

41-43 Brigham Creek Road JV

C/ - The Property Group

Level 14

55 Shortland Street

Auckland 1010

Attention Natasha Rivai

Dear Natasha

41-43 Brigham Creek Road: Plan Change: information request regarding ecological effects

We refer to the further information request dated 18 February 2022 from Todd Elder, Policy Planner at Auckland Council regarding Council's further information request for proposed private plan at 41-43 Brigham Creek Road, Whenuapai.

You have asked us to provide a response to items 33 - 38 of the request.

The queries regarding ecological matters are presented below in italics, with Council's request, followed by our reply.

Request 33

33. The Ecological Effects Assessment concludes that the potential wetland at the base of the eastern gully is a 'pond' and not a wetland. In the report this is based upon a soil core showing no evidence of hydric soils. Hydric soils can take many years to establish and therefore the absence of hydric soils alone is not sufficient evidence to determine the site is not a wetland (as is may have recently formed). During the site visit pooling water and a dominance of Ranunculus and Persicaria was observed in this area. The Ecological Effects Assessment also refers to the area as being 'seasonally wet' which would seem to indicate a wetland hydrology in excess of the thresholds outlined in the hydrology tool. If the applicant is to maintain that this area is not a wetland, further evidence including the use of the vegetation and hydrology tools would be required.

- a. <https://environment.govt.nz/publications/wetland-delineation-hydrology-tool-for-aotearoa-new-zealand/>
- b. <https://environment.govt.nz/publications/wetland-delineation-hydrology-tool-for-aotearoa-new-zealand/>

I would also draw attention to the recent guidance from the Ministry for the Environment concerning induced wetlands: <https://environment.govt.nz/assets/publications/Defining-natural-wetlands-and-natural-inland-wetlands.pdf>

Our reply

The area referred to is an area where temporary ponding of water occurs. We agree that the vegetation (as dominated by non-pasture species of wetland facultative species) is an indicator of potential wetland status. However, the soils do not match (they are not hydric).

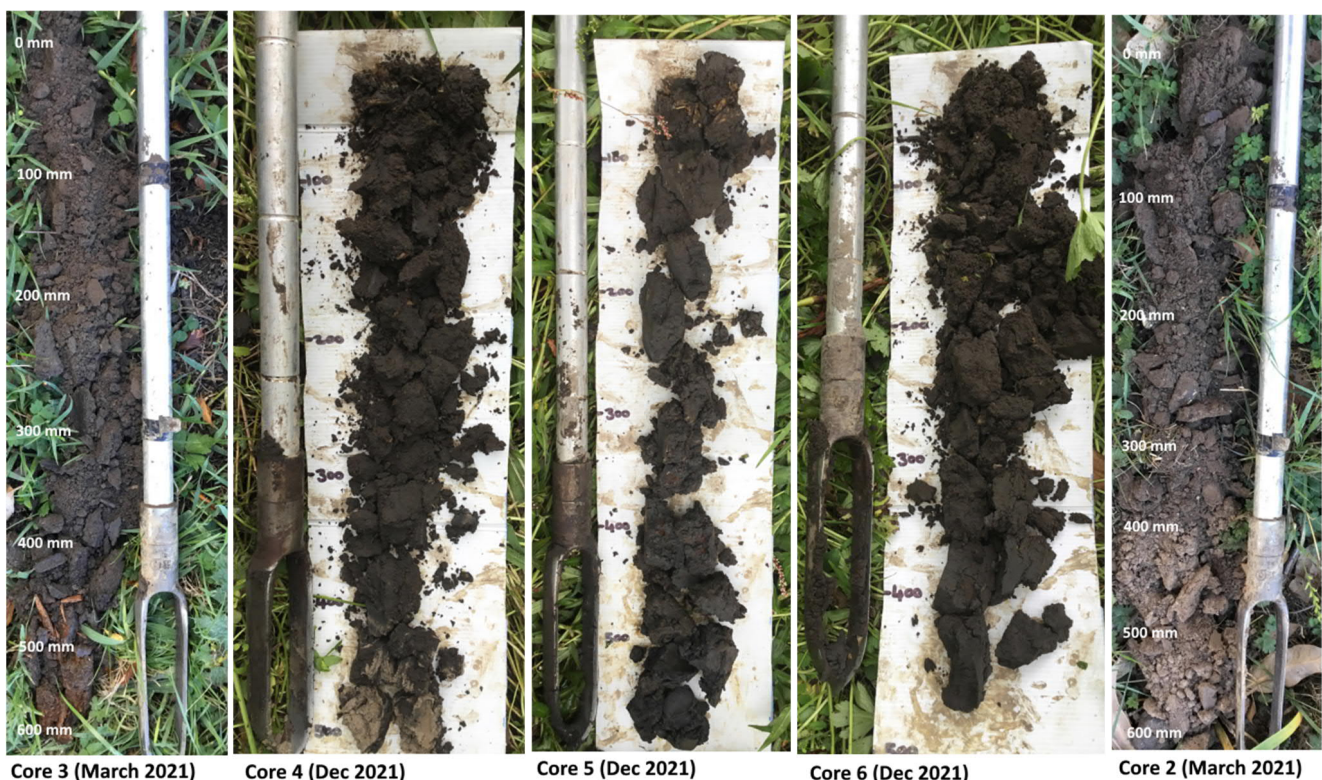
We re-visited the site on 21 December 2021 and undertook further work on soils and vegetation. The vegetation is confirmed to comprise species that are adapted to wet environments – with a dominance of creeping buttercup and water pepper.

The flow chart within the guidance attached to the NPS-FM provides a step-wise sequence of assessment using vegetation, soil and hydrology indicators. The process requires that soils are hydric for a potential wetland site to qualify. It is not enough to have vegetation (or hydrology) as the only wetland indicators. Without qualifying soils, the site is not a wetland.

We took three more soil cores within this wet area – within the lowest point and on the edges. All soil cores were within areas dominated by wet-adapted plants (buttercup/ water pepper/ Yorkshire fog grass). These are shown below, together with the soil core taken in March 2021 within the same area, and a reference sample taken on the slope/ dry soils nearby. None contain indicators of hydric soils as defined in Fraser et al. (soil guide referred to in the NPS-FM wetland classification and delineation guidance). Soils must qualify as hydric soils for a potential wetland area to be classed as wetland – if it does not pass the soils test, it is not a wetland (see flow chart in the NPS-FM wetland delineation and classification guidance). Updates to this guidance chart in subsequent clarification documents from MfE have no legal standing (they cannot replace the NPS-FM official guidance) and in any case they also require that soils AND hydrology tests be both met together for a site to be classified as a wetland.

We agree that if this system was left for another 30 years+ wetland soils may develop and the site may be then be defined as a wetland. That could also be said of (for example) cow-shed pugged areas and septic tank overflow slopes where vegetation comprises 'wetland-type' species but soils have not yet been saturated for long enough to develop hydric indicators.

The current state of the environment at this low area of the site is that it is not a natural inland wetland under the NPS-FM and it is not a wetland as defined in the RMA.



(above). Soil cores taken within the wet basin on the site, and a core taken outside of the basin on the nearby slope/ spur (Core 2). Core 3 is taken after summer and shows dry soils. Cores 4 – 6 are taken just after the wet season and show moist profiles. None of the cores show redox mottling in the upper 300 mm or dark or light low chroma colours within the top 400 mm that are at variance with the reference core. The cores indicate that the basin comprises accumulated fine sediments over underlying basement clays.

Request 34

34. The Ecological Effects Assessment notes a potential natural wetland to the south of the subject site. From the site visit there would also appear to be an equally similar area approximately 30 metres to the west of the identified potential wetland.

Information request: Please comment and update assessment as necessary.

Our reply

We visited these sites in December 2021 and undertook vegetation and soil sampling to assess wetland status. We applied the NPS-FM classification protocols (including Fraser et al. soil assessment).

We refer to these sites as the southern wet area and the western wet area (see below).



Southern wet area:

- Vegetation dominated by Yorkshire fog (40 %), lotus (10 %) and sweet vernal (5 %), also with creeping buttercup (35 %), soft rush (10 %) and sorrel (2 %).
- Most of the stippling on the aerial photo (indicative of soft rush areas) above has either been removed by pasture maintenance since this aerial photo was taken, or is along the margins of the adjoining overland flow path; the potential wetland area is at the head of the gully and in this aerial is beneath the shading caused by the adjacent shelterbelt line.

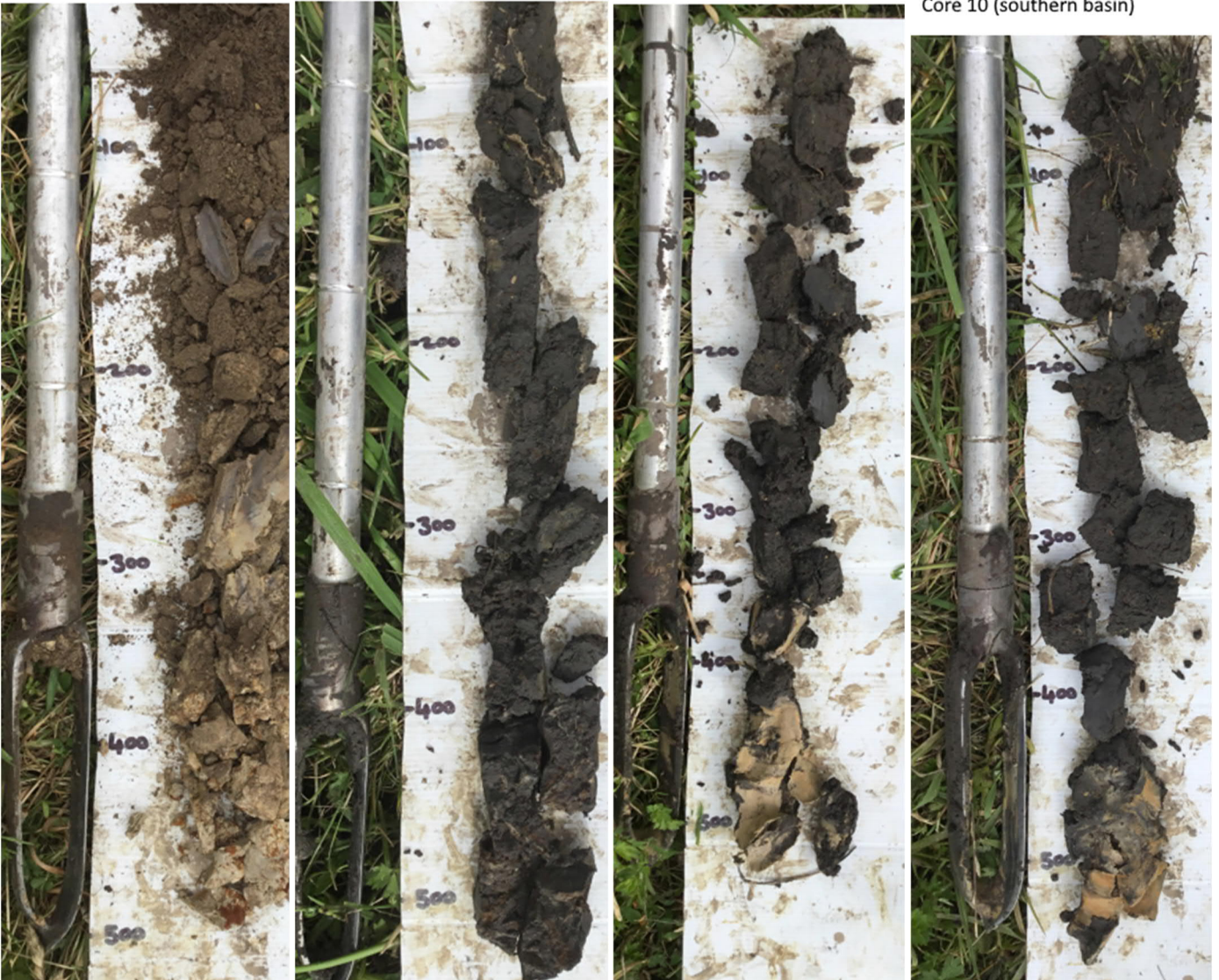
- Soils are fine silts with no mottling and no dark or light low chroma colours in the top 400 mm (see below).
- Overall, while the area is wetter than the surrounding basin sides and spurs, the soils are not hydric, and the vegetation is dominated by pasture grass species (Yorkshire fog, lotus and sweet vernal; which are part of paddock maintenance (pasture improvement) including weed control, fertiliser application and re-seeding) – meaning that the site does not qualify as a natural inland wetland under the NPS-FM nor as a wetland under the RMA.

Core 7 (slope reference)

Core 8 (southern basin)

Core 9 (southern basin)

Core 10 (southern basin)



Western wet area:

- Vegetation dominated by Yorkshire fog (55 %), lotus (5 %) and sweet vernal (5 %), with also creeping buttercup (10 %), soft rush (5 %), paspalum (10 %), sorrel (3 %) and bare ground (7 %).
- Soils are fine, moist, silts with light red mottling in the top 300 mm and a light low chroma colour change at 350 mm (see below). This qualifies this soil as a hydric (wetland) soil.
- Overall, while the area is wetter than the surrounding basin sides and spurs and the soils are hydric, the vegetation is dominated by pasture grass species (Yorkshire fog, lotus and sweet vernal; which are part of paddock maintenance (pasture improvement) including weed control, fertiliser application and re-seeding) – meaning that the site does not qualify as a natural inland wetland under the NPS-FM.
- The site does qualify as a wetland under the RMA.

- The closest point of the wetland to the proposed development at 41-43 Brigham Creek Road is 65 m.

See below for photo of the western wet area, picture of a representative 2 m x 2 m portion and a soil core taken within the wettest part of this western area.





Core 11 (western wet area)

Request 35

35. The Ecological Effects Assessment includes a copy of drawing C461 (Rev A) showing a Q100 discharge in the vicinity of the identified potential wetland to the south of the subject site of 0.45 m³/s. However, the Stormwater Management Plan includes the same drawing (same revision) with a Q100 of 0.3 m³/s.

Information request: Please clarify.

Our reply

The correct statistic is 0.3 m³/s (see Maven plan in updated Plan Change ecology report). Note that the potential wetland to the south of the site is not a wetland under the NPS-FM or RMA.

Request 36

36. With regard to the effects on the potential wetland to the south, the Ecological Effects Assessment notes that there will not be a significant change to the pre-catchment areas following development.

Information request: Can the applicant please confirm the existing and post development drainage catchment areas contributing to the potential wetlands to the south of the site. Please also confirm the percentage of imperviousness in the pre and post development scenarios. In preparing this response also consider that there is a proposed public stormwater line collecting flows intercepting the southern boundary and conveying flows to a proposed public stormwater line to the south east of the site (drawing C450).

Our reply

We understand that the public stormwater line was part of a previous application to Council which has now been superseded to show individual discharges to the south via multiple points. This revised stormwater plan aims to deliver the same overland flows to the southern catchments compared to pre-development and therefore will not affect the southern non-wetland area or the western RMA wetland area.

Request 37

37. The Ecological Effects Assessment also notes there will be little change to flow rates into the southern or eastern catchments and that the rates post-development will be slightly increased.

Information request: Noting the discrepancy in the Q100 flow from drawing C461, can the applicant please confirm the pre and post development flow rates contributing to these potential wetland areas across a range of rainfall events. Also please comment on the potential effects of increased imperviousness on the potential wetland hydrology, including both surface water and shallow groundwater.

Our reply

Please see the information supplied by Maven.

Request 38

38. While drawing C461 referred to in the Ecological Effects Assessment shows the Q100 stormwater overland flows, drawing C450 in the infrastructure report shows the Q10 Stormwater Catchment Plan. C450 shows a proposed public stormwater line collecting flows intercepting the southern boundary and conveying flows to a proposed public stormwater line to the south east of the site.

Information request: Please assess the effects of this stormwater infrastructure on the potential wetlands to the south of the sites – in particular how this is in accordance with the assertion that there will be little change to flow rates into the southern or eastern catchments.

Our reply

We understand that the public stormwater line was part of a previous application to Council which has now been superseded to show individual discharges to the south via multiple points. This revised stormwater plan aims to deliver the same overland flows to the southern catchments compared to pre-development and therefore will not affect the southern non-wetland area or the western RMA wetland area.

We trust that this provides the information that Council has requested.



Graham Ussher

Principal Ecologist

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