

ATTACHMENT A: Description of proposed mitigation works for local parks in Hibiscus and Bays

1. Park Name	Awaruku Reserve (Refer to location map in ATTACHMENT B)
Site Address	Awaruku Road, Torbay
Site Background	<p>Awaruku Reserve is located at the northern end of the East Coast Bays subdivision.</p> <p>In the early 1900's, the reserve was used as a quarry to mine rock for local roading however the quarry was later abandoned. The reserve was preserved from developers in the late 1960's and has since been enhanced and maintained by a group of residents. The reserve is completely covered with native bush and is identified as a significant ecological area. It is home to a waterfall, birdlife and glow-worms and the reserve is used by local schools for educational purposes.</p> <p>There is an extensive track network within this reserve with access from Moorgreen Heights, Relko Crescent and Awaruku Road. Some track upgrade works have recently been completed in the reserve however the entire reserve track network has not been upgraded.</p>
Current Status	<p>It is suspected that all kauri within this reserve are planted, and they are typically young kauri. The scope for this reserve is to provide appropriate mitigation for the existing kauri trees. No renewal work has been scoped for other tracks. Kauri are located at the southern end of the reserve. One is close to the first junction after the bridge coming from Awaruku Rd. Another kauri is approximately 15m downhill from the middle loop track, S4. In addition to this, there are several young kauri trees which appear to have been planted together in a section of S5.</p> <p>Track S5 has been temporary closed to protect kauri along that track. This leaves a considerable network of tracks still available for the community to use in the interim.</p>
Assessment Criteria	<ul style="list-style-type: none"> • Kauri forest ecological value - Low • Recreational value - Medium • Availability of alternative tracks - Yes
Proposed mitigation options	<p>There are two options – indefinite closure of track S5 with permanent fencing and planting or undertake mitigation works as below to protect kauri:</p> <ul style="list-style-type: none"> • There is a young planted kauri at the triangular junction after the timber bridge coming from Awaruku Road, marked as S2 on attached location plan. It is proposed that a timber post and rope fence is constructed, and appropriate signage installed, to mitigate soil transfer within this kauri zone. • The aggregate track is washing out on S4, above a planted kauri. It is recommended to install edging as required, and form an appropriate side drain to divert stormwater away from kauri root plate. • There is a small planted kauri grove beside the track on the hairpin at S5. It is recommended that this section of the track is rerouted, (marked as S6) to keep users away from the kauri zone.

	Hygiene station installation if required is not included in the costing provided below.			
Option Analysis and Recommendation	Description	Expected Outcome	Estimated Cost	Recommendation
Option A	Close track S5 indefinitely	Kauri are protected as there is no public access Loss of recreational use	\$4,500	This option is not recommended due to the loss of recreational value
Option B	Upgrade tracks to kauri-safe standard: <ul style="list-style-type: none"> On track S2 install barrier fencing and signage to prevent access to kauri On track S4 install edging and form side drain On track S5 re-route track to keep users away from kauri zone 	Kauri are protected due to track upgrades to kauri-safe standard and exposure to kauri dieback is significantly reduced.	\$12,870	This is the recommended option because it provides for adequate kauri protection and for recreational use

2. Park Name	Emlyn Place Reserve (Refer to location map in ATTACHMENT B)
Site Address	Emlyn Place, Torbay
Site Background	<p>A track from Emlyn Place traverses along the western side of the reserve and switches back to the large grassy area and stormwater detention pond at the southern end of the reserve. An existing track connects to neighbouring Fitzwilliam Drive Reserve where there are no kauri present.</p> <p>There is a proposed greenways feeder route as part of the Hibiscus and Bays Local Paths Plan from Flavia Close through to Emlyn Place that connects to Fitzwilliam Drive Reserve through the southern part of the reserve.</p> <p>Large, mature kauri are located at the northern end of the reserve in the bush on both sides of track S2 and are marked as non-symptomatic. These trees appear to be in good health. Track S2 is in relatively good condition within and around the kauri zone and appears heavily used.</p> <p>The section of track alongside the stream (S1) however, is in poor condition and in need of maintenance and renewals. There are multiple informal tracks connecting neighbouring properties to S1 and S2.</p> <p>The entirety of track S1 should be upgraded in the future. There is evidence that sections of this track become wet and muddy. There is extensive erosion alongside the stream and sections of track where slips have occurred. It is recommended that new retained edging be installed. The user experience would also benefit from some minor track realignments. These renewal works however, are not part of the Kauri Dieback programme and are therefore, not included in the below scope of works.</p>
Current Status	Track S2 passes through the dense kauri zone and has been temporary closed to protect mature kauri along that track. This leaves track S1 available for the community use.
Assessment Criteria	<ul style="list-style-type: none"> • Kauri forest ecological value - Medium • Recreational value - Medium • Availability of alternative tracks - Yes
Proposed mitigation options	<p>Option One – Indefinite closure of track S2:</p> <p>The two access points to S2 should be planted out with native bush, as per the Auckland Council Native Forest Restoration guide to visually hide the existing track. This should also be done at any informal access points to S2. Appropriate signage and fences should be used as an interim measure until the planting reaches a stage of density such that there is no longer evidence of the track.</p> <p>It is further recommended that a formalised section of track be constructed at the beginning of S3 (as marked on the attached map) to direct track users out to the open grassed area, and away from S2.</p>

	<p>Option Two – Upgrade track S2: Upgrade track to kauri-safe standards. This will require significant works involving the construction of boardwalks, minor track reroutes, stormwater management and more.</p> <p>Hygiene station installation if required is not included in the costing provided below.</p>			
Option Analysis and Recommendation	Description	Expected Outcome	Estimated Cost	Recommendation
Option A	Undertake track mitigation to keep track S2 open to make the track kauri safe	Kauri are protected due to track upgrades to kauri safe standard No loss of recreational use	\$172,172	This option is not recommended due to the significant track upgrade required
Option B	Close track S2 indefinitely with barrier planting across track entrances and fencing and signage until planting is sufficiently established	Kauri are protected as there is no public access. Loss of recreational use	\$7,722	This is the recommended option because it provides maximum protection for high value kauri (an alternative track remains open for public use)

3. Park Name	Alice Eaves Scenic Reserve (Refer to location map in ATTACHMENT B)
Site Address	2 Old North Rd, Orewa
Site Background	<p>Alice Eaves Scenic Reserve is located at the northern end of Orewa. The reserve is made up of three parcels of land and is approximately 16 hectares in total and is identified as a significant ecological area. It has frontage to Hillcrest and Old North Roads. The reserve's southern fringe is bounded by the Nukumea Stream.</p> <p>The connection from Old North Road to Hillcrest Road is identified as a greenway as part of the Hibiscus and Bays Local Paths Plan. There are existing pedestrian links to Hillcrest and Old North Roads. Nukumea Stream is crossed by a pedestrian bridge providing access into Kensington Park Village.</p> <p>Most of the tracks are in good condition, particularly to the north. There is an extensive network of existing boardwalks, structures and aggregated track throughout the reserve.</p> <p>Single track access from Hillcrest Road connects to an inner stacked loop with single track access provided at Eaves Bush Parade and Old North Road. There are long sections of boardwalk and boxed steps along the extent of the track. On the western end of the reserve the track is shown to connect to the neighbouring greenbelt property.</p> <p>Track S3 is an informal track leading to a remembrance site surrounded by planted kauri. The track appears to have been developed by those who visit the remembrance site and requires upgrades for the protection of the kauri. This is a site of significance to some members of the local community.</p> <p>Minimal parking is available for this reserve, however the expected use is as a commuter route and for local recreation, which typically doesn't require parking.</p>
Current Status	<p>The reserve is densely populated with kauri trees. There is a kauri grove at the northern end of the reserve and planted kauri at a remembrance site on track S3.</p> <p>The majority of the kauri are non-symptomatic. There is one tree marked with possible Kauri Dieback Disease. A few other trees are indicated as kauri trees with infections other than Kauri Dieback, and multiple trees are marked as infected with ill thrift.</p> <p>Tracks within Alice Eaves have been temporarily closed to protect kauri along the tracks.</p> <p>Bottle and brush cleaning stations are located at all three track entrances, with appropriate signage, however these are no longer considered adequate and all cleaning stations are to be upgraded.</p>
Assessment Criteria	<ul style="list-style-type: none"> • Kauri forest ecological value - High • Recreational value - High • Availability of alternative tracks - No

<p>Proposed mitigation options</p>	<p>Option one – upgrade tracks to kauri-safe standard:</p> <ul style="list-style-type: none"> • Due to the high value kauri located within the reserve and the extensive existing boardwalk infrastructure, mitigation works will include construction of additional boardwalk where required and formation of dry track surface • Track S7 – close track. This provides a connection to the neighbouring greenbelt property used for recreational activities such as mountain biking. Closure of this connection with planting and fencing is recommended as there are multiple kauri in the neighbouring property (not Council land) • Track S3 – Remembrance Site: Mulch around the kauri trees and form an aggregated track as required to the headstones. This needs to be discussed further with groups affected to make kauri-safe • Upgrades will be carried out in stages to allow sections of the reserve to remain open during upgrade and mitigation works construction <p>Option two – indefinite closure of tracks with no track upgrades/mitigation: Access points would be planted out with native bush, to visually hide the existing tracks. Appropriate signage and fences should be used as an interim measure until the planting reaches a stage of density such that there is no longer evidence of the track.</p> <p>Hygiene station installation is not included in the costing provided below.</p>			
<p>Option Analysis and Recommendation</p>	<p>Description</p>	<p>Expected Outcome</p>	<p>Estimated Cost</p>	<p>Recommendation</p>
<p>Option A</p>	<p>Close tracks indefinitely.</p>	<p>Kauri are protected as there is no public access Loss of recreational use</p>	<p>\$4,500</p>	<p>This option is not recommended due to the loss of recreational value.</p>
<p>Option B</p>	<p>Upgrade tracks to kauri-safe standard:</p> <ul style="list-style-type: none"> • Install boardwalks and dry track surface on multiple tracks • Close track S7 indefinitely • Upgrade track S3 to kauri-safe 	<p>Kauri are protected due to track upgrades to kauri-safe standard and exposure to kauri dieback is significantly reduced.</p>	<p>\$391,205</p>	<p>This is the recommended option because it provides for adequate kauri protection and for recreational use</p>

4. Park Name	Dacre Historic Reserve & Esplanade (Refer to location map in ATTACHMENT B)
Site Address	East Coast Rd, Redvale
Site Background	<p>Dacre Historic Esplanade is located between Long Bay and Stillwater and was established by the Rodney District Council. Since the establishment of the Long Bay-Okura Marine Reserve in 1995, the Okura Bush Walkway has been developed. Under the Reserves Act 1977, council has a management plan for the area.</p> <p>From Stillwater the track runs through grassland, then briefly across the northern end of Karepiro Bay before tracking inland from the cliff edge. The track eventually drops back to beach level to the bay located in front of Dacre Cottage. Linking across this beach, the track then connects into the Okura Bush walkway.</p> <p>There are shared interests in the track by both the council and the Department of Conservation (DOC). Even though the land is owned by council, work has been carried out on the track by DOC regarding kauri mitigation. This was completed when DOC carried out their kauri dieback works in Okura Bush.</p> <p>Note: The track use is likely to increase once the DOC track re-opens, and the nearby 128 lot Weiti Bay residential subdivision is developed. Moreover there is a public accessible carpark close to the Weiti Bay development entrance and track access is planned for development from the carpark to the reserve. This is likely to further increase the recreational usage on this track.</p>
Current Status	<p>A single mature kauri is located on the track - 30m of Geoweb has been installed by DOC at this kauri tree.</p> <p>There are some informal viewing areas where the track is close to the edge of the cliffs and large drops are present. There is also the potential danger of a slip when walking close to the cliff edge, due to potentially unstable ground.</p> <p>There is a track running inland of the coast which is in average condition. The track has little to no surfacing, boxed steps which lack fill, and long sections where tree roots are exposed. There are also sections of the track where water is ponding.</p> <p>The track does not appear heavily used due to the closure of Okura Bush Walk. The closure was made by DOC for kauri dieback mitigation upgrade works and track realignment due to a slip on the DOC section of track.</p>
Assessment Criteria	<ul style="list-style-type: none"> • Kauri forest ecological value - Medium • Recreational value - Medium • Availability of alternative tracks – Yes

Proposed mitigation options	<p>The mitigation has been carried out by DOC so the kauri hygiene zone is protected as per kauri-safe standards.</p> <p>The overall general condition of the track requires renewal particularly at the beginning.</p> <p>The track from Dacre Cottage to the kauri tree is in poor condition, and the boxed steps from the estuary to the top of the hill require renewal. These renewal works however, are not part of the Kauri Dieback programme and are therefore, not included in the programme of works.</p>			
Option Analysis and Recommendation	Description	Expected Outcome	Estimated Cost	Recommendation
Option A	No mitigation required	Kauri is protected	\$0	This is the recommended option as the kauri tree has already been mitigated

Low Risk Reserves

Park Name	Site information	Assessment	Proposed Mitigation	Cost Estimate
Karaka Cove	Contains two kauri close to track and one kauri in open green space.	Kauri forest ecological value - Low Recreational value - medium	Provide buffer planting and/or signage and barriers	\$4,000
Silverdale War Memorial Park	Single young planted kauri close to edge of sportsfield. Several medium kauri at far north eastern corner of park but are inaccessible as in dense bush	Kauri forest ecological value - Low Recreational value - medium	Provide buffer planting and/or signage and barriers	\$4,000
36 Hibiscus Coast Highway	Single kauri tree only not easily accessible to public	Kauri forest ecological value - Low Recreational value - low	no mitigation required	\$0
Esplanade Reserve off industrial place	Single kauri tree only not easily accessible to public	Kauri forest ecological value - Low Recreational value - low	no mitigation required	\$0
Northcross Reserve	Single kauri tree only not easily accessible to public	Kauri forest ecological value - Low Recreational value - Medium	no mitigation required	\$0