



SECOND GENERATION DISTRICT PLAN

Variation 2 – Additional Housing Capacity

Section 32 Report

Appendices

February 2021

TABLE OF CONTENTS

- 1.1 Appendix 1 - 2GP Objectives and Policies referenced in Section 32 Report (December 2020)
- 1.2 Appendix 2 - DCC 3 Waters Memorandum on rule changes (December 2020)
- 1.3 Appendix 3 - General Residential 1 Assessment of Effects on Residential Character and Amenity (January 2021)
- 1.4 Appendix 4 - Sites assessed for rezoning but not included in final proposal (December 2020)
- 1.5 Appendix 5 - Site Assessment Criteria Table (December 2020)
- 1.6 Appendix 6 - Site Assessments
- 1.7 Appendix 7 - DCC Memorandum from Landscape Architect (January 2020)
- 1.8 Appendix 8 - DCC Memorandum from DCC Biodiversity Advisor (November 2020)
- 1.9 Appendix 9 - Medium density character assessments (January 2021)
- 1.10 Appendix 10 - 2GP Map Amendments (January 2021)



SECOND GENERATION DISTRICT PLAN

Variation 2 – Additional Housing Capacity

Section 32 Report

Appendix 2

DCC 3 Waters Memorandum on rule changes

December 2020

TO: City Development

FROM: 3 Waters

DATE: 18 December 2020

SUBJECT: **EFFECTS OF PROPOSED 2GP VARIATION 2 RULE CHANGES ON 3 WATERS INFRASTRUCTURE**

As part of the suite of rule changes proposed for the General Residential 1 Zone and Township & Settlement Zone (serviced for wastewater) within Variation 2 of the Second Generation Plan (2GP), the following changes may impact on 3 Waters infrastructure:

- A1 - Relaxing the family flats rules;
- A2 - Permitting a duplex/two residential units in a single building on one site; and
- A3 - Reducing the minimum site size from 500m² to 400m².

The purpose of this memo is to summarise how the potential impact of these proposed changes was assessed and what the outcome of this assessment was.

ASSESSMENT PRIOR TO PROPOSED RULE CHANGES

Prior to the proposed rule changes, 3 Waters had assessed potential infrastructure impacts based on a “maximum possible development scenario”. The maximum possible development scenario considers the land areas being rezoned, the minimum lot size possible through the zone rules, and the future occupancy rate to calculate the maximum population / number of lots / percentage impervious surface coverage for the Wastewater / Water Supply / Stormwater hydraulic models. These are then used to assess the demands placed on the 3 Waters infrastructure and identify which infrastructure lacks the necessary capacity to service the rezoning and would need to be upgraded.

RULE CHANGES ASSESSMENT

Following the proposal of the rule changes, an initial assessment of impacts on 3 Waters infrastructure was carried out by DCC’s consultant, AR & Associates Ltd, detailed in the attached Memo (Ref. P19-037-M01-RevB). A “most likely development scenario” was used for comparison to the original assessment (carried out based on “maximum possible development scenario”), as this was considered most appropriate when considering growth in the next 30 years. This was based on the likely development capacity that would be added by the rule changes, as modelled in DCC’s housing capacity assessment model. This assessment indicated that the most likely development scenario under the Variation 2 rule changes generally has a lower network demand than the maximum possible development scenario. Exceptions were:

- Otago Peninsula – additional 48 lots
- Harbourside – additional 52 lots
- Mosgiel Central – additional 38 lots
- Forbury – additional 30 lots
- Bathgate Park – additional 33 lots
- St Kilda North – additional 255 lots

The Bathgate Park and St Kilda North areas are already zoned as GR2 so can be discounted. The reason for the result indicating additional capacity is an anomaly in the assessment methodology where existing GR2 sites were not excluded from the assessment of proposed GR1 rule changes.

For all of the other exceptions, the number of additional lots and associated impacts on 3 Waters infrastructure was considered to be minor, particularly when balanced against higher impacts assessed in other areas in the original maximum possible development scenario 3 Waters infrastructure impacts assessment.

Subsequent to the initial assessment of the rule changes by AR & Associates Ltd, the housing capacity model was updated using the new 2019 property rating valuations. This resulted in an increase in likely development capacity that would be added by the rule changes due to improvements in the economic feasibility of applying the new rule changes. The change in likely development capacity was then reassessed for infrastructure effects by DCC 3 Waters.

A test scenario was produced so that a new assessment could be made, the primary output of this test scenario was the map “Yield comparison with AR modelling - GR1 and TSZ retic only.pdf” (see attached). This compared:

- The expected 30 year yield within GR1 and reticulated TSZ areas, based on the proposed Variation 2 rule changes (400m² site sizes and duplexes), and
- The maximum possible development scenario that had been used for assessing 3 Waters infrastructure impacts.

This new assessment indicated that only Mosgiel would be expected to grow more as a result of the proposed rule changes than what had originally been assessed based on the “maximum possible development scenario”. The increase was assessed as an additional 38 lots. 3 Waters assessed the impact of these additional lots as follows:

- Water supply
 - Minor impact, manageable within future works already identified as being required to enable other Mosgiel growth and budgeted in draft 10 Year Plan.
- Wastewater
 - Minor impact but manageable (the original 3 Waters maximum possible development scenario assessment included a number of potential Variation 2 sites that were later discounted so the minor increase associated with the Variation 2 rule changes would be accommodated within this).
- Stormwater
 - No impact. Proposed rule changes do not allow an increase in imperviousness.

The conclusion from assessing the proposed rule changes indicated at the start of this memo has been that the proposed rule changes are considered to be acceptable from a 3 Waters infrastructure perspective. They generally fall within the maximum possible development scenario that had originally been used for assessing 3 Waters infrastructure impacts and identifying future upgrades and associated funding to accommodate growth. In Mosgiel, where effects were greater than the original assessment, these effects were considered to be minor and mitigated by other factors.

Regards,

Jared Oliver
ENGINEERING SERVICES TEAM LEADER

Attachments:

- P19-037-M02-RevB - Zone rule change.pdf
- Yield comparison with AR modelling - GR1 and TSZ retic only.pdf

Memo

To	DCC	Date	28/11/2019
Attn.	Jared Oliver	Pages	3 + Appendix
From	Lisa Dowson & Tristan Jamieson	Ref.	P19-037-M01-RevB
Re. //	2GP Zone Rule Change Review		

Dear Jared,

In response to Dunedin City Council (DCC) discussions and emails of 11/12/19 around a proposed rule change for the 2GP zones, as applicable to the existing 2GP General Residential 1 zone (Variation 2).

The proposed Variation 2 rule change includes the following changes:

- Decreasing the minimum site size from 500m² to 400m²
- Allowing two duplex units and a granny flat (up to 60m² and which anyone could live in) on each property
- Retaining the maximum habitable room standard (1 per 100m² of site area)

The changes would apply to the General Residential 1 and Township and Settlement zones, excluding the parts of the Township and Settlement zone that are within the non-reticulated wastewater mapped area.

The changes would not have any effect on the maximum impervious area of 50% per lot allowable under the current 2GP rules for the zone.

Possible Implications

The proposed rule change has implications in that the rules allow for additional development than is allowed for under the 2GP. This will go some way towards DCC meeting their identified housing demand under the National Policy Statement for Urban Development Capacity (NPS-UDC).

As there is no change to the maximum % imperviousness allowable per lot, there are unlikely to be any implications for stormwater.

As there is a potential increase in the number of lots possible, there is likely to be an increased demand on the Water Supply and the Waste Water network.

Sensitivity check

AR & Associates and Watershed have assessed the future demand on the waste water and water supply networks utilising an assumed maximum possible development scenario, as at the time of the assessment, it was not known where development uptake was most likely.

The model and site assessment results are therefore conservative, as development is unlikely to occur to the maximum possible in most locations across the city.

DCC's Planning Team has developed a housing capacity model that indicates the maximum probable development scenario for the city (rather than the maximum possible) which is the most likely maximum development scenario for the city over the next 30 years. The housing capacity model has since been used to produce a property-level layer showing DCC's assessment of the 30-year housing development capacity under the current 2GP rules and the proposed Variation 2 rules. The model results include the likely number of future connections at a property level, and also aggregated to the suburb level.

It may be necessary to assess the implications of the proposed Variation 2 zone rule change on the waste water and water supply networks due to the likely increased development capacity compared to the existing 2GP rules. However, due to the conservative approach undertaken for the modelling, it is possible that the most probable development scenario including the rule change may fall within the conservatism of the maximum possible scenario modelled for the current 2GP rules. To test this assumption, Watershed have undertaken the following tasks:

1. Extracted the existing number of connections at a suburb scale from the water supply model
2. Extracted the maximum possible number of connections at a suburb scale.
3. Calculated the most likely number of connections (30-year projection) from the existing connections and the 2GP+Variation 2 capacity outputs.
4. Mapped the difference between items 2 and 3 above.

Results and conclusion

The assessment has found that in most suburbs, the most likely development scenario under the Variation 2 rule change has a lower network demand than the maximum possible development scenario modelled using the 2GP rules (appended below). The exceptions are:

1. Otago Peninsular - the modelled maximum is only 18% of the planning capacity. (10 vs 58 lots). The planning assessment has properties allocated well outside of the current service boundary (2-8km away). It is likely these lots would be self-serviced, or are serviced by small local schemes but they are not part of the city's serviced area. It is appropriate that this growth capacity is not included in the model as they'll have no impact on the network demand.
2. Harbourside - the model shows 30% of the planning capacity. (24 vs 76 lots). The difference in demand in the model would be unlikely to cause any significant issues. The likely additional 50 lots distributed over the whole of the Harbourside area it is not considered to be a significant increase in residential demand. In addition, some of the Harbourside area includes industrial uses, which typically have a high water and waste demand.
3. Mosgiel Central – the model shows 97% of the planning capacity. (1,286 vs 1,324 lots)
4. Forebury – the model shows 95% of the planning capacity. (565 vs 595 lots)
5. Bathgate Park - the model shows 97% of the planning capacity. (1,084 vs 1,117 lots)
6. St Kilda North - the model shows 80% of the planning capacity. (1,083 vs 1,338 lots)

We are therefore of the opinion that the proposed Variation 2 zone rule change will not result in any additional demand on the network beyond what has already been modelled, subject to the limitations of DCC's Demand Capacity model.

I look forward to your feedback once you've had a chance to go over the information.

Regards,



Lisa Dowson
Bsc (Hons), Msc
MWNZ
AR & Associates Ltd



Tristan Jamieson
BA, BE
MWNZ
Watershed Ltd

Encl. Comparison Map

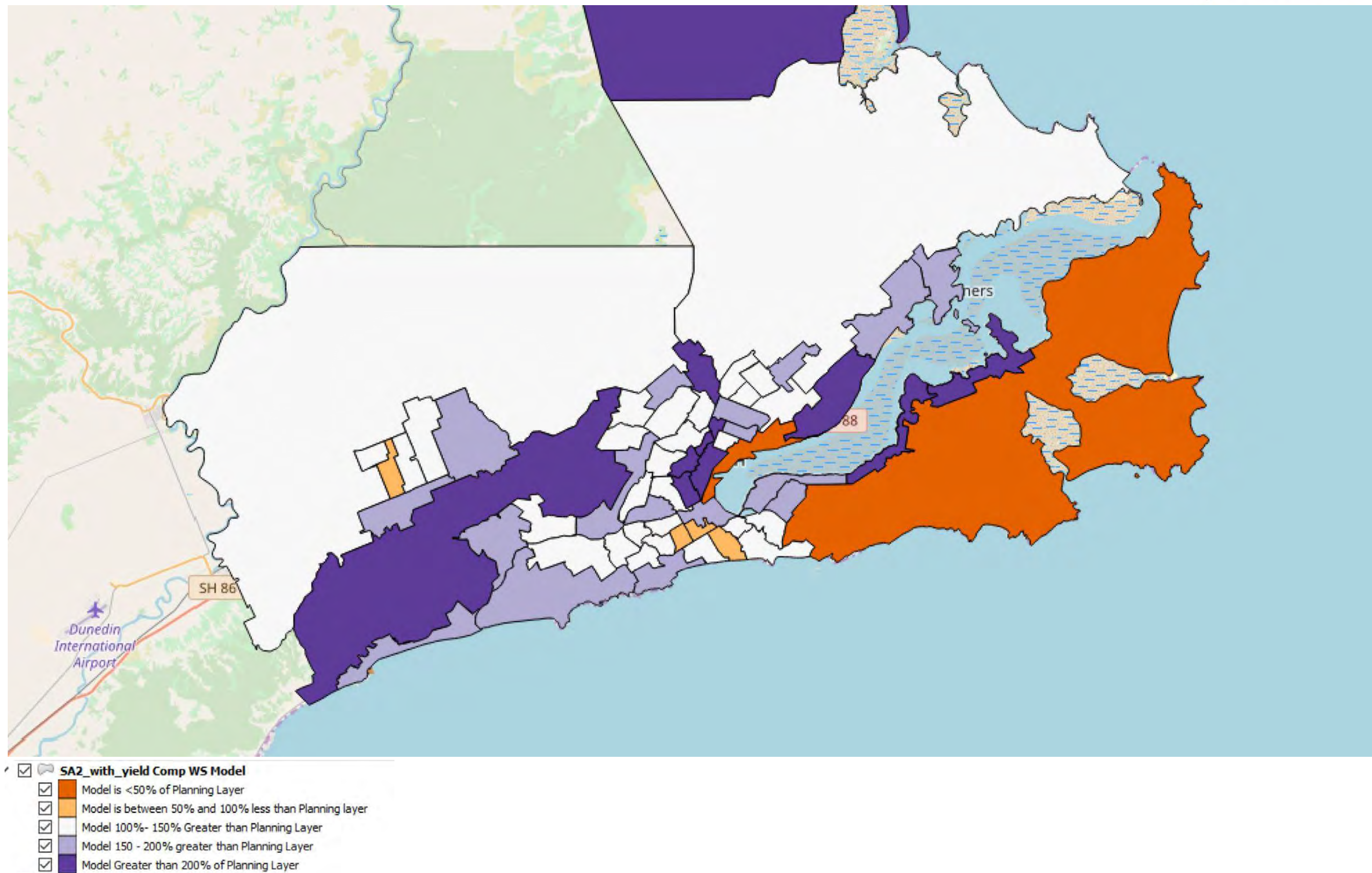
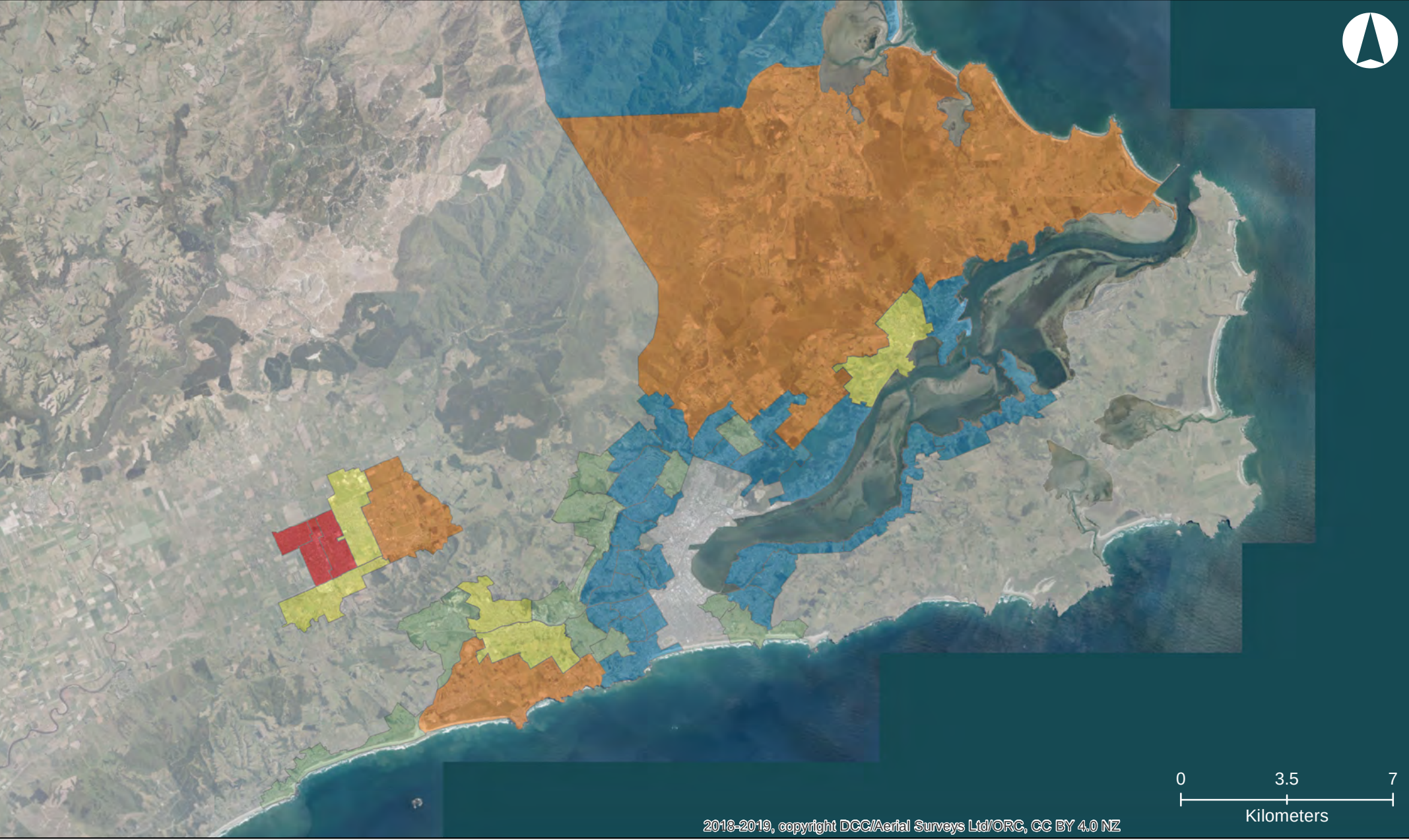


Figure 1: Comparison between Maximum Possible lots (2GP scenario) and Maximum Probable lots (2GP Var 2 zone rule change scenario)

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Variation 2

Comparison between V2 rule changes yield and growth assumed in AR modelling

30/06/2020

Variation 2 : Water supply model ratio	
	0.51 - 0.75
	0.76 - 1.00
	1.01 - 2.00
	0.00 - 0.25
	0.26 - 0.50