

**Specialist Response Template – Fast-track Approvals Act 2024 –
Substantive Application**

Technical Specialist Memo – Freshwater and Terrestrial Ecology

To:	Colin Hopkins – Lead Planner & Doug Fletcher – Principal Project Lead
From:	Andrew Rossaak, Consultant to Auckland Council’s Ecological Advice, and Earth, Streams & Trees teams.
Qualifications & Relevant Experience:	I hold the qualification(s) of: Masters of Science in Ecology and have 29 years of experience in preparing and reviewing environmental and ecological assessments. I have prepared expert evidence and technical assessments for resource consent applications, plan changes, notices of requirements , and have appeared as an expert witness before consent authorities on multiple occasions.
Preparation in Accordance with the Code of Conduct:	I confirm that I have read the Environment Court Practice Note 2023 – Code of Conduct for Expert Witnesses (Code), and have complied with it in the preparation of this memorandum. I also agree to follow the Code when participating in any subsequent processes, such as expert conferencing, directed by the Panel. I confirm that the opinions I have expressed are within my area of expertise and are my own, except where I have stated that I am relying on the work or evidence of others, which I have specified.
Date:	23 September 2025

1.0 APPLICATION DESCRIPTION

Application and property details

Fast-Track project name:	Drury Quarry Expansion – Sutton Block
Fast-Track application number:	FTAA-2503-1037 (EPA reference); BUN60449474 (Auckland Council reference)
Site address:	121 MacWhinney Drive, Drury; 1189 Ponga Road, Drury; 2113 and Ponga Road, Papakura

2.0 Executive Summary / Principal Issues

This assessment is limited to terrestrial and freshwater ecological aspects of the application.

Ecological effects management for terrestrial and freshwater have been provided through avoidance (the quarry area is north of a watercourse and Significant Ecological Area (SEA)), mitigation (through fauna management plans) and a biodiversity offset. The greatest adverse effects are: The reclamation of 3.3 km of watercourses and 2.3 ha wetlands; the removal of 17 ha of native forest and 85 ha of scrub exotic forest and grassland. Apart from the scrub, exotic forest and grassland; the impacts are otherwise proposed to be 'offset'.

There are numerous concerns regarding the proposed offsets; the calculations as well as meeting the principles of offsetting, particularly proximity, like for like and achieving net gain. These issues are set out in the assessment section below.

Given that there are concerns with the offsetting and that there are areas where there are information gaps, this application is not supported from an ecology perspective.

3.0 Documents Reviewed

- Resource Consent Assessment of Environmental Effects
- Appendix C Permitted Activity Assessment
- Resource Consent Appendix D AEE Drawing Set
- Resource Consent Appendix H Assessment of Objectives and Policies
- Resource Consent Appendix I Proposed conditions of consent

Technical reports:

- 1 Wildlife Approval Sutton Block Project Summary
- 2 Wildlife Approval Sutton Block EcIA
- 3 Wildlife Approval Sutton Block EcIA Maps
- 4 Wildlife Approval Sutton Block EMP
- 5 Wildlife Approval Sutton Block EMP Maps
- 6 Wildlife Approval Sutton Block REARTE
- 7 Wildlife Approval Sutton Block REARTE Maps
- 8 Resource Consent Technical Report D REAR-SW
- 9 Resource Consent Technical Report D REAR-SW Maps
- 10 Wildlife Approval Sutton Block NGDP Planting Plan
- 11 Wildlife Approval Sutton Block NGDP Planting Plan Maps
- 12 Wildlife Approval NGDPPWC
- 13 Wildlife Approval NGDP Pest And Weed Control Maps
- 14 Wildlife Approval Sutton Block NGDP WP
- 15 Wildlife Approval Sutton Block NGDP WP Maps
- 16 Wildlife Approval Sutton Block NGDPRP
- 17 Wildlife Approval Sutton Block NGDPRP Maps

- Resource Consent Technical Report L Ground and Surface Water (Redacted)

The above reports were accessed from <https://www.fasttrack.govt.nz/projects/drury-quarry-expansion-sutton-block/substantive-application>.

S67 responses, received 18 August

- Drury Quarry - Sutton Block Expansion - Council s67 comments - Applicants Response 12 08 25
- Attachment C_Draft Revised Consent Conditions
- Attachment D_Peach Hill Rd culverts drawing
- Attachment E_Groundwater Memo
- Attachment_F_Fast_Track_Auckland_Council_Response_Supplementary_Information_20250808

S67 responses, received 18 September

- Attachment D – Memorandum addressing the ecology comments numbers 55 and 59
- Attachment F - Hingaia (Drury) Island Offset Revegetation Update
- E - Legal memo
- Legal submission

4.0 Additional Reasons for Consent Not Included in AEE

- A discharge consent may be required for the stream augmentation with water pumped from the quarry pit.

5.0 Specialist Assessment

Site overview of ecological values and potential effects

The proposed quarry expansion area is currently a mix of farmland comprising native vegetation, wetland, and the headwaters of an entire upper catchment of a watercourse network. Specifically, 16.78 ha of indigenous vegetation and fauna habitat (14.25 ha of which is within a SEA overlay), 3,341 metres of stream and 1.88 ha of wetland is proposed to be lost.

The proposal recognises that it will have a significant adverse effect on the ecological aspects.

These extents of vegetation, wetland and watercourses are proposed to be offset both on site and at a location alongside the Waikato River. The proposed offset involves 62 ha of restoration planting, 108 ha of pest management, 3.3 km of stream enhancement (primarily riparian planting), 4.04 ha of wetland restoration.

Mitigation and avoidance measures are proposed to be managed through the implementation of fauna management plans covering avifauna, long-tailed bats, native lizards and native freshwater fauna.

Effects management is proposed to be staged and implemented over a 50year plan, the proposed life of the quarry expansion.

I attended a site visit, which was limited to the tracks on site and provided overviews of the impact area. No site visits to any of the offsets were undertaken.

Offset and compensation

The application material mentions offset and compensation together (eg. The EMP; the REARTE report discussed these aspects together throughout, however states at the end that no compensation is required; the REAR-SW report is similar). The effects management proposed have therefore been considered as offset (with no compensation being offered) and is assessed as such. S67 responses did not add clarity to what was offset and what was compensation, although the REAR-SW report states it complies with the National Policy Statement: Freshwater Management (NPS:FM) (appendix 6 Principles for Aquatic Offsetting) principles 1 through to 6 and has regard for 7 through to 11.

The terrestrial offset similarly considers it has complied with the offsetting principles in Appendix 3 of the National policy Statement: Indigenous Biodiversity (NPS:IB) principles 1 to 6 and has some regard for the balance (I note that the NPS:FM and NPS:IB both state a requirement to comply with the first 6 principles and have regard for the rest).

In both reports, the applicant equally refers to the principles for compensation in the NPS:FM and NPS:IB, however, as discussed above, there is no evidence that any of the proposed effects management is addressed via compensation and there is no test or comment to indicate that offset is not possible (the pre requirement for compensation). This is discussed further below when considering the offsets.

Terrestrial fauna and flora values

Lizard assessments were undertaken in 2020 and 2021; avifauna in 2021, with an additional bittern survey in 2024; bats in 2020, 2021 and 2024. The assessments undertaken provide a reasonable understanding of likely species presence.

Most of the site has stock. Terrestrial vegetation to be removed covers three different ecosystem types: Taraire, tawa podocarp forest (7.33 ha), Kanuka scrub/forest (8.8 ha) and Rock Forest (0.65 ha). Together forming 16.78 ha (although also reported as 16.79 elsewhere in the application material) of moderate to high value forest (on EIANZ guideline criteria, which I note is not a statutory document and has been found to be subjective). The three vegetation types are found on the east and west edges of the proposed quarry expansion, with exotic forest patches on the eastern and northern boundary, with scrub land and exotic grassland, all assessed as low value in the central areas. The forest patches are fragmented and much of the central areas of the proposed quarry is grassed, wetlands and riparian vegetation. It was all likely forested prior to historic clearing for agriculture.

The level of effect on the relict trees (130 trees of 12 to 18 meters high), exotic forest, exotic scrub (5.25 ha), exotic grassland (83.5 ha) and invertebrates is all reported to be very low, due in many cases to the level of land management (weed infestation) and impact by stock. Relict tree loss is nevertheless proposed to be offset. In

total (excluding watercourses and wetlands) terrestrial vegetation loss is reported to be 22.04 ha (excluding the grassland).

Proposed terrestrial vegetation and fauna effects management

Avoidance is reported for the rock forest at Kaarearea paa (SEA_T_5349) and an area of watercourse and wetland to the northeast of Kaarearea paa. There is no comment on any efforts to avoid the rock forest along the western edge of the pond/dam.

The adverse effects on fauna are proposed to be managed through species specific management plans. It is noted that a potential bittern call was received in the assessments, and it is considered bittern potentially utilise the site, however, there is no further comment on effects management for bittern. Long-tailed bats were also not found during the site assessment; however, it is reported that they could occupy the site. A long-tailed bat management plan is provided and minimum of six bat roost boxes provided for every bat roost identified.

As bittern are a nationally critically endangered species and have large ranges, the possible presence detected should direct particular effects management. That bittern are not discussed other than in as detection is a concern and I do not consider that they have been adequately considered in the effects management. This concern applies to other at risk species, such as the pipit, where effects management is reliant on mitigating harm, but do not consider the loss of habitat on this site and cumulative losses or fragmentation.

For bat effects management, the success of bat boxes in New Zealand has been very limited, and I suggest veteranisation as a better technique (cutting slits with chainsaw to create cavities).

Effects management includes pest control over much of the restoration and infill planting, which I consider to be essential in supporting the developing habitats.

The DOC BOAM model is used to determine the required offset for 16.78 ha (and for 130 relict trees). The BOAM model requires the identification of attributes to use for the assessment. For the vegetation component, 4 key biodiversity components are used, each with 4 or 5 attributes are included and I consider this to be acceptable. Benchmarks were from a chosen site (although I would consider a theoretical benchmark would also be appropriate if well described). The BOAM also requires values for the impact site as well as that of the receiving site prior to and estimated post offset. The BOAM models provided for the Rock Forest have the receiving environment initially at zero, however, aerial images indicate there is already vegetation in the offset locations and the reporting sites that are suitable and already remnant rock forest. There is little by way of detail or assessment on the offset site provided, however, I consider it unlikely that it is zero, which has been used in the BOAM for all four models presented. This results in a likely over-estimate of the ecological gain being reported.

I note that much of the offset vegetation is either SEA, or would meet NPS:IB criteria, and therefore the principles for offsetting in the NPS:IB for Significant Natural Areas (SNAs) are relevant.

The NPS:IB defines adverse effects as including "loss of potential value" in the effects management hierarchy: "adverse effects of an activity on indigenous biodiversity (including cumulative effects and loss of potential value)". This indicates that assessment must consider not just current values but also the potential future values that could be lost. The NPS:IB also repeatedly emphasizes restoration potential: Clause 3.21(2) prioritizes restoration of: "SNAs whose ecological integrity is degraded" and "areas that provide important connectivity or buffering functions". Similar wording is used in AUP(OP) Chapter D9 objectives and policies. This implies assessment of what these areas could become through restoration. The assessment and values used in the BOAM

are on the current state of the vegetation to be lost and the potential of these areas is not factored into the offset model, only current degraded value.

I consider a key differences between the NPS:FM and NPS:IB, are that in the NPS:IB net gain is mandatory. It must be quantitatively demonstrated, requires like-for-like comparison, must exceed baseline loss across type, amount, and condition and that "No net loss" is insufficient under NPS:IB.

I do not consider that, with the removal of 4.4 ha of offset area, the zero value for the receiving environment and the lack of potential considerations that the current BOAM calculations, there is sufficient information or proposed offset to have assurance that net gain will be achieved.

Further to this, I do not support the applicants position that with the removal of the 4.4 ha Hingaia planting, an assessment after 10 years is undertaken and if required, SAL will acquire additional land. It is considered important at this stage to have confidence in the ability to achieve the required net gain.

Restoration planting involving infill and enrichment is proposed. Most of the proposed vegetation offset is located surrounding the final quarry pit extent (north, west and south) and the existing pit areas. The enhancement is predominantly in the existing forest vegetation (SEA) to the north and east. A proposal for planting 4.4 ha on the Hingaia Islands as well as specimen totara trees was initially included but has since been withdrawn. No assessment has been made as to how the quarry may alter the perched water tables and how this will affect the proposed plantings, and if this may reduce offset success, particularly for areas close to the pit edge (planting and enhancement is proposed up to the pit extent). This was raised as a S67 RFI, however, the concern remains. Section and 4.7 of PDP GW + SW reports only on potential effects on the perched water table on the Kaarearea Paa. Section 4.3.3 of the same report states that "Shallow groundwater within, and in the vicinity of, the Sutton Block expansion area is expected to be affected by the proposed quarry." Given that proposed effects management planting is to occur between the paa dome and the quarry wall and on the quarry boundaries, there is potential that the altered perched water table may affect existing vegetation and new plantings.

Further offset of 1.14 ha of relict tree planting is proposed at Tuakau site in the Waikato. The offset has been calculated using Tanes Trees Growth and Yield calculator and the BOAM. Tree replacement is based on basal area (using an average diameter at breast height (dbh)). A total of 887 trees are proposed to be planted to offset the loss of 130 large mature relict trees. These are reported to be on the Drury site (146 trees), Tuakau site (628) and Hingaia (113). There is potential for under estimation of the required offset using Tanes Trees growth estimates as this is a silvicultural calculator and may not represent growth in a more natural landscape with lower density planting and it is not specific for this particular location (Tanes Trees is based on averages in high density planted stands).

The updated BOAM provided as a S67 response with the withdrawal of the Hingaia site does not address the 113 relict tree plantings proposed for this site.

The terrestrial offsetting is staged through the quarry activity of 50 years.

Monitoring is proposed to be undertaken annually for the first five years, followed by long term monitoring thereafter in Years 7, 10, 15, 20 & 30. Attributes and methods are provided for monitoring and adaptive management proposed, however, thresholds or performance targets when the adaptive management is required are not provided, so it is uncertain what would trigger any adaptive management.

Terrestrial ecology recommendations

The duration of consent requested, is maximum duration of a consent, 35 years. As some planting (stages 4 and 5) is planned for year 16 or later, this would reduce the monitoring period available within the consent and there is potential that offset will not be monitored for final achievement.

It would be prudent to ensure effects management is undertaken within a sufficient period within the consented period even if the impact stage has not commenced.

Freshwater stream values

The aquatic habitats in the quarry expansion area and immediately adjacent include 9 un-named streams, with a mix of permanent and intermittent streams, all upper tributaries to the Hingaia Stream. The proposed quarry expansion effectively covers the entire catchment of these headwater streams. Only streams 3 and 4, to the south of the pit expansion, are anticipated to remain. Stream 4 is the main reach in the lower catchment to which all streams flow and currently flows into a dam and then through the rest of the site, over a waterfall and onto the confluence of the Hingaia. Stream 4 is proposed to be re-aligned around the dam and piped to allow for access into the pit area. In addition, stream 9, a headwater stream in a neighbouring catchment, is also to be reclaimed.

A total of 10 Stream Ecological Valuation (SEVs) are reported on with values ranging from 0.34 to 0.67 and conducted in both intermittent and permanent streams.

Current ecological values assessed using the EIANZ guidelines ranged from moderate to very low. The assessments of current state are generally accepted.

The offset sites are both within Drury and in Tuakau and this is discussed further below.

Freshwater stream loss and proposed effects management

Augmented flows

The applicant states that to maintain baseflows in Stream 4 from Stage 3 onwards, clean water from the pit sump will be pumped up to a location just above the confluence of the Stream 7 and Stream 2 catchments, at the head of Stream 4. The proposed pit plan water management system, including this pumping system, is detailed in drawing ESCP-Sutton Blk-H20, attached to the Erosion and Sediment Control Report (Technical Report R). This drawing notes that as the pit develops, the pit pumps discharge location will move further upstream in consultation with the Freshwater Ecologist. The stream flow maintenance and recommended augmentation programme for Maketu and NT-1 Streams (which includes Stream 4), is set out in the proposed consent Conditions 148 and 149. Condition 148 (a) requires augmentation if the flow at the Mangawheau monitoring station falls below 160 l/s. This augmentation is proposed to continue for as long as quarry dewatering results in drawdown effects.

There are a number of aspects to this that are of concern. The augmentation of flows to stream 4 are important and flow monitoring should be at the point where the proposed streamworks/diversions end, and flows are into

the existing natural watercourse. Augmentation based on flows 6 km away from the site, in a separate catchment, is not considered to be an appropriate effects management action, as it will lack the sensitivities required. The to be reclaimed seep and gulley wetlands play an important role in the hydrology of the streams in the catchment proposed to be reclaimed and therefore it is considered that a sound baseline on the flows from this catchment would form a critical part to monitoring and maintaining downstream hydrology.

Water from the quarry pit base is likely to be contaminated to some extent and there is no detail on the water quality to be achieved for the augmented flows.

There is no assessment as to the potential effects of reduced flows into stream 4 for any duration (which is likely given the proposed works and stream realignments and reclamation).

There is also a likelihood of continued stream flow augmentation with clean water, and given that the adverse effects are permanent, the augmentation requirements and monitoring may be required for the long term as flow augmentation appears to be required for at least the duration of the quarry works (50 years), and potentially in perpetuity. Given that augmentation pumping from the quarry bed (below the invert of the stream) and monitoring will possibly be required for 50, 100 or 200 years, a suitable mechanism is required to ensure this will endure.

Stream 4 diversion and culverting

The report states that the flow from stream 4 into the current dam pond will be diverted through a new temporary stream channel along the left bank to join the culvert under the current accessway. The pond will become a sediment retention pond. The report continues to describe further diversions. Below the dam, a new stream diversion channel will be constructed on the benches on the northern bank of the existing stream channel below the dam. The new permanent stream channel, below the current dam. The sediment retention pond will be removed, and a new stream channel constructed, within part of the footprint of the current pond above the dam. Once the lower permanent stream channel has been completed, a temporary culvert will be installed to divert the stream flows from the temporary stream diversion channel (around the eastern side of the old dam) to the new permanent stream channel. Once the new permanent stream channel is made live, works will commence to complete the access road, reclaiming the original stream channel below the dam. When the new stream channel, within the footprint of the dam pond, has been completed, the temporary stream diversion around the side of the old pond will be disestablished and flows re-directed to the top of the new stream channel.

The application material reports that the diversion channel will be designed to provide a naturalised channel with meanders, variations in hydrology and large boulders, similar to the current stream reach, with no loss in current SEV values or stream length. It is also understood that the effectiveness of a diversion channel was checked by the project engineer and ecologist against a stream in a similar position that has been successfully diverted at Belmont Quarry (Lower Hutt).

There is almost no detail on these diversions, and whilst a design, including sinuosity, boulders and other stream enhancements is indicated, there are no long sections or any other detail. There is also no detail on how long these temporary diversions may last for (6 months or 6 years). I would anticipate as a minimum, that a streamworks management plan is provided to outline how this will be undertaken. The eastern bank of the pond where the stream is to be located is steep and it would appear there is little opportunity for any sinuosity or structure other than a pipe or drain. There is insufficient detail in the application material to provide an assessment of the diversions, effects and effects management thereof or the maintenance of ecological value.

Offset values and location

Offsets proposed in Drury (Peach Hill offsets) are considered acceptable and these include the removal of farm culverts. Whilst they are headwater streams, they have a lower grade than those being reclaimed, but they meet the principle of proximity being in a neighbouring catchment.

Davis Road does not meet the like for like principle having a silt bed and being a meandering stream on a low grade with floodplain wetlands, however, it is in a neighbouring catchment south west of Peach Hill and meets the required offset principle of proximity.

Aquatic offsets are required to meet the principals in Appendix 6 of the NPS:FM. In particular principle 7, which broadly addresses principles such as like for like and proximity.

In addition to the above, the AUP provides an offsetting framework in Appendix 8. It is considered that only Davis Road and Peach Hill address item 3 on the framework, with Peach hill addressing item 5 also.

I do not consider the proposed 'offsets' located in the Waikato to meet these principles for the following reasons:

- The planting of only one side of a stream as offset for stream loss does not represent the values lost of the streams to be reclaimed (like for like, or the potential of the impact stream).
- The planting of a highly modified (straightened) or artificial watercourse to offset catchment headwater streams is not a like for like exchange.
- Lowland streams are not considered like for like when the reclaimed streams are catchment headwaters, particularly streams 8 to 11 m wide as offsets for streams that rarely exceed 1 m, with most being around 0.5 m. This also results in a skewed outcome in the ratio of stream area (m²) that is offset, and this is not representative of the streams lost.

On a practical level, there are concerns with Auckland Council being able to access the offset sites for compliance monitoring purposes and other limitations placed on compliance and enforcement for this being out of the region.

Planting monitoring is proposed for 5 years, however the SEV outcomes are only likely to be achieved over 15 to 20 years. It is therefore considered appropriate that measures of success, adaptive management and SEV outcomes are set out and monitored over 20 years post planting.

The Tuakau offsets are therefore not supported.

Offset extent

I have detailed further below additional reasons and context for considering stream extent as well as value in the offset. In this case, there is a net loss of 3.3 km of stream from the proposed development. This has not been accounted for and with the proposed offset, there remains a net loss of stream length. The NPS:FM definition for *aquatic offset* requires that no net loss, and preferably a net gain, in the extent and values of the wetland or river is achieved.

Additional freshwater stream recommendations

There are existing enhancement offsets already consented to occur on stream 4 (from the northern quarry expansion). These were consented on the basis that there were no plans for expansion of the quarry (2018) and

provided in the application material. This offset is on the stream that is fed by the entire catchment that is to be reclaimed by the proposed quarry expansion. It is therefore subject to the potential adverse effects of the activities proposed in this application. These effects could be on water quality, quantity and the hydrological regime (conceptualised as a hydrograph). Potential adverse effects on this 2018 offset has not been considered in this application. I consider that this application is responsible for ensuring that existing offsets reliance on water quality and quantity are not adversely affected by the proposed works. This would ideally be achieved through a monitoring and responsive management plan.

In addition, it is possible that the effects are not immediately noticed through the existing consent SEV monitoring as it was not intended to address catchment scale changes, however, there is a risk that the effects of the proposed activity may become apparent after the existing consent has closed, resulting in the in perpetuity offset being degraded or even lost.

Wetland values

A total of 14 wetlands have been identified that will be lost to the proposed development (one is split into two assessments due to vegetation changes, therefore 15 wetlands are considered). All these wetlands are noted in the application as being natural inland wetlands under the NES:FW. No delineation information has been provided, however as they are largely confined to valley bottoms or hillside seeps, the extent provided is accepted. The wetland loss is reported to be 1.88 ha.

In addition to the wetland loss as part of the quarry, two wetlands will be affected (wetlands 2a and 2b) through the loss of upstream contributing catchment to wetland habitats, reducing the hydrological functioning of the wetlands. The extent of loss is not provided, however if the entire wetland is lost, through reduction in flow, which appears to be likely, the total wetland reclamation would be 2.36 Ha. This means that the wetland loss to be offset is likely to be underrepresented.

Many of the wetlands had exotic species dominating and were impacted by stock. The reports assess 2 wetlands to have moderate ecological value and 13 to have a value of low. I don't concur with all the EIANZ wetland ecological values assigned by the applicant's ecologist as the values have been predominantly associated with vegetation and have disregarded the wetland functions. Hillside seeps and wetlands in the headwaters play a critical role in the downstream hydrology, providing sustained and controlled flows which sustain freshwater habitats.

Wetland loss and proposed effects management

The wetland loss is proposed to be offset at the Tuakau Site. This area is located in wetted pasture located immediately south of a covenanted 3.59 ha stand of kahikatea and on the banks of the Waikato River. Directly east of the site a second 4.97 ha stand of kahikatea is present and west of the site is an extensive wetland known as the 'Piggott Wetland', which underwent extensive restoration undertaken by Fish and Game in 2017. Between the river and the proposed offset wetland is a small stopbank which is understood to prevent smaller flood events from inundating the wetland area, however, the wetland would still flood when this bank is overtopped or when excess rainfall occurs within the wetland's catchment.

The photos show a flooded area, however, it is not clear if this is existing natural inland wetland, and if so, no delineation evidence is provided. The report mentions slight modifications to the levels of the land, again it is

unclear what this may entail and if earthworks are required to create a wetland in this location. The wetland planting plan in figure 4 depicts a wetland that has different zones and inlets/outlets. There is no description as to how this is to be achieved.

Like for like and proximity

From the description of the offset site, it is not clear how this wetland's hydrology is maintained, however, its location suggests that it is part of the Waikato river floodplain and is reliant of river floods for its hydrology. It therefore plays little role in flow control of the Waikato River (the wetland is too small relative to the River's catchment) and any restoration planting will not substantially alter its functioning. The impact wetlands have current and potential ecological attributes that relate to sediment management, hydrology, flow attenuation, habitat provision and biodiversity that are very different to a floodplain on North Island's largest river.

The offset does not have many, if any, of the ecological functions the impact wetlands exhibit. It is therefore not a considered a like for like exchange.

Wetland assessment and potential

The wetland assessments omit critical parts of wetland function, rather focussing mainly on vegetation. In particular, the biophysical components of water quality, quantity, habitat, aquatic life and ecological processes are not assessed (NPS:FM, Appendix 1A). The NPS:FM also provides, in the definitions, the loss of value in relation to wetlands, and specifies the following existing or potential values:

- i. ecosystem health
- ii. indigenous biodiversity
- iii. hydrological functioning
- iv. Māori freshwater values
- v. amenity values

The assessments do not provide a complete assessment of the above for the current nor the potential values.

The potential evaluation of the impact wetlands is not undertaken in the same manner as the potential evaluation of the offset wetland. This is discussed further below. This result is that that incorrect values have been used in the BCM model used for the offset calculation.

The BCM offset calculation

The values used in the BCM for the offset wetland value cannot be assessed as there is no evidence presented as to how they have been derived. It should be noted that both the BOAM and BCM require benchmark sites (physical or theoretical) and that the BCM requires sound evidence to support the values used. Considering the exchange and the location, the offset potential value appears inflated. It is not clear what values were applied for the different criteria under the EIANZ guideline, a high value means that it would *Likely to be regionally important and recognised as such*. This, in a region with vast wetlands and peat domes, seems unlikely.

The extent of wetland reclaimed in the BCM is 1.91 ha. This apparently includes a 2% contingency. It is not clear why or where this 2% comes from, however, the extent of wetlands that will be lost I consider, without additional evidence, to be 2.36 ha.

In the applicant's calculation, the duration to achieve the offset is given as zero as it will be undertaken 5 years before wetlands are lost. I do not concur with this as there is no detail as to what work will be required to achieve the wetland planting performance. My experience has indicated longer periods likely required for wetland ecology and plantings to reach a *High* value and be regionally important, particularly as a large portion is to be planted as swamp forest.

For the above reasons the BCM has not been implemented in a correct or an assessable manner.

Responses to Legal response and applicant ecologist

1. Legal presumption that consents will be complied with

I am uncertain where Natalie Summerfield and Bal Matheson determine that I suggest that there should be limited reliance on the proposed consent conditions to mitigate the effects of the Sutton Block Project. My questions relate to the limitation of a maximum 35-year consent where effects management may extend well beyond that time. Robust consent conditions are critical for enforceability and compliance is expected (although the applicant has a history of delayed compliance on ecological offsets).

2. Augmentation obligations within consent conditions beyond 35 years

The legal memo provides two options to address the limited consent period for the stream augmentation. It is unclear which option they propose to utilise. In both cases, they indicate that the augmentation flows would stop once dewatering had ceased. I don't consider that the lasting pit depth will facilitate dewatering and the requirement for augmentation to stop. It is considered that there would need to be specific conditions, following closure or abandonment of the pit, that dewatering and stream augmentation would be able to cease.

3. Does the loss of stream extent and values need to be offset separately

Lawyers Natalie Summerfield and Bal Matheson disagree with my position that both stream value and extent, as separate entities are required to be addressed. They contend that in the Auckland Unitary Plan (Operative in Part) at Policy E3.3(18), which states: *The loss of river extent and values is avoided, unless the council is satisfied that: [...] conjunction used in the policy is 'and' not 'or', so both the extent and values should be considered together.*

This ignores the origin for the policy in AUP, as a directive under the NPS:FM. In the NPS:FM, it is clearly set out that that value **and** extent are both required to be addressed, and in most instances, it refers to value **or** extent. In the NPS:FM, the purpose of the 'or' in, for example, Cl. 3.24(3) is saying an activity can have an effect on either extent or values, or both extent and values – depending on the context and nature of the activity. Whilst policy 7 of the NPS:FM has *extent and values*, further set out in the NPS:FM, these are seen as separate components; in Cl 3.21, in the definition of *effects management hierarchy* and also the definition of *aquatic offset* they are seen as separate and in Principle 3 of Appendix 6 as well as numerous other passages. I consider that the understanding held by Council that offsets need to account for extent and value separately is what is intended under the NPS:FM and the policy in the AUP.

It is further erroneous to consider that the wording and approach used in the SEV, developed in 2006 and refined in 2008, would be set out to account for the much newer National Policy Statements (2020) incorporating advances in understanding and the associated specific wording.

The use of the Wayby Valley Landfill as an example does not provide support to the claim that the SEV/ECR accounts for extent. In this case the ecological work on the landfill site started at least 4 years prior to the NPS:FM being developed. The decision was based on the overall effects management, not just the SEV/ECR, and at no point in that application is it suggested that the SEV/ECR addresses loss of extent.

To suggest that extent is not considered in other environments such as wetlands is also erroneous and policy 6 of the NPS:FM is clear on this.

4. An assessment of potential wetland values must be proportionate

The response from lawyers Natalie Summerfield and Bal Matheson has not addressed the concern that the assessment of potential of both the impact and offset wetlands should be considered the same. It is unbalanced if the assessment of potential of the offset wetland includes restoration planting, but the impact wetland assessment ignores the potential of restoration planting. In contrast, the assessment of impact stream potential includes planting.

I remain of the understanding that the offset calculation for the offset wetlands in the application is misleading, partly due to this aspect.

Conclusions

Given the concerns with the assessments and particularly the offset location, calculation and types, and based on the information presented, this application is not supported.

6.0 Section 67 Information Gap

At the time of writing this Memo I have identified information gaps:

Detailed information gaps have been provided to the applicant twice.

*This information is contained in the **Drury Quarry Sutton Block – Comments Tracker**, numbers 51 to 68.*

Reasons why it is essential as well as comments responding to the applicant's initial responses are also provided in this document.

These information gaps have prevented me from forming a robust assessment, understanding the proposal and potential effects, and if the effects management is proportional and sufficient.

7.0 Recommendation

On the current merits, this application is not supported from an ecological perspective.

Terrestrial offset

The assessment must be revised and account for increased uncertainty for edge effects.

Additional offset area is required as well as improved effects management for avifauna and habitat lost.

Stream offset

The offset calculation must be revised to include extent.

An appropriate offset site that provides like for like and proximity principles is required.

Wetland offset

Calculations must be revised, and an appropriate offset wetland is required to meet the offsetting principles.

Overall

Management plans must be updated to include the monitoring proposed in the ecological assessments and that any monitoring includes performance targets or thresholds that would trigger the implementation of a detailed adaptive management plan to meet the required and reported outcomes.

On the current merits, this application is not supported from an ecological perspective.

8.0 Proposed Conditions

I consider that a condition is required to address the potential for perpetual stream augmentation to be included in a land use consent. The applicant's lawyer has proposed the following: *Include the flow augmentation requirement in the landuse consent (which has an unlimited duration). Given that the flow augmentation is to also ensure the success of terrestrial vegetation adjacent to NT1-8-Southern Tributary, this would be sufficiently linked to the land use activity. This condition would allow such augmentation to cease once dewatering had ceased and natural groundwater level had risen back to its current level.*

I note that there are conditions to develop management plans for the many aspects, however, I did not notice a condition that required the certified management plan to be implemented. A recommendation is to have a condition that all Council certified management plans must be implemented.

The following consent conditions are proposed by the applicant, and my recommended edits are provided in red. These edits are recommended to align the conditions with the undertaking in the ecological assessment reports.

15

In the event of an amendment to a management or monitoring plan under Condition 13, the Consent Holder must submit, in writing, the amendment to Council for certification that the amendment meets the objectives and performance requirements of the plan, at least 20 working days before the commencement of the relevant works. **Amendments must include but not be limited to reasons for the amendment; evidence that the amendment will not adversely affect the net gain of offset or restoration outcomes (time, value or extent); and utilise current best practice.**

47

The EEMP must include:

- Details on the buffer planting location and widths;
- Plant species, including the proposed planting schedules;
- Details on fencing location and type; and
- Monitoring and maintenance of planting and fencing undertaken.

The monitoring plan must have performance targets to ensure there is no net loss of ecological values and extents and preferably net gain and details on adaptive management actions should targets not be met.

49

The SRPP must include:

- Plans identifying the areas of proposed riparian planting;
- Describe plan species mixes, plant spacing, density and layout, plant size and planting methods;
- Describe where the plants will be eco-sourced from;
- Describe fencing and stock exclusion;
- Include a plant pest management programme;
- Include an animal pest management programme; and
- Describe the ongoing maintenance and management of planted areas, including a requirement that over a 5-year period (or until 80% canopy cover is achieved) plants that fail to establish are replaced.

A monitoring plan with clearly defined measures of success and performance targets, including repeat SEV assessments to demonstrate that outcomes envisaged are being achieved. Targets, developed or calculated in a transparent manner, are set to ensure there is no net loss of ecological values or extents and preferably net gain. An adaptive management plan must be included with details on actions should targets not be met.

Monitoring should be implemented for a minimum of 20 years post planting.

51

The NGDP:PWC must include:

Plans identifying the areas of proposed ecological enhancement;

Include a plant pest management programme that describes the ongoing maintenance and management of pest plant species, including control methods ~~and~~ ongoing monitoring ~~and~~ performance targets with associated adaptive management.

Include an animal pest management programme that describes the ongoing maintenance and management of pest predators (possums, rats, mustelids) and ungulate (pigs, goats and deer) species, including control methods, catch targets and ongoing population monitoring;

Describe any fencing (location, type and maintenance requirements), stock exclusion, or any other physical works necessary to protect enhanced areas from livestock;

Require that the offsetting and enhancement activities identified in the NGDP:PWC commence within one year of any vegetation removal within the Project area being commenced; and

Provide for re-modelling of the Biodiversity Offset Accounting Models (BOAM) for offset enhancement with updated field data at Year 10 as part of confirming the biodiversity gains accruing from enhancement in advance of vegetation loss and if necessary, adjusting the NGDP:PWC in accordance with the models

54

The NGDP:PP must:

Require that the planting of pioneer species (as identified in the NGDP:PWC dated 19 March 2025) commences no later than the first planting season following the commencement of vegetation removal within the Project;

Require that all pioneer planting be completed within 10 years from commencement (as outlined in (a) above);

Identify when the enrichment planting is to be undertaken for each area of pioneer planting (based on the monitoring of the growth of the pioneer planting and which is expected to be within three to five years of the pioneer planting);

Identify areas (including legal boundaries) where planting is to occur including staging;

Describe plant species mixes, plant spacing, density and layout, plant size (at time of planting) and planting methods (including ground preparation, mulching and trials);

Describe where the plants will be eco-sourced from (including species genetic source and propagation methodology);

Describe fencing (location and type), stock exclusion, or any other physical works necessary to protect planted areas from livestock;

Include a plant pest management programme that as a minimum targets species that threaten new or replacement plantings;

Include an animal pest management programme that as a minimum targets exotic species that threaten new or replacement plantings and indigenous fauna (pest predators);

Describe the ongoing maintenance and management of planted areas, including a requirement that over a 5-year period (or until 80% canopy cover is achieved) plants that fail to establish are replaced; and

Provide for re-modelling of the BOAM for offset planting with updated monitoring data at Year 10 as part of confirming the biodiversity gains accruing from planting in advance of vegetation loss and if necessary, adjusting the amount of further planting required in accordance with the models.

Provide a monitoring plan that details monitoring methods, performance targets and details adaptive management if targets are or may not be met. Monitoring must be undertaken annually for the first five years post planting, followed by long term monitoring thereafter in Years 7, 10, 15, 20 & 30.

56.

The SDEP must include:

Diversion details of the streams on site, including:

- (a) Construction methods and timing; and
- (b) Design drawings, with profiles illustrating;
 - (i) The location and flow path, including low flow channel and meanders; and
 - (ii) Ecological enhancements, such as riffles, pools and boulders to increase hydrologic variation.
- (c) Riparian planting, in accordance with the SRRP (Condition 49); and
- (d) Stream Monitoring Plan, including performance targets of both stream habitat and riparian planting and an associated detailed adaptive management plan.
- (e) ~~Riparian planting~~

58

To NGDP:RP must include:

Specific restoration design details, including:

Location and flow paths;

Supporting design drawings including profiles (if required);

Details of ecological enhancements including meander; low flow channel; pools; and

Monitoring and maintenance requirements.

A monitoring plan with clearly defined measures of success and performance targets, including repeat SEV assessments to demonstrate that outcomes envisaged are being achieved. An adaptive management plan must be included with details on actions should targets not be met.

Monitoring should be implemented for a minimum of 20 years post planting.

60

To NGDP:WP must include:

Wetland restoration design details, including:

Location and flow paths;

Supporting design drawings including wetland profiles;

Details of construction methods;

Details of ecological enhancements, including meander; low flow channel; pools; and

Monitoring and maintenance requirements with clearly defined measures of success and performance targets, including repeat assessments to demonstrate that outcomes envisaged are being achieved.

An adaptive management plan with details on actions should targets not be met.

Monitoring should be implemented for a minimum of 20 years post planting.

Planting plans, including details on:

Plant species mixes; plant spacing, density and layout; plant size (at time of planting);

Planting methodology, sourcing and schedules;

Physical protection of plants (i.e., fencing or stock exclusion);

Planting monitoring targets and maintenance;

Plant disease and pest animal management; and

The ongoing maintenance and management of planted areas, including a requirement that over a 5-year period (or until 80% canopy cover is achieved) plants that fail to establish are replaced.

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9.0	Supporting Documents
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<i>none</i>
