

Plan Change 26 – Residential Zone Intensification

Implementation Practice Note – Infrastructure Capacity Assessment

September 2024

This practice note sets out key requirements for Infrastructure Capacity Assessments (ICA). ICAs have been incorporated into the Medium Density Residential Zone (MDRZ) through Plan Change 26 (PC26) to the Waipā District Plan. This plan change became operative on 30 August 2024.

Infrastructure Capacity Assessments

1. When required (Rule 15.4.2.19A)

Any development proposal which will result in more than two dwellings being located on a site requires a resource consent.

For these types of development, an infrastructure capacity assessment is required to be provided as part of the resource consent application. If no infrastructure capacity assessment is provided, it will be considered a non-complying application.

2. What is an Infrastructure Capacity Assessment?

An ICA is an assessment of the capacity of an existing water supply (including fire water supply), wastewater, or stormwater network to:

- Determine if there is enough capacity to support the proposed development or
- To define the requirements for network upgrades that may be necessary for the proposed development to proceed.

3. Who prepares an Infrastructure Capacity Assessment?

An ICA must be prepared by a suitably qualified and experienced person. This is a Chartered Engineer (or equivalent) experienced in the planning and design of three waters networks.

Generally, developers will engage their own engineer to prepare their ICA. Where hydraulic modelling is required, the council may require a nominated consultant.

Any queries on these requirements and variations should be directed to Waipā District Council Development Engineering team in the first instance.

4. What information is required to be provided in an Infrastructure Capacity Assessment?

An infrastructure capacity assessment is required to provide information related to how a development will be served by water supply, wastewater and stormwater infrastructure.

The information that needs to be provided in an Infrastructure Capacity Assessment will depend on the number of dwellings proposed in the development.

The table below identifies the minimum information that needs to be provided.

Infrastructure Capacity Assessment – Information Requirements

The table below sets out the information (numbered 1 to 15 in left hand column) required to be provided as part of a resource consent application for developments that trigger an Infrastructure Capacity Assessment under Rule 15A.4.2.19A:

- 3 dwellings = required information **1 – 3, 8 – 10, 12 – 15**
- 4 or more dwellings = required information **1 – 15**

Water supply

| # | Required information |
|---|---|
| 1 | <p>Confirm if all proposed dwellings / lots can be serviced by the fire hydrant</p> <p><i>Note:</i></p> <ul style="list-style-type: none"> ▪ Refer to RITS 6.2.8.1 and SNZ PAS 4509 for guidance |
| 2 | <p>If connected to a rider main – Does the existing / proposed number of connections comply with RITS Table 6 – 4?</p> <p><i>Note:</i></p> <ul style="list-style-type: none"> ▪ Low pressure is to be assumed unless pressure testing shows otherwise. ▪ If compliance with RITS is not achieved and upgrades to rider main are not proposed as part of the ICA, pressure testing, head loss investigation and/or hydraulic modelling will be required to demonstrate suitability of water servicing for the development with no detriment to existing properties. |
| 3 | <p>Calculate and provide peak daily, peak hourly, and average demands per RITS 6.2.3</p> <p><i>Note:</i></p> <p>Peaking factor of 2.5 to be used in calculations</p> |
| 4 | <p>Calculate and provide head loss calculation for each water main the development is connecting to</p> <p><i>Note:</i></p> <ul style="list-style-type: none"> ▪ Council has no preference on formula used if results, methodology, units and coefficients used are clearly demonstrated and provided [Mannings, Colebrook – White, Hazen Williams, Darcy – Weisbach, etc]. ▪ NZS 4404:201 Section 6.3.5.4 applies for maximum allowable head loss: If the head loss increases above the values specified, ICA must propose upgrades and on-site mitigations to service proposed development. Base pressure of 300kPa (30m) is to be assumed during calculation. |
| | Supplementary information |
| | Details of how the proposed dwellings are going to be metered |
| | Location of water meters shown on a clearly annotated plan |
| | Identify location of nearest fire hydrant |

Water / Wastewater

| # | Required information | | | | | | | | | | |
|---|---|---------------------|---------------------------------------|---|-----------|---|------|--|------|-------------|--|
| 5 | <p>Hydraulic modelling for water and wastewater may be required for development proposals</p> <p>As part of pre application process and/or resource consent application review, Council will confirm whether modelling of the effects of the proposed development on the water and/or wastewater network will be required.</p> <p>The table below indicates the likelihood of modelling; however, Council reserves the discretion to request further modelling depending on the location, density of the development and known local constraints. An Infrastructure Capacity Assessment may also identify the need for further hydraulic modelling.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #00a696; color: white;">Type of Development</th> <th style="background-color: #00a696; color: white;">Will hydraulic modelling be required?</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Infill of up to 10 additional units or lots</td> <td style="text-align: center;">Unlikely.</td> </tr> <tr> <td style="text-align: center;">Infill of 11 or more additional units or lots</td> <td style="text-align: center;">Yes.</td> </tr> <tr> <td style="text-align: center;">Out of zone or non-complying development</td> <td style="text-align: center;">Yes.</td> </tr> <tr> <td style="text-align: center;">Greenfields</td> <td style="text-align: center;">Yes, if planned density within growth cell is increased above District Plan densities.</td> </tr> </tbody> </table> | Type of Development | Will hydraulic modelling be required? | Infill of up to 10 additional units or lots | Unlikely. | Infill of 11 or more additional units or lots | Yes. | Out of zone or non-complying development | Yes. | Greenfields | Yes, if planned density within growth cell is increased above District Plan densities. |
| Type of Development | Will hydraulic modelling be required? | | | | | | | | | | |
| Infill of up to 10 additional units or lots | Unlikely. | | | | | | | | | | |
| Infill of 11 or more additional units or lots | Yes. | | | | | | | | | | |
| Out of zone or non-complying development | Yes. | | | | | | | | | | |
| Greenfields | Yes, if planned density within growth cell is increased above District Plan densities. | | | | | | | | | | |

Wastewater

| # | Required information |
|---|--|
| 6 | <p>Detailed Plans / drawings showing:</p> <ul style="list-style-type: none"> ▪ Location and boundaries of the development site ▪ Proposed connection to Council wastewater network ▪ Location of closest trunk main (300mm or larger), or WW pump station ▪ The determined local catchment ▪ The determined extent of the Infrastructure Capacity Assessment |
| 7 | <p>Calculate and provide average daily flow, peak daily flow, and peak wet weather flow for the proposed development</p> <p><i>Note:</i></p> <ul style="list-style-type: none"> ▪ refer RITS 5.2.4.2 |
| 8 | <p>Calculate and provided flows for determined local catchment</p> <p><i>Note:</i></p> <ul style="list-style-type: none"> ▪ Please liaise with Council to find out if another development is already consented within catchment, to ensure accuracy and avoid time extension. |

| | |
|----|--|
| 9 | <p>Calculate and provide maximum flow capacity calculations for each pipe within the Infrastructure Capacity Assessment extent</p> <p>Note:</p> <ul style="list-style-type: none"> ▪ Council has no preference for formulae used [Mannings or Colebrook – White], but methodology, results, units and coefficient used must be clearly demonstrated and provided. |
| 10 | <p>Calculate and provide residual pipe capacity calculations for each pipe within Infrastructure Capacity Assessment extent</p> <p>Note:</p> <ul style="list-style-type: none"> ▪ $Residual\ Pipe\ Capacity = Maximum\ Flow\ Capacity - (Existing\ WW\ Flow + Proposed\ WW\ Flow)$. ▪ Results must be provided by Excel spreadsheet or pdf. ▪ If Residual Pipe Capacity is less than 0, ICA must propose sufficient upgrades or on-site mitigations to service the development. We recommend you contact Council as soon as possible to discuss extent of upgrades. |
| 11 | <p>Additional Information - Flow calculations – 4+ dwellings:</p> <p>When calculating flows for the determined local catchment, allowance must be included for each lot within the catchment to be able to develop as per permitted activity rules, i.e. two dwellings per existing lot.</p> |

| Stormwater | |
|------------|---|
| # | Required information |
| 12 | <p>Identify and provide percentage and area in square metres of impermeable surfaces</p> <p>Note:</p> <ul style="list-style-type: none"> ▪ If the development proposes site coverage of more than 60%, a Stormwater Management Plan for the catchment including upstream and downstream properties that may be affected must be provided. |
| 13 | <p>Identify and protect overland flow paths</p> <p>If overland flow paths are identified on the development site, they must be clearly shown on plans and protected via easements in gross in favour of Council as part of any associated subdivision application.</p> |
| 14 | <p>Assess and provide details of soakage tests undertaken</p> <p>Note:</p> <ul style="list-style-type: none"> ▪ Soakage test must be completed in accordance with Building Code E1 or Cambridge North SW guidelines and must be undertaken to the depth of the proposed soakage device. ▪ Methodology of testing must be provided. ▪ Soakage rate analysis must be determined utilising Hvorslev or Cambridge North method. ▪ Building Code analysis method will not be acceptable for medium density development. |

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Provide details of all proposed stormwater devices that are to service the development

Note:

- *RITS Section 4.2.3.1 Stormwater Management Disposal Hierarchy applies when choosing an appropriate stormwater solution.*
 - *Centrally located soakage trenches that dispose of stormwater for the whole development will not be accepted unless the development is to be privately managed under body corporate or similar management structure that makes express provision for financial commitment for ongoing maintenance and upgrading of shared infrastructure between owners (e.g. Homeowners Association or Company).*
 - *For fee simple subdivisions:*
 - *Stormwater from roof areas must be disposed of within the boundary of lot.*
 - *Stormwater from hardstand areas can be disposed of via proprietary stormwater devices within ROW or access leg.*
- Rock filled soakage trenches will not be accepted as suitable devices for medium-density developments triggering resource consent that propose shared stormwater systems.**
- *Proprietary devices must be utilised and maintenance arrangements for these devices must be included in Infrastructure Capacity Assessment.*
 - *Permeable pavers will not be accepted for medium density development.*
 - *If soakage is not viable (raw soakage is less than 150mm/hr), retention and/or detention tanks will be acceptable for roof area stormwater management.*
 - *For properties within the Stormwater Constraint Qualifying Matter Overlay the Infrastructure Capacity Assessment must check the displacement of 1% AEP storm event by surveying the site and verifying levels that are utilised in Urban Flood Hazard Modelling. Displacement identified must then be accommodated within design.*

Restriction of Discretion

In making decisions and setting conditions on resource consents that trigger requirements to provide an infrastructure capacity assessment, the council has restricted its discretion to the following matters:

| Restricted Discretionary Activity | Restriction of Discretion |
|--|--|
| <p><u>Rule 2A.4.1.3(b)</u> Four or more dwellings per site</p> | <ul style="list-style-type: none"> ▪ The outcomes of an infrastructure capacity assessment; and ▪ Stormwater disposal; and ▪ The adequacy of the servicing proposed for the development including but not limited to: <ul style="list-style-type: none"> - Effects of the development on the operation and the capacity of three waters infrastructure. |
| <p><u>Rule 2A.4.1.3(c)</u> Three dwellings per site within Infrastructure Constraint Qualifying Matter Overlay</p> | |

- Hydraulic modelling for the purpose of assessing effects, determining mitigations and associated costs related to the upgrade of existing or planned strategic three waters infrastructure, if required by Council.
- Effects of proposed water sensitive techniques to minimise water use and their effect on volume, discharge, and rate of use.
- Effects of on-site controls proposed to minimise impacts on three waters infrastructure.
- Effects of the proposed development's water consumption and water and wastewater discharges including proposed locations of connection or discharge.

Additional guidance

Additional guidance has been provided below to identify other matters that may be relevant to the provision of three waters infrastructure for proposed developments.

1. Water pressure for multistorey dwellings taller than 9m (without roof)

For multistorey dwellings over 9m (without roof): the council endeavours to guarantee level of service (LoS) of a minimum pressure of 200kPa (20m) at the boundary. For multistorey developments that show floor plans exceeding 9m in height, designers must take this into consideration and propose on site mitigation as required (private pump, break tank, etc.).

2. Building over

The council has not changed its stance on building over council assets, such as pipes. Building over will not be accepted unless all the other options have been exhausted and this has been clearly demonstrated (per RITS 5.2.9).

3. On-site 3 water mitigation recommendations

For on-site mitigations, the council recommends following measures:

- Header tanks
- Break tanks
- Retention tanks for grey water re-use
- Rain harvester tanks
- Low flow fixtures

If any of the above-mentioned mitigations will be utilised in the development, demand calculation within the Infrastructure Capacity Assessment can be decreased. However, any decrease must be clearly demonstrated and justified within the Infrastructure Capacity Assessment. Mitigation methods will fall as consent notices/resource consent conditions onto relevant applications.