

# INVESTMENT QUALITY ASSURANCE (IQA)

**Note** that this IQA updates the previous IQA for this activity and incorporates information following the scope change to incorporate the intersection improvements, as agreed by Delegations Committee.

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**Recommendation and summary DP&S / PI/ I&F to complete**

<p>Business case assessment summary <i>DP&amp;S / PI</i></p>	<p>The Mangawhai Shared Path Single Stage Business Case (July 2020 version) provides an adequate level of assurance that the proposed activity will address the problems identified for active modes in Mangawhai, contributes to the strategic vision for the township and that the benefits will be realised.</p> <p>It proposes a staged delivery approach across multiple NLTPs as a way to manage funding availability and will allow for lessons from earlier phases to be applied to subsequent phases. The SSBC could be amended in future if major scope changes occur in the future.</p> <p>The alternatives and options that were analysed demonstrate that an infrastructure solution is the solution to best realise the benefits. The preferred option integrates with the existing and future urban form, and best meets the overall project investment objectives.</p> <p>The SSBC would have benefited from having included a more developed delivery timeline to indicate when different requirements of the activity will be undertaken. While this was not critical to proceed to pre-implementation, it was needed prior to consideration of implementation approval. Waka Kotahi has worked with the project and council planning team to determine an appropriate delivery timeline.</p> <p>On 25 July 2020, Minister Jones committed \$2.4 million for the local share of this activity (Part of the infrastructure funding in the COVID Response and Recovery Fund).</p> <p>COVID-19 is unlikely to have a significant effect on the benefits, costs and risks associated with this activity.</p>		
<p>Assessed by</p>	<p>Rafael Furtado, Senior Advisor, Partnership Investments. Minor updates by David Croft, Principal Investment Advisor, Partnership Investments.</p>	<p>Date</p>	<p>12/11/2020  Updated 27/01/2021</p>
<p>Investment assurance assessment summary <i>I&amp;F if relevant</i></p>	<p>Not required as below the cost and risk thresholds.</p>		
<p>Assessed by</p>	<p>N/A</p>	<p>Date</p>	<p>N/A</p>
<p>Recommendation commentary</p>	<p>N/A</p>		
<p><b>Proposed Recommendation</b></p>	<p>Recommend.</p>		
<p>Proposed conditions (if applicable)</p>	<p>None recommended.</p>		
<p>Delegated decision maker</p>	<p><i>Recommend CFO funding approval</i> Vanessa Browne, Senior Manager; Operational Policy, Planning &amp; Performance <i>Funding approval</i> Howard Cattermole, Chief Financial Officer, Corporate Support</p>		
<p>Reason for recommendation</p>	<p>The shared path will give effect to the GPS priorities associated with the Walking and Cycling activity class. These are:</p> <ul style="list-style-type: none"> <li>• Access to opportunities, enables transport choice and access, and is resilient – thriving regions</li> <li>• Safety - a safe transport system free of death and serious injury</li> <li>• Environment - reduce adverse effects on the climate, local environment and public health</li> </ul>		
<p>IAF Profile</p>	<p>H/L</p>		

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Readiness / urgency factors to consider	On 25 June 2020, Minister Jones committed \$2.4 million towards the local share of the Mangawhai Shared Path <sup>1</sup> for pre-implementation and implementation.  Kaipara District Council (KDC) plans to progress some delivery in the current NLTP period and is ready now to commence implementation of phase 1.
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**Business case quality assessment questions DP&S/ PI to complete**

**Problem/opportunity statements**

Is it clear what the problem is that needs addressing (both cause and effect)?	<p>The problem statements (SSBC section 3) are clear and generally identify the causes and effects. Problem statement two does not identify an effect, but this could be inferred as being a barrier to active mode use, similar to problem statement one.</p> <p>An ILM workshop was not undertaken. However, KDC has consulted with the community that has provided information to understand stakeholder opinion.</p> <p><i>Problem statements</i></p> <ol style="list-style-type: none"> <li>1. A lack of dedicated walking and cycling facilities is a barrier to increasing the uptake of walking and cycling.</li> <li>2. The existing walking and cycling facilities are not safe or fit for purpose.</li> <li>3. Peak summer congestion: There is a high reliance on private vehicle use in Mangawhai due to lack of safe walking and cycling facilities, which results in congestion during peak summer periods.</li> <li>4. Planning for rapid growth and providing a multi-modal approach: Without sufficient walking and cycling infrastructure, growth will continue to be predominantly car based, resulting in poor environmental and land use integration outcomes for the Mangawhai area.</li> </ol> <p>Mangawhai has a linear urban form and the current walking and cycling facilities offer a low level of service that create a perception of safety problems. Fit for purpose in this context means improving the currently low level of service along extensive sections of the path (SSBC, section 3.2) – a gravel path (rather than sealed), safety and personal security, width, and grade, alignment with user desire lines, using low volume local roads with wide berms, and high amenity.</p> <p>Mangawhai is growing rapidly (current estimated population of 5,000 and projected to grow to 9,000 by 2031, and 12,800 by 2051) and experiences significant population peaks in the summer period. This leads to congestion in key areas of the town as many people do not use active modes for local trips.</p>
Is there evidence to confirm the cause and effect of the problem?	<p>Adequate evidence has been provided to support the problem statements, including from public consultation surveys.</p> <ol style="list-style-type: none"> <li>1. The evidence shows the current lack of cycling facilities in Mangawhai, and active mode share is very low. Current facilities offer a low level of service (e.g. narrow gravel track, or no footpath at all), this is especially the case in some sections of the main route where cyclists must use the road with vehicular traffic (Molesworth Drive). Students from local primary school live in dispersed locations along the route, with many estimated to live at the northernmost end of the town. Survey responses showed a desire to improve footpaths and provide cycling facilities - 37% stated it is difficult to walk/cycle.</li> <li>2. . Related to the evidence indicated above, it is reasonable to assume that cyclists with lower confidence (e.g. normal cyclists/children/elderly) would be dissuaded from cycling due to perceptions of poor safety, especially where there is no existing footpath. While actual safety statistics indicate that there have been very few crashes involving pedestrians and cyclists (2 non-injury, and 2 minor injury from 2014-18), this may be due to small numbers of</li> </ol>

<sup>1</sup> <https://www.beehive.govt.nz/release/boost-mangawhai-and-kaiwaka-community-infrastructure>

	<p>cyclists and under-reporting of incidents. Responses from the community survey indicated that safe access for active modes was desired. 37% found it difficult to walk and cycle. Submitters requested safe off-road access to Mangawhai Heads, safe cycling/walking connections between the Village and Mangawhai Heads and safe pedestrian access along the Insley Street causeway and bridge (Appendix C: Summary of the Mangawhai Community Plan Consultation.).</p> <p>3. Survey results showed that 88% of people drive around Mangawhai as their main mode of transport (interpreted as local trips). Private vehicle congestion in summer is an issue, especially at certain intersections with evidence of this from various studies and the community survey. There is significant seasonal variation in the population (holidays homes are 42% of the total) that contributes to congestion in the summer months. The lack of viable active mode or public transport options for local trips means that many people use private vehicles to access the main places of employment and services in Mangawhai, to access the beach (Mangawhai heads), and to go to school.</p> <p>4. Recent historic and forecasted growth figures have been provided as have spatial plans (SSBC, section 2.3.5). This activity contributes to strong integration of land use and transport planning for the existing and future urban area of Mangawhai. A lot of the existing population and growth will be in the existing and planned urban area through which the shared path passes, and the secondary active mode network will link to the main path. It seems reasonable that without providing adequate active mode routes, and integrating those with the current and future land use, then the high dependence on private motor vehicles for local trips will continue.</p>
Does the problem need to be addressed at this time?	<p>Recent, significant, growth has placed pressure on the current road network i.e. congestion for vehicles, perceptions of safety for active mode users, and there is a lack of dedicated, safe cycling facilities in Mangawhai.</p> <p>KDC has identified this activity in the Mangawhai Community Plan as a significant project to address community aspirations. It is in the current RLTP.</p>
Is the problem specific to this investment (or should a broader perspective be taken)?	<p>Yes. The problem statements are very specific to this investment within the wider transport strategy for Mangawhai, being documented through a Network Operating Framework (NOF),<sup>2</sup> the spatial plan, and the Mangawhai Community Plan.</p> <p>There are currently no dedicated cycling facilities, barriers to active mode use in the town, some perceptions of safety issues for active mode users, some congestion issues due to high vehicle use, and a link to longer term initiatives such as the spatial plan and the NOF.</p> <p>For a relatively small town with minimal travel options, active modes are a viable solution for short local trips.</p>
<b>Benefits</b>	
Have the benefits that will result from fixing the problem been adequately defined?	<p>Yes, there are two clear benefits that will be realised from addressing the problems (SSBC, section 3.2), with the most important being <i>Improved mode shift to walking and cycling in Mangawhai</i>.</p> <p>The other benefit relates to <i>Improved safety for walking and cycling in Mangawhai</i>, which in this case will be important to induce demand for active modes as a result of this investment (improved perceptions of safety). This is likely to be the minor benefit relative to benefit 1 which is supported by the low quantitative economic benefits accruing to safety (4% of total).</p>

<sup>2</sup> <https://www.nzta.govt.nz/planning-and-investment/learning-and-resources/network-operating-framework/#:~:text=The%20network%20operating%20framework%20is%20simply%20an%20agreed%20process%20that,for%20the%20stakeholders%20to%20use.>

	<p>Together these benefits provide active mode choice, and this has been explained as an investment objective (SSBC, section 3.3).</p> <p>There may also be environmental benefits as a result of changing to active modes.</p>
Will the measures specified provide reasonable evidence that the benefits have been delivered?	<p>The benefits have measures from the NZTA benefits framework with baselines targets and timeframes (section 3.5, SSBC). These will demonstrate that the benefits will be realised.</p> <p><i>Benefit 1 measures</i></p> <ul style="list-style-type: none"> <li>Increases in active mode share</li> <li>Spatial coverage of cycle lanes and paths</li> <li>People throughput (on the main strategic route)</li> </ul> <p><i>Benefit 2 measures</i></p> <ul style="list-style-type: none"> <li>Perceptions of safety and ease of walking and cycling (community survey)</li> </ul> <p>The economic analysis quantifies some of the benefits of the preferred option with quantified benefits accruing to safety (4%), travel time benefits (11%) and most being attributed to walking and cycling benefits (85%). The reinforces that the benefits identified are correctly identified.</p>
Are the measures both attributable and quantifiable to this investment?	<p>The measures, and monitoring proposal, are directly attributable to this investment. Quantitative baselines, targets and timeframes have been provided that will be monitored and enable an evaluation of the benefits to be appreciated.</p> <p>There are no other known initiatives that would significantly detract from or confound the measurement of the benefits from this activity.</p>
Are the benefits of high value to the NZ Transport Agency (furthering its objectives)?	<p>This activity aligns with the following:</p> <ul style="list-style-type: none"> <li>NZTA position statements: <ul style="list-style-type: none"> <li>Transport safety – improved safety for active mode users.</li> <li>Inclusive access – improves the transport network for non-vehicle modes, and for children and the elderly who may wish to use it.</li> <li>Liveable Communities – improves access to key destinations in the community (beach, school, urban centres, employment etc.) by walking and cycling.</li> <li>Environment – the reduced use of private motor vehicles to modes with lower environmental footprints.</li> </ul> </li> <li>GPS 2018/21 priorities – access (transport choice and access), safety (improved perceptions of safety for active modes) and environment (mode shift and emissions)</li> </ul>
<b>Alternatives and options considered (strategic response level)</b>	
Have a sufficient range of strategic alternatives and options been explored (demand, productivity and supply)?	<p>A reasonable range of alternatives and options (SSBC, section 6) have been explored. The alternatives are:</p> <ul style="list-style-type: none"> <li>Status quo</li> <li>Improved main strategic footpath route with on-road cycle facilities</li> <li>Shared space environment for vehicles, walking and cycling</li> <li>Mangawhai Coastal Walkway</li> <li>Dedicated off-road strategic shared path route</li> </ul> <p>Through increasing active mode share for local trips, this activity may reduce demand for parking, and thereby could alleviate community requests for additional parking.</p>
Is it clear what alternatives and options are proposed and the rationale for their selection?	<p>Yes, the alternatives and options are clearly explained and why they have been selected as well (Section 6, SSBC, Appendix C: Mangawhai Community Plan and Appendix D: Mangawhai Shared Path Connections Options Report).</p> <p>The alternatives and options have been derived from previous studies/reports on the shared path.</p>

The key factors considered in these previous studies concerned the route itself, as an options long-list, with some consideration of path design (width).

Date	Study name	Key information
2019 (draft August)	Mangawhai Coastal Walkway Feasibility Study	Considers options for the coastal walking and community engagement. Some relevant sections were incorporated into the shared path project to connect Mangawhai heads to the town centre, and meet the overall project objectives, enhance connectivity and fitness for purpose (align with user desire lines, utilise low volume local roads with wide berms, grade, high amenity).
March 2018	Mangawhai Shared Path Connections Options Report	Investigation and selection of route options, that had previously been identified at a concept level, to ensure that the routes can be constructed at reasonable cost, and to assist finalising the location and priority of these routes. This also included detailed cost estimates.
2017 and 2019	Kaipara Walking and Cycling Strategy and the Mangawhai Community Plan	These documents show what is considered the wider walking and cycling network and demonstrate where some of the alternatives and options are derived from. The strategy includes the <i>Te Araroa</i> New Zealand trail.

The alternatives selected are clear and align to the intervention types – demand, productivity, and supply – as shown in the table below. Suppressing demand for active modes was not considered relevant for an activity that seeks to increase active mode use. Some of the alternatives would reduce the attractiveness of vehicular traffic (e.g. speed management and traffic calming) to promote active mode use.

The alternatives considered were:

Alternative	Type
1. Status quo	Productivity
2. Improved main strategic footpath route with on-road cycle facilities	Productivity, supply
3. Shared space environment for vehicles, walking and cycling	Productivity, demand
4. Mangawhai Coastal Walkway	Supply
5. Dedicated off-road strategic shared path route	Supply

Alternatives 1,3,4,5 were considered as a result of previous investigations, plans or strategies. Alternative two was included as part of this business case to test an approach that separated walking from cycling infrastructure.

Are the proposed programmes the most effective response to the problem (comprehensive and balanced)?

Yes. The rationale for why the preferred alternative has been selected is clearly explained (Section 6.1, SSBC). This also aligns with the NOF network hierarchy that considered all modes for the town. Most importantly is that the preferred alternative performs best against the investment objectives that are in turn linked to addressing the causes identified in the problem statements. Specifically, this activity when implemented is expected to improve active mode use, improve perceptions of active mode safety, reduce congestion, and integrate with the existing and planned growth.

The criteria used to assess the alternatives were the investment objectives, connectivity, levels of service provided (width, grade, safety), implementability (feasibility/affordability), stakeholders, cultural/heritage and social (schools/community facilities).



Alternative	Overall rating
1. Status quo	Low
2. Improved main strategic footpath route with on-road cycle facilities	Moderate
3. Shared space environment for vehicles, walking and cycling	Low- Moderate
4. Mangawhai Coastal Walkway	Moderate
5. Dedicated off-road strategic shared path route	Moderate-High

The MCA indicated that increasing supply (new infrastructure) is the intervention type that would best realise the benefits (and meet other key criteria).

Overall, the dedicated shared path is the alternative that best meets the criteria and is the preferred way forward. It performed best against the investment objectives, improving connectivity, and levels of service (safety, width, grade), stakeholder support, and connecting key social destinations (schools etc.). However, it does not perform as well as some of the other alternatives for affordability and feasibility.

The multi-criteria analysis of alternatives was transparent and robust and was informed by very detailed analysis that had been undertaken through previous plans, strategies, and stakeholder consultation.

Are the proposed programmes *feasible*?

Yes. The proposed option is feasible and is within the capacity of KDC, through the Northern Transport Alliance, to deliver. The staged approach to delivery will enable lessons from previous stages to be applied to the following stages.

There are no significant physical, property or legal constraints for this activity and the proposed approach is to address some minor physical constraints (trees/utilities) through design. Some property acquisition is required in one section but this is expected to be manageable.

Resource consents will be needed for some sections of the shared path that may impact on implementability. This will be investigated further during pre-implementation, and the design may need to be amended to suit.

The activity also proposes a staged approach across multiple NLTP periods, that enables the project to be smaller and more easily managed, for lessons learnt from previous stages applied to those that follow, and to manage local share funding availability.

KDC has provided evidence that local share funding has been confirmed for the 2020/21 year and that wider programme funding has been included in the draft long term plan

Mangawhai Shared Path - Phase 1 - Imp - Local share confirmation.pdf  
<https://infohub.nzta.govt.nz/otcs/cs.dll/link/48245208>

#### Detailed programme of packages/activities intervention (solution/outcome level)

Consistent with the strategic alternatives chosen, have a *reasonable range of project options* been analysed?

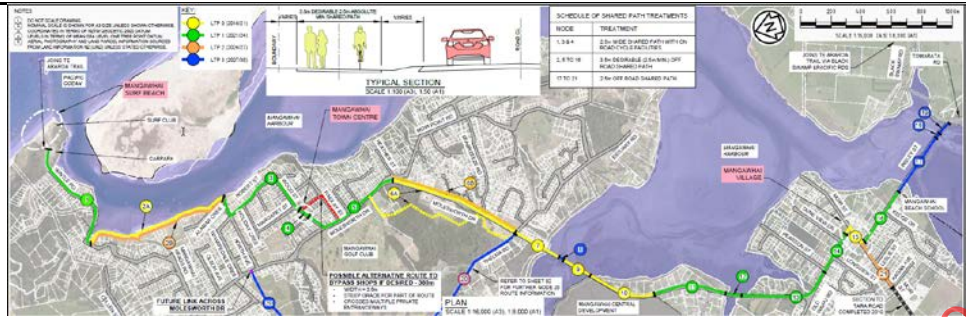
Yes, a reasonable number of project options have been considered for the specific route configuration, and general path width (SSBC, section 7 and appendix E). These are consistent with the dedicated shared path alternative identified at the strategic level.

For much of the shared path there are minimal route options due to natural constraints (estuary and inlets), amenities (beach, shops etc.) urban form (existing and planned commercial and residential zones) and transport corridors (existing roadway).

	<p><i>Minor route configuration options (informed by detailed study – options report)</i></p> <ol style="list-style-type: none"> <li>1. Mangawhai village</li> <li>2. Route from town centre to Mangawhai Heads</li> <li>3. Community Park</li> <li>4. Mangawhai town centre bypass (Wood St)</li> </ol> <p><i>Path width</i></p> <ol style="list-style-type: none"> <li>1. Do minimum</li> <li>2. 2.5 metres general design width</li> <li>3. 3.5 metres general design width</li> </ol> <p>NZTA provided feedback to KDC relating to the width of the shared path and to consider additional NZTA guidance on shared path design, primarily relating to the peak number and mix of user types (pedestrians/cyclist). As Mangawhai is a holiday destination, there is also a need to cater for the significant seasonal population as well (42% of all dwellings are currently holiday homes).</p> <p>A general design width has been used for options analysis. However, in places, the actual width is expected to be narrower (2.5 metres) depending on physical constraints (trees/utilities/road corridor etc.), and where a wider width cannot be justified due to lower demand.</p> <p><i>November 2020 update</i></p> <p>Pre-implementation and detailed design has resulted in some changes to the design of the shared path, but has not changed the overall MCA assessment of the activity (removal of section 20, timing changes, a boardwalk etc.).<sup>3</sup> The intersection improvements have not been assessed against the MCA because the SSBC was endorsed first, and the Point of Entry the intersection improvements provided an explanation of the options that were considered.</p>
<p>Is the proposed solution specified clearly and fully (all business changes and any assets)?</p>	<p>The proposed solution is defined at a concept design level sufficient to proceed to pre-implementation (SSBC, page 150). However, the route for two sections (nodes 4 and 6A) will be determined during pre-implementation and prior to moving to implementation. There may be some changes to the design as a result of the safety audits, and other analysis that will be undertaken during pre-implementation. However, any changes are not likely to seriously undermine the performance or options assessment of the options that have been considered to date.</p> <p>The Mangawhai Shared Path is planned to be staged approach over multiple NLTP periods, based on local share availability (refer below for the proposed staging). This is reasonable from a local share affordability perspective. KDC intends to include funding for the rest of the shared path in its upcoming 2021/31 Long-Term Plan, that will take effect from July 2021. This is a risk that needs to be managed through staging (i.e. sections that are build are not contingent on future funding to deliver benefits), and by ensuring that local share is available (in budgets).</p> <p>The core of the shared path will be delivered in the current and next NLTP period, with the rest implemented in future NLTP periods. Sections that are aligned to anticipated growth (blue) are planned to be implemented in out years.</p>

<sup>3</sup> Mangawhai Shared Path - Updated P50 and economic analysis Nov 2020.msg  
<https://infohub.nzta.govt.nz/otcs/cs.dll/link/47641139>





Phase	Key	Total estimated cost
One	Yellow	\$4,465,200 (incl. pre-imp.)
Two	Green	\$7,079,400
Three	Orange	\$2,917,550
Four	Blue	\$2,345,900
<b>Total</b>		<b>\$16,808,050</b>

Ongoing maintenance and operational costs have been estimated and are part of the economic assessment. KDC is expected to be able to cover these costs through its maintenance regimes (estimated at about \$25,000 per year for the completed path).

*November 2020 update*

The timing for implementation of some of the sections has changed, section 20 has been removed from the scope and the intersection improvements added. There have also been some design changes as a result of detailed design.

The changes to the shared path portion do not change the performance against the investment objectives. As of 15 November 2020, detailed design has been completed for sections 2A, 6, 7, 8, 9, and 15.

Phase	Sections	Total estimated cost, including implementation, contingency, professional fees and administration
One	2A, Part of 6B, 7, 10, 15	\$6,400,000
Two	21, 6A, 8, 9, 4, 11, 12, 13, 14	\$13,660,600
Three	5, 1, 3, 2B, 6B, 16	\$5,862,527
Four	17, 18, 19	\$3,161,934
<b>Total</b>		<b>\$29,085,061</b>

Is the proposed solution the best way to respond to the problem and deliver the expected benefits?

Yes. The proposed solution is the best way to respond to the problems and deliver the benefits.

The analysis of alternatives demonstrated that an infrastructure solution is required to best address the causes of the problem statements and to realise the benefits (SSBC, section 6.1).

An infrastructure solution addresses the problem statements that relate to active mode use, poor perceptions of safety for active mode users, reduced congestion, and better integration of land use and transport to cater for the existing population and for future growth.

*Options analysis (SSBC, section 7)*

A multi-criteria analysis was used to assess the route configuration and path widths using the standard set of criteria. An economic analysis (BCR and incremental BCR) was undertaken for the path width options.

*Analysis of route configurations* (SSBC, section 7.3)

There are four sections of the path where multiple options for route configuration were considered and assessed against the assessment criteria. For two minor sections, the preferred route option will be determined during pre-implementation using the same method.

*Analysis of path width options*

Two path width options (2.5 metres, 3.5 metres) were considered against the do-minimum. Note that the path width is expected to be 2.5m in some sections due to physical constraints, and in areas where demand is expected to be lower.

The preferred option of 3.5m path width performs best against the do-minimum and 2.5m width when assessed using a multi-criteria analysis. The preferred solution is expected to best enable an increase to the number of people travelling by active modes (benefit one), and to improve the perceived safety for active mode users (perceived and actual safety).

The 2.5m option performs better than the 3.5m path width option in the quantified economic analysis – a Benefit Cost Ratio (BCR) of 1.8 compared to 1.4. Both options are expected to deliver value for money. The incremental analysis shows that the higher cost option still offers the best value for money although it is on the margin of the target BCR (1.0, rounded from 0.97).

While the incremental analysis could indicate that the 2.5m path option performs better than the 3.5m option from an economic perspective and that the incremental analysis is borderline, overall the 3.5m option performs better when the other criteria in the MCA are taken into account (such better meeting the investment objectives). This is particularly important to maximise the use of the activity, including for less confident cyclists or walkers (e.g. school children).

The economic analysis also does not account for seasonal users or for school children that are expected to use the path. As such, it underestimates the net benefits.

There is a significant change in the estimated cost between the two design width options for an extra metre of path - \$7.4m to \$16.8m. NZTA queried the design specifications with KDC. The desired path width better meets the investment objectives, especially during peak periods, with the relevant factors incorporated into the economic evaluation. As noted above, the path width will vary based on constraints and on anticipated demand and type of user.

The extensive option investigations, community consultation, and methodology used amply demonstrate that the process to identify the preferred option was robust.

Can the solution really be delivered (costs, risks, timeframes, governance, etc)?

Yes, the activity is expected to be able to be delivered. The Northern Transport Alliance (of which KDC is a partner) has the capability and capacity to deliver it, as judged by similar activities recently delivered elsewhere and through using standard techniques, specifications, and methods.

*Cost estimates*

The initial cost estimates (SSBC, Appendix G) are based on a per metre basis for each section of the shared path and were informed by recent work in the Northland region. This adds to the robustness to the cost estimates although they are likely to be more reliable for the shorter term, rather than the longer term. The peer reviewer considered the cost current cost estimates to be of an “appropriate order of magnitude” (SSBC, Appendix H: section 3.7).

Cost estimates had been prepared according to the NZTA’s cost estimation manual for the 2018/24 programme, and the full programme.

Cost estimate	P50	P95
2018/24 programme	\$11.5 million	\$13.1 million
Full programme	\$16.8 million	\$19.0 million

The costs, especially for the short-term, appear reasonable as they are based on recent experience but COVID may have implications for this. More refined cost estimates will be developed during pre-implementation when detailed design is undertaken, rather than the current estimates that are based on a concept design.

*November 2020 update*

Costs have been updated that have been informed by the detailed design. Costs include 11.5% for contingency. Refer above for updated cost information.

Cost estimate	P50	P95
2018/24 programme	\$20.1 million	\$24.9 million
Full programme	\$29.1 million	\$36.1 million

Definitive costs for the first phase of the activity will be agreed during the tender process to award a contract to the contractor (expected in early 2021). P95 costs for the full package have been provided.

*Project management, procurement*

The management case provides an indicative timeline to the commencement of the first stage of the activity (SSBC, section 14.4), however it does not explain the timing of different requirements for the activity – such as design, consenting, stakeholder engagement, construction etc. It states the governance arrangements with roles clearly defined, a risk escalation protocol stating with issues and risks raised by the project manager to the project sponsor, the Whangarei DC's Project Management Framework Guidebook (July 2009)<sup>4</sup>, and the requirements of the Northland Transport Alliance.

While it is expected that implementation will start in the current NLTP period, a better indication of exact timing will be developed during pre-implementation when better information is available and some of the risks that could affect those timelines have been addressed (such as consents).

The tender process will be through an open tender process and in accordance with WDC's Procurement Strategy (Whangarei and KDC are part of the Northern Transport Alliance). This is a relatively simple project and there is industry capability to deliver it.

*Risks and mitigations (Risk register document)*

The main risks (residual risk medium and high only) are listed in the table below.

Risk	Residual risk	Mitigation
Funding for later NLTP periods 2024/27 and 2027/30 (KDC local share and NLTF)	Medium (unlikely likelihood, moderate consequence)	Forecast funding requirements included in the Long Term Plan 2021/31 (taking effect from July 2021).

<sup>4</sup> KDC is using Whangarei District Council's policies as both are part of the NTA.

Land acquisition in one section	High (unlikely likelihood, extreme consequence)	Engage with landowners for voluntary land sale. If no agreement, compulsory acquisition will be needed and lead to delays. This is at one end of the shared path so not critical for implementing the other sections.
Extra land acquisition may be required	Medium (unlikely likelihood, moderate consequence)	Additional land acquisitions may be identified during pre-implementation. Change design to avoid extra land acquisition.
Cost estimates higher than budget	Medium (possible likelihood, minor consequence)	Detailed design to better inform costs, value engineering to reduce scope and cost to within budget.
Construction tender prices exceed estimated cost	Medium (possible likelihood, moderate consequence)	Procure packages of work that are more attractive to tenderers, seek early interest from tenderers. Reduce cost through value engineering.
Funds not spent in 2020/21	High (likely likelihood, moderate consequence)	Funds transferred to 2021/22, programme delivery plan to be developed during pre-implementation to provide greater accuracy of timing and cashflow.
Service relocation may increase costs (power poles in some sections)	Medium (unlikely likelihood, moderate consequence)	Value engineering may be required. Costs confirmed during pre-implementation.

An additional risk is that the designs completed in the current NLTP may not be valid in future years if standards or other requirements change. The designs of affected sections may need to be amended to meet future standards and requirements. Some sections of the path (2 and 6) are staged across multiple NLTP periods, and a final design is needed earlier to inform earlier stages.

As the project is spread across multiple NLTP periods, the risk profile is likely to change. This can also allow for lessons from earlier phases to be applied to those following and risks mitigated.

November 2020 update

An updated risk register has been provided with risks remaining mostly the same. Resource consenting in the coastal marine environment is a risk for one section of the path. The cost associated with addressing this risk has been accounted for (coastal marine reports and professional fees etc.).

#### General assessment DP&S / PI to complete

##### Robustness of management case

Overall, the management case provides assurance that the project can be delivered and adequately managed. However, as noted above, additional information gathered during the pre-implementation phase will provide greater confidence of its robustness as there will be more certainty and some of the risks will have been eliminated.

The scope of the activity is generally well defined for pre-implementation. Two minor sections will be confirmed during pre-implementation.

The management case will need to be updated in future for funding decisions for subsequent NLTP periods, as personnel and other assumptions are likely to change.

The activity is scheduled to be implemented from the current NLTP period, and over subsequent NLTPs, with most of the shared path intended to be implemented over the current and next NLTP period.

The main risks have been identified in a risk register. Some elements of the business case, such as risks are likely to change going forward, the SSBC will need to be updated to reflect this over future years to reflect these changes.

While there is a risk of cost escalation, current estimates are based on recent relevant experience in Northland and have included a contingency (14%). Indicative expenditure by year has been provided with most being funding for implementation (SSBC, section 12).

*November 2020 update*

Updated costs are now available, informed by the Request for Information process, and detailed design. Contingency is now 11.5%.

A P95 cost estimate has been prepared. There has been some deviation from the Cost Estimation Manual (SM014). Costs are more certain for sections which have detailed design (sections for implementation in NLTP 2018/21 and some of 2021/24), but less so for outyears.

The most significant impact of a higher cost than the estimated the P50 cost would be to the BCR (1.1 at 6% discount rate or 1.4 at the current 4% discount rate), and to future cashflow projections.

If costs are increased by 30% (the percentage difference between the P95 and P50), the activity as a whole becomes uneconomic at a 6% discount rate. However, it remains economically efficient at a 4% discount rate (current as per the Monetised Benefits and Costs Manual).

While a parallel cost estimate has not been undertaken for entire shared path programme, KDC have completed a parallel cost estimate to help confirm costs for this phase currently requesting funding approval. A parallel cost estimate of the entire shared path programme is not expected to add much value to the assessment of this activity. The existing estimate already includes a relatively high quantum of funding risk uncertainty.

These impacts are mitigated by the staged approach to implementation of this activity (over multiple NLTPs). Separate funding decisions are advised for sections planned to be implemented in NLTPs 24/27 and 27/30 with updated risk, economic, and financial analyses. Also, most benefits from the shared path are a result of sections implemented in NLTP 2018/21 and 2021/24 as they address the most significant gaps in the active mode network, and the most pressing safety issues.

Strategic context and programme linkages

This activity is strongly aligned to the following strategic programmes:

*Central government*

- GPS 2018/21 – access (transport choice), safety, environment.
- GPS 2021/24 – better transport options, safety
- *Te Araroa* Trail – sections of *Te Araroa* will use the Mangawhai Shared Path
- COVID Response and Recovery Fund

*Regional and local*

- Northland Walking and Cycling strategy
- Kaipara Walking and Cycling strategy – identifies the shared path
- Mangawhai Community Plan – identifies the shared path as the top priority
- Network Operating Framework (in lieu of a full PBC) – currently being finalised and includes the shared path as a priority route for active modes
- KDC's spatial plans – currently being consulted on, and identifies the shared path within the wider land use and transport plan



	<ul style="list-style-type: none"> <li>RLTP – parts of this activity are currently in the Northland RLTP 2018/21, under the Low Cost Low Risk programme (with different costs). In June 2020, Northland RTC amended the RLTP to include this activity as a standalone activity.</li> </ul> <p>The shared path passes close to other relevant projects in Mangawhai, namely:</p> <ul style="list-style-type: none"> <li>proposed upgrades of two intersections (roundabouts) in the Mangawhai Village (currently at the Point-of-Entry phase).</li> <li>The Innovating Streets Fund (NZTA) has granted funding for Wood St in Mangawhai Town Centre.</li> </ul> <p>These activities do not have an adverse effect on the shared path, as they are all part of the township plan, and are expected to complement the shared path (roundabouts for walking and cycling safety, and Wood St as an enhanced pedestrian environment accessible by the shared path).</p>																						
Results alignment	<p>This activity has a High alignment rating with the Walking and Cycling Improvements activity class.</p> <table border="1" data-bbox="427 757 1444 1962"> <thead> <tr> <th>GPS priority</th> <th>Criteria</th> <th>Rating</th> <th>Explanation</th> </tr> </thead> <tbody> <tr> <td>Safety - a safe transport system free of death and serious injury</td> <td>addresses a perceived safety risk to use of the mode</td> <td>Medium</td> <td>There is some indication of perceptions of safety issues in Mangawhai. Kaipara does not feature as a high or medium priority for cyclists or pedestrians in the 2019 Communities at Risk Register.</td> </tr> <tr> <td rowspan="2">Access to opportunities, enables transport choice and access, and is resilient - thriving regions</td> <td>supports development of the connections to the NZ Cycle Network and Te Araroa Trail, including the premium tourism trails</td> <td rowspan="2">High</td> <td>Provides a link in the <i>Te Araroa</i> Trail.</td> </tr> <tr> <td>addresses a significant problem with the ability to use existing facilities including promotion, and use by people who identify as disabled and young people</td> <td>There are currently no dedicated cycling facilities in Mangawhai</td> </tr> <tr> <td></td> <td>supports increasing the uptake of children using walking and cycling especially to and from school</td> <td></td> <td>The shared path passes next to the local school and will be used by school children</td> </tr> <tr> <td>Environment - reduce adverse effects on the climate, local environment and public health</td> <td>enables a significant modal shift from private motor vehicles to active modes</td> <td>High</td> <td>The mode share (journey to work) on completion of the shared path (in 2032) is expected to be: <ul style="list-style-type: none"> <li>9% for walking (5.9% currently)</li> <li>4% for cycling (0.9% currently)</li> </ul> </td> </tr> </tbody> </table>	GPS priority	Criteria	Rating	Explanation	Safety - a safe transport system free of death and serious injury	addresses a perceived safety risk to use of the mode	Medium	There is some indication of perceptions of safety issues in Mangawhai. Kaipara does not feature as a high or medium priority for cyclists or pedestrians in the 2019 Communities at Risk Register.	Access to opportunities, enables transport choice and access, and is resilient - thriving regions	supports development of the connections to the NZ Cycle Network and Te Araroa Trail, including the premium tourism trails	High	Provides a link in the <i>Te Araroa</i> Trail.	addresses a significant problem with the ability to use existing facilities including promotion, and use by people who identify as disabled and young people	There are currently no dedicated cycling facilities in Mangawhai		supports increasing the uptake of children using walking and cycling especially to and from school		The shared path passes next to the local school and will be used by school children	Environment - reduce adverse effects on the climate, local environment and public health	enables a significant modal shift from private motor vehicles to active modes	High	The mode share (journey to work) on completion of the shared path (in 2032) is expected to be: <ul style="list-style-type: none"> <li>9% for walking (5.9% currently)</li> <li>4% for cycling (0.9% currently)</li> </ul>
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This BCR analysis is based on the entire Mangawhai Shared Path at a total cost of \$16.8 million.

*November 2020 CBA update – shared path updated costs, timing, and includes the cost and benefits of the intersection improvements*

BCR: 1.1 (6% discount rate, BCR 1.4 at 4% discount rate)

NPV: \$2.7 million

This BCR analysis is based on the entire Mangawhai Shared Path plus intersection improvements, so is a slightly different scope to the first appraisal.

The revised economic calculations have not been peer reviewed, but the method is the same as used previously (that was peer reviewed) – only updated to reflect the cost increase and added benefits from the intersection improvements. These have been internally reviewed by the consultants.

**Economics  
robustness**

The economic analysis is robust. The peer reviewer (Commute) confirmed that the EEM has been done correctly and appropriately, in accordance with the EEM. The peer reviewer noted that year one benefits are likely to be overestimated, but this is not likely to significantly reduce the overall benefits as the benefits relating to the use over the summer peak have not been included in the economic analysis.

The incremental analysis showed that the preferred option is justified by meeting the target BCR of 1.0 (rounded from 0.97). This means that the higher cost option still delivers value for money, although at the margin.

The economic analysis results seem valid, with most quantifiable benefits being related to mode shift, and corroborating the evidence associated with safety - relatively low safety benefits. The increase in active mode uptake as a result of this activity is reasonable (at double the population growth rate).

The quantified benefits are likely to be conservative because the analysis has omitted seasonal increases in population (expected to reduce in future) and the use of the path by school children. The SSBC states that only commuter benefits are quantified and that this is in accordance with the EEM (SSBC, section 10.1.3). If these benefits were included, the BCR band (for NZTA prioritisation purposes) would not be expected to change and is a lesser issue than inflating benefits.

Sensitivity analysis were undertaken across the assumptions indicated below. None result in a BCR of less than 1.0, which means that the activity is highly likely to result in net benefits in multiple scenarios. This includes the potential effects of COVID through varying assumptions around growth (less growth, fewer benefits).

Assumptions tested	Range	Lower BCR	Higher BCR
Cost	+20%, -10%	1.1	1.5
Active mode users	-10%, +20%	1.1	2.1
Crash reduction rate	-20%, 20%	1.3	1.4
Growth rate	-5%, +5%	1.0	1.8
Discount rate	8%, 4%	1.1	1.8

Up to a 25% reduction in benefits (with constant costs) results in a BCR of 1.0 (author of the IQA). This shows that the effects of reduced demand due to growth and uptake would still result in net benefits.

The economic analysis will be re-assessed for the whole activity during pre-implementation to ensure that the activity is still able to deliver quantified value for money, noting that the current BCR is expected to be conservative.

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It is advisable that an updated economic analysis is undertaken for those sections of the shared path that are scheduled for delivery from 2024/27 onwards (and will be subject to separate funding decisions). This is due to the relatively long delivery timeframe, and uncertainties relating to demand and cost in outyears.

*November 2020 update*

Assumptions tested	Range	Lower BCR	Higher BCR
Cost	+20%, -10%	0.9	1.2
Active mode users	-10%, +20%	0.9	1.6
Crash reduction rate	-20%, 20%	1.1	1.1
Growth rate	-5%, +5%	0.9	1.3
Discount rate	8%, 4%	1.0	1.4

The BCR ranges from 0.9 to 1.6. However, the base discount rate used was 6%, as per the EEM, but this has since been changed to 4% in the Monetised Benefit Cost Manual (BCR of 1.4). Overall, it seems likely that the activity will provide value for money. Cost estimates are unlikely to increase by 20% for sections intended to be implemented in the shorter term, due to better information relating to those estimates from the Request for Information process and detailed design. This is more of a risk for sections intended to be delivered in later years as there is less certainty for cost estimates.

As above, the estimates are considered conservative as the benefits from some users have not been counted.

The incremental analysis comparing the options showed that the preferred option has an incremental BCR of > 1.05, indicating that this is the better option.

A peer review has not been undertaken on the revised Cost Benefit Analysis as there has only been a change in scope to include the intersection improvements (as per the approved Point of Entry) and removal of one minor section, and changes to implementation costs. The economic analysis of the roundabouts has been subject to an internal review.

**Risks and significance**

The main risks associated with this activity have been identified. As it spans multiple NLTP periods, the risk profile is likely to change and so will need to be reviewed in future. This assessment interprets the risks for the funding application for the current NLTP.

Refer above for the risks and mitigations. Some of the mitigations for the risks appear satisfactory at the time of this assessment, and some of the mitigations will be addressed during the pre-implementation phase (which is reasonable for many).

*Significance policy*

This activity does not breach significance policy. However, as the community has been consulted on this activity (part of the Mangawhai Community Plan) and the now former Minister's funding announcement, a decision by NZTA to not provide NLTF co-funding activity could be damaging to the Agency's reputation.

It does not breach any other significant policy considerations (service delivery, financial impact, environmental/other impacts, precedent effect, inconsistency).

**Form, function and standards**

A peer review was undertaken and the comments from that review have been addressed (SSBC, Appendix G). The peer reviewer considered the SSBC to be sufficient for an activity of this size and complexity, the economics calculated correctly, and the recommended option is well considered.

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	<p>Maintenance and operating costs have been estimated for this activity and KDC has stated that it will cover these costs through its existing budgets and maintenance regimes.</p> <p>The activity will conform to the following relevant standards, including some that have been endorsed by the NZTA</p> <ul style="list-style-type: none"> <li>• NZTA Cycle Network Guidance Portal</li> <li>• NZTA Pedestrian Planning and Design Guide</li> <li>• RTS 14 – Guidelines for facilities for blind and vision impaired pedestrians</li> <li>• NZ Building code</li> <li>• KDC Environmental Engineering Standards</li> <li>• Austroads Guide to Road Design Part 6a - Pedestrian and Cyclist Paths</li> </ul> <p>A safety audit on the concept design has been undertaken and the matters raised will be addressed during pre-implementation.</p> <p><i>November 2020 update</i> A safety audit on the sections that have detailed design (and are the first planned for implementation) is available. While all design audit issues have been considered and addressed where appropriate the document has not yet been updated with party signatures. These are currently being obtained and are expected in the near future. A concept design safety audit was also previously completed.</p>
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Investment	<p>The Mangawhai Shared Path is eligible to be funded as work category 452: Cycling facilities under the Walking and Cycling activity class.</p> <p>Priority order is 5.</p> <p>Funding priority for pre-implementation for the 2018/21 NLTP has been confirmed by Owen Mata, Activity Manager Walking and Cycling, and funding availability confirmed by Martin Shearman, Manager, Treasury and Cashflow. Funding priority and availability implementation funding (in 2020/21) has also been confirmed.</p> <p>Funding for subsequent implement phases of the activity will require separate funding decisions and additional prioritisation for future NLTPs.</p> <p>On 25 July 2020, Minister Jones contributed \$2.4 million towards local share of the Mangawhai Shared Path.</p> <p>RLTP 2015/21 includes this activity (SSBC, appendix A).</p> <p><i>November 2020 update</i> Funding priority for implementation for phase one (starting implementation in NLTP 2018/21) funding has been discussed with the Activity Class Managers (Nigel Hutt and Owen Mata) and funding availability will be confirmed with Martin Shearman, Manager, Treasury and Cashflow in the new phase funding request memo.</p>
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Covid-19 questions DP&S/PII&F to complete (if relevant)	
<p>Does COVID-19 affect the problem, benefits, or option/preferred solution selection?</p>	<p>The demand for walking and cycling in Mangawhai is unlikely to be significantly affected by the effects of COVID-19. The resident population may stay the same, and in the short to medium terms especially, there will continue to be summer demand as domestic tourists visit Mangawhai and use the shared path.</p> <p>However, sections of the shared path that are intended to be delivered in later years may need to be delayed as demand may not eventuate. Separate decisions will be required to fund stages in future years.</p>

	<p>The current perceived and real safety issues along the route for existing active mode users (especially cyclists) will remain, regardless of COVID.</p> <p>In the pre-COVID environment, international tourists were unlikely to visit Mangawhai in significant numbers, so any changes as a result of COVID-19 will not affect demand for the shared path. In fact, there may be increased demand from more domestic tourism.</p> <p>The options considered for this SSBC remain valid, and appropriate. The economic sensitivity analysis tested growth assumptions, and even a 5% decline in the growth rate results in positive benefits.</p>
<p>Will COVID-19 impact the delivery of the proposed solution?</p>	<p>COVID-19 is not expected to adversely affect delivery (implementation) of the activity. However, as with all projects in the current environment, increased infrastructure expenditure across the board, may lead to higher prices due to insufficient short-term supply through the supply chain.</p>

Investment and Finance questions I&F to complete (if relevant)	
Affordability	N/A
Robustness of the financial case	N/A
Procurement approach	N/A

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