

**BEFORE AN INDEPENDENT HEARINGS PANEL
OF THE UPPER HUTT CITY COUNCIL**

IN THE MATTER OF The Resource
Management Act 1991

IN THE MATTER OF Upper Hutt City
Council's Proposed
Intensification Planning
Instrument

**EVIDENCE OF MATT FLANNERY
ON BEHALF OF SILVERSTREAM LAND HOLDINGS LTD**

(Infrastructure)

14th April 2023

1. INTRODUCTION

1.1 My name is Michael Matt Clarke Flannery. I currently hold the role of Major Projects Director at Aurecon New Zealand Ltd, a role I have held since 2016.

1.2 I am a civil engineer with 30 years' experience. I hold Bachelor of Engineering with Honours from the University of Canterbury and Masters in Business Administration from La Trobe University in Melbourne, and I am a Chartered Professional Engineer.

1.3 I have recent and relevant experience in the design and delivery of infrastructure projects throughout New Zealand. My experience includes work for local authorities and private developers.

1.4 Examples of local projects that I have been involved in include:

- (a) Riverstone Terraces, the final 450 lots of development.
- (b) Various stages at Mt Marua and Emerald Hill.
- (c) Design director for SH2 / 58 Haywards interchange grade separation
- (d) Design director for the Pole 3 Haywards Substation upgrade 2011.

1.5 I have read the Code of Conduct for Expert Witnesses outlined in the Environment Court's Practice Note 2023 and confirm that I have complied with it in preparing my evidence. I confirm that the issues I address are within my area of expertise, except where I state that I rely upon the evidence of other expert witnesses. I also confirm that I have not omitted to consider material facts known to me that might alter or detract from my opinions.

1.6 I have been engaged by Silverstream Land Holdings Ltd (**SLHL**) to provide engineering advice, including a services infrastructure assessment, in relation to the St Patrick's Estate Precinct (**Site**).

1.7 I confirm that, in preparing this evidence, I have read the relevant provisions of the IPI as notified (**IPI(N)**), the Upper Hutt City Council's (**Council**) section 32 report, the IPI recommendations in the Section 42A Report version (**IPI(R1)**), and the other evidence prepared for SLHL.

2. SUMMARY OF EVIDENCE

2.1 This statement of evidence assesses the following key infrastructure and servicing requirements (excluding transport) at the Site:

- (a) Wastewater;
- (b) Water;
- (c) Stormwater;
- (d) Other Utilities;
- (e) Earthworks; and
- (f) Overland flow & flooding.

2.2 This evidence also outlines the possible impacts on the servicing and infrastructure of the site being zoned 'Mixed Use' (**MUZ**), as sought by SLHL, rather than 'High Density Residential' (**HRZ**) as currently proposed in the IPI(N) and IPI(R1).

2.3 In my view, the MUZ zoning sought by SLHL can be supported for the Site within similar infrastructure parameters to those required to support HRZ zoning. Therefore, servicing considerations are not a reason to differentiate between the IPI(R1) and SLHL's proposal.

3. BACKGROUND

3.1 The Site is to the north of Fergusson Drive, located on a key entrance to Upper Hutt, with close access to the Silverstream Train Station and SH2 linkages. The Site is currently undergoing construction to raise the ground level above the Hutt River design flood level, as well as provide an engineered platform for development.

3.2 The Site is identified in the Council IPI map, copied below as 'Figure 1'.

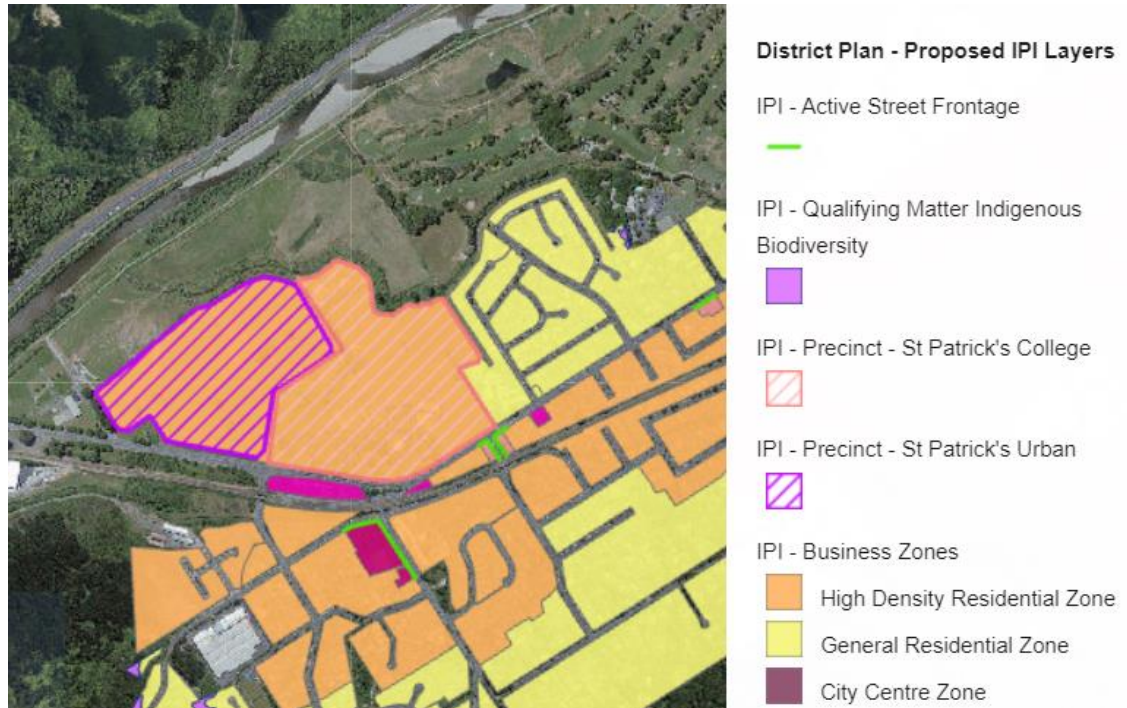


Figure 1: Draft UHCC IPI Map in area of site

4. BASIS OF ASSESSMENT

- 4.1 I have compared the current level of demand that could reasonably be expected using the proposal for MUZ zoning sought by SLHL, compared to the HRZ zoning proposed by the Council.

HRZ zoning

- (a) In order to assess the impacts of the HRZ zoning, an average density of 60 dwellings per hectare has been assumed for the purposes of this assessment (in line with the draft PC50 objectives for the site).

MUZ zoning

- (b) A MUZ zoning allows for the residential development targeted under the HRZ, while also allowing for other development including commercial and large format retail (subject to particular restrictions proposed in the evidence of Mr Lewanowski).
- (c) An indication of what this development form might feasibly look like has been summarised in the indicative scheme provided in Mr McGuinness's evidence. This includes 60-80% of residential or

residential type housing, 0-10% of mixed use (commercial and neighbourhood retail), and 20-30% of mixed use (retail and large format retail).

Zoning Comparison

(d) Given the common residential land use between the HRZ and MUZ zonings, in the following sections I have compared the possible servicing impacts of substituting area zoned for residential under the HRZ to commercial/retail area under the MUZ zoning.

5. WASTEWATER

5.1 An existing 525mm diameter bulk wastewater main is located within the site. Wellington Water have previously communicated to me during a meeting with the land development team that connection to this pipeline at a single location downstream of the site would be appropriate. New localised networks will be required for the final developed form.

5.2 Based on guidance provided in Wellington Water's Regional Standard for Water Services (2021) (**Regional Water Standard**), I have outlined in 'Table 2' the Peak Wet Weather flows for wastewater, of a hectare of high density residential development compared to a hectare of commercial/retail land use.

Table 1: Estimated Peak Wet Weather Flow per ha

	High Density Residential	Commercial
PWWF	4.0 L/s	1.0 L/s

5.3 Residential dwellings are expected to generate higher wastewater demands than commercial land uses. The HRZ zoning, which focuses on residential development, is therefore likely to result in higher wastewater peak flows comparative to the MUZ zoning, which allows for commercial and large format retail (which carry lower peak flows). Therefore, estimated wastewater flows should not be a consideration against a MUZ zoning for the Site.

6. WATER

6.1 The site is currently unserved by a suitable potable water supply connection. The nearest public networks are located on the southern side of Fergusson Drive near the Field St roundabout, and at the entrance to St Patrick's college. New lengths of public network will be required within existing roading to supply a suitable connection at the boundary of the site.

Peak Flows

6.2 Based on guidance provided in Regional Water Standard, I have outlined in 'Table 3' the peak flows for potable water estimated of a hectare of high density residential development compared to a hectare of commercial/retail land use.

Table 2: Estimated peak water flows per ha

	High Density Residential	Commerical
Peak Flow	3.4 L/s	2.0 L/s

6.3 Similarly to wastewater, residential dwellings are expected to generate higher peak flows compared to commercial land uses. The HRZ zoning is likely to result in higher peak wastewater flows, while the MUZ zoning (which allows for commercial and large format retail) will likely result in lower peak flows. Therefore, drinking water should not be a consideration against a MUZ zoning for the Site.

Fire Requirements

6.4 The New Zealand Fire Service Firefighting Water Supplies Code of Practice (SNZ PAS 4509:2008) outlines the required fire supply requirements for a range of buildings & land uses.

- (a) Residential properties including single and terraced housing will have a Water Supply classification of FW2, requiring a fire supply of 25L/s.
- (b) Apartment buildings and commercial areas are assumed to be sprinklered with an ordinary hazard level. Based on these factors, they will also have a classification of FW2, requiring the same hydrant

supply. Expected sprinkler system demands for these types of buildings are 20-25L/s based on this standard.

- 6.5** Given the similarity in fire supply requirements for both residential and commercial uses, development under the MUZ zone and the HRZ zone are likely to have similar fire fighting requirements.

Note: Any future development on the site with large un-sprinklered fire cells may require particular engineering consideration.

7. STORMWATER

- 7.1** Hydraulic neutrality will be required for discharges from the Site in both zoning scenarios, up to the 100-year ARI event with climate change.

- 7.2** HRZ zoning limits site coverage to 70%, while no specific limits are specified for MUZ zoning. All building types will be required to demonstrate that they can meet neutrality & quality requirements for consent.

- 7.3** The Site is located within a greenfield area, with large surrounding areas where development is limited. This will allow space for the provision of attenuation and water quality treatment devices to support development on the Site.

- 7.4** I do not consider that MUZ zone will introduce new stormwater constraints that would not exist under a HRZ zoning.

8. OTHER UTILITIES

- 8.1** At present, the developable area is fully unserved by power and communications infrastructure (except temporary connections for construction). All zoning requirements will require upgrades and infrastructure to be designed by providers prior to subdivision.

9. EARTHWORKS

- 9.1** The Site presently has an earthworks and land use consent for activities associated with the construction of an engineered fill platform above the design flood event for the Hutt River. This construction will result in an engineered platform that will be suitable for slab on grade construction.

9.2 Multi-storey buildings and large buildings with alternative loading profiles may require specific foundation design. However, no additional bulk earthworks are likely to be required to develop the Site for any of the uses provided for as permitted or restricted discretionary activities under either the HRZ or MUZ zoning.

9.3 All development on the site will be subject to Greater Wellington Regional Council controls for earthworks.

10. OVERLAND FLOW AND FLOODING

10.1 After the completion of current consented earthworks, the proposed site will be elevated above the surrounding land area, and flood plain. Freeboard of 900mm has been provided to the design level flooding (return period of 440 years with allowances for climate change) from the Hutt River, and the raised nature of the platform will provide sufficient fall to easily achieve overland flow out of the development. There are no upstream areas that will flow through the development area.

11. CONCLUSION

11.1 In my opinion, and as outlined in the appended Services Infrastructure Assessment, the proposal for Mixed Use Zoning within the site can be supported within similar infrastructure parameters to those required to support High Density Residential Zoning, and therefore servicing considerations should not form a basis for the rejection of SLHL's proposal.

DATED 14th April 2023



MATT FLANNERY