



Memorandum

To	Craig Sharman
Copy	
From	John Turner
Office	Hamilton
Date	3 September 2021
File/Ref	
Subject	Rotokauri North Private Plan Change: Technical Review - Ecology

1 Scope of review

This memo summarizes the findings of my review of several documents relating to the Rotokauri North Private Plan Change Request (RNPPCR) request as these related to ecology and a site visit conducted on 18th February 2019.

The scope of the review covered the following:

- 1 Determination as to whether the assessment of the effects of the RNPPC on ecology are complete, correct, adequate, appropriate, technically robust and fit for purpose, that is they demonstrate the proposal will help promote sustainable management of the environment;
- 2 The consistency of RNPPC with any relevant ecology requirements and directions of, or relating to, any national policy statement, the Waikato Regional Policy Statement, any regional plan, the Hamilton City Operative District Plan and any relevant non-statutory policy or plan of HCC;
- 3 Comment on proposed conditions relating to ecology.

2 Basis of the review

The following documents were consulted in undertaking the review:

- Rotokauri North Private Plan Change Request (RNPPCR), Planning Assessment: Assessment of Environmental Effects prepared Green Seed Consultants Limited (December 2018 DRAFT);
- Receiving Environment and Rapid Erosion Assessment Rotokauri North Sub-Catchment prepared by Morphum Environmental Ltd September 2018 DRAFT;
- Letter from Adam Purcell and Dean Miller Tonkin and Taylor to Green Seed Consultants Ltd dated 25th June 2020 "Long-tailed bat survey - Rotokauri North Subdivision";
- Rotokauri North Sub-Catchment Integrated Catchment Management Plan, June 2021 prepared by Tollemache Consultants Ltd.

- Rotokauri North Sub-Catchment ICMP – Stormwater System Report, 18 June 2021 prepared by Bloxam, Burnett & Oliver.
- Rotokauri North Sub-Catchment ICMP – Water and Wastewater System Report, 18 June 2021 prepared by Bloxam, Burnett & Oliver.

I conducted site visit on the 18th February 2019.

3 Review of documentation

3.1 Terrestrial Ecology

3.1.1 Key information provided in the Plan Change Request

With respect to land use and vegetation within the site, the RNPPCR stated:

“Vegetation on the site is mainly grazed pasture grasses and exotic tree species used for hedging and shelter belts. Some native trees are present on the site but are generally located in amenity gardens surrounding dwellings. There is an existing significant stand of kahikatea in the north eastern corner of the site, which is identified by the HCDP as a SNA.

Proportionally across Rotokauri North the land uses are as follows:

- *97.4% of land classified as exotic grassland,*
- *1.6% classified as exotic forest, and*
- *The remaining 1.0% classified as indigenous forest as per the Land Cover Database (version 4.1).*

The SNA, known as Burbush Road Forest or Perkins Bush is a small patch of kahikatea trees situated on private property north of Lake Rotokauri. It has been identified as an SNA under the HCDP. Kessels (2016) records it as: “The canopy is dominated by kahikatea with emergent rewarewa, with an understorey of tawa, mahoe, white maire, pohuehue and titoki (Cornes et al. 2012). In 2011 the area was mostly fenced from stock. Weed species include woolly nightshade, Chinese privet, Tradescantia fluminensis and pasture grasses are prevalent in the ground tier”.

It further stated with respect to Perkin’s Bush that:

“As the area is already protected by the HCDP no further assessment of the values it holds have been undertaken nor are considered warranted. It is however anticipated that this will form part of a wider “green” network within the site, as evident from the RNSP. The RNSP does not seek to alter the existing zoning or identification of the SNA.”

And that it is to be:

“retained, protected, and enhanced (at development stage)”.

3.1.2 Reviewer comment on the RNPPCR

While not a full assessment of the terrestrial values of the site and potential effects of development the information provided in the RNPPCR accurately summarised in broad terms the characteristics of the terrestrial vegetation and habitats within the site. Except for Perkin’s Bush, the vegetation is highly modified and has low intrinsic ecological value and I have no concerns about the future loss of this vegetation of itself.

Perkin’s Bush is identified as a Significant Natural Area (SNA) under the Hamilton City District Plan (HCDP) and the RNPPCR states that it will be protected and form part of a wider green network within the Rotokauri North Structure Plan (RNSP). Based on my site visit I can confirm that Perkin’s Bush is high value site in the context of Hamilton City, with an abundance of tawa in the canopy, an uncommon species within the City. While its current value is high, there are also opportunities for enhancement, including

removal of weed species and potentially enrichment planting. I generally agree that further work to assess the values of the SNA is unnecessary at this stage. However, a detailed assessment will be required at the development stage to fully articulate the values of the bush and inform any protection, enhancement and management initiatives, which could include provision of a buffer zone around the bush and control of any proposed public access e.g. secure perimeter fencing and restriction of movement via boardwalks. The provision of a rule in the District Plan is recommended to ensure this occurs. It is noted that the SNA is now to be referred to as the Kereru Reserve to reflect the wishes of mana whenua working group.

While the value of the vegetation is adequately described by the RNPCCR for the purposes of the proposed plan change, no mention is made of the values of the site for terrestrial fauna i.e. birds, bats and lizards.

Having visited the site, and from my knowledge of birdlife in and around Hamilton City, I expect that the bird species present within the site on a regular basis are likely to be common native and introduced species. Consequently, the development of the site is unlikely to result in significant adverse effects on native bird populations.

During my site visit I noted that suitable habitat for native lizard species exists across the site in areas of rank vegetation, around woody debris and within gardens where there is well established vegetation and potentially accumulation of organic matter. There is also potential lizard habitat within Perkin's Bush. Copper Skink, a species classified as Not Threatened, is the most likely species to be encountered. It is unlikely that "At Risk" or "Threatened" species are present, although the possibility cannot be completely discounted. In my opinion, based on knowledge of similar sites around the Waikato, effects on lizards are not a major risk issue in this instance, however, effects on lizards will need to be more fully assessed during the site development process to support resource consent applications, and any applications for a Department of Conservation (DOC) Wildlife Authorities, needed prior to site clearance.

Long-tailed bats are found widely in the areas surrounding Hamilton. The threat status for this species was elevated to Nationally Critical in 2018. Effects on long-tailed bats have been a major issue of concern for other developments in the rural and peri-urban zones around Hamilton e.g. the Waikato Expressway and the Southern Links/Peacockes development area. Based on my site visit I considered that Perkin's Bush, and many of the areas across the site, where there are mature exotic trees, had the potential to provide suitable roosting habitat for this species. No information was provided on the status of bats within the site in the RNPCCR. However, this matter was subsequently addressed by a survey undertaken in 2019-20 by Tonkin and Taylor, discussed in section 3.1.3 below.

3.1.3 *Bat report*

The lack of information concerning long-tailed bats within the site was rectified by the following subsequent study:

- Letter from Adam Purcell and Dean Miller Tonkin and Taylor to Green Seed Consultants Ltd dated 25th June 2020 "Long-tailed bat survey - Rotokauri North Subdivision" (BR).

Long-tailed bats are currently classified as a 'Threatened – National Critical' species and are endemic to New Zealand. Populations of long-tailed bats are known to inhabit Hamilton City and the surrounding landscapes and have been recorded approximately 3 km from the site. Local 'hotspots' of long-tailed bat activity are along the Waikato River and its associated gullies at the southern end of Hamilton and the Hakarimata Ranges which are approximately 10 km from the site.

Two bat surveys were undertaken across the site (Appendix A). The first survey was completed using 12 Automated Bat Monitors (ABMs; ARM v1.31 DSP v1) and spanned 28 nights from 18 December 2019 to 15 January 2020 (Appendix A). The second survey was

completed using 11 ABMs⁴ over 15 nights from 3-18 March 2020 (Appendix A). ABMs were deployed in locations where bat activity was considered most likely to be detected e.g. along shelterbelts and areas with potential roost trees

No long-tailed bat passes were detected by any of the ABMs in either of the surveys.

The results of two specific surveys found no evidence of long-tailed bats inhabiting the site. However, Tonkin and Taylor could not rule out the potential that bats periodically use the site for commuting, foraging or roosting due to the wide-ranging behaviour of the species, the potential habitat available on site, and the proximity to recorded long-tailed bat activity.

3.1.4 *Reviewer comment on the findings Bat Report*

The survey results indicate that the site is of low value for long-tailed bats however it is still possible that long-tailed bats use the site periodically. It should also be noted that annual city-wide surveys undertaken as part of Project Echo¹ have shown increasing bat activity within the Hamilton City and in the northern part of the City, including within Waiwhakareke Natural Heritage Park in 2020. This park is only c.3km from the North Rotokauri development cell. Given the apparent expansion of bat activity within the City including Waiwhakareke, inclusion of rules in the District Plan requiring further bat survey prior to site clearance are appropriate.

3.2 Aquatic Ecology

3.2.1 *Key information provided in the plan change request*

Morphum Environmental Ltd (Morphum) have undertaken a receiving environment and rapid erosion assessment of the Rotokauri North Sub-Catchment. This included a receiving environment assessment, geomorphic erosion assessment, black mudfish survey, macroinvertebrate community index (MCI) sampling, sediment quality sampling and water quality sampling. Their report details the results of the assessment and sampling and provides management options to remedy and mitigate the effects of future site development, as well as opportunities for enhancement.

Key findings of the assessment stated in the report were:

“The majority of the watercourses within the surveyed extent are located within agricultural pastoral land, with small areas of rural residential land use. These agricultural streams have little to no native woody riparian vegetation and direct stock access to the stream channel is common with damage from stock, such as pugging of banks, evident along many reaches. Modifications of the watercourses such as straightening, deepening and diversion of flows were recorded throughout the surveyed extent.

Surveys for black mudfish were conducted at 4 sites, while sediment and water quality were conducted at five sites within the surveyed extent. No black mudfish were recorded at the sample sites. Water quality results indicate poor water quality, with five measured parameters – including nitrogen and phosphorus exceeding Australian and New Zealand Environment and Conservation Council (ANZECC) trigger values. Sediment quality was indicative of agricultural land use, with high concentrations of arsenic at one site, but relatively low concentrations of heavy metals such as zinc and lead across the sampled sites. Guidelines proposed in the National Policy Statement for Freshwater Management (NPSFM), ANZECC and supporting Waikato Regional Council (WRC) documents suggest that the watercourses in the Rotokauri North Sub-

¹ Dumbleton, H.; Montemezzani, W.; 2020. HAMILTON CITY LONG-TAILED BAT SURVEY For Project Echo Annual Monitoring Report 2020. 4Sight Consulting, November 2020.

Catchment and the receiving environments are degraded, and therefore should be enhanced through development where possible.”

The watercourses within the proposed development site are classified in the report as modified watercourses or farm drains, with most of the modified watercourses classified as perennial.

The report presents management options to remedy and mitigate the effects of future development within the framework of four management zones. Within the Rotokauri North Development Area (MZ1), management recommendations include stock exclusion, regarding and channel naturalisation, riparian planting and stormwater treatment devices. Stream enhancement opportunities are also presented in the report, all of these being located outside the development site.

With respect aquatic ecology, the RNPCCR states:

“Notwithstanding the currently degraded and modified nature of the streams, the existing HCDP and WRC policies and rules, which apply to the subject land, with respect to stream retention and ecological values and acknowledge that with replanting, a quality ecological environment could be established. This existing frameworks provides an appropriate level of protection already....”

....Overall, and for the reasons set out above, the PPC combined with existing District and Regional Plan provisions can result in positive effects whereby stream corridors and stream health are enhanced,....”

3.2.2 Reviewer comments on the Morphem Assessment

The Morphem assessment has used appropriate methods to describe and assess the ecological values of the streams. Their findings with respect to the modified and degraded nature of the watercourses were consistent with what I would expect from this kind agricultural landscape within the Waikato. My site visit found that most of the watercourses were either dry or contained very little water, were accessible by stock and impacted land and drainage system management. I consider that the Morphem assessment fairly reflects the nature and values of the watercourses within the development site.

I also concur that there are a number of measures that could be implemented during site development that could remediate and mitigate adverse effects of the development and will likely result in enhancement of the ecological value of the watercourses.

3.2.3 Green Spine and the Stormwater Systems Report

The Rotokauri North Structure Plan (Figure 2-8A) identifies a ‘Green Spine’ through Structure Plan area. The corridor identified by the ‘Green Spine’ includes the Ohote Stream and Te Otamanui Stream. It also incorporates several stormwater treatment wetlands. The Stormwater System Report (Bloxam, Burnett & Oliver, 18 June 2021) provides details of how the existing streams will be enhanced to provide higher quality habitat than currently exists and how fish passage will be provided. It is intended that the ‘Green spine’ will form green corridors through the site.

3.2.4 Reviewer comment

The proposed ‘Green Spine’ provides an opportunity to enhance the form and function of the existing streams and develop green corridors through the site that are of higher ecological value than currently exist. Provided the approach to habitat enhancement detailed in the Stormwater System Report is implemented, ecological enhancement will be achieved. Inclusion of provisions within the District Plan to ensure that the ‘Green Spine’ is enhanced and managed appropriately are recommended to ensure this occurs.

4 Summary of findings

4.1 Terrestrial ecology

With respect to terrestrial ecology only limited assessment of potential effects has been provided in the RNPCCR. That stated, the proposed development site is for the most part a highly modified environment with low terrestrial ecological values. The RNPCCR has identified Perkin's Bush (Kereru Reserve) as an SNA under the HCDP and that it will be protected and enhanced as part of the development. Detailed surveys of this site will be required to inform future management and enhancement of this area. However, in my opinion it is not necessary to complete such surveys prior to the re-zoning process.

No information on birds and lizards within the site have been provided. However, I consider it very unlikely that effects on birds or lizards will be major issues for the development of the site to the extent that issues cannot be avoided, remedied or mitigated relatively easily. That stated, surveys of the site for lizards prior to development of the site are appropriate.

Surveys for long-tailed bats did not record any bat activity and therefore the site is likely to be of low to negligible value for bats. However, given the fact that bats have been recorded recently approximately 3km from the site, the possibility that bats may on occasion use the site now, or could use the site in the future, remains.

4.2 Aquatic Ecology

With respect to aquatic ecology the information that has been provided is sufficient in terms of scope and detail to be able to reasonably conclude that development of the site can occur, while promoting sustainable management of the environment. The proposed 'Green Spine' provides an opportunity for stream enhancement and an increase of ecological values along the stream corridors.

4.3 Legislation and policy

Given the generally low ecological values of both the terrestrial and aquatic environments within the site, and commitment to the protection and enhancement of Perkin's Bush (Kereru Reserve) and the 'Green Spine', it is expected that development of the site can be achieved while maintaining consistency with relevant ecology requirements and directions of, or relating to, any national policy statement, the Waikato Regional Policy Statement, any regional plan, the Hamilton City Operative District Plan and relevant non-statutory policy or plan of HCC.

The need to provide fish passage has been acknowledged and provided for in the Stormwater Systems Report and this will ensure compliance with the National Environmental Standard for Freshwater (2020).

5 District Plan Rules and Provisions

To ensure that the ecological values are protected and enhanced several rules relating to ecology have been recommended for inclusion in the District Plan:

- Rules relating to any subdivision lot where the footprint includes the 'Green Spine' have been included to ensure implementation of the intended ecological enhancement occurs and fish passage is maintained where necessary.
- Rules relating to any subdivision lot where the footprint includes the Kereru Reserve Significant Natural Area to ensure the ecological values of the Reserve are fully defined and that the proposed protection and enhancement of these values occurs.
- A rule has been included requiring assessment of potential bat roost trees on any subdivision exceeding 2ha in area to minimise the risk of killing and injuring roosting bats during site clearance. The application of the rule to subdivisions greater than 2ha seeks to strike a balance between the level of risk of encountering bats within the site and avoiding onerous provisions for small lot subdivisions.
- A rule has been included requiring survey for lizards on any subdivision exceeding 2ha in area to minimise the risk of killing and injuring lizards during site clearance. Once again, the application of the rule to subdivisions greater than 2ha seeks to strike a balance between the level of risk of encountering lizards within the site and avoiding onerous provisions for small lot subdivisions.

It should be noted however that long-tailed bats and indigenous lizard species, as well as indigenous bird species, regardless of threat status, are protected under the Wildlife Act 1953 from killing or injuring. Long-tailed bats are vulnerable to killing and injury while roosting, birds while nesting and lizards during any site clearance that includes habitat where they are present. It is advisable for any subdivision applicant be aware of their obligations under the Act when clearing land of vegetation and structures.



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