

**Before Independent Hearing Commissioners
At Lower Hutt**

Under the Resource Management Act 1991 (the Act)

In the matter of a notice of requirement for a designation by Wellington Water Limited ('WWL'), on behalf of Hutt City Council ('HCC'), in accordance with section 168A of the Act, for the construction, operation and maintenance of a water supply reservoir at Summit Road, Fairfield, Lower Hutt.

**Statement of evidence of Mark Hansen for Wellington Water Limited
(Ecology)**

Dated 14 November 2024



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Contents

1	Introduction	2
2	Qualifications and experience	2
3	Code of Conduct	3
4	Scope of evidence	3
5	Executive summary	4
6	Assessment methodology	4
7	The existing environment	6
8	Effects on ecological values	7
9	Recommended mitigation and conditions	10
10	RMA Statutory matters	11
11	Response to submissions	14
12	Response to Section 42A Officer's Report	15
13	Conclusions	19

Statement of Evidence of Mark Hansen

1 Introduction

- 1.1 My full name is Mark Hansen.
- 1.2 I am a Principal Ecologist at WSP New Zealand Limited. I have been in this position since December 2022. I am responsible for leading ecological aspects of proposed Projects, including the technical supervision of and delivery of ecological services including surveys, project design input, reporting and coaching and mentoring staff.
- 1.3 This evidence relates to a notice of requirement (**'NOR'**) for a designation issued by Hutt City Council (**'HCC'**), in accordance with section 168A of the Resource Management Act 1991 (**'RMA'**), for the construction, operation and maintenance of the proposed Eastern Hills Reservoir adjacent to the existing Naenae Reservoir at Summit Road, Fairfield, Lower Hutt (**'Project'**). In particular, my evidence relates to ecology.
- 1.4 I have been asked to provide evidence by Wellington Water Limited.
- 1.5 I have been involved with the project since February 2023. I supervised the desktop assessments, designed the on-site surveys and led the field staff for all ecological aspects of this Project. Having spent a total of seven days on-site across March (2 days), April (3 days) and November (2 days) in 2023, I am very familiar with the site. I reviewed and updated the Ecological Impact Assessment with technical input, which is Appendix G to the Assessment of Environmental Effects (**'AEE'**).

2 Qualifications and experience

- 2.1 My qualifications include a Bachelor of Science, with a Conservation and Ecology Major from Lincoln University. I am a full member of the Environmental Institute of Australia and New Zealand (**'EIANZ'**), a full member of the Ecological Society of New Zealand, a full member of the New Zealand Herpetological Society, a full member of the Society for Research on Amphibians and Reptiles in New Zealand (**'SRANZ'**), a full member of The Ornithological Society of New Zealand (Birds New Zealand), a full member of the Australasian Bat Society (**'ABS'**) and a full member of the Sanctuaries of New Zealand Inc (**'SONZI'**).

2.2 I have worked as a consultant ecologist performing impact assessments of this nature on a wide range of Projects from small scale developments to critical infrastructure of regional or national significance for 6 years in New Zealand and have been in the environmental industry performing surveys, and environmental auditing for over 20 years throughout New Zealand. I have either been involved in implementing or leading ecological values assessments, opportunities and constraints assessments and ecological impact assessments in a wide range of environment types from highly modified areas to indigenous forests. Projects have included hydro schemes, water main renewals, town supply storage lakes, subdivisions, land use changes, alluvial gold mines, thermal and high-coking coal mines, State Highway safety improvements, storm damage remediation, and a coastal seawall for erosion protection.

3 Code of Conduct

3.1 While the NOR is not before the Environment Court, I have read and am familiar with the Code of Conduct for Expert Witnesses in the current Environment Court Practice Note (2023). Accordingly, I have complied with the Code in the preparation of this evidence and will follow it when presenting evidence at the hearing.

3.2 The data, information, facts and assumptions I have considered in forming my opinions are set out in my evidence to follow. The reasons for the opinions expressed are also set out in my evidence to follow.

3.3 Unless I state otherwise, my evidence is within my sphere of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

4 Scope of evidence

4.1 My evidence addresses the following:

- a Assessment methodology;
- b The existing environment;
- c Effects on ecological values;
- d Recommended mitigation and conditions;
- e RMA Statutory matters

- f Response to submissions;
- g Response to Section 42A Officer's Report ('**Officer's Report**').

5 Executive summary

- 5.1 The key findings from my evidence are as follows:
 - a The ecological impacts of the project have been assessed in accordance with the EIANZ ecological impact assessments guidelines for New Zealand (2nd edition) ('**EIANZ guidelines**').
 - b On that basis, the residual levels of effects of the Project on the environment on all terrestrial ecological features and individual species, are either Low or Very Low once mitigation and remediation planting is taken into account. This translates to a 'less than minor' overall effect on the environment in RMA terms.
 - c That conclusion, as to the effects of the Project, appears to be accepted by the author of the Officer's Report and ecological peer review witness.
 - d I consider the proposed draft conditions will be sufficient to avoid, minimise and remediate adverse effects to a level not more than minor; I have reviewed the evidence provided in the Officer's Report. Overall, the planner is satisfied that, subject to the amendment of conditions, the NoR in regard to ecological matters is acceptable and is generally consistent with the planning framework. I comment on the evidence provided by Ms Tessa Roberts in section 12 of my evidence.

6 Assessment methodology

- 6.1 The ecological impact assessment followed the EIANZ ecological impact assessments guidelines for New Zealand (2nd edition) ('**EIANZ guidelines**').
- 6.2 A range of desktop assessments were conducted, including relevant literature reviews, district plan, fauna database records and GIS layers which informed the likely ecological features (Birds, Bats, Lizards, Vegetation, Watercourses, Wetlands etc) and specific species of flora and fauna with potential to be present on-site.
- 6.3 I conducted multiple site visits with several staff across a total of 7 days in March, April, and November 2023. Site visits included the install and collection of long-

term fauna monitoring devices and to perform a wide range of fine level¹ / targeted surveys, all of which informed my understanding of flora and fauna presence and utilisation of the site and within the expected zones of influence for the Project. Ecological features were confirmed, and values were assigned to each feature following EIANZ guidelines².

- 6.4 Applying the methodology of the EIANZ guidelines, actual and potential project effects during the construction phase and after Project completion were considered against appropriate spatial scales for each ecological feature. Temporal scales for effects were also considered, and a magnitude of effect was assigned for each ecological feature³.
- 6.5 Where Project impacts were possible and the I was unable to determine if they may adversely affect an ecological feature, additional specialists were asked to determine effects, to inform the impact assessment, such as a hydrogeologist modelling groundwater effects on wetlands.
- 6.6 By applying Table 10 of the EIANZ guidelines, the ecological value and the magnitude of effect was assessed for each ecological feature to determine the pre-mitigated level of effect⁴. Where adverse effects were identified, including where impacts had the potential to disturb or kill protected wildlife⁵ the effects management hierarchy was applied, pursuant to the National Policy Statement for Indigenous Biodiversity ('NPS-IB'). Avoidance is first in the effects management hierarchy. Where avoidance may not be possible or practicable, I provided mitigation requirements and/or recommendations to minimise adverse effects. Required mitigation must be implemented to either meet legislative requirements, or to ensure a reduction of effects caused by the Project. Recommended mitigation is best practice, however if not able to be implemented I provided other requirements to ensure a reduction of effects or to adhere to legislative requirements. Where remediation of Project impacts was possible, requirements were outlined. For example, due to the unknown site conditions during construction, the extent of vegetation and habitat impacts is known and therefore recommended to be minimised if practicable. Likewise, remediation of

¹ Fine level surveys are targeted field surveys of sufficient effort, performed during appropriate seasonal and weather conditions, suitable to detect presence and determine relative abundance of species.

² In accordance with EIANZ guidelines, Table 4, Table 5, and Table 6 (where appropriate).

³ In accordance with EIANZ guidelines, Table 8 & Table 9.

⁴ The Values and Magnitudes of Effect both lie along a continuum from Very High to Negligible (for Value) and Very High to Positive (for the Magnitude of Effect). The Level of Effect compares the Value with the Magnitude of Effect on a Matrix (Table 10; EIANZ guidelines).

⁵ For the purposes of this Notice of Requirement protected species are "all species of mammals, birds, amphibians and reptiles within New Zealand, other than those listed as 'Wildlife not protected' within Schedule 5 of the Wildlife Act 1953 and includes 'Terrestrial and freshwater invertebrates declared to be animals' listed in Schedule 7 of the Wildlife Act 1953".

the area where the reservoir is to be constructed cannot occur, however remediation of the pipeline route and areas impacted around the reservoir can.

- 6.7 Following the NPS-IB, after application of avoidance, minimisation and remediation measures were applied, the magnitude of effects was reassessed, as post-mitigation.³ For all ecological features, the post-mitigated / residual level of effect was either Low or Very Low.
- 6.8 **Ms Cathy Crooks**, as the Planner compiling the AEE, and I discussed the residual levels of effects on the ecological features and individual species, regarding the appropriate spatial scale for each to convert the Low and Very Low effects into RMA terminology, and I agreed the effects were not more than minor, as outlined in Table 25 of the AEE. Pursuant to the NPS-IB after application of avoidance, minimisation and remediation measures a not more than minor residual effect does not require biodiversity offsetting and/or biodiversity compensation.
- 6.9 I rely on the ecological impact assessment drafted by my colleague Dr Noah Davis (Appendix G) to the AEE, which I supervised, reviewed and edited to ensure technical accuracy. I also adopt the content of the 27 June 2024 letter sent by **Ms Cathy Crooks** in response to HCC's section 92 request regarding ecology.

7 The existing environment

- 7.1 The existing environment of the entire Eastern Hills, including the site, has suffered extensive historical impacts and continues to be impacted by modern ecological and human induced pressures. Historical impacts include indigenous forest logging and fire. Modern impacts include exotic pest plant invasion and spread, and pest mammal pressure including wild deer, feral pigs, possums, rats, mice, hedgehogs, pet (and possibly feral) cats and likely mustelids. The vegetation within the wider Eastern Hills is mostly consistent with that present at the site, however, small clusters of indigenous forest⁶ remain within the Eastern Hills, generally restricted to gullies where logging and fire did not impact.
- 7.2 The site is almost entirely covered by a mix of exotic and native vegetation, with a firebreak used as a walking track along the spur. The site is approximately 1.9 hectares and is predominantly situated on a north facing spur and extends down the northeastern face to the Waiwhetū Stream at the northern extent of the site. Urban residential properties are within proximity to the north and west of the site,

⁶ As defined by the Landcover Database V5.0

while the east and south is bordered by the vast and contiguous Eastern Hills, which are (including the project site) defined as Significant Natural Resource 12 (the 'SNR') in the Hutt City District Plan.

- 7.3 The site is highly modified from a pre-1840 state, a baseline typically used by ecologists within Aotearoa New Zealand. Prior to 1840 the site is expected to have been a beech / podocarp forest, while today the site is comprised almost entirely of regenerating arborescent⁷ vegetation (few grasses, vines etc are present). Colonising gorse, broom and kānuka is present in the higher elevations on-site, while a variety of broadleaved indigenous hardwoods,⁶ more mature kānuka and some exotic species dominate the mid to lower elevations of the site.
- 7.4 On-site and presumably throughout the Eastern Hills, the understory is extensively browsed by introduced red deer. Feral pigs are also present and foraging impacts were observed on-site. There is a significant lack of recruitment (seedlings and saplings) of palatable species. Possums are also present impacting the vegetation, particularly the canopy of palatable species. Rats and mice were confirmed on-site near Waiwhetū Stream. Domestic cats were confirmed within proximity to residential properties. Hedgehogs and mustelids are possible on-site though may be transient.
- 7.5 Historical and ongoing impacts on-site and within the wider Eastern Hills, all result in a highly modified, degraded ecosystem. On-site, tolerant indigenous species persist, although it is possible those present are facing declining populations due to ongoing pest impacts.

8 Effects on ecological values

- 8.1 The proposed Project will require the removal of vegetation to enable construction of the reservoir and associated pipework. Effects to ecological features are only expected during the construction phase of the Project. Other than the approximately 0.9 hectares (ha) of permanently lost vegetation and associated habitat due to the reservoir itself. This area comprises approximately 0.09 ha of regenerating mānuka/kanuka, approximately 0.62 ha of broadleaved indigenous hardwoods and approximately 0.2 ha comprises gorse and/or broom. No ongoing Project related effects to ecological features will occur upon Project completion.
- 8.2 Following vegetation removal, benching and removal of substrate will be required to create the reservoir. Open trenching will be required down the northern face for

⁷ Vegetation resembling a tree in growth or appearance.

the installation of the pipelines. Temporary bunding will be required with bypass pumping of the Waiwhetū Stream to allow open trenching across the watercourse. Upon completion of construction, site remediation in the form of native vegetation planting will occur, suitable for the site conditions and consistent with the Eastern Hills / the SNR. Remediation will result in an improvement in species richness and remediate habitat impacts for indigenous wildlife. Pest control and monitoring will occur to ensure vegetation establishment and canopy closure within prompt timeframes.

- 8.3 The adverse effects of the Project works on each ecological feature associated with construction, earthworks and vegetation clearance is summarised below with mitigation and remediation being taken into account.

Avifauna (birds)

- 8.4 The construction activities may, depending on the species, cause the temporary displacement of avifauna on-site due to an increase in noise, vibration, dust and human presence. These impacts may extend beyond the site boundary and will affect different bird species differently depending on their tolerance to human activities.
- 8.5 The vegetation removal for the reservoir development will result in the permanent loss of some exotic weeds (gorse) and some native vegetation (regenerating kānuka etc). This will cause a negligible loss of habitat for birds to roost, forage and potentially nest in.
- 8.6 Implementation of the Bird Management Plan ('BMP') and conducting vegetation clearance outside the active nest season (when eggs and/or chicks are present within a nest) of a protected species, or by imposing a buffer zone around any confirmed active nest of a protected species during vegetation clearance, will avoid the risk of death to eggs or chicks.
- 8.7 The vegetation removal for the pipeline installation and subsequent remediation, is expected to result in the short- to medium term loss of habitat for birds to roost, forage and potentially nest in.

Herpetofauna (geckos and skinks)

- 8.8 The construction activities may, depending on the species, cause the temporary displacement of herpetofauna (geckos and skinks) on-site due to an increase in noise, vibration, dust and human presence. These impacts are not expected to extend beyond a few metres from Project activities but skinks but may vacate the

immediate area and seek refuge nearby. It is expected the skinks would be more affected than geckos due to habitat availability being more restricted for skinks along the firebreak track edge, while geckos can utilise the entire forest canopy if needed.

- 8.9 Implementation of the Lizard Management Plan ('LMP'), (catching and relocating lizards prior to and during vegetation clearance), and conducting vegetation clearance outside the winter months (May – August inclusive) or during cold weather (<15 degrees Celsius), will avoid the risk of death to protected lizards.
- 8.10 The vegetation removal for the reservoir development may result in the permanent loss of a negligible amount of habitat for lizards to utilise. While no geckos were confirmed within the reservoir footprint, it is possible a small number of individuals may be present. This vegetation removal and subsequent remediation will result in a temporary loss of skink habitat along the edge of the firebreak track. Remediation of mānuka/kānuka around the reservoir and remediated firebreak track, will be designed as skink habitat.
- 8.11 The vegetation removal for the pipeline installation, and subsequent remediation, is expected to result in the short-term to permanent loss of arborescent vegetation and associated habitat for geckos to utilise and forage within.

Terrestrial Invertebrates

- 8.12 The vegetation removal for the reservoir development will result in the permanent loss of habitat for terrestrial invertebrates to utilise, while the vegetation removal for the pipeline installation and subsequent remediation, is expected to result in the short- to medium term loss of vegetation and associated habitat for terrestrial invertebrates to utilise.
- 8.13 No terrestrial invertebrates on-site are listed as protected animals pursuant to the Wildlife Act 1953, as such no specific management is required.
- 8.14 Highly mobile invertebrates, that can fly, are expected to naturally avoid impacts. Many terrestrial invertebrates are likely to avoid being significantly impacted as they may remain within the vegetation to be stockpiled and retained for site remediation.

Vegetation

- 8.15 Construction requirements may require the complete removal of vegetation within the Project boundary. Where possible, impacts to or the removal of vegetation will

be avoided or minimised, and will be dictated by site conditions at the time of construction.

- 8.16 The pipeline installation will see the permanent loss of large arborescent vegetation and the short-term loss of shrubs, which will be remediated.
- 8.17 The reservoir development will result in the permanent loss of some exotic and native vegetation.

9 Recommended mitigation and conditions

- 9.1 To avoid the potential disturbance or death of protected birds an appropriate BMP will be developed and implemented by a suitably qualified ecologist.
- 9.2 Where possible, vegetation clearance activities will avoid any month where active nests of protected birds may be present on-site and within the receiving environment. However, if vegetation clearance and construction works cannot avoid months where active birds' nests of protected species may be present, surveys will be conducted to check for the presence of active nests. Any active nests must be avoided with an appropriate buffer to avoid the risk of disturbance until chicks have fledged.
- 9.3 To avoid the risk of incidental death to protected lizards, an appropriate LMP will be developed and implemented by a suitably qualified herpetologist. The LMP requires an approved Wildlife Act Authority from the Department of Conservation. Lizard salvage and transfer (catching and relocating) will occur prior to and during vegetation clearance activities to comply with the Wildlife Act 1953.
- 9.4 Vegetation clearance activities will avoid May to August and will only be conducted when daily weather conditions are suitable for lizard activity.
- 9.5 To avoid, minimise and remediate actual and potential impacts to vegetation, a Vegetation Management Plan ('VMP') will be developed by a suitably qualified Ecologist or Landscape Architect with Ecologist input.
- 9.6 To minimise impacts to habitats and reduce sediment and erosion risk, vegetation clearance will be staged, if practicable.
- 9.7 The VMP will identify potential 'Threatened' and/or 'At Risk' plants on-site. 'Threatened' or 'At Risk' plants confirmed on-site during pre-clearance checks will be avoided if possible, or where practicable salvage and transfer will be conducted.

- 9.8 The VMP will include methods to retain and reuse slash and logs from the site to minimise effects to the receiving environment, and to promote micro habitats for fauna.
- 9.9 The VMP will outline site remediation requirements including quantifying the area available for remediation, identifying site appropriate eco-sourced plant species, and defining the density of plantings to ensure prompt canopy closure.
- 9.10 The VMP will include a monitoring and maintenance schedule and pest management requirements to ensure plant survivorship, or replacement of plant mortalities.
- 9.11 The site remediation will be directly linked to the required outcomes of other management plans including, but not necessarily limited to, the LMP.

10 RMA Statutory matters

- 10.1 Under Part 2 of the RMA, section 6 requires recognition and provision for matters of national importance. This includes “*the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development*” under Part 6b and “*the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna*” under section 6(c). The definition of a Significant Natural Area within the NPS-IB includes areas already identified in a policy statement or plan on 4 August 2023 and includes areas of significant indigenous vegetation or significant habitat of indigenous fauna.
- 10.2 While the site lies within the SNR, the vegetation on-site is not nationally significant. Although most of the site is indigenous vegetation (approx. 70%), it is highly modified from a natural and pristine condition and lacks ‘Threatened’ plant species from my surveys.
- 10.3 Kānuka, at the time of the Ecological Impact Assessment, was regionally ‘Not Threatened’, but listed as ‘Threatened – Nationally Vulnerable’. In October 2024 the Department of Conservation released a revised New Zealand Threat Classification report for indigenous vascular plants and reclassified this species back to nationally ‘Not Threatened’. My surveys, conducted over 7 days of site visits, failed to confirm any other ‘Threatened’ or ‘At Risk’ plants within the Project boundary.
- 10.4 The vegetation on-site is highly unlikely to provide significant habitat for any nationally ‘Threatened’ fauna. The vegetation on-site may provide habitat for the nationally ‘At Risk’ and regionally ‘Threatened’ barking gecko, though none were

observed on-site. Although highly unlikely, it is possible for regionally or nationally 'Threatened' birds (bush falcon / kārearea) to seldom utilise the site. Karearea are a highly mobile species (as defined in the NPS-IB), have vast territories, typically prey upon birds on the wing and are highly unlikely to nest on-site thus the site does not provide significant habitat for them.

- 10.5 Ecological input was provided to the Project concept design. The early design included a larger Project boundary and infilling a tributary of the Waiwhetū Stream within the gully, east of the site, and confirmation of natural inland wetlands near Waiwhetū Stream required the pipeline route to be moved to avoid these. Detailed design resulted in a reduced site boundary, avoiding the tributary and reducing vegetation and habitat impacts within the SNR, and pipeline realignment avoiding the natural inland wetlands.
- 10.6 Protection of the SNR will be achieved through the application of the effects management hierarchy by avoiding, minimising and remediating effects where possible, and by the required management plans to be enforced through conditions of consent.
- 10.7 Under Part 2 of the RMA, section 7 requires having regard for other matters including "*(d) intrinsic values of ecosystems*". The size and scale of the site and associated Project impacts within the context of the SNR will have no intrinsic effect on the value of the ecosystem. The site is located in a confined area on an edge of the SNR, and significant adjacent habitat will remain such that ecological connectivity and linkage will not be affected other than a possible temporary isolation should any geckos be present within the vegetation east of the pipeline route. Remediation of this area upon Project completion will reconnect these habitats, however this will not affect the intrinsic value of the ecosystem.
- 10.8 Section 7(f) requires having regard for "*maintenance and enhancement of the quality of the environment*". Post-construction, site remediation and requirements within management plans, is expected to result in the enhancement of the quality of the environment on-site and within proximity to the site through the removal of exotic weeds and subsequent replacement of indigenous vegetation appropriate for the site and wider SNR.
- 10.9 I understand that one of the planning or policy matters to be considered (and which **Ms Cathy Crooks** will address in her planning evidence) is whether the 'effects management hierarchy' under the NPS-IB has been applied⁸. For all Project-related effects on ecological features confirmed on-site and within the

⁸ National Policy Statement for Indigenous Biodiversity, under clause 1.6 interpretation.

receiving environment, I can confirm the effects management hierarchy was applied.

- 10.10 I outlined methods required or recommended to reduce all actual or potential Project-related adverse effect. Pursuant to relevant legislation, such as the Wildlife Act 1953, I defined requirements to address adverse effects. I also provided best practice recommendations, to mitigate effects but if recommendations are unable to be implemented, I provided additional requirements to ensure adherence to legislation.
- 10.11 Where possible, avoiding Project effects is required or recommended first. Where Project effects cannot avoid impacts, I defined mitigation required to minimise those effects. Following the Project effects, where possible, I outlined the required remediation measures to reduce the overall Project impact to the site and receiving environment.
- 10.12 I understand from the evidence of the witnesses **Mr Paul Carran**, that it is not practicable to avoid certain effects of the Project on ecology. This is due to the results of the options assessment for Project design. Regardless, as set out in Table 26 at section 9.8 of the AEE, Project-related effects have been avoided or minimised where possible.
- 10.13 In addition, where adverse effects cannot be minimised, they will be remedied where practicable. As set out in Table 26 at section 9.8 of the AEE:
- a Effects on avifauna habitat will be remediated, where possible, with planting eco-sourced⁹ vegetation, appropriate for the site and wider SNR. and to providing food resources and habitat for avifauna.
 - b Effects on herpetofauna habitat will be remediated with eco-sourced vegetation appropriate for the site to remediate any connectivity impacts and to provide food resources and microhabitats appropriate for skinks and geckos.
 - c Effects on terrestrial invertebrate habitat will be remediated with eco-sourced vegetation appropriate for the site.
 - d Effects on the indigenous vegetation will be short-term to permanent. Where possible effects will be remediated with planting eco-sourced vegetation, appropriate for the site and wider SNR.

⁹ Eco-sourced is defined as vegetation propagated from plants naturally occurring within the Ecological District.

- 10.14 Following avoidance, minimisation, and remediation I assessed the residual level of effects as either **low** or **very low** for all ecological features, pursuant to the EIANZ guidelines. **Ms Cathy Crooks** and I then translated those residual effects terms into RMA terms, and I can confirm they are 'less than minor', as set out in Table 26 at section 9.8 of the AEE.
- 10.15 The BMP will outline methods to avoid and minimise actual and potential impacts to protected birds. The VMP will outline site remediation requirements, such that any and all Project-related effects to the bird population within the spatial scale of the SNR, as well as any nationally or regionally 'Threatened' or 'At Risk' species, will be less than minor.
- 10.16 The LMP will outline methods to avoid and minimise actual and potential impacts to protected lizards. The VMP will outline site remediation requirements, such that any and all Project-related effects to the skink and gecko populations within the spatial scale of the SNR, as well as nationally or regionally 'Threatened' or 'At Risk' species, will be less than minor.
- 10.17 The VMP will outline site remediation requirements, such that any and all Project-related effects to terrestrial invertebrate populations within the spatial scale of the SNR, will be less than minor.
- 10.18 The VMP will outline methods to avoid and minimise actual and potential impacts to any nationally or regionally 'Threatened' or 'At Risk' plants, that may be present within the Project boundary. The VMP will outline site remediation requirements such that the revegetated areas will be improved upon with eco-sourced plants, compared to the current baseline condition. Approximately 0.7 ha of indigenous vegetation may be permanently lost due to the development, however this accounts for 0.1% of the 671 ha of the SNR. Hypothetically, had the Project required the permanent loss of all vegetation across the entire 1.9 ha site, this would still only account for 0.28% of the entire SNR and I would still consider this to have a low residual level of effect and still be less than minor.
- 10.19 As there are no 'more than minor' residual effects, once effects have been avoided, remedied and mitigated, no biodiversity offsetting or biodiversity compensation is required, pursuant to Appendix 3 (1) of the NPS-IB. this means.

11 Response to submissions

- 11.1 I have reviewed the submissions that comment on matters relevant to my evidence. I respond to the key matters raised below.

Response to C Burt's submission

- 11.2 Ms Christine Burt raises concerns that the environment will be harmed by native bush and wildlife being lost with this construction. She seeks that the environment be reinstated for any damage made. As outlined above, the effects on the environment will be avoided where possible, minimised through management plans such that no protected wildlife will be lost, and the site will be remediated where possible. Although the reservoir will result in the permanent loss of a negligible amount of vegetation, that is a mix of exotic weeds and only approximately 0.7 ha of indigenous plants. The remediation I proposed and that will be conducted will ensure a less than minor effect, however it is expected to result in a "better than before" suite of eco-sourced plants that will provide the same or better food resources and habitat for indigenous wildlife than the current vegetation on-site.

12 Response to Section 42A Officer's Report

- 12.1 I have read the Officer Report. The key discussion relating to my assessment is contained in paragraphs 73 to 113. Overall, the planner is satisfied that, subject to the amendment of conditions, the NoR in regard to ecological matters is acceptable in regard to adverse effects and is generally consistent with the planning framework.
- 12.2 I have reviewed the evidence provided by Ms Roberts in the Officer's Report. I note that Ms Roberts does not disagree with my effects assessment. I understand Ms Roberts visited the site for approximately two hours in October 2024 as stated in paragraph 7 of her evidence and her evidence states that she observed up to two unknown species of *Thelymitra* spp. sun orchid on-site and a northern rātā. The northern rata location was described as 'on the lower eastern slopes of the site', 'potentially impacted by vegetation clearance surrounding the pipeline and overflow scour path' and 'the eastern bank of the site'. All three descriptions vary considering the site topography and layout. The lower eastern slope implies in the gully to the east of the site, whereas the pipeline and scour path is the north of the site. Without GPS locations of these observations, I can only assume Ms Roberts was within the Project boundary regarding the orchids, however I'm not clear as to where the 'eastern bank' refers to, and from my extensive time on-site, using high-resolution imagery and the Project boundary to guide my field surveys, of which I spent a total of seven days on-site, I failed to confirm northern rātā on-site. Figure 1 below shows the vegetation within the pipeline route, dominated by mahoe and tree fern in the lower areas, with kanuka and wattle on the slope. The

pipeline was moved west to avoid natural inland wetlands to the east and I dispute the presence of northern rata within the Project site.



Figure 1: View south, up the spur from Waiwhetū Stream. Red lines show the indicative pipeline route. No **northern rātā** is visible.

- 12.3 Northern rātā is regionally ‘Not Threatened’¹⁰ by nationally ‘At Risk – Declining’ according to the latest vascular plant threat classification document¹¹ release by the Department of Conservation in October 2024.
- 12.4 It is possible for a very low abundance of orchids to be present. However, a review of the wider Lower Hutt, Belmont, Eastern Hills, Wainuiomata area on iNaturalist, revealed six species within proximity to the site. One is Nationally and Regionally ‘Data Deficient’, (*Thelymitra colensoi*), and the remaining five are all ‘Not Threatened’ (*T. hatchii*, *T. intermedia*, *T. longifolia*, *T. pauciflora*, and *T. nervosa*).
- 12.5 A review of the national distributions of ‘Threatened’ *Thelymitra* species on the New Zealand Native Orchids website¹², reveals the ‘Threatened – Nationally Critical’ *T. matthewsii*, *T. sanscilia* and *Thelymitra* (a) WELT SP79140; Ahipara) are all restricted to north of Auckland, and the ‘Threatened – Nationally Endangered’ *T. aemula* is found from the Bay of Plenty to approximately Hamilton north. Therefore no nationally ‘Threatened’ species of *Thelymitra* sun orchid are possible on-site.
- 12.6 A review of the vascular plant threat classification document for ‘At Risk’ *Thelymitra* species reveals the nationally ‘At Risk – Declining’ *Thelymitra* (b) (CHR 518036; “darkie”) is restricted to the far north, while the nationally ‘At Risk – Naturally Uncommon’ *T. tholiformis* is found from the Bay of Plenty to

¹⁰ Crisp (2020) (Conservation status of indigenous vascular plant species in the Wellington region)

¹¹ De Lange *et. al.* (2024) (New Zealand Threat Classification Series 43. Conservation status of vascular plants in Aotearoa New Zealand, 2023).

¹² <https://www.nativeorchids.co.nz/>

approximately Hamilton north, *T. (c)* (AK 229531; “rough leaf”) is restricted to the far north.

- 12.7 The distribution of *T. aff. longifolia (a)* (CHR 537579; Whakapapa) is unclear. While it is possible it is present in the Wellington area, it is not listed within the conservation status document of vascular plant species in the Wellington region. It can therefore be regarded as being regionally ‘Not Threatened’. Furthermore, this species’ habitat includes montane scrub, usually beech forest or tussock grassland, which eliminates its likelihood on-site.
- 12.8 The nationally and regionally ‘At Risk – Naturally Uncommon’, *T. formosa* and *T. ixioides* have geographic ranges that include the Wellington area. These species typically inhabit lowland scrub or open forest or well-lit tracks and roadsides. Therefore, these species have a likelihood of presence on-site.
- 12.9 Ms Roberts states (paragraph 24) that the EclA shows an outstanding impact 0.71 ha of indigenous vegetation that is not being managed within the effects management hierarchy, including avoided, remedied, offset or compensated. Ms Roberts also states (paragraph 25.) for works to achieve a desired net ecological benefit as stated in the EclA, there is a need for further mitigation, including off-site weed control. This is incorrect. The EclA does not claim a net ecological benefit. I state remediating the site with eco-sourced plants and some pest control during the plant establishment stage post-construction, will improve the character and composition of the vegetation on-site resulting in benefits to indigenous fauna, however Table 14 of the EclA clearly states a Low residual level of effect and Table 26 of the AEE clearly states a less than minor effect.
- 12.10 It is possible Ms Roberts misinterpreted the abbreviated version of Table 20 of the AEE, provided within the Letter dated 27 June 2024. Table 20 of the AEE was written by **Ms Cathy Crooks** as Project Planner and provides an overall summary for Ecology, including aquatic features and additional off-site riparian planting along the Waiwhetū Stream, as shown in Sheets 1, 2 and 3 of the Concept Landscape Plan. This information was outside the EclA, and this overall Operation level of effect claims a Positive effect on ecology due to on-site management of fauna, site remediation with eco-sourced plans, voluntary Waiwhetū Stream riparian planting of approximately 0.16 ha and the subsequent fish and water quality improvements associated with that planting. Taking all ecological factors into consideration I agree with **Ms Cathy Crooks** in an expected overall positive effect as a result of the development.

- 12.11 Furthermore, Ms Roberts' interpretation of offsetting or compensation requirements are not consistent with the NPS-IB Principles for biodiversity offsetting (Appendix 3) or Principles for biodiversity compensation (Appendix 4), which clearly state "Adherence to the effects management hierarchy: A biodiversity offset is a commitment to **redress more than minor residual adverse effects** and should be contemplated **only after steps to avoid, minimise, and remedy adverse effects** are demonstrated to **have been sequentially exhausted**". As the residual level of effect for vegetation and habitats on-site after avoidance, minimisation and remediation is **less than minor** (not more than minor), biodiversity offsetting is not required. Furthermore, if biodiversity offsetting is not required, biodiversity compensation is also not required as compensation is only required if biodiversity offsetting cannot be achieved, pursuant to Appendix 4 of the NPS-IB.
- 12.12 EIANZ guidelines are not prescriptive and are merely a guide and a stepwise approach for ecologists to conduct an impact assessment. It is up to the Project ecologist on how to apply the guidelines. Regardless, the perceived discrepancies in the application of the EIANZ guidelines, as stated in Ms Roberts' evidence, appears to be redundant as Ms Roberts agrees that mitigation can appropriately manage all Project-related effects.
- 12.13 Although Ms Roberts inaccurately identified yellow crowned parakeet / kākāriki as *Cyanoramphus novaezelandiae novaezelandiae* (which is the red-crowned parakeet) (paragraph 33.), upon further review of database information, is it possible for both species of kākāriki (red- and yellow-crowned) to be present in the wider Wellington region. Yellow-crowned parakeet, while nationally 'At Risk - Declining'¹³, they are listed as 'Threatened – Regionally Endangered'. Both species are highly mobile with large territories. The vegetation on-site proposed to be removed mostly lacks mature cavity forming trees. Furthermore, the site likely provides little in the way of high-quality food resources, especially when considering other resources available within the wider Ecological District. I believe their presence and utilisation of the site is still unlikely, however as agreed regarding bush falcon / kārearea, the BMP will include cavity inspections of any suitably cavities that may be used for nesting, if vegetation clearance occurs within the active nest season of kārearea. For this purpose, the BMP will include appropriate management for all cavity nesters that are deemed to be possible, likely, highly likely or confirmed on-site.

¹³ Robertson *et. al.* (2021) (New Zealand Threat Classification Series 36. Conservation status of birds in Aotearoa New Zealand, 2021).

- 12.14 As agreed, regarding the spotted fleshy orchid, and outlined in paragraph 35 by Ms Roberts, pre-clearance checks for 'At Risk' sun orchids will be included within the VMP and avoided if possible or managed appropriately through salvage and transfer.
- 12.15 As stated above, I dispute the need to enhance the surrounding habitat through exotic tree removal and enrichment planting, as stated by Ms Roberts in paragraphs 36 and 38. This is not consistent with the requirements outlined within the NPS-IB for less than minor adverse effects on vegetation and habitats.
- 12.16 As stated about, I dispute the perceived omission of nationally or regionally 'Threatened' orchids and bird species in desktop assessments as claimed by Ms Roberts in paragraph 39. Regionally 'Threatened' kārearea were confirmed on-site, as outlined in Table 35 of the EclA, as such they were always going to be and will be managed appropriately within the BMP, as outlined within the mitigation requirements of Table 4 of the EclA. No 'Threatened' orchids are likely on-site.
- 12.17 As stated above biodiversity compensation, as suggested by Ms Roberts in paragraph 40, is required for the less than minor adverse effects of 0.7 ha of permanently lost indigenous vegetation, pursuant to the NPS-IB. No off-site weed control nor underplanting is required.

13 Conclusions

- 13.1 The risk of disturbance or death to protected species, and the actual and potential adverse effects associated with the removal of habitats on-site will be managed through bird and lizard management plans. The actual loss of indigenous vegetation, and potential loss of 'At Risk' species of plant will be managed through the vegetation management plan. Remediation of the site, excluding the negligible area of the reservoir itself (accounting for approximately 0.7 ha of low quality and highly impacted indigenous vegetation) will be addressed through the vegetation management plan and will replace vegetation and associated habitats and resources for indigenous fauna. No Project related effect will be more than minor on any ecological feature or individual species, as such no biodiversity offsetting, or biodiversity compensation is required. Furthermore, although outside the scope of this evidence, voluntary riparian plantings of approximately 0.16 ha along the Waiwhetū Stream will benefit aquatic features and when combined with on-site removal of weeds, management of protected species remediation of the site where possible, with higher quality plants, an overall

positive effect on the wider environment is expected, irrespective of 0.1% loss of indigenous vegetation within the SNR.

Mark Hansen

14 November 2024