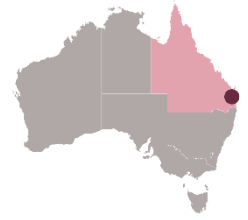


M1 Pacific Motorway - Daisy Hill to Logan Motorway



PURPOSE OF EVALUATION
Proposal seeking funding



EVALUATION OUTCOME
Not recommended for the
Infrastructure Priority List at this
time

**ASSESSMENT
FRAMEWORK
STAGE**



LOCATION

South East Queensland, Queensland
Dangan Balun Land

GEOGRAPHY

Fast-growing cities

SECTOR

Transport

OUTCOME CATEGORY

National Connectivity

PROONENT

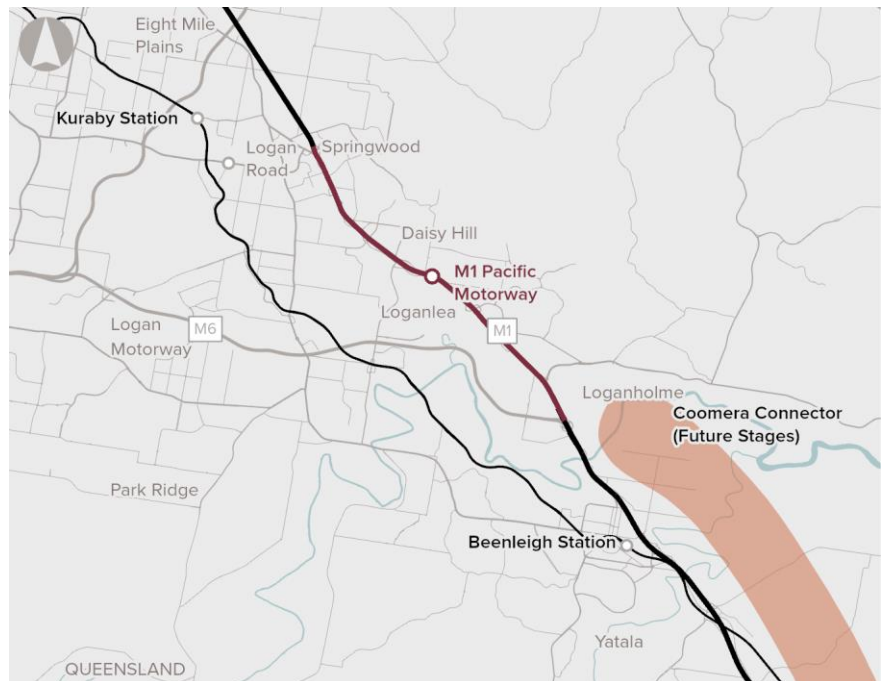
Queensland Government

INDICATIVE DELIVERY TIMEFRAME

Construction start: 2025
Completion by: 2030

EVALUATION DATE

6 December 2023



CAPITAL COST

\$4,217 million (P50, outturn)
\$4,548 million (P90, outturn)

FUNDING COMMITTED/SOUGHT (P90)



Review summary

Infrastructure Australia has evaluated the business case for **M1 Pacific Motorway - Daisy Hill to Logan Motorway** in accordance with our Statement of Expectations, which requires us to evaluate project proposals that are nationally significant or where Australian Government funding of \$250 million or more is sought. As a result of our assessment, M1 Pacific Motorway - Daisy Hill to Logan Motorway has not been added to the Infrastructure Priority List as an Investment-ready proposal at this time.

The Daisy Hill to Logan Motorway proposal is the third and final stage of the Pacific Motorway M1 North upgrade program. The proposed upgrades are consistent with those from earlier stages of the program, which include road widening, implementing Smart Motorways technologies, and extending active transport and bus infrastructure. However, we recommend the timing of delivery of this stage of work is re-considered. Options for delivering

components of the scope progressively to better manage demand and optimise the capacity of the existing asset should be investigated.

Currently, the Pacific Motorway (M1) experiences periods of frequent and prolonged congestion. This is expected to worsen with forecast population growth that will negatively impact travel times and travel reliability. Increased congestion would also impact freight movements, although freight vehicles are only a small proportion of users.

Private vehicle users would be the primary beneficiary of the proposal through reduced travel times and improved travel reliability. However, the proposal would create flow-on effects by increasing congestion to the immediate south of the Logan Motorway, and increased car travel as a result of the upgrade would increase greenhouse gas emissions. The proposal would address safety issues through design improvements, and it would create benefits for active transport users through extension of existing cycling infrastructure. These benefits, however, only make a small proportion of total benefits (5% and 2% respectively).

The business case reports that the cost of the proposal is significantly higher than its quantified benefits, with a Benefit Cost Ratio (BCR) of 0.24 and a Net Present Value (NPV) of -\$2.2 billion.¹ This indicates that the proposal represents a large net cost to society and that the scope of the proposed solution is not proportionate to the size of the problems on the M1 between Daisy Hill and the Logan Motorway.

Modelling shows that the full benefits of the proposal are realised in the first year of operation and then begin to decline as congestion builds south of the Logan Motorway. Relieving this congestion and realising further benefits of the upgrade relies on the delivery of future stages of the Coomera Connector - a future north-south transport corridor between Loganholme and Nerang, east of the M1.² With this alternative corridor in place, the BCR of the proposal increases to 0.51. However, some future stages of the Coomera Connector are still in planning and subject to Queensland Government approval. This suggests that delivery of this proposal should be better aligned with the timing of delivery of Coomera Connector.

A key risk to the proposal's delivery is that several other major infrastructure projects in South East Queensland are either currently under construction or planned for delivery in a similar time period. Infrastructure Australia expects there to be capacity and capability constraints that place risk on this proposal being delivered in line with the estimated cost and delivery period.³

The upgrade is proposed to be delivered as a single package using an Early Contractor Involvement delivery model. This is to allow for construction to be completed by 2030, and the upgraded road and bus services to be fully operational before the 2032 Brisbane Olympic and Paralympic Games. In the absence of the assumed time constraint, however, packaging of the proposal was the preferred delivery method as it allows for risks to be managed more effectively. If completion milestones change, project packaging should be revisited.

Delivery through a single procurement contract may further impact market capacity, as the high value of a single package may exclude smaller contractors from procurement processes. Market engagement by the proponent indicated that packaged delivery was more attractive. Additionally, it is likely that costs could escalate at a rate greater than forecast if the construction market remains under pressure, particularly with the other active and planned capital works. Detailed strategic analysis of all land transport projects in the region should be considered to develop a staged regional delivery approach that maximises efficiency and minimises risk.

Overall, while upgrades to the M1 between Daisy Hill and the Logan Motorway are intended to respond to congestion problems, the cost of the proposal substantially outweighs public benefits, and the overall effect is that congestion is relocated further south. Additionally, market capacity constraints introduce significant risks that costs of the proposal may increase and net benefits will be further diminished. The benefits of the proposal are reliant on delivery of interrelated projects, in particular future stages of the Coomera Connector, which suggests that staging of this proposal with a wider program of works is critical. We recommend that the proponent consider a long-term staging approach, with lower-cost demand management measures considered in the short-term to relieve congestion, and identify options to reduce project costs through value engineering of the proposed design. Further analysis of project packaging and the delivery model should be considered if there are any changes to the proposal's delivery timelines.

Proposal description

The scope of the proposal involves:

- Widening the M1 between Logan Road (Exit 20) at Daisy Hill and the Logan Motorway, south of Loganholme

¹ Using a 7% real discount rate and a P50 capital cost estimate.

² Stage 1 of the Coomera Connector, the southern section of the corridor between Coomera and Nerang, is currently under construction. Future stages that will interface with the proposal have been assumed in the analysis to be completed in 2036.

³ Infrastructure Australia's 2022 *Market Capacity Report* indicates recent non-labour cost escalation rates of around 25%.

(approximately 10kms, 1-2 lanes in each direction).

- Upgrading seven interchanges and consolidating 21 existing entry and exit ramps to 12 ramps.
- Upgrading existing service roads and constructing new ones.
- Implementing Smart Motorways technology (including ramp metering, variable speed limit signs, and lane use management systems⁴).
- Extending the Veloway 1 (a dedicated cycleway running between Lower River Terrace, South Brisbane and Underwood).
- Extending busway infrastructure and services (including two new bus stations and park and ride facilities).

The preferred option is estimated to provide 550 direct jobs over the life of the project. Further information on the proposal can be found at: [Pacific Motorway \(M1\) – Daisy Hill to Logan Motorway upgrade \(tmr.qld.gov.au\)](https://www.tmr.qld.gov.au/pacific-motorway-m1-daisy-hill-to-logan-motorway-upgrade).

Review themes

Strategic Fit	The case for action, contribution to the achievement of stated goals, and fit with the community.
Case for change	<p>The M1 is the principal link between Brisbane and Sydney and the corridor between Brisbane and the Gold Coast is subject to high levels of demand. The 10km section between Daisy Hill and the Logan Motorway currently caters for approximately 228,600 vehicle trips per weekday. During peak hours, some segments are above capacity, leading to congestion. Congestion between Daisy Hill and the Logan Motorway is recognised as part of a broader proposal on the <i>Infrastructure Priority List - M1 Pacific Motorway capacity: Eight Mile Plains to Tugun</i>.</p> <p>Continued growth in the number of trips is forecast, driven by the growth of jobs in Brisbane and growth in population across the region, as well as a heavy reliance on private vehicles. The proponent estimates growing congestion to negatively impact travel times and travel time reliability. By 2041, all segments of the section between Daisy Hill and the Logan Motorway are estimated to be at or above capacity, with travel times anticipated to increase by 60-70% in peak periods from 2016 levels.</p> <p>The cost of congestion accounts for over 90% of the quantified problems. However, while the additional capacity provided by this proposal will address congestion between Daisy and Logan Motorway, it results in increased congestion on sections to the south due to induced demand.⁵ . This suggests that other measures are needed to address the problems experienced along the wider corridor.</p> <p>Short intraregional trips by private vehicles are contributing to the forecast congestion. Currently, only 8% of trips travel the entire length of the section, and up to 20% of trips accessing the section travel less than 20 kilometres. The proposal would reduce local trips on the M1 by consolidating exit and entry ramps and redirecting local traffic to service roads and the surrounding road network. This is expected to reduce congestion on the motorway.</p> <p>In addition to congestion, the business case also identifies a range of road design deficiencies⁶, that contribute to higher rates of road safety incidents. Relative to the rest of the M1, the Daisy Hill to Logan Motorway section has experienced a relatively high number of incidents, with an average of 5.2 crashes/km/year, compared to the M1 average of 3.4 crashes/km/year.⁷ Roadway configuration issues that impact accident rates could also be resolved by the proposal.</p> <p>We acknowledge that responses to the capacity limitations on other sections of the M1 are being considered through separate projects, primarily the Coomera Connector. However, a strategic analysis does not appear to have been undertaken to assess the full benefits of the M1 program upgrades and adjoining projects.</p>

⁴ Ramp metering refers to the use of traffic signals installed on motorway on-ramps to control the frequency at which vehicles enter the flow of traffic on the motorway. This has the benefit of improving efficiency and safety for vehicles on the motorway.

⁵ Induced demand is additional or new demand that occurs as a result of a project. For this proposal, the induced demand is a result of travel time savings and demand for access to the busway park and ride at Loganholme.

⁶ Design deficiencies include interchange and ramp spacing that is inconsistent with road design guidelines, and a lack of Smart Motorway infrastructure

⁷ In 2019, 70 crashes occurred on the section between Daisy Hill and Logan Motorway, with 23 resulting in hospitalisations.

Alignment The M1 forms part of the National Land Transport Network (NLTN) and upgrades for the corridor are identified as an action in the *National Freight and Supply Chain Strategy* and *National Action Plan* (2019). The proposal would support the Queensland Government's *State Infrastructure Strategy* (2022) by improving job accessibility and reducing congestion and improving the M1's resilience.

This project is the third stage of the Pacific Motorway M1 North upgrade program, which aims to improve capacity and reliability on the motorway between the Gateway Motorway and the Logan Motorway (approximately 19km total):

- Stage 1: M1/M3 Gateway Merge (Eight Mile Plains to Springwood) – completed.
- Stage 2: M1 Pacific Motorway (Eight Mile Plains to Daisy Hill) – under construction.
- Stage 3: M1 Pacific Motorway (Daisy Hill to Logan Motorway) – this proposal.

The scope of this proposal is consistent with upgrades being delivered as part of Stage 2 (Eight Mile Plains to Daisy Hill). Both stages include widening the M1 to 8–10 lanes, as well as extension of the busway and Veloway.

Infrastructure Australia has not reviewed the economic appraisal for the program and does not have an understanding of the economic impact of all three stages together. As a result, we cannot determine how this proposal contributes to the expected outcomes of the program. Without this analysis, we also cannot determine if there are additional benefits of the proposal (Stage 3) which have been captured as part of the assessment of previous stages.

Network and system integration The proposal has significant interdependencies with other projects. In particular, future stages of the Coomera Connector are proposed to connect with the Logan Motorway interchange, immediately south of the proposal. The Coomera Connector is the key project proposed to address capacity between Loganholme and Nerang. No major works are currently planned for this section of the M1 along its existing alignment.

The additional capacity provided by the proposal and other stages of the Pacific Motorway M1 North upgrade program has the effect of shifting congestion further south on the M1. Without the additional capacity provided by the Coomera Connector, levels of congestion at Logan Motorway interchange are expected to increase, and the benefits of the proposal begin to decline after 2031. In the scenario with future stages of the Coomera Connector in place, the net benefits of the proposal are larger.

We note that future stages of the Coomera Connector are currently in planning. The stages that will interface with the proposal have been assumed in the analysis to be completed in 2036 although their delivery is subject to Queensland Government approval processes.

We recommend further planning is undertaken to better align the proposal with staging of the Coomera Connector.

Solution justification The business case analyses two options in detail. These options are similar in scope with respect to the motorway upgrade, with the preferred option including construction of the busway extension, and the alternative only allowing for land preservation for this extension. While this alternative is a pragmatic approach to future infrastructure provision, it significantly adds costs with no immediate benefits.

The two shortlisted options have costs that are substantially higher than the benefits they deliver.⁸ This suggests that the scope of the options are greater than can be justified relative to the scale of the problems. A value engineering exercise should be considered that could identify if there are high-cost scope items that do not provide commensurate benefits.

Stakeholder endorsement There appears to be relatively strong support from stakeholders for the benefits delivered by the proposal. However, there are expected to be negative impacts on some stakeholders with over 400 properties to be acquired, of which almost 200 are residential.

No specific consultation appears to have been undertaken with the Traditional Owners of the area, the Danggan Balun (Five Rivers) people, and there are currently no cultural heritage management plans in place. Identification of any culturally significant sites within the area of the proposed upgrades may impact the timing and cost of delivery.

Societal Impact The social, economic and environmental value of the proposal, as demonstrated by evidence-

⁸ The other shortlisted option has a NPV of -\$1.8 billion and a BCR of 0.1 (0.2 including WEBs).

Quality of life	<p>The main community benefits are reduced travel times, approximately 7 minutes in either direction, and improved travel reliability for private travel and public transport.</p> <p>Other benefits to the community include increased access to public and active transport services through extension of the busway and Veloway. Improved access to active transport may provide improved health outcomes.</p> <p>The proposal also supports improved safety through smart ramp metering, which reduces sudden changes in speed, and other road design improvements. The proponent has estimated that these changes will reduce crash rates by 25%.</p> <p>Negative quality of life impacts include the impact of relocation for people and businesses whose properties will be acquired. There would also be disbenefits from disruption to the network during construction and congestion increasing in some local roads.</p>
Productivity	<p>Reducing congestion costs for freight is the main productivity benefit, although freight is only projected to make up 5.4% of trips in the corridor by 2041. While the annual costs of freight congestion are projected to reach \$24 million by 2041, the benefits of reducing freight congestion are very small relative to the proposal's cost, and the proposal's impact on national productivity would be negligible.</p>
Environment	<p>The proposal is expected to have a significant negative impact on koalas and the Greyheaded flying fox, which are listed as endangered and vulnerable under the <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i> (EPBC Act). Plans to manage environmental impacts have been identified, although approvals will be required. Environmental management and offset costs are included in the proposal's cost estimate.</p> <p>The proposal is expected to result in a net increase in greenhouse gas emissions as a result of emissions during construction (including vegetation removal), and emissions embodied in construction materials. Higher emissions during operation are also expected due to additional vehicle use. Emission reduction opportunities have been identified, however they will require further analysis as the project design is further developed.</p>
Sustainability	<p>The proponent has undertaken a preliminary assessment of sustainability and has developed a sustainability management plan for the proposal's planning phase. This identifies sustainability objectives and targets, as well as governance arrangements to consider and report on sustainability.</p>
Resilience	<p>The proponent estimates that the proposed upgrades will provide improved resilience to the impact of flooding events. Under the proponent's preferred option, the upgraded motorway will achieve a 1% Annual Exceedance Probability (AEP)⁹ flood immunity and the busway will achieve a 2% AEP flood immunity. This is relative to other parts of the existing network in the project area, which have a lower flood resilience (10% AEP).</p>
Deliverability	<p>The capability to deliver the proposal successfully, with risks being identified and sufficiently mitigated.</p>
Ease of implementation	<p>The preferred delivery method involves delivery as a single package. This approach was selected to enable the project to be completed by the end of 2030 and be fully operational before the 2032 Brisbane Olympic and Paralympic Games. The delivery timeline for a single package is shorter than a traditional program delivery approach through a series of sequential project packages.</p> <p>Analysis of packaging options undertaken during development of the business case, which was informed by learnings from delivery of earlier stages of the Pacific Motorway M1 North upgrade program, indicated that sequential packaging was the preferred option in the absence of the assumed time constraint. This is because packaging allows for the scope of the proposal to be divided into discrete components such as the busway and motorway, supporting more effective risk management. It also allows for risks associated with interfacing scope components to be managed more effectively. Feedback from market engagement indicated that packaging was a more attractive model. If completion milestones change, project packaging should be revisited.</p>

⁹ AEP is a measure of flood probability. A flood with a 1% AEP has a one in a hundred chance of being exceeded in any year.

Major challenges in delivery relate to property acquisition, demolition, public utility plant relocation works and significant disruption to local traffic for an extended period. These have been appropriately considered by the proponent in the risk analysis.

Capability & capacity

The proposal forms part of a wider Pacific Motorway M1 upgrade program. A range of capital works within the program, including projects of a similar size and level of complexity to the proposal, have previously been delivered by the Queensland Government's Department of Transport and Main Roads (TMR). The experience of TMR indicates that they have the required capability to deliver the proposal.

Several major infrastructure projects are either currently under construction, or are planned to be delivered in South East Queensland over a similar time period. This will add pressure to the construction industry to deliver this proposal during the identified delivery period and may lead to cost increases or extended delivery timeframes.

Delivery of the proposal through a single procurement contract may further impact market capacity, as the high value of the contract may constrain the pool of eligible contractors with capacity to deliver the full program. This has the effect of reducing competition and may increase contract value, which translates to increased costs of the proposal.

The proponent is seeking to mitigate market capacity risks through continued engagement with industry and cooperative tendering and procurement processes. While this measure may support procurement outcomes for this individual proposal, it is unlikely to have a significant impact on the whole of market capacity and therefore will not fully mitigate time and cost risks. The proponent may benefit from progressing further strategic analysis and consider the timing and staging of projects in response to emerging market capacity constraints and associated cost pressures.

Project governance

The existing governance structure in place for the overall Pacific Motorway M1 upgrade program is proposed to be maintained for delivery of the proposal. This leverages the existing M1 Program Board and M1 Steering Committee, which ensures coordination across current and future projects along the corridor. A specific project leadership team and technical working group has been established for the Daisy Hill to Logan Motorway proposal.

Planning and environmental approvals are not yet in place, which is consistent with the current stage of the project. The timelines allowed in the project plan to attain these approvals appear to be appropriate.

The business case identifies a tailored Early Contractor Involvement (ECI) with a Collaborative Project Agreement (CPA)¹⁰ as the preferred delivery model. The approach seeks to embed some of the benefits of the alliance delivery method in an ECI-CPA method, namely allowing for a stronger relationship between TMR and the contractor.

The preferred delivery method is appropriate for the specified delivery timeframes, with completion planned for late 2030. If timelines change, this model should be revisited.

Risk

The risk analysis is based on the results of a formal risk identification workshop, which was further refined during development of the business case. The approach to identifying risks is suitable, noting the risk register will be monitored and revised over the life of the project.

Key risks include changes in TMR design guidelines on the width of concrete barriers. The Risk Management Plan indicates that these changes are 'Likely'. This would affect the proposal design, requiring additional property acquisitions. There is also the possibility that construction works will require substantial traffic network management. If a design exception is not approved, this would impact the cost of the proposal.

The risk register has informed the proposal's probabilistic cost estimates. The contingencies used are within benchmarks for a project at this level of design. However, the escalation rates for costs from 2023/24 onwards are modest. It is likely that costs could escalate at a rate higher than that forecast if the construction market remains heated, particularly with the work required for the Brisbane Olympics.

Lessons learnt

The delivery assessment has incorporated lessons learnt from ten similar transport infrastructure projects (including three projects from the Pacific Motorway M1 upgrade program) at various stages of project delivery. This included 'greenfield' and 'brownfield'

¹⁰ A CPA is contract between the project owner and delivery contractor to work cooperatively toward agreed outcomes while sharing project risk and reward.

projects with values of between \$0.7 billion and \$2 billion.

This process provided insight into what evaluation criteria should be used in assessing packaging and delivery methods. This also identified several general learnings including the value of collaborative contracts in managing risk and the use of early/enabling works to manage time related risks before construction.

We encourage the proponent to publish the findings of any reviews undertaken to capture the lessons learnt from design and delivery for the benefit of future projects.

Economic appraisal results (preferred option)

The proponent's business case states that the NPV of the proposed design solution is estimated to be -\$2.2 billion, with a BCR of 0.24. This demonstrates the proposal will be a significant net cost to society, with the costs far exceeding the public benefits. The BCR of the preferred option increases to 0.32 when Wider Economic Benefits (WEBs) are included. When modelled with future stages of the Coomera Connector in place, the BCR increases to 0.51 (and 0.65 including WEBs).¹¹ This indicates delivering greater social benefits is heavily reliant on the delivery of other projects.

	Discount rate:	4%	7% (central)	10%
Core evaluation results¹	BCR:	0.37	0.24	0.17
	NPV (\$m):	-\$2,181	-\$2,206	-\$2,109
Results with WEBs¹	BCR:	0.48	0.32	0.22
	NPV (\$m):	-\$1,809	-\$1,990	-\$1,976
Key benefits measured:	<p>Key benefits quantified in the economic appraisal include:</p> <ul style="list-style-type: none"> Private vehicle user benefits (comprising 78% of total benefits), which includes travel time savings, vehicle operating cost savings and improved travel time reliability. Public transport benefits, which are 34% of the benefits¹², and include lower in-vehicle travel time and wait time for users of bus services. <p>Notable disbenefits include:</p> <ul style="list-style-type: none"> Construction disbenefits, due to additional travel time during construction and environmental impacts from construction Operational period externalities, including noise and pollution impacts from additional vehicle travel and costs associated with emissions from additional road maintenance. <p>The business case also measures WEBs, including agglomeration benefits, labour supply benefits and the output changes in imperfectly competitive markets. These generate a combined \$216 million in present value for the preferred option.¹³</p> <p>The business case reports sensitivity tests of possible changes in population and employment patterns and travel demand in response to COVID-19. These showed slightly lower demand for the M1, reducing the benefits and the BCR of the proposal.</p>			
Key observations and issues	<p>The cost benefit analysis is thorough, and we consider the analysis provides a robust view of the costs and benefits of the proposal.</p> <p>We note that the full benefits of the proposal are realised in the first year of operation. After this point, benefits of the proposal begin to decline. This is because while the proposal reduces congestion in the boundary of the proposal's scope, it moves the congestion to other parts of the network, such as the M1 south of Logan Motorway. This congestion prevents further benefits from being realised. Scenario analysis shows that additional benefits of the proposal are realised over time with future stages of the Coomera Connector</p>			

¹¹ Using a 7% real discount rate and a P50 capital cost estimate.

¹² The sum of private vehicle and public transport user benefit are more than 100% as there are disbenefits related to construction and environmental impacts from additional car travel.

¹³ The robustness of the methods for estimating WEBs is developing, therefore we require WEBs to be presented separately for full transparency of the results.

in place. This indicates that the Coomera Connector relieves the congestion south of the Logan Motorway. Coomera Connector stages that will interface with the proposal have been assumed in the analysis to be completed in 2036, although their delivery is subject to Queensland Government approval processes.

Based on the scenario analysis, it is evident that the economic outcomes of the proposal are sensitive to the completion of other major potential road projects. However, the analysis does not include a test to understand the impacts of deferring the project. This would reflect the interactions of the proposal with the broader road network, with the proposal displacing some congestion until other areas of the network are also upgraded.

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

Proposal development

The proposal is a part of the overall Pacific Motorway M1 North upgrade program that considers the section of the M1 from Eight Mile Plains to Logan Motorway. The first two stages of this three-stage program are complete or under construction — M1/M3 Merge (completed 2020) and Eight Mile Plains to Daisy Hill (under construction).

The proposal has been under development for a long period, during which a broad range of options for the section of the M1 from Daisy Hill to Logan Motorway have been identified, analysed and progressively refined.

A range of infrastructure and non-infrastructure solutions were initially considered. The non-infrastructure solutions were either progressed alongside proposed capacity upgrades (Smart Motorway elements) or not progressed (such as tolls and high occupancy vehicle lanes). The options analysed in the business case include:

- Option 1 (BC1) – This option includes widening of the M1 corridor between Logan Road (Exit 20) and the Loganholme Motorway Interchange, implementation of Smart Motorways technologies (ramp metering), and the extension of the Veloway 1. This option also includes a new bus station at Beenleigh-Redland Bay Road, and protection of a corridor for the busway. The risk adjusted (P90) total project cost for this option is \$3,518 million.
- Option 2 (BC2): Includes scope elements of Option 1 plus the extension of busway infrastructure, stations and services. The risk adjusted (P90) total project cost for this option is \$4,548 million.

For both options, construction is planned to be completed by 2030.

BC2 was selected as the preferred option because it better aligns to the identified service requirements, and Queensland Government objectives. It also performed better on a multi-criteria analysis. The main drawback of the preferred option is that it is more costly.

Proposal engagement history

The broader corridor is included on the *Infrastructure Priority List* as [M1 Pacific Motorway capacity: Eight Mile Plains to Tugun](#). The listing was first included on the priority list at Stage 1 in 2019, recognising the nationally significant issues of congestion along various sections of the M1 between Eight Mile Plains and Tugun.

The listing was progressed to Stage 2 in April 2022 following assessment of Stage 2 submissions for the sections between Daisy Hill and Loganholme, and between Loganholme and Nerang.

Business cases for the sections from [Eight Mile Plains to Daisy Hill](#), and [Varsity Lakes to Tugun](#), have been assessed by Infrastructure Australia and were separately listed on the *Infrastructure Priority List*.



Detailed economic appraisal results

The following table presents a breakdown of the benefits and costs stated in the business case for the preferred option (Option 2, BC2).

Benefits and costs breakdown

Proponent's stated benefits and costs	Present value (\$m,2021/22)			% of total for 7% results
	4%	7%	10%	
Discount rate (real)	4%	7%	10%	
Costs				
Total capital costs (P50)	3,143	2,761	2,445	97%
Operating costs	326	159	84	3%
Total costs^{1,2}	3,468	2,920	2,529	100%
Benefits				
Road user benefits	944	554	344	78%
Public transport benefits	429	241	144	34%
Total safety related benefits	61	34	20	5%
Active transport	33	18	10	2%
Total Construction Disbenefits	-87	-73	-61	-10%
Operational Period Externalities	-129	-72	-42	-10%
Residual Value	37	13	4	2%
Total benefits¹	1,287	714	419	100%
Net present value (NPV)³	-2,181	-2,206	-2,109	n/a
Benefit-cost ratio (BCR)⁴	0.37	0.24	0.17	n/a
Wider economic benefits (WEBs)				
Agglomeration benefits	343	199	123	21%
Labour supply benefits	8	5	3	21%
Output changes in imperfectly competitive markets	20	12	8	21%
Total benefits, including WEBs¹	1,660	930	553	n/a
Net present value (NPV), including WEBs³	-1,809	-1,990	-1,976	n/a
Benefit-cost ratio (BCR), including WEBs⁴	0.48	0.32	0.22	n/a

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.