

542/790

Ferrymead Bridge



COSTS (Costs net of thirds-party contributions in brackets)

Total	Renewal	Backlog	Unallocated	Growth
\$7,178,176	\$502,472	\$2,870,553	0	\$3,805,151
(\$3,373,753)	(\$236,162)	(\$1,349,160)		(\$1,788,421)

COST ALLOCATION

Primary Driver:	Susceptibility of strategic transport link to loss through natural hazards (principally earthquake). Loss would lead to significant congestion issues, affecting sustainability and loss of integration for transport system. Responsiveness of authorities to cope in post-event scenario would also be compromised. Significant costs in terms of reduced access and mobility and environmental sustainability if link is lost.
Secondary Driver:	
Capacity discussion:	
References:	

ATTRIBUTES

Project Manager:	Chris Nordstrom, Paul Roberts
Work Planned:	Replacement of existing Ferrymead Bridge to provide secure bridge link with no load restrictions capable also of carrying other vital infrastructure (power, water, sewer, telecoms) in addition to transport. Widening of bridge to allow for more capacity and simplification of intersection at east end of bridge. Installation of traffic signals.
Location:	Ferrymead Bridge

<p>Special features being addressed:</p>	<p>Bridge susceptible to loss due to earthquake.</p> <p>Proposed intersection changes at east end of bridge will simplify existing confusing layout, which, combined with signalisation of key movement (and banning an unsafe-right-turn) will reduce the crash-rate and be consistent with the Road Safety 2010 strategy.</p> <p>Specific measures are proposed to enhance the safety and security of pedestrian and cyclist road-users.</p>
<p>A statement of the outcomes being addressed (LoS, Community Outcomes):</p>	<p>Increased Level of Service</p> <p>Increased public transport</p> <p>Maintenance of strategic transport link</p> <p>Increased safety</p>
<p>Options considered:</p>	<p>A wide range of alternatives have been considered, starting with a feasibility report produced in 1999. This considered options ranging from Do-nothing, to over 12 options for provision of a more secure link.</p>
<p>Implications of not doing the project:</p>	<p>Susceptibility of strategic transport link to loss through natural hazards (principally earthquake). Loss would lead to significant congestion issues, affecting sustainability and loss of integration for transport system. Responsiveness of authorities to cope in post-event scenario would also be compromised. Significant costs in terms of reduced access and mobility and environmental sustainability if link is lost.</p>
<p>Linkages with other projects:</p>	<p>Ferry-Humphreys Intersection, Main Road 3-laning.</p>
<p>Location of other relevant supporting information:</p>	<p>Ferrymead Bridge Lifelines Project – Frequently Asked Questions and plans.</p> <p>Report to the Sustainable Transport and Utilities Committee to the Council meeting of 23 September 2004.</p> <p>LTP Online application</p>

Project Cost Allocation Summary

Background

Project No	542/790	Activity	Transport and City Streets
Project Name	Ferrymead Bridge		
Project Manager	Chris Nordstron, Paul Roberts		
Year first spend on the project	2001	Project Scope	Replacement of existing Ferrymead Bridge to provide secure bridge link with no load restrictions capable also of carrying other vital infrastructure (power, water, sewer, telecoms) in addition to transport. Widening of bridge to allow for more capacity and simplification of intersection at east end of bridge. Installation of traffic signals.
Year of first cost allocation	2006		
Year of current cost allocation	2006		
Project cost	\$7,178,176		

Level of Service Definitions

Measure	Ratio	Primary Driver	Susceptibility of strategic transport link to loss through natural hazards (principally earthquake). Loss would lead to significant congestion issues, affecting sustainability and loss of integration for transport system. Responsiveness of authorities to cope in post-event scenario would also be compromised. Significant costs in terms of reduced access and mobility and environmental sustainability if link is lost.
Existing Capacity	100.0		
Existing Demand	143.0		
Total Capacity	200.0	Secondary Driver	
Design Capacity Year	2033		
End of Life Year	2048		
Backlog Capacity	43	Capacity Discussion	
Growth Capacity	57		
New Work Capacity	100		
% Backlog of New Work	43	References	
% Growth of New Work	57		

Localities:

locality	percentage	comment
Ferrymead	100	

Operations and Maintenance

O&M Cost Share	\$0
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Renewal

Stand Alone Renewal Cost	\$502,472	Renewal Scope	Standard assumption for renewal component of Road Network Improvements
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New Works

Stand Alone New Works Cost	\$7,178,176	New Works Scope	Standard assumption for new work component of Road Network Improvement.
Renewal Cost Share	\$502,472		
New Work Cost Share	\$7,178,176		

Preliminary Cost Shares

Backlog Cost Share	\$2,870,553
Growth Cost Share	\$3,805,151

Growth project

Stand Alone Growth Cost	\$7,178,176	Growth Project Scope	Standard assumption for growth component of Road Network Improvements.
Growth Cap	\$7,178,176		

Unallocated costs

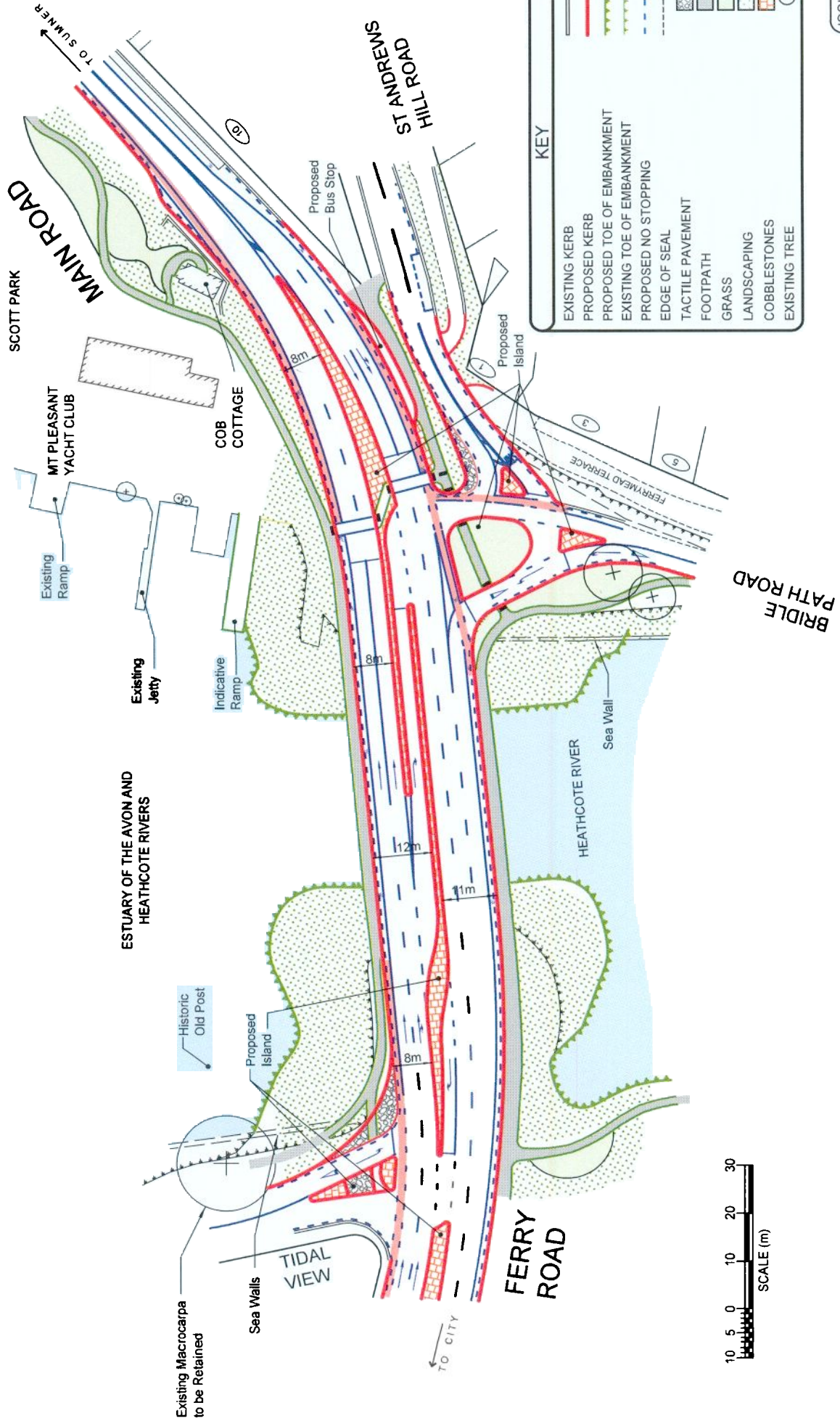
Unallocated Cost Share	\$0
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Project funding

External Funding	\$3,804,433
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Summary of Cost Allocation

	%	Total Cost	Net Cost
O&M		\$0	\$0
Renewal	7%	\$502,472	\$236,162
Backlog	40%	\$2,870,553	\$1,349,160
Growth	53%	\$3,805,151	\$1,788,421
Unallocated	0%	\$0	\$0
External Funding			\$3,804,433
Project Total	100%	\$7,178,176	\$3,373,743



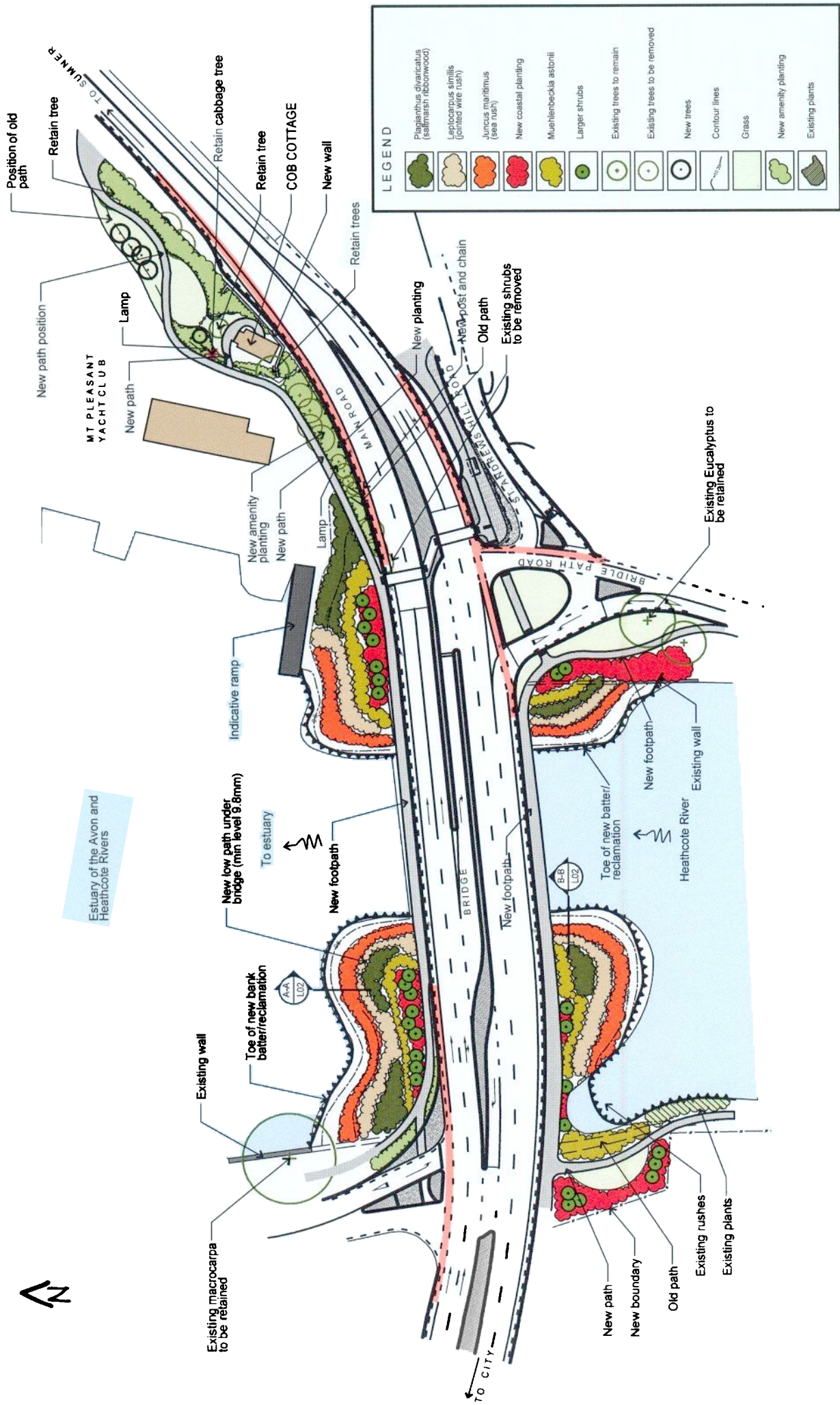
KEY

	EXISTING KERB
	PROPOSED KERB
	PROPOSED TOE OF EMBANKMENT
	EXISTING TOE OF EMBANKMENT
	PROPOSED NO STOPPING
	EDGE OF SEAL
	TACTILE PAVEMENT
	FOOTPATH
	GRASS
	LANDSCAPING
	COBBLESTONES
	EXISTING TREE



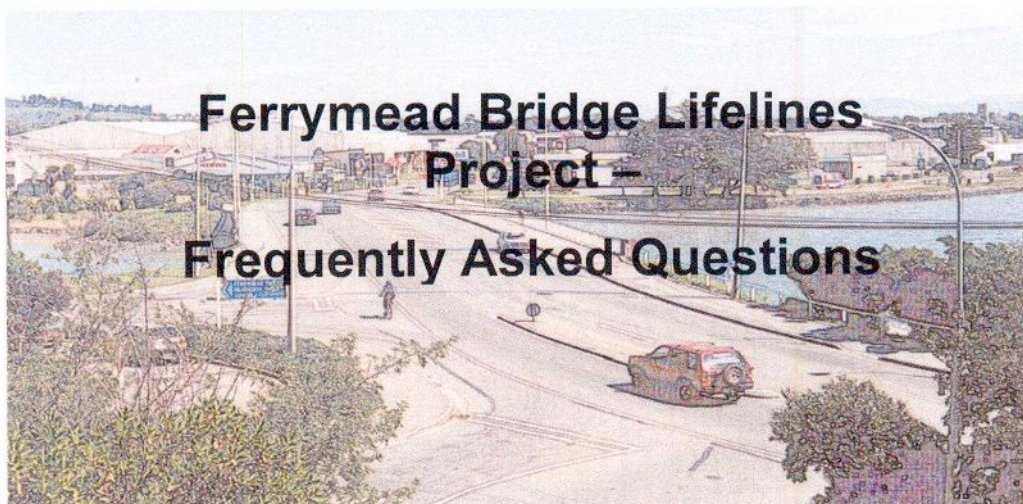
ISSUE 1
20/05/05
TP174701 LVH

FERRYMEAD BRIDGE- LIFELINES



ISSUE A
15/06/05
TP174702

FERRYMEAD BRIDGE LIFELINES LANDSCAPE CONCEPT



The Ferrymead Bridge has been identified as vulnerable to damage from natural hazards such as an earthquake. The aim of the Ferrymead Bridge Lifelines Project is to strengthen the Ferrymead Bridge so that it will survive a major earthquake. Strengthening the Bridge also gives Council the opportunity to provide some traffic management improvements.

Council received approximately 200 responses to the Ferrymead Bridge Lifelines Project concept plans, and about 100 people attended a public meeting held in July. Of those that provided feedback (via the feedback form, e-mail or telephone), approximately 69% generally supported the concept plan for the strengthening and widening of the bridge (13% did not support the plan, and 18% did not state whether they supported the plan or not). Approximately 74% generally supported the landscaping concept (6% did not support the landscaping concept, and 20% did not say).

Since the meeting, the project team has been working through the feedback received and undertaking more design work and investigations. Once these investigations are complete we hope to lodge a resource consent application for works in the Estuary with Environment Canterbury, with design work continuing next year. We will also be holding an open day in the New Year to update you on the project.

From the feedback received we have put together answers to some frequently asked questions about the concept plans. If you have any queries, please contact Michelle Flanagan, Consultation Leader on 941 8665 or e-mail at Michelle.Flanagan@ccc.govt.nz. Otherwise, keep an eye out for the open day next year.



Bridle Path Road

1. Why can't the traffic lights at Bridle Path Road allow a right turn to Sumner?

Council did look at providing a signalised right turn from Bridle Path Road to Sumner. However, significant congestion and delay was predicted to be imposed on traffic travelling on Main Road if a direct right turn was provided at the lights. Given the small number of vehicles that actually make this right turn (about 3% of the traffic flow) and that the layout proposed is actually predicted to provide a faster option, a signalised right turn option was not considered viable.

We know that many people already make a U-turn using Tidal View Road or the petrol station now because a right turn from Bridle Path Road can be very difficult, especially during peak weekday times and on the weekend. The protected U-turn bay at the west end of the bridge will make this manoeuvre safer and easier.

2. Why can't the existing free turn from Bridle Path Road onto the bridge stay?

The left turn from Bridle Path Road onto the bridge will essentially operate as it does now, with vehicles turning left moving into their own exclusive lane. The Give Way sign is in place to remind motorists that they need to give way to cyclists using the cycle lanes. This should not hold up traffic getting onto the bridge.

3. Vehicles wanting to enter the U-turn bay will hold up traffic turning left from Bridle Path Rd.

As mentioned above vehicles turning left from Bridle Path Road can enter into their own lane, and then move across to the U-turn bay. Gaps in the city bound traffic will be created by the signalised right turn from the bridge to Bridle Path Road, or pedestrians and cyclists using the signalised crossing on Main Road. This will further assist people wanting to use the U-turn bay. A number of people have suggested having two left turn lanes from Bridle Path Road; one for city bound traffic and one for traffic wanting to use the U-turn bay. Council did look at this however there would be safety issues, and difficulties with marking and enforcing the two lanes.

4. How can you make a U-turn across two lanes of fast moving traffic?

There will be breaks in the traffic travelling from the City. It is proposed to install traffic signals at the Ferry Road/Humphreys Drive intersection, and red lights at this intersection will create gaps in the traffic. In fact it is predicted to be easier to perform the 'right-turn' from Bridle Path Road to Sumner by a left turn and U-turn, as waiting for gaps in traffic travelling in only one direction at a time is a lot quicker than waiting for a gap in traffic travelling in both directions.

5. How will traffic on Bridle Path Road, coming from Heathcote, access St Andrews Hill Road?

Traffic on Bridle Path Road wanting to access St Andrews Hill Road can use other routes, as many people do now. Alternatively vehicles can use the U-turn facility. This manoeuvre wasn't considered to be of high demand, and there are other alternatives.

6. Will tourist buses and large vehicles be able to make the U-turn to go to Sumner?

Yes buses and large vehicles will be able to make this U-turn. The splitter island and kerb on Tidal View Road has been designed with sections of tactile paving (a road surface that can be driven over) so that vehicles will be able to drive over to make the U-turn. The proposed traffic signals at the Ferry/Humphreys intersection will also assist in providing gaps in the Sumner bound traffic to allow a U-turn.

7. Why can't you widen Bridle Path Road at the river as it is a pinch point now?

Council acknowledges that Bridle Path Road does narrow at the river, and that this is seen as a potential safety issue, particularly for cyclists using Bridle Path Road. On a citywide basis however this section of Bridle Path Road does not show up as a crash black spot and if money was spent on widening here it is likely to mean higher priority black spots would miss out. Council however have now listed this as a separate potential project to be investigated in the future, however to date no budget has been allocated. A number of people have asked us to include the widening of the Bridle Path Road with the Lifelines Project, and to include it with our resource consent application for works in the Estuary. To do this we would need to delay the Lifelines Project as no investigation or design work has been done for this section of Bridle Path Road. A long delay to the Lifelines Project is not desired.

8. Is the queue length to turn right from the bridge onto Bridle Path long enough?

The right turn lane on the bridge will fit about 10 vehicles. It is also proposed to install detector loops in the road at the start of the right turn lane and at the end. This means that when a vehicle hits the detector loop at the right turn bay stopline the lights on Main Road will turn red allowing the vehicles to turn into Bridle Path Road. If the queue extends to the end of the bay the lights will also turn red to ensure vehicles waiting to turn right do not impede other traffic crossing the bridge towards Sumner.

9. Will the right turn from the bridge into Bridle Path Road be wide enough for large vehicles?

Yes the right turn has been designed for very large B-train vehicles. We don't want to make this turn any wider as it will increase the speed at which vehicles make this turn.

10. Will the no right turn from Bridle Path Road make people use other streets in the area?

This right turn from Bridle Path Road to Sumner is only made by relatively few vehicles; others who wish to go in this direction already do a U-turn at Tidal View or take alternative routes. Therefore we would expect that the numbers of people using other streets in the area would not increase significantly. We will monitor this to see what happens.

11. Can you put in a mini-roundabout on Bridle Path Road and a larger roundabout on Main Road?

A number of roundabout configurations were investigated during the early design phases of the Lifelines Project. A large roundabout to the east of the bridge would require a large area of land and potentially substantial reclamation. A roundabout also wouldn't address the imbalanced nature of the peak flows across the bridge

St Andrews Hill Road/Ferrymead Terrace



12. Why can't a separate entry/exit to St Andrews Hill Road be maintained?

The two existing entrances off Main Road (one to Bridle Path and one to St Andrews Hill Road) already create confusion with some drivers turning into St Andrews Hill cutting off right turning Bridle Path Road vehicles (and some Bridle Path vehicles cutting off vehicles bound for St Andrews Hill!). The visibility for people turning right into Bridle Path Road is also impaired by vehicles queued to turn into St Andrews Hill. The elimination of the two entrances improves the safety of the area.

13. Why is there a stop sign for St Andrews Hill Road traffic at the half roundabout? Can't it be a Give Way sign?

Council did look at installing a Give Way sign at this location, however opted for a Stop sign, as it would assist in creating gaps for the Bridle Path Road traffic to access Main Road. As vehicles coming down St Andrews Hill Road need to come to a complete stop at the roundabout, gaps will be created for vehicles on Bridle Path Road.

14. The turn into St Andrews Hill looks too tight – will larger vehicles be able to make this turn?

Yes larger vehicles will be able to make this turn. This turn has been designed to accommodate the bus that travels up St Andrews Hill Road to Mt Pleasant. There is an area of tactile pavement on the edge of St Andrews Hill Road that larger vehicles can drive over.

15. How will vehicles enter and exit Ferrymead Terrace?

Vehicles can access off St Andrews Hill Road or Bridle Path Road as they do now.

16. Will the parking at Ferrymead Terrace be retained?

No, the proposed St Andrews Hill Road access goes through this area. Council understands that people use this area to drop off and pick up people, including school children, using the bus. Council did look into providing a parking/drop off area near the proposed roundabout but could not find a location safe enough for vehicles to pull in and out of. As the pedestrian crossing across Main Road is now much safer (as it is signalised), people can be dropped off for the bus, and picked up in Scott Park.



Pedestrians and Cyclists

17. Why is there a signalised pedestrian crossing across the bridge? Can't it just be a normal zebra crossing or an over-bridge?

A zebra crossing on such a busy two laned roads is considered to have safety concerns. Over-bridges also tend to be under utilised by pedestrians, as they are often not the most direct route across the road. The proposed signalised pedestrian crossing will only be triggered by pedestrians or cyclists and will not cause long delays for traffic.

18. Cyclists will not make the U-turn to Sumner, is there another alternative for them?

Cyclists can use the signalised crossing to cross Main Road to carry on to Sumner. An additional path across the half roundabout will make this easier for cyclists, and hold rails will be installed on either side of the crossing so that cyclists can remain on their bikes.

19. Can Council remove the cycle lanes and widen the footpath to create a shared path?

A shared cycle/pedestrian path across the bridge would not mate in with the existing cycle lanes on the road and would therefore create an unsafe situation for cyclists accessing the cycle lanes from a shared path.

Wider Network

20. Has Council considered the potential future growth in the Heathcote, Redcliffs, Sumner area in the plan for the bridge?

Yes, Council did consider the potential future growth in the eastern suburbs when undertaking the traffic modelling for the Lifelines Project. When we modelled the traffic flows for the strengthening and widening of the bridge we used a 25% increase on the current traffic volumes to account for growth. Our modelling shows that the proposed strengthening and widening of the bridge will cope with these increased traffic volumes in the future.

21. Why are the intersections at McCormacks Bay Road, and Mt Pleasant Road not part of the project?

The primary objective of the Lifelines Project is to strengthen the existing bridge so that it will survive a major earthquake. We recognise that these intersections form an important part of the surrounding road network and will be including them in a future project that is looking at the three laning of Main Road (one lane from the City, and two lanes into the City) between the Causeway and the bridge.

22. Why can't Main Road east of the bridge be four lanes to McCormacks Bay?

As mentioned above, the feasibility of three laning Main Road has been investigated and the project looks very worthwhile. However, an extra lane on Main Road will require some widening on the Causeway and at the Estuary edge and these works require more detailed investigation than is currently underway.

23. Does the bridge make provision for public transport? Council should be encouraging people to use public transport.

The proposed strengthening and widening of the Ferrymead Bridge could allow one lane in either direction to be utilised for public transport (e.g. a bus priority lane or light rail) in the future should this be required. Council are also working with Environment Canterbury to encourage usage of public transport.

24. Can the merging east of the bridge occur after Cobb Cottage?

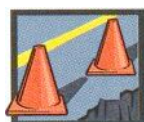
Council did look at merging the lanes after Cobb Cottage but unfortunately there was not enough room.

25. What is happening at the Ferry Road/Humphreys Drive intersection?

Council are proposing to put traffic signals at this intersection, and have been planning this for some time. The project has been delayed as Council is trying to obtain land near the intersection. This intersection and its approaches have a poor crash history, and there are often considerable delays for traffic on the weekday evenings and during the weekend. Putting traffic lights at this intersection will assist in resolving both these problems. It is planned to have the traffic lights installed before the works on the bridge are completed. A separate consultation process will be run for this project in the future.

26. What is happening at Settlers Crescent?

Works at Settlers Crescent will be done as part of the Ferry/Humphreys intersection project. A solid median island is proposed in this area to prevent the unsafe right turn from Settlers Crescent, and to/from the Ferrymead Tavern site. Vehicles would be able to turn left and right into Settlers Crescent at the bridge end. Vehicles would still be able to make a right turn out onto Ferry Road from the other end of Settlers Crescent. Traffic safety is the reason for preventing right turns at Settlers Crescent.



Construction

27. Can the construction period span only one summer rather than two?

The early works on the strengthening and widening of the bridge that will occur during the first summer will largely be off to the side of the existing bridge and will not affect traffic flows greatly. When we construct the bridge we will widen the southern side of the bridge first. Then, the traffic will be directed onto this new section of the bridge while we widen the northern side of the bridge.

28. Will traffic be diverted through Heathcote during construction?

It is not our intention to divert traffic through Heathcote during the construction period. As much of the construction works can take place out of the carriageway, and we can direct traffic onto the widened sections of the bridge we are hoping to minimise traffic delays.

29. Why does it take so long before you start to build the bridge?

The strengthening and widening of the bridge is a difficult task. We need to obtain resource consent for the works and do extensive detailed design work to make sure we get it right. We also need to tender the project and find a contractor to undertake the works.

30. The proposed traffic layout is too complex – can you make it simpler?

The Bridle Path Road, St Andrews Hill Road, Main Road area already has a complex layout. By removing the separate St Andrews Hill access and providing a signalised right turn into Bridle Path Road we are trying to make things simpler. The proposed half roundabout also formalises an existing situation where people coming down St Andrews Hill access Bridle Path Road to use the free turn to the City. Overall, the proposed traffic layout will make this intersection easier to negotiate.



Environmental

31. What is happening with the resource consent application?

Council are still preparing the assessment of environmental effects to accompany the resource consent application to Environment Canterbury. Once technical reports on the sediments, the estuary and ecology are finalised the application will be lodged. Environment Canterbury has advised that the application will be publicly notified and that the public will be able to make submissions.

32. What are you doing about the contaminated soil in the Estuary?

Council is aware of the potentially contaminated sediments in the Estuary and is undertaking testing of these sediments. The results of these tests will form part of a management plan to be put in place during construction. The report on the contaminated sediments will form part of the resource consent application to Environment Canterbury.

33. Will the proposed bridge abutments (reclamation) increase the risk of flooding in the lower Heathcote, and will the increased velocities increase erosion in the Estuary?

We are currently having technical reports prepared to look at these issues, and these reports will be made available with the resource consent application (which will be publicly notified).

34. There are historical wharf piles in the river, what is being done with these?

The 'pile' marked with the white post is clear of the bridge works. The group of piles that have recently become visible at low tide are the remains of an old jetty. We have made application to and have been granted permission by the New Zealand Historic Places Trust to bury these piles during construction, after surveying and recording their location. An archaeologist will be instructing the contractors on identifying archaeological evidence and monitoring the work during the construction phase.

35. Why can't you demolish or move Cobb Cottage to a more appropriate location?

Cobb Cottage is listed as a heritage item in the District Plan and an historic place by the Historic Places Trust. The demolition or removal of the Cottage would require a consent from both the Council and the Historic Places Trust. Cobb Cottage is a local landmark that provides a link with our past and the significance of this building is attributed to its location. The Council did look at the possibility of relocating the Cottage; however the building is in a fragile state, which would make relocation difficult and expensive.

36. Why are you proposing reclamation in the Estuary? We oppose any reclamation in the Estuary.

The reclamation is necessary to support the widened road, and the flattened batters are required to lessen the effects of liquefaction and lateral spreading on the bridge and the services it carries. Lateral spreading during an earthquake could result in the slumping of the road and the loss of the other essential services.



Landscaping

37. Will the large trees at the foot of St Andrews Hill remain?

Council will try to retain as many trees as possible. The trees at the foot of the hill, on Bridle Path Road next to the Estuary will be retained, as will the trees between Main Road and St Andrews Hill Road. Some of the trees in the Ferrymead Bridge car parking area will need to be removed.

38. Why are you spending money on landscaping? The money should be put into roading.

The majority of the budget for the strengthening and widening of the bridge will be spent on the bridge and the road. However, it is recognised that the Ferrymead Bridge is an important gateway to the eastern suburbs and we would like to create a pleasant environment for the community.

10. FERRYMEAD BRIDGE LIFELINES PROJECT

Officer responsible Transport and City Streets Manager	Author Chris Nordstrom, Roading Team Leader, DDI 941-8751
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The purpose of this report is to seek Council approval for the recommended option for the Ferrymead Bridge project.

CONTEXT AND BACKGROUND

Ferrymead Bridge carries approximately 30,000 vehicles per day and Ferry Road is the preferred route for two thirds of these vehicles. The bridge serves 11,000 people, 4,450 households, or about 3.5% of Christchurch residents, and carries water, pumped sewage mains, major Telecom, and minor power services.

There are existing traffic congestion and safety problems at the Ferry Road/Humphreys Drive intersection, growing congestion problems at St Andrews Hill and complaints about traffic congestion on Main Road to Sumner.

The 1994 'Lifelines' study identified the bridge as being susceptible to a seismic event. Subsequent investigation showed that the columns are an earthquake hazard, the bridge would be under threat from Tsunami, and that liquefaction is a major risk.

In March 1999 options for addressing the lifelines aspects of the bridge and the current and projected traffic problems were documented in the report entitled "Ferrymead Bridge - Lifelines Project, Draft Feasibility Report (Preliminary Assessment of Options)".

The contents of the report was adopted and consultation on the issues and options raised was carried out.

From the consultation process, responses were received from local businesses, interest groups, residents (local and elsewhere), local residents groups and Council Units. The report presented a range of options for resolving the bridge concerns, and the consultation and technical assessments resulted in two major options being pursued:

Option 1: New Bridge to the South.

Option 2: Widen and strengthen the existing bridge.

Diagrams of Options 1 and 2 are attached to this report.

TRAFFIC CONSIDERATIONS OF OPTIONS

The traffic considerations of the two options are:

Option 1: South Side Bridge: Provides safe traffic operation and minimal disruption during construction. No U-turns are required for Bridal Path Road traffic bound for Sumner. However, this option has limited growth capacity and is not a 'once only' solution - loss of the existing bridge in a seismic event would still require replacement of that bridge.

Option 2: Strengthening/Widening of existing bridge with 'half roundabout' at Bridal Path Road/St Andrews Hill Road: This option works best of all under all scenarios, however, the proposed construction method is complex and there is potential disruption during construction and a U-turn requirement.

Option 2 is preferred overall for day to day traffic performance.

TECHNICAL INVESTIGATION OF OPTIONS

Thorough geotechnical and structural investigation of both options has been carried out and the practicality of construction, particularly for Option 2 (strengthen/widen existing bridge) has been closely looked at. Site investigation resulted in the discovery that the existing bridge piles could in fact be founded on liquefiable material and hence the structural option to use these piles is not feasible.

Expert advice has confirmed the liquefaction risk.

New strengthening/widening options were prepared and peer reviewed. A 'frame' philosophy has now been adopted and construction methods are being further investigated.

Traffic effects during construction have been studied and delays are acceptable.

CAPITAL COSTS

The estimated capital costs for the options are as follows:

Item	Option 1	Option 2
Bridge Work	3,500,000	3,850,000
Roading Work	1,250,000	700,000
Total	4,800,000	4,550,000

Bridge work and roading work include a contingency of 20%.

COST - BENEFIT ANALYSIS

Up-front costs have been compared to the benefits derived from doing the work (security of access, services retention) and risk elements.

With Option 1, the existing bridge remains in place, and there is the probability of additional cost of replacing it in the event of its loss (\$3.85M at today's prices) and the traffic delays caused by the loss.

For Option 1 the structural net present value of benefits is \$5.5M and for Option 2 this is \$8.1M. The benefits of the options are relative to a do-nothing scenario ie avoiding total loss costs such as traffic delays, temporary bridge costs, demolition and reconstruction, and intangibles.

The preferred option, based on currently evaluated benefits and costs, and consideration of future costs, is Option 2 - widening/strengthening of the existing bridge.

The Council now has \$5.4M budgeted for the project and current estimates are in the range of \$4.5M-\$4.8M.

PROGRAMME

Details of the project were presented to members of the Sustainable Transport and Utilities Committee and Hagley/Ferrymead Community Board at the joint seminar on the Ferrymead Bridge on 15 July 2004.

A report on the project was presented to the Hagley/Ferrymead Community Board on 4 August 2004 seeking comment and support for Option 2 - strengthening/widening the existing bridge - for consultation. Comments follow later in this report.

After approval by the Sustainable Transport and Utilities Committee the intended programme is:

- Decision ratified by the Council on 23 September 2004.
- Consultation/Resource Consent process October 2004 to July 2005.
- Design completed by October 2005.
- Tender approved/accepted by April 2006.
- Construction May 2006 to November 2007.

ASSOCIATED PROJECTS

There are three projects also in progress around the Ferrymead Bridge, in differing stages of progress.

- Ferry Road/Humphreys Drive Intersection

Negotiations are continuing for land required for implementation of the approved signalised intersection scheme at the intersection of Ferry Road and Humphreys Drive. Consultation, design/tender and construction dates are all dependent upon completion of the property purchase.

- **Main Road**

A feasibility study is underway for the three-laning of Main Road from the Ferrymead Bridge to the west end of the causeway. The purpose of the three-laning proposal (two lanes toward the City, one toward Sumner) is to alleviate the congestion concerns for city-bound traffic at peak hours.

The position and geometry of the three-lane proposal gives potential constraints/opportunities for the bridge project in the Scott Park area. These are addressed later in this report.

The feasibility study is due to be completed in August 2004. No budget is currently allocated for this work.

- **Ferrymead Retail Area**

An investigation is about to commence for this area which will look at a range of scenarios including full retailing, zoning, plot-ratio limits etc.

FURTHER CONSIDERATIONS

The bridge redevelopment and proposed three-laning projects presents an opportunity to resite the historic building known as Cob Cottage. The current location jammed hard against the road embankment leaves the cottage unseen and unappreciated and is far from satisfactory.

The building is in a precarious state, with large cracks, which will make removal and resiting difficult and expensive, however, a new cottage reusing as much of the existing materials as possible could be constructed relatively cheaply at another location. Various locations have been considered in the past and this could be looked at again.

Removal of the cottage is not vital to the preferred bridge option, nor the possible future three-laning of Main Road, however, there are benefits to both projects if it occurs. Provision for future three-laning from the bridge east to the causeway is desirable and retention of Cob Cottage at its present location compromises traffic engineering standards. If the cottage was moved or replaced then a better alignment could be achieved for three-laning. Further, if the cottage is moved, there are added benefits for the bridge project (eg increased separation at the St Andrews Hill Road intersection). Moving the cottage also creates opportunities for redevelopment of Scott Park.

If Cob Cottage is going to be moved, the optimum time will be in conjunction with the roading projects.

A brief outline of the statutory and historical context of Cob Cottage is provided as Appendix 1 of this report.

HAGLEY/FERRYMEAD COMMUNITY BOARD COMMENT

A report on the project was presented to the Hagley/Ferrymead Community Board on 4 August 2004 seeking comment and support for Option 2 - strengthening/widening the existing bridge - for consultation. Comments follow later in this report.

The Board decided:

1. *To receive the information.*
2. *To support Option 2 (strengthening/widening the existing bridge) for consultation.*
3. *To recommend that options for the resiting/replacement of Cob Cottage be investigated as a separate project and coordinated with the bridge if possible.*
4. *That Option 2 be modified to allow for an on-demand right turn for motorists and cyclists out of Bridle Path Road on to Main Road.*
5. *That the need for widening Bridle Path Road to improve pedestrian and cyclist amenity along the riverside be investigated in conjunction with this process."*

Recommendations 1, 2 and 3 were those put forward by staff and recommendations 4 and 5 were added by the Board.

Staff Comment on Recommendations 4 and 5

Recommendation 4 was to modify Option 2 to allow for an on-demand right turn for motorists and cyclists out of Bridle Path Road, onto Main Road.

This on-demand right turn has been considered in-depth by officers. In particular, the issues of safety, delays, level of demand and intersection layout have been considered:

- Safety:** If a right-turn signal phase is installed, there will be conflict between the right-turn vehicles and pedestrians crossing during the right-turn phase. To eliminate the conflict would require the pedestrians and right-turn vehicles to have separate phases, which would add delays to Main Road Sumner bound traffic.
- Delay:** The on-demand option has been modelled by the Transport and City Streets Unit using SIDRA - computer analysis. The addition of this one movement (less than 1% of the traffic) requires an extra phase in the proposed two-phase sequence. This will add unacceptable delays to all of the main road traffic as both streams will have to be stopped to allow the right turn movement. This causes the B/C to become negative for the intersection.
- Demand:** The right-turn movement is currently not favoured by regular users of the intersection, because of delays and safety concerns. The current practise for many vehicles is to left turn towards the city then U-turn at Tidal View or use the Tidal View loop. If a right turn was designed into this intersection, it would make it much easier to use the intersection. Hence, it would be expected that more vehicles would choose to use the right-turn. The growth in right-turning traffic would exacerbate the delays and safety concerns mentioned above.
- Geometry:** The current (proposed) geometric configuration of this intersection will only accommodate queuing for two right turn vehicles. Significant additional intersection realignment work would be necessary to ensure adequate queuing spaces, which would detrimentally affect the overall intersection operation, particularly vehicles leaving St Andrews Hill.

Overall, due to safety and delay concerns, the Transport and City Streets Unit strongly recommend against imposing an on-demand right-turn at this intersection. However, it should be noted that the need for a right-turn (equivalent) manoeuvre has been specifically designed into this project. Provision has been made for vehicles to U-turn, once they cross the bridge, at the Tidal View intersection - a sheltered right-turn/U-turn lane is provided for east-bound traffic wishing to turn, and the island at the throat of Tidal View is contoured to allow a large U-turn turning arc. This manoeuvre will offer considerable safety improvements over the existing U-turn practise.

Further, if drivers do not wish to use this U-turn, they can continue, as at present, to use the Tidal View 'loop'. The concern for right-turning cyclists has also been intensively considered by the Transport and City Streets Unit. Provision of a right-turn phase exclusively for cyclists would require extensive re-design of the intersection, adding a further level of complexity to the existing geometry and operation. Right-turn cycle provision has, however, been specifically considered - cyclists will be permitted to share the path linkages from Bridle Path to the signalised crossing facility to allow them the protection of a signalised crossing.

It is recognised that a lack of dedicated cycle or vehicle right-turn treatments will not offer as smooth nor continuous a passage as dedicated signals, however, given the balance needed between delays, functionality and particularly safety, the designed approach is seen as providing the optimum solution for the users. The disadvantages of dedicated signals will significantly outweigh the benefits for which this project has been aiming.

The staff response to recommendation 5 is that the investigation of Bridle Path Road be referred to the Transport and City Streets Planning Team to be treated as a separate project and coordinated with the bridge if possible.

Bridle Path Road is a minor arterial road that is under-standard and its whole length needs development not just at the bridge.

SUMMARY AND RECOMMENDATIONS

The Ferry/Humphreys project is progressing, and will be reported at the appropriate times once property issues are resolved.

The Transport and City Streets Unit recommends Option 2 - widening/strengthening the existing bridge - as the most effective and economical bridge replacement option (from a traffic, technical and benefit/costs perspective).

Three scenarios have been looked at for the traffic layout at the east end of the bridge:

Scenario	Cottage	Three-laning
1.	Stays	Not provided for
2.	Stays	Compromised
3.	Moved/replaced	Optimum

The Transport and City Streets Unit recommends further investigation/consultation of the scenario to move/replace Cob Cottage to allow the ideal situation of provision for optimum three-laning of Main Road. This could be pursued as a separate project and subsequently coordinated with the bridge project if the timings make this possible.

Committee

Recommendation:

1. That this information be received.
2. That the Council approve Option 2 - strengthening/widening of the existing bridge - for consultation.
3. That options for the resiting/replacement of Cob Cottage be investigated as a separate project and coordinated with the bridge if possible.
4. That the standard of service for cyclists and pedestrians using Bridle Path Road, (riverside section) be further investigated as a separate project.

APPENDIX 1 – COB COTTAGE – A BRIEF HISTORY/DESCRIPTION

The following is a brief outline of the statutory and historical context of Cob Cottage provided courtesy of the Council's then Heritage Planner, Jenny May, for inclusion in "Ferrymead Bridge – Lifelines Project, Draft Feasibility Report (Preliminary Assessment of Options) March 1999.

"The cottage is situated on the north side of Main Road, just to the east of the bridge. This building, also known as Capt Penfold's Cottage, is listed in Group four, Appendix 1 Part 10, Vol. 3 of the City Plan. Heritage items in this group are of metropolitan significance and/or involve a contribution to the heritage of the City, the protection of which the Council seeks to encourage. Alteration or removal of buildings in this group is a controlled activity. The Cob Cottage is also registered as a Category II Historic Place by the New Zealand Historic Places Trust under Section 23 of the Historic Places Act. Category II Historic Places are "Places of historical or cultural heritage significance or value". (Part II, Section 23, 3(a), ii).

A considerable part of the significance of this building is considered to be in its site and social history. Originally built c1862, the Cottage, as it stands today, has undergone considerable restoration and reconstruction. It stands as a memorial to both the pioneer settlers and Capt. Penfold, the builder of the original cottage.

James Penfold (1833-1904) built the cottage, of sod construction. The cottage was of modest proportions, the sod section being divided into two rooms with a loft above and timber lean-to to the rear containing two further rooms. In 1863 Penfold married Frances Strachel and they lived in the cottage for some 8 years. From the early 1870s until 1908 the cottage was lived in by a number of immigrant families. Between 1911 and 1940 the cottage fell into a state of disrepair. At this point Mr Ernest Parish decided to restore and reconstruct the cottage over a period of 4 years. Media coverage and pictorial archives of the reopening of the cottage on 16 December 1944 attest to the considerable local significance of the cottage at the time. From contemporary accounts the reopening was a grand city and community occasion. In 1948 the cottage was damaged by fire and Mr Parish rebuilt the damaged sections.

A local landmark, the cottage today is considered to be "a physical reminder of the early residential development of this area and the efforts of Mr Parish, who restored and reconstructed the cottage in the 1940s thus retaining this link with our colonial past".

Other documentation available on Cob Cottage:-

- Conservation Plan for the Sod Cottage in Scott Park, Sumner Road, Ferrymead, Christchurch. January 1996 (written by J.A.G. Espie for Parks Unit CCC)

Conservation Survey – Contents of Cob Cottage. August 1997

Condition Report (City Design). October/November 1997

Ferrymead Bridge – Options for Scott Park (City Design). 1999



TIDAL VIEW



SCALE (m)

HEATHCOTE

FERRY ROAD

MAIN ROAD

ST ANDREW'S HILL ROAD

FERRYMEAD TERRACE

BRIDLE PATH ROAD

POSSIBLE RECLAMATION

RIVER

KEY

EXISTING KERB

PROPOSED KERB

ISSUE A
19/07/04
TP168501 MJR

FERRYMEAD BRIDGE OPTION 1 SOUTH SIDE BRIDGE



TIDAL VIEW



HEATHCOTE

FERRY ROAD

MAIN ROAD

ST ANDREWS HILL ROAD

RIVER

FERRYMEAD TERRACE

BRIDLE PATH RD

KEY

EXISTING KERB

PROPOSED KERB

ISSUE A
19/07/04
TP168502 MJR

FERRYMEAD BRIDGE OPTION 2 WIDEN & STRENGTHEN