NORTHLAND CORRIDOR – BRYNDERYWN HILLS SECTION OF THE ALTERNATIVE TO THE BRYNDERWYN HILLS PROJECT

SUMMARY OF PROPOSED ECOLOGICAL MANAGEMENT PACKAGE (as at August 2026)

Relevant definitions	
Active Nest	A nest containing or suspected to contain one or more nesting bird(s) and/or viable nest contents, being one or more egg(s) and/or chick(s) as identified by a Suitably Qualified Person.
Authorised Activity	In relation to Protected Wildlife: to handle, salvage and transfer/relocate and/or incidental killing.
Ecological Works	Any landscape planting, ecological mitigation planting or ecological compensation, enhancement works and activities required, and any relocation of wildlife or other measures under the Wildlife Approval.
Existing Indigenous Vegetation	The indigenous plan species identified on the map in Appendix C to the designation conditions
Existing Wetlands	Wetlands as mapped in Appendix A to resource consent conditions
ONL	Brynderwyn Hills Outstanding Natural Landscape
Project	The construction, operation and maintenance of the Brynderwyn Hills section of the Alternative to the Brynderwyn Hills project.
Project Works	The activities undertaken to construct, operation and maintain the Project.
Protected Wildlife	Any Frog(s), Lizard(s), Snail(s) or Bird(s)
Frog(s)	Hochstetter's frog (Leiopelma hochstetteri).
Lizard(s)	Pacific gecko (Dactylocnemis pacificus); Forest gecko (Mokopirirakau granulatus); Elegant gecko (Naultinus elegans); Copper skink (Oligosoma aeneum); Ornate skink (Oligosoma ornatum); any other Lizard protected by the Wildlife Act 1953.
Snail(s)	Kauri snail (Paryphanta busbyi); Rhytid snail (Amborhytida dunniaie).
Suitably Qualified Person (SQP)	A person (or persons) who can provide sufficient evidence to demonstrate their suitability and competence in the relevant field of expertise.
Release Sites	Areas identified for the transfer/relocation of salvaged Protected Wildlife as shown on the map in Appendix A to the Wildlife Approval conditions
Watercourse(s)	Perennial and intermittent rivers and streams, but not overland flow paths (ie ephemeral), conveyance channels or Wetlands – either natural or artificial.
Wetland	Includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions (excluding constructed wetlands).
Wildlife Approval	The approval issued by the Expert Panel under the Wildlife Act 1953 for the Project (Reference WA#).

Effect category	**NZTA Management Package**
Ecology – general	**Design** • Project works shall not be undertaken in mapped avoid areas (D1) or mapped ecological areas (except ecological works) (D2). • Avoid areas shown in Appendix A (kahikatea stands at Waipu) and Appendix D (Release Sites and indigenous vegetation).
Streams (RMA)	**Construction** • Standard erosion and sediment control measures (RC19 – RC27). • Avoid any bridge or culvert in Waihoihoi main stem, if practicable (RC15). • Temporary bridge to be preferred for haul roads crossing Waihoihoi main stem, Piroa main stem, Mayflower tributary main stem, Wairau north tributary and Pine north main tributary, otherwise temporary culvert to be installed (RC10). • Temporary culverts in place for more than 2 weeks during November to December to provide fish passage unless SQP determines it is unnecessary (RC11). • All machinery used in or near streams to be checked and cleaned for freshwater pests (RC12). • Standard management measures to avoid concrete leachate to streams and prevent fuel and other hazardous discharges (RC14). **Design** • Waihoihoi main stem to be bridged or realigned (RC32). • Stream enhancement, for example riparian planting, to be undertaken for any loss of a Watercourse (that is not realigned or culverted in accordance with the conditions) on a: o 1:1 ratio based on stream length and value measured by SEV (SEV to be calculated in accordance with Technical Report 2011/009 Stream Ecological Valuation: a method for assessing the ecological functions of Auckland Streams) (RC33-RC35),

<table>
<tr><th>Effect category</th><th>NZTA Management Package</th></tr>
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Or if either extent or value cannot be achieved use SEV/ECR (not including potential value and not including 1.5 multiplier) later.

Any riparian works must be determined by a SQP and must include (RC35):

Planting of indigenous vegetation for a width of at least 10 m on each side of the Watercourse, where practicable;

Be of a suitable species composition;
Be sourced from the ecological district in which it is to be planted or be otherwise eco-sourced, except where it is not practicable to do so;
Have spacing between 0.5 and 1.5 m; and
Be maintained for a period of 5 or until 80% indigenous canopy cover is achieved (whichever is earlier); and

Be fenced off or subject to some other method to exclude stock.

Watercourse realignments to be designed by a SQP to achieve same or similar values as far as practicable (RC36).
Permanent culverts to be designed to provide fish passage and benthic habitat substrate (RC37-RC38).
Riparian planting of any stream diversions in the Pukekaroro Stream tributary (D23(d));
If the meander loop of the Waihoihoi River is diverted, recreation of an equivalent meander loop, including planting of indigenous riparian vegetation (D23(e));
A riparian buffer of at least 10 m on the southern side of the Piroa Stream (D23(f)).

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<tr><td>Wetlands (RMA)</td><td>
Construction

Standard erosion and sediment control measures (RC19 – RC27).
Standard management measures to avoid concrete leachate to wetlands and prevent fuel and other hazardous discharges (RC14).

Design

Wetland replacement to be undertaken for any loss of Existing Wetlands that provide habitat for threatened or at risk avifauna (as determined by a SQEP) and any loss of indigenous Existing Wetlands with high or moderate value (as determined by a SQEP) (eg excluding exotic dominant Wetlands). Ratio based on value of wetland lost and time lag (RC39-RC42).
Wetland replacement (extent and values) to be undertaken for any loss at a ratio of:

1:2 where Established within 2 to 5 years of loss,
1:1.5 where Established within 1 year of loss, or
1:1 where Established 3 years prior to loss.

Methods for the creation of Wetland(s) that (RC42), including:

Are located within the same catchment or otherwise within the same Ecological District and the Existing Wetland lose and in an area that a SQP determines if free or can be made free from persistent ecological weed and pest species;
Provide for a mix of Wetland hydrology and majority of shallow water suitable for raupō;
Include raupō in large and solid stands;
Include fencing to prevent stock access.

Replacement habitat to be same or better as that within the Existing Wetland, as determined by a SQP, and setback an appropriate distance from the operational carriageway of the Project to avoid adverse effects on Cryptic Marsh Bird Species (as determined by a SQP) (RC43).
If replacement wetland is not practicable, wetland compensation to be provided (RC44). Wetland compensation funds to be paid to a conservation group or organisation to undertake wetland creation or restoration works within the affected catchment. The quantum of compensation must be calculated as follows (RC44):
<table>
<tr><td>The extent of wetland required to be created under Condition RC[42] and RC[43] in hectares</td><td>-</td><td>The extent of wetland that will be created by the Consent Holder in hectares</td><td>=</td><td>Compensation extent</td></tr>
<tr><td>Compensation extent</td><td>x</td><td>Cost per hectare to Consent Holder of creating wetland under Condition RC[42] and RC[43]</td><td>=</td><td>Compensation amount</td></tr>
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Measures to monitor and maintain Wetlands created to be determined by a SQP (RC46), until they have achieved 80% vegetation cover at vegetation assemblages, have no persistent ecological weeds that are considered invasive and would compromise the value and have typical hydrology (RC49).

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<tr><td>Avifauna (RMA)</td><td>
Construction

Pre-construction surveys to check for nests during breeding season, incidental discovery protocol and exclusion zones to be established if an active nest is found (D36-D37).

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	• Exclusion zones to be:
	  ○ 50 or 100m (as determined by a SQP) for indigenous 'Threatened' or 'At Risk' bird species, and
	  ○ 25m for all other indigenous bird species or
	  ○ a lesser distance determined by a SQP (D36(c)).
	• Exclusion zones required until chicks have left the nest or the nest has failed (D37).
	Design
	Wetland replacement to be undertaken for any loss of Existing Wetlands that provide avifauna habitat and/or are one of certain specified high value wetlands. See wetland and indigenous vegetation provisions discussed below.

Indigenous Vegetation (RMA)	**Design**
	• Retention of existing substantial indigenous vegetation (through avoid conditions) and use of eco-sourced indigenous plants for landscape planting (D21-D22).
	Biosecurity
	• Implementing methods to prevent establishment of kauri dieback during construction specifically adjacent to forests that contain kauri including (V1_228 Kauri podocarp forest and V4_64, V4_66 Kanuka, podocarp (tanekaha dominant) forest.
	Remediation of fragmentation
	• Weed control to facilitate native regeneration towards native dominance (>80% cover) on fragmented margins of very high and high value habitat including V1_144 Kahikatea, pukatea, pūriri forest, V1_228 Kauri podocarp forest, V1_214 Kahikatea, kauri, V4_64, V4_66 Kanuka, podocarp (tanekaha dominant) forest; V2_35, V2_22, V2_7, V2_3 Taraire, kohekohe, broadleaved podocarp forest.
	Offsetting for vegetation community loss
	• Mitigation planting for moderate to high value areas (V1_144 Kahikatea, pukatea, puriri forest, V1_214 Kahikatea, kauri forest, V3_73 Kahikatea treeland, V1_228 Kauri podocarp forest, V1_152, V1_175, V3_27, V1_229, V4_48, V4_53 Tōtara, kānuka forests) and V4_Pūriri forest) as confirmed by a SQP:
	  ○ at a ratio by area of 1:3,
	  ○ threats managed to achieve 80% tree survival and 80% canopy cover by year 10,
	  ○ potential 'trading up' loss of Tōtara, kanuka forests for additional Pūriri forest restoration,
	  ○ replacement of less common trees lost such as kawaka and rimu through inclusion into planting designs,
	  ○ with stock exclusion.
	• Mitigation planting at the following sites, in order of priority:
	  ○ The kahikatea stands at Waipu – planting to join up stands; then
	  ○ Puriri forest at Southern Release Site; then
	  ○ At the Northern Release Site; then
	  ○ Consider iwi rohe.
	Compensation for vegetation community loss
	• Compensation for very high value areas of vegetation within the indicative alignment (V4_64, V4_66 Kanuka, podocarp (tanekaha dominant) forest; V2_35, V2_22, V2_7, V2_3 Taraire, kohekohe, broadleaved podocarp forest).
	• Compensation of threatened and at risk plants (eg kauri) lost through inclusion into restoration planting areas.

Bats (RMA)	**Construction**
	• DOC bat roost protocols to be implemented during vegetation clearance (D31).
	• If an active roost is identified:
	  ○ A setback (determined by a SQP) is to be established (D32).
	  ○ No activities generating noise, vibration and/or artificial lighting that a SQP deems excessive for bats may be undertaken within the setback distance until a SQP determines the bats have left the roost (D32-D33).

Lizard habitat (RMA)	Assumption is lizards are relocated to Release Sites and planting is undertaken within those Release Sites to create new habitat and connect existing vegetation – 'trading up' opportunity. Plus: requirement for vegetation offsetting (as discussed above), Buffer planting of mitigation sites (including Release Sites covered by Wildlife Approval), and Opportunities to create lizard habitat in landscape planting.
Lizards (Wildlife Act)	Pre-construction surveys will be conducted to identify all suitable lizard habitat affected by Project Works. Lizards within Lizard habitat identified in pre-construction surveys shall be salvaged and relocated into the Northern Release Site and Southern Release Site prior to construction. Salvage of Lizards only between 15 September and 15 May (WA14). Prior to release, the following management actions shall be undertaken at the Release Sites [to be used for all Wildlife Act species]:

Effect category	NZTA Management Package
	○ *[Details re requirements for* ○ *planting and/or provision of additional refugia (including 10m edge buffer/benefit planting for Release Sites);* ○ *timing, conditions and methods for stock exclusion;* ○ *Methods for and monitoring of pest control at each Release Site, to benefit Lizards* *To be drafted].* Salvage and Relocation Report submitted to DOC annually while salvage, transfer and relocation ongoing (WA26-WA28). Final report submitted within 24 months of completion of construction (WA29). Mammalian pest control at each Release Site for 3 months prior to relocation and continuing for 5 years post completion of transfer/relocation at that Release Site (WA25). An LMP shall be prepared by a SQP. The objective of the LMP is to ensure the outcomes set out in the conditions above are achieved and shall include: • Methods for conducting pre-construction surveys; • Timing, conditions and staging of salvage and transfer/relocation activities; • Methods and protocols for Lizard salvage, handling and transport; • Methods for the management of injured or dead Lizards; • Methods to minimise the risk of spreading plague skink; • Protocols to be followed in the event of any accidental discovery of Lizards; and • Methods for ensuring all salvaged Lizards are released into species-specific suitable microhabitats. The Release Sites shall be protected by covenant or similar mechanism. Final LMP (contained within EMP) to be provided to DOC for certification that it meets the requirements set out in the WA conditions. No compensation required as residual effects assessed as low.
Snail habitat (RMA)	Assumption is Snails relocated to Release Sites and planting is undertaken within those Release Sites to create new habitat and connect existing vegetation – 'trading up' opportunity. Plus: requirement for vegetation offsetting and buffer planting of mitigation sites (including Release Sites covered by Wildlife Approval) (as discussed above), and Opportunities to create snail habitat in landscape planting.
Kauri snails (Wildlife Act)	Pre-construction surveys will be conducted to identify all suitable Snail habitat affected by Project Works. Snails within Snail habitat identified in pre-construction surveys shall be salvaged and relocated into the Northern Release Site and Southern Release Site prior to construction. Salvage of Snails between 1 October and 30 April (WA24). Prior to release, the following management actions shall be undertaken at the Release Sites [to be used for all Wildlife Act species]: ○ *[Details re requirements for* ○ *planting and/or provision of additional refugia (including 10m edge buffer/benefit planting for Release Sites);* ○ *timing, conditions and methods for stock exclusion;* ○ *Methods for and monitoring of pest control at each Release Site, to benefit snails* *To be drafted].* Salvage and Relocation Report submitted to DOC annually while salvage, transfer and relocation ongoing (WA26-WA28). Final report submitted within 24 months of completion of construction (WA29). Mammalian pest control at each Release Site for 3 months prior to relocation and continuing for 5 years post completion of transfer/relocation at that Release Site (WA25). A SMP shall be prepared by a SQP. The objective of the SMP is to ensure the outcomes set out in the conditions above are achieved and shall include: • Methods for conducting pre-construction surveys; • Timing, conditions and staging of salvage and transfer/relocation activities; • Methods and protocols for Snail salvage, handling and transport; • Methods for the management of injured or dead Snails; • Protocols to be followed in the event of any accidental discovery of Snails; and • Methods for ensuring all salvaged Snails are released into species-specific suitable microhabitats. The Release Sites shall be protected by covenant or similar mechanism. Final SMP (contained within EMP) to be provided to DOC for certification that it meets the requirements set out in the WA conditions. No compensation required as residual effects assessed as low.

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Frog habitat (RMA)	Assumption is all Frogs will be translocated to Release Sites and habitat will be created/enhanced within those Release Sites – 'trading up' opportunities. Plus, requirement for buffer planting of mitigation sites (including Release Sites covered by Wildlife Approval) as discussed for lizards above.
Frogs (Wildlife Act)	Pre-construction surveys will be conducted to identify all suitable Frog habitat affected by Project Works. Frogs within Frog habitat identified in pre-construction surveys shall be salvaged and relocated into the following Release Sites [to be used for all Wildlife Act species] prior to construction: • Northern Release Site; • Central Release Site; and • Additional Release Site(s) (as determined by a SQP). Salvage of Frogs between 1 December and 30 April (WA19). Release Sites shall be protected by covenant or similar mechanism. Salvage and Relocation Report submitted to DOC annually while salvage, transfer and relocation ongoing (WA26-WA28). Final report submitted within 24 months of completion of construction (WA29). Mammalian pest control at each Release Site for 3 months prior to relocation and continuing for 5 years post completion of transfer/relocation at that Release Site (WA25). Frogs to be released as follows: Frogs found to the north of the ONL, to: 1. the Northern Release Site; then 2. the Central Release Site; then 3. Additional Release Site(s) (as identified through the process set out below). Frogs found to the south of the ONL, to: 1. Southern Release Site [TBC]; then 2. Additional Release Site(s) (as identified through the process set out below). Any additional frogs to be released into an additional Release Site, determined by a SQP to be appropriate habitat for Frogs, on the basis that, in the opinion of the SQP it contains suitable: *[Factors to be formulated through confirmation/discussion of the Frog Release Site Suitability Framework, eg* *a. Vegetation cover and micro habitat;* *b. Water quality; and* *c. Macro invertebrate abundance as an indicator of food availability* *To be drafted]* Prior to release, a SQP shall determine which of the following management actions shall be undertaken at any Release Site: • [*Pre-release Management (as appropriate)* • *habitat enhancement;* • *stock exclusion;* • *pest management;* • *sediment management;* • *legal protection mechanisms;* • *completion and verification of prerequisite works.]* An HFMP shall be prepared by a SQP. The objective of the HFMP is to ensure the outcomes set out in the conditions above are achieved and shall include: • Methods for conducting pre-construction surveys; • Timing, conditions and staging of salvage and transfer/relocation activities; • Methods and protocols for Frog capture, salvage, handling and transport; • Protocols to be followed in the event of a discovery of injured or deceased Frogs; and • Protocols to be followed in the event of any accidental discovery. The Release Sites shall be protected by covenant or similar mechanism. Final HFMP (contained within EMP) to be provided to DOC for certification that it meets the requirements set out in the WA conditions. Compensation to be discussed for translocation failure.