

SH2 Pokeno to Mangatarata
Re-evaluation summary

24 October 2018

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EXECUTIVE SUMMARY

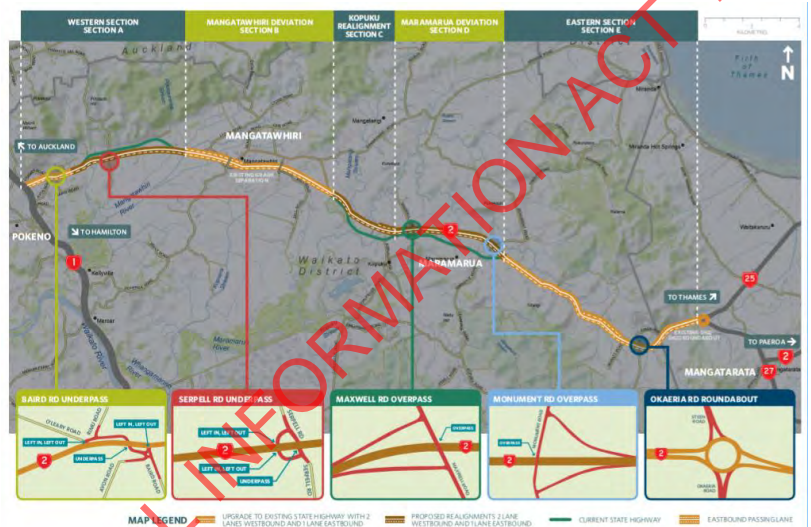
SH2 between Pokeno and Mangatarata has a ONRC classification of a Regional route, providing an important inter-regional access link between Auckland to the north via SH1 and the Bay of Plenty and Coromandel to the east. Based on a recent survey, approximately 25% of vehicles currently using this section of SH2 have a destination of Tauranga.

It is therefore imperative that is a safe and reliable transport connection for the customers using it. Currently that is not the case, the safety performance does not meet the levels commensurate with this classification with 34 DSIs over the last five years.

There has been sustained transport growth along the corridor at approximately 4% per annum for over 5 years and this is further exacerbating the safety and access challenges in the corridor.

With a renewed focus from the GPS 2018 on safety and access, the long-term strategy for this critical corridor has been reviewed and refined. This refined approach includes:

- The current board endorsed option is considered the right long-term option, however the two Maramarua grade separated interchanges standing out as not being justified with at grade options in these locations providing an appropriate level of access. There may be an opportunity to rationalise these two access points as well to further improve a value for money outcome.
- The implementation has been considered as well and the following implementation plan is proposed:
 - **In the short term:**
 - Implementation of speed management throughout the corridor
 - Secure designation and property (where best value for money is achieved via an offline alignment) for the long term solution
 - Implement travel demand initiatives including trip reliability information for customers
 - Identification of online safety works for sections B, D and E
 - **In the medium term:**
 - Implement Section A, to enable a safe transition onto SH2 from SH1 and merge onto SH1, and improve safety. The design is likely to be based on 2+2 form to enable safe transition from SH1 onto SH2, and merging onto SH1. A grade-separated intersection is planned
 - Implement (2024/27) one of remaining sections to reduce safety risk. The form will be based on a 1+1 safe and wide carriageway with centre and side barrier, passing opportunities where appropriate, and a safe speed limit. Section to be implemented should be based on emerging safety priority closer to the time.
 - **In the long term:**



- Implement remaining sections (from B-E) to address safety risk
- The proposed form of a high quality safe 1+1 arrangement with passing opportunities in the longer term is considered appropriate for this corridor and strikes the right balance between catering for forecasting growth and the role of this State Highway in the wider transport system

It is important to note that this refined corridor approach focusses investment on safety as the first priority and looks to address the access needs of the corridor by firstly making best use of existing infrastructure and using this infrastructure in the most cost effective way. Also, because of the implementation period for the whole corridor, there is an opportunity to be adaptive if growth is greater than expected.

This approach is anticipated to improve the safety of the corridor and provide improved access for customers.

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1 INTRODUCTION AND CONTEXT

1.1 REGIONAL CONTEXT

SH2 between Pokeno and Mangatarata has a ONRC classification of a Regional route and provides an important inter-regional access connection between Auckland (to the north) via SH1 and the Bay of Plenty and Coromandel to the east. The route currently carries in the order of 17,000vpd. Based on a recent survey over three days, approximately 25% of vehicles currently using this section of SH2 have a destination of Tauranga.

In August 2015, the Transport Agency Board agreed the strategic context for key upper North Island journeys. The direction was to focus primarily on delivering safety and then predictable journey outcomes from Pokeno to Tauranga via SH2 and efficiency and freight outcomes on the key journey from Auckland to Tauranga via SH1/SH29. Travel time savings on SH2 were not a priority, as this could undermine the preferred freight function on the SH1/SH29 corridor. This strategy is currently still in effect and is shown in the figure below from the Transport Agency Long Term Strategy View document.



It is therefore imperative that the corridor provides a safe and reliable transport connection for the customers using it. Currently that is not the case, the safety performance does not meet the levels commensurate with this classification with 34 DSIs over the last five years.

There has been sustained transport growth along the corridor at approximately 4% per annum for over five years and this is further exacerbating the safety and access challenges in the corridor.

This route experiences poor travel time reliability at weekends and during peak holiday periods given the inter-regional access it provides between Auckland and the Bay of Plenty and Coromandel Peninsula. The travel time reliability also extends to SH1 southbound

between Bombay and the SH1/2 interchange as this section of SH1 is impacting from queues on SH2 blocking back to SH1.

1.2 PROJECT CONTEXT

The Pokeno to Mangatarata project was approved by the Transport Agency board in 2016 and identified a number of improvements for SH2 between Pokeno and Mangatarata, including offline and online improvements to primarily address safety.

This work was done prior to the business case framework being embedded in the Transport Agency decision making process. The Transport Agency board approved investment objectives for the wider strategic direction for the transport network between the Waikato and Bay of Plenty included:

- a. *the strategic direction for the transport network in the Waikato and Bay of Plenty regions is to continue to focus on delivering clearly defined outcomes of:*
 - i. *efficient freight supply chains through travel time savings on the key journey from Auckland to Tauranga (via SH1/SH29); and*
 - ii. *a reduction in deaths and serious injuries and a predictable journey from Pokeno to Tauranga (via SH2).*

The second objective applies to this project and remains valid in the new GPS context given the focus on safety and inter-regional access.

2 OVERVIEW OF RE-EVALUATION FINDINGS

2.1 PROBLEMS AND INVESTMENT OBJECTIVES

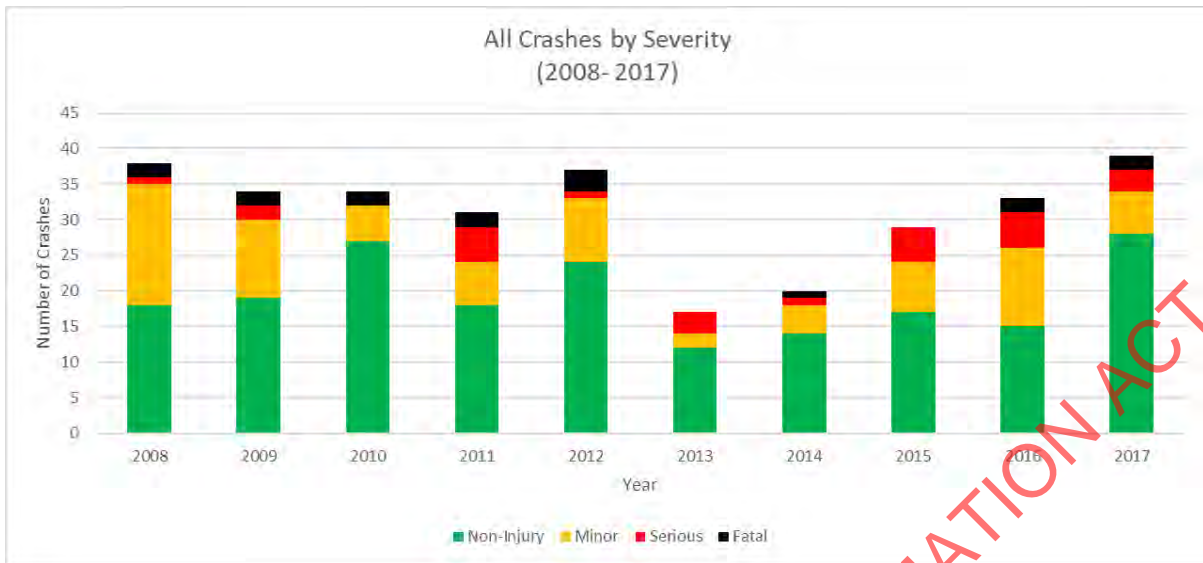
A review of the project documentation and the equivalent of the problems, benefits and investment outcomes as part of the re-evaluation processes has been undertaken. This review concluded that safety remains the primary focus of improvements in this corridor and that providing an appropriate level of inter-regional access whilst also enhancing the access of local communities along the route is of benefit.

2.1.1 SAFETY

The corridor has a very poor safety record, with 34 DSIs from 2013 to 2017. 2011 saw the introduction of a reduced speed through the majority of the corridor, from 100 to 90km/hr. This was difficult to implement at the time due to local stakeholder input and feedback.

Significantly, of these crashes, the majority were head-on and failure to keep left incidents. Fatigue is also over represented factor in crashes in the eastbound direction of the route. We also note that there is a wide mix of users in the corridor, including freight, tourists, locals and others.

The route is also predominantly either 2 or 3 star rated as per the KiwiRAP ratings system and based on the ONRC classification, the route should be 3-4 star. This shows that the form of the infrastructure is a substantive contributing factor to the current safety record.



2.1.2 ACCESS – INTER REGIONAL

SH2 provides an important access function to regions south of Auckland. As shown in the figure below in the order of two thirds of the traffic on this section of SH2 travels to the Coromandel or other communities along SH2 or SH27 prior to Tauranga, with approximately 25% of traffic heading to Tauranga and the remainder heading further south.



Growth in these areas has driven a corresponding high level of growth in traffic in this corridor. The 2017 AADT in section A of SH2 is approximately 17,000vpd, including over 12% HCVs. Growth over the last 5 years has been just under 4% per annum, which is very high.

2.1.3 ACCESS – CHOICE

There are two aspects to transport choices that impact on this corridor, being:

- Mode
- Route

There is very limited travel choice for customers in this corridor and as a result private vehicles make up the significant majority of trips in the corridor. There are limited inter-regional buses service.

For freight the East Coast Main Trunk (ECMT) rail line from Tauranga to the Main trunk line is heavily utilised and provides a viable alternative for some freight services. However, the relatively high HCV volume on this section of SH2 and the known destinations indicates that a lot of this potential demand has already been taken up by the rail line.

Route choice is another important access consideration in this corridor. With 25% of the current trips in this section of SH2 heading to Tauranga, the completion of the Waikato Expressway will further enhance the SH1/29 route to Tauranga, as will the increased development and urbanisation of SH2 closer to Tauranga. These aspects are forecast to reduce the number of vehicles using SH2 to access Tauranga, particularly for heavy vehicles, with upto 3,000 vehicles forecast to 'switch routes' once the Waikato expressway is complete.

Even with this forecast 'switch', the level of traffic on SH2 is still forecast to be well over 15,000 vpd on opening of the Waikato Expressway.

2.2 INTEGRATED LAND USE, TRANSPORT PLANNING AND MODE NEUTRALITY

There are a number of opportunities in this corridor to drive different transport outcomes with the appropriate approach and desire. There is some development potential along the corridor, however other corridors are favoured for development. There is continued growth in tourism activity along the east coast of the Bay of Plenty and the Coromandel that comes through this corridor and there could be opportunities to better serve these customers and provide enhanced facilities and opportunities in this section of SH2 .

Rail is another potential option for travel along this route as discussed previously. The rail line is currently used for freight, however a proposed passenger service between Auckland and Tauranga could reduce the share for single occupancy vehicles for this component of the trips along the corridor. Whilst not forecast to be transformative, this still represents an opportunity to delay further transport investment in the road corridor and provide time for other interventions to be implemented.

2.3 TECHNOLOGY

In addition to futureproofing for new technologies, there should be consideration of the use of other technologies such as traveller information signs, variable message signs and future EV charging locations.

This will provide customers with a greater level of information upon which to make choices. This could be particularly effective in this corridor with the number of tourists who could use greater information to better plan trips and also provide real time travel time comparison of different routes.

3 RECOMMENDED PROGRAMME

3.1 PROPOSED PROGRAMME

The conclusion from the re-evaluation is that there is a case for investment to address a significant level of service gap for safety on this section of State Highway 2 between Pokeno and Mangatarata.

Given the relatively small land use aspirations in the corridor the need for grade separated access along the route is not considered a priority.

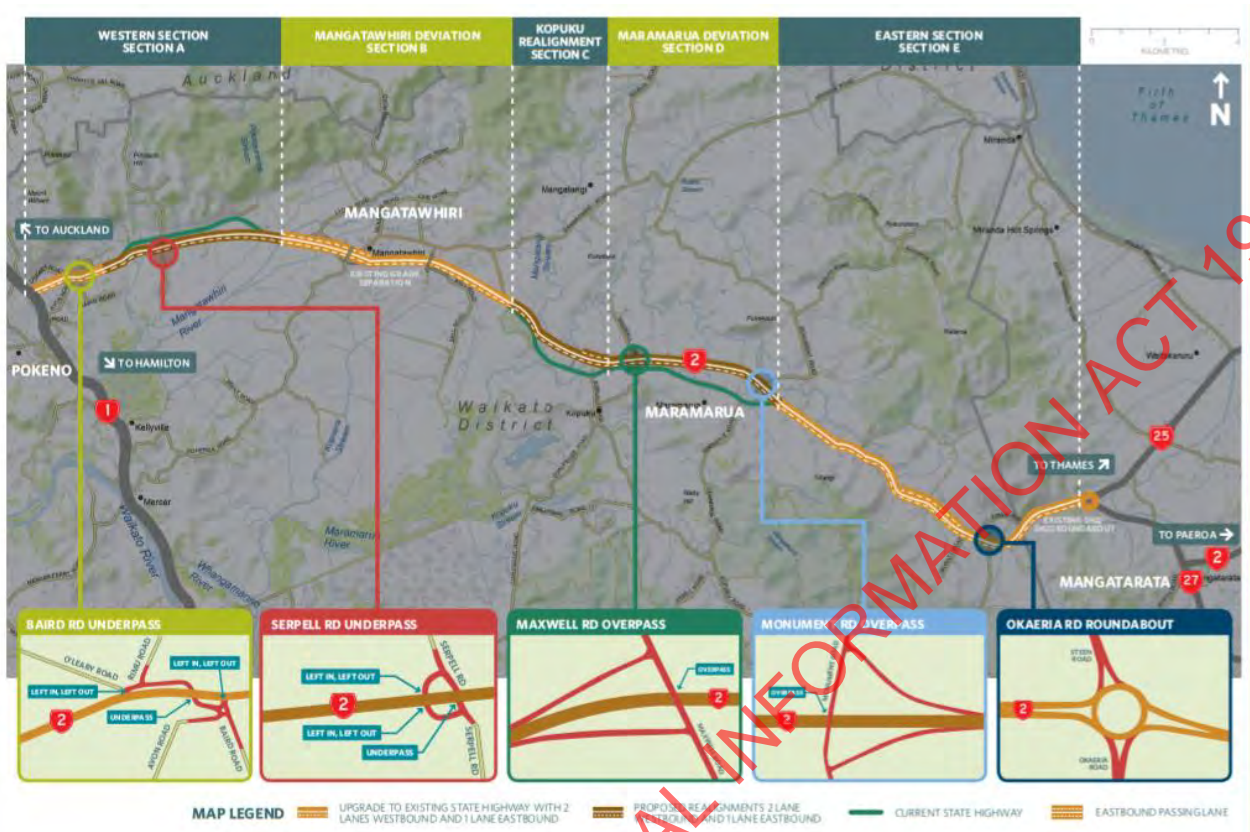
There is also an immediate and substantial safety problem in the corridor that needs to be prioritised and the interventions required are not only physical but also non-physical and it is recommended that these non-physical interventions are given the same (if not greater) priority.

Therefore the recommended investment direction for the corridor is:

- A safer SH2 corridor that interfaces with local communities along the corridor
- Non-infrastructure interventions are given the same priority as physical interventions
- The proposed form of a 1+1 arrangement with appropriate passing opportunities in the longer term is considered appropriate for this corridor and strikes the right balance between catering for forecasting growth and the role of this State Highway in the wider transport system. Section A will require a 2+2 access arrangement to ensure the appropriate interface with SH1.

3.1.1 STATE HIGHWAY INTERVENTIONS

The current intervention for the route was approved by the Transport Agency board in 2016 as outlined below at a cost of \$278M and to be implemented in stages over the next 14 years:



Based on a re-evaluation of the project to consider GPS alignment it is considered that in general the alignment and form of the proposed intervention remains valid. There is however significant cost implications of providing the grade separated interchanges proposed along the route. It is recommended that the two grade separated interchanges at Maramarua are replaced with at grade intersections (likely roundabouts) that would adequately manage the flows on these side roads and not adversely impact the inter-regional access needs of the corridor.

The two underpasses closer to SH1 are considered appropriate to remain grade separated due to their proximity to SH1 and the need to ensure appropriate flow of vehicles on both SH2 and SH1, particularly during busy periods of the network operation.

With the focus on safety there is the opportunity to further reduce speeds along the corridor in the short term whilst the longer and medium term safety works are progressed.

The staging of the works is also an important consideration of this re-evaluation as the corridor is relatively long in length and split into a number of different sections that lend themselves to a staged implementation (as is currently planned).

The following approach is recommended:

- **In the short term:**
 - Implementation of speed management throughout the corridor
 - Secure designation and property (where best value for money is achieved via an offline alignment) for the long term solution

- Implement travel demand initiatives including trip reliability information for customers
- Identification of online safety works for sections B, D and E
- **In the medium term:**
 - Implement Section A, to enable a safe transition onto SH2 from SH1 and merge onto SH1, and improve safety. The design is likely to be based on 2+2 form to enable safe transition from SH1 onto SH2, and merging onto SH1. A grade-separated intersection is planned
 - Implement (2024/27) one of remaining sections to reduce safety risk. The form will be based on a 1+1 safe and wide carriageway with centre and side barrier, passing opportunities where appropriate, and a safe speed limit. Section to be implemented should be based on emerging safety priority closer to the time.
- **In the long term:**
 - Implement remaining sections (from B-E) to address safety risk
 - The proposed form of a high quality safe 1+1 arrangement with passing opportunities in the longer term is considered appropriate for this corridor and strikes the right balance between catering for forecasting growth and the role of this State Highway in the wider transport system

The rationale for this staging is to address the significant safety issue in Section A, whilst also enhancing the access interface with SH1. There is also the opportunity to implement a further section in the medium term. Given how far away this is in the future, it is recommended that the section for implementation (from B-E) is confirmed based on safety need closer to the time.

The remainder of the route would occur following these two sections. This could be accelerated subject to funding.

3.1.2 OTHER INTERVENTIONS

A speed management strategy for the corridor should also be implemented, this will need to consider the trade off between improved safety outcomes from changes in speed against the degradation of access for customers.

It is acknowledged that this will be a difficult discussion with stakeholders who did not support the initial reduction in speed to 90km/hr in 2011.

3.1.3 PROGRAMME SUMMARY

The corridor is an important inter-regional connection that needs to have improved safety and reliability of travel time. The proposed programme of work responds to this by upgrading the alignment with a mix of improved alignment (on line and offline) as well as localised widening and a mix of grade separated and at grade intersections.

There will also be non-physical interventions of speed management and travel demand management.

SH2 Pokeno to Mangatarata

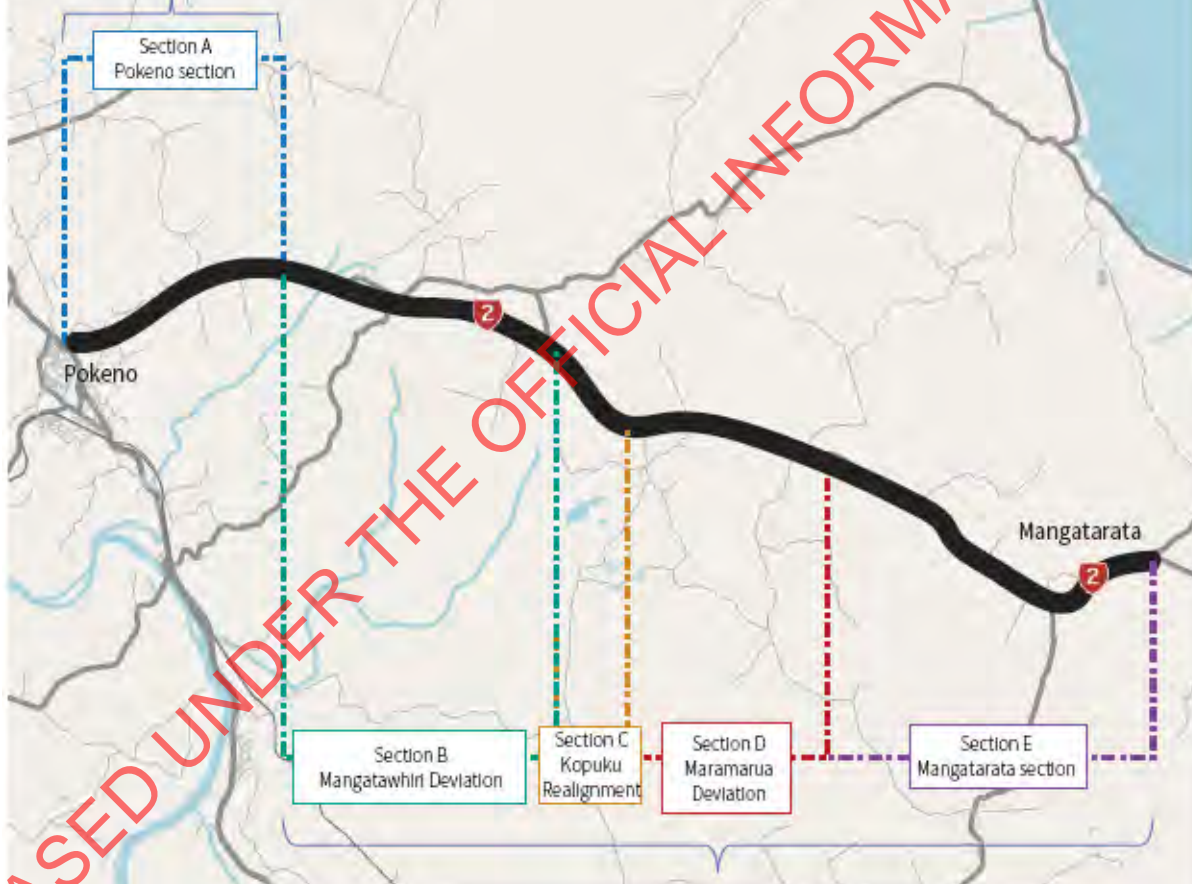
Recommended Direction

Short term initiatives (all sections)

- Implementation of speed management through corridor
- Secure designation & property for long term solution
- Implement travel demand initiatives including trip reliability information for customers

Medium term

Implement section A to enable safe transition onto SH2 & merge onto SH1

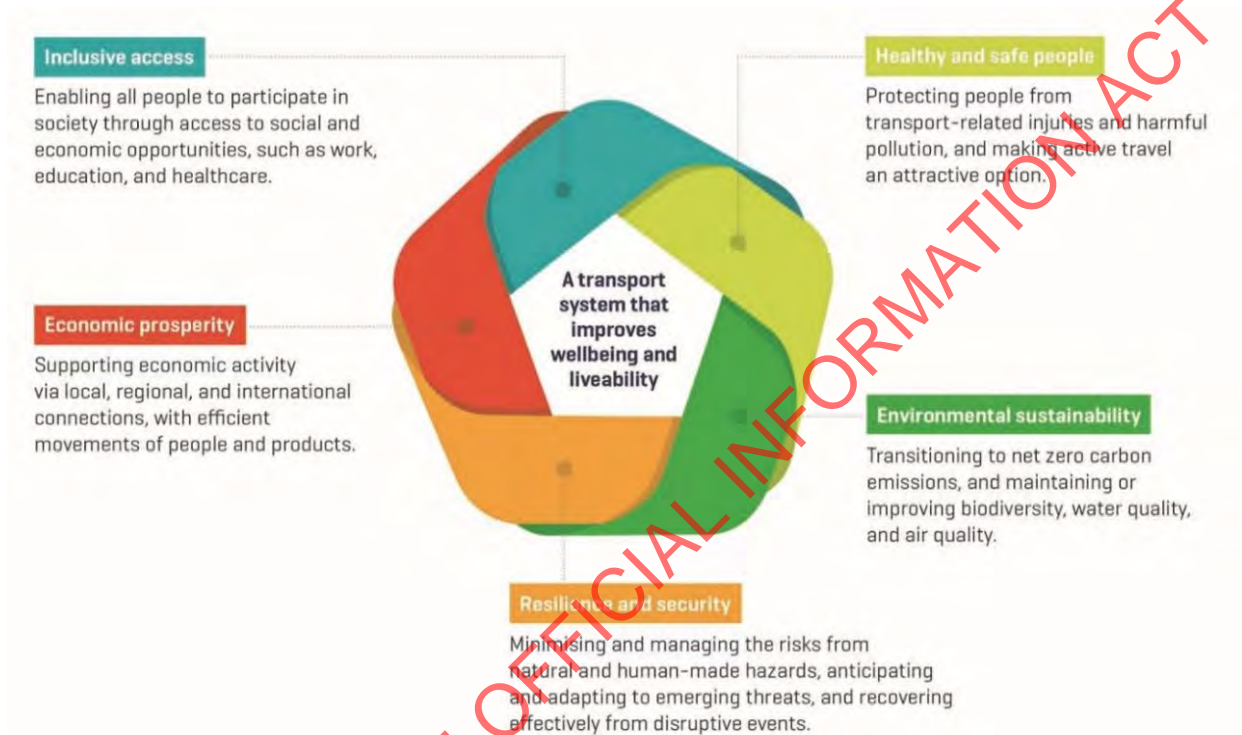


Medium term & Long term

- Implement section B, C, D & E based on a 1+1 wide corridor with centre & medium barriers, passing opportunities & at-grade intersections
- Implement one of these sections in the medium term based on safety priority

3.2 PROGRAMME IMPLEMENTATION

The table below outlines the proposed programme of work and timescales and current estimate of key benefits. In addition, an assessment of the proposals against the Government’s recently published Outcomes Framework is presented. The framework states that the purpose of the transport system is to “improve people’s wellbeing and liveability of places”. The Framework gives broad direction about how the transport system can achieve this, by contributing to five inter-related outcomes as shown.



The cost of the recommended programme will need to be determined however is considered to be less than the currently approved \$278M. The current scheme forecasts an 80% reduction in DSIs, to less than 7 DSIs every five years. A detailed analysis of the outcomes as a result of this investment has not been completed, however with the changes proposed (at grade rather than grade separated interchanges in some locations), the initial reduction in DSI would be anticipated to be slightly less.

Activity	Timing			Key Benefits	A transport system that improves wellbeing and liveability				
	Short (2018-21)	Medium (2021-27)	Long (2028+)		Inclusive access	Healthy & safe people	Economic prosperity	Resilience & security	Environmental sustainability
System Interventions									
Development and implementation speed management, including enforcement	✓			<ul style="list-style-type: none"> Contributes to DSI reduction 	L	H	L	L	L
Improved customer journey data and insights (eg VMS and travel time data) to provide improved route choice	✓			<ul style="list-style-type: none"> Contributes to greater customer choice 	M	M	L	L	L
SH Investment									
Route Protection and Property Purchase	✓			<ul style="list-style-type: none"> Contributes to long term certainty 	n/a	n/a	n/a	n/a	n/a
Section A – Pokeno		✓		<ul style="list-style-type: none"> Contributes to DSI reduction and enhanced access 	M	VH	M	M	L
Section E Mangatarata			✓	<ul style="list-style-type: none"> Contributes to DSI reduction and enhanced access 	M	VH	M	M	L
Section B - Mangatawhiri			✓	<ul style="list-style-type: none"> Contributes to DSI reduction and enhanced access 	M	VH	M	M	L
Section C – Kopuku realignment			✓	<ul style="list-style-type: none"> Contributes to DSI reduction and enhanced access 	M	VH	M	M	L
Section D - Maramarua			✓	<ul style="list-style-type: none"> Contributes to DSI reduction and enhanced access 	M	VH	M	M	L

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