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# Karangahape Station Entrance Location

## Recommendations

That the Board:

i. Approves the adoption of Mercury Lane station as the initial entrance for the Karangahape Station precinct.

ii. Notes the future proofing of the Beresford Square station entrance for construction at some time in the future.

iii. Notes the inclusion of urban realm enhancement to Mercury Lane, Cross Street and Beresford Square as part of the proposals

iv. Notes the potential $30-40m saving that this change in timing on entrance location will make on initial costs.

v. Notes this opportunity to advance the Transit Orientated Development (TOD) opportunity above and beside Mercury Lane and the regeneration of this area of the Karangahape Precinct.

vi. Notes the need for stakeholder engagement to manage the change of entrance priority.

## Executive summary

The CRL station in the Karangahape precinct has been designed for potentially two station entrances, one in Beresford Square that has been assumed to date to be the first entrance to be constructed, and one above and beside the required vent shaft in Mercury Lane. Only one entrance is intended to be constructed as part of the CRL works with the other location being future proofed for possible construction at a future date.

The construction of a second entrance at Beresford Square can be accommodated at any time after the CRL works with relative ease but the construction of a second entrance in Mercury Lane, after the CRL works, is more difficult due to the lack of future construction space.

Each entrance can accommodate the total anticipated passenger demand for the precinct to a forecast date beyond 2046. A value engineering initiative has identified an opportunity to change the priority of the Karangahape station entrance from Beresford Square to Mercury Lane with a potential saving of $30-40m.

The previously assumed first station entrance in Beresford Square has been the subject of wide stakeholder engagement and has appeared in public information released for the CRL project. If adopted the Mercury Lane entrance option will require careful management of local stakeholders expectations and will need a strategy for wider communication of the change in the public realm.

A Mercury Lane station entrance is likely to advance the TOD above and beside the station entrance footprint and is likely to be the catalyst for regeneration of the area around the entrance, where opportunities to intensify residential development have been identified in the Draft

Development Framework for the area. There is no TOD opportunity above the station entrance in Beresford Square and the scale and range of regeneration opportunities around Beresford Square is potentially constrained by the number of character and heritage buildings in this location.

An entrance in Mercury Lane directly opposite the intersection with Cross Street introduces the opportunity to provide a shared space link along Cross Street to the proposed Light Rail Transit (LRT) stop in Queen Street.

## Strategic context

The intensification of residential development around the Mercury Lane location is in accord with the Auckland Plan and the Draft Development Framework for the area.

The Cross Street link between the LRT proposal in Queen Street and the CRL station entrance in Mercury Lane provides part of an integrated public transport solution for the precinct.

The retention of the future proofed addition of a second entrance to the CRL in Beresford Square maintains future flexibility for increasing access to heavy rail in the precinct if needed.

The value engineering initiatives continue to assist in optimising project costs without impact upon the CRL core scope of works.

The entrance options were presented to the CRC meeting on 3rd August 2015 and the CRL PCG on 23rd June 2015.

## Background

The concept design for the CRL station for the Karangahape precinct envisaged the potential for two station entrances, one in Beresford Square and the other in Mercury Lane, above and beside the tunnel vent shaft. Only one station entrance is included within the CRL initial construction work scope and either entrance location will satisfy forecast patronage for the precinct to beyond 2046. Previous assumptions have been based upon the Beresford Square entrance being constructed first with the potential second entrance in Mercury Lane being future proofed for later construction. During the reference design phase a value engineering initiative has identified the potential to reverse the priority of the station entrances, proposing to construct the Mercury Lane entrance first and future proofing for the Beresford Square entrance.

The reference design development phase has identified a TOD opportunity above and beyond the footprint for the station entrance in Mercury Lane and the Draft Development Framework has identified the area around Mercury Lane for potential regeneration and intensification of residential development. This study has also identified the constraints for regeneration and development around Beresford Square due to the existence of Heritage and character buildings that surround the square.

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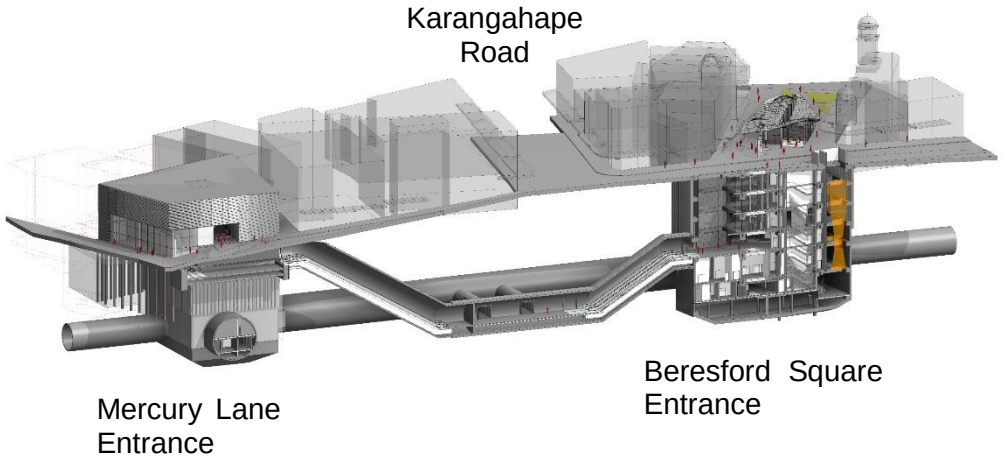
**Entrance Locations**




**Section Through Station**

# Issues and options

## Entrance Options Considered

The value engineering initiative considered the following entrance options where option 1 is the base reference design:

- Option 1A a value engineered option of option 1 where Beresford Square is constructed first with vent and escape stair in widened footway in Pitt Street  future proofing for Mercury Lane.
- Option 1B as option 1A but with no future proofing for Mercury Lane.
- Option 2A Mercury Lane entrance constructed first with vent and escape stair in Pitt Street with future proofing for Beresford Square entrance.
- Option 2B as for 2A but with vent in a median in Pitt Street and escape stair in Beresford Square.

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- Option 3A as for 2A with no future proofing for Beresford Square.
- Option 3B as for option 2B with no future proofing for Beresford Square.

A multi-criteria evaluation was carried out to assess the options. Where construction and maintenance costs are ignored the options 1A and 2A have almost identical scores. Where construction cost and maintenance costs are considered option 2A is clearly the best option with option 2B in second place. See multi-criteria summary in attachment 1 to this paper.

## Key Issues Identified

i. If the Beresford Square entrance is constructed first as part of the CRL the space available to construct Mercury Lane at some future date will be severely constrained by the lack of construction space and will probably require the complete closure of Mercury Lane and Cross Street to all through traffic for many months. In contrast The Beresford Square entrance can be added in a post CRL scenario from within the space available within Beresford Square.

ii. Enhancement of the public realm within Mercury Lane is required as part of the station entrance location with widened footways, improved lighting, new street furniture, a raised table pedestrian crossing in front of the station entrance.

iii. Cross Street has been identified for providing a shared space environment encouraging pedestrians to use this link between the CRL entrance in Mercury Lane and the LRT stop at the top of Queen Street

iv. Engagement with local property owners in Mercury Lane has been identified as a priority to seek to activate frontages between Karangahape Rd and the station entrance.

v. If Mercury Lane entrance is endorsed an engagement plan is required with local stakeholders to explain the change of entrance priority and address concerns raised

vi. The gradient of Mercury Lane has been raised as a potential issue. The current gradient varies between 1 in 9 and 1 in 13 between Karangahape Rd and the station entrance. This gradient is no worse than the gradient of Victoria Street and Wellesley Street from Queen Street to the location of the station entrances to the CRL Aotea Station.

vii. The potential change to the patronage catchment areas to the CRL has been raised. If adopted, the Mercury Lane entrance increases the distance between Aotea Station entrance and Karangahape Station entrance by approximately 200m and reduces the distance between Karangahape station entrance and Mt Eden station entrance by 200m. The overlap in 800m and 1200m catchment rings are shown in attachment 2 to this paper.

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viii. The potential value engineering saving identified by adopting the Mercury Lane entrance as the first station entrance to be constructed in the Karangahape precinct is between $30 and $40m

## Next steps

Upon adoption of the Mercury Lane entrance option it is proposed to undertake individual stakeholder meetings with key stakeholder groups within two weeks following which a communications strategy will be implemented, revising previously published material in the public realm.

The reference design shall be developed, incorporating any value engineering initiatives for completion in April 2016.

## Attachments

| Attachment Number | Description |
|---|---|
| 1 | Multi-criteria analysis |
| 2 | Patronage catchment rings for 800m and 1200m distance |
| 3 | Presentation slides from CRC meeting 3rd August |

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# Document ownership

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| **Recommended by** | Chris Meale<br>**Project Director, CRL** |  |
| **Approved for submission** | David Warburton<br>**Chief Executive** |  |

# Glossary

| Acronym | Description |
|---|---|
| AT | Auckland Transport |
| CRL | City Rail Link |
| LRT | Light Rail Transit |
| TOD | Transit Orientated Development |

Attachment 1

| Karangahape Station Entrance Multi-Criteria Analysis Base Scores | | | | | | | |
|---|---|---|---|---|---|---|---|
| Criteria | 1A | 1B | 2A | 2B | 3A | 3B | |
| Construction Cost | 3 | 3 | 4 | 4 | 4 | 4 | out of 5 |
| Operation Cost | 2 | 4 | 3 | 3 | 5 | 5 | out of 5 |
| | | | | | | | |
| Development and regeneration potential | 3 | 2 | 4 | 4 | 3 | 3 | CG |
| | 3 | 2 | 4 | 4 | 4 | 4 | DW |
| | 4 | 4 | 5 | 5 | 3 | 3 | DI |
| | 4 | 4 | 4 | 4 | 4 | 4 | GD |
| | 4 | 4 | 5 | 5 | 3 | 3 | JL |
| | 3 | 2 | 5 | 5 | 5 | 4 | JF |
| | 3 | 2 | 4 | 4 | 3 | 3 | JW |
| | 3 | 3 | 4 | 4 | 4 | 4 | LR |
| | 4 | 4 | 5 | 5 | 3 | 3 | RC |
| | 3 | 2 | 5 | 4 | 4 | 4 | RS |
| | 4 | 4 | 5 | 5 | 3 | 3 | TS |
| Average Score | 3.5 | 3 | 4.5 | 4.4 | 3.5 | 3.4 | Out Of 5 |
| Place-making impact in the precinct | 4 | 3 | 5 | 5 | 4 | 4 | CG |
| | 4 | 3 | 3 | 3 | 2 | 2 | DW |
| | 5 | 4 | 3 | 3 | 3 | 3 | DI |
| | 5 | 4 | 5 | 5 | 2 | 2 | GD |
| | 4 | 4 | 5 | 4 | 3 | 3 | JL |
| | 5 | 4 | 2 | 3 | 3 | 2 | JF |
| | 4 | 3 | 3 | 3 | 2 | 2 | JW |
| | 3 | 3 | 4 | 4 | 4 | 4 | LR |
| | 4 | 4 | 5 | 4 | 3 | 3 | RC |
| | 5 | 4 | 4 | 3 | 3 | 3 | RS |
| | 4 | 4 | 5 | 4 | 3 | 3 | TS |
| Average Score | 4.3 | 3.6 | 4 | 3.7 | 2.9 | 2.8 | out of 5 |
| Customer experience in the station | 5 | 4 | 3 | 3 | 3 | 3 | CG |
| | 3 | 3 | 4 | 4 | 3 | 3 | DW |
| | 5 | 3 | 3 | 3 | 2 | 2 | DI |
| | 5 | 4 | 5 | 5 | 2 | 2 | GD |
| | 5 | 4 | 3 | 3 | 2 | 2 | JL |
| | 5 | 4 | 3 | 3 | 3 | 2 | JF |
| | 4 | 3 | 4 | 3 | 2 | 2 | JW |
| | 4 | 4 | 4 | 4 | 4 | 4 | LR |
| | 5 | 4 | 3 | 3 | 2 | 2 | RC |
| | 5 | 4 | 5 | 4 | 4 | 4 | RS |
| | 5 | 4 | 3 | 3 | 2 | 2 | TS |
| Average Score | 4.6 | 3.7 | 3.6 | 3.4 | 2.6 | 2.5 | out of 5 |
| Total Score (with cost) | 17.3 | 17.3 | 19.1 | 18.5 | 18.0 | 17.7 | out of 25 |
| Total Score (without cost) | 12.3 | 10.3 | 12.1 | 11.5 | 9.0 | 8.7 | out of 15 |

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# Karangahape Station Entrance Multi-Criteria Analysis Weighted Scores

**Construction and operational costs doubled**

| Criteria | Option 1A | 1B | 2A | 2B | 3A | 3B | |
|---|---|---|---|---|---|---|---|
| Construction Cost | 6 | 6 | 8 | 8 | 8 | 8 | out of 10 |
| Operation Cost | 4 | 8 | 6 | 6 | 10 | 10 | out of 10 |
| Development and regeneration potential | 3.4 | 3 | 4.5 | 4.4 | 3.5 | 3.4 | out of 5 |
| Place-making impact in the precinct | 4.3 | 3.6 | 4 | 3.7 | 2.9 | 2.8 | out of 5 |
| Customer experience in the station | 4.6 | 3.7 | 3.6 | 3.4 | 2.6 | 2.5 | out of 5 |
| Total Score (with cost considered) | 22.3 | 24.3 | 26.1 | 25.5 | 27.0 | 26.7 | out of 35 |
| Total Score (without cost considered) | 12.3 | 10.3 | 12.1 | 11.5 | 9.0 | 8.7 | out of 15 |

**Development and regeneration costs doubled**

| Criteria | Option 1A | 1B | 2A | 2B | 3A | 3B | |
|---|---|---|---|---|---|---|---|
| Construction Cost | 3 | 3 | 4 | 4 | 4 | 4 | out of 5 |
| Operation Cost | 2 | 4 | 3 | 3 | 5 | 5 | out of 5 |
| Development and regeneration potential | 6.8 | 6 | 9.0 | 8.8 | 7 | 6.8 | out of 10 |
| Place-making impact in the precinct | 4.3 | 3.6 | 4 | 3.7 | 2.9 | 2.8 | out of 5 |
| Customer experience in the station | 4.6 | 3.7 | 3.6 | 3.4 | 2.6 | 2.5 | out of 5 |
| Total Score (with cost considered) | 20.7 | 20.3 | 23.6 | 22.9 | 21.5 | 21.1 | out of 30 |
| Total Score (without cost considered) | 15.7 | 13.3 | 16.6 | 15.9 | 12.5 | 12.1 | out of 20 |

**Place-making in precinct doubled**

| Criteria | Option 1A | 1B | 2A | 2B | 3A | 3B | |
|---|---|---|---|---|---|---|---|
| Construction Cost | 3 | 3 | 4 | 4 | 4 | 4 | out of 5 |
| Operation Cost | 2 | 4 | 3 | 3 | 5 | 5 | out of 5 |
| Development and regeneration potential | 3.4 | 3 | 4.5 | 4.4 | 3.5 | 3.4 | out of 5 |
| Place-making impact in the precinct | 8.6 | 7.2 | 8 | 7.4 | 5.8 | 5.6 | out of 10 |
| Customer experience in the station | 4.6 | 3.7 | 3.6 | 3.4 | 2.6 | 2.5 | out of 5 |
| Total Score (with cost considered) | 21.6 | 20.9 | 23.1 | 22.2 | 20.9 | 20.5 | out of 30 |
| Total Score (without cost considered) | 16.6 | 13.9 | 16.1 | 15.2 | 11.9 | 11.5 | out of 20 |

**Customer experience in station doubled**

| Criteria | Option 1A | 1B | 2A | 2B | 3A | 3B | |
|---|---|---|---|---|---|---|---|
| Construction Cost | 3 | 3 | 4 | 4 | 4 | 4 | out of 5 |
| Operation Cost | 2 | 4 | 3 | 3 | 5 | 5 | out of 5 |
| Development and regeneration potential | 3.4 | 3 | 4.5 | 4.4 | 3.5 | 3.4 | out of 5 |
| Place-making impact in the precinct | 4.3 | 3.6 | 4 | 3.7 | 2.9 | 2.8 | out of 5 |
| Customer experience in the station | 9.2 | 7.4 | 7.2 | 6.8 | 5.2 | 5 | out of 10 |
| Total Score (with cost considered) | 21.9 | 21.0 | 22.7 | 21.9 | 20.6 | 20.2 | out of 30 |
| Total Score (without cost considered) | 16.9 | 14.0 | 15.7 | 14.9 | 11.6 | 11.2 | out of 20 |

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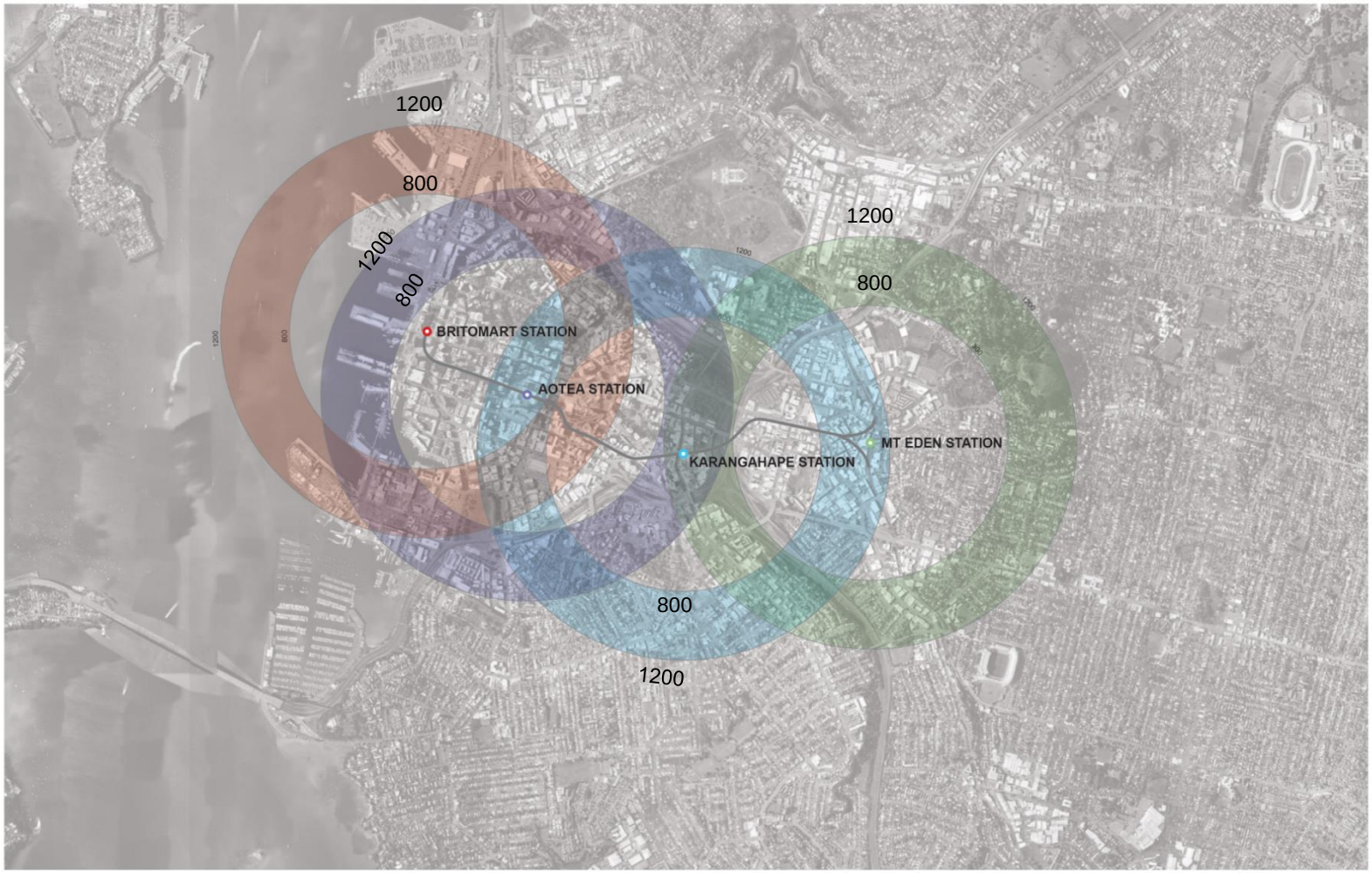
# Attachment 2

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