



NORTHERN PATHWAY

Westhaven to Akoranga

Princes Street Connection
Alternatives Report

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1 Introduction

The Northern Pathway Westhaven to Akoranga (**'The Northern Pathway'**) is a proposed new 5km-long shared walking and cycling path north of the Auckland CBD, extending from Westhaven Drive / Curran Street to Esmonde Road / Akoranga Drive. The Northern Pathway is being delivered by Waka Kotahi NZ Transport Agency (**'Waka Kotahi'**). Waka Kotahi, Auckland Council, and Auckland Transport are working together to create a safe, efficient and well-connected network of walking and cycling routes throughout Auckland.

The Northern Pathway route seeks to maximise accessibility and connectivity between the places people live, work, study, and play. The Auckland Harbour Bridge component will provide Auckland's first walking and cycling connection across the central Waitematā Harbour. The Northern Pathway will deliver transformative change, by completing one of the critical links in Auckland's walking and cycling network.

The purpose of this report is to summarise and record the assessment of alternative options for the path and connection at Northcote Point. This report collates work that has been ongoing since 2019, including at the business case stage, design development and input from technical experts as part of the consenting phase of the Northern Pathway. As this has been an iterative process, this information has been consolidated into this report and a multi-criteria analysis (**'MCA'**) approach used to assess the options.

2 The Northern Pathway

2.1 Background

Walking and cycling opportunities across the Waitematā Harbour have been discussed and considered for many years. Most recently an independent organisation, the SkyPath Trust, proposed an underslung walkway attached to the eastern clip-on for the Auckland Harbour Bridge ('AHB') commencing at Westhaven and terminating in Princes Street, at Northcote Point. Consents for the SkyPath Trust's proposal were granted in 2016 (reference numbers R/LUC/2014/3364, R/REG/2014/3365 and R/REG/2015/720). Following the approval of the 'SkyPath' resource consents, Waka Kotahi commenced investigations into options for walking and cycling connections between Northcote Point and Akoranga Drive to integrate with the SkyPath project, known then as the SeaPath project.

In 2018, the Government asked Waka Kotahi to investigate options for inclusion of walking and cycling on the AHB. Waka Kotahi then assessed options for walking and cycling (including the previously consented 'SkyPath' proposal) and carried out an MCA as part of the Business Case. Upon assessment of the 'SkyPath' proposal in relation to Waka Kotahi's broader project objectives, a range of design changes were proposed to improve user experience and safety as well as improving efficiency and connectivity by removing a number of restrictions on public access and egress.

In 2019, Waka Kotahi decided to combine both the AHB crossing and the then separate pathway from Northcote Point to Akoranga Drive into one project to create a direct, continuous shared walking and cycling pathway. The combined pathway concept has since been taken forward and a design developed for the Northern Pathway from Westhaven to Akoranga as a single project, which is now being funded by the government as part of the New Zealand Upgrade Programme.

2.2 The Northern Pathway Project Objectives

The Northern Pathway will be a shared path for pedestrians and cyclists, separated from the road, that will be a significant link in Auckland's network of cycling and walking routes. The pathway will provide an efficient and safe transport mode that will promote connectivity, support the movement of people and encourage alternative transport choices such as walking and cycling.

The overarching Project Objectives for the Northern Pathway are as follows:

To construct, operate and maintain a direct and continuous shared walking and cycling path, separated from the roadway, that:

- Enables active transport choices and modes between the Westhaven Drive/Curran Street intersection and Akoranga, using the existing Auckland Harbour Bridge to cross the Waitematā Harbour;
- Enables a safe, accessible and efficient user experience for a wide range of users; and
- Connects with existing and planned local and strategic transport networks.

3 Options

Initial design work on the combined Northern Pathway project undertaken in 2019 included the identification of indicative concepts for providing a connection at Northcote Point. An indicative triangle-shaped ramp located at 9 Princes Street (Option 3 described below) was designed for that connection. Following general feedback on ramp design from the public and stakeholders, along with further consideration of the indicative design against relevant design standards, further options for the Princes Street connection were developed.

Six different options were considered and assessed by a team of technical experts. The options assessed were:

- Option 1 – Amended SkyPath ramp to Princes Street
- Option 2 – Lift and stairs in Te Onewa Pa Reserve
- Option 3 – Triangle ramp at No. 9 Princes Street
- Option 4 – Zig Zag ramp
- Option 5 – Cranked ramp
- Option 6 – No ramp/ connection at Princes Street - Continuous Path

The options are shown as concepts in Figures 3-1 to 3-6 and described in further detail below.

In addition, Waka Kotahi's consultants have also assessed the likely area of land required to allow construction equipment and activities. Both the permanent arrangement and potential construction requirements of each of the options were considered and assessed.

3.1 Construction

All options require a construction clearance of a minimum of 20m width from the eastern side of the AHB to enable construction machinery and access, and construction of the pathway. As a result, some properties will be directly impacted by this construction corridor. In addition, all arrangements require an anchorage point within Te Onewa Pa Reserve to support the bridge component, and the removal of a scheduled pōhutukawa tree located in Te Onewa Pa Reserve.

3.2 Option 1 – Amended SkyPath ramp to Princes Street

Option 1 (as shown on Figure 3-1) involves the pathway ramping down from the AHB at deck level at a 1:12 gradient to ground level. Users would then go under the AHB, cross Princes Street at ground level, and then re-connect to the main pathway via another ramp back up in order to continue on to Sulphur Beach and beyond.

Option 1 does not involve a direct, continuous deck level path alongside the AHB to Sulphur Beach.

The minimum 20m clearance required adjacent to the AHB will intrude less into the surrounding land with this option (compared with Options 2 – 6) and will be limited to the southern end (adjacent Te Onewa Pa Reserve) and the northern end (adjacent No. 9 Princes Street). This Option requires the removal of the house at No.9 Princes Street.



3.3 Option 2 – Lift and Stairs in Te Onewa Pa Reserve

Option 2 (shown on Figure 3-2) involves the installation of two high speed lifts and wrap-around stairs within a tower structure, which connects the pathway on the AHB to exit into Te Onewa Pa reserve near the end of Princes Street. The main path would follow the gradient of the existing AHB at deck level and provide a continuous path down to Sulphur Beach Reserve.

Construction would require both the minimum 20m clearance adjacent to the eastern side of the AHB, as well as a significant construction area and activities within Te Onewa Pa Reserve. To enable access for construction, this alternative requires the removal of the houses directly adjacent to the eastern side of the AHB at 3, 5a, 7 and 9 Princes Street. The houses at 1, 5 and 7a Princes Street are affected by construction but potentially able to be retained.

Where houses are removed, this provides opportunities for landscaping and restoration.



3.4 Option 3 – Triangle ramp at No. 9 Princes Street

Option 3 (as shown on Figure 3-3) involves the pathway extending adjacent to the AHB, until it descends via a triangle-shaped ramp to allow entry and exit at 9 Princes Street. The ramp would be relatively steep with a gradient of 1:12. The main path will follow the gradient of the existing AHB at deck level and provide a continuous path down to Sulphur Beach Reserve.

For this option, the minimum 20m construction corridor adjacent to the AHB is required, and the removal of houses at 3, 5a, 7 and 9 Princes St. The houses at 1, 5 and 7a Princes Street are affected by construction but potentially able to be retained.

Where houses are removed, this provides opportunities for landscaping and restoration.



3.5 Option 4 – Zig Zag option

Option 4 (as shown on Figure 3-4) involves the pathway extending adjacent to the AHB, until it descends via a zig zag ramp (5.5m wide) on a 1:20 gradient to exit onto Princes Street. The main path will follow the gradient of the existing AHB at deck level and provide a continuous path down to Sulphur Beach Reserve.

For this option, the minimum 20m construction corridor adjacent to the AHB is required. In addition, the houses at all properties between 1-9 Princes Street would need to be removed (at 1, 3, 5a, 5, 7, 7a and 9 Princes Street).

Where houses are removed, this provides opportunities for landscaping and restoration.



3.6 Option 5 – Cranked Ramp

Option 5 (as shown on Figure 3-5) involves the pathway extending adjacent to the AHB, until it descends via a shorter, ramp (5.5m wide) with a 1:12 gradient. The main path will follow the gradient of the existing AHB at deck level and provide a continuous path down to Sulphur Beach Reserve.

For this option, the minimum 20m construction corridor adjacent to the AHB is required. In addition, the houses on the properties between 5 and 9 Princes Street will need to be removed (5a, 5, 7, 7a, 9). Properties at 1 and 3 Princes Street are affected by construction, but potentially able to be retained although will need to be vacated during construction.

Where houses are removed, this provides opportunities for landscaping and restoration.



3.7 Option 6 – No ramp/connection at Princes Street - Continuous path

Option 6 (as shown on Figure 3-6) involves a continuous deck level path alongside the AHB to Sulphur Beach, with no connection to Princes Street. The main path will follow the gradient of the existing AHB at deck level and provide a continuous path down to Sulphur Beach Reserve.

For this option, the minimum 20m construction corridor adjacent to the AHB is required. In addition, the houses at 3, 5a, 7 and 9 Princes Street would need to be removed. The houses at 1, 5, and 7a Princes Street are affected by construction, but are potentially able to be retained.

Where houses are removed, this provides opportunities for landscaping and restoration.



4 Assessment of connection options

This section summarises and records the assessment of alternative options for the path and connection at Northcote Point. A multi-criteria approach was used to assess the six different connection options against the following assessment criteria:

1. Consistency with the Project Objectives
2. Value for money
3. Built Heritage
4. Landscape and Visual
5. Cultural Values
6. Social/ Amenity
7. Urban Design/ Connectivity
8. Functionality/ Safety
9. Arboricultural
10. Noise and Vibration – Operation
11. Noise and Vibration - Construction

A scoring scale of -3 (significant adverse/un-mitigatable) to +3 (significant positive) was used, and the results of this process have been incorporated into the evaluation matrix presented in Table 4.1.

In relation to cultural values it was recognised that mana whenua are best-placed to assess cultural values, and as mana whenua were not directly involved in the assessment the table includes commentary only for this criterion, based on related feedback shared during engagement during project development to date.

Consideration was also given to whether, for each option, there were differences in relation to construction timeframes, and whether there were any differences in relation to effects on ecology. The expert discussion determined that there was no material difference between the options in relation to these criteria.

Table 4-1 – Summary of Assessment Criteria for the Princes Street Connection Arrangements

Project Criteria	Option 1 – Amended SkyPath ramp to Princes Street	Option 2 – Lift and stairs in Te Onewa Pa Reserve	Option 3 – Triangle ramp at No. 9 Princes Street	Option 4 – Zig zag ramp option	Option 5 – Cranked ramp	Option 6 – No ramp/connection at Princes Street – Continuous Path
<p><i>Note scoring as follows: -3 Significant Adverse/Un-mitigatable, -2 Significant Adverse, -1 Minor/Moderate Adverse, 0 Neutral, +1 Minor Positive, +2 Moderate Positive, +3 Significant Positive</i></p>						
Consistency with Project Objectives	<p>No</p> <p>Does not provide a direct, continuous path that is separated from the road.</p> <p>Does not provide an efficient user experience due to the need to come off under the AHB and then go up again.</p>	Yes	Yes	Yes	Yes	<p>No</p> <p>Does not provide access to the local transport network as no connection at Princes Street. Does not enable transport choice. No accessibility or connectivity for Northcote Point community or ferry terminal users (when the ferry is operational).</p>
Value for money	<p>0</p> <p>Least costly</p>	<p>-1</p> <p>Slightly more expensive when compared to Option 1, as while there is no ramp, includes lifts and stairs which have higher capital and operational costs, and requires some property acquisition</p>	<p>-1</p> <p>More expensive when compared to Option 1, as provides seamless connection and requires some property acquisition</p>	<p>-2</p> <p>Most expensive when compared to Option 1, as provides seamless connection and a longer ramp and requires most property acquisition</p>	<p>-2</p> <p>More expensive when compared to Option 1, as provides seamless connection and requires some property acquisition</p>	<p>-1</p> <p>Slightly more expensive than Option 1 as provides seamless connection, but no ramp and requires some property acquisition</p>
Land acquisition	No properties	3 properties (3, 5a, 7 Princes Street)	3 properties (3, 5a, 7 Princes Street)	6 properties (1, 3, 5a, 5, 7, 7a Princes Street)	4 properties (5a, 5, 7, 7a Princes Street)	3 properties (3, 5a, 7 Princes Street)

Project Criteria	Option 1 – Amended SkyPath ramp to Princes Street	Option 2 – Lift and stairs in Te Onewa Pa Reserve	Option 3 – Triangle ramp at No. 9 Princes Street	Option 4 – Zig zag ramp option	Option 5 – Cranked ramp	Option 6 – No ramp/connection at Princes Street – Continuous Path
<p><i>Note scoring as follows: -3 Significant Adverse/Un-mitigatable, -2 Significant Adverse, -1 Minor/Moderate Adverse, 0 Neutral, +1 Minor Positive, +2 Moderate Positive, +3 Significant Positive</i></p>						
Built Heritage	-1 Significant impacts on scheduled places at Te Onewa, including the Flagstaff which is required to be moved Removal of No.9 affects Special Character Area	-2 Significant impacts on scheduled Te Onewa Pa Reserve and the scheduled Flagstaff Removal of most houses - significant impact on Special Character Area	-2 Significant impacts on scheduled Te Onewa Pa Reserve and the scheduled Flagstaff Removal of most houses - significant impact on Special Character Area	-2 Significant impacts on scheduled Te Onewa Pa Reserve and the scheduled Flagstaff Removal of all houses - significant impact on Special Character Area	-2 Significant impacts on scheduled Te Onewa Pa Reserve and the scheduled Flagstaff Removal of most houses - significant impact on Special Character Area	-2 Significant impacts on scheduled Te Onewa Pa Reserve and the scheduled Flagstaff Removal of most houses - significant impact on Special Character Area
Landscape and Visual	-1 Key impacts on pōhutukawa and Reserve open space	-3 Significant effects particularly on physical and perceptual aspects of the Pa	-2 High visual impact, due to remaining houses in close proximity to structures	+3 High positive related to rehabilitation of coastal edge	+2 Moderate positive related to rehabilitation of coastal edge	-2 High visual impacts on remaining properties
Cultural Values <i>Note: cultural values have not been scored. It is recognised that mana whenua are best placed to assess cultural values.</i>	Moderate physical impact on the pa/headland Moderate ramp footprint (albeit under AHB) No opportunity to restore wider pa	Greatest physical impact on the pa/headland Least footprint on the wider pa Provides for some opportunity to restore wider pa	Moderate physical impact on the pa/headland Moderate ramp footprint Provides for some opportunity to restore wider pa	Moderate physical impact on the pa/headland. Greatest ramp footprint Provides for the greatest opportunity to restore the wider pa	Moderate physical impact on the pa/headland Moderate ramp footprint Provides for some opportunity to restore wider pa	Moderate physical impact on the pa/headland No footprint Provides for some opportunity to restore wider pa

Project Criteria	Option 1 – Amended SkyPath ramp to Princes Street	Option 2 – Lift and stairs in Te Onewa Pa Reserve	Option 3 – Triangle ramp at No. 9 Princes Street	Option 4 – Zig zag ramp option	Option 5 – Cranked ramp	Option 6 – No ramp/connection at Princes Street – Continuous Path
<p><i>Note scoring as follows: -3 Significant Adverse/Un-mitigatable, -2 Significant Adverse, -1 Minor/Moderate Adverse, 0 Neutral, +1 Minor Positive, +2 Moderate Positive, +3 Significant Positive</i></p>						
Social/Amenity	-1 Lack of continuous path, decreased ease of use, potential for increased commuting time All users have to enter Princes Street Increased potential for disruption Gradient could reduce usability for some	-1 Continuous path with alternative commuting options Potential queuing, disruption, potential increased commuting time, loss of recreational space/amenity values at Te Onewa Pa	+1 Continuous path with alternative commuting options Gradient could reduce usability for some	+2 Continuous path with alternative commuting options Optimum gradient	+1 Continuous path with alternative commuting options Gradient could reduce usability for some	-1 Continuous path with alternative commuting options Less operational disruption for Northcote point residents No direct connection to Northcote Point or Birkenhead Area, potential to increase commuting times
Functionality	-2 Tight blind corners, not a direct route, steeper gradients and potential conflict with traffic on Princes Street	-1 Creates delays and potential conflict with users of lift, CPTED ² issues of using lift at night	0 Potential steep gradient of ramp and acute angle of path	+1 Accessible ramp and clear approach angles to main path	0 Potential steep gradient	-3 No access for users of Northcote ferry terminal without extra 2km walk, poor access to Birkenhead and Northcote Point
Urban Design	-2 Interrupted flow, Landing plaza integration unknown, CPTED issues of ramp/ under AHB	+1 Efficient use of land Supports broader amenity outcomes Impacts on cultural values of Onewa Pa	+2 Efficient land function Minor negative amenity effects offset by compact layout Supports broader amenity outcomes	+2 Supports broader amenity outcomes Potential to provide positive amenity outcomes relating to restoration and replanting	+1 Efficient land function, compact layout, supports broader amenity outcomes	-1 Minor impacts to the existing ground level amenity, limited potential for improving amenity outcomes

Project Criteria	Option 1 – Amended SkyPath ramp to Princes Street	Option 2 – Lift and stairs in Te Onewa Pa Reserve	Option 3 – Triangle ramp at No. 9 Princes Street	Option 4 – Zig zag ramp option	Option 5 – Cranked ramp	Option 6 – No ramp/connection at Princes Street – Continuous Path
<i>Note scoring as follows: -3 Significant Adverse/Un-mitigatable, -2 Significant Adverse, -1 Minor/Moderate Adverse, 0 Neutral, +1 Minor Positive, +2 Moderate Positive, +3 Significant Positive</i>						
Arboricultural	-2 Loss of pōhutukawa within reserve and some mature pōhutukawa at No 9	-2 Loss of pōhutukawa within reserve and all trees within 20m construction corridor adjacent the AHB	-2 Loss of pōhutukawa within reserve and all trees within 20m construction corridor adjacent the AHB.	-2 Loss of pōhutukawa within reserve and all trees within 20m construction corridor adjacent the AHB. Loss of mature tree in private property.	-2 Loss of pōhutukawa within reserve and all trees within 20m construction corridor adjacent the AHB	-2 Loss of pōhutukawa within reserve and all trees within 20m construction corridor adjacent the AHB
Noise and Vibration – operation	-1 All users have to pass under the AHB, which will increase noise experienced by residents on both sides of the road, including users that are currently less affected by noise as they are below the AHB	0 Removal of 7 Princes Street may result in significant noise increase from SH1 at 7a Princes Street	0 Removal of 7 Princes Street may result in significant noise increase from SH1 at 7a Princes Street	+3 Removal of properties taking people out of high noise environment	0 1 Princes Street remaining	0 Removal of 7 Princes Street may result in significant noise increase from SH1 at 7a Princes Street
Noise and Vibration – construction	-2 Construction at ground level or above, effects difficult to mitigate	-1 Some houses removed, remaining residents/businesses at distance, effects can be managed	-1 Some houses removed, remaining residents/businesses at distance, effects can be managed	0 All houses removed	-1 All houses except 1 Princes Street removed, remaining residents/ businesses at distance, effects can be managed	-1 Some houses removed, remaining residents/businesses at distance, noticeable but effects can be managed
² CPTED - Crime Prevention through Environmental Design. CPTED is an approach which uses design to create naturally safer environments						

5 Preferred option

Considering the assessment undertaken and summarised in Table 4-1, **Option 4, the Zig Zag** ramp option is the preferred option for the Princes Street connection, for the following reasons:

- It is consistent with all Project Objectives, providing a direct and continuous pathway, that is separated from the road, whilst also providing a local connection to Northcote Point and Birkenhead.
- It provides a safe, accessible and efficient connection. The larger footprint enables a more accessible gradient for the ramp (1:20), with clear approaches for the main path, and enables active transport choices.
- While all of the houses at 1-9 Princes Street require removal for Option 4, this removes people (sensitive to noise and vibration during construction and operation) from this location and provides opportunities to restore and revegetate the area by way of mitigation.
- Removal of the houses further provides opportunities for significant positive landscape and visual impacts in relation to rehabilitating the coastal edge and supports broader amenity outcomes.

In terms of the other options considered, these were not preferred for the following reasons:

- Option 1 is not consistent with the Project Objectives. It would not provide a direct and continuous pathway, as it requires all users to exit via a ramp at Princes Street and then re-connect to the main pathway via another ramp back up in order to continue on to Sulphur Beach and beyond. This would not provide an efficient user experience. The ramps would have a gradient of 1:12 and this may create usability issues for a number of users. The requirement for all users to go under the AHB has the potential to create greater disruption for the residents and other users.
- Option 2 is consistent with the Project Objectives by providing a direct and continuous pathway and local connection and is also considered to be an efficient use of land. However, this option would have the greatest physical impact on Te Onewa Pa and headland, both during construction and operation due to the new structure within the reserve. In addition, the lift and stairs arrangement has the potential to create delays, increase commuting time and creating potential disruption.
- Options 3 and 5 are both consistent with the Project Objectives, as both options provide a direct and continuous pathway and local connection. However, these options were discounted to address the potential safety and accessibility concerns with the steeper ramps at this location. Option 3 would also have a high visual impact on the remaining Princes Street properties due to their proximity to the structures.
- Option 6 was discounted because it is not consistent with the Project Objectives, as whilst it provides a direct and continuous connection, it does not provide a local connection for Northcote Point and Birkenhead. As a result, it does not enable active transport choices or provide an accessible, efficient experience for users. In addition, there would be a high visual impact on properties remaining due to their proximity to the structures.