

October 1, 2026

Environmental Protection Authority
Te Mana Rauhi Taiao

c/- Awesta Seddiqi

FTAA-2607-1260

For the attention of the Panel Convener

Bangor Village – Applicant Response to Panel Convener Minute 3

This letter responds to the directions contained in Minute 3 issued by the Panel Convener on 24 September 2026 and to matters discussed during the Convener's conference held on 23 September 2026.

Modelling

In accordance with the Convener's directions, Hughes Developments Limited (*Hughes*) has advanced the potable water modelling as follows:

1. Hughes commissioned Mr Jamie Verstappen, infrastructure expert and author of the Infrastructure Assessment prepared in support of the Substantive Application, to undertake modelling to confirm that there is sufficient allocation within Selwyn Water Limited's consented potable water supply network (*HDL Potable Water Modelling*). The take and use of groundwater for community water supply is currently authorised under water permit CRC254098. The results of the HDL Potable Water Modelling are summarised in the memorandum from Mr Verstappen at **Attachment A**.

In summary, the memorandum confirms that:

- a. Accounting for the average daily demand attributable to both existing dwellings in Darfield and anticipated residential development (through both infill and the development of residentially zoned land), there remains sufficient capacity within the consented maximum daily take under CRC254098 to accommodate demand from Bangor Village.
 - b. The proposed internal water supply network is capable of providing potable water for Bangor Village in accordance with the relevant requirements of the Selwyn District Council Engineering Code of Practice (*ECoP*).
2. On Thursday 24 September 2026, Mr Verstappen provided the HDL Potable Water Modelling results to Selwyn Water Limited. Mr Verstappen's explanatory memorandum was provided to Selwyn Water Limited on the morning of 1 October 2026. As set out in the letter included as **Attachment B**, Selwyn Water Limited has:
 - a. Confirmed that the HDL Potable Water Modelling appears to demonstrate that potentially there is a sufficient potable water capacity to service the Project.
 - b. Advised that it will include the HDL Potable Water Modelling within its own township model to further assess the interaction between Bangor Village and its proposed internal potable water

network and the wider township supply. That further assessment will then inform the design of the internal network which will be addressed through conditions of resource consent and the Engineering Approval process or another agreed mechanism.

3. Hughes also commissioned the additional modelling requested by Environment Canterbury of the post-development downstream flood levels in critical longer duration events. The additional modelling demonstrates that with the exception of isolated areas, the Project will not exacerbate downstream flood levels in critical longer duration events. In relation to those isolated areas, minor increases (of less than 50mm) are shown in the modelling but it remains Mr Verstappen's opinion that those increases will be removed entirely through detailed design of the proposed on-site stormwater infrastructure which will be assessed and approved by Selwyn District Council through the Engineering Approval process.
4. Hughes provided the additional flood modelling to Environment Canterbury on 30 September 2026.

Updated Economic Assessment

The economic analysis prepared by Savvy Consulting Limited and submitted as part of the Substantive Application for the Project comprised the Economic Assessment (EA) provided in support of the Referral Application for the Project and an addendum to the EA (EA Addendum). The EA Addendum provided an update on the findings of the EA to address further details of the Project which were not available at the time of the Referral Application (for example, confirmation of lot numbers and infrastructure upgrades). The EA Addendum also addressed matters raised in Formative Limited's Economic Peer Review provided by Environment Canterbury as part of its comments on the Referral Application. This was done, in part, on the assumption that Formative Limited would continue to be engaged by one of the local authorities to review the Substantive Application for the Project.

During the Panel Convener Conference, both representatives from Selwyn District Council and the Panel Convener advised that the way in which the EA Addendum was presented made it more difficult to follow. In response, Savvy Consulting Limited has incorporated the updates from the EA Addendum into the EA, resulting in a single, consolidated document for the Project. Savvy Consulting Limited has confirmed that, in incorporating these documents, no changes have been made to the substance of the economic analysis contained in either the EA Addendum or the EA. Any changes to the content have been made solely to improve readability. A 'clean' version of the consolidated EA is enclosed as **Attachment C** and is intended to replace the existing Attachment 015 – Economic Assessment. For completeness, a marked-up version showing the way in which the EA Addendum has been incorporated into the original EA is also enclosed as **Attachment D**.

Please do not hesitate to contact me if we can be of further assistance.



Rachel Murdoch – General Manager
Hughes Developments Limited

Attachment A – Infrastructure – Potable Water Supply Memorandum

1 October 2026

Supplementary Water Capacity Assessment – Bangor Village

1. Purpose

This Water Capacity Assessment has been prepared as supplementary information to that previously provided through the Fast Track referral process for the proposed Bangor Village development. The assessment has been prepared in response to the request of the Panel Convener (24 September 2026) and addresses the capacity of the existing Darfield water supply to accommodate the proposed Bangor Village development within the limits of the existing water take consent. Additionally, an assessment of the water supply pipe network has been undertaken to ensure the proposed development can be suitably provided for.

2. Existing Water Take Consent (CRC254098)

The existing consent provides for water to be taken from the identified Darfield water supply bores subject to specified flow rates, and daily and annual volume limits.

The relevant consent conditions provide that:

- Water may be taken from bores **L35/0980 and BX22/0006** at a combined rate not exceeding **83 litres per second**, with a volume not exceeding **6,000 m³ per day** and not exceeding the maximum annual volume calculated in accordance with Condition 2(c).
- Water may be taken from bore **BX22/0212** at a rate not exceeding **80 litres per second**.
- The maximum annual volume for each 12-month period from 1 July to 30 June is determined annually in June in accordance with the population-based formula in Condition 2(c).

Condition 2(c) provides:

Maximum annual volume = estimate of the population to be provided with the water supply for the 12 month period × 227.3 cubic metres. The consent further records that the **227.3 m³/person/year** allowance is derived from 365 days × 0.519 m³/person/day, with a 20% allowance.

Accordingly, the annual consented volume is determined according to the population estimated to be supplied by the water supply for the relevant 12-month period.

3. Existing and Anticipated Residential Development

The Darfield township currently comprises approximately 1,350 dwellings.

In addition to the existing dwellings, there is potential for further residential growth through infill development and development of residentially zoned land. This is estimated to provide for approximately 1,300 additional dwellings.

The resulting anticipated total number of dwellings, prior to considering Bangor Village, is therefore 2650.

The proposed Bangor Village development comprises a further 743 residential connections.

RESOURCE MANAGEMENT, ENVIRONMENTAL PLANNING, LAND SURVEYING AND DEVELOPMENT, CIVIL AND ENVIRONMENTAL ENGINEERING

Established 1880	DIRECTORS	Andy Hall BSurv, BE(Hons), CMEngNZ, CPEng Jamie Verstappen BE(Hons), CMEngNZ, CPEng	Mark Brown BA, PGDip, MRRP Nick Jagvik BSurv, BSc, LCS
	PRINCIPAL	Chris D Hawes BSurv(Cred), MSSNZ, RPSurv, LCS	
	ASSOCIATES	Todd Inness BE(Hons), CMEngNZ, CPEng	Alice Burnett BA, MPlan, MNZPI

If all of the anticipated residential development were realised, the total number of dwellings/connections represented by the existing township, anticipated residential growth and Bangor Village would therefore be approximately **3,393**.

4. Water Demand Allowance

The Selwyn District Council Engineering Code of Practice (ECoP) adopts an assumed occupancy of **2.7 persons per household**.

Applying this occupancy to the proposed Bangor Village development gives:

743 connections × 2.7 persons per connection = 2,006 persons

The annual water allocation under the consent is **227.3 m³ per person per year**.

Accordingly, the theoretical annual allocation associated with the proposed Bangor Village population is:

2,006 persons × 227.3 m³/person/year = 455,964 m³/year

This is equivalent to an average daily demand of approximately:

455,964 ÷ 365 = 1,249 m³/day

This corresponds with the household allowance of approximately **1.68 m³ per household per day**.

5. Assessment of the 6,000 m³/day Limit

The combined residential demand can be assessed against the consented maximum daily volume as follows:

Development	Dwellings	Population @ 2.7 persons/dwelling	Average daily demand
Existing Darfield dwellings	1,350	3,645	2,268 m ³ /day
Anticipated additional residential development	1,300	3,510	2,184 m ³ /day
Bangor Village	743	2,006	1,248 m ³ /day
Total	3,393	9,161	5,700 m³/day

The combined average daily demand represented by the above residential development is therefore approximately **5,700 m³/day**.

This is below the consented maximum daily take of **6,000 m³/day**, leaving approximately **300 m³/day** between the calculated average demand and the maximum daily consent limit.

The assessment therefore indicates that the proposed **743 Bangor Village connections can be accommodated within the existing 6,000 m³/day consented limit**, when considered alongside the existing Darfield township and the estimated additional residential development.

6. Annual Volume

The consent's annual volume is calculated on the basis of the estimated population to be supplied during each 12-month period.

Using the adopted 2.7 persons per household assumption, the population represented by the 3,393 dwellings/connections identified above is approximately **9,161 persons**.

Applying the consent formula:

9,161 persons × 227.3 m³/person/year = approximately 2,082,295 m³/year

This represents the theoretical annual volume calculated in accordance with the consent formula for a population of 9,156 persons.

The proposed Bangor Village component represents approximately **455,964 m³/year** of that population-based annual allocation.

The annual consent volume is consequently directly related to the population estimated to be provided with water during the relevant consent year. The addition of Bangor Village does not, in itself, require an

amendment to the consent, provided that the population estimate used in determining the annual volume under Condition 2(c) appropriately accounts for the population to be supplied.

7. Internal Water Supply Network Modelling

Water supply network modelling has been undertaken for the proposed Bangor Village development using EPANET. The modelling demonstrates that the proposed internal water supply network is capable of providing water supply in accordance with the relevant requirements of the Selwyn District Council Engineering Code of Practice (ECOP).

In particular, the modelling has considered the ECOP requirements relating to allowable pipe losses and residual pressures within the proposed development. The results indicate that the proposed internal network can operate within the relevant performance requirements.

The detailed design and performance of the internal water supply network will be subject to the normal engineering design review and acceptance process. Final compliance with the applicable ECOP requirements will therefore be confirmed through the engineering acceptance process.

To further mitigate any potential adverse effects on the existing Darfield water supply network, it is proposed that the connection from the Bangor Village internal network to the existing township network be located as close as practicable to community supply bore BX22/0006, and, if necessary, directly to the supply associated with that bore.

Locating the connection in this manner would minimise the potential for the proposed development to adversely affect pressures and flows within the existing township distribution network and would provide an appropriate means of integrating the development into the existing water supply system. The proposed truck main through the site between the water bore and Bangor Road will also provide a benefit to the wider network.

The applicant has also requested a full township water supply model update from OneWater, which operates the Darfield township water supply model on behalf of Selwyn Water Limited. The updated township-wide modelling will provide an additional assessment of the interaction between the proposed Bangor Village development and the existing Darfield water supply network.

The results of that modelling will be provided to the relevant parties in due course and can be incorporated into the engineering acceptance process as appropriate.

8. Conclusion

The existing Darfield water take consent provides for water to be taken subject to maximum instantaneous, daily and annual limits.

Based on the information available:

- the proposed Bangor Village development comprises 743 additional residential connections;
- at 2.7 persons per household, these connections represent an estimated population of approximately 2,006 people;
- applying the consent's 227.3 m³/person/year allocation results in an annual volume of approximately 455,964 m³/year attributable to the Bangor Village population;
- the corresponding average daily demand is approximately 1,248 m³/day; and
- when considered alongside the existing Darfield township and the estimated additional 1,300 dwellings from infill and development of residentially zoned land, the total calculated average daily demand is approximately 5,700 m³/day, which is below the consented maximum daily take of 6,000 m³/day.

In addition, site-specific EPANET modelling indicates that the proposed internal water supply network can provide the required level of service in accordance with the relevant SDC ECoP requirements, including requirements relating to pipe losses and residual pressures. Final confirmation of the detailed network design will occur through the engineering acceptance process.

The proposed connection to the existing township supply will be located as close as practicable to BX22/0006, or directly to the community supply associated with that bore if required and technically appropriate. This approach is intended to appropriately mitigate potential effects on the existing township water supply network.

The applicant has also commissioned a full update of the Darfield township water supply model from OneWater, which operates the model on behalf of Selwyn Water Limited. This modelling will provide further confirmation of the interaction between Bangor Village and the existing township network and will be provided in due course.

On the basis of the information currently available, the proposed **743 Bangor Village connections can be accommodated within the existing consented water-take limits**, subject to the final engineering acceptance of the internal network and consideration of the updated township-wide water supply modelling.

This assessment is supplementary to the information previously supplied through the Fast Track referral process and has been prepared specifically to address the water capacity matters raised by the Panel Convener.

Jamie Verstappen - CPEng



Attachment B – Selwyn Water Limited Letter

Hughes Developments Limited
21 Worcester Boulevard
Christchurch

c/- Jake Hughes

Hi Jake

Thank you for meeting with me yesterday.

Following our discussion and the advice provided by Selwyn District Council on your Fast-track application for Bangor Village, I wanted to confirm Selwyn Water Limited's willingness to work constructively with you on a potential servicing pathway.

Selwyn's rapid growth brings significant opportunities, alongside pressure on infrastructure. The wastewater system is currently at capacity, so we will need to work together to align development phasing with the timing, funding and delivery of additional network and treatment capacity.

Continued engagement will help us explore practical solutions, including storage to manage peak flows. These solutions need to reflect SWL's broader obligations around affordability, prudent stewardship of public infrastructure, meeting existing commitments and the principle that growth pays for growth. Growth-related infrastructure costs should generally be addressed through appropriate funding and consenting arrangements, without placing an undue burden on the wider community.

In relation to potable water, SWL has received the modelling provided by Davie Lovell Smith. SWL notes that the information provided appears to demonstrate that potentially there is capacity to service Bangor Village.

SWL will, however, undertake further modelling to assess the interaction between Bangor Village and the wider township potable water supply, taking into account the modelling provided by Davie Lovell Smith. Any implications for the design of Bangor Village's potable water infrastructure will need to be addressed, potentially through resource consent conditions, the Engineering Acceptance process, or another agreed mechanism.

We welcome the opportunity to continue discussing your proposed stages and servicing requirements, including potential further drinking water assessments. This will help identify a practical pathway, with servicing dates subject to technical assessment, agreed infrastructure delivery and formal approvals.

Ngā mihi,
Alex

Alex Cabrera
Chief Executive
Selwyn Water Limited


Attachment C - Attachment 015 – (Updated) Economic Assessment

Enclosed.

Attachment D – Updated Economic Assessment (mark-up)

Enclosed.