



NZ TRANSPORT AGENCY
WAKA KOTAHI

Agenda no.

13c

In Committee

File ref: APO-88-12-09

Board Paper No.	08/12/0121
Date	08 December 2008
Prepared by	Ian Hunter Partnership Manager, Central
Recommended by	Dave Brash Group Manager Regional Partnerships and Planning
Subject	NZ TRANSPORT AGENCY: SH1 BASIN RESERVE IMPROVEMENTS INVESTIGATION FUNDING

Purpose

- 1 To seek the Board's approval for funding the Investigation of the New Zealand Transport Agency's project for improvements at the Basin Reserve in Wellington city.

Recommendations

- 2 That the NZ Transport Agency Board:
 - a. notes that the SH1 Basin Reserve Improvements project is a component of a package of works described in the Ngauranga to Airport Corridor strategy that the Board has supported, that is intended to intensify land use around the Newtown/Adelaide Road growth area assisted by improvements to passenger transport, walking and cycling and general traffic flow;
 - b. approves funding for the Investigation of the New Zealand Transport Agency's SH1 Basin Reserve Improvements project at an estimated cost of \$3.3 million from N funds, subject to:

- i. the development of a Memorandum of Understanding, to the Chief Executive's satisfaction, amongst the NZTA, Wellington City Council and Greater Wellington Regional Council that sets out the governance arrangements and obligations of each party with the aim of optimising and delivering the complete package of public transport, walking & cycling, roading, urban design and land use changes of which this project is a part; and
- ii. the establishment of a hold point during investigation following selection of the preferred option and before undertaking the Assessment of Environmental Effects and lodging of the Notice of Requirement to enable the Board and the NLTP Review Group to consider the macroscopes of this project and the Basin Reserve Package of which this project is part;
- c. requests the Chief Executive to advise the Regional Transport Committee that, should the profile of this project change during investigation, funding for subsequent phases of this project may be subject to the availability of R or C funding for the Region;
- d. notes that the construction cost for the SH1 Basin Reserve Improvements project is estimated at \$42 million the 95th percentile construction cost is estimated at \$66 million and the 5th percentile at \$32 million;
- e. notes the reasons for this decision are as set out in the Reasons for recommendation section; and
- f. agrees to take Board paper 08/12/0121 out of Committee when the Board has published the notice of decision.

Background

Strategy support and/or package endorsement

- 3 This project is an element of the Ngauranga to Airport Corridor Plan in the Wellington Regional Land Transport Strategy. The strategy behind the Plan was considered and supported by the Land Transport NZ Board at its July 2008 meeting, and this formed the basis of a submission to the Region. Our submission suggested an acceleration of the investigation into high quality public transport services in the corridor. High quality public transport services through the Newtown/Adelaide Road urban renewal and growth area are, in part, dependent on the proposed Basin Reserve improvements being in place. The Plan was subsequently adopted by the Region and the first stage (of two) is shown in the map in Attachment 1.

Strategic Context

- 4 This project appears in the Ngauranga to Airport Corridor Plan as the highest priority road improvement project with construction programmed to start in 2011/12. The relevant statement in the Plan is:

"Design and construct improvements at the Basin Reserve to improve passenger transport, walking and cycling by separating north-south flows from east-west traffic; and implement complementary bus priority measures on Kent Tce, Cambridge Tce and Adelaide Road."

Problem definition and project objective

- 5 Traffic congestion at the Basin Reserve seriously affects the reliability of bus timetables between the southern suburbs and the CBD. In addition, the clash between north/south and east/west traffic that occurs at the Basin causes significant congestion to inner city traffic flows.
- 6 Walking and cycling in the vicinity of the Basin require difficult, and unsafe crossings of high volume multi-lane roads, which needs to be addressed as part of this project.
- 7 As stated in the Project Feasibility Report (PFR), the objectives of this project are to:
 - a. Increase the efficiency of through traffic between the Inner City Bypass and Mount Victoria Tunnel;
 - b. Improve the efficiency and reliability of passenger transport services between Kent / Cambridge Terrace and Adelaide Road,;
 - c. Address safety and capacity concerns relating to high traffic flows, weaving and speed around the Basin Reserve; and
 - d. Improve pedestrian access to the Basin Reserve, particularly addressing the need for pedestrians to cross significant traffic flows during events,
- 8 The provision of a more efficient, less congested road network means that segregating the traffic movements, and hence reducing the potential for conflict, is seen as a high priority. At the same time the continued operation of the Basin Reserve as an international sporting venue must be maintained. The interaction between the physical location of the sporting facility and the road networks functionality needs to be considered during investigation.

Alternatives and options

- 9 Several options for providing the desired improvements are described in the PFR. Within each of these options, there are sub options that will be further examined in the Investigation phase.

- 10 Alternatives to the proposed roading solution are severely limited by Wellington's road pattern, the City's desire for a growth spine including the Adelaide Road area and the location of public transport corridors.

Scope of activity under funding request

- 11 The scope of this funding request is full investigation of the proposed improvements through to and including lodging the Notice of Requirement.

Regional perspective

- 12 The region has adopted the Ngauranga to Airport Corridor Plan as an element of its RLTS. This project is a high priority part of that Plan.

Funding issues

Recommended conditions of funding and Chief Executive actions

- 13 In its consideration of the project application, to endorse the recommendation for Board approval, the NLTP Review Group was concerned that the project needs to be advanced as part of the Basin Reserve Package, which requires coordination and integration amongst roading, public transport, walking and cycling, land use intensification and urban design activities to achieve the full benefits from the strategy. A risk of the project's programming and timing getting out of kilter with that of the package has driven the recommendation for a condition of funding for the development of a Memorandum of Understanding (MoU) amongst the NZTA, Wellington City Council and Greater Wellington Regional Council. The MoU, which requires the Chief Executive's approval, will set out governance arrangements and obligations of each party with respect to the complete package of public transport, walking & cycling, roading, urban design and land use changes of which this project is a part.
- 14 A further condition of funding is recommended, which is standard for larger, more complex projects, for a hold point during investigation for the Board to consider the macroscope of the project before Assessment of Environmental Effects and lodging of the Notice of Requirement. The requirement has been expanded to include the NLTP Review Group in the consideration, which would be the case for an Approved Organisation's activity where a hold point is established and ensures a fair handed application of the scrutiny principle. We also recommend consideration of the macroscope of the package at the same time, to ensure coordination and sequencing of the activities will achieve value for money from the investment proposed in the Basin Reserve Improvements project.

- 15 Finally we recommend that the Board requests the Chief Executive to be requested to advise the Regional Transport Committee that, should the profile of this project change during investigation, funding for subsequent phases of this project may be subject to the availability of R or C funding for the Region. While the PFR level analysis indicates a profile of HMM, we are concerned that the estimated costs appear low for a project of this complexity in an inner city environment and think it prudent that the Regional Transport Committee be made aware that there is a risk that R or C funds might be required for later phases of this project.

Assessment

- 16 Our assessment of the strategy included providing an indicative assessment profile for the implementation packages, including the Basin Reserve Package of which this project is part. The indicative profile of HMM has been carried through to the investigation phase, and is summarised below:

Readiness for funding this phase	Ready <ul style="list-style-type: none">the project is included in the 2008/09 NLTPit has been consulted publicly as part of the 2008/09 State Highway Forecast
Seriousness & urgency of the problem	High <ul style="list-style-type: none">the project addresses serious problems of deteriorating travel times and trip reliability on a key inner city transport route around the Basin Reservethe problems impact economic development (land use intensification, travel times and trip reliability on a route likely to be identified as critical) and access and mobility (will severely compromise plans for improved PT services in the north-south corridor)the urgency to address these problems is considered very high, as elements of the package, eg Wellington City bus priority are in the process of being implemented
Effectiveness of the solution	Medium <ul style="list-style-type: none">if the various organisations involved in delivering the package coordinate and integrate their activities properly to optimise the package, bringing sound urban design principles into play from the outset, the result could be a highly effective urban solution that contributes very positively to all NZTS objectiveshowever, the risks involved in delivering such a complex package suggest that the results, though an improvement, will probably fall short of the aspirations of the City and Region

	<ul style="list-style-type: none">the risks include suboptimal prioritisation and programming of activities which fails to achieve value for money; visual impairment of the Basin Reserve environment; compromised intensification, PT and active mode delivery
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Efficiency of the solution	Medium <ul style="list-style-type: none"> BCR is estimated at 2.4 the economics are at PFR level and have not been peer reviewed, and may change substantially during investigation.
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Reasons for recommendation

- 17 The assessment of this project is based on the strategy assessment done for the Ngauranga to Airport Corridor Plan and is of high seriousness and urgency, medium effectiveness and medium efficiency.
- 18 The project addresses the problem of route efficiency around the Basin Reserve which in turn, if not solved, will severely compromise plans for significantly improved PT services in the north-south corridor and associated intensification of development along Adelaide Road
- 19 Preliminary analysis of the Basin Reserve Project, shows that the project, properly integrated with the Basin Reserves Package, has the potential to contribute very positively to an affordable, integrated, safe, responsive, and sustainable land transport system. The potential could be compromised by the risks involved in delivering such a complex package.
- 20 We confirm that the matters in sections 20(2) and 20(5) of the LTMA have been satisfied, and that the matters in section 20(3) have been taken into account.

Cost estimate and cash-flow

Phase cash-flow

- 21 The cash-flow for the phase is forecast as below: *(in escalated \$)*

Year	Total cost (\$ million)	NZTA cost (\$ million)
2008/2009	0.70	0.70
2009/2010	1.80	1.80
2010/2011	0.80	0.80
TOTAL	3.30	3.30

Construction/implementation phase

- 22 Construction/implementation cost estimates are shown in the table below. They include property and escalation, where applicable.

	Estimate for this funding application (\$ million)
Expected	42
95 %ile	66
5 %ile	32

Case management

- 23 Case management is being applied to the project and will be directed by the MoU, once developed.

Funding source

- 24 The project is incorporated in the 2008/09 NLTP with an indicative C1 funds source. However, the assessment profile of HMM means that the project warrants funding from N funds. We recommend that the Investigation phase of this project be funded from N funds, noting the request for the Chief Executive to advise the RTC that the funding source could change to R or C funds if there is a change to the assessment profile during investigation.
- 25 We confirm that there are sufficient funds available from the recommended source to allocate to this activity.

Conclusion

- 26 Funding for the Investigation phase of this project is warranted based on the preliminary assessment profile of HMM and the urgency and seriousness of the problem being addressed. We recommend that the Board approves its funding from N funds.

In Committee status

- 27 Board paper 08/12/0121 is In-Committee to allow the Board free and frank discussion of the issues and we recommend that it be taken out of Committee when the Board has published its decision.

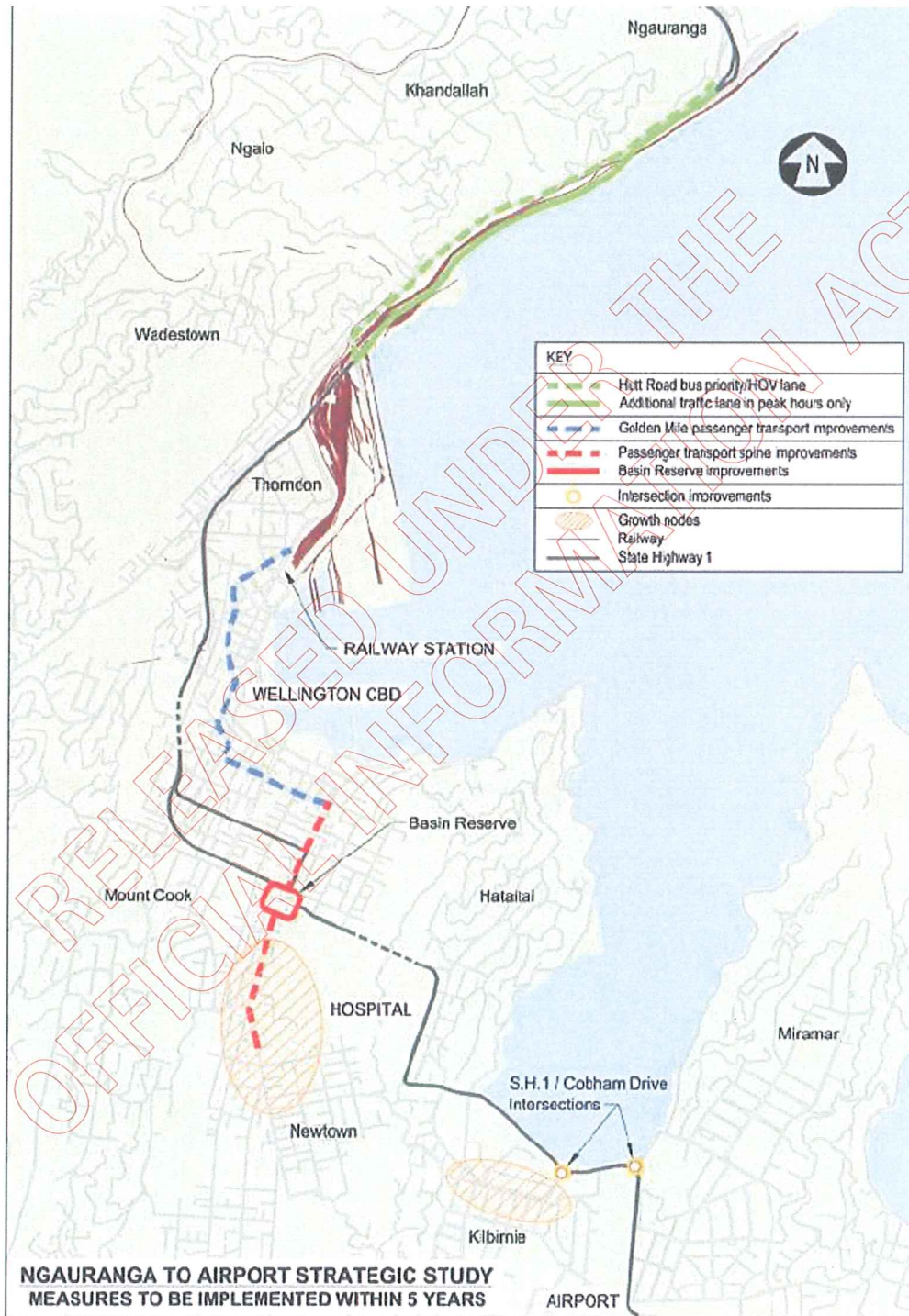
Attachments

- 28 There is 1 attachment to this paper:

Attachment 1: Location map

Attachment 1

Location map





NZ TRANSPORT AGENCY
WAKA KOTAHI

Agenda no.

20c

In Committee

File ref: APO-88-12-12

Board Paper No.	09/02/0148
Date	16 February 2009
Prepared by	Ian Hunter, Partnership Manager, Central
Recommended by	For: Dave Brash, Group Manager, Regional Partnerships & Planning
Subject	NZTA (SH1): TERRACE TUNNEL AND MT VICTORIA TUNNEL – FINAL INVESTIGATION AND PRELIMINARY DESIGN FUNDING

Purpose

- 1 To seek the Board's approval for funding of the completion of Investigation and preliminary design of the New Zealand Transport Agency's project for safety improvements at the Terrace and Mt Victoria road tunnels on SH1 in Wellington City.

Recommendations

- 2 That the NZ Transport Agency Board:
 - a. approves funding for the final investigation and preliminary design of the New Zealand Transport Agency's SH1:
 - i. Terrace Tunnel Refurbishment project at an estimated cost of \$3.7 million from N funds;
and

- ii. Mt Victoria Tunnel Refurbishment project at an estimated cost of \$3.0 million from N funds **subject to**:
 - A. the Chief Executive's approval of a procurement procedure, assessed under s25 of the LTMA, covering the procurement of both projects through an alliance contract which is to include a hold point when the target price is agreed to enable the Board to confirm the scope and standards for the refurbishment work; and
 - B. NZTA's Highway and Network Operations Group undertaking a review of the practicality and cost of undertaking the refurbishments so as to allow for the transfer of the pedestrian/cycle facility from the old tunnel should the Mt Victoria Tunnel be eventually duplicated;
- b. **notes** that the construction costs for the projects are estimated at:
 - i. Terrace Tunnel – \$44 million, 95th percentile \$63 million and 5th percentile \$33 million;
 - ii. Mt Victoria Tunnel – \$41 million, 95th percentile \$66 million and 5th percentile \$28 million;
- c. **notes** that, while the probability of a serious event is very low, the need for refurbishment of the tunnels is regarded as urgent and that the projects will be progressed as fast as practically possible;
- d. **notes** the reasons for this decision are as set out in the Reasons for recommendation section; and
- e. **agrees** to take Board paper 09/02/0148 out of Committee when the Board has published the notice of decision.

Background

Project description

- 3 Refurbishment of the Terrace and Mt Victoria road tunnels on State Highway 1 in Wellington City required to improve their fire fighting capability and to renew ageing and deteriorated machinery and fittings, particularly ventilation and lighting.

Strategy support and/or package endorsement

- 4 The projects have arisen as a result of asset management planning and monitoring and are renewals with an element of improvement to meet current standards and expectations. They are not part of a strategy or package and have not previously been before the Board.

Strategic Context

- 5 The projects are both critical links that carry around 40,000 vehicles per day on SH1 through Wellington City, a route of strategic and operational importance to the city, region and nation. Retention and improvement of these links is of vital importance and a high priority in the Wellington RLTS and the Ngauranga to airport Corridor Plan.

Problem definition and project objective

Investigations have revealed that the ventilation, fire fighting and lighting of the tunnels is well below current international practice. In the case of fire fighting facilities, they would likely be ineffective in the event of a vehicle fuel fire in either tunnel. While the probability of a significant vehicle fire in the tunnels is very low, the consequence could be severe and would, if below standard facilities were retained without improvement, be regarded as untenable. In the Mt Victoria Tunnel the concrete ceiling panels have deteriorated to the point where there is a risk of concrete falling onto the roadway. In both tunnels the wall linings would provide further fuel to any fire and produce toxic fumes.

- 6 The objective of these projects is to improve fire safety and limit network disruption by reducing the risk and consequences of incidents and fires in the tunnels, and to renew elements of the tunnels that have reached the end of their useful life.

Alternatives and options

- 7 There is no tenable alternative to improving the safety of these tunnels.
- 8 Options exist around the degree of protection provided in the event of a fire. Particularly the choice of a "design fire" is crucial and may have an effect on the effectiveness and cost of the projects. For this reason, we are recommending a hold point when the macroscope is defined, to allow the Board to review the scope and standards proposed for the preferred option and its likely cost.

Scope of activity under funding request

- 9 The scope of activity under this funding request is:
- procurement of all phases of the project under an alliance contract
 - completion of investigation;
 - preliminary design;
 - evaluation of options and selection of preferred option.

Regional perspective

- 10 The region is aware of these projects through the RLTP process. The RTC is fully supportive of the early implementation of the proposed improvements.

Funding issues

Board State Highways Committee considerations

- 11 The Board State Highway Committee has considered the projects and expressed its wish that they be progressed in a timely manner. We have captured this intent in a noting recommendation. Based on preliminary information the projects could be completed between mid-2013 and mid-2016, the wide spread of dates reflecting uncertainties around design and choice of macroscopic, consents processes and ease of construction. A key decision that will have a major impact on completion date will be whether the construction is done on a night shift (less traffic disruption) or 24 hour (requiring traffic diversion) basis. Given the projects' high priority, funding is not expected to be an issue affecting the completion date. Estimated completion dates will be firmed up during final investigation and preliminary design.

Recommended conditions of funding and Chief Executive actions

- 12 The Ngauranga to Airport Corridor Plan adopted by the Wellington RTC includes the duplication of the Terrace and Mt Victoria tunnels as longer-term (>10 years) projects. The Mt Victoria tunnel has substandard lane widths for two way flow (as at present) and unidirectional flow (following duplication). Increased lane widths in the existing Mt Victoria tunnel could only be achieved by removing the existing pedestrian/cycle facility, which also forms part of the ventilation system.
- 13 We recommend as a condition of funding for this activity that the Mt Victoria tunnel project include a review of the practicality and cost of undertaking the refurbishments so as to allow for the transfer of the pedestrian/cycle facility from the old tunnel when the Mt Victoria Tunnel is duplicated eventually.
- 14 A condition of funding for procurement through an alliance contract is also recommended, as discussed in the Procurement section.

Assessment

- 15 We have assessed the project using the NZTA's funding allocation process and have determined the following assessment profile:

Readiness for funding this phase	Ready <ul style="list-style-type: none"> the projects are included in the 2008/09 NLTP as part of NZTA's block programme, where they have been investigated to date, and will now become complex projects, given the scope and construction cost involved consultation was carried out as part of the 2008/09 State Highway Forecast
Seriousness & urgency of the problem	High <ul style="list-style-type: none"> the projects address a serious health and safety risk with very low probability but possibly extreme consequences based on the recent asset management work, which has shown that fire fighting facilities and ventilation in the tunnels are below current international practise, this project should proceed to construction as quickly as possible
Effectiveness of the solution	Medium <ul style="list-style-type: none"> the projects will help avoid the extreme adverse contributions to all LTMA objectives that could result from a fire event in either tunnel the refurbishment of ventilation systems will contribute positively to public health and safety objectives the projects will require careful planning and management to mitigate traffic disruption as these tunnels are key links in the Wellington urban road network – it is unlikely that disruption can be avoided completely and this will result in disbenefits to the city's transportation system during the construction period
Efficiency of the solution	High <ul style="list-style-type: none"> as for other renewal projects, the economic efficiency is assessed as high, with option selection being based on least whole of life cost in combination with other factors such as risk

Reasons for recommendation

- 16 The assessment profile for this activity has been determined as being of high seriousness and urgency, medium effectiveness and high efficiency.
- 17 The project addresses a risk resulting from fire fighting and ventilation equipment and systems that no longer meets international practise. Road users would be exposed to injury or death in the event of a vehicle fuel fire in one of these tunnels. While the probability of such an event is very low, and there will be disruption to the transport system during construction, the consequences could be

very serious. We consider that it would be untenable for the NZTA, now that it is aware of the risk, not to act to address the risk with all possible speed.

- 18 We confirm that the matters in sections 20(2) and 20(5) of the LTMA have been satisfied, and that the matters in section 20(3) have been taken into account.

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Cost estimate and cash-flow

Phase cash-flow for the Terrace Tunnel Safety Improvement project

19 The cash-flow for the phase is forecast as below:

Year	Total cost (\$ million)	NZ Transport Agency cost (\$ million)
2008/2009	0.50	0.50
2009/2010	3.20	3.20
TOTAL	3.70	3.70

Phase cash-flow for the Mt Victoria Tunnel Safety Improvement project

20 The cash-flow for the phase is forecast as below: *(in escalated \$)*

Year	Total cost (\$ million)	NZ Transport Agency cost (\$ million)
2008/2009	0.50	0.50
2009/2010	2.50	2.50
TOTAL	3.00	3.00

Procurement

21 The work involved for both tunnels is very complex requiring a range of specialist suppliers and contractors including:

- complex project and associated systems expertise and management;
- traffic management and associated public relations;
- fire engineering suppliers and installers;
- air ventilation and conditioning specialists; and
- civil contractors for tunnel linings, water reservoirs, etc.

22 The bulk of the work will be undertaken in an operating tunnel, within confined spaces and requiring special precautions and/or closures.

- 23 The composition and organisation of the design and construction team will be vital to the success of these projects to minimise disruption to traffic and ensure speed of implementation. Supplier selection based on the principles of partnering or alliance contracts has been recommended by the Highway and Network Operations Group.
- 24 We see the logic of this recommendation. Value for money in these projects is going to be achieved more through the quality of project management and construction-friendly design than through achieving the lowest bid price. Therefore, the early engagement during investigation and preliminary design and the use of a partnering/alliance model appears to be an appropriate method for supplier selection and contract.
- 25 The alliance arrangement is outside of current approved procurement procedures, requiring testing under section 25 of the LTMA and NZTA approval. As the NZTA Highway & Network Operations Group is part of the Procurement Manual pilot approved by the Board, the Chief Executive can approve the procedure. A condition of funding is recommended to cover this need, as would be done for any Approved Organisation in a similar situation.

Case management

- 26 It is likely that a higher level of case management will be applied to the projects once these are into the design and construction phases. We anticipate some form of governing/reference committee involving NZTA, Police and Wellington City Council. Case management details will be fleshed out during investigation.

Funding source

- 27 These projects are essentially a renewal of existing state highway assets and, would normally be funded from N funds. The assessment profile of HMH warrants funding from this source.
- 28 We confirm that there are sufficient funds available from the recommended source to allocate to this activity.

Conclusion

- 29 Funding for the final investigation of these projects is warranted based on the assessment profile of HMH and we recommend that the Board approves their funding from N funds subject to conditions relating to incorporating into investigation and design the eventual transfer of the pedestrian/cycling facility in Mt Victoria Tunnel and development and approval of a procurement procedure.

Communications plan

- 30 A communications plan is being prepared to cover possible public concerns over the projects.

In Committee status

- 31 Board paper 09/02/0148 is In-Committee to allow the Board free and frank discussion of the issues and we recommend that it be taken out of Committee when the Board has published its decision.

Attachments

- 32 There is one attachment to this paper:

Attachment 1: Location Map

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Attachment 1
Location map

