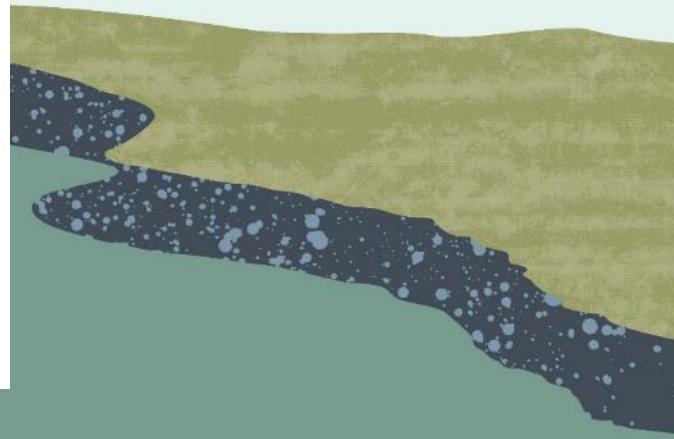
Mautohe
Cathedral Cove

Options and solutions under consideration

29 April 2024

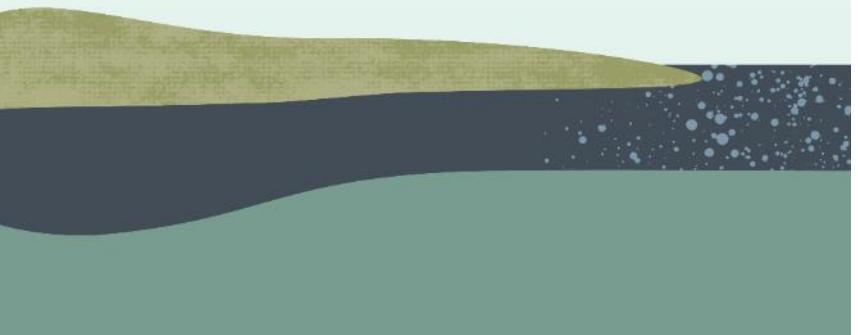


Department of Conservation
Te Papa Atawhai

New Zealand Government

This session

- High level review recap
- Landscape resilience recap
- Project phases
- Option criteria
- Initial investigation - track/beach access options discarded and why
- Options progressed to feasibility testing and why
- Potential solutions
- Let's talk about Stingray and Gemstone Bays
- What do the options/solutions mean for you – pros and cons?



High-level review recap

In progress

- The Tonkin + Taylor 2023 report undertook mapping and a landslide risk assessment following DOC's Natural Hazard Risk Analysis methodology.
- The report recommended that DOC review the site and explore practical risk reduction options.

<u>This review process is underway and includes:</u>

- Landslide predictive modelling
- Geotechnical monitoring to ascertain if the land has stabilised and what level of risk remains.
- Identifying a resilient access to Cathedral Cove beach
- Identifying practical visitor risk mitigations

Landscape Resilience learnings recap

In the first six months of 2023, Whitianga rainfall levels broke records that began in 1961.

Tonkin + Taylor noted the types of landslide and rockfall typically occurring at the reserve are triggered by high rainfall events.

Likelihood of further land damage from severe storms is very high.

Some parts of the recreation reserve are more unstable and prone to landslides/rockfalls than others.

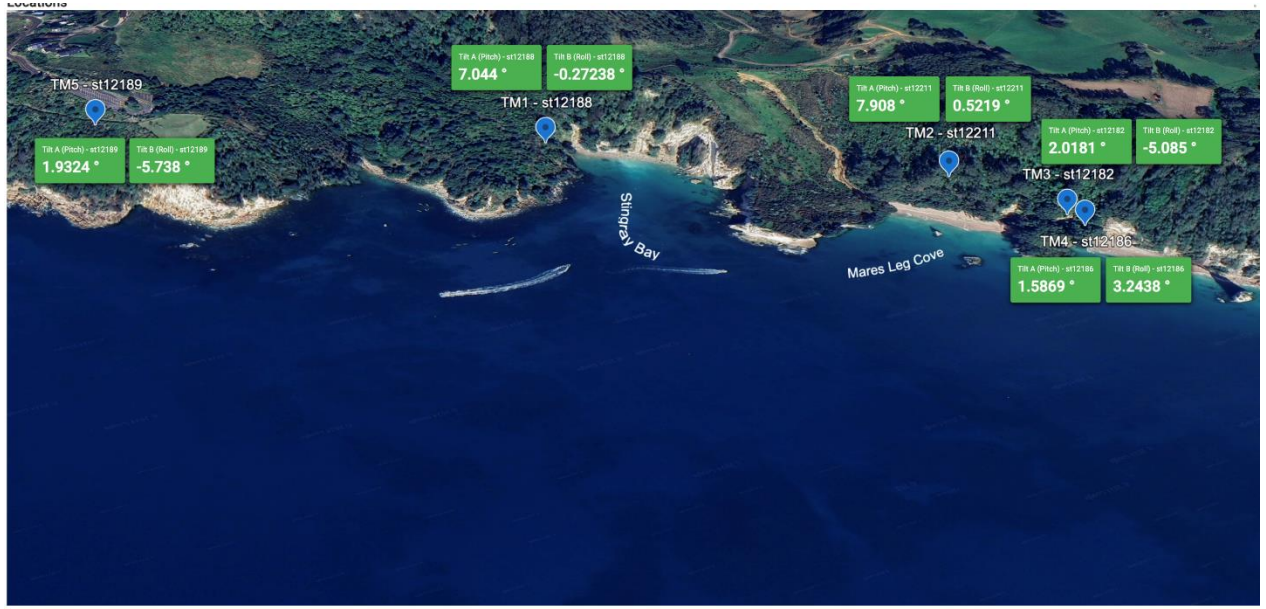
Future resilience of visitor infrastructure is an important consideration for DOC, particularly given the history of rockfall and landslides.

Real-time ground movement monitoring

Tiltmeter installation

Satellite uplink from tiltmeter

Located in sites likely to slip



Continuous real-ground data feed

Phased Approach

1

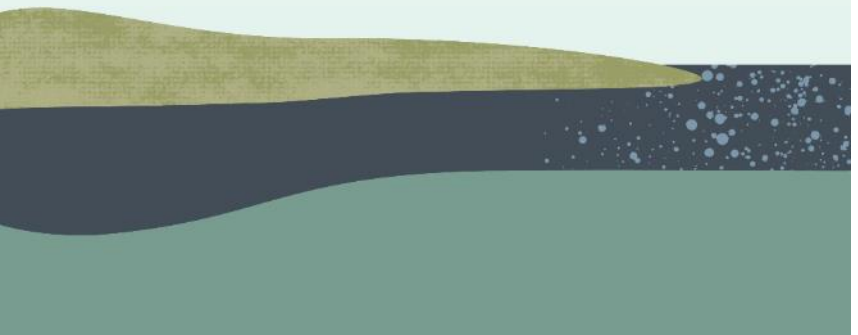
Phase 1 – assessment of walking track options and entry points (public and private) to the recreation reserve (current phase)

2

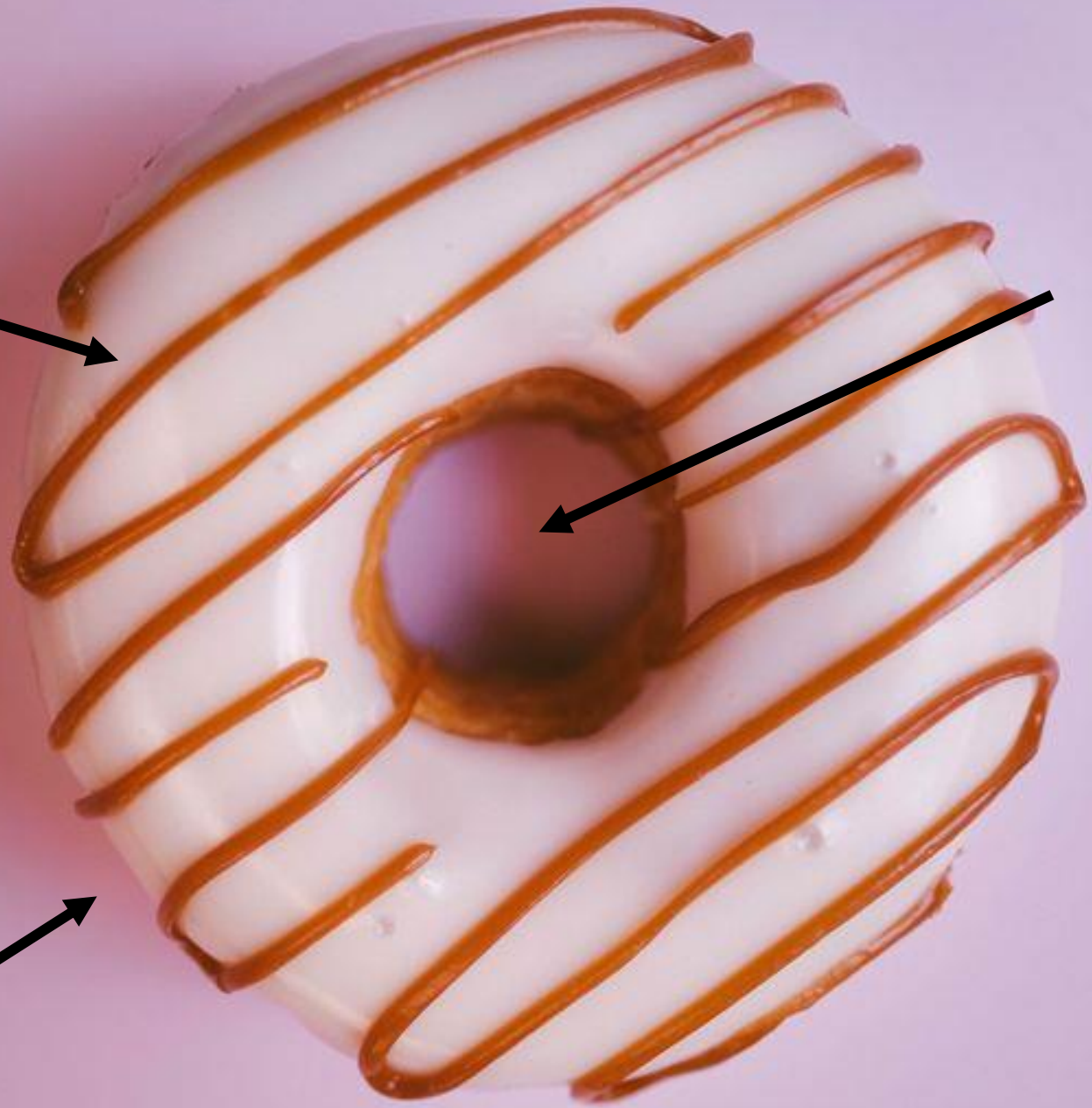
Phase 2 – potential build + applying visitor risk mitigations and transport links if applicable (post July 2024)

3

Phase 3 – management of visitor pressure (discussions alongside Council and Regional Tourism Organisation).



Step 2: Once we know if we can reach the beach, then which ways to enter the recreation reserve and walk to the beach reduce visitor risk/manage costs and impacts the best?

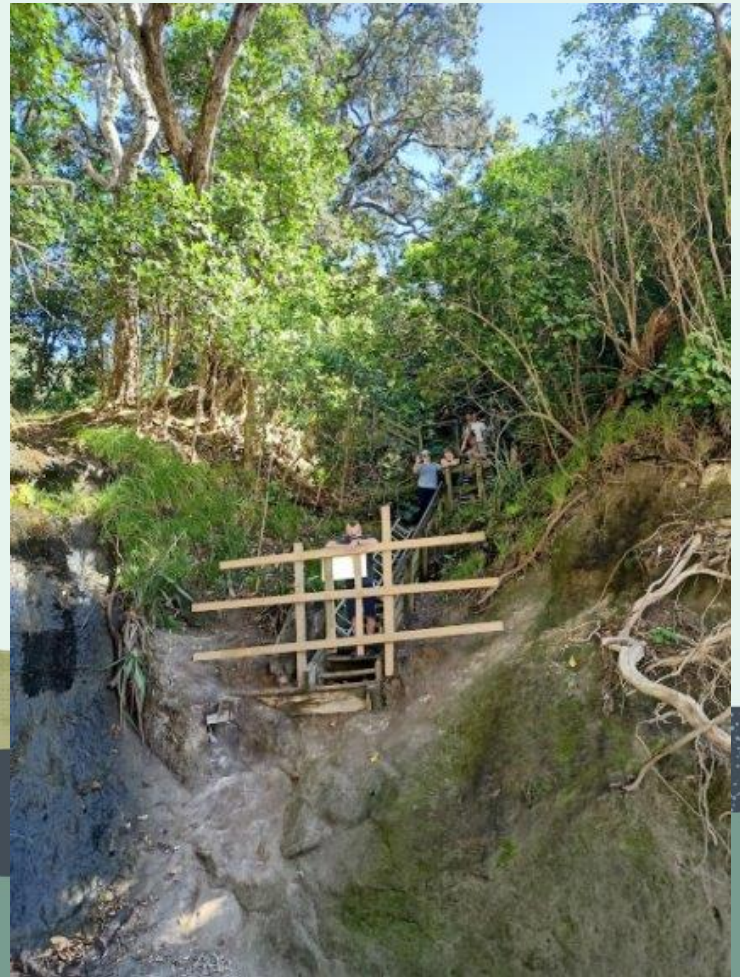


Step 1: Is it geotechnically resilient / structurally viable and resilient / financially achievable / acceptable impacts to build access to beach?

Step 3: What do we need to do to manage movement to and from the recreation reserve and through the recreation reserve to manage congestion, impacts, traffic, visitor safety?

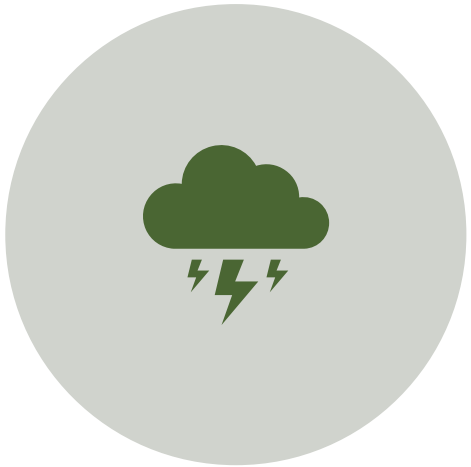
Option / Solution criteria

The solution will need to...



- align with the values of Ngāti Hei
- provide viable access to the beach that is resilient against future severe storms, landslides, rockfalls and storm surges
- reduce visitor risk to as low as reasonably practicable for the type of visitor who uses this site
- not damage Mautohe Pa and its defensive ditches the current damaged beach track access passes

The solution also needs to



Consider resilience against future severe storms and resulting landslides/ rockfalls/storm surges

Reduce the cultural, environmental, and social impacts

Balance benefits, costs and investment risks

Peak reality – peak season

Requires visitor management

Requirements to reinstate walking access

Alignment with Ngāti Hei Treaty Settlement Overlay
Significant remedial work on Grange Road carpark including drainage and stabilisation
Geotechnical ground stabilisation/footings/ground bolting
Building tracks, stair structures, box steps, drainage
Remove slip debris material/removal of hazardous trees
Toilet facilities within recreation reserve close to beach
Ongoing operating costs - maintenance, rubbish, active visitor risk management (ie. severe weather closures)
Visitor management and heritage and visitor interpretation
Transport system
Heritage authorisations from Heritage NZ

Beach access initial investigation

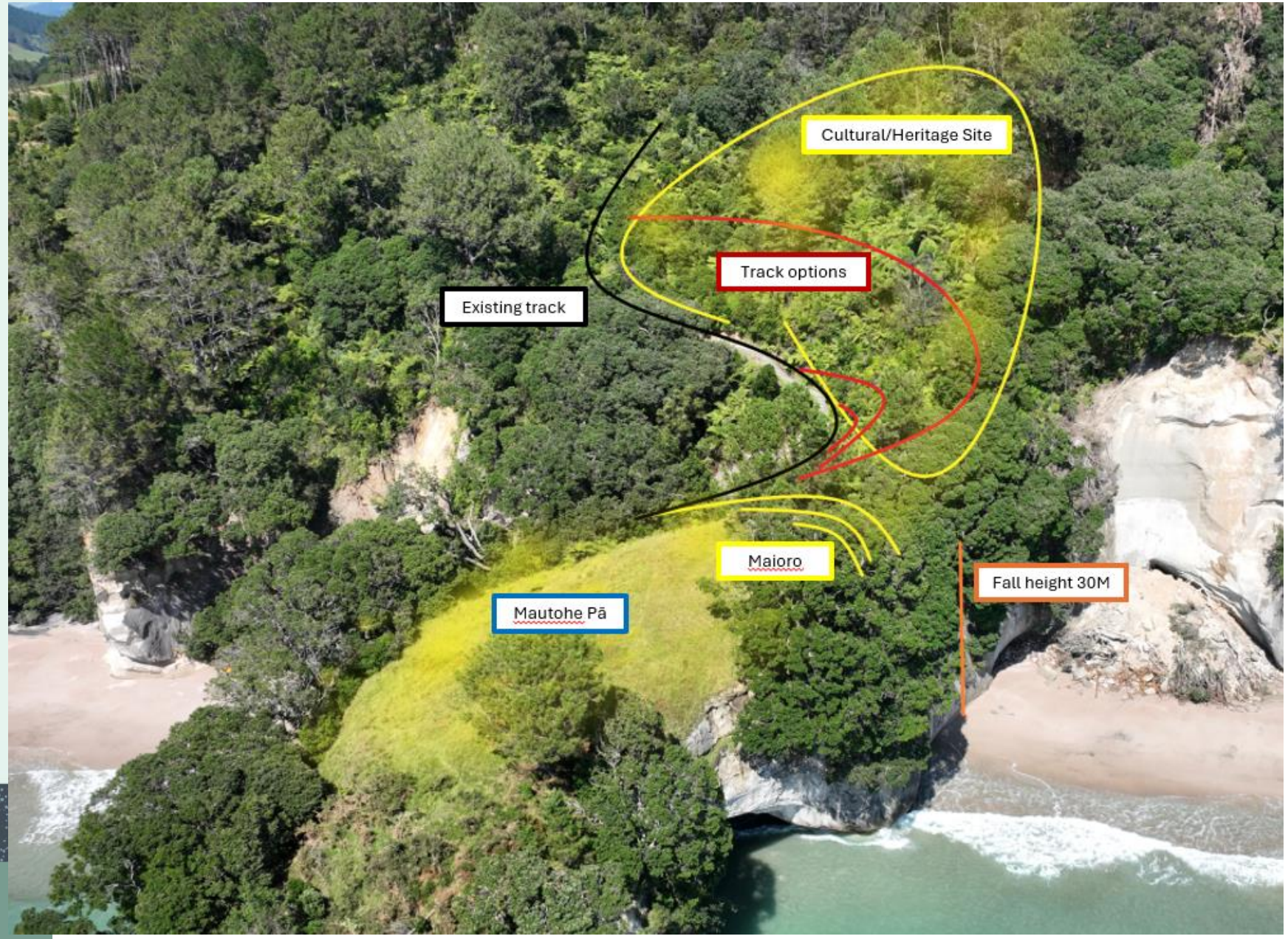
Key:

Existing track – black

Discarded options – red

maioro defensive ditches and banks – yellow

Fall heights - orange



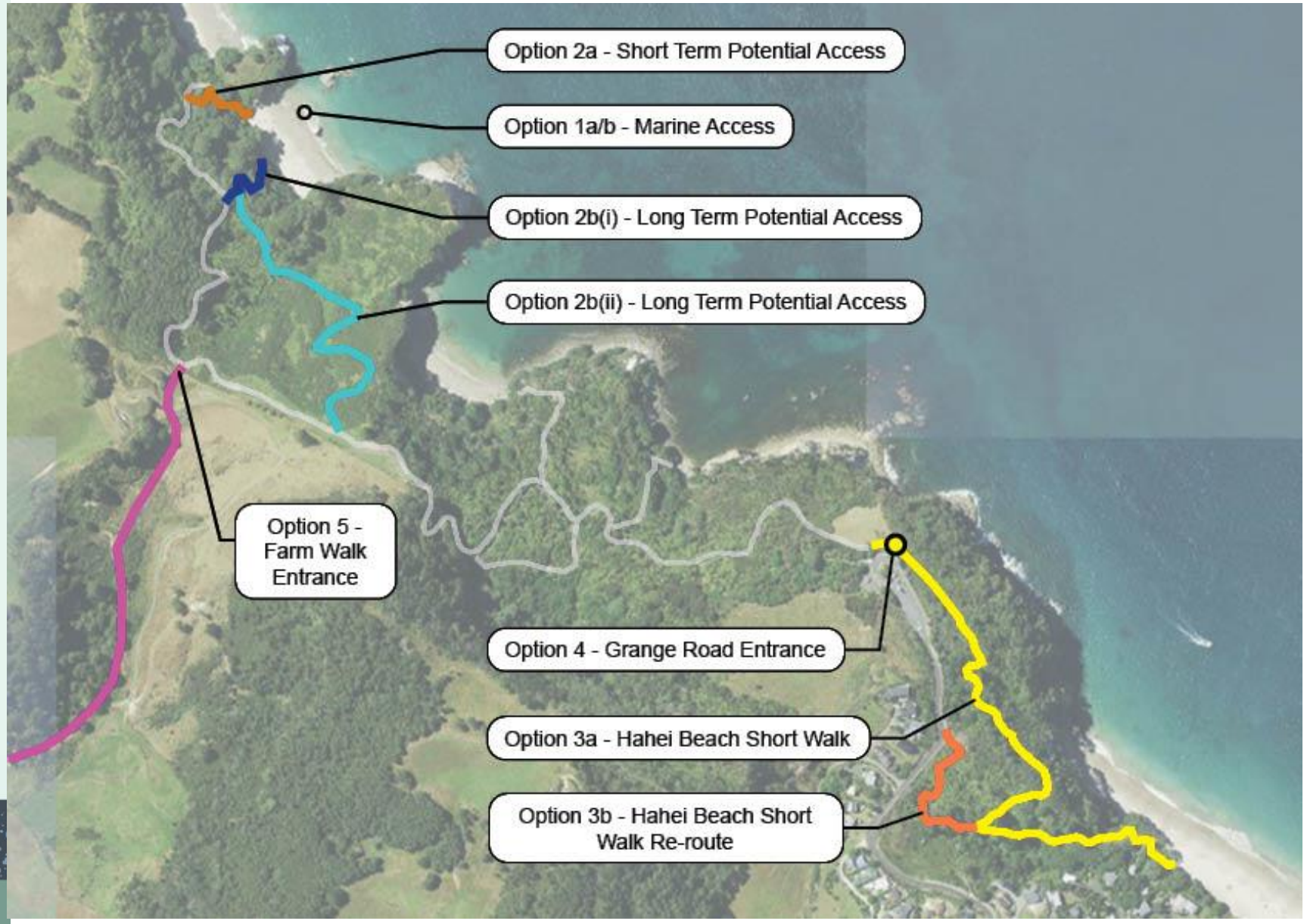
Options progressed through feasibility testing

Marine access options (2)

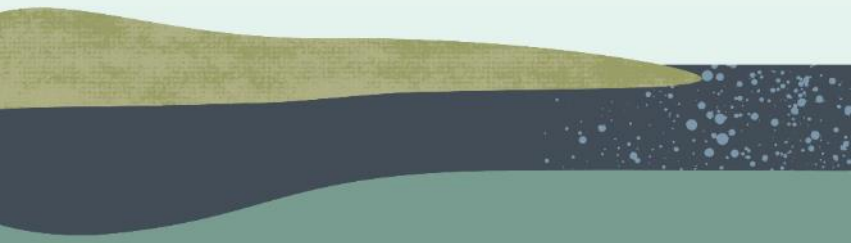
Walking beach access options (3)

Entrance to recreation reserve options (4)

Combinations to produce potentially viable solutions



Options progressed through feasibility testing



Beach access options

1. Marine:
    - **1a** Only marine access (status quo)
    - **1b** Voluntary managed marine access – joint agencies + iwi

2. Walking access to beach options:
    - **2a** Short-term potential access past Mautohe Pa
    - **2b** Long-term potential access from existing track (resilient):

- **2b(i)** steep gradient (shorter) track
- **2b(ii)** easier gradient (longer) track.

Entrance to recreation reserve options

3. Reinstatement of current reserve entrance – Hahei to Grange Road carpark
    - 3a Reinstate existing
    - 3b Reroute

4. Use existing reserve entrance – Grange Road carpark (all solutions except private entrance option)

5. Do different – farm walk across private land to new reserve entrance (pink).

1a. Marine only access permanent

Pros

- Potentially lowers visitor risk from rockfall hazards due to visitors spending less time in rockfall areas.
- Most resilient - mitigates future damage to infrastructure, lower infrastructure cost
- Improves aspects of visitor experience on beach – less crowding, rubbish, inappropriate toileting – summer survey evidence

Cons

- Marine safety issues – landings, weather and sea condition dependent
- Exposes low skilled visitors to water/ocean hazards
- Visitor experience from the viewpoints throughout the track is lost
- Shifting visitor pressure to marine and boat launching sites
- Changes visitor composition – summer survey evidence
- Creates exclusivity / cost barriers – summer survey evidence
- Community and industry dissatisfaction/community wellbeing

1b. Voluntary managed marine access

Pros

- Jointly managed marine access would mitigate some of the water safety and water congestion issues.
- Can be added in Stage 3 to any walking access solution so that both overland and water access is managed.

Cons

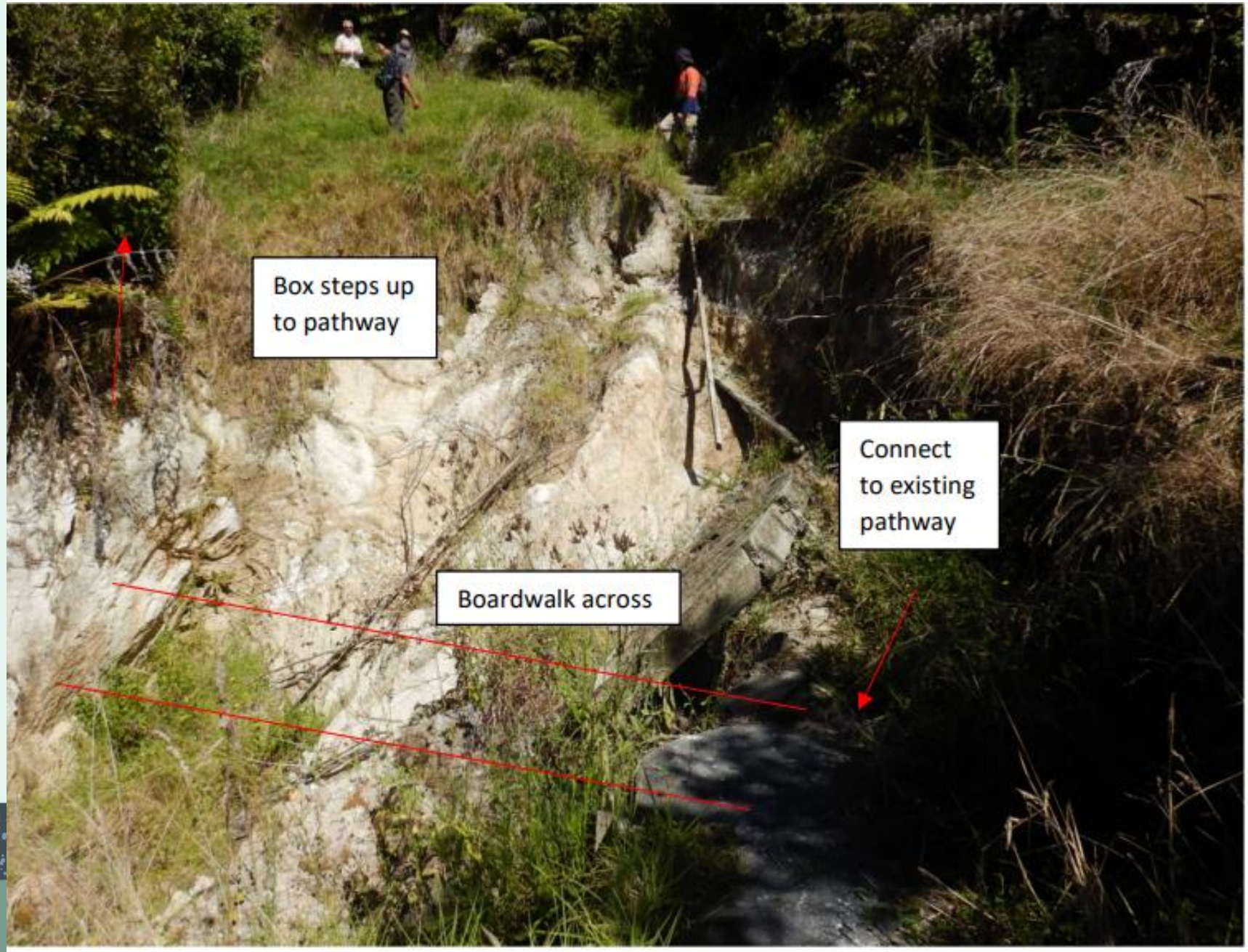
- Exposes low skilled visitors to water/ocean hazards.
- Time and resource heavy to form voluntary agreements and explore potential legal tools for marine/beach management.
- However, there are examples within NZ that could be considered.

Stage Three

- Further investigation into potential legal and voluntary tools to come.

2a. Short term potential access option

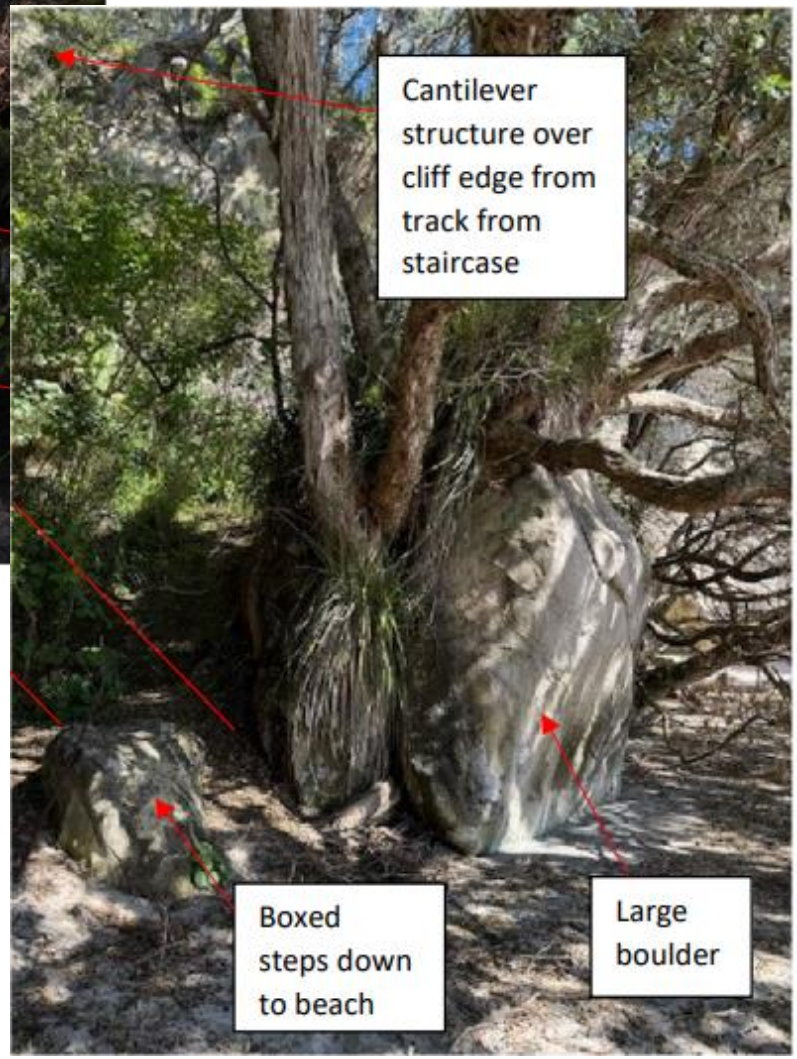
From the **draft** Frame Group 2024



2b(i) and 2b(ii). Long term potential access options

Both use a cantilevered staircase over the cliff and steps to the beach

High risk structures require high ongoing cost for inspections / maintenance



(Frame Group 2024)

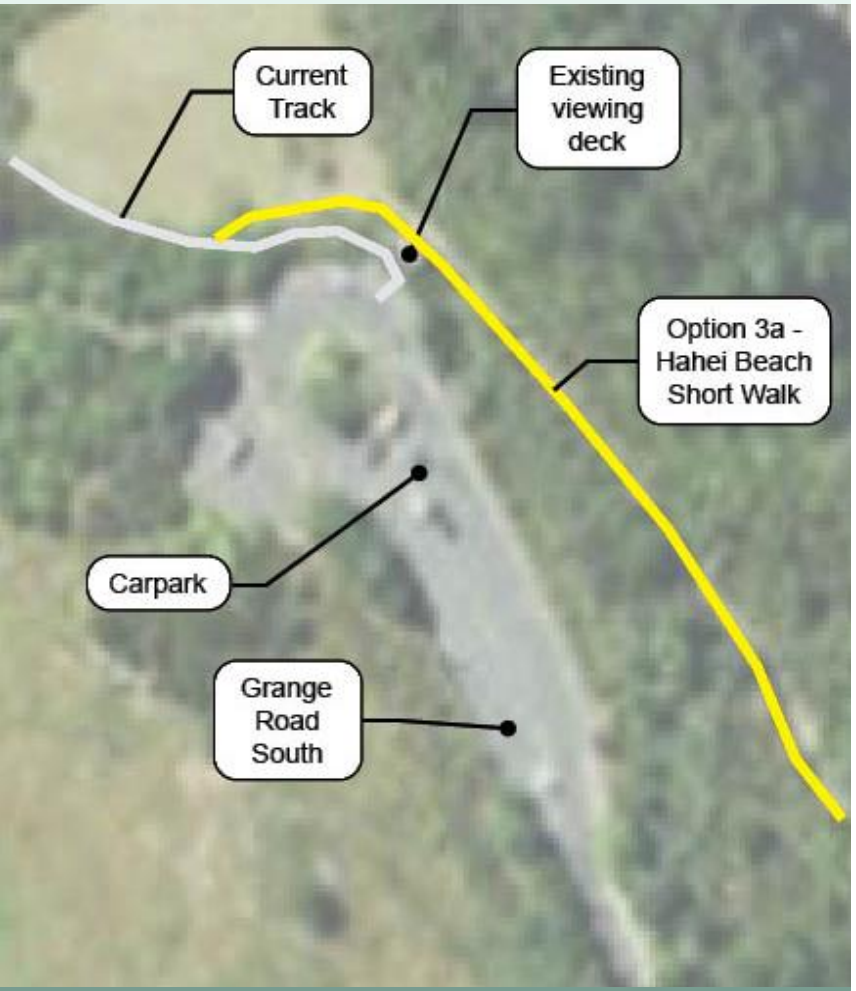
3. Hahei Short Walk

3. Hahei Short Walk

3a reinstate existing or 3b reroute

Awaiting geotechnical costings for ground stabilisation for 3a

4. Grange Road entrance



Most walking track options will require a Grange Road entrance

Requirements:

- Significant stabilisation and drainage work
- Likely to be high cost
- Shuttle drop-off only
- Congestion/road management
- Consider transport requirements in peak season/year-round if the track is reopened (multiple party interests)

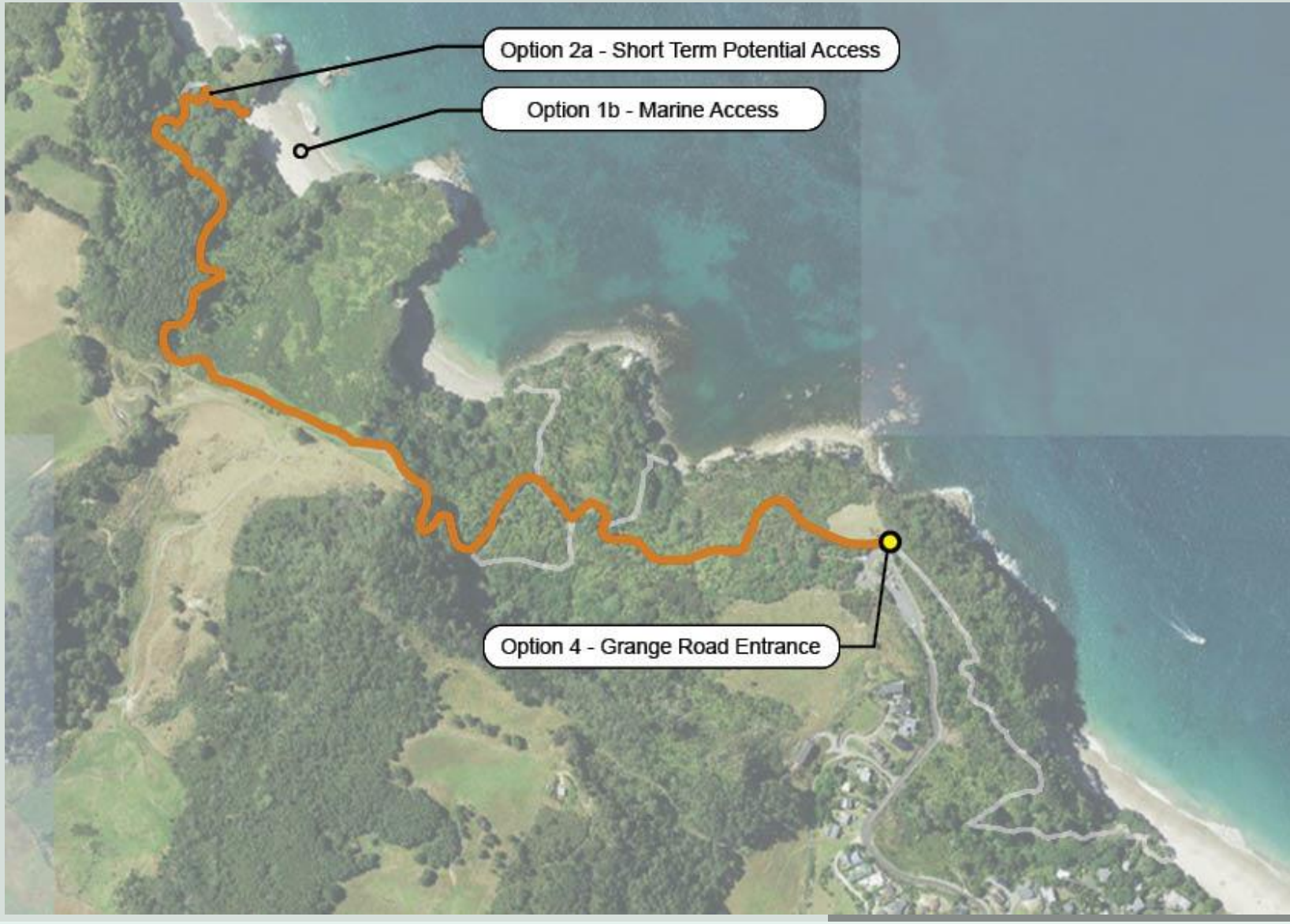
Grange Road to Cove

Short Term

Grange Road (4)
+ Short Term Potential Access (2a)

Close Hahei Beach Walk (3a)

Lower cost
Very low resilience
Requires Grange Road carpark stabilisation
Remove Hahei Beach Walk to lower visitor risk
Requires visitor management



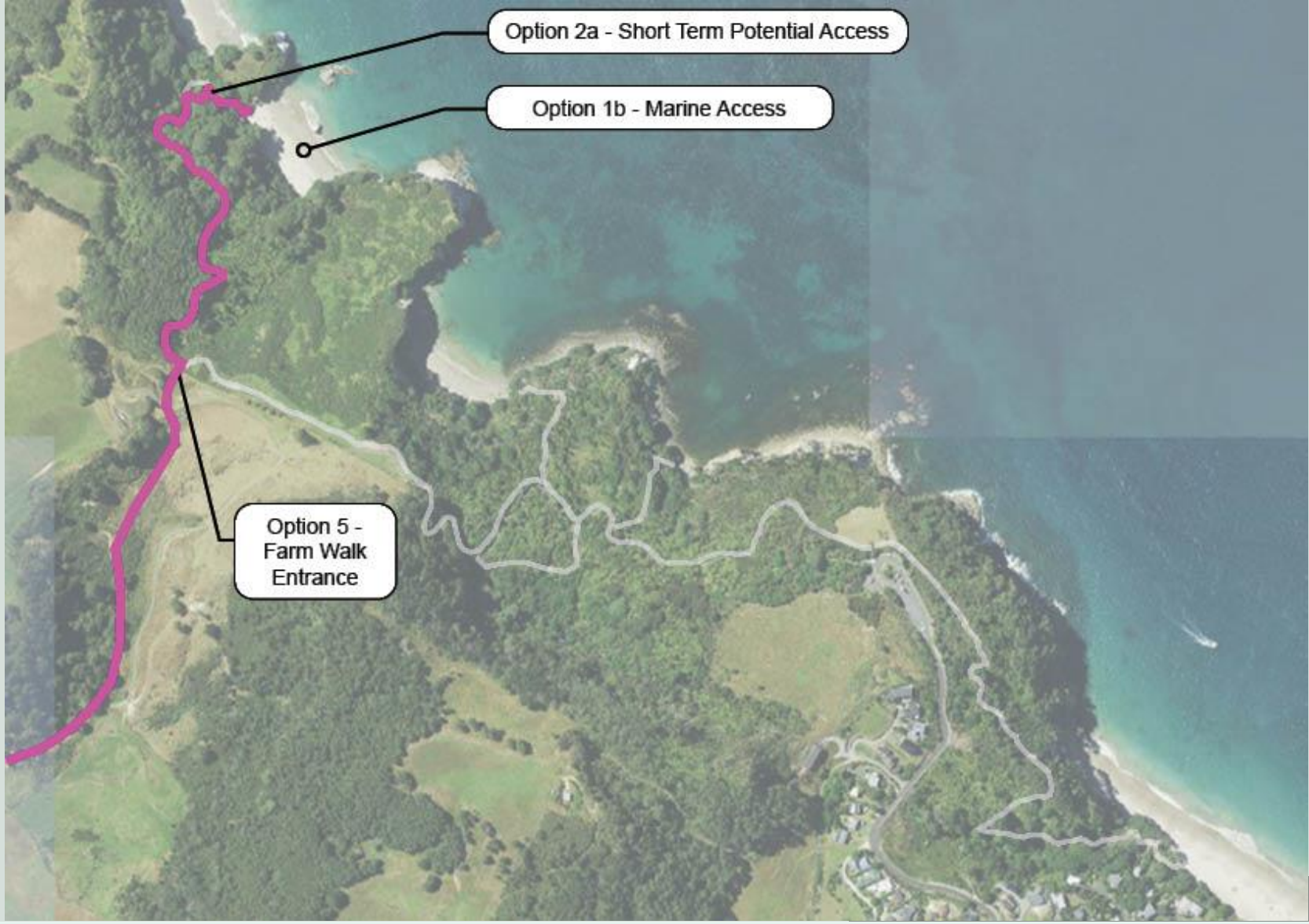
Potential overland solution - lower cost, faster to install, but won't last

Farm Walk to Cove

Short Term

Farm Walk (5)
+ Short Term Potential Access (2a)

Lowest cost
Very low resilience
Doesn't require Grange Road stabilisation



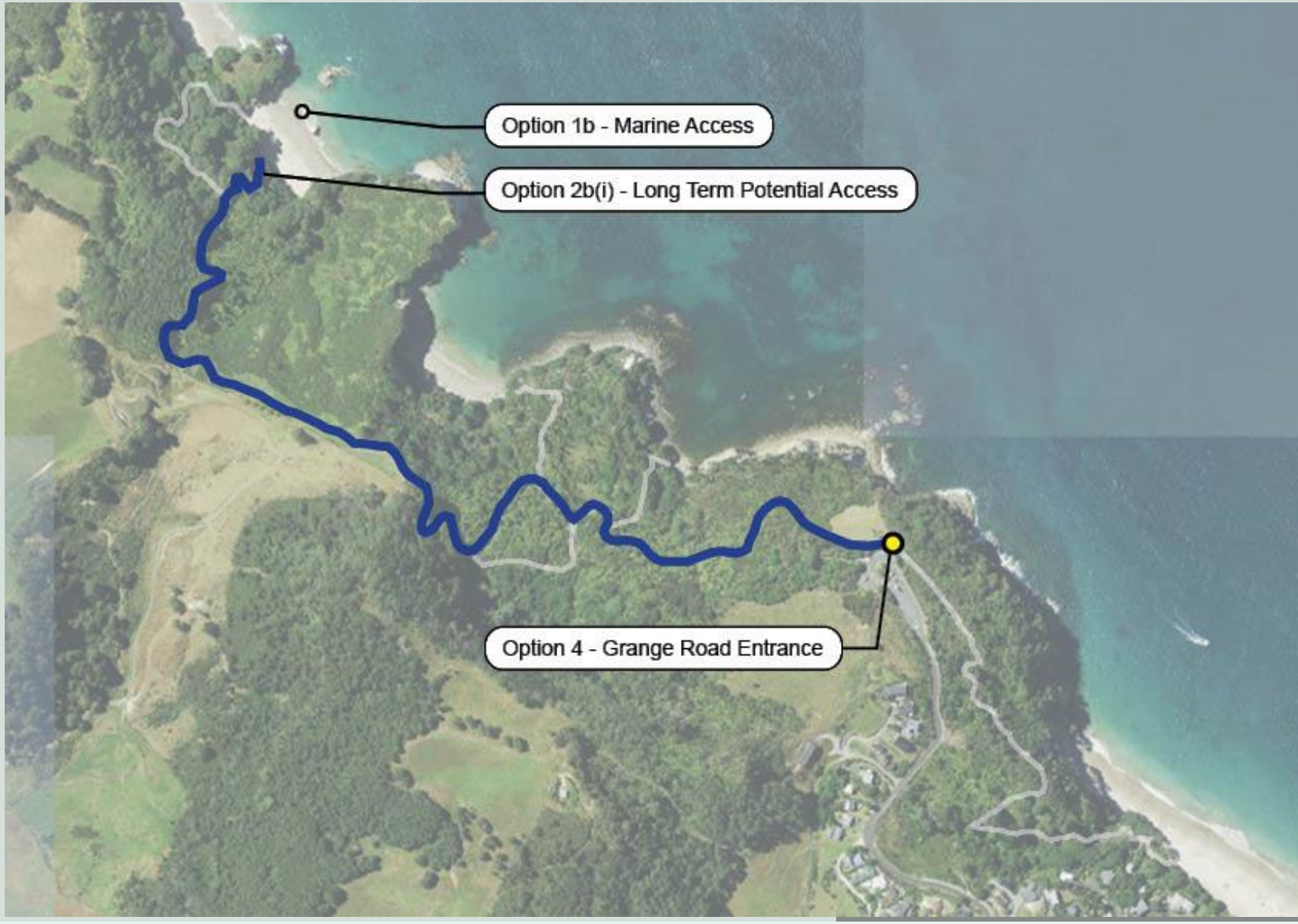
Potential overland solution - fast to install, but won't last

Grange Road to Cove

Long Term

Grange Road entrance (4)
+ Long term potential access - shorter walk to beach (2bi)

+ Close Hahei Beach Walk (3a)
+ Visitor management model
+ Managed Marine access (1b) - phase 3

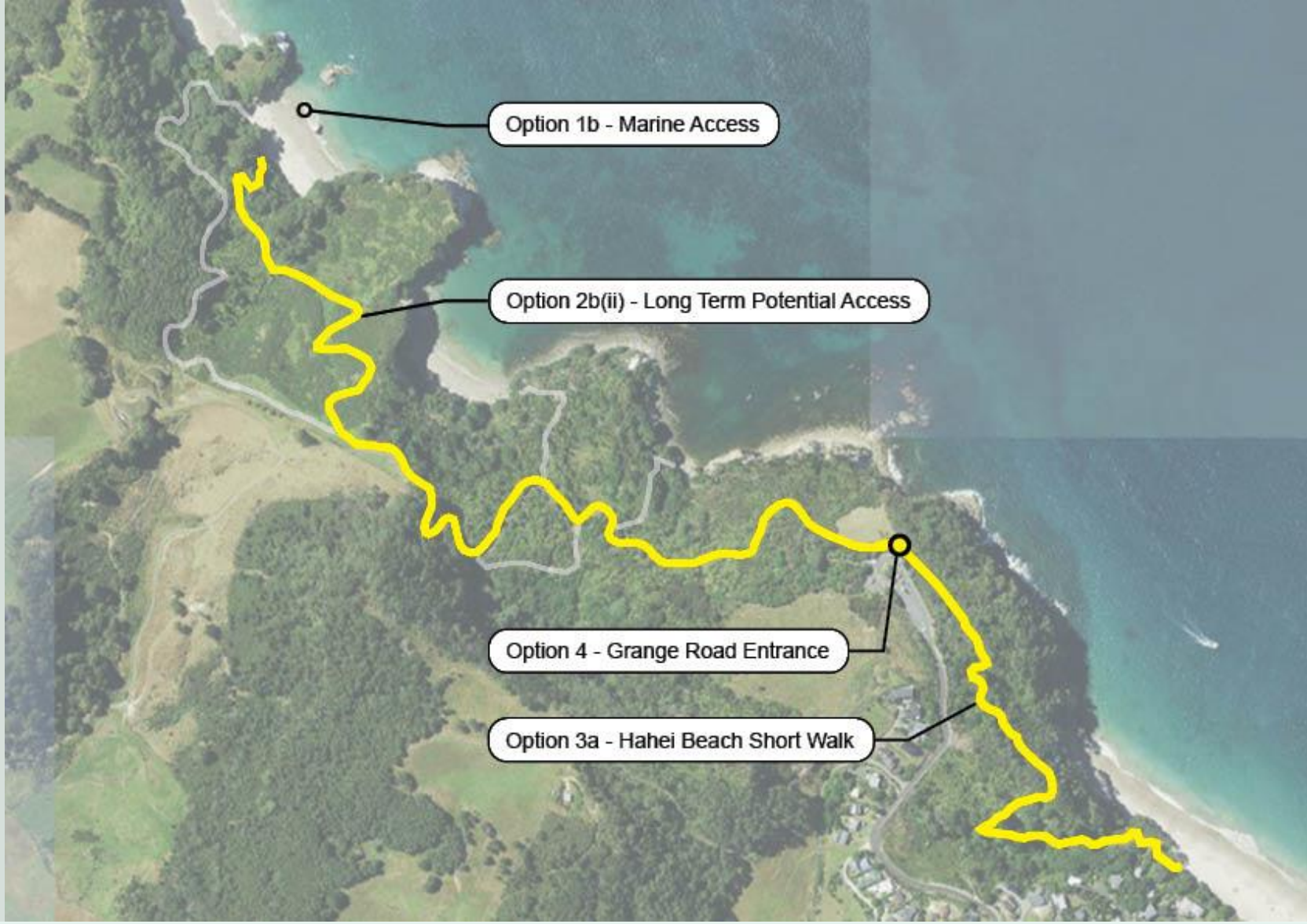


Potential overland solution – high cost, more resilient, lower impacts, lower visitor risk

Hahei to Cove Existing

Long Term

Hahei Beach Walk (3a)
+ Grange Road entrance (4)
+ Long Term Potential Access - longer walk to beach (2bii)
+ Visitor management model
+ Managed Marine access (1b) - phase 3

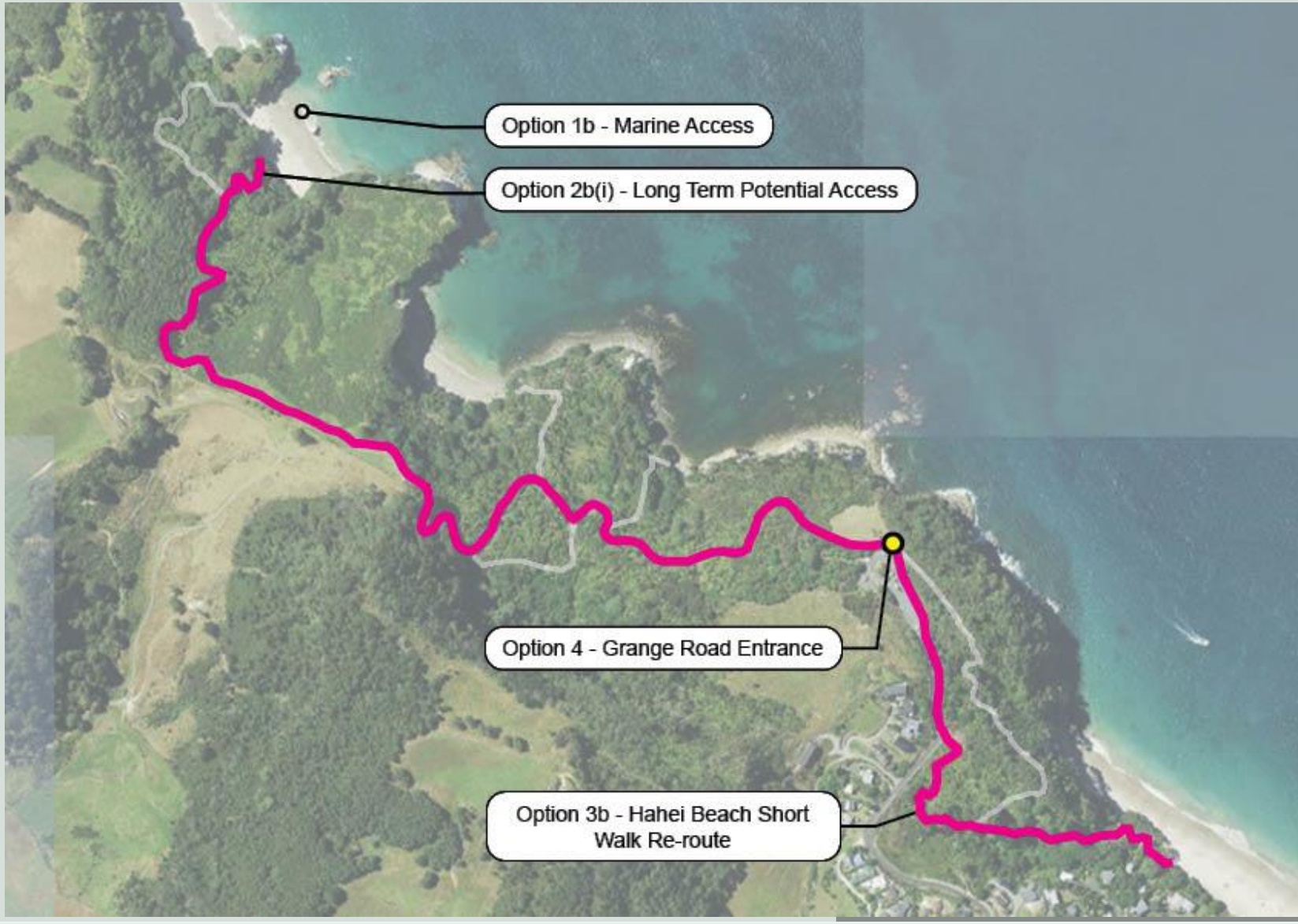


Potential overland solution – highest cost, low resilience, higher visitor risk

Hahei to Cove Rerouted

Long Term

Rerouted Hahei Beach Walk (3b)
+ Grange Road entrance (4)
+ Long Term Potential access - shorter walk to beach (2bi)
+ Visitor management model
+ Managed Marine access (1b) - phase 3



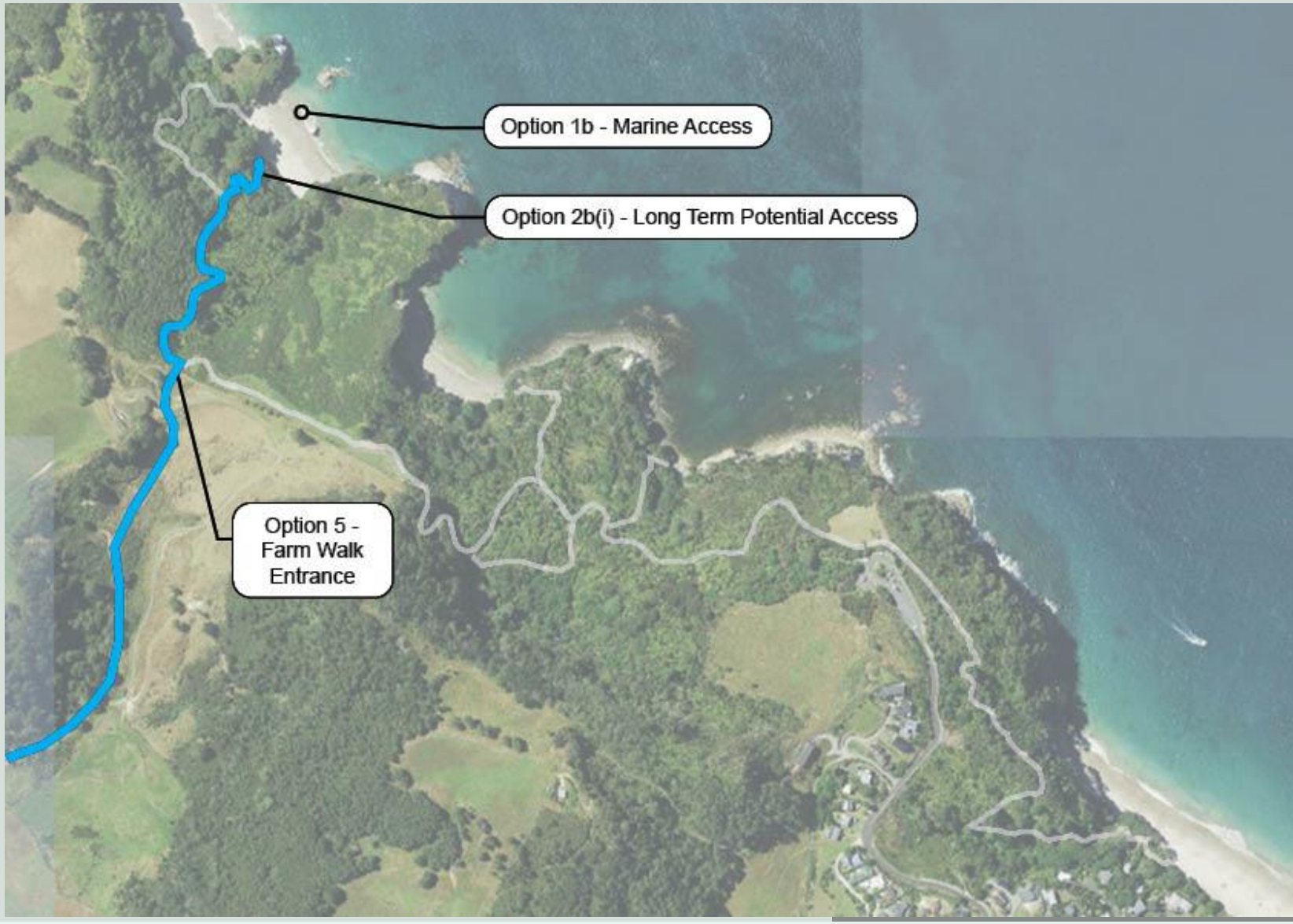
Potential overland solution – high cost, more resilient, lower impacts, lower visitor risk

Farm Walk to Cove

Long Term

Farm Walk entrance (5)
+ Long Term Potential Access - shorter walk to beach (2bi)
+ Visitor management model
+ Managed Marine access (1b) - phase 3
+ Close main Cathedral Cove from Farm Walk entrance (5) back to Grange Road (4)

Further investigation required to legal and management considerations



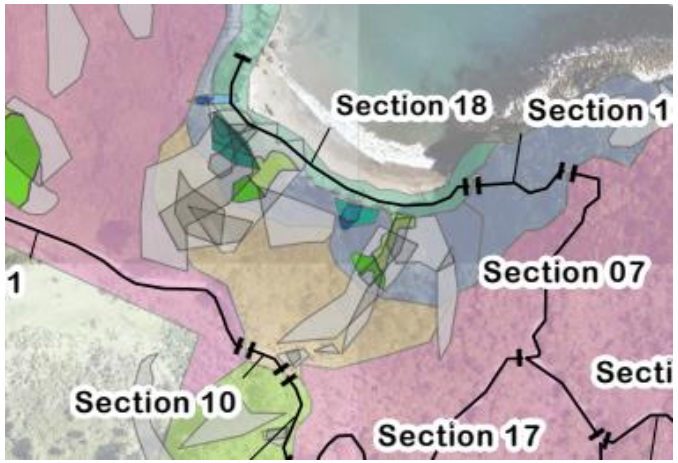
Potential overland solution – lower cost, lower visitor risk, higher resilience

+ Stingray Bay

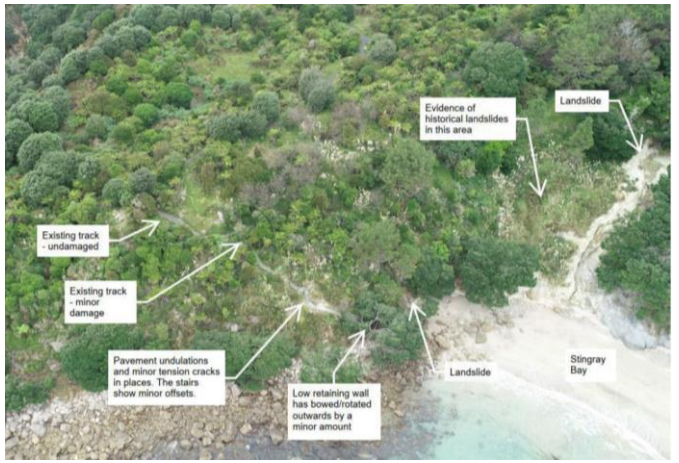
- Dependent on the main track being opened
- Adds additional costs to reopening main track
- Damage is not significant however slow landslides will continually damage access
- Higher visitor risk near the cliffs – hard to mitigate risk

Aerial view of landslides at Stingray Bay 2023

View of landslides and rockfall debris at toe of cliff Stingray Bay 2023



Patchwork of recent and historic landslides and rockfalls behind Stingray Bay



Stingray Bay access storm damage 2023

(Tonkin + Taylor 2023)

+ Gemstone Bay

Option 1: new route which avoids current stairs (including the tension cracks)
Pros:
- •Access for snorkelling
- •Lower cost

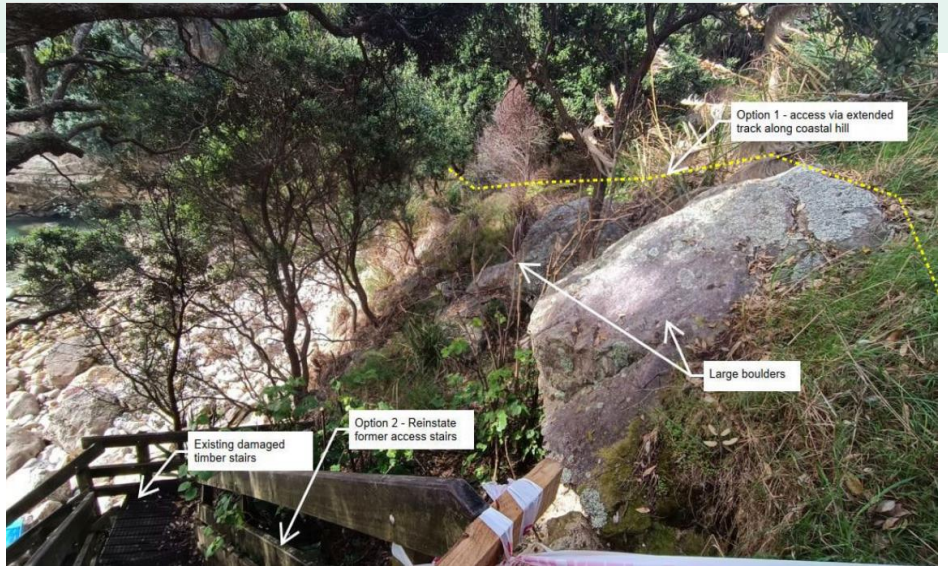
Cons:
- •Could be expensive earthworks
- •Not resilient to landslide or storm surge/beach erosion

Option 2: New stairs same alignment. May need an engineered structure.
Pros:
- •Access for snorkelling
- •Higher resilience

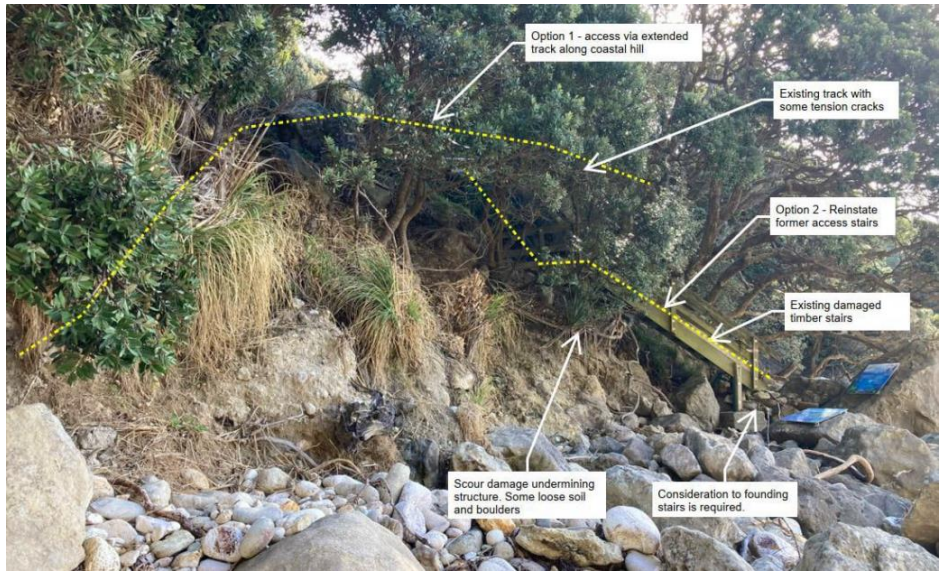
Cons:
- •High cost

Option 3: Replace stairs - like for like
Pros:
- •Access for snorkelling
- •Low cost

Cons:
- •Next severe storm potentially destroyed



Options for Gemstone Bay (Tonkin + Taylor 2023)



Questions

- **Please help us understand the impact or opportunities of the potential solutions. What does the group you represent think?**

Thinking about the criteria (see slides 8 and 9):

- **What are most important track/s to have open and why?**
- **What are the least important track/s to have open and why?**
- **What are the impacts or opportunities of each track solution?**