27 September 2022

Waipa District Council
Attn: Marne Lomas
Via email: Marne.Lomas@waipadc.govt.nz

Dear Marne,

**Resource Consent Application – Further information request response**

| | |
|---|---|
| **Application number(s):** | **LU/0147/22** |
| **Applicant:** | **Kiwifruit Investments Limited** |
| **Address:** | **582 Parallel Road, Cambridge** |
| **Proposed activity(s):** | **Retrospective land use consent to construct vertical and horizontal (overhead) artificial kiwifruit shelter** |

Thank you for your letter on the 14th September 2022 which set out a further information request arising from the review of the above application. Our response to the s92 items is addressed below:

1. *Please provide to-scale elevation plans showing the scale (distance of shelters to the boundary, height of shelters) of the proposal as it relates to 598 Parallel Road. Please show an elevation showing the side boundaries and the rear boundary, see image below as an example:*

   Please find attached to-scale elevation plans of the proposal as it relates to 598 Parallel Road. The following plan sets have been provided:

   - Southern and western elevation plan of the proposal as it relates to 598 Parallel Road, Cambridge (Pages 1 to 3). You will note in this plan set illustrates the following:

     - Setbacks of the dwelling at 598 Parallel Road, Cambridge to northern, eastern and western boundaries. These distances have been derived from building consent plans obtained by the Waipa District Council website;

     - Heights of existing internal vegetation located on northern, eastern and western common boundaries of the property located at 598 Parallel Road, Cambridge;

     - Distances and heights of proposed vertical and horizontal artificial Kiwifruit shelter from the northern, eastern and western boundaries of the property located at 598

Parallel Road, Cambridge. These distances also illustrate setbacks in which the vertical shelter reaches its full height of 6m, which is located before the second angled pole.

- Southern and western elevation plan of the proposal as it relates to 598 Parallel Road, Cambridge (Pages 4 to 6). You will note in this plan set, the proposed 6m high Cryptomeria hedging planted at 4m from the northern, eastern and western boundaries of 598 Parallel Road, Cambridge is added. This provides a visual elevation representation of the combined proposal.

- Southern and western elevation plan of the proposal as it relates to 598 Parallel Road, Cambridge (Pages 7 to 9). You will note in this plan set, the proposed 6m high Cryptomeria hedging planted at 1m from the northern, eastern and western boundaries of 598 Parallel Road, Cambridge is added. This plan set has been added as a comparison of where the Applicants could plant the Cryptomeria hedging (as a permitted activity), but have chosen to set the Cryptomeria back by 4m from these boundaries to create a bigger buffer from the property at 598 Parallel Road, Cambridge to this proposal.

- Southern and western elevation plan of the proposal as it relates to 598 Parallel Road, Cambridge (Pages 10 to 12). You will note in this plan set, the proposed 6m high Cryptomeria hedging planted at 4m from the northern, eastern and western boundaries of 598 Parallel Road, Cambridge is shown with the addition of the daylight control provisions of Rule 4.4.2.12 in the Rural Zone, if the 6m high Cryptomeria hedging was compared with 'building' of equal dimensions. This demonstrates that the proposed permitted 6m high Cryptomeria hedging at 4m from the northern, eastern and western boundaries of 598 Parallel Road, Cambridge complies with this rule.

  *Note: This information is provided as it is noted in section 4.5.4 the Council's Notification report where it is referenced that "The cryptomeria shelterbelt will create significant shading, loss of light (and temperature) and an overall reduction in amenity for this property". This plan demonstrates that the Cryptomeria hedging, as proposed will not introduce shading and reduction to daylight effects that are significant or minor.*

2. *Please provide an assessment of the proposal against the National Environmental Standard for Freshwater 2020 (NES-FW).*

   The NES-F commenced on 3 September 2020 and sets standards for freshwater management under the RMA to support improved freshwater management in New Zealand.

   A Ecological Impact Assessment, prepared by Titoki Landcare, dated September 2022 is attached to this Section 92 response. The purpose of this assessment has been prepared on behalf of the Applicant in respect to exploring the possibility of piping 205m of the watercourse located on the western side of the site and reclaiming the 114.8m$^2$ of streambed to enable kiwifruit rows to be planted over this streambed, rather than being planted on either side of the watercourse. Through this process, this assessment has evaluated the ecological value of the streambed, concluding *"The impact stream is located in the headwaters of a tributary of the Mangawhero Stream. The stream*

*itself has been heavily modified and straightened. A depression is present around the stream, with a gently sloping bank leading to the wide flat base of the depression and the highly incised stream. The vegetation within the depression and the majority of the watercourse is currently weedy pasture."*

These investigations conclude to carry out the proposed piping activities, resource consent is required under NES-FW, subpart 2 Regulation 57 of the NES-F as '*Reclamation of the bed of any river is a discretionary activity'.* This will be applied for in due course, along with relevant resource consents with Waikato Regional Council.

With respect to this application in question, for which application is sought for the construction of vertical and horizontal (overhead) artificial Kiwifruit shelter, there are no standards and rules in NES-FW, Part 3: Standards for other activities that relate to freshwater of the NES-F that apply to this Application. The Ecological Impact Assessment, prepared by Titoki Landcare has concluded that no natural wetlands are present along the riparian zone of the modified ephemeral stream for which the proposed shelter will cover, and that the two wetland areas that were identified further downstream, with the proposed works of this application being greater than 10m from the wetland extent (refer wetland buffer areas in Figure 7 of the Ecological Impact Assessment). Accordingly, this application does not require consent under NES-F.

Lastly, with respect to this proposal, the findings of this assessment highlight that the modified ephemeral stream subsequently trigger an encroachment with Rule 26.4.2.1 of the Waipa District Plan – setbacks from waterbodies. This is discussed in further detail under Question 4 below.

3. *Please provide an assessment of the proposal against the National Policy Statement for Freshwater Management 2020 (NPS-FM).*

   The NPS-FM came into effect on 3 September 2020 and replaces the NPS-FM 2014 (amended 2017). The NPS-FM sets out the objectives and policies for freshwater management under the RMA (1991) to support improved freshwater management in New Zealand. In terms of the proposed activities, I have had regard to the fundamental concept of 'Te Mana o te Wai' and the objectives and policies of the NPS-FM and consider them to be consistent.

4. *Please provide an assessment of the proposal against Rule 26.4.2.1 Setbacks from waterbodies, relating to the modified watercourse/drain on the western portion of the site.*

   *Note: assessment is not required for this rule against the waterbodies contained in the SNA (on the northern and eastern portion of the site) as they have confirmed to be wetlands and are not applicable to this rule.*

   Based on the investigations and assessment undertaken in the report prepared by Titoki Landcare as attached, the watercourse located west of the property located at 598 Parallel Road, Cambridge is determined a "modified ephemeral stream", thus subsequently triggering the definition of 'River' under the RMA 1991 and the Waikato Regional Plan. Accordingly, due to the location of the

proposed artificial shelters in respect to the watercourse Rule 26.4.2.1 is triggered. Please find our assessment below of this rule and as such we formally request that this application also seeks consent under Rule 26.4.2.1.

*Rules - 23m setback from lakes and water bodies*

*26.4.2.1* *No building, wastewater treatment system, earthworks or vegetation clearance shall be erected or undertaken within 23m of the edge of any lake or water body (excluding a natural wetland) as measured at its maximum annual water level, provided that this rule shall not apply to:*

*(a) The Karāpiro and Arapuni Hydro Power Zone.*

*(b) Maimai not exceeding 6m² in floor area; or*

*(c) Earthworks and vegetation removal associated with conservation planting of river banks and lakes; or*

*(d) St Kilda Residential Structure Plan Area; or*

*(e) Clearance of vegetation undertaken in accordance with Rule 26.4.1.1(e) or (f); or*

*(f) Harvesting of forestry over 5m from a water body.*

The proposed vertical shelter (located near the southern boundary of the site) and horizontal (overhead) shelter will encroach into the 23m setback from the modified watercourse located on the western side of the site. As the overhead shelter will span over the watercourse, there will be no setback to the proposed shelter, albeit the horizontal shelter being 6m above the watercourse (being the height of the shelter). The proposal is therefore unable to comply with this rule.

5. *Please provide a site coverage calculation that includes all buildings on the site.*

   The total site coverage including the artificial screens (23ha) and the newly constructed shed (250m$^2$) will result in a site coverage of 23.025ha, being 65.1743%.

6. *Please provide any approved Waikato Regional Council consents, and information about any not approved/ pending consents.*

   The following applications have been approved by Waikato Regional Council:

   - AUTH143442.01.01 - Construct, use and maintain well for crop irrigation;
   - AUTH144393.02.01 - Earthworks in association with proposed Kiwifruit development (construction of water storage pond). The application for this consent was accompanied with an Ecological Impact Assessment prepared by Titoki Landcare which I have also attached;
   - AUTH144142.01.01 - Construct 2 bores, use and maintain well for crop irrigation supply and monitoring bores; and

- AUTH144627.01.01 - To drill up to 3 test bores for the construction of a single production bore hole and up to 2 monitoring bores to take groundwater for a new kiwifruit orchard irrigation.

As expanded earlier in this Section 92 response, investigations into the classification of the modified watercourse and wetland area located on the western side of the site have been undertaken over the last few months by Titoki Landcare to explore the possibility of piping 205m of this watercourse and reclaiming the 114.8m$^2$ of streambed for horticultural use. The reporting from Titoki Landcare has just been finalised, and as such resource consent to Waikato Regional Council and NES-FW can now be applied for and is sought.

It must be noted that whilst a bundling approach to the Kiwifruit development of the site would have been the most appropriate way to proceed with resource consent applications with both Waipa District Council and Waikato Regional Council, the land use consent for the vertical and horizontal shelter with Waipa District Council was prioritised based on the enforcement action taken by Waipa District Council.

Tītoki Landcare
SPECIALIST ECOLOGICAL RESTORATION

# Ecological Impact Assessment and Mitigation Options: Parallel Rd Kiwifruit farm

**September 2022**

| | | | | |
|---|---|---|---|---|
| **PROJECT NUMBER** | 0056 | | | |
| **PROJECT NAME** | Ecological Impact Assessment and Mitigation Options: Parallel Rd Kiwifruit farm | | | |
| **PROJECT ADDRESS** | 582 Parallel Road, Kaipaki | | | |
| **PREPARED FOR** | Kiwifruit Investments Limited | | | |
| **AUTHOR/S** | Brenda Bartels | | | |
| **REVIEW** | **Technical** | **QA** | **Version** | **Date to client** |
| | Adam Purcell | Adam Purcell | 0.1 | 14/09/2022 |
| | Adam Purcell | Adam Purcell | 0.2 | 21/09/2022 |
| | Adam Purcell | Adam Purcell | 1.0 | 26/09/2022 |

This report should be cited as: 'Tītoki Landcare. (2022). *Ecological Impact Assessment and Mitigation Options: Parallel Rd Kiwifruit farm*. Prepared for Kiwifruit Investments Ltd.'



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## Figures



## Tables

# Executive Summary

Tītoki Landcare Ltd has been engaged by Kiwifruit Investments Ltd to undertake an ecological impact assessment (EcIA) to pipe approximately 205 m of a highly modified ephemeral stream at 582 Parallel Road, Kaipaki and provide potential mitigation options to balance potential and actual ecological impacts.

The piping of the 205 m of stream will result in the reclamation of 114.8 $m^2$ of streambed. A Stream Ecological Valuation (SEV) assessment has been completed and Environmental Compensation Ratios (ECR) have been calculated for two mitigation packages to quantify the area of restoration required relative to the amount lost to maintain a 'no net loss' in ecological function as a result of the activity.

**Description and ecological value**

The impact stream is located in the headwaters of a tributary of the Mangawhero Stream. The stream itself has been heavily modified and straightened. A depression is present around the stream, with a gently sloping bank leading to the wide flat base of the depression and the highly incised stream. The vegetation within the depression and the majority of the watercourse is currently weedy pasture. The soft bottomed macroinvertebrate community index (MCI-sb was relatively low (85) although the QMCI-sb was higher (5.95), one shortfin eel was captured in the most downstream reach of this stream, immediately below a perched culvert. The ecological value of this reach was assessed as **low** with a Stream Ecological Valuation (SEV) of 0.309.

The ecological values associated with terrestrial vegetation and fauna habitat is **very low**, with only common exotic bird species recorded and weedy pasture vegetation.

No wetland habitat will be impacted as a result of the activity, and downstream wetland habitat will be enhanced as part of the mitigation package.

**Effects Assessment**

A summary of the ecological effects and overall level of effect before and after mitigation measures is provided in the table below.

Stream reclamation is the greatest ecological effect of the proposal and enhancement of ephemeral stream habitat has been assessed to provide the onsite mitigation/offset required for the reclamation of 114.8 $m^2$ of the impact reach. The mitigation reaches will be planted with a 10 m wide riparian buffer on both stream banks. Two mitigation options are presented:

**Option 1**
A downstream mitigation site (SEVm-DS) is located immediately downstream of the impact reach and a second mitigation site (Eastern gully [SEVm-E]) is located on the opposite side of the property in a separate arm of the same gully system. A total of 409 $m^2$ of stream bed (including connected floodplain/historic streambed) and restoration of 123 $m^2$ of wetland habitat is proposed. Part of the wetland restoration is in addition to the required mitigation and given that wetlands are an underrepresented habitat and are protected in current legislation this is seen as a biodiversity gain for the project.

**Option 2**

Mitigation is proposed downstream of the impact reach (SEVm-DS) and in a newly created section of watercourse. The proposed restoration includes 209.5m$^2$ of streambed, 115 m$^2$ of connected floodplain and 123 m$^2$ of wetland. The wetland restoration is in addition to the required mitigation and given that wetlands are an underrepresented habitat and are protected in current legislation this is seen as a biodiversity gain for the project.

| Ecological effect | Magnitude of effect | Ecological value | Level of effect without mitigation | Overall level of effect after mitigation |
|---|---|---|---|---|
| Stream reclamation | Very high | Low | Moderate to high | Low |
| Construction effects resulting in increased sediment transport | Moderate | Low | Low to moderate | Low |
| Impacts to freshwater fauna | Moderate | Low | Low to moderate | Low |
| Impacts to terrestrial vegetation and fauna | Very low | Very low | Very low | n/a |

## Recommendations

It is considered that if the proposed works are carried out in accordance with the identified methodologies and either mitigation package is implemented in full, the effects of the development on ecological values within the site will be adequately mitigated or offset. To ensure the ecological effects of the proposed development are adequately mitigated, the following measure are recommended:

- Any constructed stream used for mitigation will be designed to have variable widths, depths, diverse habitat types (e.g., run and pool) and substrate (e.g., wood).
- A detailed streamworks methodology will be provided which includes erosion and sediment controls specific to streamworks;
- Fish relocation is undertaken prior to the commencement of streamworks;
- Streamworks is to be undertaken during summer months to avoid as far as practicable adverse effects on the streams; and
- Requirement for enhancement planting to be undertaken within the planting season following works commencing.

# 1 Introduction

Tītoki Landcare Ltd has been engaged by Kiwifruit Investments Ltd to undertake an ecological impact assessment (EcIA) for the proposed reclamation and piping of 205 m of a modified ephemeral stream (114.8 $m^2$ stream bed area) at 582 Parallel Road, Kaipaki. The stream is in the headwaters of the Mangawhero Stream catchment with no available habitat upstream.

The site and stream have been heavily modified with the stream being confined within a steep sided, narrow excavated channel to form the current shape. The property is being developed into a kiwifruit farm and the development of the kiwifruit farm will result in permanent stream loss (Figure 1).


*Figure 1: Impact reach proposed to be piped and reclaimed.*

# 2 Ecological assessment methods

## 2.1 Desktop assessment

Relevant source materials for the property were reviewed to gather information on the property and its context within the wider landscape. The following resources were reviewed as part of our desktop assessment:

- Aerial imagery (including historic) of the project area sourced from Land Information New Zealand, Google Inc., and Retrolens to investigate the change in vegetation at the site over time.
- NIWA Freshwater fish database
- Department of Conservation Bioweb Database.
- eBird database.
- iNaturalist database.
- Significant natural areas of the Waikato District: terrestrial and wetland ecosystems (Kessels Ecology, 2018).

## 2.2 Field survey

Tītoki Landcare ecologists visited the site on the 6 May.The entire reach of the watercourse was walked and was completely dry. Additional site visits were undertaken on 20 July and 31 August 2022.

During the site visits, qualitative information was collected regarding the type and distribution of vegetation and fauna habitat across the property. Any indigenous plant species encountered were recorded. Any bird species observed (seen or heard) was recorded. Any habitat considered suitable for indigenous herpetofauna or bats was noted.

### 2.2.1 Stream assessment

Stream ecological valuations (SEV) were carried out at three sites on the property, the impact site (SEVi) and two potential compensation sites, one located downstream of the impact site (SEVm-DS) and the other in the eastern gully (SEVm-E) (see Figure 3 for locations). All sites were intermittent (defined as ephemeral in the Waikato Regional Plan), and assessments were undertaken following the methodology and proposed timing (between July and October) for intermittent streams (Neale *et al*., 2016).

Standardised, qualitative stream habitat information was collected for the impact site following the Rapid Habitat Assessment (RHA) methodology. These assessments provide a habitat quality score for each of the stream reaches which indicate general stream condition (Clapcott 2015).

Macroinvertebrate and fish surveys were undertaken at the impact site. Macroinvertebrate sampling was undertaken according to the soft-bottom protocol C2 (Stark *et al*., 2001). Samples were preserved in ethanol and sent for taxonomic identification. Samples were processed according to protocol P2, 200 fixed count by an invertebrate taxonomist (Raw data is available in Appendix 2).

Fishing was undertaken using Gee's minnow traps and fyke nets over a 150 m reach of the impact site following the general principles of the standard fish survey methodology (Joy *et al*., 2013). The stream was relatively shallow and narrow and therefore only two mini fyke

nets were set along with 12 Gee's minnow traps. All traps and nets were set unbaited and were set in the evening of the 30 August 2022 and retrieved the following morning.Any fish species captured were measured to the nearest millimetre before being released back to the point of capture.

### 2.2.2 Wetland assessment

During the site visit in July, wetland delineation assessments were carried out to determine the position of any wetlands on the property following the methodology of Clarkson (2013) and Fraser *et al.* (2018) and using the 2021 wetland plant list (Clarkson *et al.,* 2021).

#### *2.2.2.1 Wetland definitions*

Natural wetlands are defined using the definitions provided in the Resource Management Act (RMA) 1991 and NPS-FM. These are as follows:

**The RMA (1991) description of a wetland** '*includes permanently or intermittently wet areas, shallow water, and land margins that support a natural ecosystem of plants and animals that are adapted to wet conditions.'*.

**NPS-FM definition of a natural wetland -** '*a wetland (as defined in the Resource Management Act (1991) that is not:*

*a) a wetland constructed by artificial means (unless it was constructed to offset impacts on, or restore, an existing or former natural wetland); or*

*b) a geothermal wetland; or*

*c) any area of improved pasture that, at the commencement date, is dominated by (that is more than 50% of) exotic pasture species and is subject to temporary rain-derived water pooling'.*

**<u>Proposed amendments</u> to the NPS-FM definition of a 'natural wetland'[1] – '***a wetland (as defined in the Act) that is not:*

*a) a deliberately constructed wetland, other than a wetland constructed to offset impacts on, or to restore, an existing or former natural wetland as part of giving effect to the effects management hierarchy; or*

*b) a wetland that has developed in or around a deliberately constructed water body, since the construction of the water body; or*

*c) a geothermal wetland; or*

*d) a wetland that:*

*(i) is within an area of pasture; and*

*(ii) has ground cover comprising more than 50% exotic pasture species (as identified in the National List of Exotic Pasture Species (see clause 1.8)); and*

*(iii) is not known to contain threatened species.*

[1] Ministry for the Environment. 2022. Managing our wetlands: Policy rationale for exposure draft amendments 2022. In support of amendments to the NES-F and NPS-FM in the 2022 exposure draft.

#### *2.2.2.2 Wetland delineation*

Vegetation classified using the vegetation tool[2] for wetland delineation in New Zealand defines wetland areas based on the proportion of hydrophytic (or wetland) vegetation within 2 m x 2 m plots. Plant species fall under the following wetland plant categories:

- Obligate (OBL): plant species that occur almost always in wetlands (estimated probability greater than 99 % in wetlands).
- Facultative Wetland (FACW): plant species that occur usually in wetlands (67 % to 99 %).
- Facultative (FAC): plant species equally likely to occur in wetlands or non-wetlands (34 % to 66 %).
- Facultative Upland (FACU): plant species that occur occasionally in wetlands (1 % to 33 %).
- Upland (UPL): plant species that rarely occur in wetlands (less than 1 %).

To pass the rapid test the vegetation present within the 'wetland' area across all strata must be dominated by species that are classified as OBL or FACW species (Figure 2). To pass the dominance test the most abundant plant species that immediately exceed 50 % of the total cover for each stratum, plus any additional species comprising 20 % or more of the total cover for the stratum must be OBL, FACW, or FAC. The prevalence test assigns a weighted index score for the species present, with score less than 3 indicating wetland vegetation. Areas can be excluded as natural wetlands if they are classified as 'artificial' or 'improved pasture'.

[2] Clarkson, B. 2014. A vegetation tool for wetland delineation in New Zealand. Landcare Research.

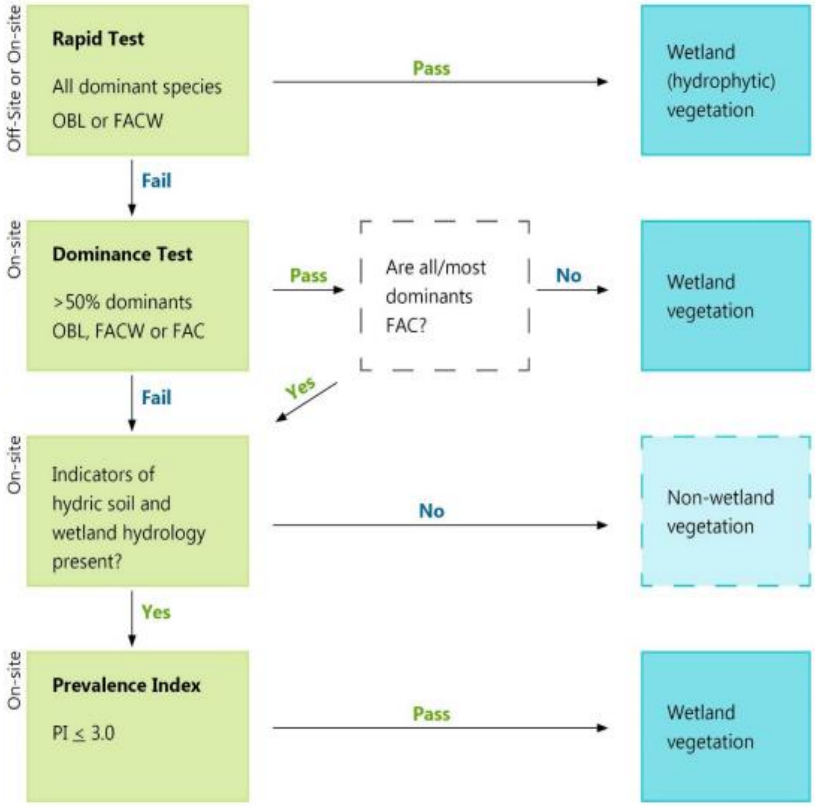


*Figure 2: Flow chart to determine wetland vegetation. FAC=Facultative and OBL=obligate wetland.*

## 2.3 Ecological Impact Assessment

The assessment of ecological effects was undertaken in general accordance with the Ecological Impact Assessment (EcIA) guidelines produced by the Environment Institute of Australia and New Zealand (Roper-Lindsay *et al.*, 2018). The EcIA approach follows the steps outlined below:

**Step 1:** Ecological values within the site are assigned a value of very high, high, moderate, low, or negligible based on assessments of the ecosystems within the site. Sites are assigned an ecological value based on four attributes: representativeness, rarity/distinctiveness, diversity and pattern, and ecological context. More information on the components of each of these attributes is provided in Appendix 1 Table 1. The national threat status[3] of individual plant and animal species present or likely present on the site are used to determine potential ecological values of the site. Examples of characteristics that would trigger each of the different values of very high, high, moderate, low or negligible are provided in Appendix 1 Table 2.

The overall value of a site is produced based on a combined score of the four attributes as outlined in Appendix 1 Table 3.

[3] As classified in th NZ Threat Classification System database

**Step 2:** The magnitude of effects on ecological values is assigned as either very high, high, moderate, low or negligible based on the criteria provided in the EcIA guidelines (Appendix 1 Table 4). The assignment of the magnitude of effect is based on:

- The size of the expected area impacted (i.e. the site boundary);
- The amount of habitat loss/gain and/or modification versus local availability;
- The intensity of the effect (e.g. the conversion of wetland to pasture, pond or pavement); and
- The duration of the effect (e.g. permanent, medium-long term, short-term etc.) (Appendix 1 Table 5).

**Step 3:** The overall level of effect is determined using a matrix based on the combination of ecological values and the magnitude of effects on these values (Appendix 1 Table 6). Overall level of effect categories include positive, negligible, very low, low, moderate, high and very high. We used the overall level of ecological effect to determine if effects management (mitigation) is required.

Ecological mitigation and management recommendations are provided to manage any moderate or high adverse effects that are identified.

# 3 Site ecological context

The property at 582 Parallel Road covers c. 35.3 ha of land south of Hamilton city within the Hamilton Ecological District. The property is within 2 km of the Waikato River and is flat land intersected by tributaries to the Mangawhero Stream and their gullies. Parts of the property fall within a significant natural area (SNA): WP344, Mangawhero Stream riparian margin (Figure 3).

Singers & Rogers (2014) classify the land as being historically covered in Kahikatea-pukatea-tawa forest (WF8). The property is now largely surrounded by exotic pasture and exotic-dominated gully systems. The property is located within 2.5 km of Moanatuatua Scientific Reserve (Figure 3), a 140 ha remnant of restiad peatland that once blanketed low lying areas of the Hamilton Ecological District. Several Threatened plants have been recorded within 5 km of 582 Parallel Road (Table 1); however, these species are all peat bog specialists found at Moanatuatua Scientific Reserve and they are not suited to conditions at 582 Parallel Road.

*Table 1. List of threatened plant species recorded within 5 km of the property.*

| Common name | Scientific name | Conservation status[4] | Distance from site (km) |
|---|---|---|---|
| Bog clubmoss | *Brownseya serpentina* | Threatened – Nationally Vulnerable | 2.5 |
| Bladderwort | *Utricularia delicatula* | At Risk – Relict | 2.5 |
| Bamboo rush | *Sporadanthus ferrugineus* | At Risk – Relict | 2.5 |

[4] As classified in de Lange *et al*. (2018).

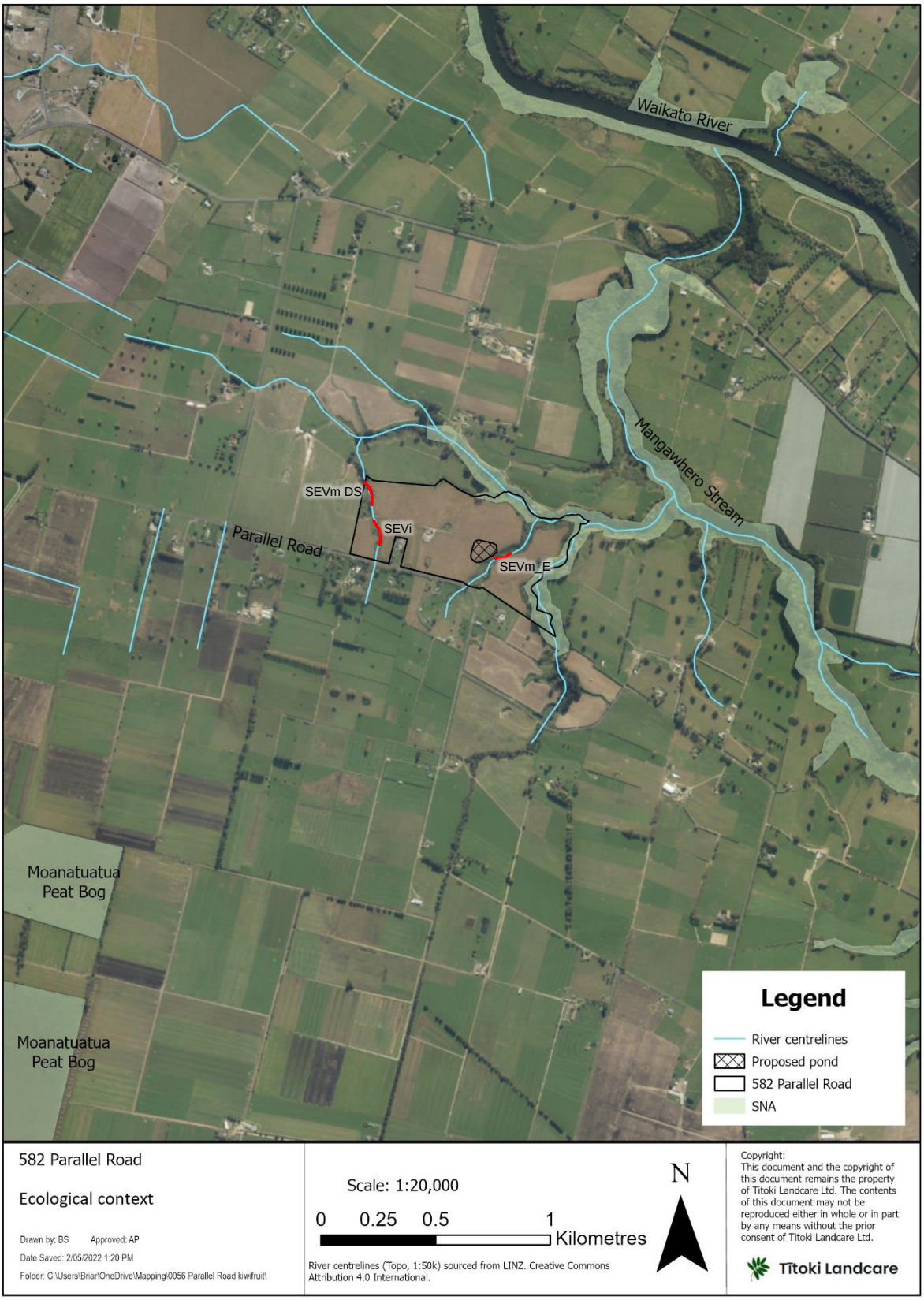


*Figure 3. Site ecological context map. The red lines show the SEV reaches. SEVi is the impact site and the other two sites are mitigation/enhancement reaches.*

# 4 Relevant Planning Documents

## 4.1 Vision and strategy for Waikato River

The Vision and Strategy for the Waikato River (Te Ture Whaimana o te Awa o Waikato) recognises the significance of the Waikato River to Waikato-Tainui, with the vision, objectives, and strategies applicable to Waikato River tributaries and catchment.

Through case law, the Vision and Strategy is acknowledged as the primary, direction-setting document for the Waikato River. Case law indicates that activities which are subject to the V&S are required to provide for the protection and restoration of the Waikato River, and that this will require "betterment" to an extent proportionate with the scale of the activity and its effects.

As detailed in the Waikato-Tainui Environmental Plan (WTEP), an enhancement approach requires a holistic approach to the whole environment, which aims for positive ecological and social outcomes.

This proposal will result in the restoration of ephemeral stream and wetland habitat which is of higher ecological value than the stream to be lost. The restoration of wetland habitat is not a specific mitigation requirement and is therefore considered to result in betterment.

## 4.2 National Policy Statement for Freshwater Management 2020

The NPS-FM came into force on 3 September 2020 and among other things, introduced a requirement to recognise and give effect to te Mana o te Wai. The NPS-FM introduces a hierarchy of management priorities which places the health and wellbeing of waterbodies and freshwater ecosystems first; health needs of people (including drinking water) second, and other uses that enable people and communities to provide for their social, economic and cultural wellbeing third.

As part of the NPS-FM, it is a requirement in Subpart 3.24 Rivers that every regional council must include the following policy (or words to the same effect) in its regional plan(s) 'The loss of river extent and values is avoided…'.

To this effect Policy 3.A.3: Rivers in the Waikato Regional Plan (WRP) states that:

'*The loss of river extent and values is avoided, unless the council is satisfied:*

*(a) that there is a functional need for the activity in that location; and*

*(b) the effects of the activity are managed by applying the effects management hierarchy.*

*For the purposes of this policy functional need, effects management hierarchy and loss of value have the same meaning given by the National Policy Statement for Freshwater Management 2020.*

The NPS-FM and WRP also state in Policy 3.A.2: Natural inland wetlands that:

*'The loss of extent of natural inland wetlands is avoided, their values are protected, and their restoration is promoted'.*

In relation to this proposal, the loss of a section of highly modified ephemeral watercourse will result in the restoration of ephemeral stream and wetland habitat which is of higher ecological value than the stream to be lost. The restoration of wetland habitat is covered in the Policy wording in 3.A.2.

## 4.3 National environmental standards for freshwater

Reclamation of rivers is covered in subpart 2 Regulation 57 of the NES-F and is a discretionary activity '*Reclamation of the bed of any river is a discretionary activity'*.

# 5 Ecological characteristics of site

## 5.1 Freshwater Ecology

### 5.1.1 Impact site description

The impact reach has had a history of modification having been artificially straightened and deepened at least twice in the past dating back to c. 1953 (see Retrolens imagery in Appendix 3). The channel itself is uniform and narrow with an average channel width of 0.59 m (median 0.56 m) and an average channel depth just under 10 cm. Depths in this reach range from 1 cm to 30 cm. The incised channel is present along the base of a 2-4 m wide depression in the topography, and although this forms a floodplain area, the incised channel is completely disconnected from its floodplain. The riparian margins are comprised of pasture grasses and herbs including Yorkshire fog (*Holcus lanatus*), buttercup (*Ranunculus repens*), ryegrass (*Lolium* sp.), prairie grass (*Bromus catharticus*) dock (*Rumex obtusifolius*) and couch (*Elytrigia repens*).

The section of the stream downstream of Parallel Road which is proposed to be reclaimed has rooted terrestrial vegetation (predominantly Yorkshire fog with some buttercup along much of the channel (61%) (Figure 4). In deeper sections of water (Figure 5), macrophyte growths are present including *Glyceria* sp, duckweed (*Lemna minor*) and starwort (*Callitriche stagnalis*). Long green and brown filamentous algae and iron floc were also present in the stream.

Upstream of the road culvert beneath Parallel Road, a depression in the topography was present which was dry during the site assessment in July and August with rooted terrestrial vegetation present. This area had no clearly defined channel (with either a bank or bed) and is best described as an overland flow path. However, historic imagery appears to show a more defined channel in the past (see Retrolens imagery in Appendix 3).

The SEV score for the stream was 0.309 and the RHA score for the site was 29 out of a possible score of 100. With the site having low scores for invertebrate habitat and abundance and fish habitat and cover, with a limited variety of substrates available for cover. These scores indicate low ecological value and functioning.

*Figure 4: Most of the channel was overgrown with rooted terrestrial vegetation with shallow water.*

*Figure 5:Standing water present upstream of the culvert.*

### 5.1.2 Macroinvertebrates

A single composite macroinvertebrate sample was collected at the impact site. No sensitive EPT taxa (mayflies, stoneflies, or caddisflies) were present, with a total of 10 taxa recorded. Many of the species recorded were tolerant species commonly found in lowland watercourses (Table 2).

The sample was dominated by beetles with Scirtidae comprising 43 % of the sample, this species has a soft bottomed (sb) tolerance score of 6.4 and are common in vegetation covered streams.

The MCI-sb (Macroinvertebrate Community Index) was 85 indicating fair water quality while the QMCI-sb (Qualitative Macroinvertebrate Community Index) score indicated good quality or possible mild pollution (Stark & Maxted, 2007).

*Table 2: Mean aquatic macroinvertebrate metrics calculated from the SEVi modified watercourse at 582 Parallel Road on the 30 August 2022.*

| Metric | Impact reach |
|---|---|
| Taxa richness | 10 |
| EPT taxa richness | 0 |
| % EPT | 0 |
| % EPT taxa | 0 |
| Number of individuals | 203 |
| MCI-sb | 85 |
| QMCI-sb | 5.95 |

(Excluding Hydroptilidae for EPT indices)

### 5.1.3 Freshwater fish

A fish survey was undertaken at the impact site only, where one shortfin eel (*Anguilla australis*) (420 mm in length) was captured downstream of the farm track and culvert (Figure 6). No fish were captured upstream of the culvert which was perched and likely poses a barrier to fish migration. It is likely that the downstream section of the impact site (c.10m) provides temporary habitat for shortfin eels for parts of the year when water is present.

The FFDB shows that there have been historic records for five species in the main stem of the Mangawhero Stream, downstream of the site. Longfin eel *(Anguilla dieffenbachi*), shortfin eel, giant kokopu (*Galaxias argenteus*), Cran's bully (*Gobiomorphus basalis*) and koura (*Paranephrops*) have been recorded. Of these species both longfin eel and giant kokopu have a conservation status of At Risk – Declining (Dunn *et al*., 2018).

*Figure 6: Shortfin eel captured in the impact reach downstream of the farm track and culvert.*

## 5.2 Wetland Delineation

A wetland delineation assessment was carried out to determine whether the flat depression areas adjacent to the impact reach proposed to be piped contained areas defined as natural wetlands in accordance with the NPS-FM. This area contained areas of rank grass that had not been grazed by stock since the conversion of the majority of the property into a kiwifruit

orchard. Grass species, in particular, Yorkshire fog dominated the area with patches of creeping buttercup present in places.

Ten 2 m x 2 m vegetation plots were assessed approximately 20 m apart on alternating sides of the watercourse from Parallel Road to immediately downstream of the farm track and culvert. The plots were located on the lowest parts of the riparian zone, 1 m from the top of the watercourse channel (Figure 7). No natural wetlands were present along the riparian zone of the impact reach following the Wetland Delineation methodology. Plots 4-8 had greater than 50% pasture species (identified on the Nation Pasture Species list) and therefore have been classified as improved pasture. Plots 1, 9 and 10 passed the dominance test but failed the prevalence test and did not have hydric soils or hydrology indicators (Table 3).

Two wetland areas were identified further downstream, with the proposed works being greater than 10 m from the wetland extent (see 10 m buffer areas in Figure 7).

Photos of the plots are provided in Appendix 4 and the raw data for the delineation plots is available in Appendix 5.


*Figure 7: Wetland delineation vegetation plots. Downstream wetlands are shown in green and blue with 10m buffers.*

*Table 3. Summary of wetland delineation assessment results.*

| Plot number | Improved pasture | Dominance test met | Prevalence met | Hydric soils | Hydrology indicators |
|---|---|---|---|---|---|
| Plot 1 | No | Yes | No | No | No |
| Plot 2 | No | No | No | | |
| Plot 3 | No | No | No | | |
| Plot 4 | Yes | | | | |
| Plot 5 | Yes | | | | |
| Plot 6 | Yes | | | | |
| Plot 7 | Yes | | | | |
| Plot 8 | Yes | | | | |
| Plot 9 | No | Yes | No | No | No |
| Plot 10 | No | Yes | No | No | No |

## 5.3 Terrestrial Ecology

### 5.3.1 Plant species and vegetation

The vegetation adjacent to the proposed reclamation site is comprised of pasture herbs and species as described in the site description in Section 5.1.1. A detailed list of the species present is also provided in the wetland delineation plot assessment in Appendix 5.

### 5.3.2 Fauna and fauna habitat

#### *5.3.2.1 Fauna*

Four bird species were observed on the property during the site visits, all of which are introduced species (

Table 4). No At Risk or Threatened bird species were observed. No lizard species or bats were observed but no field surveys for their presence were undertaken.

A desktop assessment found records of 25 native bird species within 5 km of the property, including five species classified as At Risk or Threatened (

Table 4) (Robertson *et al*., 2021).

Copper skink (*Oligosoma aeneum*) have been recorded within 5 km of the property and are classified as At Risk – Declining (Hitchmough *et al*., 2021).

In 2015, low levels of long-tailed bat (*Chalinolobus tuberculatus*) activity were recorded at a location approximately 3.5 km away along the Waikato River near Hooker Road (DOC BioWeb Database). Long-tailed bats, which are classified as Threatened – Nationally Critical (O'Donnell *et al.*, 2018), are known to forage and commute along the Waikato River and its tributaries.

*Table 4. Introduced birds recorded onsite and native bird species recorded within 5 km of the property.*

| Common name | Scientific name | Conservation status[5] | Distance from site (km) |
|---|---|---|---|
| Myna | *Acridotheres tristis* | Introduced and Naturalised | Observed onsite |
| Goldfinch | *Carduelis carduelis* | Introduced and Naturalised | Observed onsite |
| Greenfinch | *Carduelis chloris* | Introduced and Naturalised | Observed onsite |
| Sparrow | *Passer domesticus* | Introduced and Naturalised | Observed onsite |
| Kererū | *Hemiphaga novaeseelandiae* | Not Threatened | 4 |
| Pukeko | *Porphyrio melanotus* | Not Threatened | 4 |
| NZ scaup | *Aythya novaeseelandiae* | Not Threatened | 4 |
| Australasian shoveler | *Spatula rhynchotis* | Not Threatened | 4 |
| Black swan | *Cygnus atratus* | Not Threatened | 4 |
| Grey duck | *Anas superciliosa* | Threatened – Nationally critical | 4 |
| Black shag | *Phalacrocorax carbo* | At Risk – Naturally uncommon | 2.5 |
| Grey teal | *Anas gracilis* | Not Threatened | 4 |
| Pied stilt | *Himantopus himantopus* | Not threatened | 4 |
| Tūī | *Prosthemadera novaeseelandiae novaeseelandiae* | Not Threatened | 4 |
| Fantail | *Rhipidura fuliginosa* | Not Threatened | 4 |
| Grey warbler | *Gerygone igata* | Not Threatened | 4 |
| Little shag | *Phalacrocorax melanoleucos brevirostris* | Not Threatened | 2 |
| Sacred kingfisher | *Todiramphus sanctus vagans* | Not Threatened | 4 |
| Silvereye | *Zosterops lateralis* | Not Threatened | 4 |
| Spur-winged plover | *Vanellus miles novaehollandiae* | Not Threatened | 4 |
| Welcome swallow | *Hirundo neoxena* | Not Threatened | 4 |
| White-faced heron | *Egretta novaehollandiae* | Not Threatened | 4 |
| Paradise shelduck | *Tadorna variegata* | Not Threatened | 4 |
| Swamp harrier | *Circus approximans* | Not Threatened | 4 |
| Morepork | *Ninox novaeseelandiae novaeseelandiae* | Not Threatened | 4 |
| Shining cuckoo | *Chrysococcyx lucidus lucidus* | Not Threatened | 4 |
| New Zealand pipit | *Anthus novaeseelandiae novaeseelandiae* | At Risk – Declining | 4 |
| Spotless crake | *Porzana tabuensis* | At Risk – Declining | 4 |
| New Zealand dabchick | *Poliocephalus rufopectus* | At Risk – Recovering | 4 |

[5] As classified in Robertson *et al*. (2021).

# 6 Ecological value assessment

The overall ecological value of the impact reach is **low.** The impact reach is a highly modified ephemeral stream with steeply incised banks, no connectivity to floodplains and a lack of instream habitat for macroinvertebrates and fish. Shortfin eel were the only fish species captured and were restricted to the lower portion of the reach downstream of the perched farm track culvert. The SEV score for the impact reach was 0.309, indicative of low ecological value and function.

The ecological values associated with terrestrial vegetation and fauna habitat is very low.

Justification for these ecological values are provided in Table 5.

*Table 5: Assigning ecological value to the Impact reach using EIANZ criteria.*

| **Freshwater ecological value** | | | |
|---|---|---|---|
| **Representativeness** | **Rarity/Distinctiveness** | **Diversity & pattern** | **Ecological Context** |
| Low-moderate – The impact reach is a highly modified first order intermittent stream with no upstream habitat. Modification has resulted in straightening and deepening the watercourse over the entire length resulting in full floodplain disconnection. A culvert beneath a farm track in the lower reaches poses a full barrier to fish migration. | Low – A culvert beneath a farm track in the lower reaches poses a full barrier to fish migration with one shortfin eel captured downstream of the culvert. The reach does not have any distinctive features. | Low – The impact reach provides habitat for shortfin eel in the downstream 10 m of stream length. Invertebrate community indicative of poor stream health (MCI-sb = 85) although the QMCI-sb is higher (5.95). | Low – The impact reach had an SEV score (0.309) indicative of low ecological value and function. Instream and riparian habitat is of low quality. |
| **Terrestrial ecological value** | | | |
| **Representativeness** | **Rarity/Distinctiveness** | **Diversity & pattern** | **Ecological Context** |
| Negligible - dominated by exotic weeds and therefore not representative of the vegetation that would have naturally occurred here. Only exotic bird species observed onsite. | Low - because it is not a naturally occurring vegetation type but can still be used as habitat by native birds and potentially long-tailed bats for commuting. The site may contain suitable nesting habitat for pipits but is unlikely utilised due ongoing disturbance from people and vehicles at the site. | Very low - because the vegetation is dominated by exotic plant species and is unlikely to provide habitat for some native birds. | Low - because although vegetated, it is low quality habitat for indigenous fauna and provides little connectivity or buffering to other habitats. |

# 7 Assessment of Ecological Effects

## 7.1 Magnitude and level of ecological effect without mitigation or offset

This section assesses the effects of reclamation of the impact stream and follows the approach outlined in the Ecological Impact Assessment Guidelines (EcIAG) (Roper-Lindsay *et al*., 2018) published by the Environment Institute of Australia and New Zealand (EIANZ).

The SEV for the current ecological value of the impact reach is 0.309 (or 0.306 excluding fauna), indicative of **low** ecological value and function. The potential value of the impact stream is 0.42 indicative of **low to moderate** ecological value and function.

The current ecological value of terrestrial vegetation and fauna habitat is considered to be **very low** with rank pasture grass and herbs in the area to be reclaimed.

Ecological effects of the stream reclamation include:

- Loss of stream habitat
- Construction effects resulting in increased sediment transport during streamworks
- Effects on freshwater fauna
- Effects of terrestrial vegetation and fauna habitat

### 7.1.1 Assessing the effects of stream habitat loss

The proposed activity involves the piping and reclamation of 205 m (114.8 $m^2$ stream bed area) of a modified ephemeral stream. The proposed works will result in the irreversible loss of aquatic habitat, and this has been identified as the most significant of the potential effects of the proposed activities at this site.

Table 6 provides a summary of the current (SEVi-C), potential (SEVi-P) and impact (SEVi-I) values for the impact reach. The current low value is driven by a lack of riparian margins, channel modification, no connectivity to the riparian zone, and poor instream habitat heterogeneity.

Note that a value of 0 has been assigned after the impact of stream reclamation as there will be no available habitat upstream following piping of the impact reach. The SEV calculation summary and assumptions applied when modelling the potential scores are provided in Appendix 6.

*Table 6: Summary of the current and potential SEV scores, median width and area to be reclaimed in the impact reach.*

| SEV score | Impact reach |
|---|---|
| SEVi-C | 0.306 |
| SEVi-P | 0.379 |
| SEVi-I | 0 |
| Median width (m) | 0.56 |
| Reclamation length (m) | 205 |
| Reclamation area ($m^2$) | 114.8 |

#### *7.1.1.1 On-site mitigation/offset sites*

Onsite mitigation is proposed in two ephemeral (WRP definition) reaches of the Mangawhero Stream. The downstream mitigation site (SEVm-DS) is located immediately downstream of the impact reach and the Eastern gully (SEVm-E) is located on the opposite side of the property.

SEVm-DS is located immediately downstream of the impact reach.This site had a median wetted width of 0.91 m and an average depth of 14.4 cm (Figure 8). The riparian vegetation was comprised of rank grass and pasture herbs, with a row of exotic trees approximately 10 m from the stream edge on the true right bank. This section of the stream has been modified and excavated in the past. Even so, connectivity to the floodplain is present along the true left bank for part of the reach (which is included in the mitigation area calculation). There is also a seepage area in an adjoining depression which contains approximately 135 $m^2$ of wetland habitat. The current and potential SEV scores were 0.42 and 0.61 (excluding IFI and FFI[6]), respectively. Current ecological value and functioning is low to moderate.

The second mitigation site is located in the Eastern gully (SEVm-E). This stream had a median wetted width of 0.74 m and an average depth of 7.1 cm (Figure 9). This stream is located along the flat base of a steep gully. The stream meanders along the gully base in a defined channel which is connected to the floodplain. The steep gully is largely inaccessible and is overgrown with weeds and is dominated by blackberry (*Rubus fruiticosus* agg.), Himalayan honeysuckle (*Leycesteria formosa*), grey willow (*Salix cinerea*) and Chinese privet (*Ligustrum sinense*). The current and potential SEV scores were 0.68 and 0.84 (excluding IFI and FFI) respectively. Current ecological value and functioning is moderate.

[6] IFI = invertebrate fauna intact, and FFI = fish fauna intact are functions of the SEV method which are excluded from modelling calculations as required by the SEV methodology.

*Figure 8: Downstream mitigation site (SEVm-DS).*

*Figure 9:Eastern gully mitigation stream (SEVm-E).*

#### *7.1.1.2 Onsite mitigation package*

To define the quantum of stream enhancement and/or restoration required to mitigate or offset the effects of the reclamation, an environmental compensation ratio (ECR) can be calculated.

The ECR formula below requires a SEV score to be calculated for both the impact and proposed mitigation sites.

*ECR = [(SEVi-P – SEVi-I) / (SEVm-P – SEVm-C)] x 1.5*

*Where: SEVi-P is the potential SEV value for the site to be impacted.*

*SEVi-I is the predicted SEV value of the stream to be impacted after impact.*

*SEVm-C is the current SEV value for the site where environmental compensation is applied.*

*SEVm-P is the potential SEV value for the site where environmental compensation is applied.*

Potential SEV scores were modelled on the basis of the streams being retained as they are, with 10 m riparian margins (Figure 10; SEV assumptions are provided in Appendix 6).

ECR's have been calculated based on the area of streambed proposed to be impacted. The calculations in Table 7 have been applied to determine the 'stream bed area required' to be enhanced to achieve a no-net-loss outcome. The two lines in the table sequentially calculate the amount of offsetting provided by the riparian planting enhancement at the two mitigation sites. The residual streambed area is taken as the new impact area for the following SEV/ECR row (notes relating to the calculations are provided as table notes).

**Option 1**

Overall, 123 $m^2$ of streambed habitat restoration and an additional 115 $m^2$ of stream floodplain is in the downstream reach (SEVm-DS) and 222 $m^2$ of streambed restoration is required in the Eastern gully (SEVm-E) to offset the effects of streambed reclamation of 114.8 $m^2$ in the impact reach. The inclusion of 115 $m^2$ of hydrologically connected floodplain into the streambed calculation is considered appropriate as this area is likely to have naturally been an ephemeral watercourse prior to modification as a result of cattle pugging and channel excavation (which have changed the landform and diverted water flows). Currently, this area is best described as an induced wetland (and considered a natural wetland in the NPS-FM, 2020a) which is a protected (NES-FM 2020b) and nationally and regionally under-represented habitat type.

In addition to this, the proposal includes the restoration of another wetland area on the western bank of the downstream reach (123 $m^2$). Restoration of 37 $m^2$ is part of the mitigation package, however, full restoration of this area is recommended for the reasons stated above.

While wetland restoration is not 'like for like' habitat this could be considered 'trade-up' offsetting whereby wetland habitat which is regionally rare habitat (compared to historic extent) and could be used to offset stream reclamation. The Guidance on Good Biodiversity Offsetting in New Zealand (GGPBO) states that "*an overall net gain could be deemed to have been achieved if the biodiversity being lost is of low value and the biodiversity being gained is clearly of a much higher value and the amount gained is reasonably of the same or greater magnitude*". However, an accounting method has not been applied.

**Option 2**

Overall, 123 $m^2$ of streambed habitat restoration is required in the downstream reach (SEVm-DS) and 86.8 $m^2$ of restoration in the created channel to offset the reclamation of 114.8 $m^2$ in the impact reach. The restoration of these areas will also include 115 $m^2$ of hydrologically connected floodplain which has not been included in the calculation. Currently, this area is best described as an induced wetland (and considered a natural wetland in the NPS-FM, 2020a) which is a protected (NES-FM 2020b) and nationally and regionally underrepresented habitat type. In addition to this, the proposal includes the restoration of another wetland area on the western bank of the downstream reach (123 $m^2$) (orange area in Figure 11).

A summary of the mitigation/offset areas to be restored is provided in Table 8.

The magnitude of effects associated with the proposed loss of aquatic habitat is considered to be **very high** due to the permanent reclamation of stream and irreversible loss of aquatic habitat. The overall level of ecological effect, without mitigation measures being proposed is considered to be **moderate to high** based on the ecological values and magnitude of effects. To mitigate the adverse effects of aquatic habitat loss as identified by the proposed activities, a mitigation assessment has been prepared in accordance with the SEV and ECR methodology. It is considered that ecologically, the proposed mitigation package reduces the overall level of effect to **low**.

*Table 7: SEV/ECR Calculations to determine mitigation requirements.*

## Option 1

| Impact | | | | Mitigation | | | | | | ECR | | Residual | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEVi-P | length (m) | Median width (m) | Impacted stream-bed area ($m^2$) | Reach | Median width (m) | Length (m) | SEVm-P | SEVm-C | Streambed area avaliable ($m^2$) | ECR | Area required ($m^2$) | Residual area ($m^2$) | Resdual of original (%) | Impact stream area (m) |
| 0.38 | 205 | 0.56 | 114.8 | SEVm-DS | 0.91 | 135 | 0.57 | 0.42 | 122.85 | 3.974 | 456.2 | 333 | 27% | 30.91 |
| | | | 83.89 | SECm-DS FP | | | 0.57 | 0.42 | 115 | 3.974 | 333.3 | 218 | 34% | 28.94 |
| | | | 54.95 | SEVm-E | 0.74 | 300 | 0.8 | 0.68 | 222 | 4.865 | 267.3 | 45 | 83% | 45.63 |
| | | | 9.32 | | | | 0.57 | 0.42 | 123 | 3.974 | 37.0 | -86 | 332% | 30.95 |
| | | | -21.63 | | | | | | | | | | | |

## Option 2

| Impact | | | | Mitigation | | | | | | ECR | | Residual | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEVi-P | length (m) | Median width (m) | Impacted stream-bed area ($m^2$) | Reach | Median width (m) | Length (m) | SEVm-P | SEVm-C | Streambed area avaliable ($m^2$) | ECR | Area required ($m^2$) | Residual area ($m^2$) | Resdual of original (%) | Impact stream area (m) |
| 0.38 | 205 | 0.56 | 114.8 | SEVm-DS | 0.91 | 135 | 0.57 | 0.42 | 122.85 | 3.974 | 456.2 | 333 | 27% | 30.91 |
| | | | 83.89 | SEV-created | 0.56 | 155 | 0.55 | 0 | 86.8 | 1.03 | 86.4 | 0 | 100% | 84.27 |

The standard SEV/ECR formula is applied to determine the 'stream bed area required' to be enhanced to achieve a no-net-loss outcome.

The 'streambed area available' is subtracted from the stream bed area required to derive the 'residual area'.

The residual area is converted to a percentage of the 'Impacted Stream Area'.

The 'conversion impact stream area' represents the area of the original stream bed not addressed.

The conversion impact stream area is then taken as the new impact area and the SEV/ECR formula followed

*Table 8: Summary of areas to be lost and restored.*

## Option 1

| Mitigation/offset summary | Area ($m^2$) |
|---|---|
| Streambed loss | 114.8 |
| Stream bed restoration (+ connected floodplain with standing water) | 344.8 (+115)<br>459.8 total |
| Recommended wetland restoration* | 123 |

*In reality this is likely to be higher as areas in the eastern gully also support floodplain wetlands.

## Option 2

| Mitigation/offset summary | Area ($m^2$) |
|---|---|
| Streambed loss | 114.8 |
| Stream bed restoration | 209.5 |
| Connected floodplain restoration | 115 |
| Recommended wetland restoration* | 123 |

*Figure 10: Option 1: Proposed mitigation showing a 10 m buffer. Downstream SEVm-DS also includes 115 $m^2$ of adjoining floodplain habitat and an additional wetland area. Blue wetland area is recommended for restoration.*


*Figure 11: Option 2: Proposed mitigation showing a 10 m buffer. Downstream SEVm-DS also includes 115 $m^2$ of adjoining floodplain habitat and an additional wetland area. Orange area shows the indicative created channel and buffer.*

### 7.1.2 Construction effects resulting in increased sediment transport

Specifically, regarding streamworks, there is the potential for instreamworks to result in an uncontrolled discharge of sediment laden water during construction.

Management of sediment is critical for protecting ecological and water quality values. Earthworks and the associated temporary creation of bare earth surfaces can result in increased sediment transport into streams and other aquatic environments, which can have negative impacts on aquatic biota and plants.

During construction, care will be needed to prevent sediment from directly discharging into waterways. Erosion and sediment control measures should be adopted in accordance with Waikato Regional Council best practice guidelines. Monitoring during construction will ensure that any potential erosion problem areas are identified at an early stage. Appropriate contingency measures can then be undertaken quickly.

Streamworks have the potential to result in the uncontrolled discharge of sediment laden water to the streams, which could alter instream habitat and fauna, therefore the potential magnitude of effect is **moderate**. The overall level of ecological effect, without mitigation measures being proposed is considered to be **moderate** based on the combined ecological values and magnitude of effects. The implementation of a comprehensive streamworks methodology and sediment control measure, is considered sufficient to reduce the potential magnitude of effects to **low,** resulting in a **low** overall level of effect.

### 7.1.3 Impacts on freshwater fauna

The proposed activity has the potential to impact on native fish species present in the watercourses through injury or mortality (fish surveys indicate that fish are only present in the lower 10 m of the impact reach). Although streamworks will be undertaken in summer months when stream flows are expected to be low or absent, there is potential for native fish species to be present.

We recommend fish recovery and relocation is undertaken prior to streamworks commencing as a condition of consent. Native fish will be captured in accordance with the New Zealand Freshwater Fish Sampling Protocols, with traps and nets set with a minimum of 9 fykes and 18 Gee minnow traps per 150 m dependent on water levels[7]. Electrofishing may alternatively be used if conditions are appropriate. Fish shall be relocated to suitable reaches downstream of the site.

Any fish caught and relocated will be processed and data recorded to be entered into the NIWA NZFFD. Fishing will take place in accordance with an MPI fishing permit.

Any pest fish caught will be humanely euthanised on site, such as being exposed to clove oil. All equipment will be cleaned before use on site and cleaned after use on site to avoid and minimise the risk of spreading aquatic weeds.

The proposed development has the potential to impact on aquatic fauna through removal of habitat and direct mortality, however, most of the impact reach is inaccessible and therefore the potential magnitude of effects is **moderate**. The overall level of ecological effect, without mitigation measures being proposed is **low to moderate** based on the combined ecological

[7] Joy et al. (2013). New Zealand Freshwater Fish Sampling Protocols. Part – wadeable rivers and streams.

values and magnitude of effects. Undertaking fish recovery and relocation prior to instream works is considered sufficient to reduce the overall level of effect to **low**.

### 7.1.4 Impacts of terrestrial vegetation and fauna

The proposed area for the stream reclamation is currently weedy pasture. The weedy pasture has low ecological value because it is dominated by exotic weeds, is low quality habitat for indigenous fauna and provides little connectivity or buffering to other habitats. The loss of this habitat is assessed as having a **very low** magnitude of the effect. A very low magnitude of effect and low ecological value results in a **very low** level of effect**.**

With vegetation removal and earthworks there is inherent risk to fauna. This weedy pasture vegetation has been assessed as potential nesting habitat for pipits, but this is considered highly unlikely due ongoing disturbance from people and vehicles at the site. The magnitude of the potential harm or disturbance to indigenous wildlife within the weedy pasture areas is therefore considered **low**. A low magnitude of effect on high value pipits is assessed as a **low** level of effect.

## 7.2 Summary of effects and recommendations

It is considered that if the proposed works are carried out in accordance with the identified methodologies and the mitigation package is implemented in full, the effects on ecological values within the site will be adequately managed? (Table 9).

To ensure the ecological effects of the proposed development are adequately mitigated, the following measure are recommended:

- Any new stream constructed for mitigation will be designed to have variable widths, depths, diverse habitat types (e.g., run and pool) and substrate (e.g., wood);
- A detailed streamworks methodology provided which includes erosion and sediment controls specific to streamworks;
- Fish recovery and relocation is undertaken;
- Streamworks to be undertaken during summer months to avoid as far as practicable adverse effects on the streams; and
- Requirement for enhancement planting to be undertaken within the planting season following works commencing.

*Table 9. Summary of ecological effects due to stream reclamation.*

| Ecological effect | Magnitude of effect | Ecological value | Level of effect without mitigation | Level of effect after mitigation |
|---|---|---|---|---|
| Stream reclamation | Very high | Low | Moderate to high | Low |
| Construction effects resulting in increased sediment transport | Moderate | Low | Low to moderate | Low |
| Impacts to freshwater fauna | Moderate | Low | Low to moderate | Low |
| Impacts to terrestrial vegetation and fauna | Very low | Very low | Very low | n/a |

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# Appendices

# Appendix 1 Table extracts from the EIANZ ecological impact assessment guidelines

**Appendix 1 Table 1. Ecological values assigned to habitats.**

| Recommended attributes to be consider for determining ecological value or importance to a site or area of vegetation/habitat/community. | |
|---|---|
| **Matters** | **Attributes to be considered** |
| **Representativeness** | Attributes for representative vegetation and aquatic habitats:<br>• Typical structure and composition<br>• Indigenous species dominate<br>• Expected species and tiers are present<br>Attributes for representative species and species assemblages:<br>• Species assemblages that are typical of the habitat<br>• Indigenous species that occur in most of the guilds expected for the habitat type |
| **Rarity/ distinctiveness** | Attributes for rare/distinctive vegetation and habitats:<br>• Naturally uncommon, or induced scarcity<br>• Amount of habitat or vegetation remaining<br>• Distinctive ecological features<br>• National priority for protection<br>Attributes for rare/distinctive species or species assemblages:<br>• Habitat supporting nationally Threatened or At Risk species, or locally uncommon species<br>• Regional or national distribution limits of species or community<br>• Unusual species or assemblages<br>• Endemism |
| **Diversity and Pattern** | • Level of natural diversity, abundance and distribution<br>• Biodiversity reflecting underlying diversity<br>• Biogeographical considerations – pattern, complexity<br>• Temporal considerations, considerations of lifecycles, daily or seasonal cycles of habitat availability and utilisation |
| **Ecological context** | • Site history, and local environmental conditions which have influenced the development of habitats and communities<br>• The essential characteristics that determine an ecosystem's integrity, form, functioning, and resilience (from "intrinsic value" as defined in RMA)<br>• Size, shape and buffering<br>• Condition and sensitivity to change<br>• Contribution of the site to ecological networks, linkages, pathways and the protection and exchange of genetic material<br>• Species role in ecosystem functioning – high level, key species identification, habitat as proxy |

**Appendix 1 Table 2. Ecological values assigned to species.**

| Value | Species values |
|---|---|
| **Very high** | Nationally Threatened - Endangered, Critical or Vulnerable. |
| **High** | Nationally At Risk – Declining. |
| **Moderate** | Nationally At Risk - Recovering, Relict or locally uncommon or rare |

| Value | Species values |
|---|---|
| Low | Not Threatened Nationally, common locally |
| Negligible | Exotic species, including pests |

**Appendix 1 Table 3. Overall ecological value scoring for sites or areas based on the four matters in Appendix 1 Table 1**

| Value | Description |
|---|---|
| Very High | Area rates High for 3 or all of the four assessment matters listed in Appendix 1 Table 1.<br>Likely to be nationally important and recognised as such. |
| High | Area rates High for 2 of the assessment matters, Moderate and Low for the remainder, or<br>Area rates High for 1 of the assessment maters, Moderate for the remainder.<br>Likely to be regionally important and recognised as such. |
| Moderate | Area rates High for one matter, Moderate and Low for the remainder, or<br>Area rates Moderate for 2 or more assessment matters Low or Very Low for the remainder<br>Likely to be important at the level of the Ecological District. |
| Low | Area rates Low or Very Low for majority of assessment matters and Moderate for one.<br>Limited ecological value other than as local habitat for tolerant native species. |
| Negligible | Area rates Very Low for 3 matters and Low or Very Low for remainder. |

**Appendix 1 Table 4. Criteria for describing magnitude of effect.**

| Magnitude | Description |
|---|---|
| Very high | Total loss of, or very major alteration to, key elements/features/ of the existing baseline conditions, such that the post-development character, composition and/or attributes will be fundamentally changed and may be lost from the site altogether; AND/OR<br>Loss of a very high proportion of the known population or range of the element/feature |
| High | Major loss or major alteration to key elements/features of the existing baseline conditions such that the post-development character, composition and/or attributes will be fundamentally changed; AND/OR<br>Loss of a high proportion of the known population or range of the element/feature |
| Moderate | Loss or alteration to one or more key elements/features of the existing baseline conditions, such that the post-development character, composition and/or attributes will be partially changed; AND/OR<br>Loss of a moderate proportion of the known population or range of the element/feature |
| Low | Minor shift away from existing baseline conditions. Change arising from the loss/alteration will be discernible, but underlying character, composition and/or attributes of the existing baseline condition will be similar to pre-development circumstances or patterns; AND/OR<br>Having a minor effect on the known population or range of the element/feature |
| Negligible | Very slight change from the existing baseline condition. Change barely distinguishable, approximating the 'no change' situation; AND/OR<br>Having negligible effect on the known population or range of the element/feature |

[1]Baseline conditions are defined as 'the conditions that would pertain in the absence of a proposed action' (Roper-Lindsay *et al*., 2018).

**Appendix 1 Table 5. Timescale for duration of effects.**

| Timescale | Description |
|---|---|
| **Permanent** | Effects continuing for an undefined time beyond the span of one human generation (taken as 25 years) |
| **Long-term** | Where there is likely to be substantial improvement after a 25 year period (e.g. the replacement of mature trees by young trees that need > 25 years to reach maturity, or restoration of ground after removal of a development) the effect can be termed 'long term' |
| **Temporary**[1] | Long term (15-25 years or longer – see above)<br>Medium term (5-15 years)<br>Short term (up to 5 years)<br>Construction phase (days or months) |

[1]Note that in the context of some planning documents, 'temporary' can have a defined timeframe.

**Appendix 1 Table 6. Matrix for determining overall levels of ecological effects based on ecological value and magnitude of effect.**

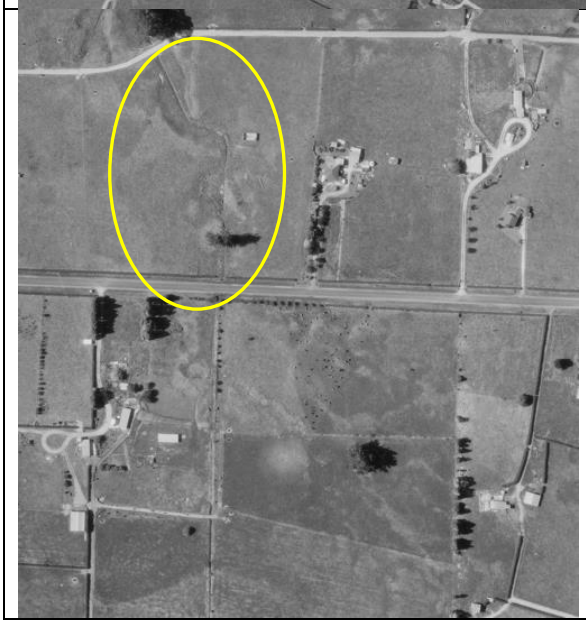
| Ecological value / Magnitude | Very high | High | Moderate | Low | Negligible |
|---|---|---|---|---|---|
| **Very high** | Very high | Very high | High | Moderate | Low |
| **High** | Very high | Very high | Moderate | Low | Very low |
| **Moderate** | High | High | Moderate | Low | Very low |
| **Low** | Moderate | Low | Low | Very low | Very low |
| **Negligible** | Low | Very low | Very low | Very low | Very low |

# Appendix 2 Raw macroinvertebrate results

| Sample No. | | | Parallel Rd |
|---|---|---|---|
| Site Name | | | 30.08.22 |
| Taxa | MCI | MCI-sb | |
| | score | score | |
| Caddisfly Oxyethira | 2 | 1.2 | 6 |
| Beetle Berosus | 5 | 0.0 | 4 |
| Beetle Hydrophilidae | 5 | 8.0 | 48 |
| Beetle Scirtidae | 8 | 6.4 | 88 |
| True Fly Chironomus | 1 | 3.4 | 14 |
| Crustacea Paraleptamphopus | 5 | 0.0 | 10 |
| SPIDERS Dolomedes | 5 | 6.2 | 2 |
| Mollusc Potamopyrgus | 4 | 2.1 | 4 |
| Mollusc Sphaeriidae | 3 | 2.9 | 1 |
| OLIGOCHAETES | 1 | 3.8 | 26 |

## Appendix 3: Historic imagery (retrolens and google earth)

| | |
|---|---|
|  | Retrolens image from 21/08/1953. Circled area shows the subject site which shows the watercourse has been excavated in the past. |
|  | Retrolens image from 9/9/57 |

| | |
|---|---|
|  | Retrolens image from 4/74 |
|  | Retrolens image 25/10/79 |
|  | Retrolens image 3/2/83 |


Google Earth image dated 02/2018


Google Earth image dated 04/2018

# Appendix 4 Wetland delineation photos

| Location | photo |
|---|---|
| Plot 1 |  |
| Plot 2 |  |
| Plot 3 |  |
| Plot 4 |  |

| | |
|---|---|
| Plot 5 |  |
| Plot 6 |  |
| Plot 7 |  |
| Plot 8 |  |

| | |
|---|---|
| Plot 9 |  |
| Plot 10 |  |

# Appendix 5 Wetland delineation assessment results

| Species+A1:K41 | Plot 1 | Plot 2 | Plot 3 | Plot 4 | Plot 5 | Plot 6 | Plot 7 | Plot 8 | Plot 9 | Plot 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| BIDfro | | | | | | | | | | 3 |
| Erodium sp | | 1 | | | | | | | | |
| FUMmur | | 1 | | | | 5 | | | | |
| HYPrad | | 1 | | | | | | | | |
| Lamiaceae sp | | 1 | | | | | | | | |
| Malva sp | | 1 | | | | | | | | |
| POAann | | 1 | | | | | | | | |
| Sonchus sp | | 1 | | | | | | | | |
| RUMobt | 5 | 2 | 5 | | 5 | 2 | 2 | | 3 | 1 |
| BROcat | 10 | 5 | | | | 3 | 3 | 2 | | |
| CERfon | | 5 | | | | | | | | |
| Chenopodium sp | | 5 | | | | | | | | |
| LOLmul | | 5 | 4 | 20 | 50 | 3 | | 27 | 7 | 10 |
| HOLlan | 35 | 15 | 10 | 35 | 15 | 80 | 77 | 25 | 35 | 1 |
| STEmed | | 35 | | | | | | | | |
| Periscaria sp | 10 | | | | 2 | | | | 2 | |
| RANrep | 25 | | 6 | 10 | 23 | 3 | 5 | 35 | 46 | 73 |
| CIRvul | | | | | | | 6 | | | |
| CONsum | | | | | 1 | | | | | |
| Dandelion | | | | 1 | | | | 2 | | |
| ELYrep | | | 75 | 19 | | | | | | |
| Latuca sp | | | | | | | 6 | | | |
| LYCeur | | | | | | | | | 2 | |
| RUBfru | | | | | | 4 | 1 | | | |
| Thistle - cali | | | | | 1 | | | | | |
| Thistle - dead | | | | | | | | | 2 | |
| Poa sp (annua?) | | | | | | | | | | 10 |
| RUMcri | 5 | | | | | | | | | |
| TRIrep | | | | 15 | 3 | | | 7 | 3 | 2 |
| Yes+2:29 | | | | | | | | 2 | | |
| Bare ground | 10 | 21 | | | | | | | | |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| % improved pasture | 0 | 41 | 0 | 70 | 68 | 86 | 80 | 61 | 38 | 2 |
| Improved pasture? | no | no | no | yes | yes | yes | yes | yes | no | no |
| No. dominant species | 2 | 1 | 1 | | | | | | 2 | 1 |
| Total dominant specie | 2 | 2 | 1 | | | | | | 2 | 1 |
| % OBL/FACW/FAC | 100 | 50 | 0 | | | | | | 100 | 100 |
| Prevalence | 3.1 | 4.1 | 3.78 | | | | | | 3.00 | 3.03 |
| Prevalance met? | NO | NO | NO | | | | | | NO | NO |
| Hydric soils | NO | NO | | | | | | | NO | NO |

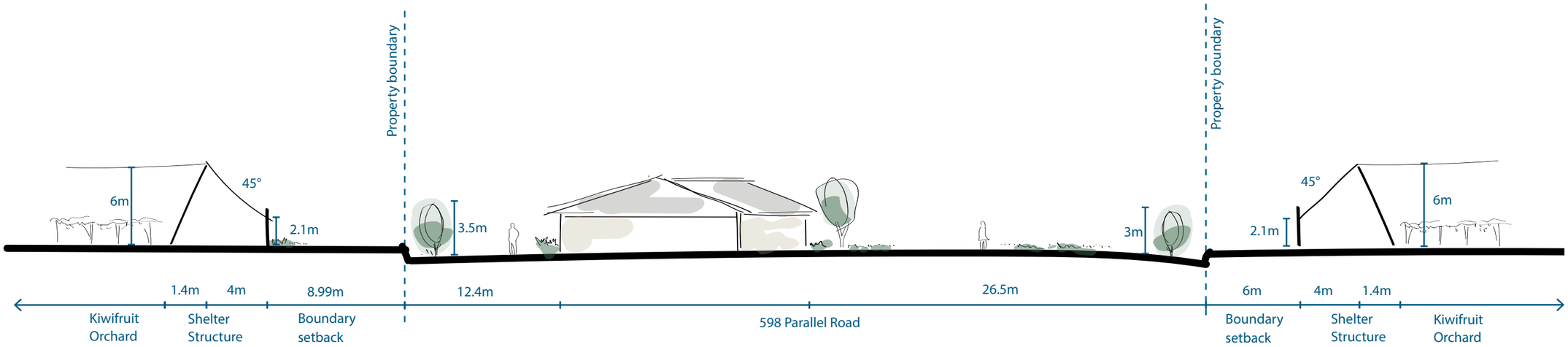
# Appendix 6 SEV summary calculations and assumptions

| Variable (code) | SEVi_C | SEVi_P | SEVm_C_DS | SEVm_P_DS | SEVm-C_E | SEVm_P_E | SEVcreated_P |
|---|---|---|---|---|---|---|---|
| Vchann | 0.10 | 0.10 | 0.10 | 0.10 | 1.00 | 1.00 | 0.50 |
| Vlining | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.70 |
| Vpipe | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| = | **0.33** | **0.33** | **0.33** | **0.33** | **0.93** | **0.93** | **0.57** |
| Vbank | 0.00 | 0.00 | 0.62 | 0.62 | 1.00 | 1.00 | 0.40 |
| Vrough | 0.50 | 0.96 | 0.50 | 0.96 | 0.78 | 0.96 | 0.68 |
| = | **0.00** | **0.00** | **0.31** | **0.60** | **0.78** | **0.96** | **0.27** |
| Vbarr | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| = | **0.00** | **0.00** | **1.00** | **1.00** | **1.00** | **1.00** | **1.00** |
| Vchanshape | 0.20 | 0.20 | 0.20 | 0.20 | 1.00 | 1.00 | 0.60 |
| Vlining | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.70 |
| = | **0.60** | **0.60** | **0.60** | **0.60** | **0.87** | **0.87** | **0.67** |
| **Hydraulic function** | **0.23** | **0.23** | **0.56** | **0.63** | **0.90** | **0.94** | **0.63** |
| Vshade | 0.80 | 1.00 | 0.52 | 0.90 | 0.58 | 0.90 | 0.68 |
| = | **0.80** | **1.00** | **0.52** | **0.90** | **0.58** | **0.90** | **0.68** |
| Vdod | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| = | **0.50** | **0.50** | **0.50** | **0.50** | **0.50** | **0.50** | **0.50** |
| Vripar | 0.00 | 0.50 | 0.10 | 0.50 | 0.15 | 0.50 | 0.50 |
| Vdecid | 0.92 | 0.92 | 1.00 | 1.00 | 0.39 | 1.00 | 1.00 |
| = | **0.00** | **0.48** | **0.10** | **0.50** | **0.10** | **0.50** | **0.50** |
| Vmacro | 0.21 | 1.00 | 0.41 | 1.00 | 1.00 | 1.00 | 1.00 |
| Vretain | 0.20 | 0.20 | 0.20 | 0.20 | 1.00 | 1.00 | 0.60 |
| = | **0.20** | **0.20** | **0.20** | **0.20** | **1.00** | **1.00** | **0.60** |
| Vsurf | 0.89 | 0.81 | 1.00 | 1.00 | 1.00 | 1.00 | 0.64 |
| Vripfilt | 0.60 | 0.80 | 0.60 | 0.80 | 0.60 | 0.80 | 0.80 |
| = | **0.74** | **0.81** | **0.80** | **0.90** | **0.80** | **0.90** | **0.72** |
| **Biogeochemical function** | **0.45** | **0.60** | **0.42** | **0.60** | **0.60** | **0.76** | **0.60** |
| Vgalspwn | 0.00 | 0.00 | 0.70 | 0.70 | 1.00 | 1.00 | 1.00 |
| Vgalqual | 0.00 | 0.00 | 0.25 | 0.75 | 0.75 | 1.00 | 0.75 |
| Vgobspwn | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 |
| = | **0.05** | **0.05** | **0.14** | **0.31** | **0.43** | **0.55** | **0.43** |
| Vphyshab | 0.30 | 0.53 | 0.44 | 0.63 | 0.56 | 0.68 | 0.54 |
| Vwatqual | 0.25 | 0.38 | 0.18 | 0.35 | 0.20 | 0.35 | 0.30 |
| Vimperv | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| = | **0.44** | **0.58** | **0.49** | **0.63** | **0.55** | **0.65** | **0.57** |
| **Habitat provision function** | **0.24** | **0.32** | **0.31** | **0.47** | **0.49** | **0.60** | **0.50** |
| Vfish | 0.33 | | | | | | |
| = | **0.33** | | | | | | |
| Vmci | 0.55 | | | | | | |
| Vept | 0.23 | | | | | | |
| Vinvert | 0.20 | | | | | | |
| = | **0.33** | | | | | | |
| Vripcond | 0.20 | 0.80 | 0.20 | 0.80 | 0.62 | 0.80 | 0.32 |
| Vripconn | 0.00 | 0.00 | 0.40 | 0.40 | 1.00 | 1.00 | 0.50 |
| = | **0.00** | **0.00** | **0.08** | **0.32** | **0.62** | **0.80** | **0.16** |
| **Biodiversity function** | **0.22** | | | | | | |
| | | | | | | | |
| SEV score | **0.309** | | | | | | |
| SEVscore (minus FFI and IFI) | 0.306 | 0.379 | 0.423 | 0.566 | 0.680 | 0.797 | 0.555 |

| SEV Assumptions | | | | | |
|---|---|---|---|---|---|
| **Function category** | **Variable** | **SEVi-P** | **SEVm-DS-P** | **SEVm-E-P** | **SEV created channel** |
| Hydraulic | Vchann | No change | No change | No change | Natural channel, but evidence of channel incision from flood flows |
| | Vlining | No change | No change | No change | Created channel with assumed lining of unnatural fine sed loading and possiblypermeable lined in places. |
| | Vpipe | No change | No change | No change | Assume no pipes |
| | Vbank | No change | No change | No change | Assume floodplain present, but connectivity to the full floodplain is restricted by modification |
| | Vrough | Full riparian planting assumes late succession with grasses and sedges on lower bank. | Full riparian planting assumes late succession with grasses and sedges on lower bank. | Full riparian planting assumes late succession with grasses and sedges on lower bank. | Full riparian planting assumes late succession with grasses and sedges on lower bank. |
| | Vbarr | No change | No change | No change | No barrier - culvert under farm track currently poses a barrier |
| | Vchanshap | Autopopulated | Autopopulated | Autopopulated | Autopopulated |
| Biogeochemical | Vshade | Assume all cross sections very high shading. Steep banks mean shading is already relatively high | Assume all cross sections have high to very high shading. | Assume all cross sections have high to very high shading. | Assume all cross sections have moderate to very high shading (bank gradient lower). |
| | Vdod | No change | No change | No change | No change |
| | Vripar | Increase to 0.5 assuming riparin planting 10m on both banks. | Increase to 0.5 assuming riparin planting 10m on both banks. | Increase to 0.5 assuming riparin planting 10m on both banks. | Increase to 0.5 assuming riparin planting 10m on both banks. |
| | Vdecid | No change | No change | No change | No change |
| | Vmacro | Assume no macrophytes based on shading. | Assume no macrophytes based on shading. | Assume no macrophytes based on shading. | Assume no macrophytes based on shading. |
| | Vretain | Autopopulated | Autopopulated | Autopopulated | Autopopulated |
| | Vsurf | No change | No change | No change | Assume similar to SEVi-C |
| | Vripfilt | Assume high filtering activity due to riparian vegetation. | Assume high filtering activity due to riparian vegetation. | Assume high filtering activity due to riparian vegetation. | Assume high filtering activity due to riparian vegetation. |
| Habitat | Vgalspwn | No change | No change | No change | Assume bank gradients are low along banks |
| | Vgalqual | No change bank slope is unsuitable. | Improvement due to vegetation | Improvement due to vegetation | Assume medium based on vegetation type. |
| | Vgobspwn | Autopopulated | Autopopulated | Autopopulated | Autopopulated |
| | Vphyshab | Increase due to shading which will shade macrophytes and increase habitat diversity and abundance. | Increase due to shading which will shade macrophytes and increase habitat diversity and abundance. | Increase due to shading which will increase habitat diversity and abundance. | Asusme designed instream factors and vegetation integrity is moderate to good and shade c.60% |
| | Vwatqual | Assume improvement from minimal to partial based on riparian enhancement | Assume improvement from minimal to partial based on riparian enhancement | Assume improvement from minimal to partial based on riparian enhancement | Assume partial based on riparian enhancement |
| | Vimperv | No change | No change | No change | No change |
| Biodoversity | Vfish | Excluded | Excluded | Excluded | Excluded |
| | Vmci | Excluded | Excluded | Excluded | Excluded |
| | Vept | Autopopulated | Autopopulated | Autopopulated | Autopopulated |
| | Vinvert | Autopopulated | Autopopulated | Autopopulated | Autopopulated |
| | Vripcond | Autopopulated | Autopopulated | Autopopulated | Autopopulated |
| | Vripconn | No change | No change | No change | Assume channel connectivity to riparian zone is improved with created channel. |

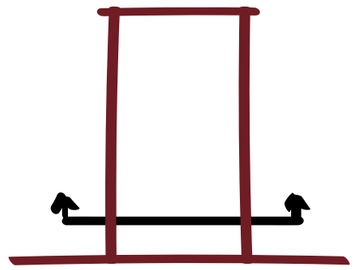
## Souhern Elevation Plan for 598 Parallel Road

Scale: 1: 300 (A3)




## Site Reference Plan

Not to scale




**For Resource Consent**

Notes.

Legend

Site

Property Boundary

**598 Parallel Road**

Section Elevation Plans - Kiwifruit Shelter

Figure 1

Scale. 1:300 at A3
Date. 15/09/2022

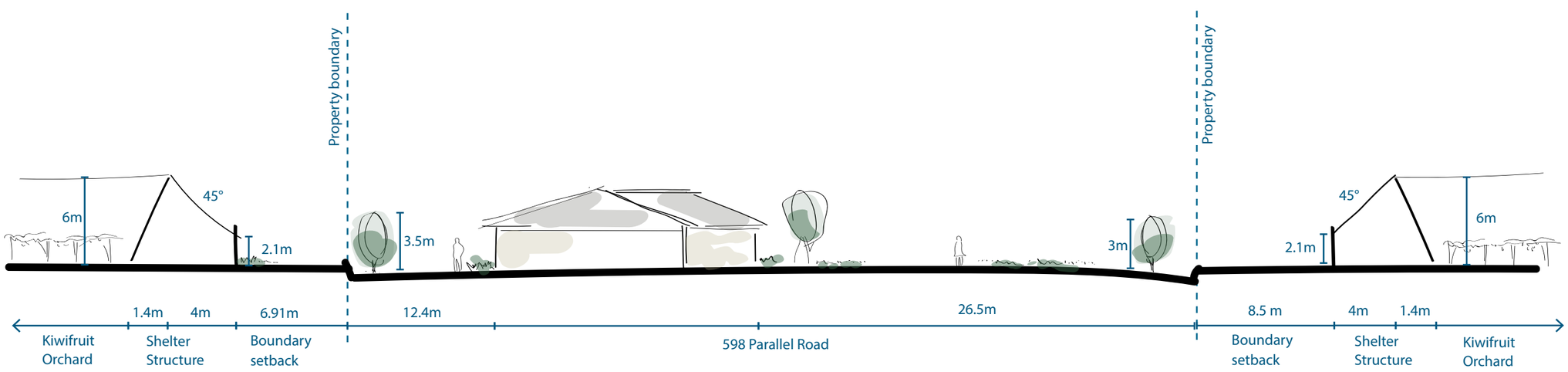
Status. For Resource Consent
Sheet. NA

B&A Urban & Environmental

I:\Jobs\13000-13999 General Jobs\19352 582 Parallel Road, Cambridge\Working File

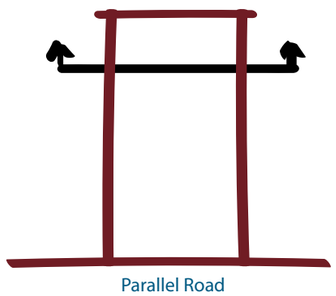
## Southern Elevation Plan for 598 Parallel Road

Scale: 1: 300 (A3)




## Site Reference Plan

Not to scale




**For Resource Consent**

Notes.

Legend

Site

Property Boundary

**598 Parallel Road**

Section Elevation Plans - Kiwifruit Shelter

Figure 2

Scale. 1:300 at A3

Date. 15/09/2022

Status. For Resource Consent

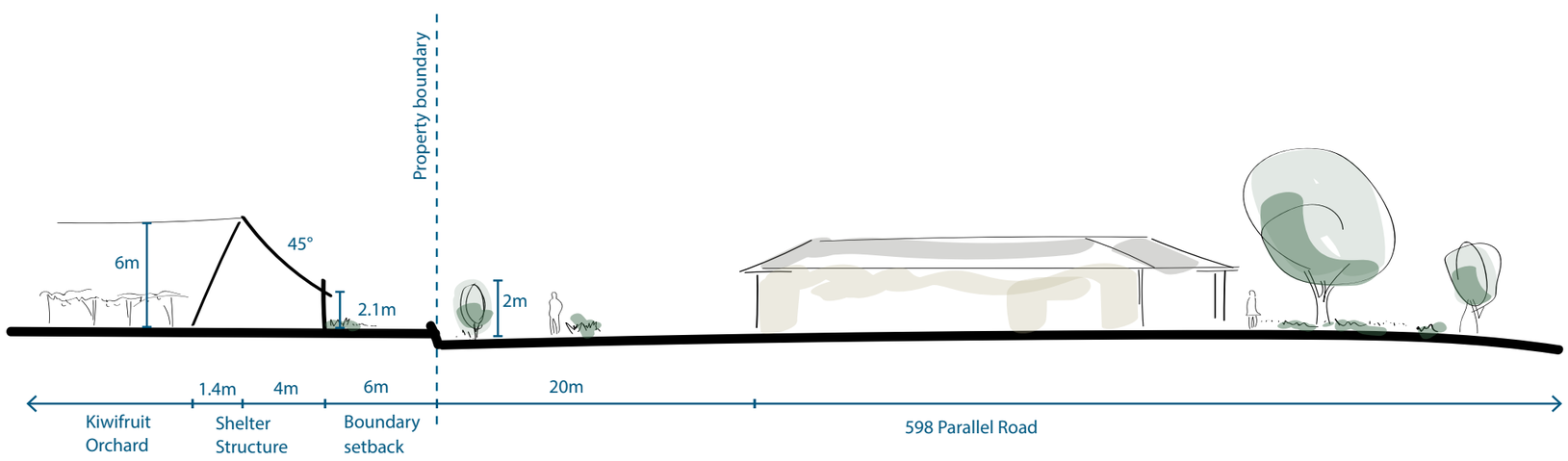
Sheet. NA

B&A Urban & Environmental

I:\Jobs\13000-13999 General Jobs\19352 582 Parallel Road, Cambridge\Working File

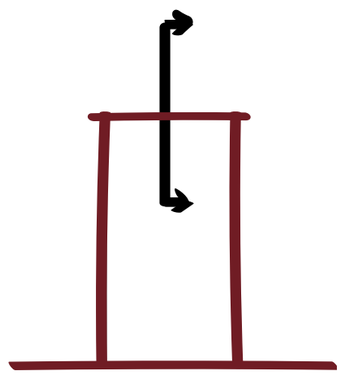
# Western Elevation Plan for 598 Parallel Road

Scale: 1: 300 (A3)




# Site Reference Plan

Not to scale




**For Resource Consent**

Notes.

Legend

Site

Property Boundary

**598 Parallel Road**

Section Elevation Plans - Kiwifruit Shelter

Figure 3

Scale. 1:300 at A3
Date. 15/09/2022

Status. For Resource Consent
Sheet. NA

B&A Urban & Environmental

I:\Jobs\13000-13999 General Jobs\19352 582 Parallel Road, Cambridge\Working File

# Western Elevation Plan for 598 Parallel Road - Shelter Belt 4m from Boundary

Scale: 1: 300 (A3)

## Site Reference Plan

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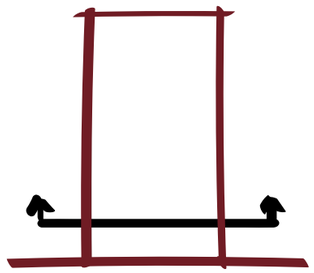
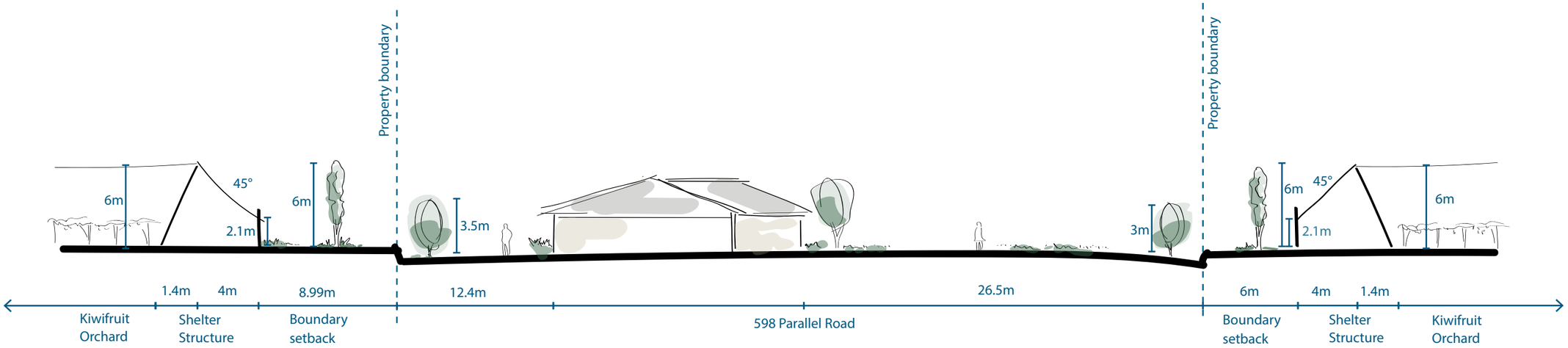


Parallel Road




**For Resource Consent**

Notes.

Legend

Site

Property Boundary

**598 Parallel Road**

Section Elevation Plans - Kiwifruit Shelter

Figure 1

Scale. 1:300 at A3
Date. 15/09/2022

Status. For Resource Consent
Sheet. NA

B&A Urban & Environmental

I:\Jobs\13000-13999 General Jobs\19352 582 Parallel Road, Cambridge\Working File

# Western Elevation Plan for 598 Parallel Road - Shelter Belt 4m from Boundary

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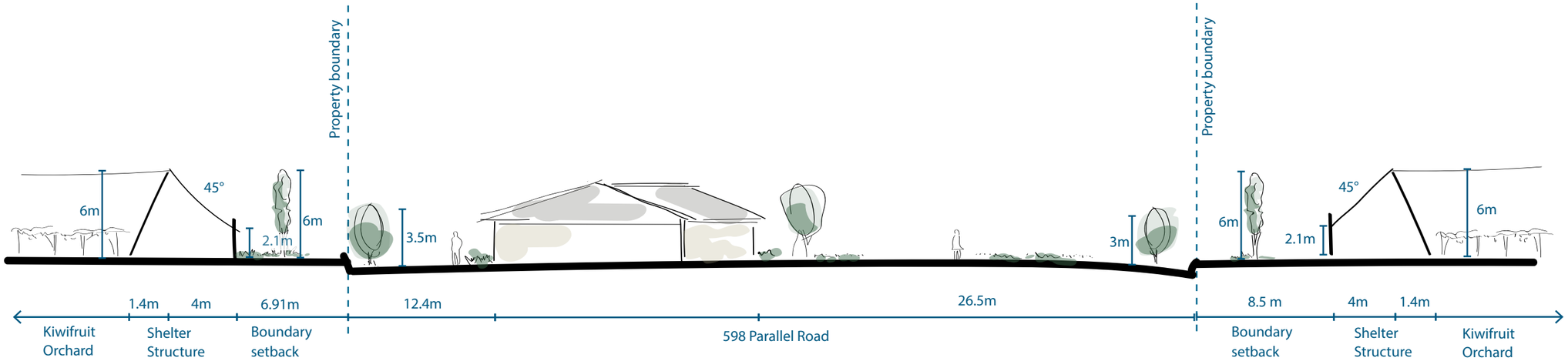


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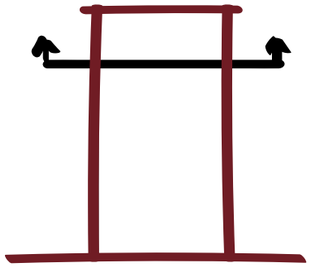

Parallel Road

**For Resource Consent**

Notes.

Legend

Site

Property Boundary

**598 Parallel Road**

Section Elevation Plans - Kiwifruit Shelter

Figure 2

Scale. 1:300 at A3
Date. 15/09/2022

Status. For Resource Consent
Sheet. NA

Urban & Environmental

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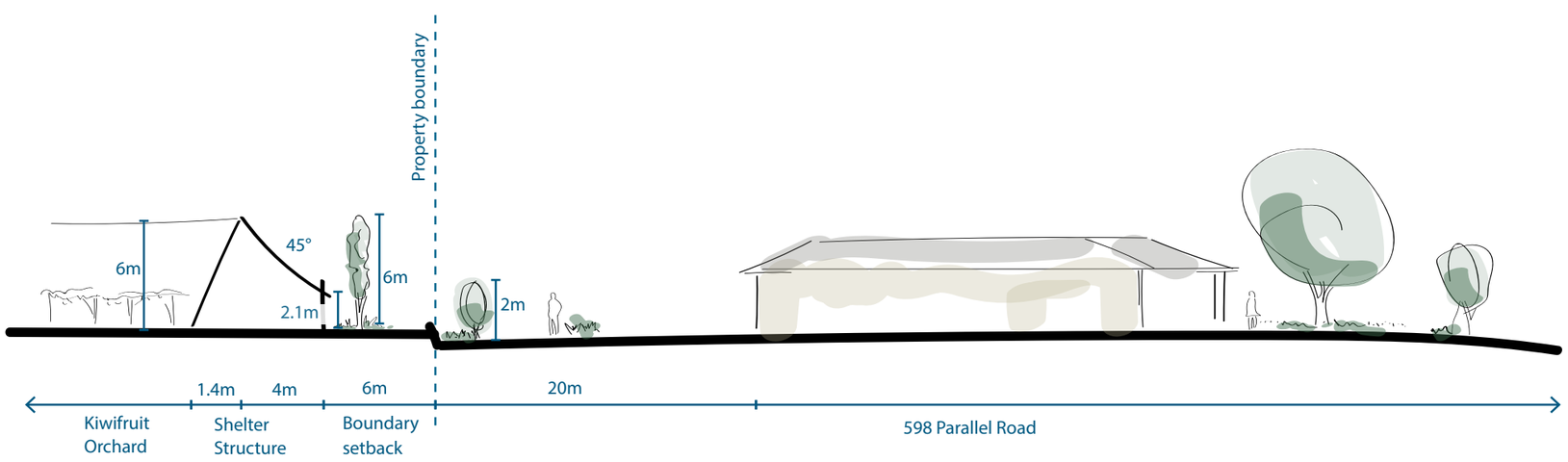


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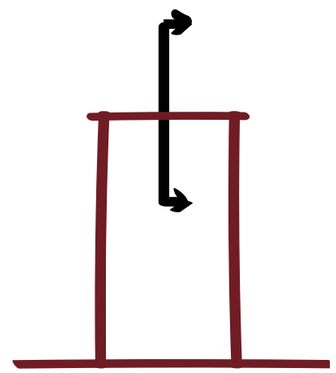



**For Resource Consent**

Notes.

Legend

Site

Property Boundary

**598 Parallel Road**

Section Elevation Plans - Kiwifruit Shelter

Figure 3

Scale. 1:300 at A3
Date. 15/09/2022

Status. For Resource Consent
Sheet. NA

B&A Urban & Environmental

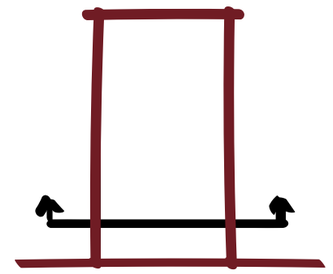
I:\Jobs\13000-13999 General Jobs\19352 582 Parallel Road, Cambridge\Working File

# Southern Elevation Plan for 598 Parallel Road - Shelter Belt 1m from Boundary

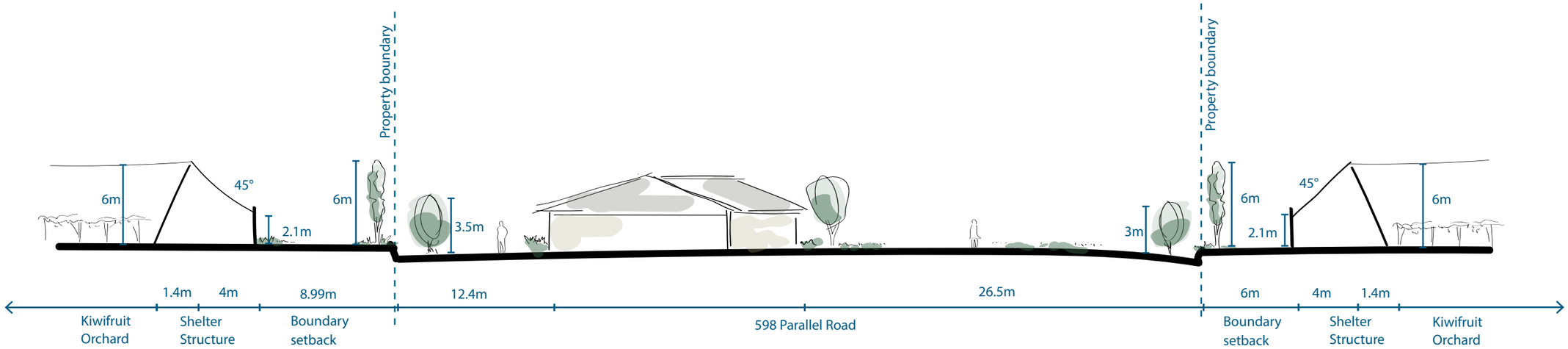
Scale: 1: 300 (A3)

## Site Reference Plan

Not to scale



Parallel Road




**For Resource Consent**

Notes.

Legend

Site

Property Boundary

**598 Parallel Road**

Section Elevation Plans - Kiwifruit Shelter

Figure 1

Scale. 1:300 at A3
Date. 15/09/2022

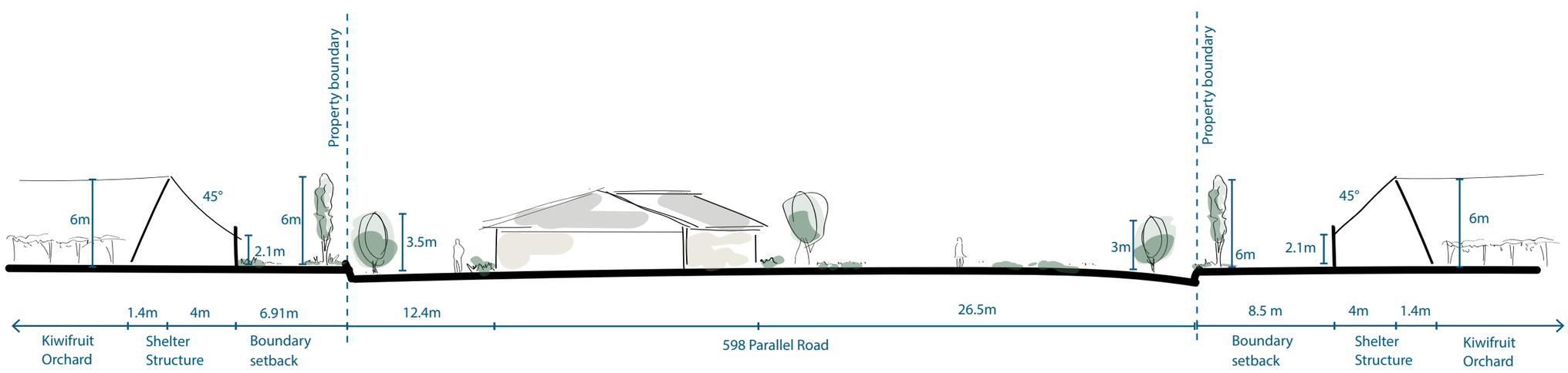
Status. For Resource Consent
Sheet. NA

B&A Urban & Environmental

I:\Jobs\13000-13999 General Jobs\19352 582 Parallel Road, Cambridge\Working File

# Southern Elevation Plan for 598 Parallel Road - Shelter Belt 1m from Boundary

Scale: 1: 300 (A3)

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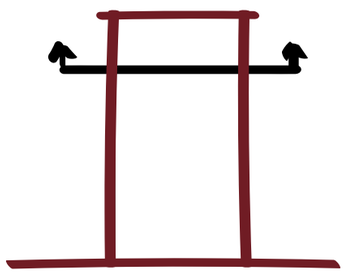



**For Resource Consent**

Notes.

Legend

Site

Property Boundary

**598 Parallel Road**

Section Elevation Plans - Kiwifruit Shelter

Figure 2

Scale. 1:300 at A3

Date. 15/09/2022

Status. For Resource Consent

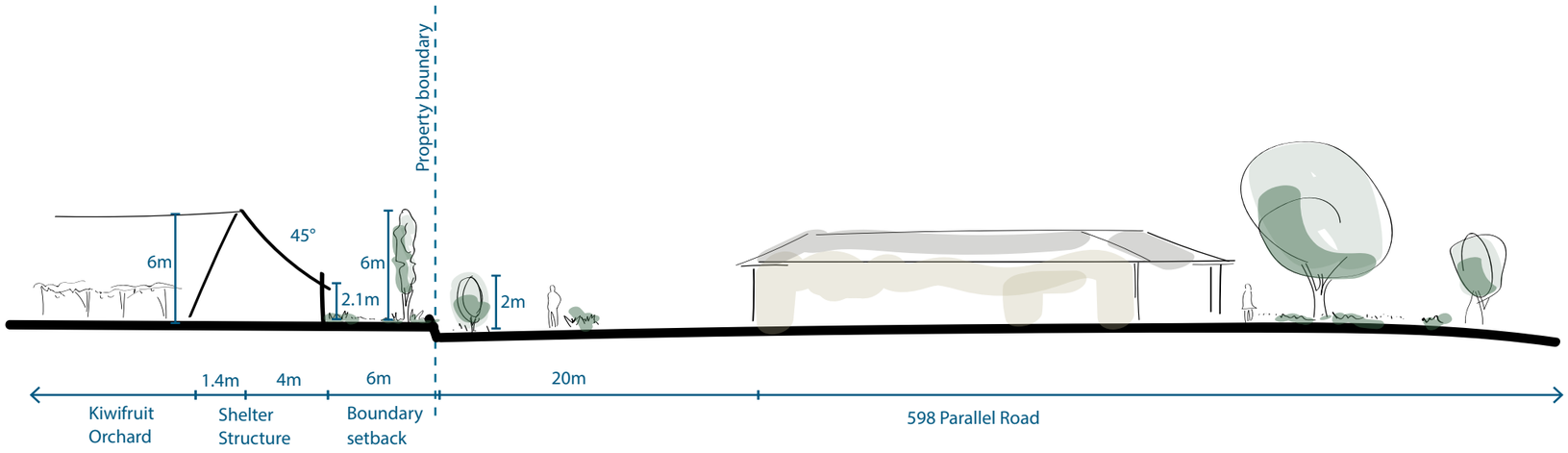
Sheet. NA

B&A Urban & Environmental

I:\Jobs\13000-13999 General Jobs\19352 582 Parallel Road, Cambridge\Working File

# Western Elevation Plan for 598 Parallel Road - Shelter Belt 1m from Boundary

Scale: 1: 300 (A3)

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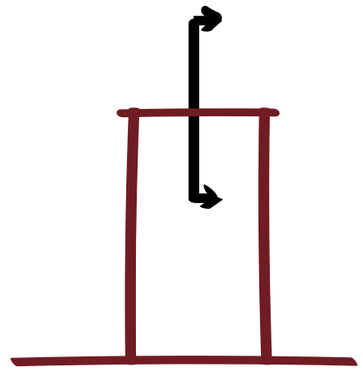


Parallel Road

**For Resource Consent**

Notes.

Legend

Site

Property Boundary

**598 Parallel Road**

Section Elevation Plans - Kiwifruit Shelter

Figure 3

Scale. 1:300 at A3
Date. 15/09/2022

Status. For Resource Consent
Sheet. NA

B&A Urban & Environmental

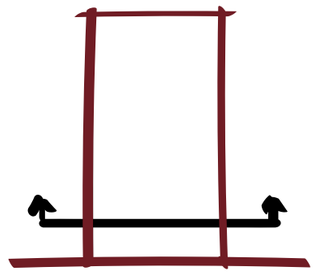
I:\Jobs\13000-13999 General Jobs\19352 582 Parallel Road, Cambridge\Working File

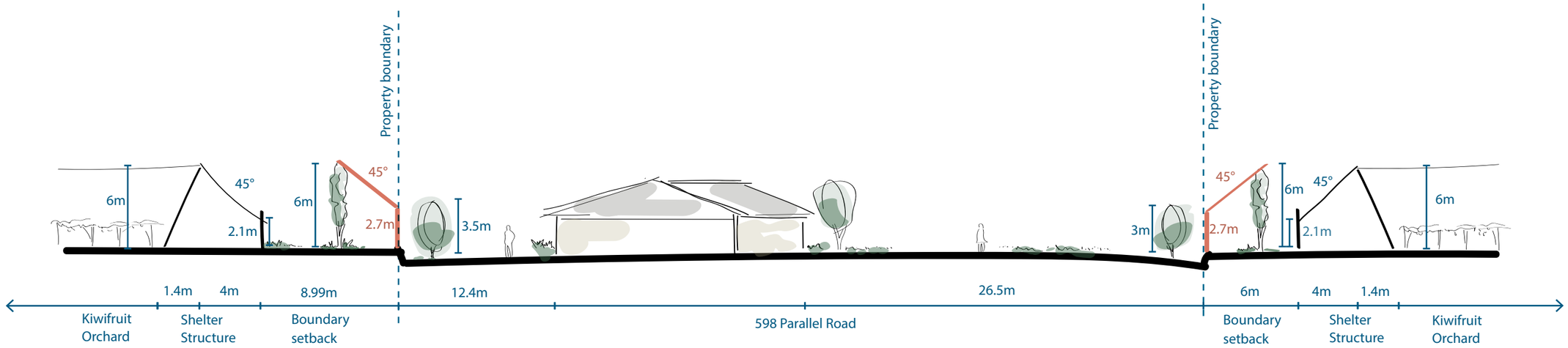
# Western Elevation Plan for 598 Parallel Road -
# Shelter Belt 4m from Boundary with Height in Relation to Boundary

Scale: 1: 300 (A3)

## Site Reference Plan

Not to scale




**For Resource Consent**

Notes.

Legend

Site

Property Boundary

**598 Parallel Road**

Section Elevation Plans - Kiwifruit Shelter

Figure 1

Scale. 1:300 at A3
Date. 15/09/2022

Status. For Resource Consent
Sheet. NA

B&A Urban & Environmental

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# Shelter Belt 4m from Boundary with Height in Relation to Boundary

Scale: 1: 300 (A3)

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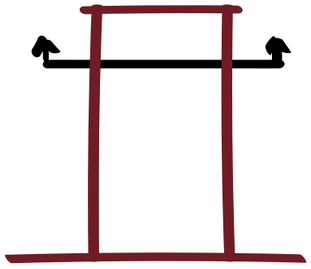
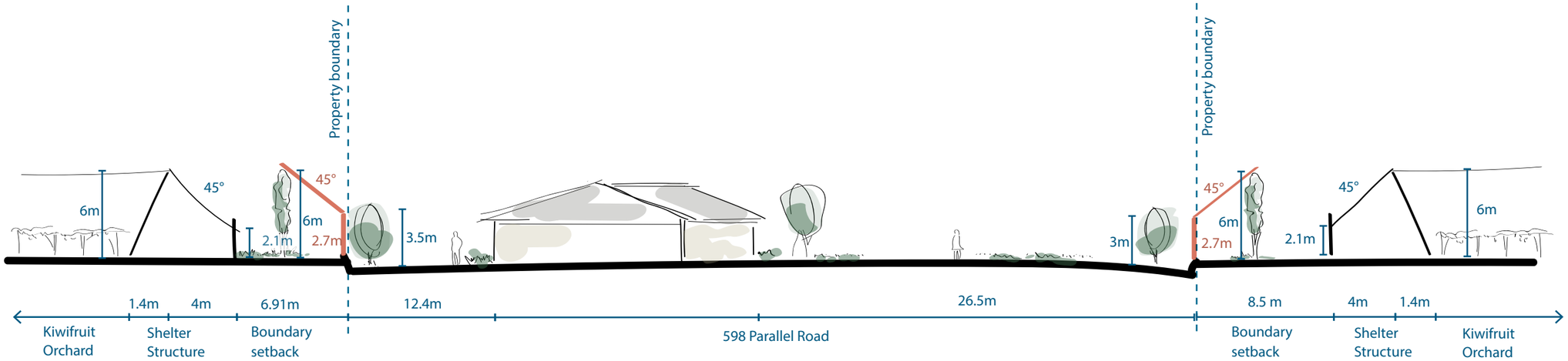


Parallel Road




**For Resource Consent**

Notes.

Legend

Site

Property Boundary

**598 Parallel Road**

Section Elevation Plans - Kiwifruit Shelter

Figure 2

Scale. 1:300 at A3
Date. 15/09/2022

Status. For Resource Consent
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B&A Urban & Environmental

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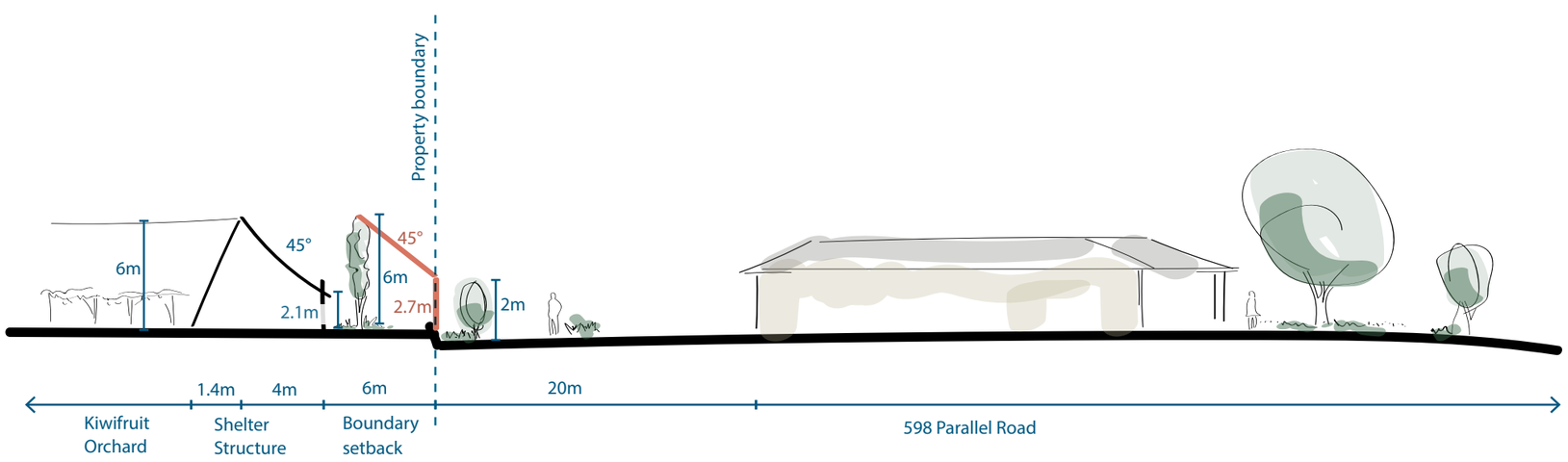


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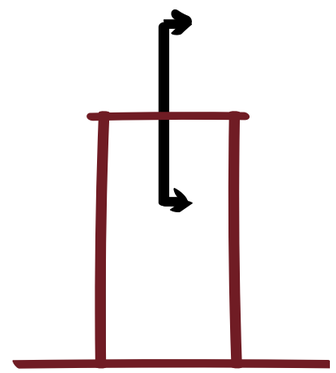


**For Resource Consent**

Notes.

Legend

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Property Boundary

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Section Elevation Plans - Kiwifruit Shelter

Figure 3

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Date. 15/09/2022

Status. For Resource Consent
Sheet. NA

B&A
Urban & Environmental

I:\Jobs\13000-13999 General Jobs\19352 582 Parallel Road, Cambridge\Working File

# Consent Evaluation Report

| | | | |
|---|---|---|---|
| **Applicant:** | Bains Hort Group Limited | **File No.:** | 61 80 83A |
| **Address of Site:** | 582 Parallel Road, Cambridge | **Project Code:** | RC222 |
| **Consent Type:** | Land Use Consent | **Application Number:** | APP143442 |

## 1 Description of Activity

Bains Hort Group Limited has applied for a resource consent to construct, use and maintain a well for crop irrigation water supply purposes at 582 Parallel Road, Cambridge. The proposed maximum abstraction rate is shown as 1,200 cubic metres per day.

## 2 Status of Activities under the Waikato Regional Plan

Under the Waikato Regional Plan drilling below the water table is a controlled activity under Rule 3.8.4.7. Drilling below the water table which does not comply with the standards and terms of the controlled activity rule is a discretionary activity under rule 3.8.4.8.

Note that this application is to authorise the construction, use and maintenance of the well only, and does not authorise the taking of water from the well. The taking of groundwater from a well for reasonable domestic purposes, or for the purposes of providing drinking water for animals does not require any authorisation under the Resource Management Act unless it causes, or is likely to cause, adverse effects on the environment. The taking of up to 15 m3 per day of groundwater for purposes not covered in the above is allowed by permitted activity rule 3.3.4.12 (attached) of the Waikato Regional Plan subject to compliance with the conditions of that rule. Any additional groundwater take over 15 m3 per day would require a separate resource consent to that being considered in this report.

**Figure 1: Proposed location of bore**

**Note: The proposed bore location appears to be just a little more than 50 metres east from a watercourse. It is unclear whether that area could be deemed to be a natural inland wetland. The area around the stream to the east (shown in yellow on Figure 1 above) is shown as a wetland on Council's mapping system.**

**The National Environmental Standard for Freshwater (2020) deems the taking of water within 100 metres of a natural wetland to be a non-complying activity requiring consent. The applicant needs to be aware of this when locating the bore as any such application for a water take would require a full assessment of the impacts on an adjoining wetland. Any bore should be located more than 100 metres away from the area shown in yellow. If an application is lodged to take water from a bore within 100 metres of the stream to the west then an assessment would be made at the time as to whether the area constitutes a natural wetland. It would be advisable to consider a location that was more than 100 metres from the surrounds of both streams.**

## 3 Consultation/Affected Party Approvals

This activity falls within Rule 3.8.4.7 of the Plan. That rule provides that "Applications under this rule will be considered without notification or the need to obtain written approval of affected persons in accordance with section 94(1)(b) of the RMA" [now s95A(3)] and, on that basis, s95A(1) provides for non-notification of this application. In addition, it is not considered that any special circumstances exist that would warrant notification in accordance with s95A(4). Accordingly, no party's approval has been sought and it is recommended that this application be processed on a non-notified basis.

## 4 Statutory Considerations

Section 104 of the Resource Management Act 1991 requires the Waikato Regional Council to have regard to the following matters when considering a resource consent application:

- Any actual or potential effects on the environment of allowing the activity
- The New Zealand Coastal Policy Statement and Regional Coastal Plan (for coastal consents)
- The Waikato Regional Policy Statement
- The Waikato Regional Plan and any proposed variations to that plan
- Other matters considered relevant and necessary to consider

### 4.1 Assessment of Environmental Effect

Drilling and its associated activities can have a variety of adverse environmental effects including:

1. contamination of ground water, surface water and soils by drilling fluids
2. reduction in ground water quality by contamination from surface water run-off, other surface water and other ground water sources
3. fuels and other hazardous substances on drill sites contaminating soils and surface water
4. accelerated soil erosion
5. vegetation removal to create drilling pads and drill rig access
6. well placement causing adverse environmental effects on other ground water users
7. loss of artesian water or aquifer pressure both in the short and long term
8. flow between previously isolated aquifers
9. adverse effects on geothermal characteristics
10. loss of geothermal fluid/pressure both in the short and long term
11. blow-outs (i.e. uncontrolled well discharges) in geothermal wells

The magnitude of these effects is influenced by the physical setting of the site, the scale of the drilling operation, the type of drilling, duration of the activity, and the hydrology and water quality at the site. Effects can be minimised through good drilling practices and through compliance with the

recommended consent conditions, which are taken directly from the conditions of the controlled activity within the Waikato Regional Plan.

I consider that as long as these conditions, and the conditions in the attached schedule/certificate are complied with, there are less than minor risks of any adverse effects occurring from the granting of this resource consent application.

### 4.2 Policy Statements and Plans

#### 4.2.1 Waikato Regional Plan

The Waikato Regional Plan contains two policies in section 3.8.3 which relate to drilling. Policy 1 is relevant to this application:

**Policy 1: Effects of Drilling Activities**

Manage the effects of drilling and any associated discharges in a manner that avoids significant adverse effects on the quality of ground water, surface water and soils from:

a. contamination by drilling fluids
b. contamination of ground water by contaminants in surface water
c. mixing of previously isolated aquifers
d. loss of aquifer pressure/level
e. disturbance of waahi tapu and other identified sites of significance to tangata whenua as Kaitiaki
f. inappropriate drilling in geothermal systems.

**Rules**

As discussed in section 2 above, drilling below the water table is a controlled activity, provided that the activity complies with the standards and terms of rule 3.8.4.7, which states:

3.8.4.7 Controlled Activity Rule - Drilling Below the Water Table

The drilling of holes or wells below the water table where the hole or well is not permitted by or does not comply with Rule 3.8.4.6, is a controlled activity (requiring resource consent) subject to the following standards and terms:
a. All drilled holes/wells shall be constructed, maintained and/or abandoned so that they shall not cause cross-contamination between hydraulic units (aquifers) in any water including ground water and geothermal water.
b. Holes drilled shall be at least 100 metres away from any Significant Geothermal Feature.
c. All holes/wells shall be managed and maintained such that leakage of water or contaminants to or from the ground surface is prevented.
d. Materials used for well construction shall be of such quality and strength to enable the well to be completed without casing or seal leakage during construction or subsequent well operation.
e. Wells used for potable water supply shall be located at least 30 metres from any on-site sewage disposal system.
f. Wells used for taking water, shall be located at least 50 metres from a lake or stream, and 100 metres from Mean High Water Springs.
g. A log for each drilled hole/well shall be forwarded to the Waikato Regional Council within two months of completion of drilling. Each log shall show:

i. the location of the hole/well
ii. date of completion
iii. duration of drilling
iv. depth and diameter of the hole/well

v. the method of drilling
vi. full construction details
vii. the subsurface geology
viii. results of any tests undertaken during drilling, including permeability, temperature and water quality
ix. a site diagram.

h. The activity shall not disturb any archaeological site or waahi tapu as identified at the date of notification of this Plan, in any district plan, in the NZ Archaeological Association's Site Recording Scheme, or by the Historic Places Trust except where Historic Places Trust approval has been obtained.

Waikato Regional Council reserves control over the following matters:
i. Measures to avoid, remedy or mitigate the adverse effects of the activity on soil and water quality.
ii. Measures to avoid, remedy or mitigate the effects on other users of water.
iii. Monitoring, sampling and analysis requirements.
iii. The location and depth of drilling.
iv. Any measures necessary to rehabilitate the land following the completion of the activity.
v. Measures to avoid, remedy or mitigate the effect of the activity on areas of significant indigenous vegetation and significant habitats of indigenous fauna.
vi. The requirement for bonds to ensure appropriate control and abandonment of deep geothermal wells.
viii. Measures taken to remove wastes introduced to the hole/well during drilling and construction.

## 5 Relevant Part 2 Considerations

I consider that, if carried out in accordance with the conditions of this consent, the well construction will not contravene the purpose and principles of the Resource Management Act 1991 (as set out in Part 2 of the Act)

## 6 Monitoring

Whilst no scheduled monitoring of this consent is proposed, should the need arise, Waikato Regional Council may undertake monitoring of the well to ensure compliance with the resource consent conditions.

## 7 Conclusion

I consider that the exercise of this consent, if carried out in accordance with the conditions set out below, will have only minor environmental effects, and recommend that, in accordance with s104A of the Resource Management Act, this consent be granted with a term and conditions in line with Waikato Regional Council guidelines and with standard conditions for drilling and well construction.

## 8 Recommendations

**Recommended Decision**

- That resource consent application APP143442 be processed non-notified.
- That resource consent application APP143442 be granted in accordance with the duration and conditions prescribed in the attached schedule/certificate for the following reasons:
- The activity will have no more than minor actual or potential adverse effects on the environment
- The activity is not contrary to any relevant plans or policies
- The activity is consistent with the purpose and principles of the Resource Management Act 1991

Caitlyn Harty **Date: 22 June 2021**

Resource Officer

Resource Use Directorate

**9 Decision**

That the resource consent application is granted in accordance with the above recommendations.

Mark Row **Date: 28 June 2021**

Project Manager, Farm Water & Drilling

Resource Use Directorate

Acting under authority delegated subject to the provisions of the Resource Management Act 1991 which at the time of decision had not been revoked.

# RESOURCE CONSENT CERTIFICATE

**Resource Consent:** AUTH143442.01.01

**File Number:** 61 80 83A

*Pursuant to the Resource Management Act 1991, the Regional Council hereby grants consent to:*

Bains Hort Group Limited
PO Box 745
Te Puke

(hereinafter referred to as the Consent Holder)

**Consent Type:** Land Use Consent

**Consent Subtype:** Land - well

**Activity authorised:** construct, use and maintain a well for crop irrigation water supply purposes

**Location:** 582 Parallel Road, RD 3, Cambridge

**Map reference:** NZTM 1810641 E 5802227 N

**Consent duration:** This consent will commence on the date of decision notification and the term is unlimited.

**Subject to the conditions overleaf:**

**CONDITIONS**

1. The well shall be constructed and maintained and/or abandoned so that it will not cause cross-contamination between hydraulic units (aquifers) in any water (including ground water and geothermal water).

2. The well shall be completed and sealed such that leakage of water or contaminants to or from the ground surface is prevented.

3. Materials used for well construction shall be of such quality and strength to enable the well to be completed without casing or seal leakage during construction or subsequent well operation.

4. If the well is to be used for potable water supply, it shall be located at least 30 metres horizontally from any on-site sewage disposal system.

5. If the well is to be used for taking water, it shall be located at least 50 metres horizontally from a lake or stream, and if near the coast, located at least 100 metres from mean high water springs (MHWS).

6. Upon completion of the well, wastes introduced to the well during drilling and construction shall be removed.

7. If artesian conditions are encountered, a conductor casing shall be grout sealed to ensure control of potential flowing artesian ground water and to prevent instability of the ground at the well head. Well head completion shall be such that ground water leakage under flowing artesian pressures is prevented.

8. The Waikato Regional Council shall be notified of the anticipated date of drilling commencing if the well is not to be drilled within three months of this consent being granted.

9. A log for each well drilled shall be forwarded to the Waikato Regional Council within two months of drilling being completed. Each log shall show:
    i. the location of the hole/well
    ii. date of completion
    iii. duration of drilling
    iv. depth and diameter of the hole/well
    v. the method of drilling
    vi. full construction details
    vii. the subsurface geology
    viii. full results of any tests (e.g. well yield, temperature, water quality) undertaken on the drilled hole/well
    ix. a site diagram

10. The activity shall not disturb any archaeological site or waahi tapu as identified in any district plan or by Heritage New Zealand except where Heritage New Zealand approval has been obtained.

11. Abandoned or obsolete bores must be identified and decommissioned to prevent contamination. Advice of decommissioning of bores should be provided to Council within 4 weeks of the work being completed.

Note: If an existing bore is to be decommissioned then this should be properly capped and sealed by a driller, and Council advised of this. If you are decommissioning a bore, you must ensure that

contaminants are prevented from entering the bore by filling it with clean material and compacting or sealing the surface.

Advice Notes - General

- This resource consent does not give any right of access over private or public property. Arrangements for access must be made between the consent holder and the property owner.
- Where a resource consent has been issued in relation to any type of construction (e.g. dam, bridge, jetty) this consent does not constitute authority to build and it may be necessary to apply for a Building Consent from the relevant territorial authority.
- This resource consent is transferable to another owner or occupier of the land concerned, by written notice to the Council, on the same conditions and for the same use as originally granted (s.134-137 RMA). The transfer of water, including changes of location, may occur as provided for in Chapter 3.4 of the Waikato Regional Plan, subject to the requirements of those rules.
- The consent holder may apply to change the conditions of the resource consent under s.127 RMA.
- The reasonable costs incurred by Waikato Regional Council arising from supervision and monitoring of this/these consents will be charged to the consent holder. This may include but not be limited to routine inspection of the site by Waikato Regional Council officers or agents, liaison with the consent holder, responding to complaints or enquiries relating to the site, and review and assessment of compliance with the conditions of consents.
- Note that pursuant to s332 of the RMA 1991, enforcement officers may at all reasonable times go onto the property that is the subject of this consent, for the purpose of carrying out inspections, surveys, investigations, tests, measurements or taking samples.

# Consent Evaluation Report

| | | | |
|---|---|---|---|
| **Applicant:** | Bains Hort Group Limited | **File No.:** | 61 80 83A |
| **Address of Site:** | 582 Parallel Road, Cambridge | **Project Code:** | RC222 |
| **Consent Type:** | Land Use Consent | **Application Number:** | APP144142 |

## 1 Description of Activity

Bains Hort Group Limited has applied for a resource consent to construct up to 2 bores, use and maintain a well for pasture or crop irrigation supply and monitoring bores for the purposes of monitoring a pumping test at 582 Parallel Road, Cambridge. The proposed maximum abstraction rate is shown as 1200 cubic metres per day. Four locations have been proposed and only two will be used. The final locations will be confirmed on the day drilling is undertaken.

## 2 Status of Activities under the Waikato Regional Plan

Under the Waikato Regional Plan drilling below the water table is a controlled activity under Rule 3.8.4.7. Drilling below the water table which does not comply with the standards and terms of the **controlled activity rule is a discretionary activity under rule 3.8.4.8.**

**As this well is within 50m of a Water Course, it is considered to be a discretionary activity under rule 3.8.4.8. Note: This consent is to drill the bore and by granting Council makes no statement as to the suitability of the water should the applicant wish to use it for potable water purposes.**

Note that this application is to authorise the construction, use and maintenance of the well only, and does not authorise the taking of water from the well. The taking of groundwater from a well for reasonable domestic purposes, or for the purposes of providing drinking water for animals does not require any authorisation under the Resource Management Act unless it causes, or is likely to cause, adverse effects on the environment. The taking of up to 15 m3 per day of groundwater for purposes not covered in the above is allowed by permitted activity rule 3.3.4.12 (attached) of the Waikato Regional Plan subject to compliance with the conditions of that rule. Any additional groundwater take over 15 m3 per day would require a separate resource consent to that being considered in this report.

## 3 Consultation/Affected Party Approvals

This activity falls within Rule 3.8.4.8 of the Plan. No consultation has been undertaken by the applicant or affected party approvals supplied.
A decision to process this application non-notified was undertaken as a separate process (Waikato Regional Council reference number # 23172664).

## 4 Statutory Considerations

Section 104 of the Resource Management Act 1991 requires the Waikato Regional Council to have regard to the following matters when considering a resource consent application:

- Any actual or potential effects on the environment of allowing the activity
- The New Zealand Coastal Policy Statement and Regional Coastal Plan (for coastal consents)
- The Waikato Regional Policy Statement
- The Waikato Regional Plan and any proposed variations to that plan
- Other matters considered relevant and necessary to consider

### 4.1 Assessment of Environmental Effect

Drilling and its associated activities can have a variety of adverse environmental effects including:

1. contamination of ground water, surface water and soils by drilling fluids
2. reduction in ground water quality by contamination from surface water run-off, other surface water and other ground water sources
3. fuels and other hazardous substances on drill sites contaminating soils and surface water
4. accelerated soil erosion
5. vegetation removal to create drilling pads and drill rig access
6. well placement causing adverse environmental effects on other ground water users
7. loss of artesian water or aquifer pressure both in the short and long term
8. flow between previously isolated aquifers
9. adverse effects on geothermal characteristics
10. loss of geothermal fluid/pressure both in the short and long term
11. blow-outs (i.e. uncontrolled well discharges) in geothermal wells

One of the proposed locations outlined in this application is for a bore that will be located within 50m of a water course. There are a range of potential issues with a bore located close to a stream depending on the proposed volume and use.

Whilst the proposed use is not for potable water where matters such as inundation of the well head are a potential concern, the applicant is advised to have the well-head raised set above the ground level as much as possible.

The proposed take is 1200 m3/day for Irrigation. Takes of that size may have an impact on stream depletion. It is noted that the proposed well depth is 120 metres. Technical comment was sought from Council Senior Scientist John Hadfield. Using information from a nearby bore he noted there are likely to be a couple of intervening silt layers (aquitards) which would mitigate stream depletion effects. He points out that proximity is one factor in stream depletion consideration and the applicant may wish to be mindful of that in selecting their sites (WRC doc # 23175323).

Given the advice received, no additional conditions are proposed aside from the standard conditions that are associated with controlled activity drilling consents. The applicant is advised to be mindful of where the bores are located and a technical review of any associated water take consent will look more closely at issues such as effect of the take on proximal bores and stream depletion effects.

### 4.2 Policy Statements and Plans

#### 4.2.1 Waikato Regional Plan

The Waikato Regional Plan contains two policies in section 3.8.3 which relate to drilling. Policy 1 is relevant to this application:

**Policy 1: Effects of Drilling Activities**

Manage the effects of drilling and any associated discharges in a manner that avoids significant adverse effects on the quality of ground water, surface water and soils from:

a. contamination by drilling fluids
b. contamination of ground water by contaminants in surface water
c. mixing of previously isolated aquifers
d. loss of aquifer pressure/level

e. disturbance of waahi tapu and other identified sites of significance to tangata whenua as Kaitiaki
f. inappropriate drilling in geothermal systems.

**Rules**

As discussed in section 2 above, drilling below the water table is a discretionary activity.

3.8.4.8 Discretionary Activity Rule – Drilling Below the Water Table

The drilling of holes or wells below the water table where the hole or well is not permitted by or does not comply with Rule 3.8.4.6 or 3.8.4.7 and which is not classified as a non-complying activity under rule 3.8.4.9, is a discretionary activity (requiring resource consent).

**Council has the discretion to grant the consent with conditions in addition to the standard controlled activity consent conditions detail in Rule 3.8.4.7 of the Waikato Regional Plan. As noted, in section 4.1 of this report, no additional conditions related to the proximity of one of the proposed bore locations to the stream have been included.**

## 5 Relevant Part 2 Considerations

I consider that, if carried out in accordance with the conditions of this consent, the well construction will not contravene the purpose and principles of the Resource Management Act 1991 (as set out in Part 2 of the Act)

## 6 Monitoring

Whilst no scheduled monitoring of this consent is proposed, should the need arise, Waikato Regional Council may undertake monitoring of the wells to ensure compliance with the resource consent conditions.

## 7 Conclusion

I consider that the exercise of this consent, if carried out in accordance with the conditions set out below, will have only minor environmental effects, and recommend that, in accordance with s104A of the Resource Management Act, this consent be granted with a term and conditions in line with Waikato Regional Council guidelines and with standard conditions for drilling and well construction.

## 8 Recommendations

**Recommended Decision**

- That resource consent application APP144142 be granted in accordance with the duration and conditions prescribed in the attached schedule/certificate or the following reasons:
- The activity will have no more than minor actual or potential adverse effects on the environment
- The activity is not contrary to any relevant plans or policies
- The activity is consistent with the purpose and principles of the Resource Management Act 1991

Sean Whatarangi **Date: 17/01/2022**

Consents and Data Officer

Resource Use Directorate

## 9 Decision

That the resource consent application is granted in accordance with the above recommendations.

Mark Row **Date: 18/01/2022**

Project Manager, Farm Water & Drilling

Resource Use Directorate

Acting under authority delegated subject to the provisions of the Resource Management Act 1991 which at the time of decision had not been revoked.

# RESOURCE CONSENT CERTIFICATE

**Resource Consent:** AUTH144142.01.01

**File Number:** 61 80 83A

*Pursuant to the Resource Management Act 1991, the Regional Council hereby grants consent to:*

Bains Hort Group Limited
PO Box 745
Te Puke

Contact Details:
Nick Hazard – c/- Hazard Consulting Limited
Mobile: 0214 22 913

| Resource Consent No | Site/Station |
|---|---|
| AUTH144142.01.01 | 72_10955 |
| AUTH144142.01.01 | 72_10956 |
| AUTH144142.01.01 | 72_10957 |
| AUTH144142.01.01 | 72_10958 |

(Hereinafter referred to as the Consent Holder)

**Consent Type:** Land Use Consent

**Consent Subtype:** Land - well

**Activity authorised:** to construct bores, use and maintain a well for pasture or crop irrigation supply and monitoring bores for the purposes of monitoring a pumping test

**Location:** 582 Parallel Road, RD 3, Cambridge

**Map reference:** NZTM 1810593 E 5802338 N, NZTM 1810407 E 5802401 N, NZTM 1810479 E 5802554 N, NZTM 1810434 E 5802598 N

**Consent duration:** This consent will commence in accordance with section 116 of the Resource Management Act 1991 and the term is unlimited.

**Subject to the conditions overleaf:**

**CONDITIONS**

1. The wells shall be constructed and maintained and/or abandoned so that they will not cause cross-contamination between hydraulic units (aquifers) in any water (including ground water and geothermal water).

2. The wells shall be completed and sealed such that leakage of water or contaminants to or from the ground surface is prevented.

3. Materials used for well construction shall be of such quality and strength to enable each well to be completed without casing or seal leakage during construction or subsequent well operation.

4. If a well is to be used for potable water supply, it shall be located at least 30 metres horizontally from any on-site sewage disposal system.

5. Upon completion of each well, wastes introduced to the well during drilling and construction shall be removed.

6. If artesian conditions are encountered, a conductor casing shall be grout sealed to ensure control of potential flowing artesian ground water and to prevent instability of the ground at the well head. Well head completion shall be such that ground water leakage under flowing artesian pressures is prevented.

7. The Waikato Regional Council shall be notified of the anticipated date of drilling commencing if a well is not to be drilled within three months of this consent being granted.

8. A log for each well drilled shall be forwarded to the Waikato Regional Council within two months of drilling being completed. Each log shall be provided with the correct identifier as detailed in the table below (include the co-ordinates of actual location that the well was drilled). Each log shall show:
    i. the location of the hole/well
    ii. date of completion
    iii. duration of drilling
    iv. depth and diameter of the hole/well
    v. the method of drilling
    vi. full construction details
    vii. the subsurface geology
    viii. full results of any tests (e.g. well yield, temperature, water quality) undertaken on the drilled hole/well
    ix. a site diagram

9. The activity shall not disturb any archaeological site or waahi tapu as identified in any district plan or by Heritage New Zealand except where Heritage New Zealand approval has been obtained.

10. Abandoned or obsolete bores must be identified and decommissioned to prevent contamination. Advice of decommissioning of bores should be provided to Council within 4 weeks of the work being completed.

**Bore Log Reference Numbers**

| Resource Consent No | Site/Station |
|---|---|
| AUTH144142.01.01 | 72_10955 |
| AUTH144142.01.01 | 72_10956 |
| UTH144142.01.01 | 72_10957 |
| AUTH144142.01.01 | 72_10958 |


Note: If an existing bore is to be decommissioned then this should be properly capped and sealed by a driller, and Council advised of this. If you are decommissioning a bore, you must ensure that contaminants are prevented from entering the bore by filling it with clean material and compacting or sealing the surface.

Advice Notes - General

- This resource consent does not give any right of access over private or public property. Arrangements for access must be made between the consent holder and the property owner.

- Where a resource consent has been issued in relation to any type of construction (e.g. dam, bridge, jetty) this consent does not constitute authority to build and it may be necessary to apply for a Building Consent from the relevant territorial authority.
- This resource consent is transferable to another owner or occupier of the land concerned, by written notice to the Council, on the same conditions and for the same use as originally granted (s.134-137 RMA). The transfer of water, including changes of location, may occur as provided for in Chapter 3.4 of the Waikato Regional Plan, subject to the requirements of those rules.
- The consent holder may apply to change the conditions of the resource consent under s.127 RMA.
- The reasonable costs incurred by Waikato Regional Council arising from supervision and monitoring of this/these consents will be charged to the consent holder. This may include but not be limited to routine inspection of the site by Waikato Regional Council officers or agents, liaison with the consent holder, responding to complaints or enquiries relating to the site, and review and assessment of compliance with the conditions of consents.
- Note that pursuant to s332 of the RMA 1991, enforcement officers may at all reasonable times go onto the property that is the subject of this consent, for the purpose of carrying out inspections, surveys, investigations, tests, measurements or taking samples.

# Notification and Consent Evaluation Report

| | | | |
|---|---|---|---|
| **Applicant:** | Kiwifruit Investments Limited | **File No.:** | 61 84 04A |
| **Address of Site:** | 582 Parallel Road, Ohaupo | **Project Code:** | RC26189 |
| **Application Number:** | APP144393 | | |

## 1 Introduction

Feathers Planning Limited on behalf of Kiwifruit Investments Limited have applied for a resource consent for the following:

| Reference Id | Activity Subtype | Activity Description |
|---|---|---|
| AUTH144393.02.01 | Land - disturbance | Earthworks in association with proposed Kiwifruit Orchard development |

This report assesses the application, the potential environmental effects and the relevant planning provisions in the Resource Management Act 1991 (RMA) and Waikato Regional Council policies and plans. The report recommends whether to process the application with or without notification and whether consent should be granted.

## 2 Background and Description of Proposal

### 2.1 Background

The site is located at 582 Parallel Road, Ohaupo with the following map coordinate reference NZTM 1810584.0000 E 5802358.0000 N. The site is legally described as Lot 3 DPS 89413 and held in record of title SA70D/525, with a total land area of 35.3ha. The site is zoned rural under the Operative Waipa District Plan (District Plan). The site currently contains a milking shed, and ancillary farming related buildings. A dwelling is located towards the centre of the site near the road boundary. Access to the site is via an existing driveway from Parallel Road. Figure 1 below shows the location of the property.


**Figure 1:** Location of property

As shown in Figure 1, two gullies transect the site, one near the western boundary, the other near the centre of the site. Both gullies contain unnamed tributaries to the Mangawhero Stream to the north of the site and have a 'surface water classification' under the Waikato Regional Plan (WRP). The remainder of the topography is flat and in pasture.

The Applicant has provided an Ecological Impact Assessment (EIA) prepared by Titoki Landcare, dated May 2022. The EIA provides an assessment of the ecological values of the site, and in particular provides an assessment of the two gully features. The EIA identifies a wetland features in the base of the eastern gully. Figure 2 below shows the wetland location relative to the proposed earthworks area.

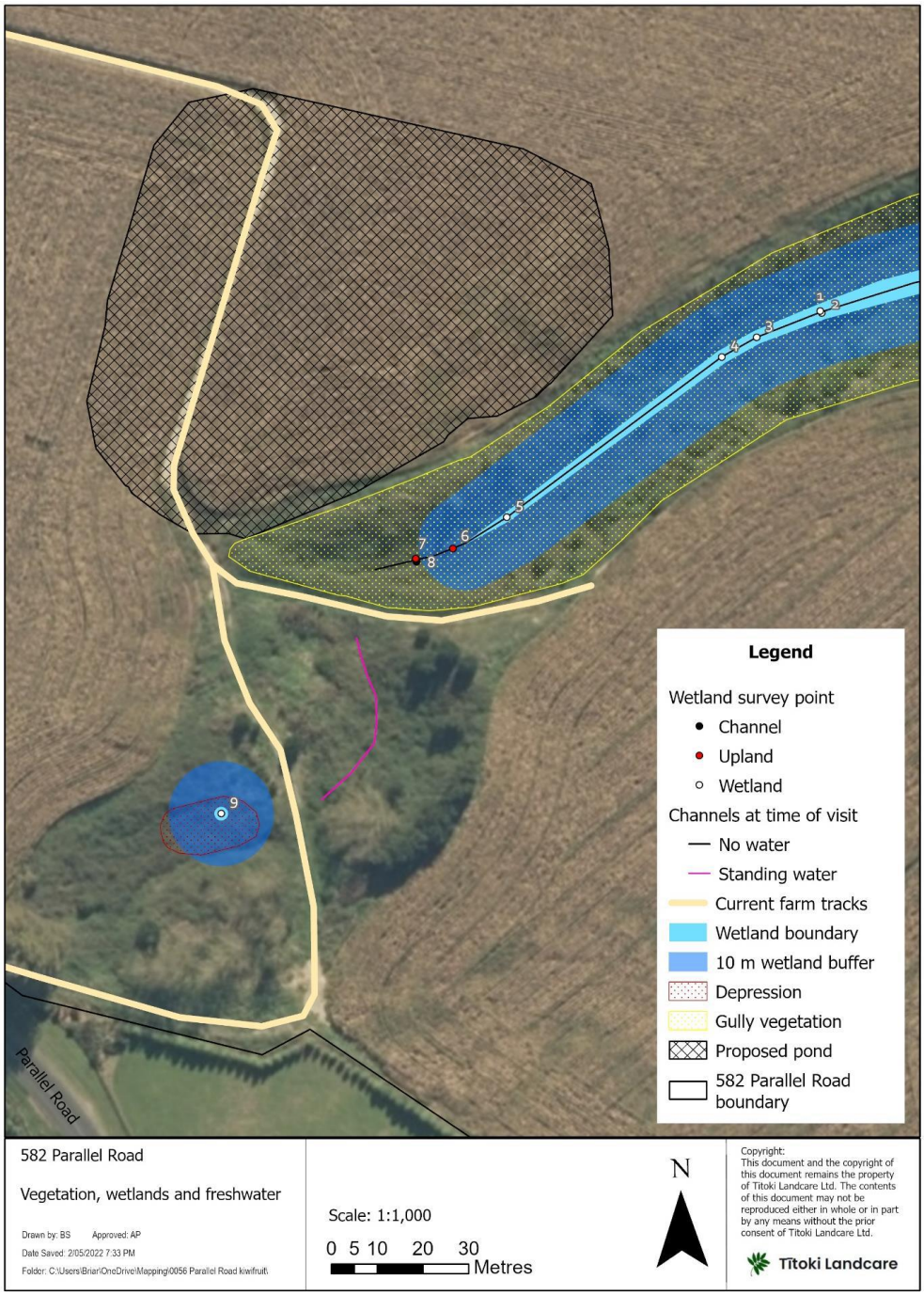



**Figure 2:** Vegetation, wetlands and freshwater map (sourced from EIA)

The site is surrounded by a mixture of rural properties, and rural residential properties, the closest dwelling being to the south of the earthworks area (577 Parallel Road), and a dwelling being what appears to be a previous subdivision of the wider site at 598 Parallel Road.

### 2.2 Proposal

Cut and fill earthworks are proposed in the centre of the site to establish a water storage pond. The water will be stored and used for frost protection initially, and subsequently for irrigation purposes once the kiwifruit orchard is established. The earthworks are proposed to be undertaken in a single stage, over a single earthworks season. The Applicant has proposed to commence earthworks as soon as practical, and within the winter period. The extent of the earthworks is summarised in the following table and depicted in Figure 2 below.

**Table 1:** Proposed earthworks details

| Description | Volume | Area |
|---|---|---|
| Cut – topsoil stripping | 1,650m$^3$ | 8,410m$^2$ |
| Cut | 10,600m$^3$ | |
| Fill | 5,700m$^3$ | |
| Maximum cut depth | 4.5m | - |
| Maximum fill depth | 2.7m | - |

It is noted that the application originally included an activity to import cleanfill material. This aspect of the proposal is no longer proposed, with all fill material to be sourced onsite from cut. The excess cut material will be stockpiled or exported from the site.

The application includes an Erosion and Sediment Control Plan (ESCP), and a Construction Management Plan (CMP) prepared by Titus Consulting Engineers Ltd. The proposed sediment and erosion control measures are as follows, and shown in Figure 3 below:

1. *Dirty Water Diversion Bund formed out of "stripped topsoil" and shaped to be direct surface run-off to the Decant Earth Bunds.*
2. *Dirty Water Diversion Bund formed out of "metal" and shaped to be traversable by construction vehicles at "construction entrance" to the excavation site. Location of these entrances are to be formed at the top any catchment to minimise material exiting the site via vehicle tires/movements*
3. *Decant Earth Bunds will be constructed at the low point of each catchment as per Waikato Regional Council guidelines*
4. *Silt Fence to be constructed 1.0m off set from the existing gully edge*
5. *Once earthworks construction is completed, and the internal pond liner has been installed the topsoil from the Dirty Water Diversion Bunds can be respread on the pond embankment batter, along with grass-seeding & hay mulching to stabilise the site.*
6. *Decant Earth Bunds will only be disestablished once written approval from Waikato Regional Council representatives has been received.*

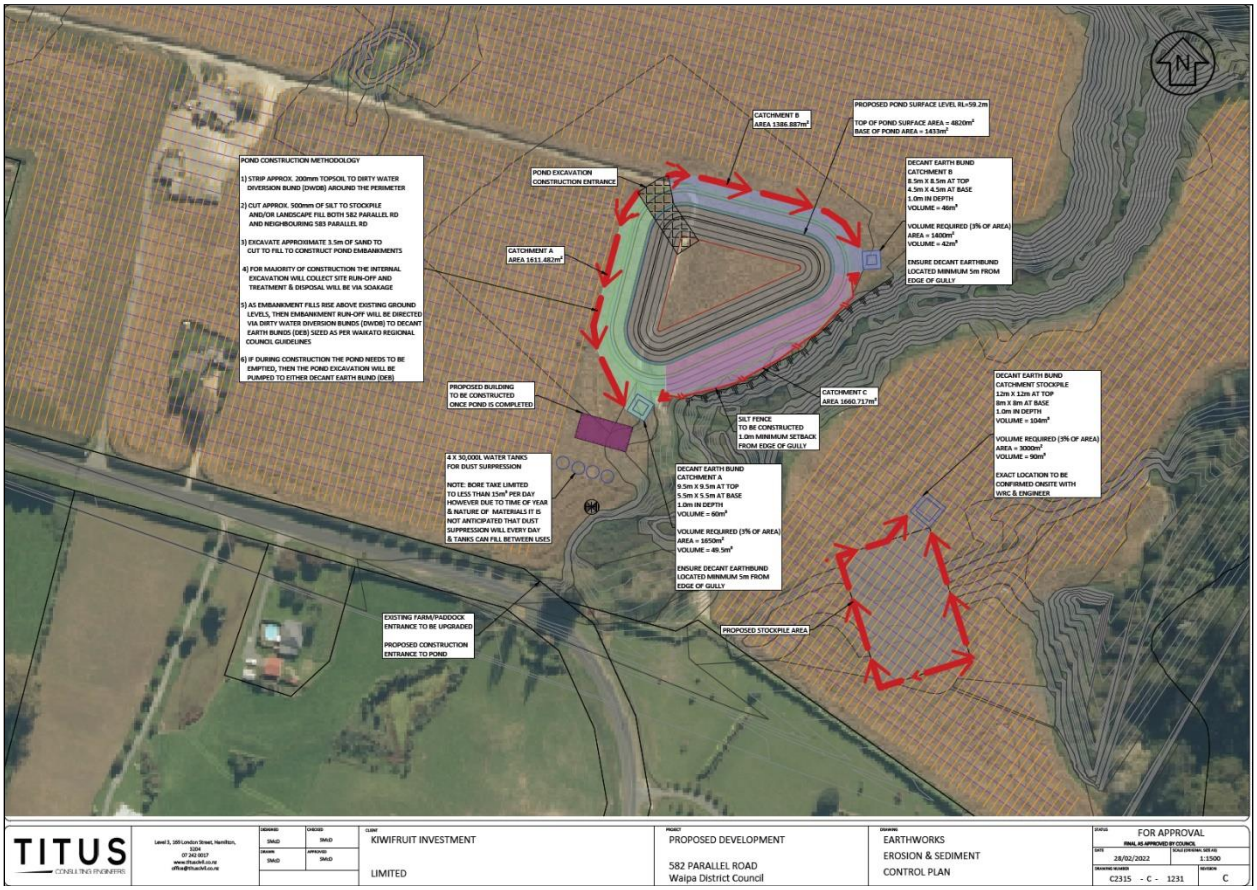



**Figure 3:** Erosion and Sediment Control Plan

## 3 Status of Activities under the Plans

The WRP contains objectives, policies and rules to address issues of use, development and protection of land and water.

The National Environmental Standards for Freshwater (NES-F) came into force on 3 September 2020 and contains a number of regulations relating to activities that may impact natural wetlands. An assessment of the proposal against the rules of the WRP and NES-F has been completed, with the relevant non-compliances identified below.

### 3.1 Earthworks

#### 3.1.1 Waikato Regional Plan

The application notes that the proposed earthworks will not be able to achieve the permitted activity standards of Rule 5.1.5 5(h). As noted above, the unnamed tributary of the Mangawhero Stream is adjoining the earthworks area to the east. The tributary is classified as 'surface water' and therefore a suspended solids standard of 100g/m$^3$ applies. The Applicant has noted that it is unlikely compliance with this standard can be achieved, and has therefore sought consent under Rule 5.1.4.13 of the WRP as a **Discretionary Activity**.

#### 3.1.2 NES for Freshwater

The EIA identifies a qualifying wetland is located within the eastern gully system. The wetland is not within 10m of the earthworks area but is within 100m. As set out below, the earthworks are unlikely to result in the partial or complete drainage of the wetland, and therefore resource consent is not required under Regulation 52 of the NES-F. There are no other activities proposed that require resource consent under the NES-F.

### 3.2 Activity status

Overall, resource consent is required under the WRP for the earthworks as a Discretionary Activity. Overall, the application is assessed as a **Discretionary Activity**.

## 4 Consultation/Affected Party Approvals

### 4.1 Iwi

The Applicant has advised that consultation was initiated with Nga Iwi Toopu o Waipa (NIToW) and Waikato Tainui. An email was sent to both iwi representative groups on the 3rd March 2022 and 10th March 2022. Gaylene Roberts (NIToW representative) provided a response asking for further details. The Applicant has advised that no further response has been received.

### 4.2 Other Parties

No other consultation has been undertaken.

## 5 Process Matters

The resource consent application was received as complete on the 24 March 2022. The following processing matters are noted:

| Date | Process Detail |
|---|---|
| 24/03/2022 | Lodged |
| 11/04/2022 | Active |
| 13/04/2022 | S91 advice issued |
| 20/07/2022 | S91 advice satisfied |
| 29/07/2022 | S37 extension for review of draft conditions (5 working days) |

In terms of the s91(1) advice that further consents were required, this advice related to the necessary groundwater take to fill the water storage pond. The Applicant subsequently lodged an application on the 20 July 2022 (APP144723) to take groundwater for the purpose of frost control and spraying. A further water take application is required for the irrigation of the kiwifruit. However, for the purposes of progressing this application, APP144723 satisfies the s91 advice, and subsequently enables this application to progress. APP144723 is being processed via a separate consent process.

### 5.1 Adequacy of information

It is my opinion that the information contained within the application is substantially suitable and reliable for the purpose of making a recommendation of and decision on notification. The information within the application is sufficient to understand the characteristics of the proposed activity as it relates to provisions of the WRP, for identifying the scope and extent of any adverse effects on the environment, and to identify persons who may be affected by the activity's adverse effects.

### 5.2 S95A: Determining whether the application should be publicly notified

**Step 1(a): Has the applicant requested public notification? (s95A(3)(a))**

The applicant has not requested public notification.

**Step 1(b): Is public notice required under s95C due to required information not being provided? (s95A(3)(b))**

There are no further information requests (s92(1)) or reports to be commissioned (s92(2)) that have not been responded to or provided.

**Step 2(a): Is there a Rule or NES that precludes public notification? (s95A(5)(a))**

There are no rules in the WRP or national environmental standard relevant to this proposal that preclude public notification.

**Step 2(b): Is public notice precluded on the basis that the application is for a controlled activity under the Regional Plan? (s95A(5)(b)(i))**

The activity is not for a controlled activity.

**Step 3(a): Is there a rule or NES that requires public notification? (s95A(8)(a))**

There are no rules in the WRP or national environmental standard relevant to this proposal that require public notification.

**Step 3(b): Is public notification required on the basis that the activity will have adverse effects on the environment that will be, or are likely to be, more than minor? (s95A(8)(b))**

In forming this opinion, I have had appropriate regard to all of the matters in s95D (a) to (e) which are assessed below.

(a) I confirm that I have disregarded effects on persons who own or occupy the land in, on or over which the activity will occur or any land adjacent to that land.

(b) There are no rules in the WRP or national environmental standard relevant to this proposal that permit an activity with this effect.

(c) There are no restricted discretionary activities which limit the effects that may be considered (s95D(c)).

(d) I confirm that I have had no regard to any trade competition matters.

(e) No written approvals have been provided.

Section 104(1)(a) of the RMA provides that when considering a consent application, the consent authority must, subject to Part 2, have regard to the actual and potential effects on the environment of allowing the activity. Case law has determined that the "environment" must be read as the environment which exists at the time of the assessment and as the environment may be in the future as modified by the utilisation of permitted activities under the plan and by the exercise of resource consents which are being exercised, or which are likely to be exercised in the future. It does not include the effects of resource consents which might be sought in the future nor any past reversible effects arising from the consent being considered. In this instance the existing environment is described in section 2.1 of this report, and has been taken into account.

Permitted baseline

Section 104(2) provides that when forming an opinion about the actual or potential effects of the activity, the consent authority may disregard an adverse effect of the activity on the environment if the regional plan permits an activity with that effect.

There are no permitted activity baseline effects relevant to the applications and as such none have been discounted.

Actual and potential effects:

The key environmental effects considered relevant to this proposal are:

- Water quality effects from sediment discharges during earthworks;
- Ecological effects;
- Effects of dust discharges;
- Exotic weed invasion; and
- Cultural and archaeological effects.

The Applicant has undertaken an assessment of environmental effects, as presented in Section 11 of the application. This assessment informs key conclusions and management recommendations. Therefore, and for the purpose of this assessment, in accordance with s 42A(1A) and (1B) of the RMA, I wish to generally adopt the applicant's assessment and provide the additional commentary below.

Water Quality Effects from Sediment Discharges during the Earthworks

Soil disturbance activities increase the potential for erosion and destabilisation effects and have the potential to discharge sediment into waterways both during and after the works until the ground surface is stabilised. Sediment discharges to water can cause a range of adverse effects on freshwater ecosystems, including smothering aquatic life, damaging fish and invertebrates' gills, destruction of spawning grounds, and the deposition of nutrients to waterways. Increased turbidity can interfere with aquatic animal's abilities to feed due to poor visibility and reduced light penetration can reduce photosynthetic activity.

The Applicant has proposed to manage the potential erosion and sediment effects of the earthworks through implementation of erosion and sediment controls as detailed in the ESCP. The ESCP proposes to use dirty and clean diversion bunds and decanting earth bunds. As noted above, an unnamed tributary of the Mangawhero Stream is located near the earthworks area. Adherence with the erosion and sediment controls is essential to ensure sediment does not enter this gully system. The effective management of sediment discharges from the site is reliant on robust monitoring and maintenance of the specified erosion and sediment control devices throughout the duration of these activities. Conditions of consent are recommended to ensure this occurs.

The applicant has provided an *'Erosion and Sediment Control Plan*' (ESCP) with the application, which outlines the methodology to mitigate any potential adverse effects from the earthworks activities. The *'Erosion and Sediment Control Plan*' has been assessed by Waikato Regional Council (WRC) staff, who consider that the plan has been prepared in general accordance with WRC's publication, '*Erosion and Sediment Control – Guidelines for Soil Disturbing Activities, January 2009'.*

Overall, the Applicant has demonstrated that appropriate ESCP can be implemented to manage the earthworks to ensure that any potential sediment discharge effects from the earthworks will be minimised to levels to ensure that any residual effects are no more than minor within downstream receiving environments. A consent condition is included in the attached certificate requiring provision of a final ESCP for certification and implementation.

Ecological effects

As outlined above, the site contains a possible wetland within the base of the gully feature immediately to the east of the proposed earthworks area. The proposal has the potential to result in adverse effects

on the ecological values of the gully feature and wetland. The Applicant has engaged Titoki Landcare Ltd to prepare an ecological assessment that considers the potential impacts of the proposal on the ecological features on the site. This assessment concludes that the proposal is likely to have low to very low level of effect and has recommended the following actions:

1. A silt fence will be constructed with a minimum setback of 1 m from the gully edge to prevent any soil from entering the gully (as per the current pond construction design).
2. No construction materials or construction waste should enter the gully.
3. Gully vegetation should not be cleared or damaged.
4. The pond must be located a minimum of ten metres from any wetland.

The Applicant has confirmed that the above actions will be implemented and are reflected in the draft CMP submitted with the application.

I agree and adopt the conclusions and recommendations outlined above and, on that basis, consider the potential adverse ecology effects to be less than minor.

Dust Effects

The exposure of earth surfaces associated with earthworks activities has the potential to create adverse dust effects on neighbouring properties when machinery is working during dry and windy conditions.

In this instance, while there are two residential properties to the north and east of the earthworks area, the earthworks scale is not significant, and can be managed via typical suppression measures. On this basis, the risk of dust presenting an adverse effect is considered to be less than minor.

Exotic Weed Invasion

The proposed earthworks will provide conditions for invasive weeds to become established on exposed surfaces during and after construction. Machinery brought onto the site to undertake earthworks could potentially carry plant matter and/or seeds, which could result in the introduction of new weed species in the area. This is a potential detrimental impact as weeds may threaten the ecological integrity of the surrounding indigenous vegetation.

I recommend that all machinery brought onsite is first cleaned to remove any plant matter and/or seeds. If consent is granted, I have proposed a condition of consent in the attached certificate regarding washing of machinery. On this basis, I consider that the risk of exotic weed invasion will be adequately avoided.

Cultural/Archaeological Effects

As set out above, the Applicant has contacted mana whenua in relation to this proposal. To date, the Applicant has advised that no response has been received from NITOW or Waikato-Tainui.

Notwithstanding this, on review of both WRC and District Council planning maps, there are no recorded cultural or archaeological sites identified on the site. However, there is potential to uncover unidentified archaeological sites during earthworks activities. Therefore, accidental protocol procedures are recommended as consent conditions, should consent be granted. The inclusion of these conditions does not preclude the use of other protocols if agreed between the applicant and iwi, but rather provides a minimum standard to be followed. On this basis, the risk of disturbing archaeological sites is considered to be appropriately managed.

Taking the above into account, I consider the potential for adverse cultural effects to be less than minor and can be appropriately managed through consent conditions.

Conclusion

The actual or potential adverse effects of the proposal on the environment will be, or are likely to be, minor or less than minor. Therefore, public notification is not required on this basis.

**Step 4: Are there special circumstances that warrant public notification (s95A(9))?**

There are no other matters or special circumstances that warrant public notification.

**Conclusion**
The application does not require public notification.

### 5.3 S95B: Determining whether the application should be limited notified

**Step 1: Is there a Statutory Acknowledgment Area under s95E? (s95B(3)(a))**

There is no statutory acknowledgement applicable to the site.

**Step 2: Is there a rule or NES that precludes limited notification? (s95B(6)(a))**

There are no rules in the WRP or national environmental standard relevant to this proposal that preclude limited notification.

**Step 3: Is limited notification required on the basis that there are persons who are affected to a "minor or more than minor" extent? (s95B(8))**

In forming this opinion, I have had appropriate regard to the matters in s95E which I assess as follows:

(a) There are no rules in the WRP or national environmental standard relevant to this proposal that permit an activity with this effect on a person;

(b) There are no controlled or restricted discretionary activities which limit the effects that may be considered;

(c) No written approvals have been provided with the application; and

(d) There are no persons whose approval it is unreasonable to seek.

**Assessment**
An assessment of effects is captured in section in Section 5.2 of this report. There are no persons that own or occupier adjoining land nor any interest groups considered affected.

**Conclusion**
The application does not require limited notification on the basis of Step 3.

**Step 4: Are there Special Circumstances? (s95B(10))**

There are no special circumstances existing that warrant notification to any other persons not already determined to be eligible for limited notification.

**Conclusion**
The application does not require limited notification.

## 6 Section 95 notification recommendation and decision under delegated authority

It is recommended the application proceed on a **non-notified** basis for the reasons discussed above:

**Reporting Officer:**

Tim Wilson
Consultant Planner

**Date:** 3 August 2022

**Approved By:**

**Date: 4 August 2022**

Team Leader
Resource Use Directorate
Acting under authority delegated subject to the provisions of the RMA 1991 which at the time of decision had not been revoked.

## 7 Section 104

A decision was made under section 95 of the RMA to process the application on a non-notified basis. An assessment of, and decision on, the application under section 104 of the RMA is provided below.

## 8 Section 104(1)(a) - actual and potential effects on the environment

### 8.1 Effects of the proposal

The assessment of adverse effects in the approved notification report (section 5.2 of this report) is also relevant for the purposes of the assessment required under s104(1)(a). In summary it was concluded that the proposal has the potential to result in the following adverse effects:

- Water quality effects from sediment discharges during earthworks;
- Ecology effects;
- Effects of dust discharges;
- Exotic weed invasion; and
- Cultural and archaeological effects.

The assessment found that the actual and potential effects of the proposal are able to be avoided, remedied or mitigated through the imposition of conditions and are therefore acceptable.

## 9 Section 104(1)(b) - relevant policies & plans

### 9.1 National Policy Statement for Fresh Water Management

There is only one NPS that is relevant to the application being the NPS for Freshwater Management 2020 (NPS-FM). The NPS-FM came into effect on 3 September 2020 and replaces the NPS-FM 2014 (amended 2017). The NPS-FM sets out the objectives and policies for freshwater management under the RMA (1991) to support improved freshwater management in New Zealand.

In terms of the proposed activities, I have had regard to the fundamental concept of 'Te Mana o te Wai' and the objectives and policies of the NPS-FM and consider them to be consistent. Specifically, the proposal involves the implementation of appropriate erosion and sediment control measures to effectively manage the potential for sediment from the earthworks to enter water bodies. It is therefore my opinion that should the application be granted it will not be contrary to the NPS-FM.

### 9.2 New Zealand Coastal Policy Statement

The NZ Coastal Policy Statement is not relevant to this application.

### 9.3 National Environmental Standards

There are eight NESs that have come into effect. There are two NESs considered relevant, the NES-F and the NES for Sources of Human Drinking Water, both of which are addressed below.

#### 9.3.1 National Environmental Standards for Freshwater

The NES-F commenced on 3 September 2020 and sets standards for freshwater management under the RMA to support improved freshwater management in New Zealand.

In terms of the proposed activities, I have had regard to the NES-F, which is specifically addressed under section 3.2 of this report, where it was found that there are no consents required under the NES-F.

### 9.3.2 National Environmental Standard for Sources of Human Drinking Water

The National Environmental Standard for Sources of Human Drinking Water commenced on 17/5/2008. This standard is a regulation enacted by an Order in Council, under s43 of the Resource Management Act. The regulation requires that a regional council must not grant a water or discharge permit for an activity that will occur upstream of a drinking water abstraction point if specific criteria at the point of abstraction are exceeded. The criteria within the NES will not be exceeded and therefore no further consent conditions are required.

## 9.4 Waikato Regional Policy Statement

The Regional Policy Statement (RPS) identifies the significant resource management issues of the region and sets out the objectives, policies and methods to address these issues and to achieve integrated management of the natural and physical resources of the Region. The RPS aims to ensure the way we use our resources does not tip the balance and compromise the ability of future generations to provide for their own needs. The RPS was made operative on 20 May 2016.

Key issues in the RPS relating to this proposal are the state of resources (Issue 1.1), effects of climate change (Issue 1.2), managing the built environment (Issue 1.4) the relationship of tangata whenua with the environment (Issue 1.5) and the health and wellbeing of the Waikato River catchment (Issue 1.6). There are also many overlapping objectives under each of these issues which are relevant, including:

- Integrated management (Objective 3.1).
- Resource use and development (Objective 3.2).
- Decision making (Objective 3.3).
- Health and well-being of the Waikato River (Objective 3.4).
- Adapting to climate change (Objective 3.6).
- Ecosystem services (Objective 3.8).
- Relationship of tangata whenua with the environment (Objective 3.9).
- Sustainable and efficient use of resources (Objective 3.10.
- Built environment (Objective 3.12).
- Mauri and health of freshwater bodies (Objective 3.14).
- Allocation and use of fresh water (Objective 3.15).
- Ecological integrity and indigenous biodiversity (Objective 3.19).

Relevant policies to address these issues include:

- Integrated approach (Policy 4.1).
- Tangata whenua involvement (Policy 4.3).
- Planned and coordinated subdivision, use and development (Policy 6.1).
- Coordinating growth and infrastructure (Policy 6.3).
- Significant infrastructure and energy resources (Policy 6.6).
- Approach to identifying freshwater body values and managing freshwater bodies (Policy 8.1).
- All freshwater bodies (Policy 8.3)
- Catchment-based intervention (Policy 8.4).
- Waikato River Catchment (Policy 8.5).
- Allocating freshwater (Policy 8.6).
- Relationship of Maori to taonga (Policy 10.2).
- Maintain or enhance indigenous biodiversity (Policy 11.1).
- Protect significant indigenous vegetation and significant habitats of indigenous fauna (Policy 11.2).
- Collaborative management (Policy 11.3).

In assessing the proposed activity, the objectives and policies of the RPS have been considered and conditions have been recommended to avoid, remedy or mitigate potential adverse effects, should

consent be granted. On this basis, I am satisfied that the proposed activities are consistent with the relevant provisions of the RPS.

### 9.5 Te Ture Whaimana o Te Awa o Waikato – the Vision and Strategy for the Waikato River

As of 24 September 2010, Waikato Regional Council, in addition to any requirement specified in the RMA, must have particular regard to Te Ture Whaimana o Te Awa o Waikato – the Vision and Strategy for the Waikato River (the Vision and Strategy) under Schedule 2 of the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Claims Act. The Vision and Strategy applies to applications relating to the Waikato River or activities in the catchment that affect the Waikato River.

The site is near an unnamed tributary of the Mangawhero Stream, which meets the Waikato River approximately 1km to the north of the site. While the Applicant has not proposed specific betterment, the earthworks proposed will occur over a single earthworks season, be undertaken in accordance with the erosion and sediment control measures proposed in the draft ESCP, and subject to adherence to the conditions of consent recommended, will avoid adverse effects on the Waikato River. On this basis, no specific betterment is required to be demonstrated, and is considered that the proposal is consistent with the Vision and Strategy.

### 9.6 Waikato Regional Plan

The purpose of regional plans are to help regional councils carry out their functions under s30 of the RMA.

The objectives and policies contained in the WRP which are relevant to this proposal are those relating to matters of significance to Maori and water resources. These are outlined below.

<u>Matters of Significance to Maori</u>

- Objective 2.3.2 (Tangata Whenua Relationship with Natural and Physical Resources);
- Policy 1: Processes for Defining Relationship;
- Policy 2: Increase Awareness.

<u>Water Resources</u>

- Objective 3.1.2: (Water Resources);
- Policy 1: Management of Water Bodies;
- Policy 4: Waikato Region Surface Water Class;
- Policy 6: Tangata Whenua Uses and Values;

<u>Land and Soil</u>

- Objective 5.1.2: (Accelerated Erosion);
- Policy 1: Managing Activities that Cause or Have the Potential to Cause Accelerated Erosion and Encouraging Appropriate Land Management Practices
- Policy 2: Use of Regulatory and Non-Regulatory Approaches of Management for Soil Disturbance/Vegetation Clearance Activities in High Risk Erosion Areas
- Objective 5.2.2: (Discharges Onto or Into Land);
- Policy 2: Other Discharges Onto or Into Land.

In assessing this proposal, the objectives and policies of the WRP have been considered and conditions are recommended to avoid, remedy or mitigate actual and potential adverse effects, should consent be granted. On this basis, I am satisfied that the proposed activities are consistent with the relevant provisions of the WRP.

### 9.7 Waikato Regional Plan Change 1 - Waikato and Waipā River Catchments

Waikato Regional Plan Proposed Plan Change 1 (PPC1) is applicable to the Waikato and Waipā River catchments and gives effect to the NPS-FM and the V&S. The purpose of the proposed plan change is to

reduce point source and non-point sources of contaminants – nitrogen, phosphorus, sediment and bacteria - entering waterbodies (including groundwater) within the Waikato and Waipā River catchments.

The "Decisions Version" of PPC1 was formally notified on 22 April 2020 and must be given regard to. The objectives and policies of PPC1 are unlikely to be in conflict with the objectives and policies of the WRP as they introduce new provisions not previously included in the WRP. As such, the PPC1 objectives and policies should be given "considerable" (but not "full") weight. In assessing this proposal, the relevant objectives and policies of PPC1 have been considered. However, given that appropriate erosion and sediment control measures will be implemented, the proposal is unlikely to increase the levels of nitrogen, phosphorus, sediment and bacteria in waterbodies, I am therefore satisfied that this activity is consistent with the relevant objectives and policies of PPC1.

## 10 Section 104(1)(c) – any other matter considered relevant and reasonably necessary

### 10.1 Other Matters

#### 10.1.1 Waikato-Tainui Environmental Plan

The Waikato-Tainui Environmental Plan provides a background to, and identifies key, resource-based issues for Waikato-Tainui. The plan sets out Waikato-Tainui's vision statement for environmental and heritage issues and key strategic objectives such as tribal identity and integrity, including "to grow our tribal estate and manage our natural resources." The plan is designed to enhance Waikato-Tainui participation in resource and environmental management.

I have assessed this proposal against the objectives and outcomes within this plan and overall, I consider that the proposal is consistent with this Iwi Environmental Plan.

#### 10.1.2 Climate change

Section 7(i) of the RMA identifies the effects of climate change on the proposal as an "other matter" to which particular regard must be had. I have considered the potential for climate change to affect the proposal and conclude that there is unlikely to be any such effects of concern.

### 10.2 Customary activities

There are no customary activities relevant to this consent process.

## 11 Part 2 Matters

The Court of Appeal decision in *R J Davidson Family Trust v Marlborough District Council* means that there is no need to assess applications against Part 2 of the RMA, unless doing so would add something beneficial to the process.

The RPS gives complete coverage over the proposed activities and potential effects, however, given the age of the WRP, I consider that an assessment of Part 2 is appropriate. In that regard, I have considered the proposal to not be inconsistent with Part 2 of the RMA.

## 12 Discussion/Conclusions

Feathers Planning Limited, on behalf of Kiwifruit Investments Limited, has made an application for resource consent to undertake earthworks associated with establishing a kiwifruit orchard at 582 Parallel Road, Ohaupo. The potential adverse environmental effects associated with the proposed works are considered to be:

- Water quality effects from sediment discharges during earthworks;
- Ecology effects;
- Effects of dust discharges;

- Exotic weed invasion; and
- Cultural and archaeological effects.

For the reasons outlined in this report, I am satisfied that these adverse effects can be avoided, remedied or mitigated such that they can be managed to be no more than minor.

The proposal has been assessed in respect to its consistency with the standards, objectives and policies of the NES-F, NPS-FM, RPS, Vision and Strategy, WRP, Waikato-Tainui Environmental Plan, and the statutory provisions of the RMA. It has further been considered in accordance with section 104B of the RMA which has regard to the determination of applications for discretionary activities. Provided the activities are undertaken in accordance with the application for consent and subsequent supporting documentation, and the recommended consent conditions in the attached Resource Consent Certificate, I consider that they will not be inconsistent with Council's policy and plans, or the statutory provisions of the RMA.

For these reasons, I recommend that consent be granted subject to the consent conditions in the attached Resource Consent Certificate for a period of 5 years, being the period applied for.

The following considerations have been taken into account in recommending these terms:

- The temporary nature of the soil and bed disturbance activities;
- The various proposed mitigation measures and ongoing monitoring requirements;
- The actual and potential adverse effects of the proposed activities on the environment;
- Consistency with Regional Council policies, objectives and plans;
- Consistency with the purpose and principals of the RMA; and
- Waikato Regional Council's internal guidelines for consent duration.

## 13 Monitoring

The Waikato Regional Council has a statutory obligation under section 35 of the RMA to monitor the effects of resource consents being exercised in its region. Waikato Regional Council staff and/or its authorised agents will therefore monitor the proposed activities throughout the term of consent.

Consent conditions are recommended requiring monitoring and maintenance procedures to be implemented over the course of the consent term for the activities to ensure that the required environmental management procedures are implemented on site in accordance with the specifications outlined within the consent application documents, consent conditions and in accordance with Waikato Regional Council best practice guidelines. Accordingly, I have recommended conditions to this effect in the attached resource consent certificate. In particular, it is recommended that the consent ensures that all erosion and sediment controls at the site are regularly inspected and in good working order prior to, and immediately after rain events, and that these controls are maintained to achieve optimal sediment capture efficiency at all times.

All costs associated with monitoring are recovered from the consent holder on a reasonable and actual basis.

## 14 Recommended Decision

I recommend that in accordance with s104B, resource consent application be granted in accordance with the duration and conditions prescribed in the attached Resource Consent Certificates for the following reasons:

- The activities will have no more than minor actual or potential adverse effects on the environment.
- The activities are not contrary to any relevant plans or policies.

- The activities are consistent with the purpose and principles of the RMA.

**Reporting Officer:**

Tim Wilson **Date:** 5 August 2022
Consultant Planner
Resource Use Directorate

**15 Decision**

Diane Palmer **Date:** 5 August 2022
Team Leader
Resource Use Directorate

# RESOURCE CONSENT CERTIFICATE

**Resource Consent:** AUTH144393.02.01

**File Number:** 61 84 04A

*Pursuant to the Resource Management Act 1991, the Regional Council hereby grants consent to:*

Kiwifruit Investments Limited
10A Oxford Street
Te Puke 3119

(hereinafter referred to as the Consent Holder)

**Consent Type:** Land Use Consent

**Consent Subtype:** Land - disturbance

**Activity authorised:** Earthworks in association with proposed Kiwifruit Orchard development

**Location:** 582 Parallel Road, RD 3, Cambridge

**Map reference:** NZTM 1810584.0000 E 5802358.0000 N

**Consent duration:** This consent will commence in accordance with section 116 of the Resource Management Act 1991 and will expire on 6 August 2027

**Subject to the conditions overleaf:**

**CONDITIONS**

**General**

1. The earthworks and all associated activities authorised by this resource consent shall be undertaken in general accordance with the application for this resource consent *'Resource Consent Application, Kiwifruit Investment Limited, 582 Parallel Road, Ohaupo'* (Feathers Planning Limited, March 2022) – (WRC Doc #23647939), except where otherwise required in the resource consent conditions below. Where there is any inconsistency between the application documents and the resource consent conditions then the conditions below shall prevail.

2. The consent holder shall be responsible for all contracted operations relating to the exercise of this resource consent and shall ensure contractors are made aware of the conditions of this consent and ensure compliance with those conditions.

3. A copy of this resource consent shall be kept onsite at all times that the works authorised by this consent are being undertaken and shall be produced without unreasonable delay upon request from a servant or agent of the Waikato Regional Council.

**Pre-works Requirements**

4. The consent holder shall inform the Waikato Regional Council in writing, 10 working days prior to commencement of any works authorised by this resource consent, of the start date of the works authorised by this resource consent.

5. The consent holder shall appoint a representative(s) prior to commencement of any works authorised by this resource consent, who shall be the Waikato Regional Council's principal contact person in regard to matters relating to this consent. The consent holder shall inform the Waikato Regional Council of the representative's name and how they can be contacted prior to this consent being exercised. Should that person(s) change during the term of this resource consent, the consent holder shall immediately inform the Waikato Regional Council and shall also give written notice to the Waikato Regional Council of the new representative's name and how they can be contacted.

6. The consent holder shall arrange and conduct a pre-construction site meeting and invite, with a minimum of 10 working days' notice, the Waikato Regional Council, the site representative nominated under condition 5 of this consent, the contractor, and any other party representing the consent holder prior to any works authorised by this consent commencing on the site.

   ***Advice Note:*** *In the case that any of the invited parties, other than the site representative does not attend this meeting, the consent holder will have complied with this condition, provided the invitation requirement is met.*

**Erosion and Sediment Control**

7. The consent holder shall provide the Waikato Regional Council with an "Erosion and Sediment Control Plan" (E&SCP), at least 10 working days prior to the commencement of activities authorised by this consent. The objective of the E&SCP shall be to minimise sediment discharge from the site to the extent practicable.

8. The E&SCP shall as a minimum be based upon and incorporate those specific principles and practices which are appropriate for the activity authorised by this consent and contained within the Waikato Regional Council document titled *"Erosion and Sediment Control – Guidelines for Soil Disturbing Activities" (Technical Report No. 2009/02 – dated January 2009)*, and shall include at least the following;

a) Details of all principles, procedures and practices that will be implemented to undertake erosion and sediment control to minimise the potential for sediment discharge from the site;
b) The design criteria and dimensions of all key erosion and sediment control structures;
c) A site plan of a suitable scale to identify;
    i. The locations of waterways;
    ii. The extent of soil disturbance and vegetation removal;
    iii. Any "no go" and/or buffer areas to be maintained undisturbed adjacent to watercourses;
    iv. Areas of cut and fill;
    v. Locations of topsoil stockpiles;
    vi. All key erosion and sediment control structures;
    vii. The boundaries and area of catchments contributing to all stormwater impoundment structures;
    viii. The locations of all specific points of discharge to the environment; and
    ix. Any other relevant site information
d) Construction timetable for the erosion and sediment control works and the bulk earthworks proposed;
e) Timetable and nature of progressive site rehabilitation and re-vegetation proposed;
f) Maintenance, monitoring and reporting procedures;
g) Rainfall response and contingency measures including procedures to minimise adverse effects in the event of extreme rainfall events and/or the failure of any key erosion and sediment control structures;
h) Procedures and timing for review and/or amendment to the E&SCP; and
i) Identification and contact details of personnel responsible for the operation and maintenance of all key erosion and sediment control structures.

The E&SCP shall be certified in writing by the Waikato Regional Council acting in a technical certification capacity prior to any works authorised by this consent commencing. The Council's certification will be based on its assessment as to whether the E&SCP addresses the matters required. The consent holder shall undertake all earthworks authorised by this consent in accordance with the certified E&SCP.

9. Any changes proposed to the E&SCP shall be confirmed in writing by the consent holder and the Waikato Regional Council, acting in a technical certification capacity, prior to the implementation of any changes proposed.

10. The consent holder shall ensure that a copy of the certified E&SCP, including any confirmed amendments, is kept onsite and this copy is updated within 5 working days of any amendments being confirmed.

11. The consent holder shall ensure that all sediment laden run-off from the site is treated by sediment retention structures. These structures are to be fully operational before bulk earthworks commence and shall be maintained to perform at least at 80% of their full operational capacity.

12. The consent holder shall ensure that all clean water run-off from stabilised surfaces including catchment areas above and around the site shall be diverted away from the earthworks area via a stabilised diversion system.

13. The earthworks and associated activities shall be undertaken in accordance with the recommendations set out in the Ecological Assessment titled 'Ecological Impact Assessment: Parallel Rd Kiwifruit farm', prepared by Titoki Landcare, dated May 2022 (Doc Ref # 24471823). In particular, the activity shall be undertaken in accordance with the following requirements:

a) A silt fence shall be constructed with a minimum setback of 1 m from the gully edge.
b) No construction materials or construction waste is to enter the gully.
c) Gully vegetation must not be cleared or damaged.
d) The pond must be located a minimum of ten metres from any wetland.

14. The concentration of suspended solids in the unnamed tributary of the Mangawhero Stream shall not exceed 110 grams per cubic metre suspended solids concentration as a result of the exercise of this consent. This standard shall apply, except where the suspended solids concentration in the named water body, unaffected by the activity, is greater than the standard specified. When the concentration of suspended solids in the named water body, unaffected by the activity, exceeds 110 grams per cubic metre then there shall not be any increase in the suspended solids concentration in the named water body as a result of activities authorised by this consent.

**Erosion and Sediment Control Monitoring and Maintenance**

15. The consent holder shall ensure that the erosion and sediment controls at the site are inspected a minimum of once per week and within 24 hours of each rainstorm event that is likely to impair the function or performance of the controls.

16. The consent holder shall carry out monitoring and maintenance of erosion and sediment controls in accordance with the conditions of this consent and shall maintain records detailing:

a) The date, time and results of the monitoring undertaken; and
b) The erosion and sediment controls that required maintenance; and
c) The time when the maintenance was undertaken; and
d) The type of maintenance carried out.

These records shall be provided to the Waikato Regional Council on request.

**Machinery**

17. The consent holder shall ensure that all machinery used in the exercising of this consent is cleaned prior to being transported to/from the site to ensure that all seed and/or plant matter has been removed and documented in accordance with the National Pest Control Agencies A series, best practice (Code A16) guidelines.

Keep it clean - machinery cleaning guidelines and handbook | Waikato Regional Council

18. All earthmoving machinery, pumps and generators shall be operated in a manner which ensures that spillages of fuel, oil and similar contaminants are prevented, particularly during refuelling and machinery servicing and maintenance. Refuelling and lubrication activities shall be carried out away from any surface water such that any spillage can be contained and does not enter any surface water.

19. Any storage of fuel, oil or other hazardous substances shall be fully contained within an area where any accidental spillages are unable to discharge to any waterbody.

**Dust**

20. All earthworks activities carried out on site shall be conducted and managed in such a manner as to ensure that all dust and particulate emissions are kept to a practical minimum to the extent that there are no dust discharges beyond the boundary of the site that cause an objectionable effect.

21. The consent holder shall ensure that, at all times, the soil moisture of exposed areas is maintained at sufficient levels, under prevailing wind conditions, to prevent dust generated by normal earthmoving operations from remaining airborne beyond the boundary of the work site.

22. The consent holder shall ensure that, outside of normal working hours, staff are available on-call at all times to operate the water application system for dust suppression.

23. If so required by the Waikato Regional Council, the consent holder carry out immediate sealing of any problematic dust generating surfaces within the site using hydro-seed/hydro-mulch, polymer soil stabilisers or a similar dust control product to provide instant remediation of dust effects to the satisfaction of the Waikato Regional Council.

**Archaeology**

24. The consent holder shall ensure that the exercise of this resource consent does not disturb any sites of archaeological value or of cultural significance to Tangata Whenua other than those sites for which specific archaeological authorities have been granted by Heritage New Zealand. In the event of any archaeological artefacts being discovered the works shall, in the vicinity of the discovery, cease immediately and the Waikato Regional Council, Heritage New Zealand and representatives of local iwi (where artefacts are of Māori origin) shall be notified within 24 hours. Works may recommence on the written approval of the Waikato Regional Council after considering:

    a) Tangata Whenua interests and values;
    b) Protocols agreed upon by Tangata Whenua and the consent holder;
    c) The consent holders interests;
    d) Any Heritage New Zealand authorisations; and
    e) Any archaeological or scientific evidence.

**Stabilisation**

25. The site shall be stabilised against erosion as soon as practicable. The consent holder shall monitor and maintain the site during the entirety of the works period to prevent sediment from entering any watercourse.

26. If required by the Waikato Regional Council, the consent holder shall carry out immediate stabilisation of any required area of exposed earthworks surfaces on site using straw mulching, pinned geotextile or similar instant stabilisation techniques to the satisfaction of the Waikato Regional Council.

**Administrative**

27. The consent holder shall pay the Waikato Regional Council any administrative charge fixed in accordance with section 36 of the Resource Management Act (1991), or any charge prescribed in accordance with regulations made under section 360 of the Resource Management Act (1991).

**Advice Notes - General**

1. In accordance with section 125 RMA, this consent shall lapse five (5) years after the date on which it was granted unless it has been given effect to before the end of that period.

2. This resource consent does not give any right of access over private or public property. Arrangements for access must be made between the consent holder and the property owner.

3. This resource consent is transferable to another owner or occupier of the land concerned, upon application, on the same conditions and for the same use as originally granted (s.134-137 RMA). The transfer of water, including changes of location, may occur as provided for in Chapter 3.4 of the Waikato Regional Plan, subject to the requirements of those rules.

4. The consent holder may apply to change the conditions of the resource consent under s.127 RMA.

5. The reasonable costs incurred by Waikato Regional Council arising from supervision and monitoring of this/these consents will be charged to the consent holder. This may include but not be limited to routine inspection of the site by Waikato Regional Council officers or agents, liaison with the consent holder, responding to complaints or enquiries relating to the site, and review and assessment of compliance with the conditions of consents.

6. Note that pursuant to s332 of the RMA 1991, enforcement officers may at all reasonable times go onto the property that is the subject of this consent, for the purpose of carrying out inspections, surveys, investigations, tests, measurements or taking samples.

7. If you intend to replace this consent upon its expiry, please note that an application for a new consent made at least 6 months prior to this consent's expiry gives you the right to continue exercising this consent after it expires in the event that your application is not processed prior to this consent's expiry.

8. If at any time during the resource consent period, you no longer require your consent, it may be surrendered, in whole or part, by giving written notice of such to the consent authority. Alternatively, please contact Resource Use staff on 0800 800 402 and we can provide you with a surrender form. Note that the surrender takes formal effect when you receive a notice of acceptance of the surrender from the Council.

# Consent Evaluation Report

| | | | |
|---|---|---|---|
| **Applicant:** | Bains Hort Group Limited | **File No.:** | 61 80 83A |
| **Address of Site:** | 582 Parallel Road, Cambridge | **Project Code:** | RC222 |
| **Consent Type:** | Land Use Consent | **Application Number:** | APP144627 |

## 1 Description of Activity

Bains Hort Group Limited has applied for a resource consent to drill up to 3 test bores for the construction of a single production bore hole and up to 2 monitoring bores to take groundwater for a new kiwifruit orchard irrigation at 582 Parallel Road, Cambridge. The proposed maximum abstraction rate is shown as 1200 cubic metres per day.

**Important Note: Irrigation of dairy pasture will require a consent. The National Environmental Standard for Freshwater requires that the irrigation of dairy farm land that is more than 10 ha above what was irrigated at any time in the 12 months before the close of 2 September 2020 is a discretionary activity that requires consent. The NES sets a high bar for granting such consents and the requirement is copied below. The applicant is advised to discuss this further with Council Farm Consenting Team staff if they wish to irrigate dairy pasture.**

**Note: Some bore location are within the vicinity of a mapped wetland. Under the rules of the NES Freshwater this could have an impact on any application for a water take consent. The applicant is advised to site the bores at least 100 metres away from the wetland**.

## 2 Status of Activities under the Waikato Regional Plan

Under the Waikato Regional Plan drilling below the water table is a controlled activity under Rule 3.8.4.7. Drilling below the water table which does not comply with the standards and terms of the controlled activity rule is a discretionary activity under rule 3.8.4.8.

**Note that this application is to authorise the construction, use and maintenance of the well only, and does not authorise the taking of water from the well**. The taking of groundwater from a well for reasonable domestic purposes, or for the purposes of providing drinking water for animals does not require any authorisation under the Resource Management Act unless it causes, or is likely to cause, adverse effects on the environment. **The taking of up to 15m$^3$ per day of groundwater for purposes not covered in the above is allowed by permitted activity rule 3.3.4.12 (attached) of the Waikato Regional Plan subject to compliance with the conditions of that rule. Any additional groundwater take over 15m$^3$ per day would require a separate resource consent to that being considered in this report**.

## 3 Consultation/Affected Party Approvals

This activity falls within Rule 3.8.4.7 of the Plan. That rule provides that "Applications under this rule will be considered without notification or the need to obtain written approval of affected persons in accordance with section 94(1)(b) of the RMA" [now s95A(3)] and, on that basis, s95A(1) provides for non-notification of this application. In addition, it is not considered that any special circumstances exist that would warrant notification in accordance with s95A(4). Accordingly, no party's approval has been sought and it is recommended that this application be processed on a non-notified basis.

## 4 Statutory Considerations

Section 104 of the Resource Management Act 1991 requires the Waikato Regional Council to have regard to the following matters when considering a resource consent application:

- Any actual or potential effects on the environment of allowing the activity
- The New Zealand Coastal Policy Statement and Regional Coastal Plan (for coastal consents)
- The Waikato Regional Policy Statement
- The Waikato Regional Plan and any proposed variations to that plan
- Other matters considered relevant and necessary to consider

### 4.1 Assessment of Environmental Effect

Drilling and its associated activities can have a variety of adverse environmental effects including:

1. contamination of ground water, surface water and soils by drilling fluids
2. reduction in ground water quality by contamination from surface water run-off, other surface water and other ground water sources
3. fuels and other hazardous substances on drill sites contaminating soils and surface water
4. accelerated soil erosion
5. vegetation removal to create drilling pads and drill rig access
6. well placement causing adverse environmental effects on other ground water users
7. loss of artesian water or aquifer pressure both in the short and long term
8. flow between previously isolated aquifers
9. adverse effects on geothermal characteristics
10. loss of geothermal fluid/pressure both in the short and long term
11. blow-outs (i.e. uncontrolled well discharges) in geothermal wells

The magnitude of these effects is influenced by the physical setting of the site, the scale of the drilling operation, the type of drilling, duration of the activity, and the hydrology and water quality at the site. Effects can be minimised through good drilling practices and through compliance with the recommended consent conditions, which are taken directly from the conditions of the controlled activity within the Waikato Regional Plan.

I consider that as long as these conditions, and the conditions in the attached schedule/certificate are complied with, there are less than minor risks of any adverse effects occurring from the granting of this resource consent application.

### 4.2 Policy Statements and Plans

#### 4.2.1 Waikato Regional Plan

The Waikato Regional Plan contains two policies in section 3.8.3 which relate to drilling. Policy 1 is relevant to this application:

**Policy 1: Effects of Drilling Activities**

Manage the effects of drilling and any associated discharges in a manner that avoids significant adverse effects on the quality of ground water, surface water and soils from:

a. contamination by drilling fluids
b. contamination of ground water by contaminants in surface water
c. mixing of previously isolated aquifers

d. loss of aquifer pressure/level
e. disturbance of waahi tapu and other identified sites of significance to tangata whenua as Kaitiaki
f. inappropriate drilling in geothermal systems.

**Rules**

As discussed in section 2 above, drilling below the water table is a controlled activity, provided that the activity complies with the standards and terms of rule 3.8.4.7, which states:

3.8.4.7 Controlled Activity Rule - Drilling Below the Water Table

The drilling of holes or wells below the water table where the hole or well is not permitted by or does not comply with Rule 3.8.4.6, is a controlled activity (requiring resource consent) subject to the following standards and terms:

a. All drilled holes/wells shall be constructed, maintained and/or abandoned so that they shall not cause cross-contamination between hydraulic units (aquifers) in any water including ground water and geothermal water.
b. Holes drilled shall be at least 100 metres away from any Significant Geothermal Feature.
c. All holes/wells shall be managed and maintained such that leakage of water or contaminants to or from the ground surface is prevented.
d. Materials used for well construction shall be of such quality and strength to enable the well to be completed without casing or seal leakage during construction or subsequent well operation.
e. Wells used for potable water supply shall be located at least 30 metres from any on-site sewage disposal system.
f. Wells used for taking water, shall be located at least 50 metres from a lake or stream, and 100 metres from Mean High Water Springs.
g. A log for each drilled hole/well shall be forwarded to the Waikato Regional Council within two months of completion of drilling. Each log shall show:
    i. the location of the hole/well
    ii. date of completion
    iii. duration of drilling
    iv. depth and diameter of the hole/well
    v. the method of drilling
    vi. full construction details
    vii. the subsurface geology
    viii. results of any tests undertaken during drilling, including permeability, temperature and water quality
    ix. a site diagram.
h. The activity shall not disturb any archaeological site or waahi tapu as identified at the date of notification of this Plan, in any district plan, in the NZ Archaeological Association's Site Recording Scheme, or by Heritage New Zealand except where Heritage New Zealand approval has been obtained.

Waikato Regional Council reserves control over the following matters:

i. Measures to avoid, remedy or mitigate the adverse effects of the activity on soil and water quality.
ii. Measures to avoid, remedy or mitigate the effects on other users of water.
iii. Monitoring, sampling and analysis requirements.
iv. The location and depth of drilling.
v. Any measures necessary to rehabilitate the land following the completion of the activity.
vi. Measures to avoid, remedy or mitigate the effect of the activity on areas of significant indigenous vegetation and significant habitats of indigenous fauna.

vii. The requirement for bonds to ensure appropriate control and abandonment of deep geothermal wells.

viii. Measures taken to remove wastes introduced to the hole/well during drilling and construction.

## 5 Relevant Part 2 Considerations

I consider that, if carried out in accordance with the conditions of this consent, the well construction will not contravene the purpose and principles of the Resource Management Act 1991 (as set out in Part 2 of the Act)

## 6 Monitoring

Whilst no scheduled monitoring of this consent is proposed, should the need arise, Waikato Regional Council may undertake monitoring of the well/s to ensure compliance with the resource consent conditions.

## 7 Conclusion

I consider that the exercise of this consent, if carried out in accordance with the conditions set out below, will have only minor environmental effects, and recommend that, in accordance with s104A of the Resource Management Act, this consent be granted with a term and conditions in line with Waikato Regional Council guidelines and with standard conditions for drilling and well construction.

## 8 Recommendations

**Recommended Decision**

- That resource consent application APP144627 be processed non-notified.
- That resource consent application APP144627 be granted in accordance with the duration and conditions prescribed in the attached schedule/certificate for the following reasons:
- The activity will have no more than minor actual or potential adverse effects on the environment
- The activity is not contrary to any relevant plans or policies
- The activity is consistent with the purpose and principles of the Resource Management Act 1991

Breeahn Munns **Date: 28 June 2022**

Resource Officer - Water Allocation

Resource Use Directorate

## 9 Decision

That the resource consent application is granted in accordance with the above recommendations.

Mark Row **Date: 8 July 2022**

Project Manager, Farm Water & Drilling
Resource Use Directorate

Acting under authority delegated subject to the provisions of the Resource Management Act 1991 which at the time of decision had not been revoked.

# RESOURCE CONSENT CERTIFICATE

**Resource Consent:** AUTH144627.01.01

**File Number:** 61 80 83A

*Pursuant to the Resource Management Act 1991, the Regional Council hereby grants consent to:*

Bains Hort Group Limited
PO Box 745
Te Puke 3153

Contact Details:
Nick Hazard
Mobile: 021 422 913

(hereinafter referred to as the Consent Holder)

**Consent Type:** Land Use Consent

**Consent Subtype:** Land - well

**Activity authorised:** To drill up to 3 test bores for the construction of a single production bore hole for groundwater take for new kiwifruit orchard irrigation. In addition, up to 2 monitoring bores are required to be drilled. Groundwater take consent to be lodged following bore construction and pumping test.

**Location:** 582 Parallel Road, Cambridge

**Map reference:** NZTM 1810194 E 5802667 N, NZTM 1810904 E 5802428 N, NZTM 1810924 E 5802413 N, NZTM 1810760 E 5802124 N, NZTM 1810745 E 5802135 N

| Resource Consent No | Site/Station |
|---|---|
| AUTH144627.01.01 | 72_11225 |
| AUTH144627.01.01 | 72_11226 |
| AUTH144627.01.01 | 72_11227 |
| AUTH144627.01.01 | 72_11228 |
| AUTH144627.01.01 | 72_11229 |

**Consent duration:** This consent will commence in accordance with section 116 of the Resource Management Act 1991 and the term is unlimited.

**Subject to the conditions overleaf:**

**CONDITIONS**

1. The wells shall be constructed and maintained and/or abandoned so that they will not cause cross-contamination between hydraulic units (aquifers) in any water (including ground water and geothermal water).

2. The wells shall be completed and sealed such that leakage of water or contaminants to or from the ground surface is prevented.

3. Materials used for well construction shall be of such quality and strength to enable the well to be completed without casing or seal leakage during construction or subsequent well operation.

4. If a well is to be used for potable water supply, it shall be located at least 30 metres horizontally from any on-site sewage disposal system.

5. If a well is to be used for taking water, it shall be located at least 50 metres horizontally from a lake or stream, and if near the coast, located at least 100 metres from mean high-water springs (MHWS).

6. Upon completion of each well, wastes introduced to the well during drilling and construction shall be removed.

7. If artesian conditions are encountered, a conductor casing shall be grout sealed to ensure control of potential flowing artesian ground water and to prevent instability of the ground at the well head. Well head completion shall be such that ground water leakage under flowing artesian pressures is prevented.

8. The Waikato Regional Council shall be notified of the anticipated date of drilling commencing if a well is not to be drilled within three months of this consent being granted.

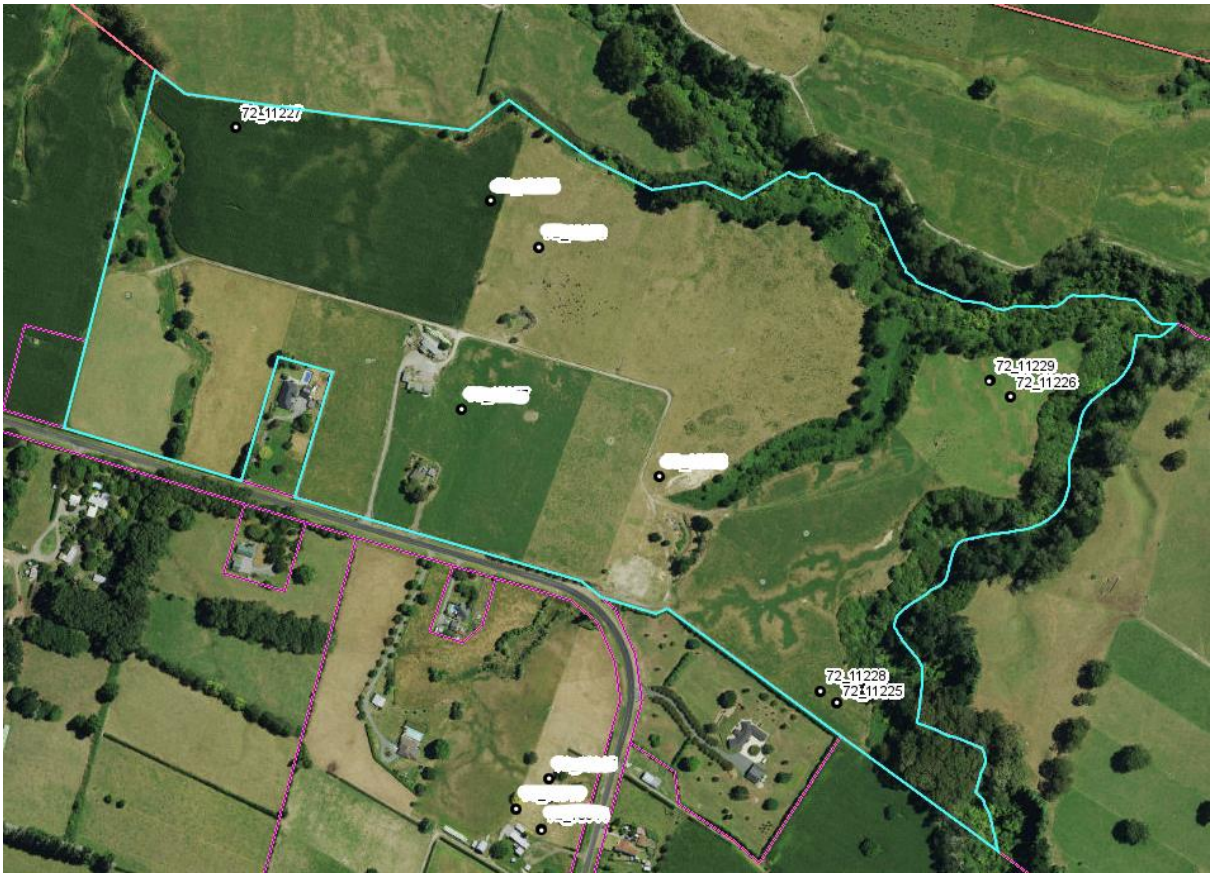
9. A log for each well drilled shall be forwarded to the Waikato Regional Council within two months of drilling being completed. Each log shall be provided with the correct identifier as detailed in the table below (include the co-ordinates of actual location that the well was drilled). Each log shall show:
    i. the location of the hole/well
    ii. date of completion
    iii. duration of drilling
    iv. depth and diameter of the hole/well
    v. the method of drilling
    vi. full construction details
    vii. the subsurface geology
    viii. full results of any tests (e.g. well yield, temperature, water quality) undertaken on the drilled hole/well
    ix. a site diagram

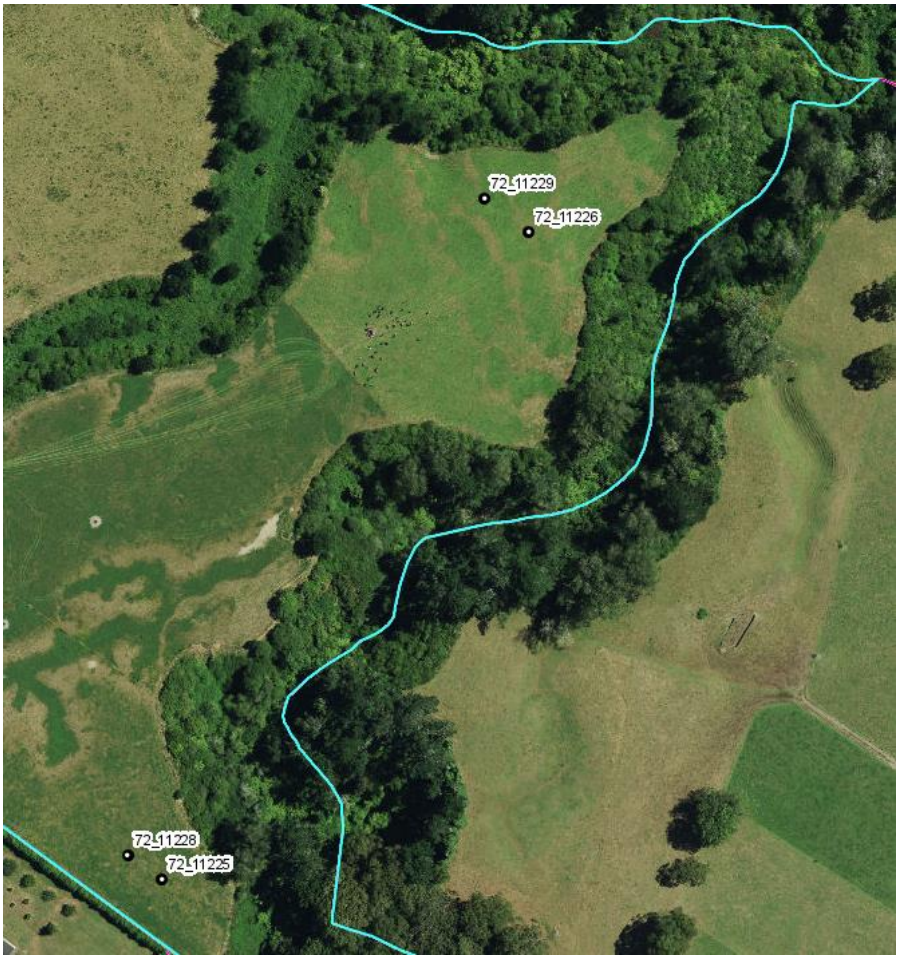
10. The activity shall not disturb any archaeological site or waahi tapu as identified in any district plan or by Heritage New Zealand except where Heritage New Zealand approval has been obtained.

11. Abandoned or obsolete bores must be identified and decommissioned to prevent contamination. Advice of decommissioning of bores should be provided to Council within 4 weeks of the work being completed.

**Bore Log Reference Numbers**

| Resource Consent No | Site/Station |
|---|---|
| AUTH144627.01.01 | 72_11225 |
| AUTH144627.01.01 | 72_11226 |
| AUTH144627.01.01 | 72_11227 |
| AUTH144627.01.01 | 72_11228 |
| AUTH144627.01.01 | 72_11229 |






Note: If an existing bore is to be decommissioned then this should be properly capped and sealed by a driller, and Council advised of this. If you are decommissioning a bore, you must ensure that contaminants are prevented from entering the bore by filling it with clean material and compacting or sealing the surface.

**Advice Notes - General**

- This resource consent does not give any right of access over private or public property. Arrangements for access must be made between the consent holder and the property owner.
- Where a resource consent has been issued in relation to any type of construction (e.g. dam, bridge, jetty) this consent does not constitute authority to build and it may be necessary to apply for a Building Consent from the relevant territorial authority.
- This resource consent is transferable to another owner or occupier of the land concerned, by written notice to the Council, on the same conditions and for the same use as originally granted (s.134-137 RMA). The transfer of water, including changes of location, may occur as provided for in Chapter 3.4 of the Waikato Regional Plan, subject to the requirements of those rules.
- The consent holder may apply to change the conditions of the resource consent under s.127 RMA.
- The reasonable costs incurred by Waikato Regional Council arising from supervision and monitoring of this/these consents will be charged to the consent holder. This may include but not be limited to routine inspection of the site by Waikato Regional Council officers or agents, liaison with the consent holder, responding to complaints or enquiries relating to the site, and review and assessment of compliance with the conditions of consents.
- Note that pursuant to s332 of the RMA 1991, enforcement officers may at all reasonable times go onto the property that is the subject of this consent, for the purpose of carrying out inspections, surveys, investigations, tests, measurements or taking samples.

Tītoki Landcare
SPECIALIST ECOLOGICAL RESTORATION

# Ecological Impact Assessment: Parallel Rd Kiwifruit farm

**May 2022**

| | | | | |
|---|---|---|---|---|
| **PROJECT NUMBER** | 0056 | | | |
| **PROJECT NAME** | Ecological Impact Assessment: Parallel Rd Kiwifruit farm | | | |
| **PROJECT ADDRESS** | 582 Parallel Road, Kaipaki | | | |
| **PREPARED FOR** | Kiwifruit Investments Limited | | | |
| **AUTHOR/S** | Dr Briar Taylor-Smith | | | |
| **REVIEW** | **Technical** | **QA** | **Version** | **Date to client** |
| | Adam Purcell | | 1.0 | 05/05/2022 |
| | | | | |

This report should be cited as: 'Titoki Landcare. (2022). *Ecological Impact Assessment: Parallel Rd Kiwifruit farm*. Prepared for Kiwifruit Investments Ltd.'



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# Contents

# Figures



# Photos



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## Executive Summary

Tītoki Landcare Ltd has been engaged by Kiwifruit Investments Ltd to undertake an ecological impact assessment (EIA) of the proposed pond and shed construction at 582 Parallel Road, Kaipaki.

Ecologists carried out desktop and site assessment of type and distribution of vegetation and fauna habitat across the property and a wetland delineation assessment to determine the presence and extent of wetlands.

The proposed pond and shed sites are currently weedy pasture adjacent to a modified gully system. Modified willow wetlands are present within the adjacent gully system and improved pasture wetlands are present within the proposed pond and shed site. The wetlands are highly modified and hydrological processes have already been highly modified by unculverted track and road construction. The habitats onsite have been assessed being low and moderate in value, however, some indigenous fauna that potentially utilise the areas such as long-tailed bats (*Chalinolobus tuberculatus*) and copper skink (*Oligosoma aeneum*) have high ecological value due to being classified as Threatened or At Risk.

Three potential ecological impacts have been identified as a result of the pond and shed contruction. These include:

- Use of land as storage pond rather than weedy pasture.
- Harm or disturbance to indigenous wildlife during pond and shed construction.
- Potential hydrological changes to adjacent wetland and subsequent impacts to wetland species.

The magnitude of each of these potential effects have been assessed as low and the level of effect and does not require mitigation. The associated level of effects have been assessed as low or very low.

Although the effects of pond and shed constructions are assessed as having a very low to low level of effect, indigenous fauna species such as fantail (*Rhipidura fuliginosa*) and silvereye (*Zosterops lateralis*) are likely present in the gully or use the gully at times and these species may be killed or injured if construction materials enter the gully or if gully vegetation is removed or damaged. These species are protected species under the Wildlife Act 1953 and it is illegal to harm or disturb them without a Department of Conservation issued Wildlife Act Authority. Actions should therefore be undertaken to ensure they are unharmed during pond construction or any other activity that may harm or disturb protected animals.

The following actions are recommended:

1. A silt fence will be constructed with a minimum setback of 1 m from the gully edge to prevent any soil from entering the gully (as per the current pond construction design).
2. No construction materials or construction waste should enter the gully.
3. Gully vegetation should not be cleared or damaged, unless as part of ecological restoration or weed management work and with the necessary care taken to ensure indigenous fauna is not harmed during vegetation clearance.

A Waikato Regional Council representative visited the site on 22 April 2022 and advised that the pond must be located a minimum of ten metres from any wetland habitat.

# 1 Introduction

Tītoki Landcare Ltd has been engaged by Kiwifruit Investments Ltd to undertake an ecological impact assessment (EIA) of the proposed pond and shed construction at 582 Parallel Road, Kaipaki. The property is being developed into a kiwifruit farm and the following works are proposed for the site:

- Construction of a 15,000 $m^3$ lined water storage pond (surface area 4,820 $m^2$). The earthworks extent will be 8,128 $m^2$ and topsoil removed from the pond site will be used to construct erosion and sediment control bunds at 582 Parallel Road. The bunds will be located a minimum 5 m from the gully edge. Silt removed from the pond site will be stockpiled on pasture and/or used as landscape fill on 582 and 303 Parallel Road. A silt fence will be constructed with a minimum setback of 1 m from the gully edge.
- Construction of a farm shed. This will be approximately 25 x 12 m but exact location and dimensions are to be confirmed.

## 1.1 Report scope and layout

This report is structured as following:

Section 2: Ecological assessment methods.

Section 3: Site ecological context.

Section 4: Ecological characteristics of the site.

Section 5: Ecological assessment.

Section 6: Ecological management recommendations.

Section 7: Summary.

# 2 Ecological assessment methods

## 2.1 Desktop assessment

Relevant source materials for the property were reviewed to gather information on the property and its context within the wider landscape. The following resources were reviewed as part of our desktop assessment:

- Aerial imagery (including historic) of the project area sourced from Land Information New Zealand, Google Inc., and Retrolens to investigate the change in vegetation at the site over time.
- Department of Conservation Bioweb Database.
- eBird database.
- iNaturalist database.
- Significant natural areas of the Waikato District: terrestrial and wetland ecosystems (Kessels Ecology, 2018).

## 2.2 Field survey

Tītoki Landcare ecologists visited the property on 8 March and 8 April 2022. During the initial site visit, qualitative information was collected regarding the type and distribution of vegetation and fauna habitat across the property. Any indigenous plant species encountered were recorded. Any indigenous bird species observed (seen or heard) was recorded. Any habitat considered suitable for indigenous herpetofauna or bats was noted. During the second site visit, a wetland delineation assessment was carried out to determine the position of any wetlands on the property following the methodology of Clarkson (2013) and Fraser *et al.* (2018) and using the 2021 wetland plant list (Clarkson *et al.* 2021).

## 2.3 Assessment of ecological effects

The assessment of ecological effects was undertaken in general accordance with the Ecological Impact Assessment guidelines (EcIA) produced by the Environment Institute of Australia and New Zealand (Roper-Lindsay *et al.*, 2018). The EcIA approach follows the steps outlined below:

**Step 1:** Ecological values within the site are assigned a value of very high, high, moderate, low, or negligible based on assessments of the ecosystems within the site. Sites are assigned an ecological value based on four attributes: representativeness, rarity/distinctiveness, diversity and pattern, and ecological context. More information on the components of each of these attributes is provided in Appendix 1 Table 1. The national threat status[1] of individual plant and animal species present or likely present on the site are used to determine potential ecological values of the site. Examples of characteristics that would trigger each of the different values of very high, high, moderate, low or negligible are provided in Appendix 1 Table 2.

The overall value of a site is produced based on a combined score of the four attributes as outlined in Appendix 1 Table 3.

[1] As classified in th NZ Threat Classification System database

**Step 2:** The magnitude of effects on ecological values is assigned as either very high, high, moderate, low or negligible based on the criteria provided in the EcIA guidelines (Appendix 1 Table 4). The assignment of the magnitude of effect is based on:

- The size of the expected area impacted (i.e. the site boundary);
- The amount of habitat loss/gain and/or modification versus local availability;
- The intensity of the effect (e.g. the conversion of wetland to pasture, pond or pavement); and
- The duration of the effect (e.g. permanent, medium-long term, short-term etc.) (Appendix 1 Table 5).

**Step 3:** The overall level of effect is determined using a matrix based on the combination of ecological values and the magnitude of effects on these values (Appendix 1 Table 6). Overall level of effect categories include positive, negligible, very low, low, moderate, high and very high. We used the overall level of ecological effect to determine if effects management (mitigation) is required.

## 2.4 Ecological management recommendations

Ecological management recommendations are provided to manage any moderate or high adverse effects of that are identified.

# 3 Site ecological context

The property at 582 Parallel Road covers c. 35.3 ha of land south of Hamilton city within the Hamilton Ecological District. The property is within 2 km of the Waikato River and is flat land intersected by tributaries to the Mangawhero Stream and their gullies. Parts of the property fall within a significant natural area (SNA): WP344, Mangawhero Stream riparian margin (Figure 1).

## 3.1 Vegetation

Singers & Rogers (2014) classify the land as being historically covered in Kahikatea-pukatea-tawa forest (WF8). The property is now largely surrounded by exotic pasture and exotic-dominated gully systems. The property is located within 2.5 km of Moanatuatua Scientific Reserve (Figure 1), a 140 ha remnant of restiad peatland that once blanketed low lying areas of the Hamilton Ecological District. Several Threatened plants have been recorded within 5 km of 582 Parallel Road (Table 1); however, these species are all peat bog specialists found at Moanatuatua Scientific Reserve and they are not suited to conditions at 582 Parallel Road.

*Table 1. List of threatened plant species recorded within 5 km of the property.*

| Common name | Scientific name | Conservation status[2] | Distance from site (km) |
|---|---|---|---|
| Bog clubmoss | *Brownseya serpentina* | Threatened – Nationally Vulnerable | 2.5 |
| Bladderwort | *Utricularia delicatula* | At Risk – Relict | 2.5 |
| Bamboo rush | *Sporadanthus ferrugineus* | At Risk – Relict | 2.5 |

[2] As classified in de Lange *et al*. (2018).


*Figure 1. Site ecological context map.*

## 3.2 Fauna

Our desktop assessment found records of 25 native bird species within 5 km of the property, including five species classified as At Risk or Threatened (Table 2) (Robertson *et al*., 2021).

Copper skink (*Oligosoma aeneum*) have been recorded within 5 km of the property and are classified as At Risk – Declining (Hitchmough *et al*., 2021).

In 2015, low levels of long-tailed bat (*Chalinolobus tuberculatus*) activity were recorded at a location approximately 3.5 km away along the Waikato River near Hooker Road (DOC BioWeb Database). Long-tailed bats, which are classified as Threatened – Nationally Critical (O'Donnell *et al.*, 2018), are known to forage and commute along the Waikato River and its tributaries.

*Table 2. Native bird species recorded within 5 km of the property.*

| Common name | Scientific name | Conservation status[3] | Distance from site (km) |
|---|---|---|---|
| Kererū | *Hemiphaga novaeseelandiae* | Not Threatened | 4 |
| Pukeko | *Porphyrio melanotus* | Not Threatened | 4 |
| NZ scaup | *Aythya novaeseelandiae* | Not Threatened | 4 |
| Australasian shoveler | *Spatula rhynchotis* | Not Threatened | 4 |
| Black swan | *Cygnus atratus* | Not Threatened | 4 |
| Grey duck | *Anas superciliosa* | Threatened – Nationally critical | 4 |
| Black shag | *Phalacrocorax carbo* | At Risk – Naturally uncommon | 2.5 |
| Grey teal | *Anas gracilis* | Not Threatened | 4 |
| Pied stilt | *Himantopus himantopus* | Not threatened | 4 |
| Tūī | *Prosthemadera novaeseelandiae novaeseelandiae* | Not Threatened | 4 |
| Fantail | *Rhipidura fuliginosa* | Not Threatened | 4 |
| Grey warbler | *Gerygone igata* | Not Threatened | 4 |
| Little shag | *Phalacrocorax melanoleucos brevirostris* | Not Threatened | 2 |
| Sacred kingfisher | *Todiramphus sanctus vagans* | Not Threatened | 4 |
| Silvereye | *Zosterops lateralis* | Not Threatened | 4 |
| Spur-winged plover | *Vanellus miles novaehollandiae* | Not Threatened | 4 |
| Welcome swallow | *Hirundo neoxena* | Not Threatened | 4 |
| White-faced heron | *Egretta novaehollandiae* | Not Threatened | 4 |
| Paradise shelduck | *Tadorna variegata* | Not Threatened | 4 |
| Swamp harrier | *Circus approximans* | Not Threatened | 4 |
| Morepork | *Ninox novaeseelandiae novaeseelandiae* | Not Threatened | 4 |
| Shining cuckoo | *Chrysococcyx lucidus lucidus* | Not Threatened | 4 |
| New Zealand pipit | *Anthus novaeseelandiae novaeseelandiae* | At Risk – Declining | 4 |
| Spotless crake | *Porzana tabuensis* | At Risk – Declining | 4 |
| New Zealand dabchick | *Poliocephalus rufopectus* | At Risk – Recovering | 4 |

[3] As classified in Robertson *et al*. (2021).

# 4 Ecological characteristics of site

## 4.1 Plant species and vegetation

The proposed location of the pond and shed is vegetated with weedy pasture (Photo 1). This vegetation type was dominated by exotic grasses, clovers (*Trifolium repens*, *Trifolium pratense*), thistles (*Cirsium* spp.) and fleabane (*Conyza sumatrensis*). Grasses present include ryegrass (*Lolium* sp.), cocksfoot (*Dactylis glomerata*), bristle grass (*Setaria* sp.), paspalum (*Paspalum dilatatum*), witchgrass (*Panicum dichotomiflorum*), crowfoot grass (*Eleusine indica*), prairie grass (*Bromus catharticus*) and soft brome (*Bromus hordaceus*). Other weeds present included dandelion (*Taraxacum officinale*), chicory (*Cichorium intybus*), plantain (*Plantago lanceolata*), dock (*Rumex obtusifolius*), hedge mustard (*Sisymbrium officinale*), spotted spurge (*Euphorbia maculata*) and creeping mallow (*Modiola caroliniana*).

Adjacent to the proposed pond site is a gully (Figure 2, Photo 2) that is dominated by the following weeds: blackberry (*Rubus fruticosus* agg.), Himalayan honeysuckle (*Leycesteria formosa*), grey willow (*Salix cinerea*), Chinese privet (*Ligustrum sinense*) and hawthorn (*Crataegus monogyna*). Some indigenous vegetation is present in the understory in some places and includes seedlings of karamu (*Coprosma robusta*), mahoe (*Melicytus lanceolatus*), wheki (*Dicksonia squarrosa*) and ponga (*Cyathea dealbata*).

South of the gully is a short length of incised channel with standing water (Figure 2, Photo 3), the margins of which are vegetated with water pepper (*Persicaria lapathifolia, P. maculata*), fleabane, dock, creeping buttercup (*Ranunculus repens*), sow thistle (*Sonchus* sp.), blackberry and some native plants including rautahi (*Carex geminata),* kiokio (*Blechnum novae-zelandiae*) and pig fern (*Paesia scaberula*). Further south of the channel is a depression containing a mixture of pasture and weedy vegetation as described above (Figure 2, Photo 5).

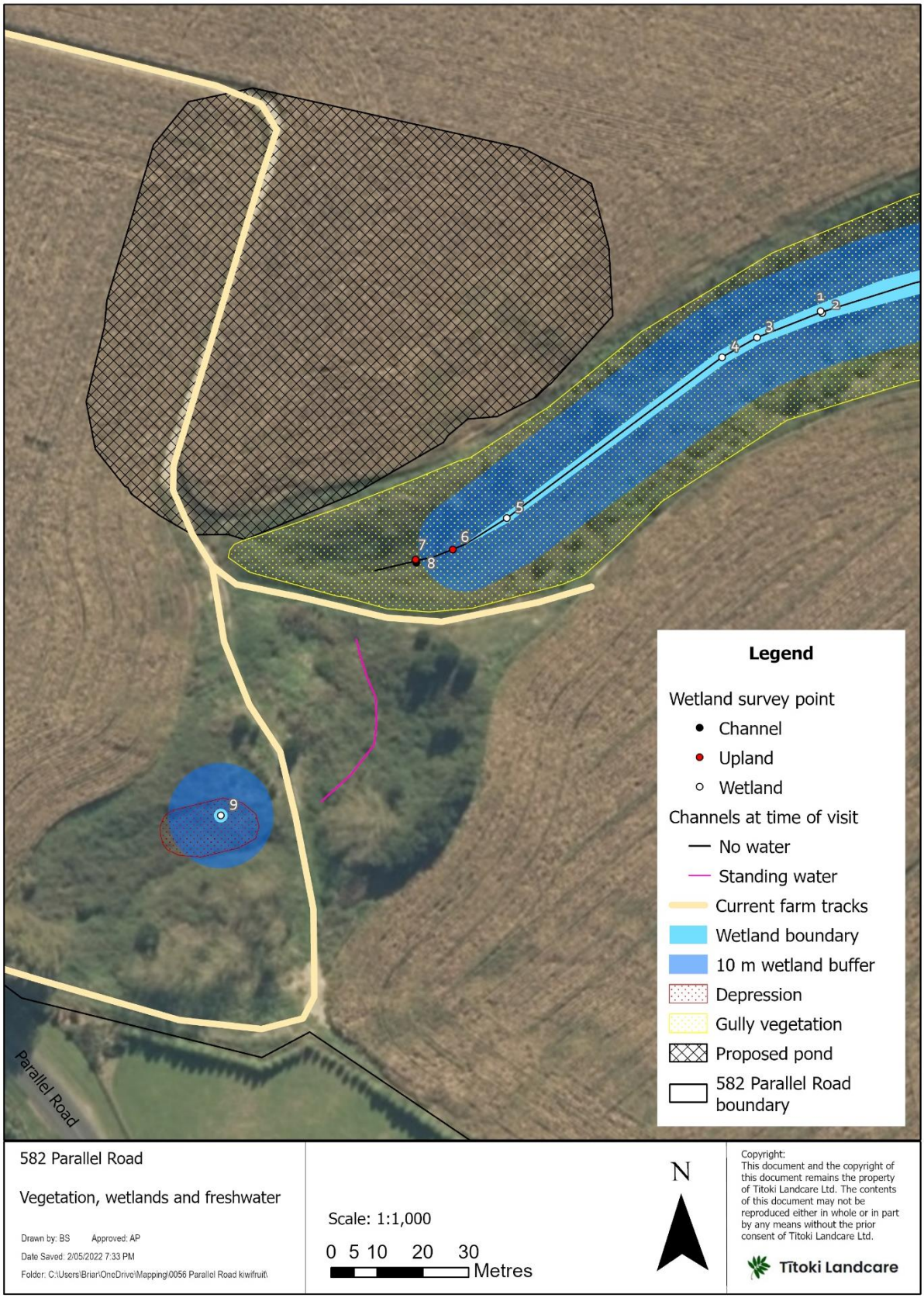


*Figure 2. Vegetation, wetlands and freshwater map.*

*Photo 1. Weedy pasture vegetation at the proposed pond location.*

*Photo 2. Weedy gully vegetation.*

*Photo 3. Incised channel and adjacent vegetation.*

*Photo 4. Depression containing a mixture of pasture and weedy vegetation.*

## 4.2 Fauna and fauna habitat

### 4.2.1 Fauna

Four bird species were observed on the property during the site visits, all of which are introduced species (Table 3). No At Risk or Threatened bird species were observed. No lizard species or bats were observed but no field surveys for their presence were undertaken.

*Table 3. Bird species observed onsite during the site visit.*

| Common name | Scientific name | Conservation status[3] |
|---|---|---|
| Myna | *Acridotheres tristis* | Introduced and Naturalised |
| Goldfinch | *Carduelis carduelis* | Introduced and Naturalised |
| Greenfinch | *Carduelis chloris* | Introduced and Naturalised |
| Sparrow | *Passer domesticus* | Introduced and Naturalised |

### 4.2.2 Fauna habitat

The gully vegetation adjacent to the proposed pond site may provide suitable habitat for indigenous birds, lizards, and bats (Table 4). The weedy pasture areas are unlikely to provide suitable habitat for these species.

*Table 4. Fauna habitat assessment of 582 Parallel Rd pond site.*

| Fauna group | Habitat assessment |
|---|---|
| Birds | The gully vegetation provides suitable habitat for several of the Not Threatened bird species listed in Table 2 that were not observed during the site visits such as fantail and silvereye. The weedy pasture vegetation may provide nesting habitat for New Zealand pipits and foraging habitat suitable for other indigenous bird species. |
| Lizards | Copper skinks like sheltered, moist habitats such as low growing vegetation or piles of woody debris. The weedy gully vegetation may provide potential habitat for copper skinks. The weedy pasture vegetation is unlikely to provide habitat suitable for indigenous lizards. |
| Bats | Long-tailed bats forage for insects along waterways. The gully vegetation adjacent to the proposed pond site may provide potential foraging habitat for long-tailed bats. Given the connectivity between this site and the Waikato River, it is likely that bats feed in the area from time to time. The gully vegetation is too small in stature to provide suitable habitats for roosting for long-tailed bats. |

## 4.3 Freshwater ecology and wetland assessment

The gully base contains a defined stream channel approximately 50 cm in width with flat riparian areas (Photo 5). No water was present within the channel at the time of the visit. The channel is bare soil covered by leaves. Upstream of but not connected to the gully channel is a short section of channel containing standing water (Figure 2). Further south of this is a depression containing some wetland vegetation. Historically, the stream channel in the gully would have been linked with the short area of channel and the depression to the south but

these upstream areas have been highly modified by the creation of farm tracks with no bridges or culverts present.

### 4.3.1 Wetland delineation

A wetland delineation assessment was carried out to determine whether the flat riparian areas of the gully and the depression to the south contain areas of wetland. Nine holes were dug to determine whether hydric soils were present. Vegetation plots were measured at five sites to determine whether wetland plant species were prevalent and/or dominant.

Wetland soils and vegetation are present at the base of the gully. Wetland vegetation is present within the depression at the south end of the site. A summary of results is presented in Table 5, detailed results are presented in Appendix 2 Table 1. The approximate extent of wetland areas is mapped in Figure 2.

*Photo 5. Defined stream channel and flat riparian areas in base of gully.*

*Table 5. Summary of wetland delineation assessment results.*

| Site (see Figure 2) | Vegetation | Soils | Water table | Wetland |
|---|---|---|---|---|
| 1 | Wetland | Hydric | Water not observed | Wetland |
| 2 | Not measured | Hydric | 30 cm | Wetland |
| 3 | Not measured | Hydric | Water not observed | Wetland |
| 4 | Wetland | Hydric | Water not observed | Wetland |
| 5 | Not measured | Hydric | 27 cm | Wetland |
| 6 | Not measured | Not wetland | Water not observed | Upland |
| 7 | Not wetland | Not wetland | Water not observed | Upland |
| 8 | Not wetland | Hydric | Water not observed | Channel |
| 9 | Wetland | Not wetland | Water not observed | Wetland |

# 5 Ecological assessment

This section provides an assessment of the ecological value of the site.

## 5.1 Ecological values assessment

The ecological values associated with pasture and gully vegetation are assessed in Table 6. This includes a values assessment of each vegetation type as habitat for indigenous fauna with a focus on At Risk and Threatened fauna. The ecological values associated with individual species are assessed in Table 7.

*Table 6. Ecological values assessment of vegetation/habitat at 582 Parallel Road.*

| Habitat type | Assessment of ecological value |
|---|---|
| Weedy pasture (including margins of channel with standing water) | The proposed pond site is vegetated with weedy exotic pasture. Adjacent to the channel with standing water is mostly also exotic weeds with some native species. This vegetation scores:<br>**Negligible value for representativeness** because it is dominated by exotic weeds and therefore not representative of the vegetation that would have naturally occurred here.<br>**Low for rarity and distinctiveness** because it is not a naturally occurring vegetation type but can still be used as habitat by native birds and potentially long-tailed bats for commuting. The site may contain suitable nesting habitat for pipits but is unlikely utilised due ongoing disturbance from people and vehicles at the site.<br>**Low value for diversity and pattern** because the vegetation is dominated by exotic plant species but may still provide habitat for some native birds and bats.<br>**Low value for ecological context** because although vegetated, it is low quality habitat for indigenous fauna and provides little connectivity or buffering to other habitats.<br>Exotic pasture is assessed as having an overall **low ecological value.** |
| Weedy gully vegetation | Adjacent to the proposed pond site is a gully that is vegetated mostly with exotic weedy species. This vegetation scores:<br>**Low value for representativeness** because it is dominated by exotic weeds and therefore the vegetation structure and composition is not representative of the vegetation that would have naturally occurred in this area.<br>**Moderate value for rarity and distinctiveness** because although it is not a naturally occurring vegetation type, it is potential habitat for copper skinks (At Risk), bats (Threatened) and indigenous bird species.<br>**Low value for diversity and pattern** because the vegetation is dominated by exotic plant species, though it may still provide habitat for some indigenous species.<br>**Moderate value for ecological context** because the gully vegetation provides buffering to the tributary to Mangawhero Stream and connectivity with the Waikato River.<br>Weedy gully vegetation is assessed as having an overall **moderate ecological value** |

| Habitat type | Assessment of ecological value |
|---|---|
| Wetland comprising riparian margins in gully bottom | At the bottom of the gully is an area of wetland vegetated mostly with exotic weedy species but also some native seedlings. This vegetation scores:<br>**Low value for representativeness** because it is dominated by exotic weeds and therefore the vegetation structure and composition is not representative of the vegetation that would have naturally occurred in this area.<br>**Moderate value for rarity and distinctiveness** because it is potential habitat for copper skinks (At Risk), bats (Threatened) and indigenous bird species. Furthermore, wetlands are underrepresented in the Waikato with less than 10% of their original extent remaining[4]. However, the wetland vegetation is highly modified 'willow wetland' and so is not high value wetland habitat.<br>**Low value for diversity and pattern** because the vegetation is dominated by exotic plant species, though it may still provide habitat for some indigenous species.<br>**Moderate value for ecological context** because it provides buffering to the tributary to Mangawhero Stream and connectivity with the Waikato River.<br>The gully-bottom wetland is assessed as having an overall **moderate ecological value** |
| Small area of wetland within a depression | Towards the southern boundary of the property is an area of wetland vegetated mostly with exotic weedy species but also some native species. This vegetation scores:<br>**Low value for representativeness** because it is dominated by exotic weeds and therefore the vegetation structure and composition is not representative of the vegetation that would have naturally occurred in this area.<br>**Low value for rarity and distinctiveness** because although wetlands are underrepresented in the Waikato, the area of wetland is very small (likely <5 $m^2$) and the wetland vegetation is highly modified.<br>**Low value for diversity and pattern** because the vegetation is dominated by exotic plant species but may still provide habitat for some indigenous species.<br>**Low value for ecological context** because although vegetated, it is low quality habitat for indigenous fauna and provides little connectivity or buffering to other habitats.<br>The small area of wetland within the depression is assessed as having an overall **low ecological value** |

*Table 7. Ecological values of species potentially present at 582 Parallel Road.*

| Species | Threat status | Likelihood of presence at site | Ecological value |
|---|---|---|---|
| Long-tailed bat | Threatened – Nationally Critical | Likely at least occasionally present foraging and/or commuting | Very high |

[4] https://www.waikatoregion.govt.nz/environment/water/lake-and-wetland-monitoring/extent-freshwater-wetlands/. Accessed 03/05/2022.

| Species | Threat status | Likelihood of presence at site | Ecological value |
|---|---|---|---|
| Copper skink | At Risk – Declining | Possibly present | High |
| NZ pipit | At Risk – Declining | Unlikely | High |
| Other locally common indigenous bird species (e.g. tui, silvereye) | Not threatened | Likely | Low |

## 5.2 Magnitude and level of ecological effect without mitigation or offset

The magnitude of effects on ecological values is assessed based on the extent, intensity, duration, and timing of identified ecological effects associated with the vegetation management on the property.

The overall level of effect is determined by a combination of the magnitude of effect and the ecological value of a feature as per the EIANZ guidelines (Appendix 1 Table 4 and Appendix 1 Table 6).

Ecological effects of the pond and shed construction include:

- Use of land as storage pond rather than weedy pasture.
- Harm or disturbance to indigenous wildlife during pond and shed construction.
- Potential hydrological changes to adjacent wetland and subsequent impacts to wetland species.

### 5.2.1 Use of land as storage pond rather than weedy pasture

The proposed area for the water storage pond (surface area 4,820 $m^2$) is currently weedy pasture. The weedy pasture has low ecological value because it is dominated by exotic weeds, is low quality habitat for indigenous fauna and provides little connectivity or buffering to other habitats. The construction of the storage pond will also provide open water habitat for fauna and has the potential to be of higher ecological value than the existing weedy pasture. The conversion of this habitat is assessed as having **very low magnitude of the effect**. A very low magnitude of effect on low value vegetation is assessed as a **very low level of effect.**

### 5.2.2 Harm or disturbance to indigenous wildlife

With vegetation removal and earthworks there is inherent risk to fauna. This weedy pasture vegetation has been assessed as potential nesting habitat for pipits, but this is considered highly unlikely due ongoing disturbance from people and vehicles at the site. The magnitude of the potential harm or disturbance to indigenous wildlife within the weedy pasture areas is therefore considered **low**. A low magnitude of effect on high value pipits is assessed as a **low level of effect**.

The gully vegetation may contain copper skinks and indigenous birds, which may be killed or injured if construction materials (e.g. soil) enter the gully or if gully vegetation is damaged. Native birds within the area should be able to emigrate out of the area, unless unfledged chicks are present in nests. The magnitude of the potential harm or disturbance to

indigenous wildlife within the gully vegetation is considered **low**. A low magnitude of effect on moderate value vegetation and high value indigenous species is assessed as a **low level of effect**.

Note that many indigenous species are protected species under the Wildlife Act 1953 and it is illegal to harm or disturb them without a Department of Conservation issued Wildlife Act Authority. Actions should therefore be undertaken to ensure they are unharmed during pond construction or any other activity that may harm or disturb protected animals.

### 5.2.3 Potential hydrological changes to adjacent wetland and impacts to wetland species

Pond and shed construction may change the hydrology of the wetlands and so adversely impact wetland species. Given that the wetlands are highly modified willow and unimproved pasture wetlands and that hydrological processes have already been highly modified by unculverted track and road construction, any changes to the hydrology are likely to have a **low magnitude of effect** on the ecology of the wetlands. A low magnitude of effect on a low to moderate ecological value wetlands is assessed as a **very low to low level of effect**.

*Table 8. Summary of ecological effects due to pond and shed construction.*

| Ecological effect | Magnitude of effect | Ecological value | Level of effect without mitigation |
|---|---|---|---|
| Use of land as storage pond rather than weedy pasture | Low | Low | Very low |
| Harm or disturbance to indigenous wildlife within weedy pasture | Low | High | Low |
| Harm or disturbance to indigenous wildlife within gully vegetation | Low | High | Low |
| Hydrological changes to willow and unimproved pasture wetlands | Low | Low to moderate | Low to very low |

# 6 Ecological management recommendations

Any moderate or high adverse ecological effects warrant management measures to avoid, remedy, mitigate and/or offset those effects. Effects of pond and shed constructions are assessed as having a very low to low level of effect, so do not require management measures. However, species that are protected by the Wildlife Act (1953) are likely present in the gully or use the gully at times, including copper skinks, bats and common indigenous birds. These species may be killed or injured if construction materials (e.g. soil) enter the gully or if gully vegetation is removed or damaged. It is illegal to harm or disturb protected species without a Department of Conservation issued Wildlife Act Authority. Actions should therefore be undertaken to ensure they are unharmed during pond construction or any other activity that may harm or disturb protected animals. Accordingly, the following actions are recommended:

1. A silt fence will be constructed with a minimum setback of 1 m from the gully edge to prevent any soil from entering the gully (as per the current pond construction design).
2. No construction materials or construction waste should enter the gully.
3. Gully vegetation should not be cleared or damaged.

Further to this, as per Waikato Regional Council (WRC) instruction (following the site visit by Resource Officer Martin Keep on 24/04/2022), the National Environmental Standards for Freshwater[5] is not tiggered and the National Policy Statement for Freshwater Management 2020 (NPS-FM) applies, therefore:

4. The pond must be located a minimum of ten metres from any wetland.

[5] Resource Management (National Environmental Standards for Freshwater) Regulations 2020.

# 7 Summary

The proposed pond and shed sites are currently weedy pasture adjacent to a modified gully system. The potential impact of the construction of the proprosed pond and shed have been assessed as having a very low to low level of ecological effect.

However, indigenous species are likely present in the gully or use the gully at times and these species may be killed or injured if construction materials enter the gully or if gully vegetation is removed or damaged. These species are protected species under the Wildlife Act 1953 and it is illegal to harm or disturb them without a Department of Conservation issued Wildlife Act Authority. Actions should therefore be undertaken to ensure they are unharmed during pond construction or any other activity that may harm or disturb protected animals.

Therefore, the following actions are recommended to manage potential ecological impacts associated with the construction of the pond and shed:

1. A silt fence will be constructed with a minimum setback of 1 m from the gully edge to prevent any soil from entering the gully (as per the current pond construction design).
2. No construction materials or construction waste should enter the gully.
3. Gully vegetation should not be cleared or damaged.
4. The pond must be located a minimum of ten metres from any wetland, as per WRC instruction to comply with the NPS-FM.

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# Appendices

# Appendix 1 Table extracts from the EIANZ ecological impact assessment guidelines (adapted from Roper-Lindsay et al., 2018)

**Appendix 1 Table 1. Ecological values assigned to habitats.**

| **Recommended attributes to be consider for determining ecological value or importance to a site or area of vegetation/habitat/community.** | |
|---|---|
| **Matters** | **Attributes to be considered** |
| **Representativeness** | Attributes for representative vegetation and aquatic habitats:<br>• Typical structure and composition<br>• Indigenous species dominate<br>• Expected species and tiers are present<br>Attributes for representative species and species assemblages:<br>• Species assemblages that are typical of the habitat<br>• Indigenous species that occur in most of the guilds expected for the habitat type |
| **Rarity/ distinctiveness** | Attributes for rare/distinctive vegetation and habitats:<br>• Naturally uncommon, or induced scarcity<br>• Amount of habitat or vegetation remaining<br>• Distinctive ecological features<br>• National priority for protection<br>Attributes for rare/distinctive species or species assemblages:<br>• Habitat supporting nationally Threatened or At Risk species, or locally uncommon species<br>• Regional or national distribution limits of species or community<br>• Unusual species or assemblages<br>• Endemism |
| **Diversity and Pattern** | • Level of natural diversity, abundance and distribution<br>• Biodiversity reflecting underlying diversity<br>• Biogeographical considerations – pattern, complexity<br>• Temporal considerations, considerations of lifecycles, daily or seasonal cycles of habitat availability and utilisation |
| **Ecological context** | • Site history, and local environmental conditions which have influenced the development of habitats and communities<br>• The essential characteristics that determine an ecosystem's integrity, form, functioning, and resilience (from "intrinsic value" as defined in RMA)<br>• Size, shape and buffering<br>• Condition and sensitivity to change<br>• Contribution of the site to ecological networks, linkages, pathways and the protection and exchange of genetic material<br>• Species role in ecosystem functioning – high level, key species identification, habitat as proxy |

**Appendix 1 Table 2. Ecological values assigned to species.**

| **Value** | **Species values** |
|---|---|
| **Very high** | Nationally Threatened - Endangered, Critical or Vulnerable. |
| **High** | Nationally At Risk – Declining. |
| **Moderate** | Nationally At Risk - Recovering, Relict or locally uncommon or rare |

| Value | Species values |
|---|---|
| **Low** | Not Threatened Nationally, common locally |
| **Negligible** | Exotic species, including pests |

**Appendix 1 Table 3. Overall ecological value scoring for sites or areas based on the four matters in Appendix 1 Table 1**

| Value | Description |
|---|---|
| **Very High** | Area rates High for 3 or all of the four assessment matters listed in Appendix 1 Table 1.<br>Likely to be nationally important and recognised as such. |
| **High** | Area rates High for 2 of the assessment matters, Moderate and Low for the remainder, or<br>Area rates High for 1 of the assessment maters, Moderate for the remainder.<br>Likely to be regionally important and recognised as such. |
| **Moderate** | Area rates High for one matter, Moderate and Low for the remainder, or<br>Area rates Moderate for 2 or more assessment matters Low or Very Low for the remainder<br>Likely to be important at the level of the Ecological District. |
| **Low** | Area rates Low or Very Low for majority of assessment matters and Moderate for one.<br>Limited ecological value other than as local habitat for tolerant native species. |
| **Negligible** | Area rates Very Low for 3 matters and Low or Very Low for remainder. |

**Appendix 1 Table 4. Criteria for describing magnitude of effect.**

| Magnitude | Description |
|---|---|
| **Very high** | Total loss of, or very major alteration to, key elements/features/ of the existing baseline conditions, such that the post-development character, composition and/or attributes will be fundamentally changed and may be lost from the site altogether; AND/OR<br>Loss of a very high proportion of the known population or range of the element/feature |
| **High** | Major loss or major alteration to key elements/features of the existing baseline conditions such that the post-development character, composition and/or attributes will be fundamentally changed; AND/OR<br>Loss of a high proportion of the known population or range of the element/feature |
| **Moderate** | Loss or alteration to one or more key elements/features of the existing baseline conditions, such that the post-development character, composition and/or attributes will be partially changed; AND/OR<br>Loss of a moderate proportion of the known population or range of the element/feature |
| **Low** | Minor shift away from existing baseline conditions. Change arising from the loss/alteration will be discernible, but underlying character, composition and/or attributes of the existing baseline condition will be similar to pre-development circumstances or patterns; AND/OR<br>Having a minor effect on the known population or range of the element/feature |
| **Negligible** | Very slight change from the existing baseline condition. Change barely distinguishable, approximating the 'no change' situation; AND/OR<br>Having negligible effect on the known population or range of the element/feature |

[1]Baseline conditions are defined as 'the conditions that would pertain in the absence of a proposed action' (Roper-Lindsay *et al*., 2018).

**Appendix 1 Table 5. Timescale for duration of effects.**

| Timescale | Description |
|---|---|
| **Permanent** | Effects continuing for an undefined time beyond the span of one human generation (taken as 25 years) |
| **Long-term** | Where there is likely to be substantial improvement after a 25 year period (e.g. the replacement of mature trees by young trees that need > 25 years to reach maturity, or restoration of ground after removal of a development) the effect can be termed 'long term' |
| **Temporary**[1] | Long term (15-25 years or longer – see above)<br>Medium term (5-15 years)<br>Short term (up to 5 years)<br>Construction phase (days or months) |

[1]Note that in the context of some planning documents, 'temporary' can have a defined timeframe.

**Appendix 1 Table 6. Matrix for determining overall levels of ecological effects based on ecological value and magnitude of effect.**

| Ecological value / Magnitude | Very high | High | Moderate | Low | Negligible |
|---|---|---|---|---|---|
| **Very high** | Very high | Very high | High | Moderate | Low |
| **High** | Very high | Very high | Moderate | Low | Very low |
| **Moderate** | High | High | Moderate | Low | Very low |
| **Low** | Moderate | Low | Low | Very low | Very low |
| **Negligible** | Low | Very low | Very low | Very low | Very low |

# Appendix 2 Wetland assessment results

**Appendix 2 Table 1. Wetland sampling points: vegetation and soil descriptions.**

| Site | Vegetation description | Soil description |
|---|---|---|
| 1 | 5 metre radius:<br>LIGsin 15<br>COProb 12<br>RUBfru 3<br>SALcin 1<br>10 metre radius:<br>SALcin 40<br>Prevalance = 2.8 | 0-30 cm: 10YR 2/2 |
| 2 | NA | 0-6 cm: topsoil 10Y 3/2<br>6-34 cm: 10Y 3/1 |
| 3 | NA | 0-30 cm: Top soil with sand 10YR 2/2<br>30-36 cm: silty 10Y 2/2 |
| 4 | 5 metre radius:<br>RUBfru 95<br>LIGsin 5<br>10 metre radius:<br>SALcin 25<br>Prevalance = 2.84 | 0-30 cm: 10YR 2/2 plenty of organic material - exotic or young soil |
| 5 | NA | 0-30 cm: 10 YR 4/2 |
| 6 | NA | 0-30 cm: 10YR 4/3 sandy |
| 7 | Blackberry (FAC) | 0-30 cm: Top soil 10YR 4/4, some mottling 15% 2mm iron mineral |
| 8 | Blackberry (FAC) | 0-1 cm: detritus<br>1-15 cm: sand<br>15-24 cm: 10YR 2/2<br>24-38 cm: Sand |
| 9 | 2 x 2 m plot:<br>RUMobt (FAC) 40, PERmac (FACW) 20, CARgem (FACW) 15, PLAlan (FACU) 10, TRIrep (FACU) 5, Sonchus (FACU) 2, RANrep (FAC) 2, HYPrad (FACU) 2, LOLper (FACU) 1, LOTper (FAC) 1, CYNdac (FACU) 1, DACglo (FACU) 1.<br>Prevalance = 2.9 | 0-28 cm: 10YR 3/4<br>28-31 cm: 10YR 5/6 60% mottling 1cm iron mineral<br>31-37 cm: 10YR 5/8 sand |

22 September 2022

Waipa District Council
Attn: Marne Lomas
Via email: Marne.Lomas@waipadc.govt.nz

Dear Marne,

**Resource Consent Application – Further information request response**

| | |
|---|---|
| **Application number(s):** | **LU/0147/22** |
| **Applicant:** | **Kiwifruit Investments Limited** |
| **Address:** | **582 Parallel Road, Cambridge** |
| **Proposed activity(s):** | **Retrospective land use consent to construct vertical and horizontal (overhead) artificial kiwifruit shelter** |

Thank you for your letter on the 14th September 2022 which set out a further information request arising from the review of the above application. Our response to the s92 items is addressed below:

1. *Please provide to-scale elevation plans showing the scale (distance of shelters to the boundary, height of shelters) of the proposal as it relates to 598 Parallel Road. Please show an elevation showing the side boundaries and the rear boundary, see image below as an example:*

   Please find attached to-scale elevation plans of the proposal as it relates to 598 Parallel Road. The following plan sets have been provided:

   - Southern and western elevation plan of the proposal as it relates to 598 Parallel Road, Cambridge (Pages 1 to 3). You will note in this plan set illustrates the following:
     - Setbacks of the dwelling at 598 Parallel Road, Cambridge to northern, eastern and western boundaries. These distances have been derived from building consent plans obtained by the Waipa District Council website;
     - Heights of existing internal vegetation located on northern, eastern and western common boundaries of the property located at 598 Parallel Road, Cambridge;
     - Distances and heights of proposed vertical and horizontal artificial Kiwifruit shelter from the northern, eastern and western boundaries of the property located at 598

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Parallel Road, Cambridge. These distances also illustrate setbacks in which the vertical shelter reaches its full height of 6m, which is located before the second angled pole.

- Southern and western elevation plan of the proposal as it relates to 598 Parallel Road, Cambridge (Pages 4 to 6). You will note in this plan set, the proposed 6m high Cryptomeria hedging planted at 4m from the northern, eastern and western boundaries of 598 Parallel Road, Cambridge is added. This provides a visual elevation representation of the combined proposal.

- Southern and western elevation plan of the proposal as it relates to 598 Parallel Road, Cambridge (Pages 7 to 9). You will note in this plan set, the proposed 6m high Cryptomeria hedging planted at 1m from the northern, eastern and western boundaries of 598 Parallel Road, Cambridge is added. This plan set has been added as a comparison of where the Applicants could plant the Cryptomeria hedging (as a permitted activity), but have chosen to set the Cryptomeria back by 4m from these boundaries to create a bigger buffer from the property at 598 Parallel Road, Cambridge to this proposal.

- Southern and western elevation plan of the proposal as it relates to 598 Parallel Road, Cambridge (Pages 10 to 12). You will note in this plan set, the proposed 6m high Cryptomeria hedging planted at 4m from the northern, eastern and western boundaries of 598 Parallel Road, Cambridge is shown with the addition of the daylight control provisions of Rule 4.4.2.12 in the Rural Zone, if the 6m high Cryptomeria hedging was compared with 'building' of equal dimensions. This demonstrates that the proposed permitted 6m high Cryptomeria hedging at 4m from the northern, eastern and western boundaries of 598 Parallel Road, Cambridge complies with this rule.

  *Note: This information is provided as it is noted in section 4.5.4 the Council's Notification report where it is referenced that "The cryptomeria shelterbelt will create significant shading, loss of light (and temperature) and an overall reduction in amenity for this property". This plan demonstrates that the Cryptomeria hedging, as proposed will not introduce shading and reduction to daylight effects that are significant or minor.*

2. *Please provide an assessment of the proposal against the National Environmental Standard for Freshwater 2020 (NES-FW).*

   The NES-F commenced on 3 September 2020 and sets standards for freshwater management under the RMA to support improved freshwater management in New Zealand.

   A Draft Ecological Impact Assessment, prepared by Titoki Landcare, dated September 2022 is attached to this Section 92 response. Please note that this is still in draft form and is subject to finalisation and agreement of mitigation options. The purpose of this assessment has been prepared on behalf of the Applicant in respect to exploring the possibility of piping 205m of the watercourse located on the western side of the site and reclaiming the 114.8m$^2$ of streambed to enable kiwifruit rows to be planted over this streambed, rather than being planted on either side of the watercourse. Through this process, this assessment has evaluated the ecological value of the

streambed, concluding *"The impact stream is located in the headwaters of a tributary of the Mangawhero Stream. The stream itself has been heavily modified and straightened. A depression is present around the stream, with a gently sloping bank leading to the wide flat base of the depression and the highly incised stream. The vegetation within the depression and the majority of the watercourse is currently weedy pasture."*

These investigations conclude to carry out the proposed piping activities, resource consent is required under NES-FW, subpart 2 Regulation 57 of the NES-F as '*Reclamation of the bed of any river is a discretionary activity'.* This will be applied for in due course, along with relevant resource consents with Waikato Regional Council.

With respect to this application in question, for which application is sought for the construction of vertical and horizontal (overhead) artificial Kiwifruit shelter, there are no standards and rules in NES-FW, Part 3: Standards for other activities that relate to freshwater of the NES-F that apply to this Application. The Draft Ecological Impact Assessment, prepared by Titoki Landcare has concluded that no natural wetlands are present along the riparian zone of the modified ephemeral stream for which the proposed shelter will cover, and that the two wetland areas that were identified further downstream, with the proposed works of this application being greater than 10m from the wetland extent (refer wetland buffer areas in Figure 7 of the Draft Ecological Impact Assessment). Accordingly, this application does not require consent under NES-F.

Lastly, with respect to this proposal, the findings of this assessment highlight that the modified ephemeral stream subsequently trigger an encroachment with Rule 26.4.2.1 of the Waipa District Plan – setbacks from waterbodies. This is discussed in further detail under Question 4 below.

3. *Please provide an assessment of the proposal against the National Policy Statement for Freshwater Management 2020 (NPS-FM).*

   The NPS-FM came into effect on 3 September 2020 and replaces the NPS-FM 2014 (amended 2017). The NPS-FM sets out the objectives and policies for freshwater management under the RMA (1991) to support improved freshwater management in New Zealand. In terms of the proposed activities, I have had regard to the fundamental concept of 'Te Mana o te Wai' and the objectives and policies of the NPS-FM and consider them to be consistent.

4. *Please provide an assessment of the proposal against Rule 26.4.2.1 Setbacks from waterbodies, relating to the modified watercourse/drain on the western portion of the site.*

   *Note: assessment is not required for this rule against the waterbodies contained in the SNA (on the northern and eastern portion of the site) as they have confirmed to be wetlands and are not applicable to this rule.*

   Based on the investigations and assessment undertaken in the report prepared by Titoki Landcare as attached, the watercourse located west of the property located at 598 Parallel Road, Cambridge is determined a "modified ephemeral stream", thus subsequently triggering the definition of 'River'

under the RMA 1991 and the Waikato Regional Plan. Accordingly, due to the location of the proposed artificial shelters in respect to the watercourse Rule 26.4.2.1 is triggered. Please find our assessment below of this rule and as such we formally request that this application also seeks consent under Rule 26.4.2.1.

*Rules - 23m setback from lakes and water bodies*

*26.4.2.1* *No building, wastewater treatment system, earthworks or vegetation clearance shall be erected or undertaken within 23m of the edge of any lake or water body (excluding a natural wetland) as measured at its maximum annual water level, provided that this rule shall not apply to:*

*(a) The Karāpiro and Arapuni Hydro Power Zone.*

*(b) Maimai not exceeding 6m² in floor area; or*

*(c) Earthworks and vegetation removal associated with conservation planting of river banks and lakes; or*

*(d) St Kilda Residential Structure Plan Area; or*

*(e) Clearance of vegetation undertaken in accordance with Rule 26.4.1.1(e) or (f); or*

*(f) Harvesting of forestry over 5m from a water body.*

The proposed vertical shelter (located near the southern boundary of the site) and horizontal (overhead) shelter will encroach into the 23m setback from the modified watercourse located on the western side of the site. As the overhead shelter will span over the watercourse, there will be no setback to the proposed shelter, albeit the horizontal shelter being 6m above the watercourse (being the height of the shelter). The proposal is therefore unable to comply with this rule.

5. *Please provide a site coverage calculation that includes all buildings on the site.*

   The total site coverage including the artificial screens (23ha) and the newly constructed shed (250m$^2$) will result in a site coverage of 23.025ha, being 65.1743%.

6. *Please provide any approved Waikato Regional Council consents, and information about any not approved/ pending consents.*

   The following applications have been approved by Waikato Regional Council:

   - AUTH143442.01.01 - Construct, use and maintain well for crop irrigation;
   - AUTH144393.02.01 - Earthworks in association with proposed Kiwifruit development (construction of water storage pond). The application for this consent was accompanied with an Ecological Impact Assessment prepared by Titoki Landcare which I have also attached;

- AUTH144142.01.01 - Construct 2 bores, use and maintain well for crop irrigation supply and monitoring bores; and
- AUTH144627.01.01 - To drill up to 3 test bores for the construction of a single production bore hole and up to 2 monitoring bores to take groundwater for a new kiwifruit orchard irrigation.

As expanded earlier in this Section 92 response, investigations into the classification of the modified watercourse and wetland area located on the western side of the site have been undertaken over the last few months by Titoki Landcare to explore the possibility of piping 205m of this watercourse and reclaiming the 114.8m$^2$ of streambed for horticultural use. The reporting from Titoki Landcare has just been finalised, and as such resource consent to Waikato Regional Council and NES-FW can now be applied for and is sought.

It must be noted that whilst a bundling approach to the Kiwifruit development of the site would have been the most appropriate way to proceed with resource consent applications with both Waipa District Council and Waikato Regional Council, the land use consent for the vertical and horizontal shelter with Waipa District Council was prioritised based on the enforcement action taken by Waipa District Council.