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Project/File:	Ōhoka FTAA	Date:	10 September 2026

Reference: Ōhoka FTAA aquatic ecology – response to Environment Canterbury comments

This addendum has been provided in relation to the Fast-track Application – 531 & 535 Mill Road – Aquatic Ecology Assessment, dated 12 August 2025¹ (referred to as the Aquatic Ecology Assessment). This document seeks to provide updated information on the watercourse information contained in the Ecological Impact Assessment, in response to the Technical Advice report, dated 5 July 2026, which was provided by Environment Canterbury on 12 August 2026, after a project meeting with Environment Canterbury and the technical reviewer for Environment Canterbury (reviewer).

The technical advice report contained a number of areas where the reviewer agreed with the aquatic ecology assessment; however, there was some areas of disagreement. Responses, including further information and clarity is provided in the below sections, split into stormwater quality and watercourse extent loss for ease of reading.

1 Water Quality

The reviewer considers the proposed land-use change of 154.7 ha of dairy land use to an urban catchment will lead to the catchment receiving an elevated level of irregular nutrient loads, increased sedimentation, heavy metal loading, nutrient enrichment, pathogen/faecal contamination, thermal pollution and hydrological stress². While the agricultural to urban land use change is recognised, the development is intended to be developed with a high level of treatment, following regional best practice wetland design and will lead to a reduction in agricultural contaminants discharged to land.

As per the stormwater assessment³, stormwater within the site is proposed to be treated through a range of best practice methods, with attenuation and discharge designed to mimic pre-development

¹ Instream Consulting Limited. (2025). Fast Track Application – 531 & 535 Mill Road – Aquatic Ecology Assessment. Prepared for the Carter Group Limited.

² Comment 25 - Ōhoka Residential Development – Water Ecology FTAA Technical Advice document.

³ PDP Stormwater report C045190001R002.

Reference: Ōhoka FTAA aquatic ecology addendum

flows. This includes the first 25 mm of rainfall to be attenuated within basins and wetlands, with discharge volume controlled at the outlets. It is noted that the reviewer had not seen the updated site map which showed the proposed stormwater discharge locations. A marked-up drawing showing the stormwater discharge locations was provided during the meeting. Attached to the end of this document is a similar plan, which has been updated with revised Stormwater Management Areas (SMAs) as well as the SMA outfall/discharge locations (see the orange dots as per the legend). The following text is provided to clarify expected effects to the identified discharge locations.

The reviewer raised concerns in the meeting on 12 August 2026 that the mixing assessment was undertaken on one stream only (Ōhoka Stream Tributary), when discharge was to occur in multiple locations. Treated stormwater discharge is proposed within the three main streams on-site, as well as to roadside drains along Mill Road and Whites Road. The Water Quality Assessment⁴ undertaken used a modelling-based assessment of stormwater discharge to the Ōhoka Stream Tributary, which has four discharge locations, to provide an assessment against discharge conditions within the most sensitive and high-value stream within the site. The approach undertaken therefore provides a conservative assessment example of highest quality receiving environment on the site and is considered appropriate for comparison with treated stormwater discharges to the Northern Spring Channel, South Ōhoka Branch and perennial sections of Whites Road Drain. Mill Road treated stormwater discharge is to an artificial roadside drain that is typically dry, primarily providing stormwater flow conveyance. Therefore, adverse effects to aquatic ecology values are expected to be very low as a result of this discharge.

Further clarification on specific matters raised on the water quality assessment is provided below.

1.1 Suspended Solids (TSS)

The reviewer has interpreted that the provided assessment enables TSS to reach levels of 50 mg/l, and that this potential discharge threshold has not been adequately evaluated⁵.

The provision of the 50 mg/L of TSS within the assessment is a comparison with the Canterbury Land and Water Regional Plan (LWRP) Schedule 5 receiving water standard for TSS in spring-fed streams. This is the more conservative of the standards within the region, with other streams in the region having a standard of 100 mg/l. The assessment was made on the expected discharge quality provided from the swales and detention basins, which is 2.1-12.6 mg/l, pre-mixing with the receiving environment; however, it is acknowledged that the proposed consent conditions refer to a maximum discharge limit of 50 mg/l.

A detailed assessment of baseflows, assumptions and outcomes are provided in the stormwater report⁶, which determines that with an assumption built into the modelling (that no flows are attenuated by stormwater treatment features) the highest discharge rates prior to mixing are expected to be up to 12.6 mg/l. When comparing to current conditions, which is direct overland runoff from paddocks, this short-

⁴ (Appendix C to Appendix 31) mixing assessment

⁵ Comment 5, 20 - Ōhoka Residential Development – Water Ecology FTAA Technical Advice document.

⁶ 531 & 535 Mill Road – Water Quality Assessment (PDP 2025).

Reference: Ōhoka FTAA aquatic ecology addendum

term increase in TSS concentration is not expected to have adverse ecological effect for the short duration of discharge.

While the range of expected TSS within the treated stormwater discharge is considered low and is not expected to cause significant adverse effects, we recognise that baseflows in the existing environment have very low TSS values (3 mg/l or less) as a result of their spring-fed source which makes them sensitive to change; however, stormwater discharge is a temporary effect that already occurs within the rural catchment, with elevated turbidity and reduced clarity at times from overland runoff, associated with stormwater events. As the stormwater management areas are to capture the first 25 mm of rainfall, the level of suspended sediment within overland runoff compared to current is expected to reduce.

In most situations, a TSS concentration below 20 mg/L should appear clear⁷, resulting in a very low risk of clarity issues arising. The proposed consent conditions provide for deposited sediment monitoring to be written into the Ecological Management Plan, with actionable trigger levels warranting further investigation and mitigation.

1.2 Additional water quality parameters

The reviewer considers that the stormwater and ecology assessments did not adequately cover any potential effects of the proposed treated stormwater discharge on in-stream water temperature and dissolved oxygen regarding aquatic life⁸. Biological activity and attenuation have the potential to affect temperature⁹ and dissolved oxygen levels¹⁰. pH is not expected to be affected. The receiving environment under baseflow conditions has low temperatures and dissolved oxygen, as a result of spring fed sources. Variable temperature and dissolved oxygen associated with attenuation is not expected to cause adverse effects of more than a low magnitude of effect, with mitigation provided through riparian planting to increase shade, and also the mixing of waters at discharge points, which is expected to increase dissolved oxygen levels.

It is noted that the current stream systems have low water temperatures and dissolved oxygen conditions, with stable pH (as shown in Table 8 of the Aquatic Assessment Report). The volume of treated stormwater to be discharged is low, as it will be controlled at the outlet points to pre-development rates. Once mixed with the receiving environment it is expected to result in no more than a low magnitude of effect to aquatic life.

We agree that stormwater discharges from an urban environment have the potential to have small, localised impacts within mixing zone areas, as well as cumulative effects within the catchment. However, this is expected to have a low level of effect within the mixing zones downstream of treatment feature discharges and is not expected to cause more than a low level of effect, when the aquatic fauna

⁷ Hickin, E. J. (Ed.). (1995). *River Geomorphology*. Chichester: Wiley.

⁸ Comment 7, 25 - Ōhoka Residential Development – Water Ecology FTAA Technical Advice document.

⁹ Jones, M. P., & Hunt, W. F. (2010). Effect of storm-water wetlands and wet ponds on runoff temperature in trout sensitive waters. *Journal of irrigation and Drainage engineering*, 136(9), 656-661.

¹⁰ US Environmental Protection Agency (EPA) – CADDIS / Dissolved Oxygen Guidelines. Evaluates how impoundments, increased water temperatures, and urban runoff modifiers diminish DO saturation and create acute hypoxia in slow-moving aquatic systems.

Reference: Ōhoka FTAA aquatic ecology addendum

community is already impacted by elevated nitrate concentrations. We agree with the reviewer that there needs to be monitoring and actionable detection trigger outcomes. This is proposed under the Ecological Management Plan. To address residual uncertainty, the incorporation of additional monitoring to determine temperature and dissolved oxygen levels within the Ōhoka Stream Tributary and South Ōhoka Branch could be incorporated through continuous monitoring during summer low-flow periods (Jan-March) before, during construction and for one sampling event after the development stages have been completed.

Current nitrate concentrations within the site watercourses (except for the Southern Spring Channel) are indicative of moderate impacts on fish species¹¹. There have also been significant elevations in *Escherichia coli* (457% increase) recorded in upstream to downstream samples and dissolved reactive phosphorus concentrations increased 100-fold from upstream to downstream samples of the Ōhoka Stream Tributary. These concentrations were below the National Policy Statement – Freshwater Management (NPSFM) National Bottom Line (NBL) levels, indicating that the current state (agricultural land-use) of the contributing environment is having a notable impact on water quality. The development is expected to have a reduction on these contaminant concentrations. As noted in the Ecological Assessment, these are key issues for the catchment, as set out in the Canterbury LWRP, and the proposed land use change is expected to have a cumulative improvement in water quality regarding these parameters.

1.3 Heavy metals

In regard to heavy metals within treated stormwater, we recognise that the land use will result in an increase in metals discharged to the receiving environment compared to current agricultural land use.

It is noted that stormwater treatment, as reported by PDP, has been designed to treat stormwater to a level determined to be acceptable as per the Christchurch City Council Waterways and Wetlands Drainage Guidelines, which is best practice for stormwater treatment in Canterbury. The reviewer notes¹² that expected zinc levels will be above Canterbury LWRP receiving water values and may present as an elevated risk to aquatic life. However, zinc levels will not exceed 95% species protection levels and discharge will be limited in duration (3–4-hour events), when mixed within the receiving environment, further dilution of zinc concentrations will occur. On this basis, we reiterate that our assessment of risk to aquatic life will be low.

1.4 Land-use change and overland flow contributions

The reviewer disagrees with the conclusion that the mitigation measures proposed for the development will result in net-positive outcomes for the local environment¹³ and instead proposes that the risk profile

¹¹ NPS-FM; Appendix 2A – Table 6.

¹² Comment 5, 18 - Ōhoka Residential Development – Water Ecology FTAA Technical Advice document.

¹³ Comment 7, 12, 31 - Ōhoka Residential Development – Water Ecology FTAA Technical Advice document.

Reference: Ōhoka FTAA aquatic ecology addendum

on aquatic values will shift. We agreed that there will be a shift in the potential contaminants discharged to waterways during stormwater events compared to current.

As detailed in the Aquatic Ecology Assessment, the natural watercourses on-site will be enhanced through the provision of naturalised buffers creating corridors through the site, riparian wetland margins, and stormwater treatment basins and wetland features, designed to achieve high-quality stormwater treatment. The creation of approximately 68,800 m² of offset riparian stream corridor (Table 1), including 6,300 m² of riparian benched plains wetland margins will significantly improve the quality of surface run-off the watercourses receive, as well as retain water and slow overland flow contributions, providing a positive outcome. Establishment of riparian buffers will provide shade, reducing the current nuisance macrophyte growth that binds sediment and reduce flows and reduce temperatures. In addition to the aquatic ecology values this proposed approach will achieve, it is also expected these stream corridors will provide habitat for birds, lizards and invertebrates.

In addition, the shift in land-use will remove the site's direct contribution of nutrients to land and water through the deposition of urine and manure, nutrient irrigation and surface runoff from inadequately buffered soils. This can result in elevated concentrations of nitrogen and phosphorus, promoting excessive macrophyte and algal growth. Evidence of this is apparent with total macrophyte cover scores of 100% frequently observed within the site's watercourses¹⁴.

Table 1: New riparian zone provision for on-site watercourses within the proposed development.

Watercourse Name	Riparian Zone Addition (m) each side of watercourse
Northern and Central Spring	20
Groundwater Seep	15
Ōhoka Stream Tributary	10
South Ōhoka Branch, Northern and Southern Spring Channels	10
Groundwater Seep Channel	10
Southern Boundary Drain	5

The reviewer also comments on 'peak-flow effect' risks from the increase in impervious surface area within the development. We consider this has been adequately addressed through the provision of substantial riparian margins, development setbacks, as well as stormwater management areas (SMAs). The report produced by PDP¹⁵ provides further clarification on the attenuation within the SMAs, which are designed to capture/treat the first 25 mm of rainfall and discharge from the wetland outlets based on a four-day retention time, to mimic pre-development flows. These mitigation measures will minimise risk of peak flow effects within the receiving environment.

¹⁴ Appendix 5 – Table 9 of the Aquatic Ecology Assessment.

¹⁵ PDP Stormwater report C045190001R002

Reference: Ōhoka FTAA aquatic ecology addendum

Monitoring is required to record potential water quality effects and aquatic ecology effects associated with the development. This is proposed and will be managed through the development of the Ecological Management Plan for the site (as set out in the proposed consent conditions), which will be a 'living document' that is updated as each stage progresses. Baseline ecological assessments are proposed at key locations, located at upstream and downstream sites per watercourse, with construction and operational phase monitoring proposed to track potential adverse effects. Should adverse effects be detected, then the Ecological Management Plan will require an assessment and suitable mitigation, or remedy is to be provided.

1.5 Watercourse classifications

The reviewer indicated that the term drains in the Aquatic Ecology Assessment required further clarification¹⁶. For the assessment, the term 'drain' is used due to criteria set out under the Resource Management Act 1991 (RMA). However, for regional context, the man-made drains within the site have been classified as 'Natural Modified Watercourses' as they are man-made drainage systems that, at times, intercept shallow groundwater and may have historically drained land that had wetland values. Environment Canterbury have internal guidance, and through local experience, define 'modified natural' as the areas that have historically been wetlands and waterbodies but are now drained and confined within historically natural flow paths but are modified to be (often) straightened watercourses. It is noted that the drainage channels along Mill Road, Bradley's Road and the Unnamed Dry Drain meet the definition of an artificial watercourse.

The reference to "drains" in the Aquatic Ecology Assessment is intended as a descriptive term only and does not alter their classification as Natural Modified Watercourses. The assessment of effects has been undertaken on that basis.

1.6 Watercourse value and extent

The following information is provided for clarity on the implementation of the Effects Management Hierarchy for watercourse loss within the site, with the intention of No-Net-Loss of value. It is recognised that there will be loss of extent within the site of these drains, as a result of the land use change and development layout.

1.6.1 Site context

The internal farm drains/Natural Modified Watercourses on site have been assessed as having low ecological value. The reasoning for this assessment is the lack of flow or very low flow levels, lack of riparian vegetation or shading, excessive macrophyte growth, and no fish being recorded during the site survey.

Based on site observations and field surveys, these waterways, with the exception of Whites Road Drain where it flows between the Southern Groundwater Seep channel and the Ōhoka Stream

¹⁶ Comment 27, page 10 of the Ōhoka Residential Development – Water Ecology FTAA Technical Advice document.

Reference: Ōhoka FTAA aquatic ecology addendum

Tributary, and between the Unnamed Drain 3 and Ōhoka Stream Tributary, are considered to provide marginal aquatic habitat, with flow only observed during times of very high local shallow groundwater levels, or after heavy irrigation when excess water drains the land.

The site is actively irrigated as a working dairy farm, therefore the drains function more as flow conveyance/ land drainage (i.e. a 'drainage system' per the CLWRP definition) and have limited ecological potential in the current or proposed land use. Because of the land irrigation that has occurred on site for decades, the classification of Natural Modified Watercourse is conservative, as without irrigation some of these channels, or sections of these channels, may be dry and therefore be classified as artificial. Because of this, a lower level of offsetting for their loss is considered appropriate.

1.6.2 Watercourse loss

The Aquatic Ecology Assessment provided a table summarising the loss of watercourse extent as a result of the development (Table 4 within the report). Table 2, below shows an updated spilt between the main streams and the internal farm drains, with the assigned ecological values of these watercourses. The main changes are associated with the realignment of Drain 1 in the latest watercourse changes overview plan, reducing loss of extent by ~1 km, and the inclusion of approximately 100 m of loss along South Ohoka Branch (update based on recent updates after original Aquatic Ecology Assessment).

As discussed above and in the Aquatic Ecology Assessment, these internal drains are classified as Natural Modified Watercourses by Environment Canterbury. As such, these watercourses have been included in ecological offset/compensation actions to address the residual loss identified in Table 2.

In summary, approximately 1,594 m of low value, 450 m of moderate and 100 m of high-quality watercourse extent is proposed to be lost. The number of road crossings at the three main watercourses has been minimized as much as practical and will replace current culvert crossings. Four culvert crossings are required to enable the subdivision (one per main watercourse, with one having two crossings) but have been limited to 11 m per crossing.

Table 2: Summary of proposed changes to stream length and area (extent). Orange shading represents low value watercourses, yellow represents moderate, and green represents high value – as determined by the Aquatic Ecology Assessment.

Watercourse Name	Length* (m)		Area (m ²)		
	Current	Proposed	Current	Proposed Riparian Setback**	Proposed Stream Buffer Setback**
Ōhoka Stream Tributary	935	935	1,870	18,700*	37,400
Groundwater Seep channel	280	270	560	5,400	5,400
Northern Spring Channel	1,050	600	2,140	12,000	18,000
Central Spring Channel	385	385	770	7,700	5,775
South Ōhoka Branch	1,350	1,250	2,700	25,000*	37,500

Reference: Ōhoka FTAA aquatic ecology addendum

Total:	4,000	3440	8,040	68,800*	104,075
+/-	-	-560	-	+60,760	+96,035
Whites Road Drain	1,350	1,175	2,700	2,350	2,350
Southern Boundary Drain	270	270	540	1,350	1,350
Unnamed Drain 1	1,444	1015	2,888	14,440	14,440
Unnamed Drain 2	460	0	920	0	0
Unnamed Drain 3	520	0	1,040	0	0
Unnamed Dry Drain	700	700	1,400	3,500	3,500
Total:	4,744	3,160	9,488	21,640	21,640
+/-	-	-1,584	-	+12,152	+12,152
Total – all waterways	8,744	6,610	17,528	90,440	125,715
+/-		-2,144		+72,912	+108,187

**Measures are approximate, sourced from flow models and aerial imagery and are not based on survey data. ** Minimum setback, additional area possible in detailed design.*

Mitigation hierarchy breakdown for loss of watercourse extent

The NPS-FM establishes a hierarchy of management to minimise the loss of extent or value of the following impacted watercourses:

- Groundwater Seep Channel – 10 m
- Northern Spring Channel – 450 m
- South Ōhoka Branch – 100 m
- Whites Road Drain – 175 m
- Unnamed Drain 1 – 429 m
- Unnamed Drain 2 – 460 m
- Unnamed Drain 3 – 520 m

The policies overarching objective is to achieve 'No-Net-Loss' of rivers. The Effects Management Hierarchy is the mechanism within the policy to manage these effects, and can be defined into the following categories, in descending order of preferred application:

1. Avoidance (where possible),
2. Minimise effects (where unavoidable),
3. Remedy effects (where they cannot be minimised),

Reference: Ōhoka FTAA aquatic ecology addendum

4. Offset (when residual effects exist after avoiding, minimising and remediating have been applied, through the provision of 'like-for-like' compensatory action on-site, or within close proximity to the impact area), and;
5. Compensation (Providing ecological compensation that cannot be offset following 'no net loss of biodiversity', cannot be ensured or other key principles of a biodiversity offset cannot be met but still result in ecological positive outcomes).

Within the Aquatic Ecology Assessment, the mitigation hierarchy was followed (section 6). For clarity, a brief summary of the avoid, minimise and remedy steps is provided below.

Avoid

After assessing the ecological values of the site, the main watercourses have been avoided within the development design, with the full alignment of Ōhoka Stream Tributary, Central Spring Channel and South Ōhoka Branch (minor realignment of 100 m around existing buildings for a more natural alignment) being retained, apart from road crossings/culverts. Avoidance buffers have also been established to protect ecological values on-site during earthworks, with a key aspect of the subdivision design being the avoidance of high value watercourse extent loss (Table 3).

Table 3: Proposed buffer zone setback distances.

Watercourse Name	Buffer (m)
Northern and Central Spring	30
Groundwater Seep	20
Ōhoka Stream Tributary	20
South Ōhoka Branch, Northern and Southern Spring Channels	15
Groundwater Seep Channel	10
Southern Boundary Drain	5

Minimise or Remedy

It was not possible within the site development constraints, to retain the full alignment of the Northern Spring Channel, which has been artificially channelised to zig zag along paddock boundaries. After initial ecological assessments determined existing values on-site, advice was provided that the best ecological outcome was to realign the upper reaches of this channel and combine the baseflow of the lower channel with the Central/Southern Spring channel, below the spring fed pond. As the Aquatic Ecology Assessment notes, this channel has very low base flow and high macrophyte growth which currently restricts ecological values and aquatic habitat availability.

By combining the baseflow of these two channels in the downstream reach, existing flow issues are expected to be remediated, to provide improved ecological conditions for fish and invertebrates and improved connections between the Ōhoka Stream Tributary downstream of the site, and the two natural spring ponds within the site (Northern Spring and Central Spring). These spring head ponds are proposed to be enhanced as part of the development, with 30 m buffers and native wetland planting.

Reference: Ōhoka FTAA aquatic ecology addendum

As noted in the Aquatic Effects Assessment, despite avoidance, minimisation and remediation, residual effects remain. It is expected that 1,594 m of low value, 450 m of moderate value and 100 m of high-quality stream length will be infilled as a result of the development.

In summary, after careful design, avoidance of watercourse loss was deemed impractical due to development restrictions on site layout, as well as resulting site hydrology changes. In the Aquatic Ecology Assessment report, the loss of length was proposed to be offset through a substantial increase in stream ecological value within the wider stream corridors across the site. However, it is recognised based on comments received by the Environment Canterbury technical reviewer that the proposed offset actions require further clarification.

Proposed On-Site Offset Actions

The main loss of watercourse extent will result from the infilling of 1,594 m of low value natural modified watercourse. It is unfeasible to avoid this loss, as they have been installed and maintained as flow conveyance from a combination of high shallow groundwater levels, rainfall, and land irrigation to keep the land dry for the current agricultural land use. They bisect the site and, if all were retained, would result in an illogical layout of the development. Further, if they were retained SMAs would direct stormwater away from the channel, which would alter their hydrology. The intention of the development is to provide high-quality natural watercourse corridors and features. Retaining the current farm modified layout would create a perverse outcome, as it would result in a series of lower value systems.

A loss of watercourse extent will occur as a result of the realignment of the Northern Spring Channel (450 m), the Groundwater Seep channel (10 m), South Ohoka Branch (100 m) and the three Unnamed Drains. An increase in stream value is expected within the realigned sections of the South Ohoka Branch and the Northern and Central Spring channels and pond system, resulting from the improved baseflow and stream enhancement. The realignment of the Groundwater Seep channel also provides an opportunity to enhance the current modified condition of the channel into a more naturalised feature that links to the enhanced wetland area at the spring head.

The loss of realigned watercourse extent assessed against is limited to a maximum of 560 m, of a total of 4,000 m (14% decrease in total extent). This loss is pre detailed design, which will include the addition of meandered stream length. Additional stream meander is expected to substantially reduce this; however, this will need to be accounted for in detailed design, and as part for the Ecological Management Plan.

While overall, a reduction in perennial stream length of the South Ohoka Branch, Northern Spring Channel and the Groundwater Seep channel will occur, native riparian margin extent and stream corridor extent will greatly increase for these watercourses, which will improve their value. When comparing the proposed riparian setback of the four main watercourses, an approximate increase from 8,040 to 68,800 m² will occur, representing an increase of 60,760 m². When comparing the proposed stream buffer setback, an approximate increase from 8,040 to 104,075 m² will occur, representing an increase of 96,035 m². It is noted that this offset includes the 6,300 m² of riparian benched fresh plains, which provide additional riparian wetland values along the stream corridors. This is accounted for in the wetland offsetting; however, it is noted here as well given it also provides for instream habitat

Reference: Ōhoka FTAA aquatic ecology addendum

improvement through variation in habitat, additional flowing habitat extent and overhanging vegetation etc.

A breakdown of expected future stream values has been provided for clarity once offset actions have had time to establish and provide complete provision and function benefits to the watercourses on-site (Table 4). Through the proposed enhancement of riparian margins and provision of instream habitat, the proposal is expected to achieve a substantial uplift in aquatic ecological values, with the objective of improving and protecting approximately 1,940 m of low value watercourse, to moderate value and 1,775 m of moderate value watercourse to high value.

The improvement of instream habitat will be achieved, in part, through the creation of enhanced realigned sections of stream length within the development. Full details of the instream habitat enhancement will be provided in the Ecological Management Plan when detailed landscape design occurs, but will include, at minimum, the following:

- Instream habitat features (woody debris, boulders, overhanging vegetation etc.)
- Increased hydraulic variability (pools, riffles, runs)
- Meandered stream length (this will further reduce loss of extent but cannot be confirmed until detailed design stage)
- Riparian benched fresh plains, which provide additional riparian wetland values along the stream corridors. This is accounted for in the wetland offsetting; however, is noted as it also provides for instream habitat improvement through variation in habitat, additional flowing habitat extent, overhanging vegetation etc.

Table 4: Expected future watercourse values on-site after offset actions have been implemented.

Watercourse	Future length (m)	Current Value	Future Expected Value
Ōhoka Stream Tributary	935	High	High
Groundwater Seep channel	270	Low	Moderate
Northern Spring Channel	600	Moderate	High
Central/Southern Spring Channel	385	Low	Moderate
South Ōhoka Branch	1,250	High	High
Whites Road Drain	1,175	Moderate	High
Southern Boundary Drain	270	Low	Moderate
Unnamed Drain 1	1,015	Low	Moderate

Proposed consent condition 12 below provides requirements for Restoration and Enhancement Plans, as part of the Ecological Management Plan, to guide instream and riparian habitat enhancement and realignment. These plans will be the mechanism to achieve the objective of No-Net-Loss and development of moderate to high value aquatic networks.

Reference: Ōhoka FTAA aquatic ecology addendum

12 - The Restoration and Enhancement Plans required under Condition 10(a), are to be in general accordance with the Concept Landscape Design (Attachment 1) and must:

- a. Identify the realigned section of the waterways for:
 - i. South Ohoka stream*
 - ii. Northern and Southern Spring Channel connection*
 - iii. Eastern groundwater seep**
- b. Identify all the wetland areas to be retained and enhanced.*
- c. Detail the waterway wetted width and minimum water depths in new sections of the following waterways:
 - i. South Ohoka stream*
 - ii. Northern and Southern Spring Channel connection*
 - iii. Eastern groundwater seep**
- d. Detail the section of the waterways to be naturalised for the following waterways/springs:
 - i. South Ohoka stream*
 - ii. Northern and Southern Spring Channel (that is to be combined)*
 - iii. Eastern groundwater seep*
 - iv. Ohoka tributary*
 - v. The northern and southern springheads and seep**
- e. Detail the bank slope in the new section of the following waterways and of any sections that are to be naturalised:
 - i. South Ohoka stream*
 - ii. Northern and Southern Spring Channel connection*
 - iii. Eastern groundwater seep*
 - iv. Ohoka tributary**
- f. The plans must show all stream and wetland restoration / creation design details including the extent of all stream and wetland areas to be ecologically enhanced, restored or created.*
- g. Include the timing, staging and programme of enhancement, creation and restoration works.*
- h. Details of the timing of when works will be undertaken, such that all enhancements and restoration are undertaken within two years of the associated impact occurring.*
- i. Methods to ensure ongoing fish passage is provided within all enhanced, created and restored streams as well as all associated structures.*
- j. Include Final Landscape Plans for the creation, enhancement and restoration works, which must include the use of indigenous Riparian Planting where possible.*

Reference: Ōhoka FTAA aquatic ecology addendum

Adherence to the National Policy Statement for Freshwater Management Principles

By applying the effects management hierarchy of avoidance, minimisation and remediation before resorting to offsetting and compensation measures, the proposal achieves No-Net-Loss of the extent and values of aquatic natural inland wetlands and rivers on site and is therefore consistent with Principle 1 of Appendix 6 and 7 of the NPS-FM.

Additionally, offset and compensation actions proposed are considered appropriate and in alignment with Principle 2 for each appendix section. These actions do not impact irreplaceable wetlands or rivers/streams as both habitat types found on-site are considered to be common habitat features for degraded environments within the region. Any significant habitat types (i.e. spring systems, intermittent or permanent streams) are proposed to be protected and enhanced where possible.

1.7 Proposed Offset Monitoring

To provide assurance that the streams reach their expected values, the incorporation of Baseline, Year 1 and Year 3 monitoring shall be implemented to track progress over time. Methodology for ecological assessments is provided in the draft Regional Consent Conditions for Ecological Monitoring, provided below.

15. Prior to the commencement of works, the Consent Holder shall undertake baseline ecological monitoring of the streams in accordance with the certified EMP. The monitoring shall include:

- a. Identification of the ecological survey locations for the streams on site, at two sites per stream;*
- b. Rapid Habitat Assessments (RHA);*
- c. Deposited fine sediment surveys (percent cover and depth) using the SAM2 method (Clapcott et al., 2011);*
- d. Macrophyte and/or periphyton surveys (percent cover and type) in accordance with NEMS (2020);*
- e. Benthic macroinvertebrate sampling in accordance with NEMS (2022) '200+ Fixed Count with Scan for Missed Taxa' method; and*
- f. Freshwater fish surveys using backpack electrofishing over a minimum reach length of 50 metres.*

The results of the baseline monitoring shall be used to inform management actions under the EMP and shall form the baseline for all subsequent monitoring required by this consent.

Reference: Ōhoka FTAA aquatic ecology addendum

16 Post-development ecological monitoring

The Consent Holder shall undertake follow-up ecological monitoring at the same sites and using the same methodologies as required by Condition 15:

- a. a) Between 1 December and 31 March; and*
b) At 1 year and 3 years following the completion of each stage of development.
- b. All monitoring shall be undertaken within comparable habitat conditions to the baseline surveys.*

Any deviations from conditions 15 and 16 shall be agreed upon in writing with the CRC.

17 Results from all monitoring undertaken in accordance with Conditions 15 and 16 shall:

- a. Include comparison of deposited sediment, benthic macroinvertebrate, and periphyton results against relevant regional and national standards and guidelines;*
- b. Assess changes relative to the baseline dataset; and*
- c. Identify any statistically or ecologically significant trends or changes attributable to the exercise of this consent.*

A monitoring report shall be prepared for each survey and submitted to the Regional and District Councils no later than 9 months following completion of the relevant monitoring event.

2 Conclusions

This addendum to the Aquatic Ecology Assessment is provided to update key assessment assumptions. The conclusion of the report still stands, that the proposed development has the opportunity to result in a net improvement in ecological values, if the recommendations provided are incorporated and as per the draft consent conditions.

While it is recognised that the change in land-use from agricultural to urban will result in a shift in the potential effects to watercourses, the site has been designed with regional best practice stormwater treatment, with high-quality treated discharges and the ability to attenuate stormwater to mimic predevelopment flows. Watercourse length loss will occur as a result of the development, however, is limited to the extent practical to enable the development, with the loss primarily limited to the internal man-made drainage network/modified natural watercourses.

No-Net-Loss and scale is achieved through the proposed development by delivering a net increase of aquatic habitat on-site and enhancing the quality of existing aquatic environments through stream restoration, riparian planting, habitat creation and buffer establishment¹⁷. As a result, effects on stream

¹⁷ Aquatic Ecology Report – Page 28, Table 5.

Reference: Ōhoka FTAA aquatic ecology addendum

habitat are appropriately addressed, with the proposal generating a net positive outcome for the site's watercourses.

Yours sincerely

Stantec New Zealand



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Attachment: Attachment

c.

WATERCOURSE AND WETLAND TOTALS		
FEATURE NAME	NO.	UNITS
WETLAND - EXISTING	5,176	m ²
WETLAND - REMOVED	37,635	m ²
SPRING POND - EXISTING	2,623	m ²
POND - TO BE REMOVED	612	m ²
STORMWATER MANAGEMENT AREAS (SMA)	118,034	m ²



LEGEND:

- ABUTTAL BOUNDARY
- LOT BOUNDARY
- STAGING BOUNDARY
- CULVERT - EXISTING
- CULVERT - PROPOSED
- MINIMUM RIPARIAN ENHANCEMENT SETBACK
- WATERWAY - EXISTING
- WATERWAY - REALIGNED
- WATERWAY - REMOVED
- ROAD SIDE DRAINS
- SMA OUTFALL STRUCTURE AND PIPE
- WETLAND - EXISTING
- WETLAND - REMOVED
- SPRING POND - EXISTING
- POND - TO BE REMOVED
- STORMWATER MANAGEMENT AREAS (SMA)
- SMA OUTFALL LOCATION

NOTES

- WETLAND AND DELINEATION AS PROVIDED BY PATTLE DELAMORE PARTNERS IN FIGURE 1: WETLAND DELINEATION, OHOKA R.E.B, DATED JAN 2025/
- EXISTING WATERWAY AND CULVERTS PROVIDED BY PATTLE DELAMORE PARTNERS HYDROLOGY ASSESSMENT, REF NO. C045180002. DATED JULY 2025.

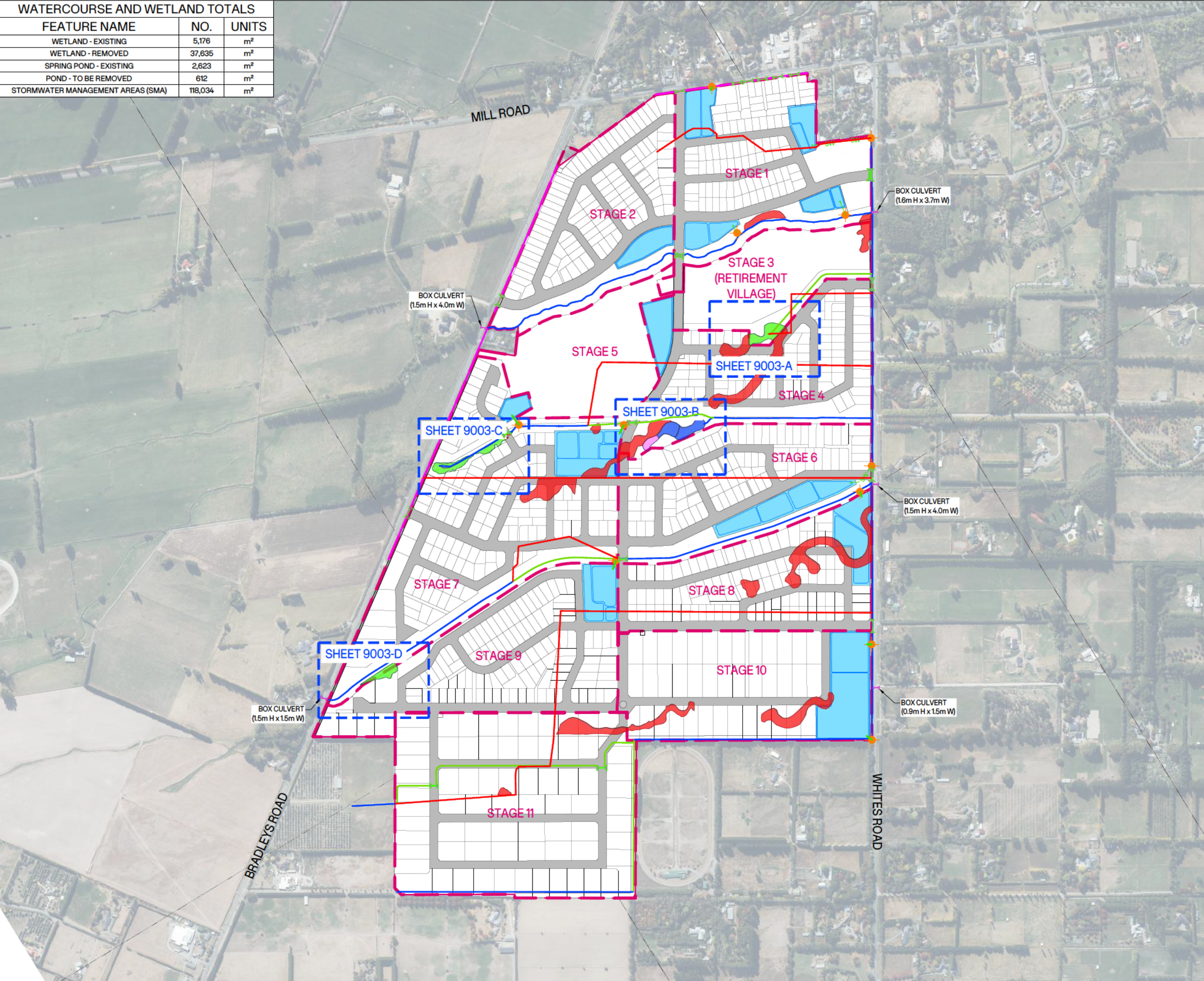
D	ISSUED FOR INFORMATION	PE	10/09/2026
C	ISSUED FOR INFORMATION	AO	29/05/2026
B	UPDATE REALIGNED WATERWAYS	KC	17/07/2025
A	ISSUED FOR INFORMATION	PE	11/07/2025
REVISION DETAILS		BY	DATE

PROJECT: MILL ROAD, OHOKA
WAIMAKARIRI
CANTERBURY

DESCRIPTION: WATERCOURSE AND
WETLAND CHANGES
OVERVIEW PLAN

SURVEYED	-	-
DESIGNED	SS	10/09/2026
DRAWN	PE	10/09/2026
CHECKED	LM	10/09/2026
APPROVED	LM	10/09/2026

SCALE	1:4,000 @A1	1:8,000 @A3	REVISION
STATUS	FOR INFORMATION		D
PROJECT	16013		
DWG NO	16013-00-IN-9000		



0 80 200 400 SCALE (m) 1:4000 @A1 1:80000 @A3