Before the Expert Consenting Panel

under: the Fast-track Approvals Act 2024 (*FTAA*)

in the matter of: notices of requirement and applications for resource consents, wildlife approvals and archaeological authorities by the NZ Transport Agency Waka Kotahi to develop the Brynderwyn Hills section of the Alternative to the Brynderwyn Hills Project, a state highway from the intersection of State Highway 1 and Baldrock Road in the south, through the Brynderwyn Hills to Waipū in the north.

applicant: **NZ Transport Agency**

Requiring Authority and Applicant

Statement of Evidence of Tony Innes for NZ Transport Agency Waka Kotahi

Dated: 28 October 2026

Reference: Paula Brosnahan (paula.brosnahan@chapmantripp.com)
Rebecca Tompkins (rebecca.tompkins@chapmantripp.com)

chapmantripp.com
T +64 9 357 9000
F +64 4 472 7111

PO Box 2206
Auckland 1140
New Zealand

Auckland
Wellington
Christchurch

chapman tripp

STATEMENT OF EVIDENCE OF TONY INNES

INTRODUCTION

1 My full name is Tony Brett Innes.

2 I am a Director of Commute Transportation Consultants.

3 While I am not giving expert evidence, I do have extensive professional experience of relevance to the matters discussed. For completeness I note the following qualifications relevant to my evidence. I hold a Bachelor of Engineering degree with first class honours in Civil Engineering from Auckland University. I have also undertaken post graduate transportation studies at Auckland University. I have over 30 years' experience in the fields of traffic and transport engineering. This has included leading and undertaking option selection and alternative assessments for a number of transport projects.

4 More recently I have been involved in the development of a number of option and alternative selection processes, including:

4.1 Tauranga's Takitimu Northern Link Stage 2 Alternatives Assessment: I led the option development process for this project including completing the Alternatives Assessment as part of the FTAA application which was recently approved.

4.2 Economic Case lead for Auckland Light Rail project: I led the development of the option assessment process as well as the implementation of that process for this business case that identified the preferred option.

4.3 Business Case Lead for Supporting Growth Alliance: I led the development of business cases for the transport infrastructure required to support Greenfields growth identified in the Northwest, South Auckland, North Auckland and Warkworth areas. This Alliance obtained route protection for the transport infrastructure as well and I was heavily involved in the development (and application) of the option and alternatives assessment process adopted by the Alliance during the business case and designation phases.

4.4 Peka Peka Interchange Project Director: I led the development of the approved business case for this project including the development and implementation of the interchange option selection process.

4.5 Puhoi to Warkworth Alliance, Alliance Manager: I led the Planning Alliance that sought and obtained the designation for that project through the Board of Inquiry process.

5 I also developed the NZ Transport Agency Waka Kotahi (*NZTA*) Multi Criteria Analysis (*MCA*) guidance document in 2016 for business case option development and selection. Consideration of the Alternative Assessment requirements of the Resource Management Act 1991 (*RMA*) was included in the development of this guidance.

6 My evidence has been prepared to support NZTA as part of its response to comments on the notices of requirement and applications for resource consents, wildlife approvals and archaeological authorities (together, the *Application*) to develop the Brynderwyn Hills section of the Alternative to the Brynderwyn Hills (*Project*), a state highway from the intersection of State Highway 1 (*SH1*) and Baldrock Road in the south, through the Brynderwyn Hills to Waipū in the north.

7 I have been involved in the Project since 2024 as Investment Case lead as well as Project Director for the Northland Corridor from Te Hana to Whangārei. In this role I have led the development and implementation of the option assessment processes, engaged with key stakeholders (including partners, councils and landowners) and am responsible for obtaining endorsed Investment Cases and statutory approvals for the Northland Corridor, including the Project section.

8 I have personal knowledge of the matters set out in this evidence and its contents are true to the best of my knowledge and belief. I am authorised to give this evidence on behalf of NZTA.

SCOPE OF EVIDENCE

9 In response to matters raised by commenters, my evidence addresses:

9.1 The benefits of the Project;

9.2 The width of the Proposed Designation;

9.3 Consideration of alternatives for the Project, including:

(a) Overall route selection;

(b) Alternatives with respect to the Piroa Stream;

(c) Consideration of frog habitat avoidance; and

9.4 Comments on the Application as these relate to alternatives.

BENEFITS OF THE PROJECT

10 As part of the Project development and optioneering the outcomes and benefits of the Project have been a critical consideration. The Investment Case work has shown the importance of improved accessibility between Northland and the rest of New Zealand to help strengthen the Northland region's economic performance, which is one of the lowest in the country. The Northland Corridor and the three Roads of National Significance that make up this corridor seek to address this accessibility deficit through the provision of a safe, resilient and efficient state highway connection for goods and services and the people of Northland. This corridor is forecast to generate over 1,500 new jobs and a $700M increase in GDP per annum, which will be transformational for the region.

11 The Brynderwyn Hills is a critical component of the Northland Corridor due to its current resilience challenges, which have not only resulted in lengthy delays to travellers during incidents, but have also reduced the confidence of industry to invest in Northland. Development of the Project has ensured that delivery of a resilient, safe and efficient road through the Brynderwyn Hills has been at the forefront of thinking.

WIDTH OF THE PROPOSED DESIGNATION

12 NZTA has carefully considered the spatial extent of the Proposed Designation during development of the notices of requirement, reflecting the area reasonably necessary to undertake the Project and to achieve the Project objectives. In reaching that view, NZTA has taken into account a number of relevant factors, including:

12.1 the Indicative Alignment and the need to retain flexibility for refinement during detailed design;

12.2 the space required for construction and for the ongoing operation, maintenance and improvement of the state highway;

12.3 engineering constraints, including geotechnical uncertainty and existing infrastructure;

12.4 environmental and cultural constraints and the implications of NZTA's proposed conditions, including identified avoid areas; and

12.5 the need to accommodate effects management measures.

13 I address each of these factors in turn below.

Need for flexibility to enable changes during detailed design

14 As described in the Application, NZTA has adopted a flexible consenting approach for the Project.[1] That approach is intended to enable optimisation of the design through subsequent detailed design processes, which is standard practice for projects of this scale and complexity.

15 In my view, it is neither practicable nor desirable to fix the designation boundary solely by reference to the current Indicative Alignment, because further refinement of matters such as horizontal and vertical alignment, earthworks design, and cut-fill balance may reduce environmental effects and improve constructability and overall cost efficiency. Such flexibility is particularly important for large earthworks projects where design development needs flexibility to optimise cut to fill approaches. NZTA has seen and experienced the significant benefits of this flexible approach for project delivery in the Northland Corridor, through the Puhoi to Warkworth and Warkworth to Te Hana (*W2TH*) projects. For those projects the flexibility of the projects' designations and resource consents has resulted in the same or better environmental outcomes as the initial consented design with considerable cost savings. As an example, the recent W2TH project procurement process generated savings of hundreds of millions of dollars compared to the original estimate (whilst still delivering the environmental outcomes secured through the designation / consents) due in large part to the flexibility available to develop a design that best suited the implementation strengths and strategy of each bidder. These innovations included different stream crossing treatments, interchange layouts and earthworks optimisation through geometric alignment changes.

16 In addition, if sufficient flexibility was not provided through the Proposed Designation, design refinements identified through detailed design for the Project would be more likely to require subsequent alterations to the designation (and associated consenting processes). In my view, that situation would create unnecessary cost and delay for the Project, and would also introduce additional uncertainty for affected landowners and for the management of effects. For those reasons, I consider it appropriate that the Proposed Designation includes a reasonable degree of width beyond the footprint of the Indicative Alignment. I consider this width is reasonably necessary to achieve NZTA's objectives for the Project and will greatly assist with facilitating delivery of the Project.

Need for sufficient space across Project life-cycle

17 The Proposed Designation cannot be confined to the land required for the final formed carriageway and batters alone. In addition to the land required for the carriageway and batters, space is also

[1] Throughout the Application documents, with the approach summarised in Volume 0 – Legal Submissions prepared on behalf of NZ Transport Agency Waka Kotahi dated 2 April 2026 at [79]-[84].

required to enable construction of the Project, including for matters such as site access, haul roads, temporary works areas, and spoil management associated with the substantial earthworks anticipated. Further space is required for ancillary works necessary to support the operation of the Project, including stormwater infrastructure and local road connections.

18 The Proposed Designation must also provide for the ongoing operation, maintenance and future improvement of the state highway corridor once constructed. In my view, it would be inappropriate to designate only the minimum land necessary to physically establish the road, without also providing sufficient room for activities such as maintenance access, pavement renewal, resealing, drainage maintenance, and other works that are ordinarily required over the life of a state highway asset.

Width necessary to accommodate engineering constraints

19 Engineering constraints have materially informed the width of the Proposed Designation. In particular as outlined in Mr Ireland's evidence, geotechnical uncertainty is a significant consideration for this Project. It is well recognised in the construction industry that poor and variable ground conditions are common in Northland, and the Brynderwyn area presents particular engineering challenges. The Proposed Designation therefore allows a degree of flexibility to adjust the alignment or associated earthworks if more detailed geotechnical investigations undertaken during subsequent design phases identify currently unknown constraints that need to be addressed.

20 Given what we know about the ground conditions in the Brynderwyn Hills area from the assessments and investigations that have been undertaken, the previously identified western alignment would have had a wider footprint than the Proposed Designation and Indicative Alignment due to the more challenging geotechnical environment in these areas.

21 The Proposed Designation has also been informed by the location of existing infrastructure that must either be avoided, relocated or accommodated as part of the Project. This existing infrastructure includes, in particular, Transpower's National Grid transmission lines and the First Gas Maungaturoto Gas Mainline. In my view, these constraints reinforce the need for a designation width that is not unduly narrow, so that the final design can accommodate or respond appropriately to those existing assets while still achieving the Project objectives.

Environmental constraints and NZTA's conditions have influenced Proposed Designation width

22 The Proposed Designation boundary has also been influenced by environmental constraints. For example, the boundary has been shaped to avoid as far as practicable the large Outstanding Natural

Landscape (*ONL*) in the Brynderwyn Hills area to the east. While the Project traverses a small outlier part of that landscape, the Proposed Designation avoids the vast majority of the ONL area lying to the east. Similarly, the Proposed Designation has been developed having regard to QEII covenant areas to the south and seeking to avoid those areas as far as practicable.

23 There are also environmental features located within the Proposed Designation that NZTA is proposing to avoid through conditions. The Proposed Designation conditions identify avoid areas, which constrain where works can occur within the Proposed Designation (for ecological and cultural reasons).[2] As a result, additional width is required in some locations so that the final design retains sufficient flexibility to respond to those constraints while ensuring that the identified features are not adversely affected by the Project.

Width is necessary to accommodate effects management measures

24 The width of the Proposed Designation has also been informed by the need to accommodate effects management measures. NZTA's proposed conditions require a range of such works, including erosion and sediment control measures, stream realignments, wetland offsetting, landscaping, fauna release sites, indigenous vegetation planting, and operational stormwater and flood mitigation measures. Those works are an integral part of the Project and the Proposed Designation must include sufficient land to enable them to be undertaken in appropriate and effective locations.

25 In my opinion, it is appropriate and prudent that the Proposed Designation provides sufficient spatial extent to accommodate not only the transport infrastructure itself, but also the works necessary to avoid, remedy or mitigate adverse effects arising from the construction and operation of that infrastructure.

26 Overall, for these reasons, I consider the Proposed Designation to be appropriately and reasonably sized. It is not wider than necessary, but nor is it so constrained that it would undermine NZTA's ability to finalise the design efficiently, construct the Project safely, respond to engineering, cultural and environmental constraints, and implement the mitigation and management measures necessary to deliver the Project.

[2] Proposed Designation Conditions D1, D2 and D10H dated 13 July 2026, Appendices A, D and X.

CONSIDERATION OF ALTERNATIVES FOR THE PROJECT HAS BEEN ROBUST

27 As outlined in the Application, NZTA undertook an extensive alternatives process for the Project – moving from broad strategic corridor assessments to more detailed alignment and design refinement.[3]

28 Since 2017, options for the wider Te Hana to Whangārei corridor have been assessed through business case and investment case processes, with the area progressively narrowed from long-list corridors to the Proposed Designation boundary and Indicative Alignment.[4] Those assessments discounted a number of more western, eastern and existing SH1 upgrade options, and ultimately identified the current option as the emerging preferred corridor through a multi-criteria assessment of matters including safety, resilience, cost, geology, cultural values, property impacts and environmental constraints.[5]

29 Figure 1 below sets out the two broad stages of the alternatives analysis over the past 18 months.

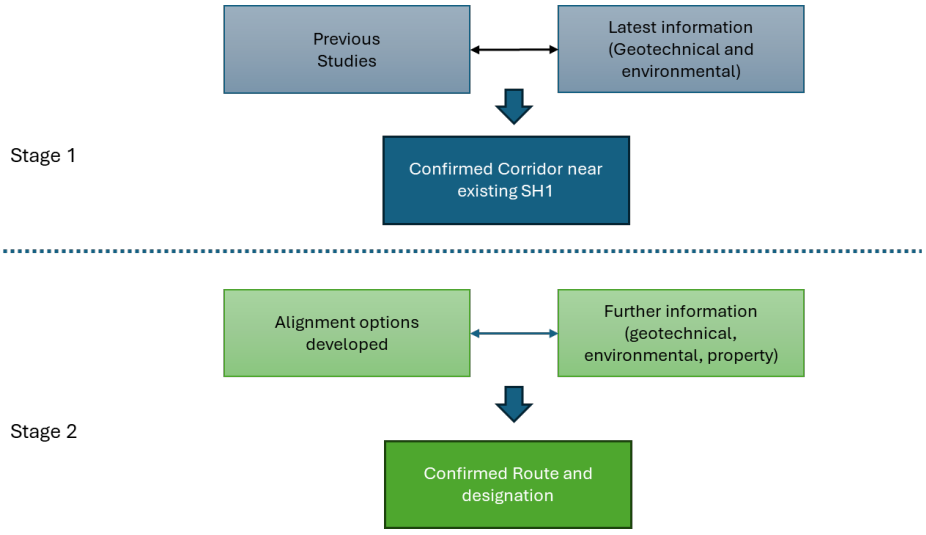

Figure 1: Diagram of broad alternatives approach

30 I will now summarise the different stages of the alternatives process (including as it relates to consideration of specific localised alternatives), and provide some commentary on why NZTA considered cost as part of the assessment criteria.

---

3 Volume B – RMA Approvals *(Volume B)*, section C.5.2 at pages 27-33.

4 Volume B, section C.5.2.2, pages 27-38.

5 Volume B, section C.5.2.2 at page 28.

Alternatives assessment Stage 1

31 The first stage of the recent alternatives process involved a review of previously completed studies and consideration of additional information that was now available. One of the key changes since the previous studies were undertaken was the 2023 weather event that closed the existing SH1 route through the Brynderwyn Hills for a number of months. This event provided key information about potential impacts that could arise for the existing route in extreme weather events. Further, the events highlighted the very poor ground conditions to the west of the Brynderwyn Hills, where lateral land shifts of over 1m were observed. This new information increased the cost (in the order of hundreds of millions of dollars) and viability risk of options to the west of the Brynderwyn Hills that had been considered in previous studies.

32 As a result, and with the benefit of this new information, Stage 1 of the current alternatives assessment confirmed that corridors closer to the existing SH1 should be considered in more detail in the next stage of optioneering on the basis that:

32.1 The ground conditions in these corridors were more favourable and cost effective than other alignments; and

32.2 These options would be shorter in length, reducing potential travel times compared to options further away from the existing SH1.

Alternatives assessment Stage 2

33 The second stage of the alternatives process involved the development of options within a broad corridor closer to SH1 (identified in Stage 1 above). This process included options to both the west and east of the existing SH1. Further information on these options was gathered and considered, including:

33.1 Geotechnical and environmental investigations;

33.2 Engagement with property owners (including the Department of Conservation (*DOC*) and Atlas Quarry); and

33.3 Development of more detailed design.

34 Key assessment criteria for this stage are set out in Table 1 below.

Criteria	Metrics
Objectives	Safety – state highway and affected local road network
	Resilience – based on closure risk and alternative route availability, including consideration of natural hazard risk (flooding, coastal inundation, and geological risks)
	Economic Growth and Productivity – based on travel times for state highway traffic, local road and property access.
Constraints and Critical Issues	Geology – based on physical encroachment into areas of high geological or geotechnical risk (e.g. sites prone to slips); instability; liquefaction and settlement related issues.
	Cultural Values – physical encroachment into known sites of cultural value/significance (e.g. pā sites, urupā, maunga or waterways) and direct impact on Māori land.
	Planning and Environment – based on: • indicative physical encroachment into NZAA sites or heritage notations. • indicative physical encroachment into the coastal marine area (CMA). • indicative physical encroachment into sites of high ecological value (e.g. DOC land) and/or into sites denoted as outstanding features. • indicative physical encroachment into existing or planned settlements and/or has severance implications or settlement access limitations. • zoning, other notations/layers from plans, property, or designation interfaces.
Proxy Cost	Earthworks – quantities, including suitability of fill
	Structures – length of bridges
	Hydrology – quantities of wetlands etc required
	Distance of construction – lane km
	Constructability – qualitative assessment
	Revocation – length of road
	Property – estimated no of affected properties

Table 1 – Key Assessment Criteria

35 As an example of the types of constraints that have been considered, Figure 2 shows a number of the important constraints in and around the general Brynderwyn Hills area, being QEII areas, DOC Reserves and ONL areas. When these constraints are overlaid on the topography in the area and NZTA's ability to efficiently construct the transport infrastructure, it becomes clear that the number of alignment options available is limited and trade-offs between the assessment criteria are required.

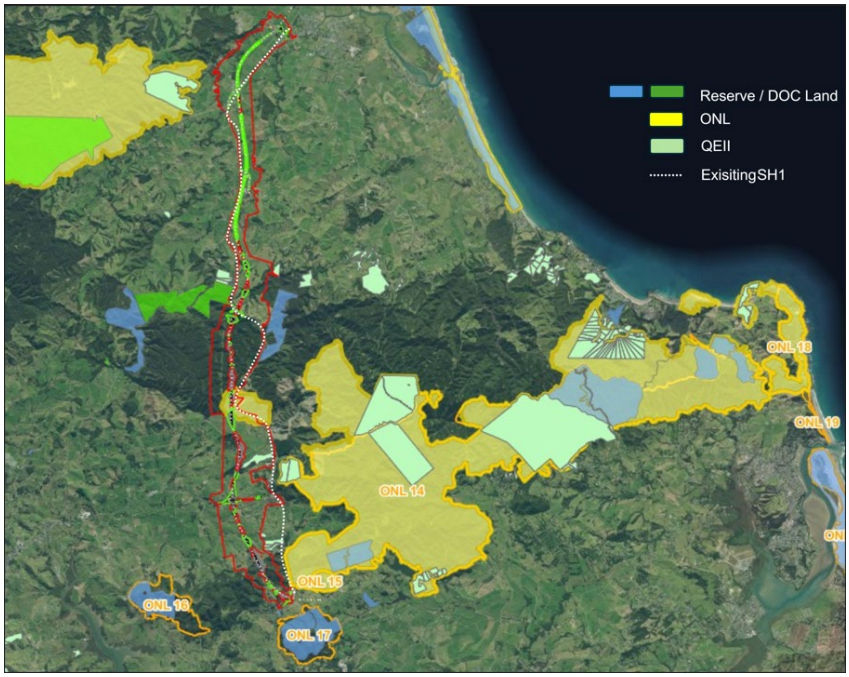

Figure 2: Overview of Constraints

36 An important option considered during this stage was an alignment through the Atlas Quarry (to the east of the current Indicative Alignment). This option was identified as a way to potentially avoid the environmental impacts of an option to the west of the existing SH1 (ie the preferred option that the Application is based on). Multiple options through the Atlas Quarry were considered.

37 Ultimately the options to the east of the existing SH1 through Atlas Quarry were not favoured due to:

37.1 Impacts on a regionally significant business;

37.2 Potential impacts on a DOC reserve along the alignment;

37.3 If the reserve was avoided, a need to cross the existing SH1 twice (considerably increasing complexity); and

37.4 Costs in the order of hundreds of millions of dollars more when compared to other options.

38 Whilst options to the west of (but in proximity to) the existing SH1 had greater environmental impacts compared to the eastern options, further investigations demonstrated that these options were more viable than previously considered. This additional viability was particularly related to the extent of the vegetation in this area, which after surveys was deemed to not be as significant as had been previously considered. Construction through the Atlas Quarry would have also had adverse impacts on ecology, including populations of Hochstetter's frogs located around the quarry.

39 On balance, options to the west of, but in proximity to, the existing SH1 were preferable to the eastern options, when considered against all relevant assessment criteria, as options to the east were considered as impactful as the western options, but more expensive.

Alternatives – More localised considerations

40 Following Stage 2, NZTA undertook more detailed assessments of alternatives within its preferred corridor to confirm the Proposed Designation and Indicative Alignment. This stage involved a structured process of identifying constraints and opportunities, developing concept alternatives, and having those alternatives assessed by technical specialists (including environmental specialists) and the project team before NZTA made its decisions.[6]

41 The Project team carried out targeted assessments for various localised areas, including the Brynderwyn Hills area, the area east of the Transpower transmission lines and the Piroa Stream crossing.[7]

42 Overall, the Indicative Alignment and Proposed Designation are the outcome of a robust and iterative process informed by technical input, stakeholder feedback and engagement with hapū.

43 Two specific examples (of relevance in terms of ecological impacts) are expanded on below.

Piroa Stream

44 Two broad options were considered for traversing the Piroa Stream - an embankment and a viaduct. These options were developed and assessed by a range of experts using the same MCA assessment criteria used in the earlier alternatives assessment stages. This analysis confirmed a number of challenges for the viaduct option, including:

44.1 There is a faultline near the Piroa Stream, which, when combined with the height of a structure in this area (approx. 40m), greatly increases the construction complexity to ensure that the structure is safe and usable (eg increased seismic reinforcing and challenges siting piers on or near the faultline), which greatly increases the cost.

44.2 A viaduct would negate the need for approximately 700,000m^3 of spoil, which would need to be disposed of elsewhere if not included as part of the embankment. Given the area from which this spoil would be generated (immediately north of the Piroa Stream), most of this spoil would ideally (for efficiency) be located in this area (being close to the cut location), resulting in environmental impacts (irrespective of incorporating a viaduct into the design) due to

[6] Volume B, section C.5.3 at pages 28-29.

[7] Volume B, section C.5.4 at pages 29-33.

the increased spoil resulting in more spoil sites being required and potential impacts associated with these sites.

44.3 As outlined by Mr Ireland, earthworks crossing the Piroa Stream would be less efficient as the viaduct would take longer to construct, impacting the efficiency of the overall earthworks in this area. This impact on earthworks results from the material from the cut sites in the Brynderwyn Hills (north of Piroa Stream) being required for fill areas further south. With access reduced during viaduct construction it would take longer to move material between these two locations resulting in time (at least six months) and cost implications. This efficiency point is a cornerstone of a successful earthworks strategy.

45 These challenges resulted in an estimated additional cost in excess of $200M compared to other options. Therefore, NZTA did not prefer a viaduct in this location due to:

45.1 Significantly greater cost;

45.2 Delivery inefficiencies and programme risk; and

45.3 Whilst delivering clear environmental benefits for the Piroa Stream, alternatively there would be environmental impacts due to the need to dispose of an additional 700,000m^3 of spoil elsewhere.

Pepeketua habitat in the Brynderwyn Hills

46 The Project's ecology experts identified a pepeketua 'stronghold' within the Brynderwyn Hills (shown on Figure 3 below).

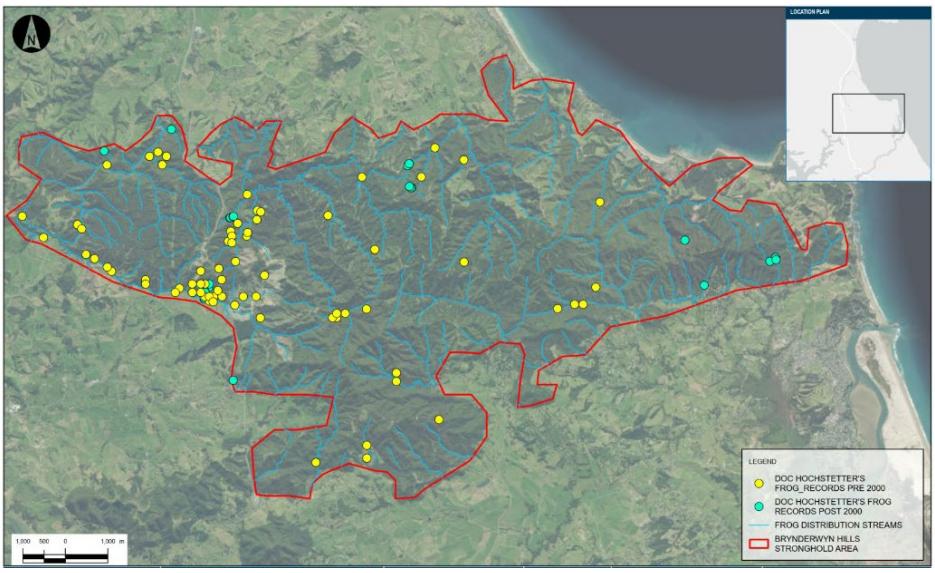

Figure 3 – Location of pepeketua stronghold within the Brynderwyn Hills

47 Like the Piroa Stream, the Project team considered a range of options in this area to reduce the scale of earthworks, and thereby avoid or reduce adverse impacts on pepeketua and associated habitat. These options included a bridge structure. Analysis of the bridge option confirmed a number of challenges in constructing structures in this area, including:

47.1 The average gradient in this location of the alignment (at its steepest at around 8%) would require the bridge structure to be a box cantilever. This form of bridge structure is extremely costly to construct (adding an additional $135-$150M). Further, this structure would take approximately 5-6 years to construct. Assuming a bridge structure in this location ultimately enabled avoidance of impacts on an estimated 10,000 frogs, this cost would equate to approximately $13-15,000 per frog on top of the costs to relocate these frogs during construction of the bridge.

47.2 The construction duration for this bridge structure would also create considerable inefficiencies for the rest of the Project construction (due to reduced capacity for earthworks to traverse this area during construction given the steep topography in the area).

47.3 Overall, it is estimated that constructing this bridge would lengthen the overall duration of construction by potentially 1-2 earthworks seasons.

47.4 There would also be a need to dispose of approximately 50,000m^3 of spoil. To ensure construction certainty, such disposal would need to be enabled elsewhere within the Proposed Designation. Like the Piroa Stream viaduct option, any spoil disposal is likely to have adverse environmental effects wherever it is placed.

48 In addition to the above, we also discussed a bridge structure with our terrestrial ecology experts. Given any frogs in proximity to construction of the bridge would need to be salvaged and relocated to new habitat before works could commence, I understand there would be limited pepeketua remaining in this stronghold location, potentially reducing the anticipated environmental benefits for pepeketua of such a bridge.

49 These challenges resulted in structures being considered inappropriate from a cost perspective, but also because the bridge option would provide localised environmental benefits, but greater environmental impacts (due to spoil disposal) elsewhere.

Importance of Cost

50 I think it is important to explain why cost has been included as part of the MCA criteria for the alternatives assessment process for the Project.

51 The provision of cost-effective infrastructure is always an important consideration for NZTA. The latest Government Policy Statement on Land Transport (*GPS*) includes specific direction for NZTA to realise greater value-for-money, and continue to take a leading role in securing improved effectiveness and efficiency when delivering outcomes.

52 Cost is even more of an important consideration for this Project due to the terrain and constraints in the area (eg geological, property, environmental). These factors make the provision of infrastructure complex and expensive to start with (even without consideration of additional requirements such as structures). Whilst the benefits of the Project are significant, so are the costs and accordingly the currently predicted Benefit Cost Ratio (*BCR*) for the Project is only just over 1.0, highlighting the close relationship between the Project's benefits and its costs. Accordingly, NZTA has sought to ensure that costs are as efficient as possible to ensure the scale of spend is justified when considered against the Project's benefits. Otherwise, there is a real risk that funding for implementation of the Project will not be obtained.

53 This point is also outlined in Mr Ireland's evidence where he sets out the relative increases in cost over time in this corridor of delivering infrastructure and shows that currently costs for the Project are forecast to exceed the cost per km of the recently procured W2TH section of the Northland Corridor.

RESPONSE TO COMMENTS ON THE APPLICATION

54 Comments have been received on the Application relating to alternatives from:

54.1 Te Parawhāu ki Tai (representing Te Parawhau and Te Pouwhenua o Tiakiriri Kukupa Trust) (Te Parawhau);

54.2 Members of the Bryham Family and Bryham Farms Limited (*Bryham Family*);

54.3 Karen Cave and Joshua Preece (collectively referred to as *Cave Preece*); and

54.4 Bain McGregor and the McGregor Family Trust (*McGregor Family*).

55 I address these comments in turn below.

Tunnel, viaduct and bridge alternatives

56 In the comments from Te Parawhau on the Application, they seek that the Project is redesigned, including tunnel and viaduct options, to avoid impacts on wāhi tapu and high value ecological habitat.[8] These comments reflect statements made in the Te Parawhau Cultural Impact Assessment and throughout engagement with NZTA to date.[9]

57 Throughout development of the Project, representatives of NZTA (including myself) have met with Te Parawhau regularly (on average at least monthly) to discuss both the Northland Corridor generally, and the Project specifically. During this engagement, NZTA has responded on multiple occasions to questions from Te Parawhau relating to specific elements of the alternatives process and its outcomes, including consideration of tunnels and structures.

58 As outlined in the summary of the alternatives process above, bridges and other structures in various locations were considered throughout development of the Proposed Designation and the Indicative Alignment.

59 A tunnel was considered as part of the alternatives process and discussed with Te Parawhau throughout engagement on the Project. While we agree with Te Parawhau that a tunnel would reduce environmental impacts within the Brynderwyn Hills, there are other factors that ultimately meant a tunnel was not selected as the preferred option for the Indicative Alignment. Two broad tunnel options were considered by NZTA during development of the Project (as shown on Figure 4 below), being:

59.1 A long tunnel from the Piroa Stream through to the proposed Northern Mitigation Site (3.5km in length and up to 150m deep); and

59.2 A short tunnel from north of the Piroa Stream running approximately 700m through to the next significant cut to the north (700m in length and up to 60m deep).

[8] Comment from Te Parawhāu ki Tai (representing Te Parawhau and Te Pouwhenua o Tiakiriri Kukupa Trust) dated 10 August 2026 at section 2, page 2.

[9] Aromatawai Ngā Uara Ahurea o Te Pouwhenua o Tiakiriri Kūkupa Trust me Te Parawhau Hapū dated July 2026 at pages ii, iv, 9, 113-114, 157, 160 and 174.



Figure 4 – Tunnel options considered during the alternatives process

60 If constructed, the long tunnel option would be the longest road tunnel in New Zealand, and would require specialist overseas expertise to build as well as to operate.

61 Whilst there are differences between each of these options in terms of Project outcomes as well as environmental outcomes, fundamentally a tunnel was not preferred due to the prohibitive additional costs a tunnel would generate. The additional cost of a tunnel (when compared to above-ground road forms):

61.1 Ranged from (in the order of) $0.5BN (short tunnel) and $1.4BN (long tunnel) for initial Capital cost; and

61.2 Between $5M (short tunnel) and $10M a year (long tunnel) for annual operation and maintenance costs.

62 For context, the estimated $1.4Bn additional cost of the long tunnel could fund another 10-15km of the Northland Corridor, or a number of other Roads of National Significance currently awaiting funding availability, such is the magnitude of the additional cost of a tunnel.

Location of proposed roundabout at Waipū

63 In the Bryham Family's comment on the Application, they raise concerns about the Indicative Alignment. Specifically, the indicative location of the roundabout and linking roads proposed at the Waipū end of the Proposed Designation, which impacts two kahikatea stands on their property.

64 NZTA has received comments from the Bryham Family and other members of the Waipū community about the significance of these kahikatea trees as part of engagement relating to the Application. Since lodgement, NZTA has undertaken further design work to see if an alternative design could be developed that avoids impacting these kahikatea stands.

65 This further design work considered a number of options that sought to balance the physical constraints in the area including the nearby river and flooding as well as the Transpower lines whilst seeking to avoid the Kahikatea stands identified. This work confirmed that an option was available that avoided the main kahikatea stands in the area whilst not overly impacting future alignments to the north and Project implementation flexibility. This potential alignment is shown in Figure 5 below.



Figure 5 – Potential alignment that avoids main kahikatea stands at Waipū

66 To ensure the final design does not impact these kahikatea stands, NZTA proposes a condition requiring that they be avoided.[10] The avoid areas will now include a buffer area as recommended by Mr Nicholas Singers, NZTA's terrestrial vegetation expert, to ensure these trees will not be impacted by works in proximity to the stands during construction. Accordingly, these kahikatea stands will be protected from impacts during construction.

67 We also propose to alter the designation near Waipū to remove a stand of environmentally significant trees that we can now avoid as shown in Figure 6, with a full updated set of plans to be provided to the Panel in the near future confirming this proposed designation change.



Figure 6 – Area removed from Proposed Designation

Impacts on Cave Preece property

68 In the Cave Preece comments on the Application, they query whether all alternative routes have been properly assessed, including the potential to avoid the complete loss of 4569 State Highway 1.[11]

[10] Designation Condition D1 and Appendix A (dated 13 July 2026).

[11] Comment from Karen Cave and Joshua Preece dated 11 August 2026 at sections 8 and 11, pages 4 and 5.

69 As outlined above, NZTA has carefully considered different alternatives throughout the development of the Project. When considering the Cave Preece property specifically, I note there are a number of constraints in this area that have resulted in the full Cave Preece property being required. These constraints are identified relative to the Indicative Alignment on Figure 7 below and include:

69.1 A crossing of the existing SH1 that requires a new bridge and therefore construction space and access associated with constructing this new bridge in parallel to the existing road alignment;

69.2 High value environmental areas to the east (which we are proposing as part of the Northern Mitigation Site and avoid areas);

69.3 Access routes to existing forestry blocks and Transpower transmission assets to the west; and

69.4 The geometry of the existing SH1 in this area, which means a bridge cannot be constructed too close to the existing curve in the road.

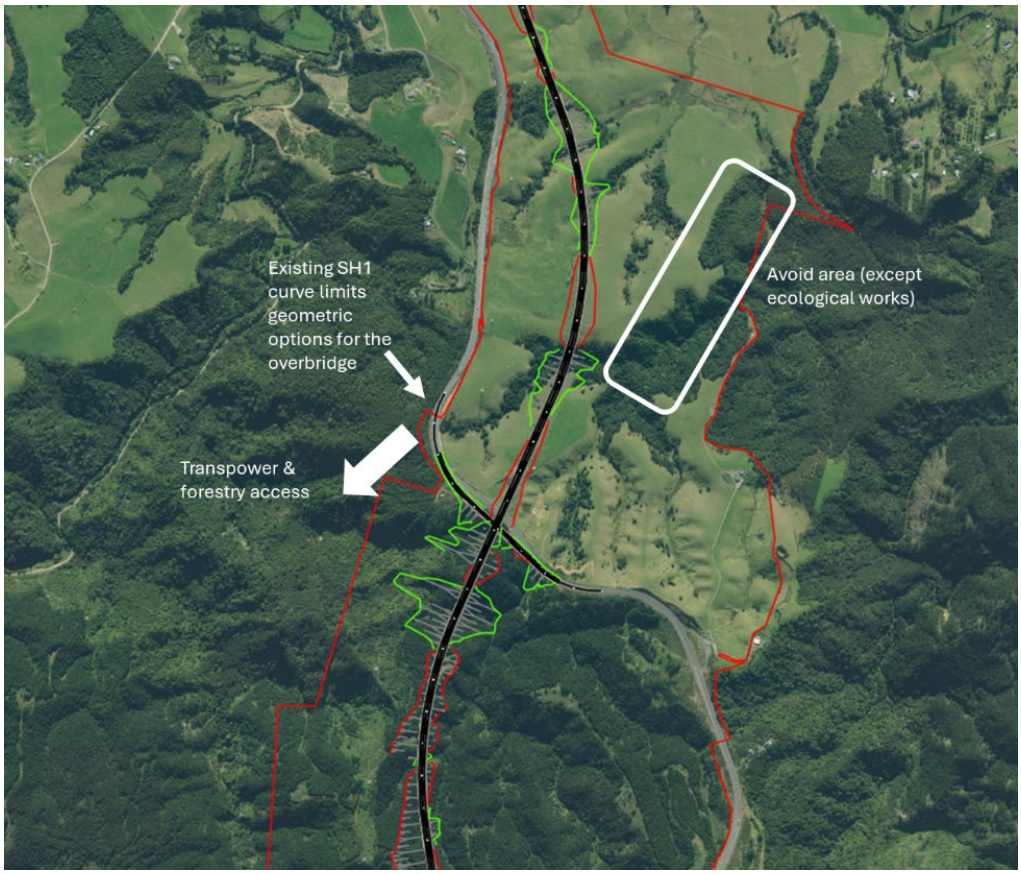

Figure 7 – Constraints in proximity to the Cave Preece property, relative to the Indicative Alignment

70 Moving the alignment to the east would impact the high value environmental area (which is proposed as an avoid area), whilst moving the alignment to the west would result in a substantial change to the geometry of the existing SH1 in this area. In addition, movement to the west would adversely impact forestry access routes and Transpower transmission lines. Accordingly, while alternative options have been considered, these were not ultimately preferred in light of these different constraints.

Impacts on McGregor Family property

71 In the McGregor Family's comments on the Application, they query the necessity of acquiring their property at 47 Millbrook Road and propose an amendment to the Proposed Designation to reduce the extent of land to only that which is required for the motorway carriageway formation and drainage works along the motorway.[12]

72 There are a number of constraints in this area of the Project that have resulted in the McGregor Family property being required. These constraints are identified relative to the Indicative Alignment on Figure 8 below and include:

72.1 Ahuroa River to the west;

72.2 Transpower transmission assets;

72.3 Stormwater reticulation;

72.4 Stands of kahikatea trees (which are proposed to form an avoid area) to the north east; and

72.5 Existing SH1 at the eastern designation boundary.

[12] Comments from Bain McGregor and the McGregor Family Trust at page 2 and Attachment 2.

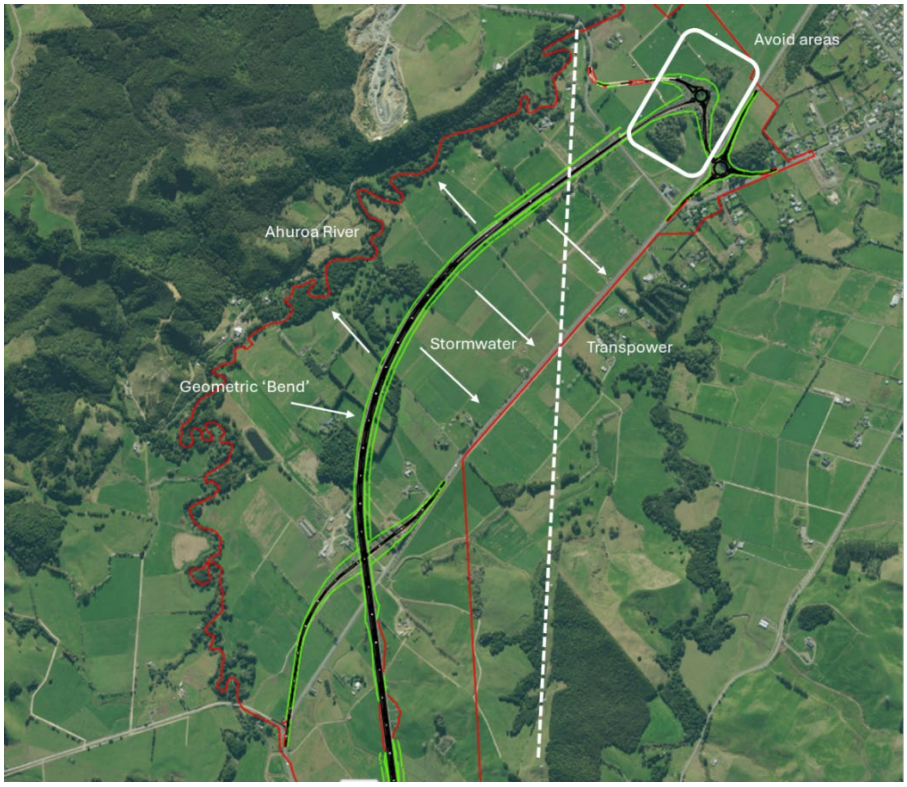

Figure 8 – Constraints in proximity to the McGregor Family property, relative to the Indicative Alignment

73 These constraints mean the Proposed Designation width in this area needs to be wide enough to enable the most efficient traversing of all of these constraints whilst delivering the Project outcomes, particularly given the fact the alignment 'bends' to the east in this location as the geometric standards require an appropriate radius on this curve, which means the alignment needs to move in one location to avoid a constraint results in a not insignificant movement in other areas as a result of these radius requirements.

74 The McGregor Family's proposed 'narrower' designation would reduce design and construction flexibility in this area and would require access between the two 'blocks' of land created. A narrow designation in this area would also restrict the ability of the Project to be able to avoid the kahikatea trees to the north, as well as limiting the ability of the Project to provide for other elements such as culverts and stormwater provisioning.

CONCLUSIONS

75 The Project provides very significant resilience, safety and economic benefits to the Northland region and NZ Inc through improved connectivity and accessibility between one of the country's most economically deprived areas (Northland) and the country's economic engineroom (Auckland). These benefits have been an important part of optioneering and NZTA's consideration of alternatives as the Project has developed.

76 As part of the consideration of alternatives, NZTA has undertaken a robust process. This process has included the consideration of alternatives throughout the Project's development including the corridor, the route and at specific locations along the alignment. The process considered a wide range of criteria, seeking to balance competing aspects. These are the trade-offs that are typically made through an alternatives assessment in my experience.

77 Cost has been an important consideration given the increasingly costly nature of building infrastructure in this area of the country and particularly through the topography of the Brynderwyns.

78 Throughout the alternatives process, the extent of the Proposed Designation has been constantly challenged. Careful consideration was given to the width of the designation to ensure certainty of outcomes (including mitigation as well as the construction itself) whilst also providing an appropriate level of flexibility given the large-scale nature of the Project and lessons from past state highway construction projects.

79 I consider the alternatives process and optioneering for the Project have been appropriately robust, particularly for a project of the scale and importance to the region and New Zealand.

Tony Innes
28 October 2026