



# Hamilton Southern Links Form and Function Review

29 September 2023

Final Report for Hamilton City Council Strategic Growth Committee

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# 1. Executive Summary

This document provides an overview of the findings from the Form and Function Review (the Review) of the state highway components of Hamilton Southern Links (HSL or the Project). While Hamilton Southern Links is an integrated transport network, for the purposes of the Review, the 'Project' refers to the state highway components of Southern Links and not the local road elements being developed and delivered by Hamilton City Council.

## The Form and Function Review

The review focused on changes that have occurred since the Notice of Requirements was developed in 2014, the impact of urban growth and the completion of the Waikato Expressway. The Project is not currently funded or staged within the next 10 years. The Review recommends next steps in the planning and development of the Project, to align with current national and regional policy and to support the needs of the growing Hamilton metropolitan area. This includes potential staging and phasing of the Project.

The strategic relationship between movement (of goods and people) and place were key considerations in the review. These movement and place insights would inform any future consideration of the classification of the form and function of the corridor in line with Waka Kotahi's One Network Framework.

Key insights from the Review are outlined below.

## The Project's physical and policy environment has changed

There have been several physical changes to the regional transport network and surrounding areas, including the delivery of the Waikato Expressway and significant growth and land development in South Hamilton. These developments have led to emerging areas of increased congestion and walking and cycling access constraints.

Furthermore, the policy context has changed significantly. The strategic priorities identified at both national and regional levels now include a much greater emphasis on transport choices, safety, reduction in Vehicle Kilometres Travelled (VKT), and integrated land use and transport development. Additional work is required with our partners to ensure that the development of the Project supports the achievement of these objectives. Before investing in major new infrastructure, integrated land use planning and investment is required to enable sustainable transport choices and make best use of the existing transport system.

## Improvements within the Project area should be delivered in stages

The nature of the current and future challenges, and the degree of urgency of these issues differ across the extent of the study area, shown in Figure 1, Section 2.2.

There are several short to medium term (zero to 15 year) challenges to consider, in particular:

- Asset renewals, safety and congestion issues in the eastern part of the study area, from SH3 to SH1 including SH21. This includes consideration of the forecast property and development growth in and around the Airport (Waikato Regional Airport Limited or WRAL).
- The state highway network to the northwest of the Project, and surrounding local road network in Dinsdale, has known issues, such as safety, congestion and rat-running. The Review recommends a broader review of the western Hamilton transport network to ensure appropriate improvements and management responses that deliver integrated transport outcomes.

The preferred form and function of the corridor in the middle to western portion of the Project, from west of SH3 to Kahikatea Drive, is interconnected with longer term (15-30 year+) land use development planning considerations. The future land use development plan is currently being investigated through FutureProof | Te Tau Tītōki, and further work is required before determining the preferred form and function of the transport corridor. Traffic modelling also indicated that further development of the western connection could create negative transport outcomes to the south of Dinsdale, if not managed and planned carefully.

Table 1 and Figure 1 overview the recommended **post review activities** to take the Project forward considering the outcomes from this Review. Further details, and timeframes, on these recommendations are outlined in Section 7.3, Recommended Next Steps.

Table 1: Recommended post review activities (Summary version)

Ref	Activity
A	Develop a business case in the next NLTP (2024-2027) to address the problems and opportunities on SH21 Airport Road (including the Narrows Bridge), Tamahere Interchange, Airport access, and the link from SH3 to the Waikato Expressway.
B	Develop a joint Waka Kotahi and Hamilton City Council business case (West Hamilton Network Review) in the next NLTP (2024 – 2027) to investigate transport problems around Dinsdale and south west Hamilton (including Greenwood Street, Kahikatea Drive, Massey Street etc.)
C	Make best use of the existing system, including SH3 and SH1c, and wider network planning (public transport, walking and cycling projects) before building new state highway infrastructure. This includes completing the currently underway Southern Links local road infrastructure.
D	The north-west portion of the Project (west of SH3 to Kahikatea Drive including SH1c and SH3) requires ongoing development within Future Proof   Te Tau Titoki, to develop the preferred long term development strategy and transport approach to cater for growth.



Figure 1: Post review activities

## 2. Introduction

This report presents the findings developed through the Review of the state highway components of the Hamilton Southern Links project. The Review was initiated to consider significant changes in the transport policy and planning context regionally and nationally since 2014, and to consider the impacts of changes to the physical environment, including recently delivered projects such as the Waikato Expressway. This report covers the key aspects of the Review, including:

- A review of the changes in policy and plans that influence the approach to the next steps in developing the Project.
- A desktop study of the current transport network considerations
- Transport modelling to understand the impacts of staging and sequencing of the Project.

Throughout the report, **'the Project'** refers to the State Highway components (only) of the Hamilton Southern Links project. The State Highway components are shown in purple in the below Figure 2: Southern Links designation Map (from AEE).

### 2.1. Purpose

The purpose of the Review is to:

#### **Consider the changes since the original planning work on Southern Links:**

The review aims to consider the changes that have occurred since the initial planning work for Southern Links, which took place approximately a decade ago. This includes taking into account the growth of Hamilton City, the completion of the Waikato Expressway, and the changes to regional and national policies and plans. There is a greater focus on sustainability, VKT reduction, and transport choices.

#### **Assess potential staging and sequencing of the Project:**

The review involves preliminary consideration of whether the Project could or should be implemented in stages. The Waka Kotahi intervention hierarchy is to be considered in developing the potential sequencing and staging approach. The intervention hierarchy promotes integrated planning, demand management, and best use of the existing system to optimise existing and proposed investments in the land transport system.

#### **Develop a preferred way forward:**

Noting that funding and staging for construction of the Project is yet to be confirmed within the next 10-year period, the review considers the changes that have occurred since the original planning work was carried out, and develops a preferred way forward. Whilst not charged with reviewing the funding requirements for the Project, the backdrop to this review is that funding for major transport investment is currently constrained. This has been exacerbated during the review period following the need to invest in the recovery and resilience of the wider transport network following Cyclone Gabrielle and other major weather events.

### 2.2. Scope

The scope of this review has been tailored to be appropriate for a Project with no current implementation funding and which has had significant planning and development work completed prior to the adoption of the Waka Kotahi Business Case Approach. This Review builds on the work done to date and seeks to align the future work with current business case, land use and transport planning best practices.

This Review is not a business case, nor a defined stage in the business case process. However, the Report does include some elements typically found in the "Case for Change" within the Business Case process. It also involves preliminary consideration of staging and sequencing options, similar to an indicative business case. This Review is not intended to inform a funding decision for construction. It also does not include an assessment of local roads and public transport specifically, although integrated transport system outcomes are considered.

This report focuses on the state highway components of the Southern Links project, however considers integrated transport system outcomes. Refer to the purple area in Figure 2 below for a visual representation, with a larger version available online at <https://www.nzta.govt.nz/projects/southern-links/designation-map/>

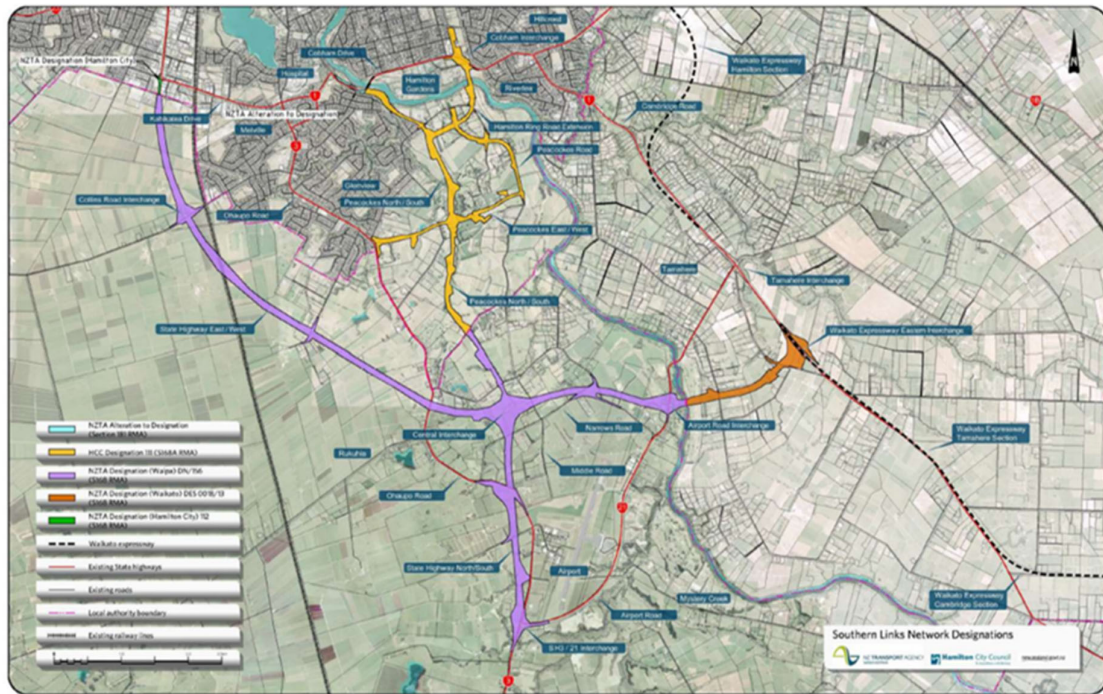


Figure 2: Southern Links designation Map (from AEE)

### 2.3. Context

A brief history of Southern Links is outlined in Figure 3 below.

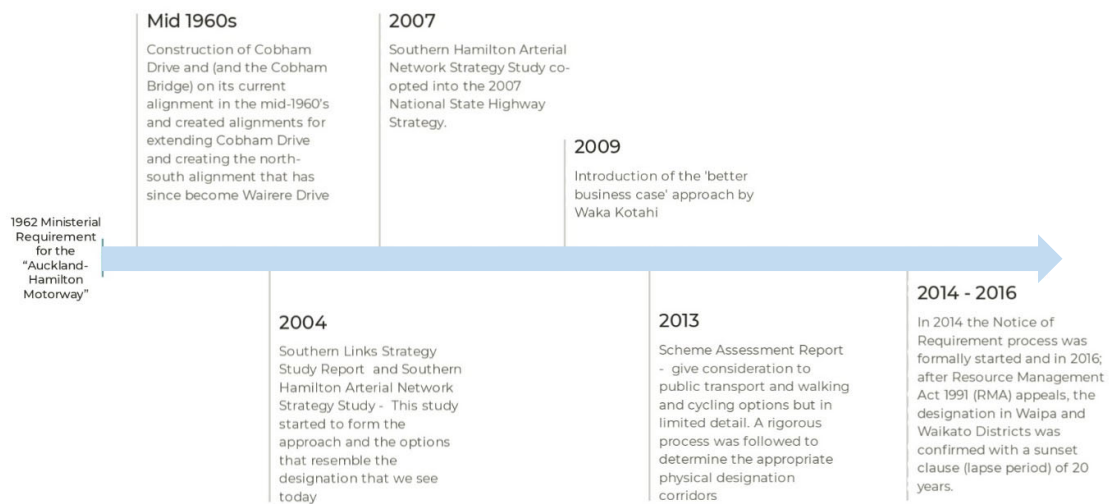


Figure 3: History of Hamilton Southern Links

## 2.4. Timing of the review

The review is considered timely due to:

### **Opening of the Waikato Expressway and Impacts on SH21 and Tamahere Interchange:**

The recent opening of the Waikato Expressway (WEx) has prompted a need to assess the potential effects on traffic flows on State Highway 21 (SH21) and the Tamahere Interchange. Understanding and addressing these effects are critical for effective planning and decision-making.

### **Completion of the Metro Spatial Plan and recommendations for Rapid Transit:**

The completion of the Metro Spatial Plan, with its recommendations for a rapid transit corridor (long term) to WRAL and the prioritisation of the link between SH21/WRAL and the WEx.

### **Growing development pressures and changing timelines:**

The increasing development pressures in the south Hamilton region, such as the advancement of the Northern Precinct at the Airport earlier than planned in 2014. The review acknowledges the evolving context and its implications for land-use planning and infrastructure development.

### **Future planning considerations:**

Land development proposals are being considered in the area bounded by Collins Road, Tuhikaramea Road, Kahikatea Drive and SH3. The Southern Links designation runs through this area. This raises the need to carefully consider how to integrate these developments with the transport network. Moreover, the Future Proof partners emphasize the importance of long-term (30+ years) planning considerations for the area. The partners will need to work together to scope the requirements of developing integrated planning work to confirm the place based strategic planning context, outcomes and direction so partners are clear and provides certainty and confidence of what appropriate and when transport system initiatives are required.

### **Funding and delivery challenges:**

Currently, there is no identified funding in the 10-year plan to deliver the State Highway components of the Southern Links project. Determining the order and sequence of delivery poses a challenge, particularly in terms of connecting the project to local roads without exacerbating existing issues or creating undesirable effects on the current and proposed urban networks.



## 3. Approach to the Review

### 3.1. Organisation

The Form and Function Review was undertaken in partnership with council and iwi partnerships, including involvement from the following governance groups in Figure 4.

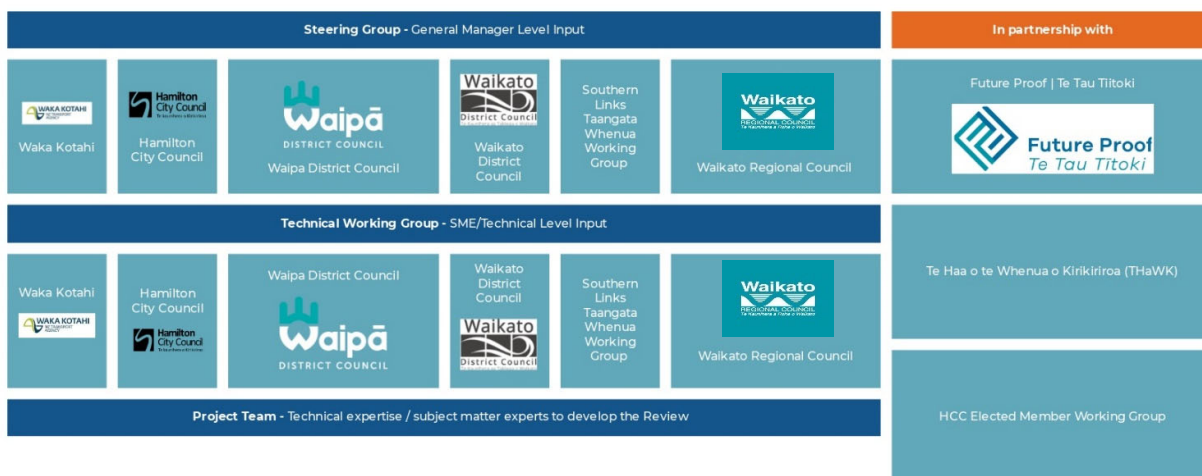


Figure 4: Governance structure

### 3.2. Taangata Whenua Partnership and Engagement

As noted in the Governance Structure above, the Review was completed with representation from the Taangata Whenua Working Group in the Steering Group and Technical Working Group.

The Taangata Whenua Working Group was established to provide input through the delivery of the Hamilton City Council components of Southern Links.

The Project Team also engaged with Te Haa o te Whenua o Kirikiriroa to seek guidance on the relevant Taangata Whenua policies and plans that should be considered in this study, and to refine the indicative post review activities set out in Section 7.

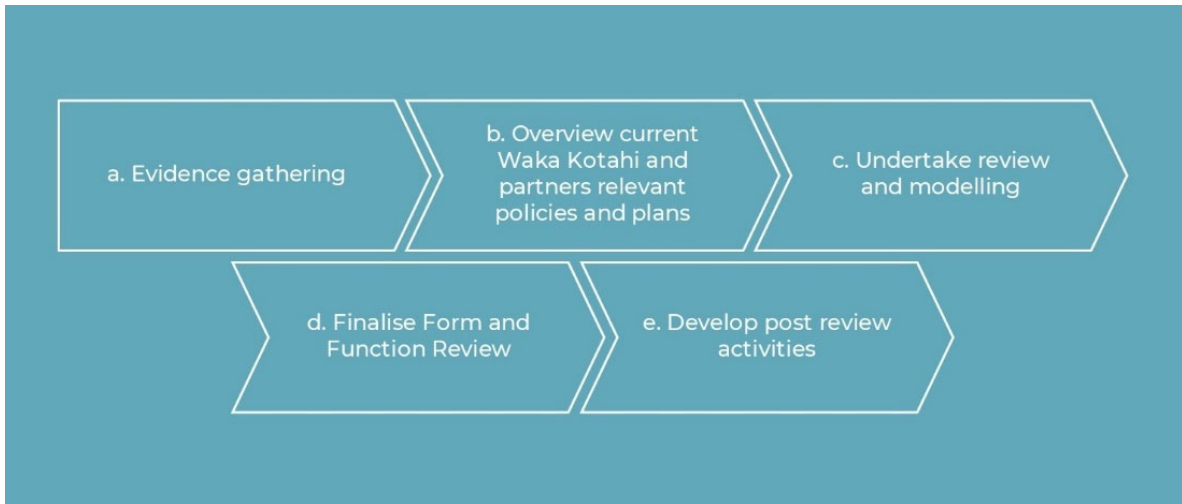
The approach to structuring ongoing involvement in the next steps, including through the proposed business cases, will be developed with Te Haa o te Whenua o Kirikiriroa and the Taangata Whenua Working Group.

### 3.3. Elected Member Engagement

The strategy for engagement during the review was developed in collaboration with Hamilton City Council and a dedicated working group consisting of Elected Members from Hamilton City Council. Engagement sessions involved Elected Members from Hamilton City Council, and Waikato District Council, with the aim of gathering information and perspectives to inform the findings and proposed future actions.

### 3.4. Methodology

An overview of the approach and methodology to the review is shown in **Figure 5** below.



*Figure 5: Methodology Overview*

## 4. Strategic Policy Review

This section overviews the national and regional strategies, policies and plans that, collectively, provide the context and guidance for the development and planning of projects such as Southern Links. There are several consistent themes across each of these documents that have driven our approach and outcomes from this Review. These cross-cutting themes reinforce the need to:

- Reduce carbon emissions from transport (by way of vehicle kilometres travelled (VKT)).
- Integrate land use and transport planning, particularly to promote greater density and compact urban form.
- Provide greater transport options, to support a mode shift from cars to sustainable transport modes such as public transport, walking and cycling.
- Develop efficient, reliable and resilient freight connections.
- Develop a transport system where no-one is killed or seriously injured.

### 4.1. National

The following national policies and plans were considered in the review.

**Government Policy Statement for Transport 2021-2031 (GPS):** The Ministry of Transport (MOT) identifies the purpose of the transport system as improving wellbeing and liveability. The current GPS priorities include safety, better travel options, improving freight connections, and addressing climate change. Southern Links aligns with these objectives, particularly in terms of freight outcomes and safety, but careful consideration is needed to ensure the Project considers climate change goals appropriately.

**Emissions Reduction Plan (ERP):** The Emissions Reduction Plan (ERP) is a policy document that aligns with international commitments to reduce carbon emissions. The ERP sets four transport targets, including reducing light fleet kilometres, increasing zero-emissions vehicles, reducing freight transport emissions, and decreasing transport fuel intensity. Integrated land-use planning, urban development, and transport planning are emphasised in the ERP, aiming to reduce emissions and incentivise sustainable travel options. The ERP proposes that “*new investment for transport projects [such as Southern Links] to demonstrate how they will contribute to emissions-reduction objectives and set a high threshold for approving new investment for any transport projects if they are inconsistent with emissions-reduction objectives.*”

**Waka Kotahi - Arataki (10-year Plan):** Arataki is a 10-year plan by Waka Kotahi NZ Transport Agency that outlines the government’s priorities and long-term outcomes for the land transport system. It informs decision-making and partnership in planning and investment tools. For the Waikato region, the plan focuses on improving urban form, transforming urban mobility, and significantly reducing harm. The intervention hierarchy within Arataki emphasises land use changes and maximising existing infrastructure before considering new infrastructure.

**Waka Kotahi - Toitū te taiao - our sustainability action plan:** This plan demonstrates a commitment to environmental sustainability and public health in land transport. The action plan identifies priorities including reducing greenhouse gas emissions, fostering sustainable urban access, and integrating land use and transport planning. These priorities extend to major projects like Southern Links, emphasising the need to minimise carbon emissions, aligning with the goal of a low-emission economy. The plan indicates that Southern Links and similar initiatives will undergo rigorous evaluation to ensure sustainable outcomes and contribute to the national objective of reducing emissions.

**National Freight and Supply Chain Strategy (MoT):** This strategy, launched in mid-2021, focuses on the freight and supply chain system, highlighting key vulnerabilities and barriers. Stakeholders identified issues such as just-in-time efficiency prioritisation, difficulty in shifting between freight options, reliance on international shipping lines, suboptimal competition settings in New Zealand ports, and limited data on the freight sector. Climate change, shipping, and technology change were recognised as significant challenges and opportunities. Stakeholders agreed on the vulnerabilities but questioned whether there would be sufficient commitment to address them post-COVID-19 disruption. The completion of the final

strategy is expected by the end of 2022 or early 2023, with a need to further understand the freight needs of Hamilton and how the Southern Links Project may contribute to them.

## 4.2. Regional

The following regional policies and plans were considered in the review.

**Hamilton Waikato Metro Spatial Plan V1 (September 2020):** The Hamilton Waikato Metro Spatial Plan outlines a vision for the future, focusing on six key moves including improving transport, creating vibrant urban centres, and addressing environmental concerns. The plan emphasises the importance of developing a rapid public transport network, a well-designed road network for freight and movement, and an active mode network prioritising pedestrians.

**The Hamilton Waikato Metro Spatial Plan Transport PBC:** The Transport Programme Business Case (PBC) for the Hamilton Waikato Metro Spatial Plan analysed different network approaches to achieve its desired outcomes. It concluded that increased density within existing urban areas and surrounding towns is crucial for an affordable public transport network. The PBC emphasised the need for a shift to a multimodal transport network that connects the metro area and enables a step change in public transport use through the establishment of a rapid and frequent public transport network. The preferred option identified three rapid transit corridors. Southern Links has an important role to play in connecting planned growth areas to the Airport and SH3, considering the locations of freight hubs.

**Future Proof Strategy 2022:** The strategy emphasises a shift to a multi-modal network and notes the importance of the Hamilton to Auckland corridor. By the end of 2024, the Future Proof Strategy will undergo a review, including ensuring that it fulfils the requirements of a Future Development Strategy (FDS) under the National Policy Statement on Urban Development 2020. This is required to be completed by 2024. Considering this, further work is needed to finalise the development strategy, particularly in the area between Southern Links and the city. The outcomes from the development strategy will be integral to determining the appropriate form and function of the state highway components of Southern Links. The preferred form and function of the corridor would be different between various scenarios where the adjacent land is rural, urban or peri-urban. One practical example of this is the number of access points (intersections and interchanges) required from the transport corridor to the surrounding land would differ under different scenarios.

**Regional Land Transport Plan 2021-2035:** The RLTP (Regional Land Transport Plan) prioritises several key areas for transportation development, including ensuring efficient and effective strategic corridors in growth areas like the Hamilton-Waikato metro spatial area and the Hamilton to Auckland Corridor. It also emphasises improving road safety, providing better transport options for urban and rural communities, and meeting climate change responsibilities by shifting towards a net carbon zero transport system. Southern Links aligns strongly with the economic objectives of the RLTP. However, there is a need for future work to incorporate consideration of climate change goals.

## 5. Operational Considerations

This section provides details of the current and future issues that also warrant consideration with respect to this review. This helps to set a broader picture of why the Southern Links project exists and overviews the operational considerations. Several consistent themes emerged, which are presented below. Icons are used as a reference to these themes in the following section and in **Figure 6**. These icons are only intended to represent the 'key' themes in each part of the corridor and it is acknowledged that broader considerations exist.



### Walking and cycling considerations



### Road safety considerations



### Public transport, freight and general traffic considerations



### Maintenance and renewals considerations

**1. Tamahere Interchange:** Deficiencies in walking and cycling facilities have been identified at the interchange. Previous work completed here recommended an interim improvement scheme along with measures to reduce traffic speeds. It was also noted that if traffic volumes continue to grow without the implementation of the Southern Links corridor, an underpass may be required in the future. The report also noted increasing delays at the interchange due to rapid residential and industrial growth, which could worsen with further development at the Airport.



General traffic delays are increasing at this location due to unforeseen higher levels of east-west traffic movement than anticipated during the planning of the WEx, potentially caused by the rapid growth of residential and industrial areas in the surrounding Waikato District.

**2. Narrows Bridge:** Operational concerns and near misses have been reported at the Narrows Bridge, which is narrow in width and poses risks as interregional freight trips increase. The bridge's design and width limitations lead to ongoing issues with vehicles mounting the kerbed area, increasing the risk of a bridge strike.



The bridge is situated at a narrow point in the Waikato River, it is vulnerable to increased water velocity and rising water levels during storms. A previous investigation indicated that attempts to reinforce the riverbanks at this location would result in scouring at the riverbed. In 2010, significant scouring under the upstream eastern pier was discovered, leading to major rehabilitation efforts. However, these measures have a limited lifespan of approximately 30 years.

The bridge, completed in 1939, is approaching its 100-year lifespan, and a forthcoming inspection in 2024 will determine if further remedial work is necessary. While some low-

cost management changes are proposed, a longer-term analysis and potential remedial work may be required after the next inspection in 2024.

**3.SH3 - From SH21 Roundabout to Normandy Avenue:** The SH3 corridor has a mix of single-lane and dual-lane sections with safety improvement needs, including safety improvements at SH3/Raynes Road and possible closure of access at Hall Road. There are current projects in planning on the urban sections of SH3 to support mode shift outcomes, such as better bus facilities and transit lanes with improved cyclist safety.



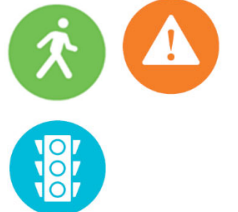
**4.SH1c - Between SH3 and Killarney Road:** SH1c Greenwood Street would potentially require dual-laning when Southern Links is implemented. There are investigations underway into potential safety improvements at Greenwood Street and Kahikatea Drive. Rat running and freight volumes are additional considerations in this area.



**5.SH1c north of Killarney Road:** Beyond the Killarney Intersection, the SH1c route faces transport challenges due to multiple driveway accesses, a mix of commercial and industrial premises, and the need to accommodate high traffic volumes from residential areas accessing the CBD and southeast of the city. Intensification along the corridor may require additional intersection controls, impacting its capacity. To address the complex mix of travel demand and land use, further examination is planned through the Freight Study and the proposed SH23 West Hamilton Network Review involving community engagement.



**6.SH1c between the Waikato Expressway southern interchange and Cobham Drive:** The corridor along SH1c has experienced improved traffic conditions due to the WEx project, particularly from Wairere Drive to the City Centre. However, traffic volumes are forecast to continue to grow on this corridor which will likely require further investigation. The section between Riverlea and Wairere Drive has high access levels and consists mainly of residential areas, accommodating both local and regional traffic. Road space reallocation and mode shift opportunities exist in this corridor, with potential for improving bus frequencies and considering options to reduce private vehicle travel between Cambridge and Tamahere. Safety improvements, such as addressing pedestrian severance in Hillcrest, may be needed, and further analysis is ongoing regarding lane requirements and the shared path implementation.



**7. Network impact following the Waikato Expressway opening:** The opening of the WEx has resulted in marginal traffic volume decreases on SH3, varied changes on SH1c, and significant volume increases on Wairere Drive and the eastern section of SH1c. Recent data suggests that the initial volume drops may be receding. In terms of freight, SH3 carries a significant portion of traffic related to existing development in Frankton, while future freight volumes beyond Frankton have decreased. Industrial and logistics developments are concentrated near the WEx, including sites like Horotui, Crawford Street, Ruakura Superhub, Hautapu, and the Airport. Encouraging freight traffic to utilise limited access corridors like the WEx aligns with the original intentions of the Southern Links Project.



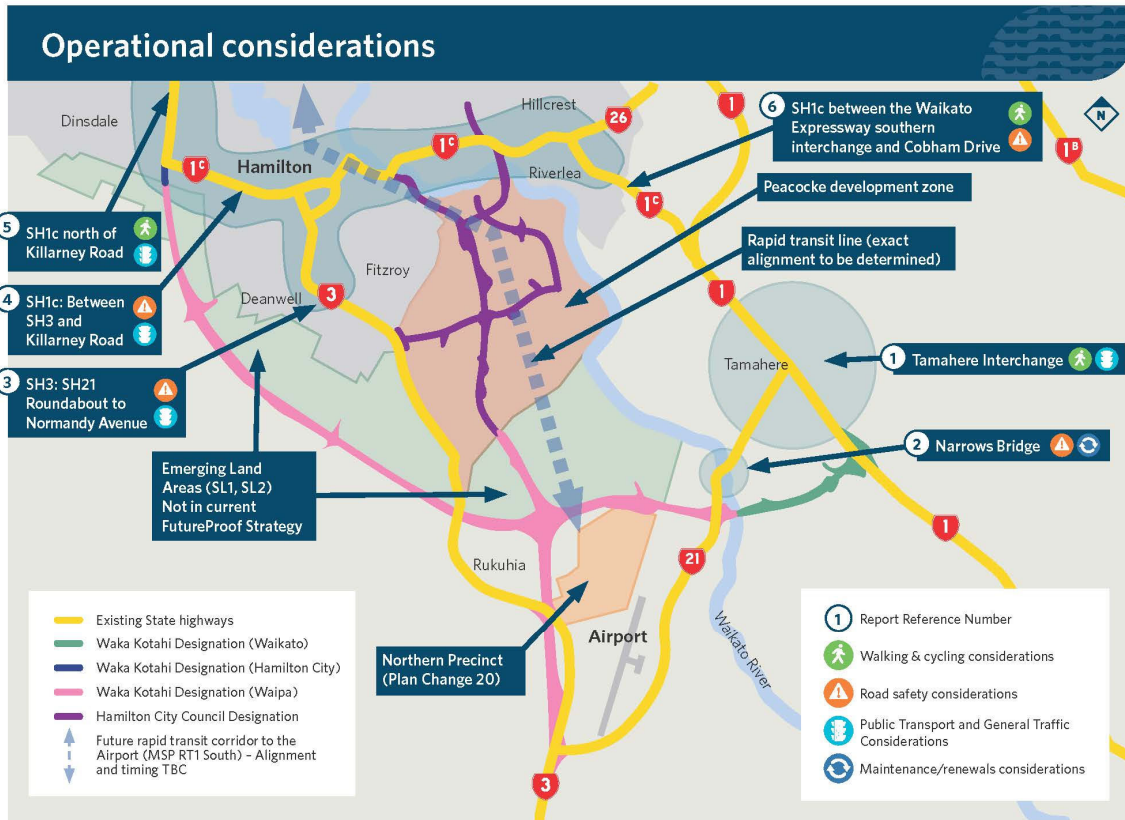


Figure 6: Local transport and land use considerations for Southern Links

### 4.3. Insights

There are several short to medium term (zero to 15 years) challenges to consider in the eastern part of the study area, from SH3 to SH1 including the SH21 connection. These include asset renewals, safety and congestion, and forecast property and airport related development growth. Likewise, the state highway network to the north west of the Project, and surrounding local road network in Dinsdale, has known issues, such as safety, congestion and rat-running, that need to be addressed in the short to medium term (Zero to 15 years).

The preferred form and function of the corridor in the middle to north western portion of the Project, from SH3 to Kahikatea Drive, is interconnected with longer term (15-30 year+) land use development planning considerations. The future land use development plan is currently being investigated through FutureProof | Te Tau Titoki, alongside work being undertaken by Hamilton City Council on future industrial land supply.

## 6. Transport Modelling Analysis

This section overviews results from the land use and transport modelling carried out to inform the recommendations on staging and sequencing the Project. The Waikato Regional Transport Model (WRTM) was used to forecast travel demand and congestion on the transport network. The modelling supports to identify where and when there are predicted capacity constraints on the transport network, which is useful to support staging considerations.

### 6.1. Model limitations

All transport models have limitations, in that they are based on a range of assumptions of future travel behaviour, land use and network changes. In this case, the specific limitations of note are:

- The demand for travel (or number of trips made) in the model is not impacted by how long it takes for people to make the trip. However, in reality, there is increasing evidence to show that more people will choose to make a trip if the journey is made faster (induced demand) or will choose to delay or avoid travelling at peak congestion times if the trip is slow (peak spreading).
- The Waikato Regional Transport Model (WRTM) currently only uses three stages of the potential four stage modelling process. The 'mode split' stage, which is not currently used, relates to how trips choose different modes (car, bus, walking or cycling). Because this stage is currently not being used, the WRTM assumes that future travel choices (and mode share) will remain broadly consistent with today's travel choices. Mode shift to more efficient modes (i.e. from single occupancy car to bus) would result in improved transport performance, but this currently can't be tested in the WRTM.

Future Southern Links studies should consider or allow for the impacts of induced traffic, peak spreading, and the impact of mode shift on public transport and active modes.

### 6.2. Forecast population and employment growth

A 'land use' scenario was adopted to test three different staging scenarios on Southern Links. The land use is based on the 2018 census, with an 'interim' forecast population and employment growth approved by the Waikato Local Authority Shared Services (LASS) who administer the WRTM. This was modified with updated population and employment assumptions in the Airport precinct close to Southern Links, provided by consultants working for Waikato Regional Airport Limited.

An alternative 2041+ land use scenario was used as a sensitivity test to understand how additional land development between the southern edge of Hamilton's urban growth boundary (SL1 and SL2 in **Figure 6**) may affect the performance of the transport network beyond 2041. As a sensitivity test, this assumes that the land development is feasible and delivered by 2041, but it is not the focus of this review to determine whether the development is feasible, or desirable.

### 6.3. Transport network scenarios

The forecast transport scenarios modelled are summarised in this section. This includes a 'do minimum' scenario as a basis for comparison, and three test scenarios with different staging for Southern Links.

**Note:** The three test scenarios were not modelled for the purposes of testing three future 'end' states. Instead the three test scenarios were used to inform and test the preliminary thinking about 'staging and timing' (Refer Section 2.1, Purpose).

#### Do Minimum

The 2041 Do Minimum is a possible future where we do not invest in Southern Links, for comparison with the test scenarios. The Do Minimum does include other confirmed and funded projects to address safety issues and to enable growth, including:

- Hamilton Section of the WEx
- Roundabouts at SH3 / Raynes Road, SH3 / Ossie James Drive, and SH21 / Raynes Road



- Northern precinct collector road between a new roundabout on SH3 and Raynes Road, and
- Peacocke Structure Plan strategic network (Hamilton Southern Links local roads).

### **Scenario A – Waikato Expressway to SH21**

Scenario A includes all the ‘Do Minimum’ activities, **and** includes the first section of Southern Links from WEx to State Highway 21 and Northern Precinct. This scenario includes:

- An interchange on SH1 south of Tamahere
- A four lane link between SH1 and SH21 south of Narrows Bridge, and on to Northern Precinct
- Raynes Road is closed north of Northern Precinct, and
- Narrows Bridge is closed to vehicles but remains open to walking and cycling.

### **Scenario B – Waikato Expressway to SH3**

Scenario B includes all the ‘Scenario A’ activities, **and** extends Southern Links west to SH3 south of Raynes Road. This scenario includes:

- Re-connecting Raynes Road to Northern Precinct and Southern Links
- A four lane link between Northern Precinct and SH3, and
- A roundabout on SH3 south of Raynes Road.

### **Scenario C – Full Southern Links**

Scenario C includes all the ‘Scenario B’ activities, **and** extends Southern Links west to the SH1c Kahikatea Drive / Greenwood Street intersection to complete the full Southern Links project. Scenario C includes:

- A four lane link between SH3 and SH1c Kahikatea Drive / Greenwood Street intersection
- North facing ramps at Collins Road
- SH3 two lane realignment between SH3 / SH21 and Peacocke
- A full interchange where the realigned SH3 intersects with Southern Links, and
- A full interchange at Southern Links / SH21.

## **6.4. Findings from modelling**

### **Do Minimum**

The Do Minimum shows that:

- Significant forecast increases in traffic demand and resulting congestion are primarily due to forecast housing and industrial activity, and high growth in south Hamilton is particularly relevant to Southern Links.
- Forecast congestion on SH3 is primarily as a result of growth at the Airport and further north.
- Congestion is predicted to increase across the network. Significant congestion increases are expected at SH21 and WEx interchanges between 2026 and 2031 due to high growth associated with the Airport.
- The levels of predicted employment associated with WRAL are recommended for further investigation and testing.

### **All Three ‘Do Something’ Test Scenarios**

None of the test scenarios fully addresses congestion issues across the entire Hamilton network. Changes in network statistics for vehicle speeds, travel times, and Vehicle Kilometres Travelled (VKT) are minor at a city-wide level compared to the Do Minimum. This is expected for a single intervention of this scale.

### **Scenario A – Waikato Expressway to SH21**

The connection from the Waikato Expressway to SH21:

- Resolves significant delays on SH21 and the WEx interchanges, which are primarily caused by additional growth at the Airport between 2026 and 2031.

- Has negative effects on SH3, as traffic from existing areas south of Hamilton utilise the connection through Northern Precinct north of the Airport to access the new WEx connection.

### Scenario B – Waikato Expressway to SH3

The connection from SH3 to Waikato Expressway mirrors the effects predicted for Scenario A above, but slightly eases congestion on SH3 north of the Airport.

### Scenario C – Full Southern Links

The full Southern Links scheme:

- Is predicted to operate well within capacity along its entire length up to 2041.
- Reduces congestion on SH3 by reducing isolated sections of significant delay to minimal levels.
- Reduces delays from significant to moderate on SH1c Kahikatea Drive between the intersection with SH1c Greenwood Street and SH3.
- Contributes to further capacity issues at the Greenwood Street / Kahikatea Drive intersection and north on SH1c, because of the additional traffic volumes directed to these existing parts of the network.
- Traffic volume reductions vary, with the highest traffic reductions at SH21 between the Narrows Bridge and SH3. Volume drops at SH3 peak around 12,000 vehicles per day near the current SH3 / Raynes Road intersection.
- Carries low volumes (10-12,000 vehicles per day) on the western link between SH3 and Greenwood Street, which would not typically warrant construction of a four-lane road.
- Shows that the delivery of the Peacocke north-south arterial is potentially more attractive for trips going to and from SH3 south of SH21, and may be more attractive than the western link to Greenwood Street.

## 6.5. Key insights

Key insights from the scenario modelling:

- Significant forecast increases in traffic demand and congestion on the transport network are primarily due to forecast housing and employment growth. Investment in walking, cycling and public transport modes, which may be able to mitigate some of these predicted effects, has not been tested. The high levels of predicted employment associated with WRAL are recommended for further investigation and testing.
- The Waikato Expressway to SH21 link (Scenario A) resolves significant delays on SH21 and the WEx interchanges. This connection has enough capacity to accommodate through traffic between SH3 and WEx along SH21, plus the additional growth associated with the Airport.
- The extension across to SH3 (Scenario B) has minimal additional benefit over Scenario A, and should be investigated further in relation to the future role of Raynes Road and traffic through Northern Precinct, and
- The full Hamilton Southern Links scheme (Scenario C) operates well within capacity out to 2041 and relieves congestion and delays on SH3 and SH1c, but is predicted to increase congestion at the Greenwood Street / Kahikatea Drive intersection and north on SH1c.

## 7.2 Land Use Sensitivity Tests

Sensitivity tests were used to understand how additional land development on the southern edge of Hamilton's urban growth boundary (SL1 and SL2 in **Figure 6**) may affect the performance of the transport network beyond 2041.

The key insights from the land use sensitivity tests are:

- Development of this area will increase traffic demands and substantially increase congestion on the transport network, that cannot be accommodated without Southern Links.
- Providing access from the development areas to the western SH3 to Greenwood Street link is predicted to help to reduce this congestion. Therefore, further investigations should consider optimal land use here, and how access is provided to it from Southern Links. This should

consider planning at a neighbourhood level to decrease reliance on private vehicles (and VKT) and increase travel options via walking, cycling and public transport.

- Network statistics show that the delivery of Southern Links does not result in longer trips for vehicles compared to existing connections. However, induced traffic demand is likely to occur, which can be mitigated by providing competitive alternative mode options, and considering the timing and phasing of the Southern Links.

## 7. Conclusions and recommendations

The review conclusions and recommendations are outlined below.

### 7.1. Changes since the Notice of Requirements in 2014

There have been several changes to the regional transport network, including the delivery of the Waikato Expressway, and significant growth and land development in South Hamilton. These factors have led to emerging areas of increased congestion for public transport, freight and general traffic, and walking and cycling access constraints.

The guiding policy and plans that the Project needs to respond to have changed significantly. The strategic priorities identified at both national and regional levels now include a much greater emphasis on transport choices, safety, emissions reduction, and integrated land use and transport development. Additional work is required with our partners, to ensure that the development of the Project supports the achievement of these objectives, particularly through prioritising integrated land use planning, enabling sustainable transport choices, and making best use of the existing network before investing in major new infrastructure.

### 7.2. Staging and sequencing of the Project

The urgency and nature of the current and future challenges and considerations differ across the extent of the study area.

There are several short to medium term (Zero to 15 years) challenges to consider in the eastern part of the study area, from SH3 to SH1 including the SH21 connection. These include asset renewals, safety and congestion, and forecast property and development growth associated with the Airport. Likewise, the state highway network to the north-west of the Project, and surrounding local road network in Dinsdale, has known issues, such as safety, congestion and rat-running, that need to be addressed in the short to medium term (Zero to 15 years).

The preferred form and function of the corridor in the middle to western portion of the Project, from west of SH3 to Kahikatea Drive, is interconnected with longer term (15-30 year+) land use development planning considerations. The future land use development plan is currently being investigated through the Future Development Strategy, and further work is required here before determining the preferred form and function of the transport corridor. Traffic modelling also indicated that further development of the western connection could create negative transport outcomes to the south of Dinsdale, if not managed and planned carefully.

### 7.3. Recommended next steps

Table 2 and Figure 7 below summarises the post review recommendations that have been developed with our project partners, and informed by the Review findings.

*Table 2: Recommended Post Review Activities (Detailed Version)*

	Recommendation	Lead	Timeframe
A	Develop a business case in the next NLTP (2024-2027) to address the problems and opportunities on SH21 Airport Road (including the Narrows Bridge), Tamahere Interchange, Airport access, and the link from SH3 to the Waikato Expressway.	Waka Kotahi	Business Case to be developed in the NLTP 2024-2027 period, subject to funding.  Implementation timeframes to be developed within the business case (0-15 Years – Subject to funding).
B	Develop a joint Waka Kotahi and Hamilton City Council Business Case (SH23 West Hamilton Network Review) in the next NLTP (2024 – 2027) to investigate transport problems around Dinsdale and south west Hamilton (including Greenwood Street, Kahikatea Drive, Massey Street etc.)	Waka Kotahi	Business Case to be developed in the NLTP 2024-2027 period, subject to funding.  Implementation timeframes to be developed within the business case (0-15 Years – Subject to funding).
C	Make best use of the existing system, including SH3 and SH1c, and wider network planning (public transport, walking and cycling projects) before investment in new infrastructure.  This includes completing the Southern Links local road infrastructure (East West Corridor, Peacockes North South corridor, Cobham Drive access) and planning for a potential North-South Mass Rapid Transit Corridor.	Hamilton City Council, Waka Kotahi and Future Proof   Te Tau Tītoki	Implementation of Southern Links local road infrastructure (already commenced)  Ongoing planning through Metro Spatial Plan.  North-South Mass Rapid Transit Corridor potentially to be developed within 15-30+ years
D	The remaining aspects of Southern Links (between SH1c and SH3) require ongoing development within Future Proof   Te Tau Tītoki, to develop the preferred long term integrated planning development strategy and transport system approach to support growth and ensure optimal outcomes are achieved.  Potential future plan changes would develop the preferred land use and enabling transport infrastructure staging and sequencing	Hamilton City Council and Future Proof   Te Tau Tītoki	Ongoing planning through FutureProof  Potential implementation within 15–30-year timeframe (TBC)



Figure 7: Recommended post review activities