieved. Ten years to next PDP	Role Greater Chch partnership agreements	Urban form forced by existing network	User to describe...	Decisions already made. Mostly supports existing corridors now	User to describe...		Discontinue	
Manage demand	2	Time of Use Charging	3	1. Low	2	5. Red (difficult/complex)	5. Red (difficult/complex)	3.Amber	5+ years	$5-$50 million	Social licence and implementation	unknown	Impact on low income travellers	Alternative longer route	New technology in s small town appears inappropriate	User to describe...		Progress	
Manage demand	3	Congestion Charging	3	1. Low	2	5. Red (difficult/complex)	5. Red (difficult/complex)	4.Red/amber	5+ years	$5-$50 million	Social licence and implementation	unknown	Impact on low income travellers	Alternative longer route	New technology in s small town appears inappropriate	User to describe...		Discontinue	
Best use of the existing system	4	Tidal laning (2+1)	3	3	1. Low	3.Amber	4.Red/amber	3.Amber	2-5 years	$5-$50 million	Social licence and implementation	unknown	Nil material			User to describe...		Progress	
Best use of the existing system	5	Four lane Southbrook Rd within existing road reserve	5. High	3	2	1. Green	2.Amber/green	2.Amber/green	2-5 years	$5-$50 million	Community adverse response	unknown	Nil material			User to describe...		Progress	
Best use of the existing system	6	Increase PT frequency	2	2	1. Low	1. Green	1. Green	1. Green	5+ years	$1-$5 million	Funding	unknown	Nil material		Unlikely to be effective in changing patterns	User to describe...		Discontinue	
Best use of the existing system	7	Upgrade western route	1. Low	1. Low	1. Low	1. Green	1. Green	1. Green	2-5 years	$5-$50 million	Limited risk	unknown	Nil material		Does not meet objective for East Rangiora growth	User to describe...		Discontinue	
New infrastructure	8	Construct REL Sbk to Northbrook (West of WWTP)	5. High	5. High	4	2.Amber/green	1. Green	2.Amber/green	2-5 years	$5-$50 million	Normal risk profile. Land acquisition	High value water resources	Waterways	Good design and restoration		User to describe...		Progress	
New infrastructure	9	Construct REL Sbk to Northbrook (East of WWTP)	5. High	5. High	4	2.Amber/green	1. Green	2.Amber/green	2-5 years	$5-$50 million	Normal risk profile. Land acquisition	High value water resources	Waterways	Good design and restoration		User to describe...		Progress	
New infrastructure	10	Construct REL Lineside to Northbrook	5. High	5. High	4	2.Amber/green	1. Green	2.Amber/green	2-5 years	$5-$50 million	Normal risk profile. Land acquisition	High value water resources	Waterways	Good design and restoration		User to describe...		Progress	
New infrastructure	11	Park and Ride upgrade	1. Low	1. Low	1. Low	2.Amber/green	1. Green	2.Amber/green	2-5 years	$1-$5 million	Effectiveness	Unknown	Nil material		Unlikely to be effective in changing patterns	User to describe...		Discontinue	
New infrastructure	12	Mass rapid transit	2	2	1. Low	5. Red (difficult/complex)	3.Amber	3.Amber	5+ years	$50+ million	Funding and delivery	Unknown	Unknown		Unlikely to be effective in changing patterns sufficiently	User to describe...		Discontinue	
New infrastructure	13	New western bypass	2	1. Low	1. Low	1. Green	1. Green	2.Amber/green	5+ years	$50+ million	Landowner and funding	High value water resources	Waterways	Good design and restoration	Does not meet objective for East Rangiora growth	User to describe...		Discontinue	
New infrastructure	14	New eastern bypass - Fernside to Coldstream Rd	5. High	5. High	4	1. Green	1. Green	2.Amber/green	5+ years	$5-$50 million	Landowner and funding	High value water resources	Waterways	Good design and restoration		User to describe...		Progress	
New infrastructure	15	Widen and four lane Southbrook Rd	5. High	5. High	4	1. Green	1. Green	3.Amber	5+ years	$5-$50 million	Community adverse response	unknown	Private impact	Purpose of built and improved private land		User to describe...		Progress	

Note: Please copy the row above to add a new alternative or option

Attachment H: Long List Multi Criteria Assessment

	Criteria		Likely Investment Objectives			Critical success factors				Opportunities and Impacts			Base Ranking			What if Scenarios: If we weighted towards:					
			33%			33%				33%						Investment Priorities		Economics		Social & Cultural	
			Unlocks land for	Reduces travel	Improves safety	Affordability	Risk to delivery	Value for money	Resilience	Environment and	Social and Landscape	People & Property									
			45%	45%	10%	35%	35%	30%	5%	40%	30%	30%									
	Options		15%	15%	3%	12%	12%	10%	2%	13%	10%	10%	Weighted score	Rank	Shortlist	Weighted	Rank	Weighted	Rank	Weighted	Rank
DM	Do Minimum		0	0	0	0	0	0	0	0	0	0	0	4	Y						
	Southbrook Road																				
A.1	Southbrook Four laning – within existing road reserve	$21.5 M	0	1	-3	-1	-2	1	1	0	-2	-3	-0.68	6		0.15	8	0.25	5	-1.35	7
A.2	Southbrook Four laning – within wider road reserve	$38.9 M	0	1	-1	-2	-3	1	1	0	-2	-3	-0.85	8		0.35	6	0.25	5	-1.25	6
A.3	Southbrook three laning – tidal flow 2+1 within existing road reserve	-	0	1	-3	-1	-3	1	1	0	-2	-2	-0.7	7		0.15	8	0.25	5	-1.14	3
A.4	Congestion charging / Time of Use	-	0	1	-1	-2	-3	-3	0	0	-3	-1	-1.17	10		0.35	6	-1	9	-1.24	5
	Eastern Alignments																				
B.1	Eastern Link - west route	$34.9M	3	3	3	-2	3	3	3	-2	0	-1	1.1	1	Y	3	1	1.75	1	-0.87	1
B.2.1	Eastern Link – east route to WWTP roundabout	$35.7M	3	3	3	-2	2	3	3	-2	0	-1	0.98	2	Y	3	1	1.75	1	-0.87	1
B.2.2	Eastern Link – east route to Lineside Rd	$32.9M	3	3	1	-2	-1	2	3	-2	0	-2	0.37	3	Y	2.8	3	1.5	3	-1.18	4
B.2.3	Eastern Link – east route to Fernside/Youngs	$40.9M	3	2	3	-2	-2	1	3	-3	-3	-2	-0.37	5		2.55	4	1	4	-2.04	8
C	Eastern Bypass	$44.6M	2	2	2	-2	-3	-1	3	-3	-3	-3	-0.97	9		2	5	0.25	5	-2.3	9

Attachment I: Multi Criteria Shortlist Assessment

Type of Criteria	Criteria	Considerations	Option A: Four Laning Southbrook Road	Option B.1 : REL west of WWTP (designated route)	Option B.2.1 REL east of WWTP	Option B.2.2 REL east of WWTP to Lineside Rd
Investment Objectives	Improve accessibility from East Rangiora development area to SH1 by 3 minutes by 2038 (30%)	Measure 1: Travel time improvement from Area of East Rangiora greenfield land to SH1 (Lineside Road) Measure 2: Proportion of population living within 10 mins (am peak) of Southbrook Industrial Area (%) Measure 3: Reduce sideroad delays accessing Southbrook Road (secs)	2	2	2	2
	Reduce am peak travel time between Lineside and Northbrook Road by 40% by 2038 (55%)	Measure 1 Proportion of population within 10 mins of Southbrook Measure 2 Time to travel from Southbrook to Northbrook Road (Mins) Measure 3:Improvement in travel time reliability (comparing peak to inter-peak) (%)	2	2	2	2
	Improve the Infrastructure Risk Rating on strategic roads in South Rangiora to Medium or better by 2038 (15%)	Measure 1: Number of deaths and serious injuries Measure 2: Infrastructure risk rating > medium Measure 3: Ease for locals to cross the road (and access)	-2	2	2	1
Critical success factors	Affordability	Current budget is $35 million	-1	-2	-2	-2
	Deliverability (achievability)	Note advice in slide pack, Consenting, schedule, construction and land acqusition key risks	2	2	0	0
	Value for money	Economic metrics below	1	3	3	3
Opportunities and Impacts	Te ao Māori	Workshop deliberations	-1	-1	-1	-2
	Environment and ecology	Workshop deliberations	-1	-1	-1	-2
	Social and Landscape	Workshop deliberations	-3	1	1	1
	Private Property and immediate neighbours	Workshop deliberations	-3	2	0	-1
Economic indicators	Benefit Cost Ratio	Stantec Economic Assessment	2	4.8	4.3	5.0
	BCR (Govt)	Stantec Economic Assessment	2.2	7.7	6.7	8.0
	Net Present Value ($millions)	Stantec Economic Assessment	33.6	223.8	194.6	221.2
	First year rate of return	Stantec Economic Assessment	6%	5%	6%	3%
Cost	Capital Cost (P_{50}-P_{95})	Programme Manager	$21.5 -$31M	34.9- 52.4 M	$35.7 - 53.6M	$32.9 - 49.4 M
	Public sector cost (P50-P95)	Programme Manager	$5.4 - $7.75	$17.5 - 26.2 M	$17.9 - 26.8M	$16.5 - 14.7M
		Raw unweighted sum	-4	10	6	2
		Investment Ovjectives (weighted)	1.5	2.1	2.1	1.95
		Critical Success Factors (unweighted)	2	3	1	1
		Opportunities and impacts (unweighted)	-6	5.8	3.3	-4
		Rank	4	1	2	3