

Water Services Resource Consent Conditions – Assessment of Application

Date: 23 May 2022

SR505203 – 292 Main Road

INTRODUCTION

1. My name is Zeean Brydon. I am an Associate Engineer based in Blenheim.

QUALIFICATIONS AND EXPERIENCE

2. I hold a Bachelor of Engineering (Civil)(Hons) (1994) from the University of Canterbury. I am a member of Engineering New Zealand.
3. I have 28 years' experience working as an Engineer in Hamilton, Bristol (UK) and Blenheim with projects throughout New Zealand. Specifically, my experience includes 3 years as a consulting Engineer to Wellington Water between 2015 and 2017, and again from late 2020 to present. During this time, I have processed a wide range of subdivision and land use consents on behalf of the Wellington Water Land Development Team.
4. I am familiar with the Wellington City District Plan, the Regional Policy Statement for the Wellington Region as well as the Wellington City Council Code of Practice for Land Development and the Wellington Water Regional Standard for Water Services and Regional Specification for Water Services.

EXPERT WITNESS CODE OF CONDUCT

5. I confirm that I have read the Code of Conduct for expert witnesses contained in the 2014 Environment Court Practice Note and that I agree to comply with it. This evidence I am presenting is within my area of my expertise. To the best of my knowledge, I have not omitted to consider any material facts known to me that might alter or detract from the opinions I express.

BACKGROUND

6. The 1,204 m² site is located at 292 Main Road, Tawa at the intersection of Main Road and McLellan Street. The site currently has an existing residential dwelling on it and is bounded to the east by Porirua Stream.
7. The topography of the site slopes eastwards toward the Porirua Stream.
8. The applicant is seeking a Land Use Consent to construct a new 4 storey (ground floor + 3 floors above) building comprising 24 x 2 No bedroom residential units.
9. The proposed development includes planting and landscaping for the areas surrounding the building. The ground floor units will have yards (western

units) and decks (eastern units). A building access ramp, steps and central entranceway will be constructed off Main Road and a bin store and a bike store are proposed between the building and northern boundary.

10. Pre-Application Notes covering water, wastewater and stormwater were provided to the applicant on the 29 April 2021.



Figure 1 Existing site location and extents (Ref.: Wellington Water online GIS)



Figure 2 Proposed Development

ASSESSMENT OF APPLICATION

Water Supply

11. The site is currently supplied via a DN20 connection into the existing DN100 uPVC pressure main at the intersection of McLellan Street and Nathan Street.



Figure 3 Existing Water Supply infrastructure in the vicinity of the site (Ref.: Wellington Water online GIS)

12. The existing 20 mm water supply connection is not suitability sized to service 24 units and will need to be decommissioned by disconnecting at the public main. A new suitably sized water supply connection in accordance with the Regional Standard for Water Services will be required to service the unit title development. In addition individual shut off valves will be required to ensure each unit can be independently isolated.
13. In April 2021 WWL indicated that:
- the minimum pressure at the point of water supply (corner of Nathan Street and McLellan Street) is 55-60m, compliant for a stand alone residential house.
 - the hydrant outside 1 Nathan Street is expected to be compliant with SNZ PAS 4509:2008 for stand alone residential houses.
14. The hydrant outside 1 Nathan Street is assessed (based on the proposed layout) as being approximately 120 m from the furthest ground floor dwelling.

15. The servicing of the multi-story residential development for domestic water and fire-fighting requirements will need to be supported by:
 - a. A statement confirming the site fire classification.
 - b. Calculations based on pressure logging and hydrant testing to:
 - i. support the sizing of the domestic water supply connection and demonstrate that all dwellings can be provided with suitable flow / pressure.
 - ii. Demonstrate that site complies with SNZ PAS 4509:2008 for fire fighting requirements.
16. Upgrades to the existing network and / or on site solutions for domestic (booster pumps, low pressure fittings) and fire fighting requirements (sprinklers or tanks) may be required to meet fire fighting requirements. Where required these will be at the developers expense.
17. The applicant has advised that the water servicing requirements will be addressed at detailed design stage during the Building Consent process (AEE Section 1.5).
18. It is the conclusion of this assessment that the site will be able to be serviced for domestic water and fire fighting requirements and
 1. The existing 20 mm lateral will need to be replaced with a new appropriately sized water service connection. The existing lateral will need to be appropriately abandoned.
 2. The existing water supply network may need to be upgraded to meet the domestic and fire fighting flows and pressures.
 3. On site solutions (booster pumps, sprinklers and / or on site tanks) may be required to meet the domestic and fire fighting flows and pressures.

It is considered that appropriate solutions will be able to be achieved at detailed design stage. Appropriate conditions / advice notes should be placed on the Land Use consent notifying the application of the water servicing requirements to be finalised prior to start on site.

Wastewater

19. The site is currently serviced via an existing private household connection which conveys wastewater discharge to the council main on 292A Main Rd. The lateral connects to a public wastewater manhole at the head of a 1974 DN150 AC gravity main.



Figure 4 Existing Wastewater infrastructure assets in the vicinity in the site (Ref.: Wellington Water online GIS)

20. The existing lateral may be re-used if it is demonstrated to be in good condition, made of resilient material, and is suitably sized to accommodate the increase in flows. If the existing lateral cannot be re-used it must either appropriately abandoned by disconnecting from the public main or relaid as new.
21. Any physical works within #292A and / or works to upsize the existing lateral will require the permission of the owner(s) of #292A. Obtaining permission for the off site wastewater connection is a civil matter between the developer and the owner of #292A. Failure to obtain permission may mean that the development cannot be delivered in its current format.
22. Whilst it is advised that permissions are obtained prior to granting the Land Use consent, servicing requirements are only discretionary and this requirement can therefore only be noted on the consent. The applicant will be advised to obtain the necessary permissions as soon as possible to ensure the development can be delivered.
23. In April 2021 WWL indicated that the downstream Council owned wastewater network is currently surcharged during a 1-year LTS design event. Although the public main is surcharged there are no overflows from the local network and whilst the increased flows from the development will exacerbate the situation they will not cause overflow to occur. WWL confirm therefore that wastewater mitigation is not required to support this development.
24. The applicant has advised that the wastewater servicing requirements will be addressed at detailed design stage during the Building Consent process (AEE Section 1.5).

25. It is the conclusion of this assessment that subject to obtaining necessary permissions from the adjacent landowner for the off site wastewater discharge, that the site will be able to be serviced for wastewater. Appropriate advice notes should be placed on the Land Use consent advising the applicant and future reviewers of the wastewater servicing requirements.

Stormwater – Public Stormwater Main

26. The site includes an existing council owned DN225 concrete gravity main which conveys stormwater from the upstream network and discharges it into the Porirua Stream. The main runs inside and approximately parallel with the northern site boundary.

27. The stormwater main outfall is identified on the applicants topographic survey. The public main upstream of the outfall has not been accurately located.



Figure 5 Existing Stormwater Infrastructure in the vicinity of the site (Ref.: Wellington Water online GIS)

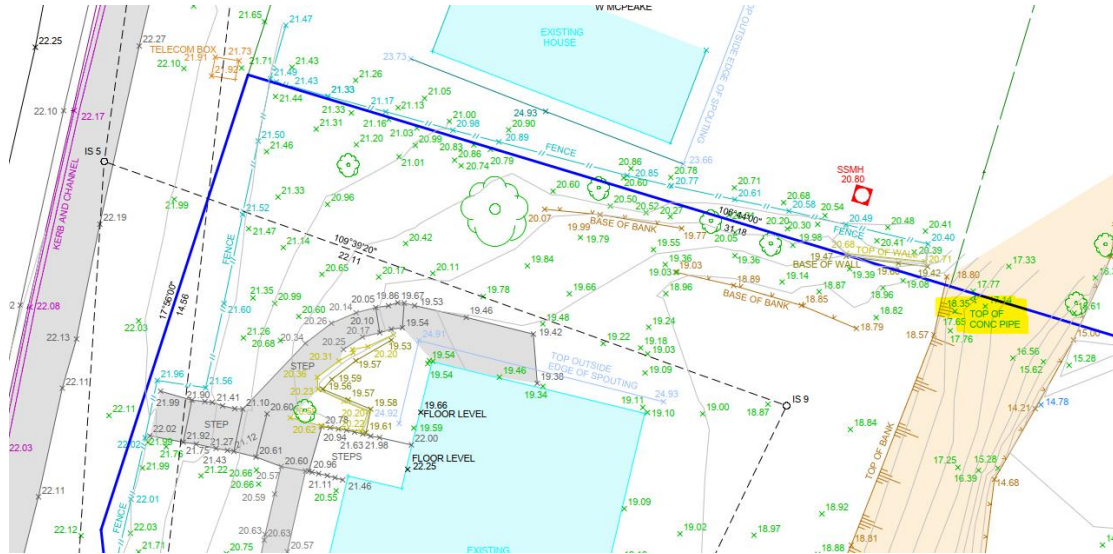


Figure 6 292 Main Road, Tawa - Topographical Survey Rev A (S21-0167-T1) - Spencer Holmes

28. Drawings submitted as part of the Applicant's original application (03 December 2021) indicate that the applicant is proposing to:

- Raise ground levels over the proposed stormwater main. Site sections appear to show retaining at the rear of the bike store.
- Plant trees over the public stormwater main,
- Build bin and bike storage over the public stormwater main.

Revised drawings submitted by the Applicant in January 2022 confirm this intention.

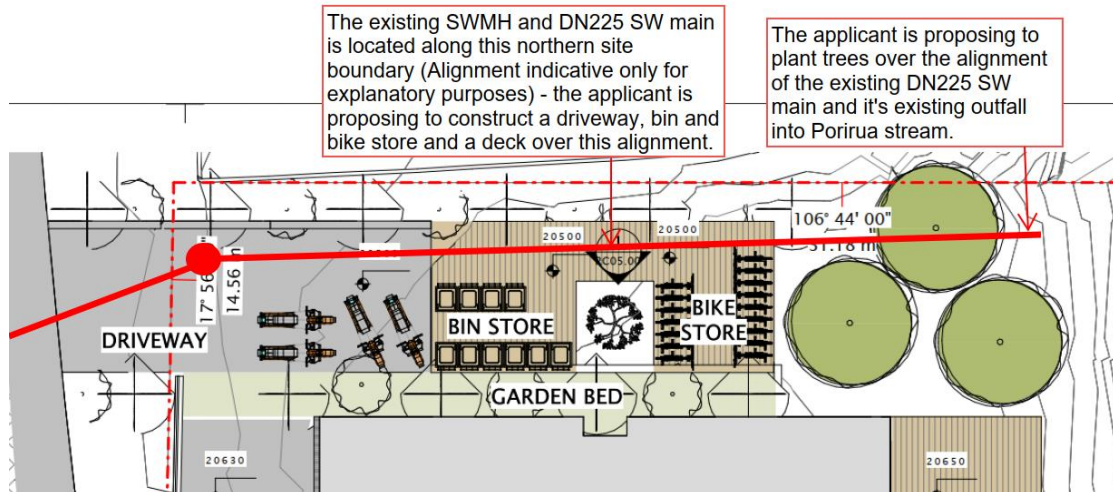


Figure 74 Applicant's Proposal to build over the existing SW main along the sites northern boundary (ref.: Archaus Drawing Set – 21026 292 Main Road Tawa – Rev 1, 15/11/2021)



Figure 8 Applicant's Proposal to build over the existing SW main along the sites northern boundary (ref.: Archaus Drawing Set – 21026 292 Main Road Tawa – Rev 2, 28/01/2022)

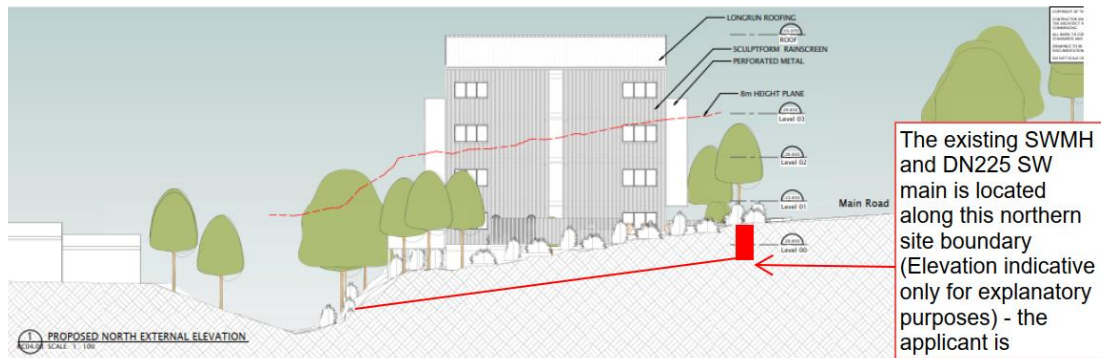


Figure 9 Applicant's proposal to raise ground levels over the existing DN225 SW main onsite (ref.: Archaus Drawing Set – 21026 292 Main Road Tawa – Rev 1, 15/11/2021)

29. The applicant has advised that the stormwater servicing requirements will be addressed at detailed design stage during the Building Consent process (AEE Section 1.5).
30. The applicants proposal to change ground levels, build over and plant in vicinity of the existing public stormwater main has been assessed against the requirements of the Regional Standard for Water Services and Regional Specification for Water Services. These are the minimum standards required to ensure long term protection of Council assets. Failure to protect the public stormwater main may result in stormwater flooding of the site / wider catchment.

Assessment of the current proposal is provided in Table 1 below.

Table 1 – Stormwater Public Main Build Over

| Proposal | Implications | Acceptability | Relevant Clause(s) |
|---|--|---------------|---|
| Bin storage and bike storage over the alignment of the existing Council SW main | In its current form it is not clear how access to the Council main and outlet will be achieved in the long term. The applicant will need to demonstrate that appropriate long term access can be achieved to both the public main and outfall. This may require amendment of the bin store, bike store and site levels. | Unacceptable. | Wellington Water Regional Specifications for Water Services (2021) Cl. 3.8 Cl. 4.2.2(c) Cl. 4.4.12 |

| | | | |
|---|---|---------------------------------|--|
| Raise ground levels over the proposed stormwater main. | Increasing the cover and loading over this pipe has the potential to cause failure. Further information / design is required to confirm that an appropriate solution can be achieved. | Unacceptable. | Wellington Water Regional Specifications for Water Services (2021) Cl. 3.8 |
| The building position (and by consequence the zone of influence of the foundations) maybe too close to the existing Council owned DN225 SW main | To ensure appropriate long term access the building requires to be a minimum 1.0 m clear of the public stormwater main (subject to confirming appropriate access is achievable). The applicant has not accurately located the public stormwater main on site. The public main will need to be accurately located on site and either demonstrated to be clear or diverted clear of the proposed dwelling. It is considered that this can be addressed at detailed design stage. | Requires further investigation. | Wellington Water Regional Specifications for Water Services (2021) Cl. 3.8 |
| Plant trees over the public stormwater main | Large tree roots have the potential to ingress into the pipe through the joints. Over the long term this has the potential to cause structural failure to the pipe. Tree's will not be permitted within the stormwater main easement. | Unacceptable. | |

31. It is the conclusion of this assessment that further information / review and revision of the applicants proposal is required to ensure that bin store, bike store and retaining / change of levels do not:
- a. do not damage the public main, and
 - b. ensure long term access to the public main is achieved.
32. The bin store / bike store and associated retaining wall are not acceptable to Wellington Water as they restrict access to the public stormwater main and outfall. If an amended design cannot be conditioned and these facilities cannot be moved then the Land Use should not be granted until an agreed layout is achieved.
33. The landscaping plan in its current form is not acceptable to Wellington Water. If it is not possible to alter the layout post issue of the Land Use then Land Use should not be granted until an agreed landscaping plan is provided.

Stormwater Servicing

34. Neither the GIS or applicants topographic survey show how the existing site is serviced for stormwater. It is anticipated that the existing residential dwelling discharges stormwater to the Porirua Stream within the site boundary.

35. The existing site servicing will need to be identified on site and appropriately decommissioned.
36. It is anticipated that the site stormwater will discharge to the Porirua Stream either by a new private outfall or via the existing Wellington Water outfall. Provided stormwater neutrality is achieved and an appropriate outfall designed there should be no issues discharging the site stormwater runoff to the Porirua Stream either independently or via the WWL outfall.
37. Greater Wellington Regional Council consent may be required for the stormwater outfall.

Stormwater Treatment

38. The site does not trigger GWRC earthworks or operational stormwater discharge consents and does not create any new roads or extensive car parking and stormwater treatment (Water Sensitive Urban Design) is not considered to required for this site.
39. If not controlled building materials have the ability to effect water quality within the receiving catchment through the release of heavy metals (Zinc, Copper etc). Conditions regarding building materials should be placed on the Land Use consent.

Flood Assessment:

40. All levels below are quoted to Wellington 1953 Datum.
41. The Porirua River runs along the length of the eastern boundary of the site.
42. The site is subject to flooding from the Porirua Stream and via overland flow from roading network south west of the site. The Wellington Water Flood Modelling Team have provided the flood extract below and have confirmed:
 - a. A minimum recommended floor level (including freeboard) of either;
 - i. 21 m aMSL. or
 - ii. 0.4 m above existing ground levelWhere minimum floor level is to the underside of the floor slab or underside of timber joists;
 - b. A maximum water level on site of 20.8 m aMSL
 - c. A minimum water level of 18.9 m aMSL

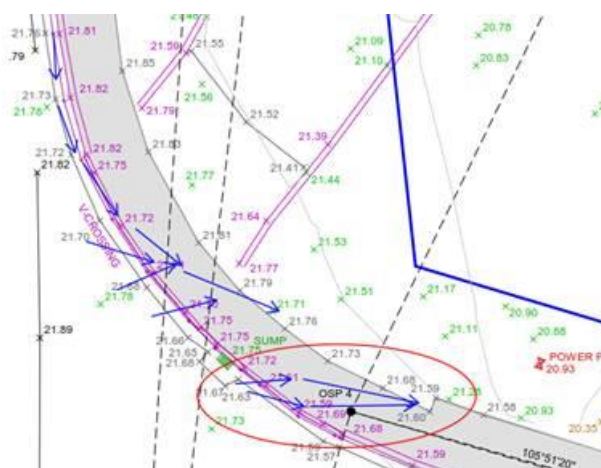


Figure 10 Modelled onsite flooding (1 in 100 year Annual Return Interval + 20% Climate Change Intensity) onsite (Ref.: ArcGIS, WCC Combined 100yearCC Flood Zones)

43. The applicant has provided a flood assessment letter report undertaken by ENGEO, dated 04 October 2021 (Appendix 6 of the AEE). ENGEO created a HEC-RAS one-dimensional hydraulic analysis to assess the surface water profile for the Porirua Stream through the site. The assessment applied a steady-state peak hydrologic flow rate of 92 m³/s taken from the 2008 Opus Consultants Ltd Porirua Stream walkway feasibility Study which in turn references the flow rate as being from the GWRC website. The HEC-RAS model identified a water surface elevation along the stream between 16.8 m and 19.3 m aMSL. The ENGEO report concluded that the flood flows would be contained with the stream bank and that development of the site should be founded at or above the top of bank.
44. The applicant states in the *Application for Land Use Consent, 292 Main Road, Tawa* that an appropriate “Flood Floor Level” has been determined to be 20.65m MSL which they have states is above the flood level of the 1% AEP Flood Hazard Level associated with the Porirua Stream (AEE Section 3.11.2).
45. Whilst a number of limitations are noted within the ENGEO report and whilst it is not clear from either the ENGEO report what allowance is made for climate change the findings of the ENGEO report are considered to be generally consistent with the WWL flood modelling which generally does not show flooding of the site from the Porirua Stream.
46. Both the WWL and GWRC flood modelling show an isolated pocket of flooding near the northern site boundary. The ground level in the location of this flooding is approximately 18.79 to 19.24 m aMSL. The WWL modelling confirms a maximum depth of flooding on site of 200 mm given a top water

level in this area of 19.44 m aMSL (well below the proposed building finished floor level).

47. The ENGEO report does not consider / assess overland flood flow paths through the site from the wider catchment. In addition to flooding from the Porirua Stream the WWL flood modelling identifies an overland flood flow path entering the site from the roading network vicinity of the Main Road / McLellan Street intersection. The WWL modelling team have advised a minimum recommended building level to the underside of the floor slab of 21 m aMSL, or 0.4 m above the existing ground level.
48. An RFI was raised with the applicant regarding the FFL, in response the applicant advised that the flood flows would be kept within road reserve and not flow through the development site, they believe therefore that the building remains clear of the 100-year flood path for the Porirua Stream.
49. Detailed review of the topographic survey identified at least two locations where an overland flow would potentially enter the site. The applicants assessment is not therefore accepted.



50. The applicants proposed floor level is lower than Wellington Waters recommended flood level. The assessment and implications are outlined in Table 2 below.

Table 2 – Floor Level Assessment

| Proposal | Implications | Acceptability | Relevant Clause(s) |
|---|---|--------------------------------|--|
| Proposed Building Floor level is 20.65m | The proposed FFL is lower than WWL’s recommendation for the floor. Inadequate clearance above flood levels could mean that the building lower levels have the potential to flood during peak rainfall events. | Requires further investigation | Wellington Water Regional Specifications for Water Services (2021) Cl. 4.2.8 Cl. 4.2.9 |

51. The finished floor level is lower than the flood model recommendation. A condition will be placed on the Land Use that either the building is elevated in accordance with WWL recommendations or the applicant provide a site specific assessment to demonstrate how flood flows will be collected and managed through the site so that the proposed building is not at risk of flooding. The site layout would appear to provide sufficient space for a site solution to be achieved, however failure to achieve a site solution may not allow the building to be developed as currently proposed. It is recommended therefore that this is resolved prior to granting the Land Use consent.
52. To proposed development will increase the site impermeable area and will therefore increase stormwater runoff within the receiving catchment. Stormwater neutrality in the form of on-site detention will be required to ensure the development does not increase the flood hazard within the wider catchment.
53. The applicant has not provided a stormwater neutrality design. Review of the site layout identifies several locations where stormwater detention could be provided and it is considered appropriate to required the detailed design to be finalised at the Building Consent stage.

Porirua Stream Setback

54. The development is required to comply with the District Plan and Regional Standard for Water Services (4.4.4) with regards to achieving appropriate set back from the Porirua Stream.
55. The Regional Standard for Water Services Section 4.4.4 requires:
 - a. Major watercourses and their natural character shall be retained where possible.
 - b. Development should be located away from the riparian buffer where possible,
 - c. Ipediments to natural flow with barriers to fauna should be avoided.
56. The District Plan Rules 30.1.1 and 5.3.4 (relating to non-compliance with standard 5.6.2.2.11) require a minimum 10 m set back from the Porirua Stream.
57. The applicant's engineer has stated that the development meets the setback requirements.

58. Overlay of the development and site topographic survey demonstrates that the:
- building is located between 6.0 m and 10.4 m of the stream,
 - Decks are located between 2.2 m and 6.3 m from the stream,

Scaled from Spencer Holmes Ltd Topographic Survey with the development overlaid. 'Stream' location is assessed from the topographic survey 'top water level' survey points.

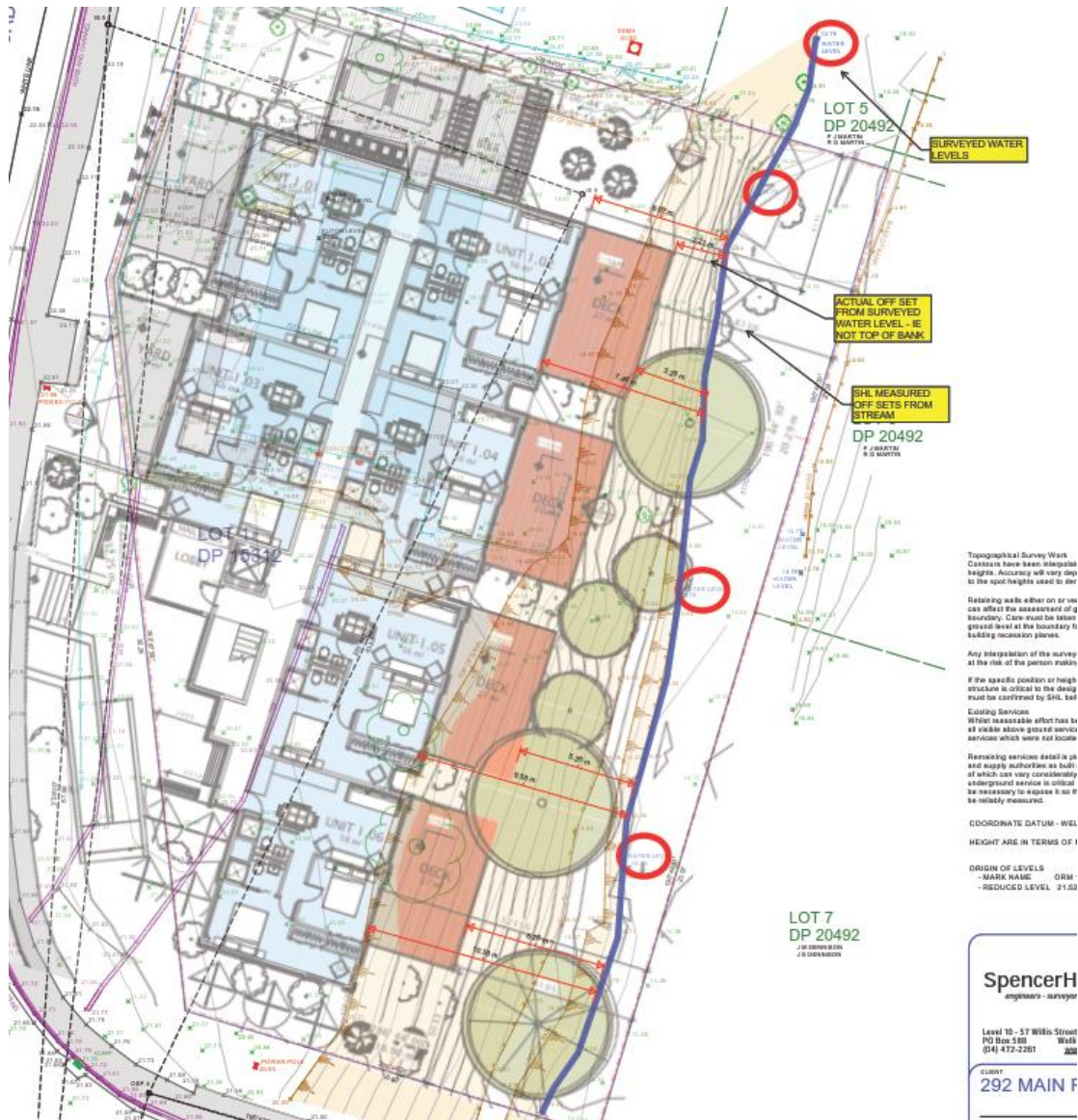


Figure 51 Overlay of the site layout and topographic survey.

59. In addition to decks the applicant is also proposing a number of tree's along the stream bank between the deck and stream edge.
60. The stream width (ranging from approximately 3.5 m to 5.8 m) is considered to wide to allow maintenance from one side.

61. There is existing vegetation along the stream bank:
- a. Access to the top of bank is not restricted, and
 - b. Existing vegetation can be cleared if maintenance is required.

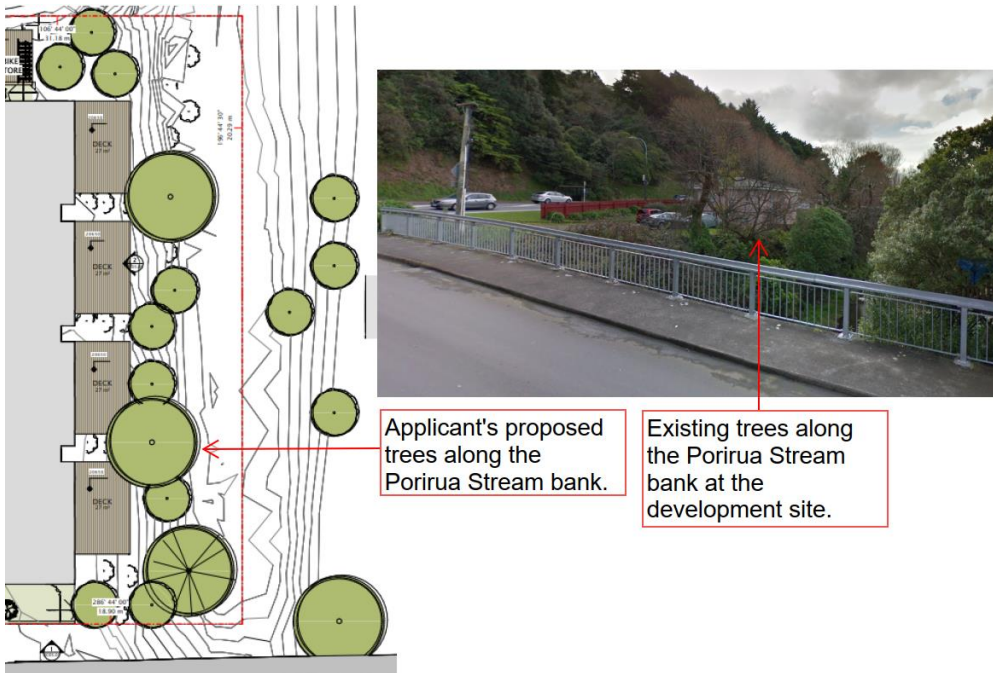


Figure 126 Proposed planting of trees along the Porirua Stream Bank (ref.: Archaus Drawing Set – 21026 292 Main Road Tawa – Rev 1, 15/11/2021)

62. The effect of the encroachment is assessed in Table 3 below:

Table 3 – Porirua Stream Encroachment

| Proposal | Implications | Acceptability | Relevant Clause(s) |
|--|--|---------------|---|
| Proposed Building Decks encroach onto the Porirua Stream corridor. | The building and decks encroachment will: <ol style="list-style-type: none"> a. Affect access to and along the stream bank for stream channel for long term maintenance purposes. Failure to maintain the stream could increase the flood hazard within the receiving catchment. b. Affect the flood conveyance capability of the stream. Overlay of the ENGEO flood assessment shows the decks within the flood hazard, Overlay of the WWL flood model shows the building and deck within the flood hazard. Unless a flood resilient design is provided the building / decks will displace flood waters potentially increasing the flood hazard within the receiving catchment. | Unacceptable | District Plan Rule 30.1.1 and 5.3.4 (relating to non-compliance with standard 5.6.2.2.11) Wellington Water Regional Specifications for Water Services (2021) Cl. 4.4.1 Cl. 4.4.3 |

63. The proposal does not comply with the requirements of the district plan and Regional Standard for Water Services.

- c. The proposed buildings and decks need to be permeable below the flood level so as not to restrict flood flows. It is considered that a compliant design which allows for unobstructed flow of water can be achieved and it is considered that this can be managed via a consent condition allowing the details to be finalised prior to construction commencing.
- d. It is *not* considered that the current proposal maintains appropriate clearance to the Porirua Stream for access / maintenance purposes. The current proposal requires amendment to demonstrate how maintenance access will be achieved. As this has the potential to effect the site layout / landscaping it is recommended that this is resolved prior to granting of the Land Use consent.

Conclusion

Wellington Water Ltd would not recommend granting of the Land Use consent until:

- An off site wastewater solution is confirmed.
- The existing public stormwater main has been accurately located on site and an revised layout that provides appropriate access to the stormwater main for ongoing maintenance / long term replacement is agreed.
- A revised layout / landscaping proposal is achieved that provides appropriate access to the Porirua Stream.
- The development finished floor level is raised or alternatively a site specific assessment provided to demonstrate that overland flood flows can be

managed through the site so as to not present a flood hazard to the proposed development.

If Wellington City Council are minded to grant this Land Use consent the following conditions and advice notes are recommended.

Proposed Land Use Conditions:

Flood Levels:

- 22) Unless otherwise agreed with the Wellington Water Land Development Team under **condition (23)** or otherwise in writing, any residential building constructed on the site must have a minimum floor level of 21 m RL (Wellington 1953 Datum)
- 23) A reduced floor level may be accepted by the Wellington Water Land Development Team if the consent holder provides a site specific engineering assessment demonstrating that overland flood flows entering the site from Main Road / McLellan Street are managed through the site so as not to cause flooding of the proposed building with freeboard as per the Wellington Water Regional Standard for Water Services.
- 24) Any secondary overland flow paths created under **condition (23)** must be protected by an easement in gross in favour of the Wellington City Council and which prevents the alteration of the ground surface and prohibits the location of structures that might impede the flow of water across the land.
- 25) To avoid impact on the Porirua Stream flood flow path all development ~~below 21.0 m RL (Wellington Datum)~~ must be permeable (must not restrict flood flows) to a minimum of 0.4 m above existing ground level.
- 26) The development layout and levels must achieve a minimum 10 m set back to the Porirua Stream.
- 27) The existing public gravity stormwater main and outfall must be accurately located on site and the site layout must achieve at least 1.5m clearance from any building works including bin store, bike shed and any retaining walls so that access to the pipeline and outfall is not impeded or alternatively the stormwater main can be re-laid to achieve a minimum 1.5 m clearance.
- 28) Piles and concrete foundations within the proposed building site are required to be kept a minimum of 1.5m from the public gravity stormwater main, and pile foundations are required to be founded on solid ground below the main invert level within 1.5m of the main.
- 29) The site landscaping plan must be agreed with the Wellington Water Land Development Team to ensure trees and shrubs are maintained clear of the public stormwater main and Porirua Stream.

Engineering Standards

- 30) The consent holder must comply with the requirements of the Wellington City Council Code of Practice for Land Development (either its current version or replacement document), unless otherwise modified by condition(s) of the consent or agreed in writing by the Wellington Water Land Development Team. These are the engineering standards for mitigating adverse effects on the environment from earthworks, traffic (roading and vehicle access), wastewater and stormwater drainage, water supply and utility structures.

- 31) No construction is to start prior to the following engineering plans in relation to water supply, stormwater or wastewater drainage, being accepted in writing by the Wellington Water Land Development Team:
- i. engineering plans and design certificate,
 - ii. specifications.
 - iii. identification of secondary overflow flow paths
 - iv. design and construction documentation (must include an analysis of the impact of the proposed development on the existing stormwater and/or wastewater network capacity)
- 32) Where existing buildings have been or are to be demolished or replaced, the end of the existing private water, stormwater and wastewater lateral(s) must be abandoned / decommissioned including disconnecting from the public main (water) and capping at the shared private drain (stormwater and wastewater). Council must be advised of the final treatment by way of including the location of capping on the final as-built plan.

Water supply:

- 33) Prior to the commencement of any works, the consent holder must provide to Wellington Water Land Development Team for review and approval, a design statement endorsed by a Chartered Professional Engineer on:
- i. Calculations, specifications and design plans to confirm that:
 - a. there is sufficient water supply pressure and flow for the development to meet the Wellington City Code of Practice for Land Development 2012.
 - b. fire hydrants with sufficient pressure and flow to service the development in accordance with the NZ Fire Service Code of Practice for Firefighting Water Supplies SNZ PAS 4509:2008 are provided.
 - ii. Calculations based on pressure logging (for a minimum one week period) and flow readings taken from the nearest hydrant.

Notes:

- i. The design statement must include the following statement: “The design of the water mains and services complies with the Wellington City Council Code of Practice for Land Development and current Wellington City Council Water Supply Specification”
 - ii. The design of the fire service connection and sprinkler system shall allow for any head loss incurred by the required backflow prevention containment device.
 - iii. Please note that permission is required prior to using or testing hydrants.
 - iv. Upgrading of the existing water infrastructure (including additional fire hydrants) and / or on site solutions (booster pumps, sprinklers or tanks) may be required if the Code requirements cannot be achieved or if the proposal will have a detrimental effect on existing users.
- 34) The consent holder will need to provide the site with an appropriately sized water service pipe connected to the public water supply network at a location approved by the Wellington Water Land Development Team. An engraved plastic tag reading ‘WATER SUPPLY MAINFOLD FOR (Street No)’ is to be secured to the manifold clearly showing which property is served by the manifold. An RPZ type backflow preventer is required if the connection is greater than 20 mm ID.
- 35) If a separate fire connection is required, a separate application for the fire connection must be submitted along with the calculations provided under condition (33). The consent holder all fire connections / sprinkler connections with a double check detector check backflow prevention containment device

- 36) The consent holder must provide each unit with a separate water supply shut-off valve. The shut-off valve will need to be located such that each dwelling or unit can be independently isolated, if required.

Wastewater:

- 37) The site must be provided with a suitably sized wastewater connection to a public wastewater network at a location accepted in writing by the Wellington Water Land Development Team and in accordance with the Wellington City Council Code of Practice for Land Development.

Note: The existing lateral may be re-used if it is demonstrated to be in good condition, made of resilient material, and is suitably sized to accommodate the increase in flows, and this is confirmed in writing by the Wellington Water Land Development Team. If the existing lateral cannot be re-used it must either appropriately abandoned by disconnecting from the public main or re-laid as new.

Stormwater:

- 38) In regard to the existing Council stormwater line passing through the site, as the proposed construction will not comply with the Regional Standard for Water Services requirement for building/working near public drains, the consent holder must provide pre- and post-CCTV footages and reports of the existing main to the Wellington Water Land Development Team.

Any new defects identified post-development must be repaired by the consent holder. All costs incurred for repairs post development will be at the expense of the consent holder.

- 39) The site must be provided with a suitably sized stormwater connection to a public stormwater network or an approved outfall at a location accepted in writing by the Wellington Water Land Development Team and in accordance with the Wellington City Council Code of Practice for Land Development.

Where the site is connected to the public stormwater main, the consent holder must assess the velocity at which the stormwater exits the existing public outfall and the potential for scour/erosion with documentation and calculations provided to Wellington Water Land Development Team. If there is an increased risk of scour or erosion as a result of the development, then the consent holder must upgrade the existing outfall to mitigate the impact of the development to the satisfaction of the Wellington Water Land Development Team.

Note: The consent holder may also require Greater Wellington Regional Council approval for the proposed stormwater discharge.

- 40) Bare galvanised, zinc alum or unpainted metal (including copper) may result in contamination of stormwater runoff upon corrosion of surfaces and therefore must not be used for exterior construction, including but not limited to roofing, cladding, gutters and downpipes.
- 41) To avoid impact on the downstream network, stormwater neutrality is required for all events up to the 1% AEP event (1 in 100 year event). The site must be provided with a stormwater management system(s). The stormwater management system design must be approved in writing by the Wellington Water Land Development Team and the following aspects will need to be met.
- i. The owner of the site must construct an approved stormwater management system or systems in accordance with plans approved by the Wellington Water Land Development Team.

- ii. The stormwater management system(s) must be designed so that the total stormwater discharge post-development from the site for all events up to the 1% AEP event is less than or equal to the stormwater runoff flows prior to the development.
 - iii. The owner(s) of the site must ensure that all connections to the system(s) are trapped to minimise debris entering the system.
 - iv. Following construction of the stormwater management system(s), an as-built plan and a maintenance schedule will need to be made available for future property owners. The plan and schedule will need to be approved by the Wellington Water Land Development Team.
 - v. The owner of the site must follow the required operation, maintenance and renewal of the system(s), set out in the maintenance schedule, to ensure it is in full working order at all times.
 - vi. The owner(s) of the site cannot increase stormwater discharge, through an increase in non-permeable areas, without Council approval; as an increase in stormwater discharge may result in failure of the stormwater detention systems.
- 42) A covenant must be entered into with the Council that includes the requirements of **condition (40)** above. The covenant must be entered into within 1 month of the completion of the works.

The covenant must be submitted to, and certified by, the Council's Compliance Monitoring Officer who will execute the covenant on behalf of the Council once approved. This will be subject to payment of the Council's fee relating to the execution of legal documents.

As-builts:

- 43) Within 1 month of the conclusion of the engineering works, the consent holder must submit as-built drawings that meet the requirements of Wellington Water Regional As-built Specification for Water Services for water supply, wastewater and stormwater drainage.
- 44) Once an as-built plan has been submitted and within one month of completion of the drainage works, the Consent holder will need to arrange for a final inspection with the Wellington Water Senior Drainage Inspector.

Where possible, all as-built plans are to be submitted in both hard copy (PDF) and electronically. Electronic copies are to be submitted in CAD format (.DWG file) drawn in the NZGD 2000 New Zealand Transverse Mercator' coordinate system.

Advice Notes

- 9. Where drainage works are required, permits **in addition** to this resource consent are required: namely
 - Building Consent for private drains - where a subdivision and new laterals are required from an existing network **only** a Building Consent is required.
 - Public Drainage Permit for working within the vicinity of the public stormwater mains.

Some of the engineering plans and specifications in the consent condition above are to be submitted during the application stage for these permit(s).

Scheme and other indicative layout plans submitted as part of the application will be used by Council for information purposes only. These plans will not be used for granting approval under the condition above. Approvals will only be given on detailed engineering plans.

10. Prior to connection, an application for water supply, wastewater and stormwater (if required) is required to be made to Wellington City Council. All works must be inspected and tested by the Wellington Water, Water and Drainage Inspector.
11. The development of this site may require new drainage or modification of existing drainage through #292A Main Road. The written permission of the owner(s) of #292A is required to be obtained prior to the granting of a Building Consent. A copy of the written permission is required to be presented to the Building Consent Team as part of the application for a Building Consent. Obtaining permission from the owner(s) of #292A is a civil matter between the consent holder and owner(s) of #292A. The consent holder is advised to obtain written permission as early in the development process as possible. Failure to obtain permission may mean that the consent cannot be enacted in its current format.
12. Any alteration or addition to the existing public drainage network is required to be carried out under a Public Drainage Permit (as distinct from a Building Consent) issued by the Wellington Water Land Development Team.
13. All Public Drainage work is required to be carried out by a suitably experienced Registered Drainlayer; who is employed by a contractor who has an approved Health and Safety Plan and Public Liability Insurance

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Date: 31 March 2022

Contractor/E2Environmental Consulting Engineers