Australian Government | Infrastructure Australia

BUSINESS CASE EVALUATION REPORT

Picton Road Upgrade (Western Section)

ASSESSMENT FRAMEWORK STAGE

1 DEFINING PROBLEMS AND OPPORTUNITIES
2 IDENTIFYING AND ANALYSING OPTIONS
3 DEVELOPING A BUSINESS CASE
PROJECT DELIVERY
4 POST COMPLETION REVIEW

LOCATION
Southern Sydney, NSW

PURPOSE OF EVALUATION
Proposal seeking funding

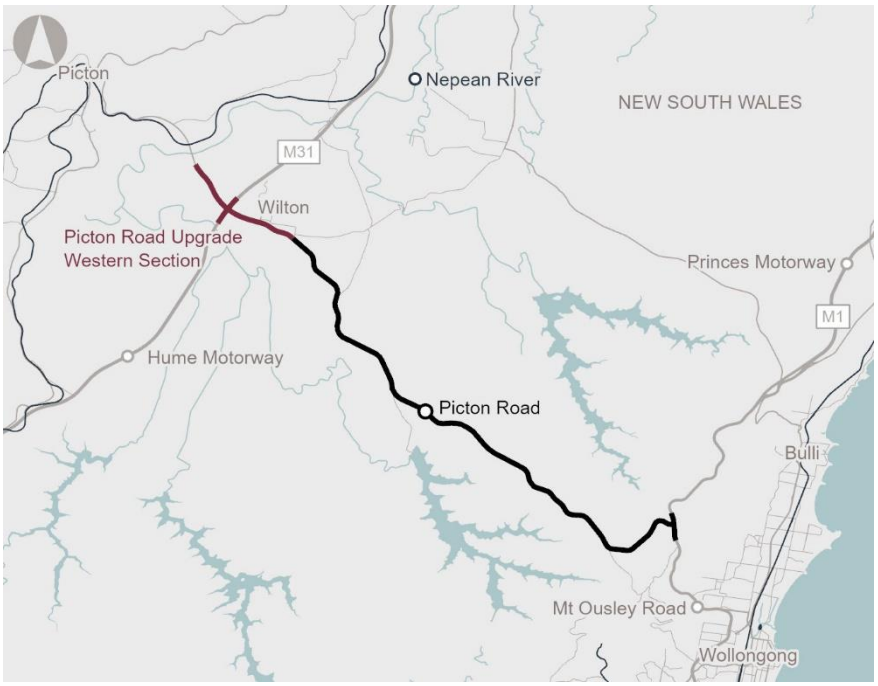
SECTOR
Transport

INVESTMENT THEME
High-Capacity Transport for Growing Cities

PROPONENT
Transport for NSW

INDICATIVE DELIVERY TIMEFRAME[1]
Construction start: 2028
Completion by: 2031

EVALUATION DATE
5 May 2025



CAPITAL COST[1]
$544 million (P50, outturn)
$598 million (P90, outturn)

FUNDING SOUGHT (P90)

Australian Government: $478.6 million sought

NSW Government: $119.7 million

Recommendations

- Infrastructure Australia supports the Picton Road Upgrade (Western Section) and acknowledges that the proposal aligns with NSW Government plans to increase housing supply in the Wilton and Greater Macarthur growth areas and precincts.
- We recommend delivery of Picton Road (Western Section) is considered as part of an integrated delivery plan for the Picton Road Upgrade Program to identify construction efficiencies and opportunities to minimise construction impacts.
- As part of future planning, we also recommend that the business cases for the Central and Eastern Sections consider the potential impacts of induced demand and the level of certainty regarding key benefits, such as travel time savings.

[1] Assuming delivery funding commitment by mid-2025.

Evaluation summary

Infrastructure Australia evaluated the business case for the **Picton Road Upgrade - Western Section** (the proposal), in accordance with our Statement of Expectations, which requires us to evaluate project proposals that are nationally significant or where Australian Government funding of more than $250 million is sought.

Picton Road is an important transport corridor linking the Illawarra Region with Sydney. It is one of two major east-west links between the M31 Hume Motorway and the M1 Princes Motorway, which are both on the National Land Transport Network. Carrying over 20,000 vehicles daily, of which about 27% are freight vehicles, Picton Road plays a significant role in the movement of freight from key industries within the region to Melbourne, Canberra, Sydney and broader areas of western NSW.

The road's alignment, undivided carriageway, and challenging topography has led to poor performance and safety issues, and congestion is forecast to worsen due to population and economic growth. The NSW Government is planning for 15,000 new homes and 40,000 people by 2040 in the growth area around Wilton. This growth will see areas around Picton Road transform from predominantly rural and peri rural land uses to residential, increasing transport demand along the Picton Road corridor. The business case assumes this growth will occur irrespective of the proposed Picton Road upgrade, although in reality it is likely that the upgrade will also enable this forecast growth.

The proponent, Transport for New South Wales (TfNSW), developed the Picton Road Upgrade Program (the Program) to progressively upgrade approximately 30km of Picton Road. The Western Section is the first of three sections within the Program:

- Western Section between the Nepean River and Almond Street, Wilton (this proposal)
- Central Section from Almond Street, Wilton, to around Mount Kiera Road
- Eastern Section from Mount Kiera Road to the M1 Princes Motorway interchange.

A robust Strategic Program Business Case (SPBC) considered options for the Program including interchange and intersection upgrades; road duplication; facilitating Performance Based Vehicle[2] access; active transport infrastructure; fauna corridors and land offsets. Other non-capital options, such as better use or land use reform, or public transport improvements, were not identified as potential solutions, either as independent options or as part of a package. The SPBC included a cost benefit analysis (CBA) on the Program and each project to inform prioritisation.

The CBA for this proposal assessed only one option against the base case. However, the detailed options analysis and CBA developed as part of the SPBC provides confidence in the selection of the preferred option.

The CBA results found the proposal would deliver a benefit cost ratio (BCR) of 3.3 and a Net Present Value (NPV) of $792 million[3], indicating significant net benefits to society. The key benefits of the proposal are travel time and vehicle operating cost savings, which represent 94% of total benefits.

The proposal will clear up to 11.5 hectares of both endangered and critically endangered plant community types listed under both NSW and Commonwealth legislation, although a Review of Environmental Factors concluded that the impacts of the proposal are not likely to be significant.

Greenhouse gas (GHG) emissions have been estimated for the proposal and the business case reports the proposal will lead to an overall reduction in emissions. However, there are inconsistent assumptions used to monetise emissions, and this appears to be overstating emissions reduction benefits.

The Picton Road corridor has limited adaptability to emerging technologies like electric vehicles and connected and automated vehicles. A future readiness assessment was completed, resulting in recommendations for the concept design, but it is unclear if these have been included in the proposal costs.

The proposal's next phase is the development of a reference design. Delivery as a single package through a Design and Construct contract is the preferred contracting method. The business case identifies a number of construction disbenefits that will need to be managed to minimise impacts during delivery.

There is a lack of information on how the three stages of the Program will be integrated, with no clear information on delivery, timing and funding for subsequent stages. Delivery funding for the Central and Eastern sections will be subject to separate final business cases.

Post-completion reviews offer valuable insights into delivery effectiveness and capture lessons learned. Committing to a post completion review for the Western Section would inform and enhance the delivery of the Central and Eastern sections of the Program.

[2] Performance Based Standards (PBS) is a national heavy vehicle scheme designed to help the industry become safer and more productive.
[3] Using P50 cost estimate and 7% real social discount rate.

Proposal description

The scope of the proposal includes:

- widening and upgrading along the 5km Western Section of Picton Road
- upgrading the existing Picton Road and M31 Hume Motorway interchange into a Diverging Diamond Interchange[4]
- new and upgraded shared paths on Picton Road
- reconfiguring the existing intersections with Wilton Park Road, Aerodrome Drive, Janderra Lane and Almond Street
- reduced speed limit of 60 km/h from the western end to Pembroke Parade.

Further information on the proposal can be found at:

https://www.transport.nsw.gov.au/projects/current-projects/picton-road-upgrade-picton-road-projects
https://www.transport.nsw.gov.au/projects/current-projects/picton-road-and-m31-hume-motorway-picton-road-upgrade

Review themes

Strategic Fit	The case for action, contribution to the achievement of stated goals, and fit with the community.
Case for change	The business case identifies the Western Section of Picton Road as the priority section for implementation, which is based on the results of a needs assessment and practicality assessment completed in the SPBC. The proposal clearly articulates the case for change, highlighting issues with capacity and design meeting current and projected demand, particularly for heavy vehicles. The proposal responds to several challenges such as network efficiency from the current road configuration, worsening congestion impacting freight efficiency, and about 60,000 new homes expected in the region by 2040. Safety is a concern with 33 crashes recorded on the Western Section of Picton Road between 2018-2022, resulting in 23 injuries and one fatality. Route resilience is also compromised by frequent lane closures resulting mostly from fire, flooding, crashes and breakdowns. Sustainability is also impacted by increased emissions from stop-and-go traffic. Currently Picton Road and the M31 Hume Motorway (northbound on and off ramp) operate below acceptable standards in both the AM and PM peaks, equating to an average delay of 58 and 50 seconds respectively (with the slowest movement taking up to 5 minutes). Transport modelling forecasts increased average delays of between 96 and 137 seconds in the AM and PM peaks in 2031 and between 110 and 151 seconds in 2046, resulting in a Level of Service[5] F (over capacity, unstable operation).
Alignment	Picton Road plays a significant role in the movement of freight from key industries within the region to Melbourne, Canberra, Sydney and broader areas of western NSW. It is also identified as a National Key Freight Route that provides an important connection from Port Kembla and the Illawarra Region, and the Western Sydney industrial precincts and Moorebank Intermodal Terminal. The proposal aligns with Australian and NSW Government priorities to reduce congestion on a key freight route and help improve safety and resilience of land transport infrastructure. The proposal aligns with the Infrastructure Policy Statement by addressing the strategic themes of Productivity and Resilience (freight networks) and Liveability (safety). The proposal demonstrates alignment and contribution to a range of NSW policies and plans including the *State Infrastructure Strategy 2022-2042*, *Future Transport Strategy* and the *NSW Freight and Ports Plan 2018-2023*.

[4] a Diverging Diamond Interchange allows traffic to navigate through the interchange via a crossover arrangement, which is done under the safety of signalised intersections (increasing traffic efficiency and removing conflict with opposing vehicles).
[5] Level of Service provides an indication of potential delays that a road user may experience in peak traffic conditions. A level of service of D or worse is considered unacceptable.

Network and system integration	The proposal is for upgrade of the Western Section and includes the interchange with the M31 Hume Motorway. There is a lack of information on how the three stages of the Program will be integrated, with no clear information on delivery, timing and funding for the Central and Eastern sections. The concept design for the proposal has considered a range of related projects such as the Wilton Park Road realignment and intersection upgrade and where appropriate, additional space allowances are incorporated to assist in the future delivery of intersections onto and over Picton Road. The proposal will provide new infrastructure for active transport users, which provides limited benefit in a network context, especially in a peri-rural setting. The severance issues introduced by wider roads and larger interchanges is likely to outweigh active transport benefits, and the increase in road capacity will increase car dependence.
Solution justification	The proponent identified Picton Road for investment through the Picton Road Corridor Strategy (2011) that was developed to assess road safety, transport efficiency and asset maintenance issues and set out a 25-year framework for the corridor. Different options have been assessed, including 13 preliminary interchange options identified in 2011-2014, further refined to 7 options in 2018 (both pre-SPBC). The SPBC included two rounds of multi-criteria analysis with stakeholders and CBA to rank options. The SPBC considered early phase non-infrastructure options such as: • high occupancy lanes along Picton Road • shuttle bus services • integration of emerging mobility choices. These lower capital cost and service planning solutions were found not to address the nature of the identified challenges given the location, capacity constraints and the high percentage of heavy vehicles using the corridor. The SPBC instead focused on options identification and refinement within discrete sections of Picton Road. Value Management Workshops in 2021 and 2022 shortlisted to three options and the preferred option is presented in the business case. The assessment considered a range of criteria including safety, constructability, environment and transport performance. In addition, the SPBC conducted cost-benefit analysis on strategic options before bringing forward the preferred option to the final business case. The CBA quantitatively assesses only one option. The proposal has not explored other modal considerations in any detail. The preferred option addresses the identified problems but was not demonstrated as the sole or best option given the investment value proposed. As TfNSW is considering new rapid bus routes to connect Wilton to Picton and Campbelltown, the proposal would be improved by considering multi-modal solutions and integrating and improving existing public transport options. The proponent notes the dominance of private vehicle travel in the region, with only 0.8% of residents travelling to work using public transport (based on the 2021 Census data). The proposal is likely to continue car dependent travel patterns in this region. The concept design has been developed in accordance with TfNSW's specifications, design standards and guidelines, as well as Austroads Guide to Road Design, Australian Standards, and utility authority design standards. The Picton Road Upgrade (Western Section) will have a five-star AusRAP rating[6].

[6] AusRAP (Australian Road Assessment Program) assessments are conducted by state, territory and some local governments. They collect data about a road's attributes and usage to calculate a road safety star rating. The higher the rating, the safer the road, with 5 stars being the safest.

Stakeholder endorsement	Three phases of community engagement were undertaken between 2021 and 2024 for the Program. The proponent documented issues raised during consultation and noted how these items were addressed or considered. First Nations stakeholders were engaged, with insights provided and considered in the Review of Environmental Factors. The proponent engaged an Aboriginal Cultural advisor to establish a Planning with Country working group. Infrastructure Australia is supportive of this initiative. The scope of the proposal was developed in parallel with community and stakeholder engagement activities, with feedback used to refine options design and inform the environmental impact assessment. Stakeholder, industry and community feedback indicates strong support for the proposal.
Societal Impact	**The social, economic and environmental value of the proposal, as demonstrated by evidence-based analysis.**
Quality of life	Consistent with a proposal addressing issues on a key freight corridor, the primary quantifiable benefits are travel time savings and vehicle operating cost savings, equating to 94% of total benefits. These benefits result from reducing current and forecast congestion through greater capacity and contemporary road design. Improved road design, including active transport, and a lower speed limit on Picton Road to Pembroke Parade in the east, is estimated to reduce the impacts and costs of crashes. The overall crash rate is expected to be reduced by 35%, with rear-end crashes reduced by 50% and zero active transport crashes. It is unclear whether historical safety issues were a result of road design and/or speed limits, or if it was due to driver behaviour. With benefits for active transport users through the provision of new infrastructure making up 0.01% of the total benefits, it is assumed active transport infrastructure is provided as part of updated design requirements rather than based on demand.
Productivity	The proposal will be critical in catering to the projected growth in freight along the corridor. Freight benefits would be realised for vehicles heading westward from Port Kembla to Greater Sydney and regional NSW, and eastward towards the Illawarra-Shoalhaven region. Picton Road accounts for over 70% of the total road freight task coming into and leaving the region. The proposal seeks to address forecasts of 1,000 additional truck movements per day on Picton Road by 2046, and over 7 million additional tonnes moved per annum – an increase of 45%. Faster average travel speeds and fewer stops will lower operating costs for freight through: • increased passing opportunities and improved signal coordination, particularly at the interchange (measured by the value of time for heavy vehicles) • additional infrastructure capacity (measured by changes in service reliability). Upgrades to road geometry and lane widths, particularly at the interchange, will allow high productivity vehicle movements, improving freight productivity and market access where the freight task requires fewer trips by carrying more freight in each load - saving both time and fuel. Given heavy vehicles account for around 27% of traffic, travel time and vehicle operating cost savings provide significant quantifiable benefits for freight vehicles.
Environment	The proposal will clear up to 11.5 hectares of both endangered and critically endangered plant community types listed under both NSW and Commonwealth legislation. The cost estimate includes provision for environmental management and mitigation measures, including biodiversity offsets, monitoring, soil and water management. A Review of Environmental Factors has been completed, which concluded that the benefits outweigh the potential impacts on the environment and that the environmental impacts of the proposal are not likely to be significant. The business case notes a Fauna and Flora Management Plan, and a Biodiversity Offset Strategy will be developed to mitigate and offset biodiversity impacts.

Sustainability	The business case reports on all required greenhouse gas emissions associated with the proposal. The upgrade is estimated to generate 82,817 tCO2-e of upfront emissions, primarily from construction materials and land clearing. These emissions have been monetised using national emissions values as outlined in the Infrastructure Australia *Guide to assessing GHG emissions*.[7] The proposal also notes that increased speed and free-flow traffic conditions will improve fuel efficiency, lower operating costs and correspondingly lower GHG emissions by 229,372 tCO2-e relative to the base case, which has been estimated using a nationally untested methodology. This is forecast to deliver an economic benefit of $12.6 million (NPV). However, this benefit seems to be overstated as it has been monetised using higher alternative values to monetise emissions and the method assumes all vehicles are internal combustion engine vehicles. The options analysis completed during the design development phase included rigorous consideration of key performance indicators that would generate emissions, including incorporation of resource use, efficiency of construction and operation and traffic performance (travel time and number of stops). Options and refinements that presented opportunities to reduce these and other associated impacts were given preference by scoring higher in value management and engineering assessments. However, it is unclear if these measures have been costed in the analysis or whether the opportunities will be included in design or the delivery strategy for the proposal.
Resilience	The proposal considers both transport network resilience and resilience to climate change. Picton Road corridor is not expected to have capacity to support increased transport demand in the region and the upgrade will improve network resilience by supporting additional vehicle movements when there is an interruption elsewhere on the network. The Picton Road corridor has limited 4G coverage and limited adaptability to emerging technologies such as electric vehicles and connected and automated vehicles. The proponent completed a future readiness assessment to consider how the design of Picton Road could support these emerging technologies and futureproof the corridor. The readiness assessment resulted in a series of recommendations for the proponent to consider as part of the concept design. It is unclear the extent to which these have been included into the costs of the proposal, as several recommendations are noted as either open, or out of scope. The rural and peri-rural location of the proposal means climate resilience will likely become more critical as the risk of natural hazards, such as bushfires and flooding, increases. The area surrounding the Western Section of Picton Road is classified as a category 3 bushfire prone area and the proposal will improve emergency vehicle access to the region.
Deliverability	**The capability to deliver the proposal successfully, with risks being identified and sufficiently mitigated.**
Ease of implementation	The proponent has appropriately assessed different design, packaging, contracting and procurement strategies in accordance with their standard approach. The preferred packaging strategy is to deliver the proposal as a single main works package, with the potential for an early/separate works package for utilities relocation. Detailed Design and Construct was identified as the most suitable model for the delivery of the single main works package. The proponent preferred full price competition given current market volatility and a conventional two-phase procurement process as there are limited opportunities for value engineering or design innovation and high confidence in the affordability of the design. There is no consideration of how the design, packaging and contracting strategies interact with future stages of the Program, and this may contribute to future cost pressure. The development of a final delivery strategy is expected to be informed by a market interaction process, and the proponent will continue to engage with the market to confirm that the proposed procurement and contracting approach will deliver value for money.

[7] https://www.infrastructureaustralia.gov.au/sites/default/files/2024-03/24IA_Greenhouse-Gas-Emissions.pdf

Capability & capacity	TfNSW is well-equipped to deliver the scope of work outlined in the proposal, having a track record of successfully delivering many major road upgrade projects.
Project governance	Project governance will operate according to TfNSW's Integrated Framework for Capital Projects, which recognises three levels of internal governance: enterprise, client and delivery partner governance. We consider the proposed governance model to be appropriate for delivery and operation of the project and in accordance with the proponent's organisational requirements.
Risk	The proponent has a comprehensive risk management framework that aligns with contemporary standards. No Very High risks are identified in the risk register pre- or post-mitigation. The High rated risks post mitigation include: 1. complexity of construction methodology and staging (several traffic switches including works in between carriageways) 2. potential property acquisition cost increases based on change in market conditions 3. additional lighting required The proposal's cost estimate includes quantitative risk assessment developed in accordance with TfNSW policies and has been undertaken using probabilistic methods to determine the range of potential cost outcomes. Based on the probabilistic analysis, the cost estimate includes the following contingency allowances: • P50 – 37.1% • P90 – 47.5%. These values align to the Infrastructure Australia Assessment Framework (IAAF) expected ranges for this stage of development. The values capture impacts of the identified risks and reflect that further development of the design is required.
Lessons learnt	Lessons learnt have been incorporated into the proposal from similar projects, including engagement with Queensland Department of Transport and Main Roads in their experience designing, building and operating diverging diamond interchanges. A post completion review plan has not been developed, however, an INSW Gate 6 assurance review will be required to report against benefits realisation from the proposal. Post-completion reviews offer valuable insights into delivery effectiveness and capture lessons learned, which could inform and enhance the delivery of the Central and Eastern sections of the Program. As the Program received Australian Government funding for planning works, it is expected that a post completion report will be submitted to the Federal Government.

Economic appraisal results (preferred option)

The business case estimates the NPV of the project to be $798.5 million with a BCR of 3.3[8], indicating that project benefits outweigh the quantified costs, and the project represents a net benefit to society. When upfront GHG emissions are included the NPV reduces slightly to $792 million.

Sensitivity analysis identifies that the proposal remains economically viable across a broad range of sensitivities including increased costs by 40%, reduced benefits by 40% and 0% traffic growth.

The economic appraisal's underlying assumptions were based on parameters for a rural project as defined by TfNSW guidance. Infrastructure Australia considers that urban parameters should be applied to the appraisal given forecast residential development. While the adoption of rural parameters is likely to have inflated key benefits such as travel time savings, the use of urban parameters would still result in an overall net benefit to society. Infrastructure Australia recommends that TfNSW consider the appropriateness of using rural parameters for future Picton Road upgrade business cases and/or conducts sensitivity testing on rural parameter values.

The economic appraisal did not identify any additional land use benefits or Wider Economic Benefits, which we consider to be appropriate.

[8] Using a 7% real discount rate and a P50 capital cost estimate.

	Discount rate:	4%	7% (central)	10%
Core evaluation results[1]	**BCR:**	5.7	3.3	2.0
	NPV ($m):	$1,785.2	$792	$320.6
Key benefits measured:	The key benefits are travel time savings and vehicle operating cost savings, equating to 94% of the quantifiable benefits: • travel time savings: NPV $892 million – 79% of benefits • vehicle operating cost savings: NPV $167 million – 15% of benefits The present value of benefits is estimated to be distributed to light vehicles and heavy vehicles at 73% and 23% respectively. Safety, active transport, reliability and sustainability benefits were estimated and represent marginal benefits.			
Key observations and issues	There are inconsistencies between the narrative of the business case, assumptions in the economic analysis and the economic results. The analysis assumes that the increase of traffic on Picton Road would primarily result from future land use developments, yet no induced demand has been identified. Given the significant contribution of both travel time and vehicle operating cost savings to the quantifiable benefits, the traffic demand assumptions (including no induced demand) are fundamental to the realisation of the benefits of the proposal. Travel time and vehicle operating cost saving benefits are derived from multiple sources including outputs from the Strategic Traffic Forecasting Model. Benefits resulting from reduced GHG emissions are also dependent on traffic demand assumptions. Considering the underlying problems identified for the corridor relate to traffic volumes, safety and the percentage of freight movements within overall traffic, induced demand assumptions are important to the integrity of the assessment. The impacts of additional traffic demand on the proposal benefits was not included in sensitivity testing and it is unclear how this would impact the BCR.			

(1) Costs reported in this table are based on P50 cost estimates.

Proposal development

Picton Road safety and capacity was added to the Infrastructure Priority List in 2019 to recognise the nationally significant problems forecast on the corridor. In February 2021, the problem timeframe for the proposal was updated from medium term (5–10 years) to near term (0–5 years), in recognition of the growing problem costs. In 2022, the Australian Government committed $95.6 million towards the planning works for Picton Road Upgrades and the Picton Bypass (the Picton Bypass is not part of this appraisal).

Given the length of the corridor, a Strategic Program Business Case for the Picton Road Upgrade identified a program of individual projects to meet the objectives, and customer demands of the corridor in the short (0-10 years) to medium (10-20 years) term. The program includes three sections, with the Western section between the Nepean River and Almond Street, Wilton being identified as the highest priority. The Central and Eastern sections will be subject to future assessment.

A comprehensive options identification and assessment process over multiple years and iterations determined the preferred option for the interchange. This process included:

- 13 potential options identified between 2011 and 2014
- seven interchange options selected following stakeholder consultation and traffic forecasting in 2018
- value Management Workshop shortlisted three options in 2021
- value Management Workshop selected the preferred option – a Diverging Diamond Interchange – in 2022.

The preferred option is a Diverging Diamond Interchange that facilitates a safer and more efficient flow of vehicles by minimising the number of conflict points in an interchange. Fewer conflict points translate to less waiting time to clear other traffic movements, and lower exposure to potential crashes from crossing and merging conflicts.

We have also identified areas that support ongoing improvement of business case development and recommend the proponent consider the following for future submissions:

- Program considerations – given the project is part of a program, each stages' submission would benefit from consistent inclusion of, or reference to, the strategic quantified results, from the SPBC. This is important where an individual stage may not represent a BCR above 1.
- Risk management – future business case submissions would benefit from greater linkage between the commercial and delivery strategies and how they best mitigate the major risks identified for the program or project.

Proposal engagement history

Picton Road safety and capacity was added to the Infrastructure Priority List in February 2019.

Not submitted for evaluation

Evaluation by Infrastructure Australia completed on 05 May 2025.

Detailed economic appraisal results

The following table presents a breakdown of the benefits and costs of the proposal.

Benefits and costs breakdown

Proponent's stated benefits and costs	Present value ($m,2023/24)			% of total for 7% results
Discount rate (real)	**4%**	**7%**	**10%**	
Costs				
Total capital costs (P50)	$384.7	$342.3	$306.6	100.7%
Total maintenance (P50)	-$5.2	-$2.4	-$1.1	-0.7%
Total costs[1,2]	**$379.5**	**$339.9**	**$305.5**	**100%**
Benefits				
Travel Time	$1,687.6	$892.0	$498.9	78.8%
Vehicle Operating Costs	$318.2	$167.4	$92.2	14.8%
Reliability	$58.2	$33.2	$20.2	2.9%
Residual value	$57.3	$20.0	$7.2	1.8%
GHG (speed intervals)	$26.1	$12.6	$6.1	1.1%
Resilience	$19.6	$11.9	$7.7	1.1%
Crash Cost	$12.0	$6.8	$4.1	0.6%
Active Transport	$0.3	$0.2	$0.1	0.0%
Externalities	-$7.4	-$5.8	-$4.7	-0.5%
Embodied carbon	-$7.2	-$6.5	-$5.8	-0.6%
Total benefits[1]	**$2,164.7**	**$1,132.0**	**$626.0**	**100%**
Net present value (NPV)[3]	**$1,785.2**	**$792.0**	**$320.6**	
Benefit-cost ratio (BCR)[4]	**5.7**	**3.3**	**2.0**	

Source: Proponent's business case

(1) Totals may not sum due to rounding.

(2) Costs reported in this table are based on P50 cost estimates.

(3) The net present value is calculated as the present value of total benefits less the present value of total costs.

(4) The benefit–cost ratio is calculated as the present value of total benefits divided by the present value of total costs.