

Sarawia Street – Laxon Terrace Rail Level Crossing Removal

Recommendations

It is recommended that the Board:

Receives the report.

Executive summary

The removal of the Sarawia Street to Laxon Terrace rail level crossing (Project) has been investigated on a number of occasions since 2004. In order to remove the rail crossing, an alternative means of access will need to be provided to both Laxon Terrace and Youngs Lane.

The purpose of this report is to provide a Project update.

The Project has funding of \$5.72m allocated in the LTP for 2013/14 and 2014/15 for the implementation of a preferred solution.

The closure of the Crossing has been previously investigated by both Auckland City Council in 2007 and KiwiRail in 2011. This latest review of the Project was commenced by Auckland Transport in the second half of 2012 and public engagement has been an important element that will inform future decision making towards selecting a preferred design solution. The feedback period commenced in December 2012 and to date feedback has been significant and wide ranging on the options proposed. Opinions have been divided and the feedback received does not show a clear consensus of support for any one option.

Background

The level crossing at Sarawia Street (Crossing) provides the only vehicular access route to the dwellings on Laxon Terrace and Youngs Lane. It needs to be removed in order to improve operational resilience and to support planned frequency improvements to the rail timetable in time for the introduction of EMU services. In addition, the Crossing's removal increases safety for road and pedestrian users in the area. Completion of an alternative means of access is required prior to any decommissioning of the Crossing.

The Crossing has the highest volume of rail movements of any crossing in New Zealand and is the most complex, involving twelve different train approaches and three platform interactions.

During investigations for the closure of the Crossing carried out in 2007 by Auckland City Council (AC), it was indicated that a bridge from Cowie Street was the most feasible option. Options considered at that time (see location map below) were:

- Construction of a bridge linking Cowie Street to Laxon Terrace.
- Conversion of an existing pedestrian walkway to a road link between the southern end of Laxon Terrace and the private road Furneaux Way
- Construction of a road from Laxon Terrace to Ayr Street via Newmarket Park

- Construction of a bridge linking Sarawia Street to Laxon Terrace.

In 2011 KiwiRail investigated the bridge options further, concluding that a bridge from Cowie Street was preferable over a bridge from Sarawia Street. KiwiRail followed this up by developing a high-level concept design for a Cowie Street bridge. However, as a result of objections from the Ministry of Transport regarding funding for the remaining DART 26 project, KiwiRail declined to progress any further.

The AC 2007 report did not enter into detail on the two non-bridge options. When Auckland Transport took the lead for the project in 2012 the original alternative options were revisited. These two non-bridge alternatives were assessed to the same level of detail as the Cowie Street bridge design, concluding that both alternatives are technically feasible.

Public engagement has been entered into with feedback received and compiled for consideration.

Location map



Strategic context

Removing the Crossing is important to the future improvement of Auckland's metro network. The Crossing has been identified as a significant restriction on current rail operational performance and will be a constraint on the planned timetable frequency improvements following the introduction of full EMU services in 2015.

If the Crossing remains and a higher frequency timetable introduced as planned, this timetable will have little operational resilience to recover from delays and maintaining reliable services will be unlikely during the morning and evening peak periods.

Currently the Crossing provides pedestrian and cycle access to Newmarket Park from the north, via Sarawia Street. Removal of the Crossing would see this access lost and feedback from the Waitemata Local Board and public has placed a high importance on any preferred option retaining access to Newmarket Park.

In addition to the pedestrian use, access to the park is important for cyclists. Although currently there are few recognised cycle ways in the immediate vicinity, recreational cyclists make use of the current crossing to access the park. Retention of cross-rail corridor access to the park supports proposed future cycleway initiatives, particularly the Greenway cycle and walking link, an important project for the Local Board.

Issues and options

The removal of the Crossing is required because of constraints to Britomart-bound trains waiting at Newmarket Station. These services are currently held at the station while the barrier arms are operating and are unable to move forward to wait at the signals adjacent to the Crossing. This is because of the risk that the steep track gradient leading from Newmarket to the Crossing could cause trains to be unable to stop and may result in a train sliding through the Crossing while the barrier arms are raised.

If the Crossing is removed, signal safety restrictions could be lifted and trains waiting at Newmarket Station to travel to Britomart could be allowed to move out of a platform and wait at the Sarawia Street signals. This is the equivalent of adding a further platform of capacity for passenger services during busy morning and evening peak periods and adds operational resilience to recover from delays.

The faulty operation of the Crossing itself also introduces the risk of delay considering its critical location on a busy stretch of the Auckland network. Two incidents were recorded in 2013 to date, the most recent in April 2013 due to vandalism of the barrier arm resulting in the cancellation of four services.

The addition of the new Parnell Station will exacerbate this constraint further due to the risk of delays to Britomart-bound services at the Parnell Station causing services to be delayed at Newmarket Station.

A Scheme Assessment Report is being prepared to outline the range of options that have been considered, including previous investigations that have taken place by different organisations. Included within the report is a preliminary business case, consistent with NZTA's Economic Evaluation Manual, and which estimates the BCR of the short-listed alternative access options based on information to date.

Table 1 outlines the high level options considered for alternative access, while table 2 identifies the short-listed options that are considered the most feasible and developed further.

Table 1: Options Explored

| Option | Explored By |
|--|--|
| Vehicle Underpass | Auckland City (Opus) 2004 |
| Sarawia Street Bridge | Auckland City (Opus) 2004 |
| Cowie Street Bridge | ARTA (URS) 2007, KiwiRail (Opus 2011), AT (Opus) 2012 |
| Furneaux Way Connection | Auckland City (Opus) 2004, ARTA (URS) 2007, AT (Opus) 2012 |
| Newmarket Park Roads | ARTA (URS) 2007, AT (Opus) 2012 |
| Parnell Road Connections (Mobil Station) | AT 2013 |

There is not a 'Do Nothing' option considered as KiwiRail have advised that at minimum, if rail service frequencies increase through the Crossing, the current half-arm barriers would be unacceptable from a safety perspective and would require additional measures such as longer barrier arms and the presence of dedicated personnel to monitor the Crossing.

The 'Do Minimum' (retain the Crossing, with dedicated personnel to ensure safety of rail and road users) is not seen as a viable option as this would not enhance resilience to recover from network delays, resulting in increasing difficulty maintaining reliable services through the junction/crossing. Furthermore, the 'Do Minimum' option would not remove the on-going risk of vandalism the Crossing has been subject to, whereas all other options would remove this risk.

However, the 'Do Minimum' option does provide a reference point to assess the relative efficiency of the short-listed alternative options outlined in table 2.

Following an options analysis the feasible options have been narrowed to three:

Option 1: Removal of the Crossing and construction of a two-lane road bridge from Cowie Street to Laxon Terrace (Cowie Street bridge option).

Option 2: Replacement of the Crossing with a pedestrian/cycle bridge located at Cowie or Sarawia Street and accommodating vehicle traffic to/from Laxon Terrace by expanding an existing walkway to a double (**Option 2a**) or single (**Option 2b**) lane road connecting to Furneaux Way, a private road (Furneaux Way Double Lane and Single Lane respectively).

Option 3: Replacement of the Crossing with a pedestrian/cycle bridge located at Cowie or Sarawia Street and construction of a two-lane road from Laxon Terrace through Newmarket Park to Ayr Street (Newmarket Park through Road).

Table 2: Developed Options and Estimated Costs

| Option | Min Cost | Base Cost | Max Cost |
|---------------------------------------|--|---|---|
| 1) Cowie St Bridge | \$4.5m (base -10%) | \$5.0m | \$6.0m (base +20%) |
| 2a) Furneaux Way – Double Lane | \$5.9m (double lane shared, Cowie pedestrian bridge, 50% land acquisition) | \$7.1m (double lane separated, Cowie pedestrian bridge, 50% land acquisition) | \$11.9m (double lane separated, all properties purchased, Sarawia bridge) |
| 2b) Furneaux Way – Single Lane | \$2.6m (single lane shared, Cowie pedestrian bridge) | \$3.4m (single lane shared, Cowie pedestrian bridge) | \$4.3m (single lane separated, Sarawia pedestrian bridge) |
| 3) Newmarket Park through Road | \$3.6m (basic parking, Cowie pedestrian bridge) | \$4.0m (enhanced parking, Cowie pedestrian bridge) | \$4.8m (enhanced parking, Sarawia pedestrian bridge) |

Attachment 1 shows the concept designs for each option under consideration.

Stakeholder engagement

Auckland Transport began engagement with residents and community groups in November 2012, including a public forum held at the Parnell Community Centre in December 2012. Auckland Transport shared these options with affected stakeholders and solicited their views on a preferred option to progress via a survey form circulated at the meeting and available on Auckland Transport's website.

Auckland Transport arranged two letter drops to residents, the first inviting their attendance at the December 2012 public forum and the second on 3 April 2013 advising residents of updated information available on the Auckland Transport website and encouraging responses to the survey form which was attached to the letter. This phase of public engagement concluded on 24 April 2013. Results from the feedback can be found in Attachment 2.







Next steps

- Update to the Local Board in June 2013
- Seek Board approval in June 2013 to progress the design phase for the preferred option
- Engage with residents and stakeholders on the specifics of the preferred option design
- Acquire any land required for the preferred option
- Gain resource consent
- Implement preferred option

Attachments

| Number | Description |
|--------|---|
| 1 | Concept Designs for Shortlisted Options |
| 2 | Results of Community Engagement Survey |
| 3 | Overview of Feedback Themes |
| 4 | Benefit Cost Analysis and Assumptions |

Document Ownership

| | | |
|-------------------------|---|--|
| Prepared by | Nick Seymour Project Director, Passenger Transport Improvements |  |
| | Rick Walden Manager, Major Projects and PMO Mark Lambert Manager, PT Operations Claire Stewart Chief Development Officer Greg Edmonds Chief Operations Officer |     |
| Approved for Submission | David Warburton Chief Executive |  |

Attachment 1 – Concept Designs for Shortlisted Options

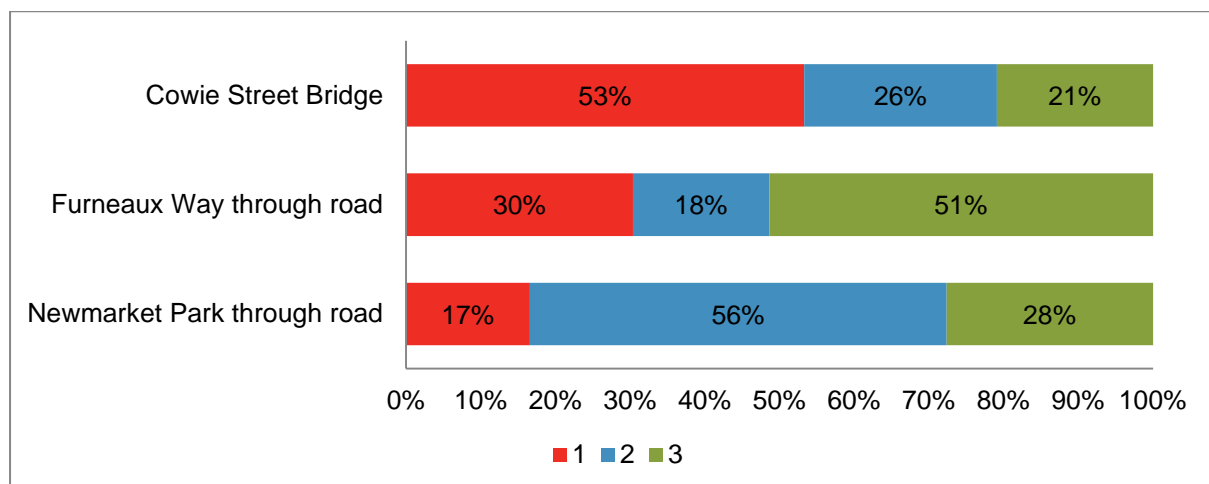
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Attachment 2 – Results of Community Engagement Survey

188 survey forms have been received and collated. Residents and other interested parties were asked to rank the three options in order of preference.

Overall Survey Responses

| | 1 st Preference | 2 nd Preference | 3 rd Preference | Total |
|--|-------------------------------|-------------------------------|-------------------------------|-------|
| Cowie Street Bridge Option 1 | 97 | 47 | 38 | 182 |
| | 53% | 26% | 21% | 100% |
| Furneaux Way through road Options 2a, 2b. | 55 | 33 | 93 | 181 |
| | 30% | 18% | 51% | 100% |
| Newmarket Park through road Option 3 | 30 | 101 | 50 | 181 |
| | 17% | 56% | 28% | 100% |



Where 53% of respondents selected Cowie Street bridge (Option 1) as their preferred option, 30% selected Furneaux Way (Options 2a and 2b) and 17% selected Newmarket Park (Option 3). Although Option 3 was unpopular as a first preference, it is a popular second preference.

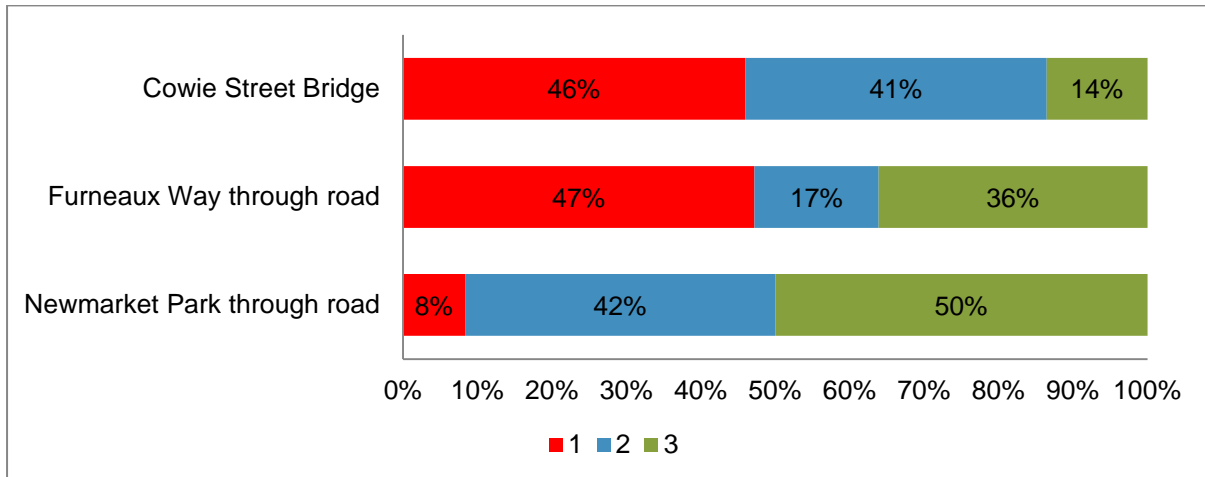
The 188 responses were received from:

- Residences in roads adjacent to the crossing: 21.3%
- Residences south of Laxon Terrace: 52.1%
- Residences north of Laxon Terrace excluding Sarawia St: 18.6%
- Residences east of Laxon Terrace: 8.0%

To a great extent, the survey results reflect the geographical location of respondents, with Broadway Park residents (residences south of Laxon Terrace) strongly opposed to Options 2a and 2b, Ayr St residents (east of Laxon Terrace) opposed to Option 3 and Cowie Street residents (north of Laxon Terrace) opposed to Option 1.

The strong response from residences south of Laxon Terrace (52%), predominantly within the Broadway Park complex and surrounding roads, has led to overall results favouring Option 1 over all others.

Residences living in streets adjacent to the Crossing (Laxon Terrace, Sarawia Street, Youngs Lane) are arguably the most affected by the Project and their survey response consists of:



This shows an approximately even split between Options 1 and Options 2a and 2b as a first preference. Option 3 is a distant third preference, and even as a second preference is similar to those preferring Option 1.

Attachment 3 – Overview of Feedback Themes

Recurring themes from the comments received include:

- Concern over the removal of the Crossing and questioning the need for its removal.
- Concern on the impact of a Newmarket Park Road considering that the park has been recently redeveloped and improved.
- Mixed response on the safety impact for Newmarket Park users should a road be introduced, some commenting that increased public presence makes the park safer while others believe there will be an increase in loitering and anti-social behaviour in the park.
- Concern over the effect of Laxon Terrace/Youngs Lane traffic being redirected into Furneaux Way and how this may interact with new developments in the Broadway Park area.
- Concern that a Cowie Street bridge will affect Cowie Street property prices and be visually imposing.
- Concern that the community engagement did not extend widely enough to include residents further afield.
- Comments on the methodology used by Auckland Transport to produce a benefit-cost analysis of the economic case for the various options.

Other interested groups have also commented upon the proposal:

- Feedback from transport portfolio members indicates that they are unlikely to support the Newmarket Park option and are supportive of retaining pedestrian and cycling links from Parnell Road into Newmarket Park.
- The Parnell Community Committee is opposed to the Newmarket Park and Cowie Street bridge options.
- The Newmarket Community Association has expressed concern over the engagement process generally and the level of investigative work undertaken by Auckland Transport. Their representative has questioned the need to remove the crossing at all.
- Cycle Action Auckland expressed concern that the existing pedestrian and cycle access from Parnell Road to Newmarket Park might not be retained.

Attachment 4 – Benefit Cost Analysis and Assumptions

Benefit / Cost Analysis

A preliminary benefit/dis-benefit and cost analysis for the options is highlighted in Table 1 below. The BCR results vary primarily as a result of the cost of each option, as the benefits for each option are similarly dominated by the significant savings in time for rail passengers, which is the same across all options.

Table 1: Option Analysis - Benefits and Dis-Benefits

| Item | 1)Cowie St Bridge | 2a) Furneaux Way Double Lane | 2b) Furneaux Way Single Lane | 3)Newmarket Park through Road |
|--|-------------------|------------------------------|------------------------------|-------------------------------|
| Benefits 2016: Reduced delays to rail passengers and | \$612,620 | \$612,620 | \$612,620 | \$612,620 |
| Benefits 2016: Remove delays to level crossing users | \$6,040 | \$6,040 | \$6,040 | \$6,040 |
| Disbenefits 2016: Delays to road traffic | \$6,460 | \$113,040 | \$113,040 | \$38,760 |
| Present value of benefits, \$m | \$7.74 | \$7.74 | \$7.74 | \$7.74 |
| Present value of disbenefits, \$m | \$0.07 | \$1.22 | \$1.22 | \$0.42 |
| Present value of net benefits, \$m | \$7.67 | \$6.52 | \$6.52 | \$7.32 |
| Present value of net costs, \$m | \$3.60 | \$5.33 | \$2.20 | \$2.68 |
| Total BCR | 2.1 | 1.2 | 3.0 | 2.7 |

The Cowie Street Bridge provides a comprehensive solution to Laxon Terrace and Youngs Lane access, being a two lane road also providing pedestrian and cycle access, and would complement the planned Greenway link cycling/walking improvements without affecting the integrity of Newmarket Park. However, it is comparatively expensive, technically challenging and is opposed by the majority of Cowie Street residents and the Parnell Community Committee.

The Furneaux Way double lane connection has the lowest BCR, while a simplified single lane shared connection generates the highest BCR. However, significant challenges

surround both variants, with a high risk of a legal challenge, complicated consenting and property issues to navigate. It is primarily opposed by the Broadway Park Residents Society.

The Newmarket Park through road will affect the park's public amenity and will involve geotechnical construction risks, has complex consenting issues at a comparatively high cost. It is opposed by the Parnell Community Committee, Auckland Council Parks, Sports and Recreation and initial feedback from Waitemata Local Board transport portfolio members is that they do not support the option.

Assumptions

For each of the options, the analysis has measured the distances by road to Laxon Terrace from two locations:

- South: the junction Broadway /Remuera Rd
- North: the junction Ayr St /Parnell Rd

It has been assumed that of traffic entering or leaving Laxon Terrace, 60% would be to /from the north (CBD) and the remainder, the south (Newmarket and beyond). These have been used in the evaluation of car user impacts.

The distances have been converted into times using an average car speed of 30kph and the extra times have then been monetised and included in the benefit calculation.

For pedestrians, the situation is different. Pedestrians to /from the south (Broadway /Remuera Road) are likely to be already using Furneaux Way so any changes at the crossing will be immaterial. For pedestrians to /from the north (Parnell Road – e.g. to catch a bus into town) the new Cowie or Sarawia Street bridge would allow pedestrians to avoid the delays at the crossing. In the light of this it has been assumed that with all the options there would be no delay to pedestrians.

A breakdown of the present value (PV) of benefits and dis-benefits assessed is provided in Table 1. The PV Costs used in the BCR analysis consist of the most likely capital cost estimate to construct and maintenance/renewal cost estimates over a 30 year period for each option.