

BOARD PAPER

Paper no:	14/12/0886
Meeting date:	12 December 2014
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Recommended by:	Tommy Parker, Group Manager (HNO) for contract award Dave Brash, Group Manager (P&I) for construction funding
Board function:	Significant planning, investment and operational matters
Subject:	SH20A to Airport Project – contract award and funding for property, design and construction

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PURPOSE

1. To update the Transport Agency Board on the State Highway 20A (SH20A) to Airport project and seek the Board's approval for:
 - a. the project delivery strategy
 - b. property, design and construction funding for the project at an expected cost of \$157 million.



SUMMARY

2. The SH20A to Airport project is part of the Auckland Accelerated package. This project was reported to the Board at your meeting on 13 December 2013. An interest free loan to the Transport Agency, provided to progress the project, was confirmed in Budget 2014.
3. Pre-construction phases are progressing rapidly due to the opportunity to accommodate a major Watercare pipeline that traverses the site as part of the construction phase. Co-ordination with Watercare will allow disruption to road users to be minimised, specifically those travelling to and from Auckland Airport.
4. To date, \$8 million has been approved for project development, including target outturn cost development. Pre-implementation investigation and design phases are now well under way.
5. Target outturn costs have been verified through a reconciliation process undertaken by independent experts, and a value engineering exercise has been carried out to address project affordability issues and to ensure value for money.

6. As a result of this work, the estimated total project cost has been revised from \$140 million (estimated in 2013) to \$157 million. The main reasons for this cost increase are new measures to improve whole-of-life outcomes and to enhance safety; scope refinements to address community and stakeholder concerns; and escalation since 2010. This revised cost remains below the Transport Agency's 95th percentile estimate of \$180 million.
7. This cost estimate will be further revised due to design changes of the base option to allow for a single widened trench to be incorporated into the centre of the motorway for future light rail to the airport. The cost of this widened trench has been estimated at up to \$30 million. The Transport Agency is working with Auckland Transport to refine the costs for the widened trench and future funding arrangements.
8. Subject to agreement between the Transport Agency and the MHX Alliance on the project design and cost, the MHX Alliance will be commissioned to deliver the project. Construction is expected to start in early 2015 and to be completed by March 2017.



RECOMMENDATIONS

9. That, in relation to project delivery, the New Zealand Transport Agency Board:
 - a) **Notes**
 - (i) the current Transport Agency's project scheme for the State Highway 20A to Airport project
 - (ii) that the final State Highway 20A to Airport project scheme will integrate with Auckland Transport's future Southwestern Multi-modal Airport Rapid Transit Project (SMART) within the State Highway 20A corridor through future-proofing of rail options

- b) **Endorses** the project delivery strategy for the State Highway 20A to Airport project with SMART integration.
10. That, in relation to project funding and investment, the New Zealand Transport Agency Board
- c) **Notes** the total project cost is estimated at up to \$157 million (including net property and escalation) and is within the 95th percentile at \$180 million
- d) **Notes** the National Land Transport Fund funding is to be supported by an interest-free Crown loan
- e) **Notes** the reasons for this decision are set out in the *Reasons for recommendation* section in Attachment 3
- f) **Approves** up to \$157 million for the property, design and construction of the State Highway 20A to Airport project.



BACKGROUND

11. State Highway 20A is the primary route between Auckland Airport and the Auckland central business district.
12. The SH20A to Airport project involves grade-separating what is currently a signalised intersection at the end of a motorway environment. It also involves associated works on the motorway approaches and on the intersecting local roads.
13. The project is incorporated into the 2012-15 Regional Land Transport Programme and the 2012-15 National Land Transport Programme.

14. The project was initially proposed to be delivered prior to the 2011 Rugby World Cup but did not proceed due to other priorities and funding constraints. Its start date was subsequently deferred in the state highway programme to approximately 2018/19.
15. In June 2013 the Prime Minister announced an accelerated package of transport infrastructure improvements for Auckland, including the SH20A to Airport project. Funding to accelerate the project's start date was confirmed in Budget 2014 at a cost of \$140 million. This is to be provided through National Land Transport Funding supported by a Crown loan.
16. The Government's decision to accelerate the project provides an opportunity to co-ordinate works with Watercare's major work on their Southwestern pipe-line (the Hunua 4 project) to minimise public disruption. The pipeline will traverse this site with major excavation and would require significant rework if the two projects were not co-ordinated.
17. Approval to commence design of this project resulted from a paper presented to the Board in December 2013 (*Auckland Accelerated State Highway Projects: Status Report, request for NLTP Variation and Advance of Project Development Funding*).
18. The airport and its surrounding service facilities are planned to grow vastly over the forthcoming years to include new hotels, service businesses, airport terminus extensions and an extra runway. The completed project will resolve a 'pinch point' on the motorway network between Auckland city and the airport, improve safety on this route, improve cycle facilities, and allow for the construction of a future rapid rail system if required.
19. Further details of the project and its assessment can be viewed in the Board Resource Centre in Board Books (*NZTA SH20A to Auckland Airport Cost Scope Adjustment*).

CURRENT STATUS

20. As noted, the project was given support at the December 2013 Board meeting.
21. The Board approved \$2.5 million for initiating the project development phase. This was intended to cover investigation and consenting. A contract was subsequently awarded to the Manukau Harbour Crossing (MHX) Alliance for investigation, specimen design and consenting.
22. Subsequent to this initial amount, an additional \$5.5 million for continuing the project development was approved by the Group Manager, Planning and Investment in October 2014.
23. Current progress under the pre-implementation investigation and design phase is:
 - Design 40% complete
 - Pre-implementation consultation 100% complete
 - Property purchase 40% complete
24. Subject to agreement between the Transport Agency and the MHX Alliance on the project design and cost, the MHX Alliance will be commissioned to deliver the project. Construction is expected to start in early 2015 and to be completed by March 2017.

EXPECTED PROJECT COST

25. As part of its work to date, the MHX Alliance has also developed a target outturn cost based on the project presented to the Board as part of the Accelerated package funding in early 2014.
26. The Transport Agency's independent experts have completed a reconciliation process on the target outturn cost. They have confirmed that the MHX Alliance meets the requirements

specified in our procurement strategy for awarding the contract and that the reconciled target outturn cost represents a fair price for the scope of work.

27. The total project cost after this reconciliation was above the Transport Agency's original estimate of \$140 million. A value engineering exercise was undertaken to address the project affordability issue and ensure value for money. Following the value engineering exercise, the final project cost is estimated as \$157 million.
28. The cost increase is primarily due to:
 - Transport Agency and Auckland Council standard changes since 2010 that provide improved whole-of-life outcomes and enhance safety. These include: 50-year design life for concrete noise walls, additional barrier lengths required by the safe systems approach, improved stormwater design to meet the new stormwater code of practice and unitary plan requirements.
 - Refinement to the original macroscope requirements of the project to address community and stakeholder concerns, including keeping the Bader Drive off-ramp open to meet community travel needs and accommodating a cycleway within the SH20A corridor to integrate with the regional cycle network.
 - Escalation since 2010.
29. The expected project cost of \$157 million is still below the Transport Agency's 95th percentile estimate of \$180 million.

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INTEGRATION WITH SMART

30. The Transport Agency has worked with Auckland Transport since 2009 to investigate options for future heavy rail along this corridor through the SMART working group.
31. The conclusion of this study recommended a preferred option for heavy rail to the west of the Kirkbride interchange either in a separate trench or on an elevated structure.
32. In assessing options for rail to the airport, Auckland Transport approached the Transport Agency to consider opportunities to include provision for light rail within this project, with the objective of minimising future costs for rail along this corridor.
33. The Transport Agency and Auckland Transport considered 10 options for light rail. The preferred option is for a single widened trench in the centre of the motorway. This is mainly due to the less restrictive design standard for a light rail solution.
34. The MHX Alliance estimates the cost for a widened trench to be up to \$30 million. This is due to the fundamental change to the trench design, additional material (such as props, piles, and extra supporting structures) and construction costs (wider and deeper excavation).
35. Auckland Transport has subsequently indicated a desire to proceed with the widened trench option although it is yet to formally confirm this.
36. The MHX Alliance is now working with Auckland Transport to develop a target outturn cost variation to incorporate the SMART light rail trench. The Transport Agency is also working with Auckland Transport to establish a funding mechanism for the additional cost of the SMART light rail trench.
37. The project cost of \$157 million reported in this Board paper does not include the additional \$30 million for the SMART light rail trench. An additional request for funding will be made following confirmation of the cost and funding arrangement with Auckland Transport.



PROJECT PROCUREMENT

38. The rationale for the decision to proceed with the MHX Alliance to deliver the SH20A to Airport project is based on factors such as:
 - it allows the Transport Agency to coordinate construction with Watercare's Hunua 4 project which would not be possible if we tendered on the open market
 - it reduces the construction period from 3–4 years to 18–27 months
 - it allows a quick start using the historical knowledge and intellectual property gained from the early phases of the project, which were led by the MHX Alliance.
39. The target outturn cost reconciliation has confirmed that the price offered by the MHX Alliance (which is below the independent experts' cost estimate) is comparable to competitive prices likely to be achieved through open market tendering.
40. The MHX Alliance has provided the Transport Agency with an assessment on the value proposition. The independent experts and the Transport Agency have reviewed the assessment and confirm that the MHX Alliance provides the Transport Agency with cost savings of more than \$20 million. The MHX Alliance also meets the requirements specified in the procurement strategy for contract awarding.
41. An extension to the MHX Alliance contract is considered the optimal procurement strategy and meets the Transport Agency's procurement requirements for fair and open competition.
42. This project's procurement is consistent with the State Highway Procurement Strategy, which has been approved by the Board.

PROJECT DELIVERY STRATEGY

43. The project team is progressing on the assumption of integration with SMART. It has developed a project delivery strategy to accommodate different SMART scenarios.
44. Enabling works are planned to start in January 2015.
45. A decision from the Transport Agency and Auckland Transport by the end of January 2015 on the integration with SMART is critical and is a key project risk (see below).

RISKS AND FINANCIAL IMPLICATIONS

46. In Budget 2014, the Transport Agency was provided with an interest-free loan facility from the Crown of \$375 million to accelerate \$815 million worth of Auckland transport projects from the National Land Transport Fund. Within this accelerated package, the cost of the SH20A to Airport Project was estimated at \$140 million. As noted, the estimated cost is now \$157 million.
47. The Transport Agency is managing the Auckland accelerated projects as a single programme, and will look to make savings in other components to account for this \$17 million increase. The risk remains on the National Land Transport Fund and its wider programme if these Auckland accelerated programme savings cannot be achieved.
48. The project team is working with Auckland Transport to reach agreement on the long-term network solution for the project area while endeavouring to meet Watercare's project timeframes. Two key issues currently being investigated are:

- a) Montgomerie Road closure: There is a statutory process yet to be completed which could result in additional costs for network mitigation. This is estimated to be up to \$5 million.
- b) Southwestern Multi-modal Airport Rapid Transit (SMART): As previously noted, the future-proofing of the trench for the provision of SMART has an indicative cost of \$30 million with future full development costs still uncertain. Auckland Transport is yet to formally confirm its support for the trench option, and is working with the Transport Agency to establish a funding mechanism for the additional cost.

Should Auckland Transport fail to decide on SMART integration by the end of January 2015, there would be impacts on project costs and the coordinated programme with Watercare's Hunua 4 project. The project team is working closely with Auckland Transport to allow this decision to be made on time.



COMMUNICATION AND ENGAGEMENT

49. Significant external stakeholder engagement has occurred and fortnightly hui were held with mana whenua between August and November 2014. Key stakeholder groups continue to be engaged regularly by project presentations, working groups and meetings.



ATTACHMENTS

50. There are four attachments:

Attachment 1: SH20A to Airport scheme

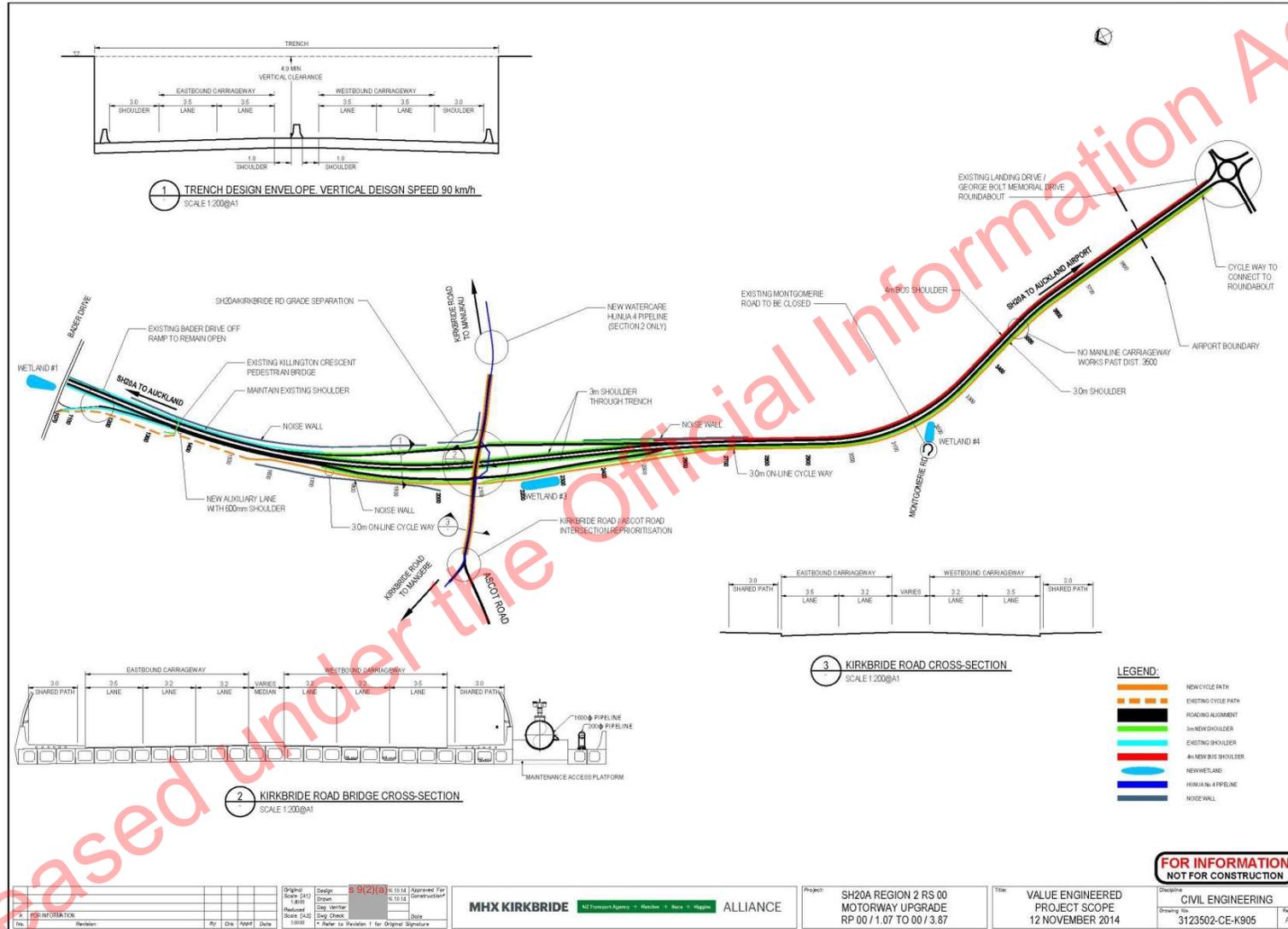
Attachment 2: Artist's impression of Kirkbride Road intersection: before and after scenarios

Attachment 3: Reasons for recommendation to approve funding

Attachment 4: Location map

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Attachment 1: SH20A to Airport scheme



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Attachment 2: Artist's impression of Kirkbride Road intersection: before and after scenarios



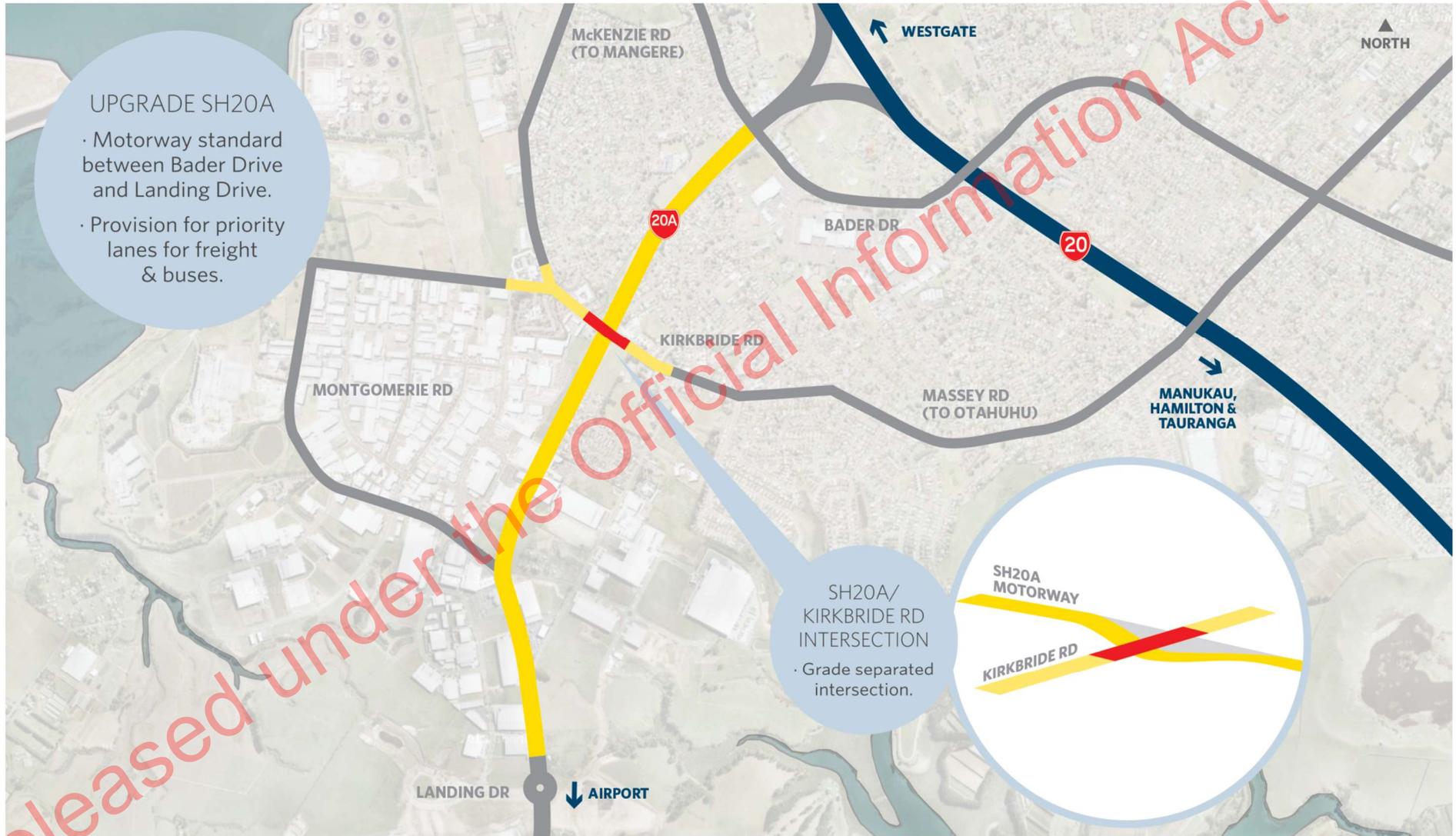
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Attachment 3: Reasons for recommendation to approve funding

- The SH20A to Airport improvements project has been assessed against the NZ Transport Agency's Assessment Framework.
- The assessment profile for the project is: High strategic fit, Medium effectiveness, with a BCR of 3.1 ('Medium efficiency' under the current Investment Assessment Framework).
- The current at-grade signalised SH20A/Kirkbride Road intersection is a 'pinch point' on the motorway network between Auckland and New Zealand's main international airport. It is also listed in New Zealand's most at-risk (crashes) 100 intersection sites. The airport and its surrounding service facilities are planned to grow vastly over the forthcoming years to include new hotels, service businesses, airport terminus extensions and an extra runway. The predicted annual traffic growth rate at our current pinch point is 5%.
- To cater for the airport growth and the existing capacity and crash problems, the current signalised intersection will be replaced with a grade-separated interchange. Additionally, the associated approaches will be upgraded to meet the standard of the changed speed environment. After the improvements are completed, the corridor will have improved cycle facilities and will be designed to allow for the construction of a future rapid rail system if required.
- We confirm that the matters in sections 20(2) and 20(5) of the Land Transport Management Act 2003 have been satisfied, and that the matters in section 20(3) have been taken into account.

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Attachment 4: location map



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