Urban Uplift Testing Areas – City Algorithmic Modelling Summary.

October 2023

Final

Status: Mana whenua issues, opportunities or values were not assessed as part of this report. That further research will include investigations into Māori Land ownership and Treaty settlement obligations, and engagement with Mana Whenua leadership will take place to discuss these opportunities at future phases of the project.

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Contents

Glossary / Terms

Term / Acronym	Definition
CAT	City Algorithmic Tool – The parametric model we have used to develop this
Existing GFA	GFA currently within the walkable catchment
FAR	Floor Area Ratio
GFA	Gross Floor Area
GFA Additional (CAT)	GFA Modelled in CAT
GFA Development Sites	GFA included in specific sites we have more detail on – i.e committed masterplans
GFA NoR	GFA Proposed in the NOR
GFA Removed	Existing GFA removed to provide for uplift
LUTI	Land Use Transport Integration – A model used to develop inputs for the CAT Modelling.
LV/CV Ratio	Land Value / Capital Value Ratio
NoR	Notice of Requirement
NPSUD	National Policy Statement for Urban Development
Walkable Catchment	The 800m isochrone around a station

1. Introduction

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Purpose

This report establishes an initial baseline to understand the theoretical GFA (constrained supply) in key regeneration locations within the 800m walkable catchments for Auckland Light Rail stations.

The testing looks at two scenarios:
- **Scenario 1: Urban Do minimum (NPSUD – min requirements)** – modelled for all areas
- **Scenario 2: Do Something + (NPSUD+)** – modelled for areas where Scenario 1 does not achieve all scenarios (Dominion Junction / Kingsland and Onehunga)

A separate set of parameters is considered for the City Centre to respond to the zoning in this location, which is much more enabling of density than Scenario 1 and 2 parameters.

Further detail on the scenarios are outlined on slide 16 - 19.

Uplift testing is used alongside information about land supply and demand to understand whether there is enough 'enabled' GFA within each catchment to support the level of demand for the homes and jobs ALR may induce. It will also identify where further investigation or intervention might be required to support the level of growth and desired urban form.

The testing uses parametric modelling to build in a number of constraints and assumptions (outlined on slide 14 and 15) to allocate GFA in response to the scenario parameters. The output of this is massing (not designed or optimised) which visualises the theoretical GFA for a site. Outputs of this information are recorded as GFA (m2) and visualised in a 3D model.

It is important to note the GFA outputs from the CAT modelling are a baseline for future refinement to direct where further intervention will be required in the corridor. Further review and interrogation of the NOR area, large sites and more detailed study into realisable urban form will be undertaken in future stages. (Detail on the limitations of this assessment can be found on slide 7 and in the methodology document).

This report summarises the information from the urban uplift schedule. Assumptions for the modelling can also be found at this link

This report uses the growth assumptions from ALR Growth Options August 2023

Urban Uplift Testing Areas (6 locations)

These locations have been selected for testing as they are the key locations in the corridor where we expect the majority of growth to occur in the corridor. Some of the catchments around stations overlap and where this occurs we have merged the catchments together. The primary growth catchments are highlighted below in bold.

- **Wynyard, Te Wai Horotiu, Universities**

- **Dominion Junction** and Kingsland

- **Balmoral Road** and Sandringham South

- **Wesley**, Puketāpapa and Hayr Road

- **Onehunga** and Depot

- **Māngere Town Centre** and Te Ararata

*Mangere Bridge was not included in this study as it does not share an overlap with one of the 6 focus catchments. Further testing in future phases will pick up the analysis for this location.

Limitations of the model

It Does:

- Identify the **constrained supply** for key locations in the corridor.

- Utilise **Land Value Uplift** Data across 2021, 2031, 2041 and 2051 (input from PwC and LUTI) – This data is reflective of the transport investment only and does not capture additional value that might be achieved from urban investment.

- Builds a **theoretical urban form** based on urban planning parameters, constraints and typologies.

- Provide **guidance to where additional intervention** might be required to improve demand or supply factors in a location.

It Doesn't:

- Factor in areas or **site-specific constraints** that may impact deliverability, i.e. ground conditions, consentablility, environmental constraints etc.

- **Nuance the urban design** of individual buildings or sites to specific unit requirements, i.e. outlook.

- Factor in car-parking requirements or other functions that might reduce GFA.

- Detail the development opportunity within the **NOR** boundary.

- Build in specific information of current or proposed development other than the government / council sites.

- Consider development feasibility or desirability.

2. Methodology + Assumptions

What is the City Algorithmic Tool (CAT)

The City Algorithmic Tool (CAT) is a parametric modelling tool. Parametric modelling is a process whereby complex geometries and outputs can be calculated and modified with accuracy and efficiency. This is made possible through the ability to change the parameters or inputs to rapidly test iterations.

CAT is a parametric model based in Grasshopper and Rhino which enables the ability to pull in data from multiple sources, combining these to output a 3d development model and quantifiable data to derive theoretical GFA.

Refer to [methodology summary](#) for detailed methodology and process.
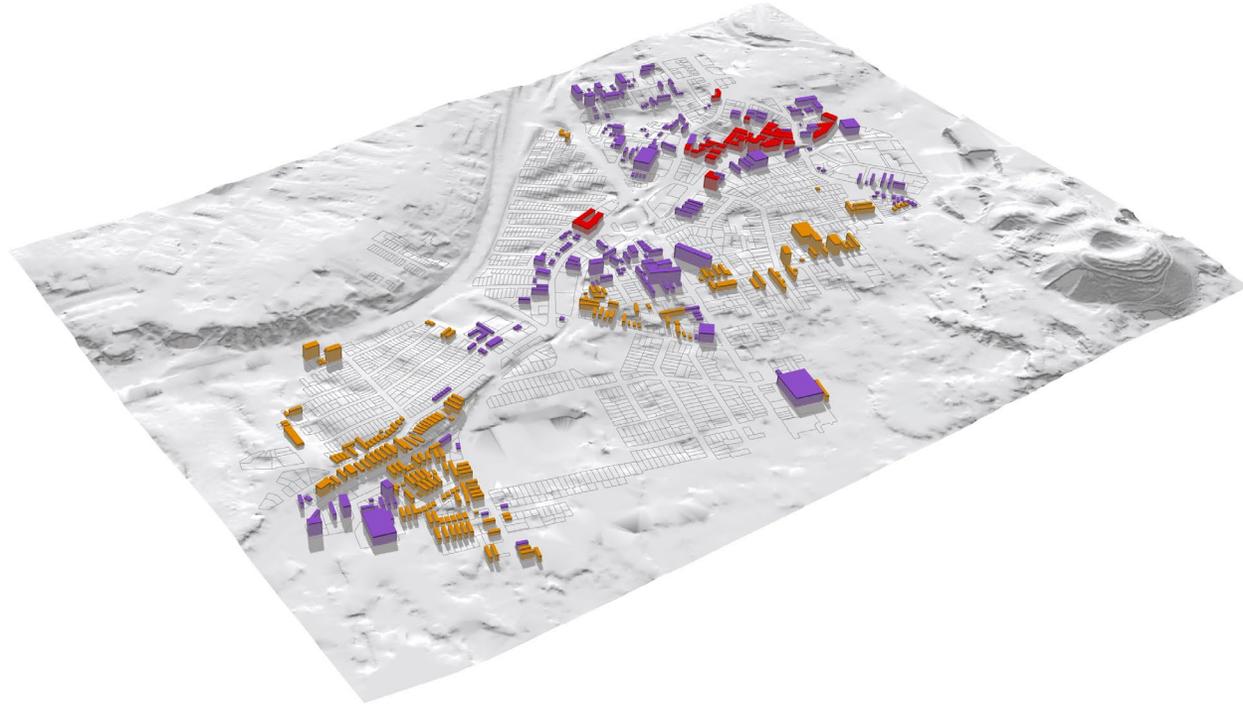
Methodology and approach

The following methodology has been used to define the extents, constraints and parameters for the baseline urban form modelling:

- 800m walkable catchment around each station established and site constraints identified
- Constraints layers are removed from the model. Refer slide 13.
- Remaining land is considered 'developable'. The development assumptions, typologies and parameters are applied to this. Refer assumptions slides and urban uplift schedule for further assumptions, typologies and parameters.
- The model outputs GFA with bulk and massing. The outputs have been combined with LV/CV data to identify development potential of sites.
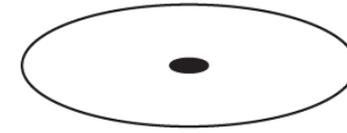
01 - Walkable catchments and site constraints identified
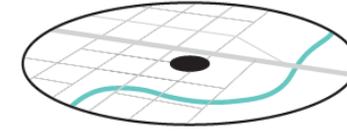
02 - Linear constraints removed (road, rail and waterways)
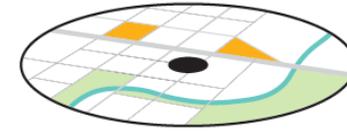
03 - Constrained land removed (open space, schools, heritage)
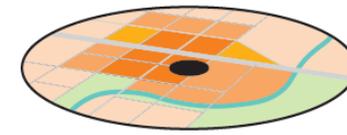
04 - Zoning parameters and overlays (setbacks, heights, volcanic viewshafts)

05 - Massing and theoretical GFA

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Agreed Parameters

In an initial workshop with attendees from the Alliance, ALR team and PwC we agreed:

- Scenario assumption parameters (including heights, setbacks and any rules for the parametric modelling).

- Typologies – Five typologies are deployed into the model

- Scope of study (800m walkable catchment, retention of viewshafts, retention of special character)

- LV/CV Ratio of 0.75

Once the Scenario 1 and 2 testing was complete, some of the parameters were revised and retested to present a more realistic situation to support the achievement of the do min scenario in Dominion Junction/Kingsland and Onehunga:

- Revise Typology and FAR assumptions

- Revise site coverage

- Revise location specific constraints, i.e Mangere limited to three stories due to known ground condition constraints (Town Centre area modelled to 6 stories).

Further testing will be required to investigate impact on GFA of removal of Volcanic Viewshafts and Height Sensitive Areas and/or Special Character Areas Overlay.

Process of Developing the CAT Outputs

Inputs

LUTI Land Value Uplift

PwC LV/CV Ratio above 0.75

Height, Site Coverage, FAR, Setbacks and Max. Density Parameters

Workshop to review initial outputs and compare with PwC Catchment Analysis as a sense check. Identify any additional changes needed.

Step 1 – Collate Info

Identify need for CAT modelling to assess theoretical development capacity

Workshop to establish Assumptions for Modelling (Scenario 1 + 2 and City Centre)

Develop Constraints Layers for Model Input.

Catchment GIS Data Typologies Parameters

Step 2 – Scenario Testing

Scenario 1 Modelling All Areas City Centre, NNR, Balmoral Mile, Te Auaunga Awa, Onehunga, Mangere

Assess ability to achieve do min / do something +

Re-test with Scenario 2 Parameters where do min and do something not achievable

Scenario 2 Modelling for NNR and Onehunga

Model City Centre Scenario

No additional testing required for City Centre

Auckland Unitary Plan Parameters

Step 3 – Review and Assess

Outcome of initial Scenario 2 testing *– Lower FAR, not achieving do min – Revise assumptions for Scenario 2*

Second Modelling Run for Scenario 2 with updated Parameters (Higher FAR Assumption, changes to Typology assumptions)

Outcome of Scenario 2 re-testing *– Higher FAR, achieves do minimum and within margin of error to achieve Do Something and Do Something +*

Reporting and Socialisation of outcomes and develop Narrative to support intervention development and Economic Case

Additional testing on specific variables – i.e Volcanic Viewshafts, Special Character – LV/CV 0.7

General Assumptions – Applicable to all scenarios

Assumptions

Assumption
No land use change in initial testing (residential to residential, business to business)
Special Character Areas Retained
Typology 5 or lots over 1600m² will be attributed an FAR
Land inside NOR applies the same assumptions around height – this is likely to be a conservative estimate of development on residual NOR land
Specific development sites (i.e. Maungawhau Station or Wesley West Masterplan) are included as GFA separate to modelled GFA
No land acquisition outside of NOR

Detailed assumptions are recorded in the urban uplift schedule.

Refer to Context Analysis Report for detailed place-based opportunities and constraints.

Constraints

Constraints	Model Response
Open Space (including Maunga)	Excluded
Māori / Mana whenua Sites of Significance	Excluded
Road and Rail Parcels	Excluded
Schools and Churches	Excluded
Volcanic Viewshafts and Height Overlay	Cap height of buildings under viewshaft and height overlays
Significant Environmental Areas (SEA's)	Excluded
Heritage Buildings	Excluded
Special Character	Excluded
Unit Title	Retained
Geology/Ground Conditions	Data unavailable
Flooding	Data unavailable

General Assumptions – Typologies and GFA

Typologies

Typology	Min Plot Width	Min Plot Depth	Typology Width	Typology Depth
Type 1 (MDRS- 3 stories)	9m	12m	9m	12m
Type 2	15m	30m	9m	22m
Type 3	25m	30m	20m	27m(can extend)
Type 4	30m	40m	20m	30m(can extend)
Type 5	40m	40m	FAR applied	

GFA per use assumptions

Average House Size	m^2
City Centre / DJ	80m^2
South of DJ to Onehunga	90m^2
South of Onehunga	120m^2

Average Job Size	m^2
City Centre / DJ / Balmoral	27m^2
Isthmus	33m^2
SH20 to Onehunga	38m^2
South of Onehunga	34m^2
Airport	41m^2

GFA assumption have come from analysis that was done in support of the economic ecosystems strategy and LUTI modelling. Refer Economic Ecosystems Strategy

3. Scenario Parameters

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Scenario 1: NPS-UD (min) Parameters and Assumptions
Applied to all areas

Parameters	Mixed Use Zones	Residential Zones
Minimum Building Height	6 stories	6 stories
Typologies	All	All
Floor Height	3.6m	3.6m
Height in Relation to Boundary	Open Space: 16.5m and 45° 19m and 60°	19m and 60°
Front Yard	0m	1.5m
Side Yard	3m	1m
Rear Yard	3m	1m (excludes corner sites)
Riparian Yard	10m	10m
Lakeside Yard	30m	30m
Coastal Yard	25m	10m
FAR for existing	Over 2.4	Over 2.4
FAR for lots over 1600m2	2.4	2.4
Building Coverage	100%	50%

More detail on scenario assumptions, parameters and their rationale can also be found at this link

NOTE: Te Ararata and Mangere Town Centre assumption is 3 stories except for town centre which has assumed 6 stories

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Scenario 2: NPS-UD+ Parameters and Assumptions
Applied only to areas where Scenario 1 does not achieve the required capacity for growth

Parameters	Mixed Use Zones	Residential Zones
Minimum Building Height	12 stories	12 stories
Typologies	All	All
Floor Height	3.6m	3.6m
Height in Relation to Boundary	Open Space: 16.5m and 45° Residential: 19m and 60°	19m and 60°
Front Yard	0m	1.5m
Side Yard	0m	0m
Rear Yard	0m	0m
Riparian Yard	10m	10m
Lakeside Yard	30m	30m
Coastal Yard	25m	10m
FAR for existing	4.1	4.1
FAR for lots over 1600m2	4.1	4.1
Building Coverage	100%	60%

More detail on scenario assumptions, parameters and their rationale can also be found at this link

City Centre Parameters
Only deployed in the City Centre

Parameters	Parameter
Minimum Building Height	Maximise enabled height
Typologies	N/A
Floor Height	3.6m
Height in Relation to Boundary	N/A
Front Yard	N/A
Side Yard	N/A
Rear Yard	N/A
Riparian Yard	N/A
Lakeside Yard	N/A
Coastal Yard	N/A
Building Coverage	N/A
Height Controls	See Fig. 1
Admission of Sunlight and Height Variation	See Fig. 2 and 3
Harbour Edge Height Control	See Fig. 4
Site Intensity/Max FAR	See Fig. 5

Figures are snapshots of specific rules from the unitary plan that have also been built into the model and have an impact.

More detail on scenario assumptions, parameters and their rationale can also be found at this link
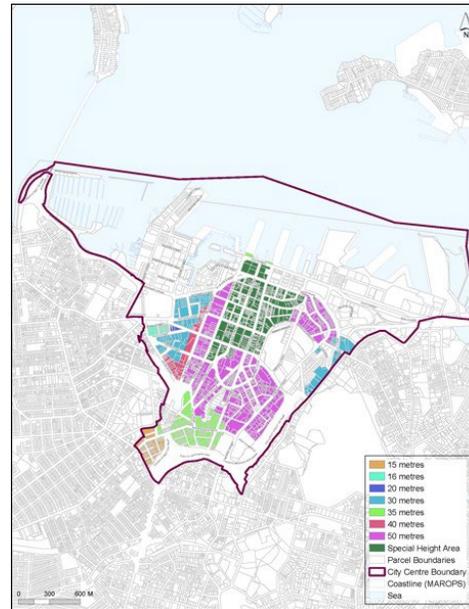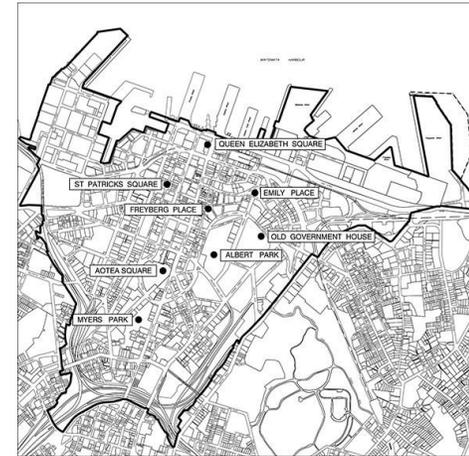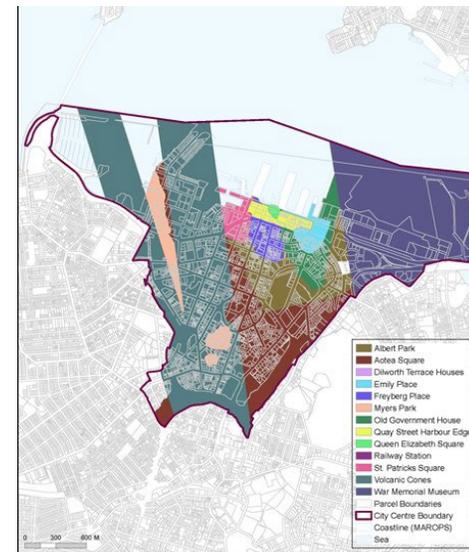

Fig 1. Maximise enabled height

Fig 2. AoS Locations

Fig 3. Special Height Variation
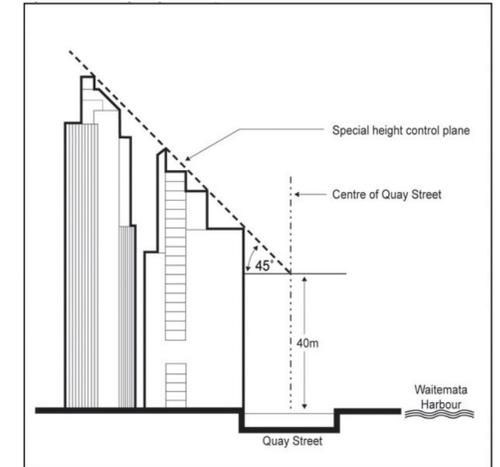
Fig 4. Harbour Edge Control

Fig 5. Site Intensity

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4. Testing Outputs

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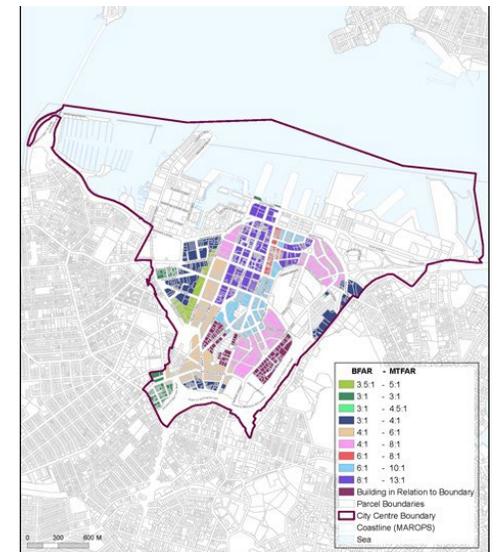
Corridor Wide – GFA
All numbers shown are m²

	2021	2031	2041	2051
DJ and Kingsland Scenario 2	992,583	992,257	1,013,226	1,018,447
Balmoral and Sandringham	1,238,356	1,590,825	1,635,493	1,661,146
Wesley, Puketapapa and Hayr Road	1,778,731	1,837,826	1,894,279	1,905,469
Onehunga Scenario 2	585,546	589,832	594,380	605,207
Te Ararata and Mangere TC	1,174,172	1,173,022	1,186,781	1,188,540
Total	5,769,388	6,183,762	6,324,159	6,378,809

How to read the following slides

The following pages display the summary of the data outputs consistently.

States the information from the growth scenarios (number of jobs and homes) and the GFA required to achieve these .

Records the theoretical uplift potential in the catchment and the components that make up this GFA

Summarises the % of the growth scenarios in response to the theoretical growth (GFA) assumptions

The plot area within the catchment that has an LV/CV ratio of >0.75

The average Floor Area Ratio (FAR) for each catchment (for the sites modelled)

A graphic of the sites modelled and a 3D representation of the GFA for each scenario

Theoretical Uplift Potential (LVU 2021)

Requirements (Urban Do Min)	Total	GFA
Homes	5,900	472,000
Jobs	5,300	143,100
Requirements (Do Something)		
Homes	7,600	608,000
Jobs	9,700	261,900
Requirements Do Something +		
Homes	10,200	816,000
Jobs	12,200	329,400

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	914,165	
	Total Additional GFA (CAT + NOR + Development Sites)	883,988	
	GFA NOR	70,284	
	GFA Development Sites	180,112	
	GFA Additional (CAT)	633,592	
	Resi Non-Resi Split	257,513	376,080
	GFA Removed	240,814	
	Total Additional GFA output less GFA removed	643,174	

% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	105%
	Do Something	74%
	Do Something +	56%

Plot area LV/CV =>0.75
444,178

Average Floor Area Ratio: 1.99

Typology 1
Typology 2
NOR
Planned development sites

Note: The four time periods indicate how land value uplift might change over time to increase the number of 'more likely sites' within the walkable catchment.

Model Outputs Summary – Dominion Junction and Kingsland

Scenario 1:

- Based on the modelling assumptions:
    - The do minimum scenario can be accommodated within the walkable catchment
    - The do something and do something + scenarios can not be accommodated with in the walkable catchment

- Under this scenario – additional interventions will be required to unlock supply in these catchments.

- In a Do Minimum growth scenario additional interventions to unlock demand may be required.

- Scenario 2 should be deployed to understand how more enabling parameters can support higher levels of growth.

Scenario 2:

- Scenario 2 deployed to retest a more enabling set of urban parameters.

- Based on the modelling assumptions:
    - The do minimum scenario can be accommodated within the walkable catchment
    - The do something scenario can be accommodated within the walkable catchment
    - The do something + scenarios cannot be accommodated within the walkable catchment.

- Additional testing should be completed in further stages to investigate what assumptions within the model could be changed to accommodate further growth in the catchments. For example – Lower LV/CV ratio (0.7), testing of removal of Height Sensitive Areas, testing of removal of Special Character Areas, additional Typology testing.

Dominion Junction and Kingsland Scenario 1

Theoretical Uplift Potential (LVU 2021)

Requirements (Urban Do Min)	Total	GFA
Homes	5,900	472,000
Jobs	5,300	143,100
Requirements (Do Something)		
Homes	7,600	608,000
Jobs	9,700	261,900
Requirements Do Something +		
Homes	10,200	816,000
Jobs	12,200	329,400

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	914,165	
	Total Additional GFA (CAT + NOR + Development Sites)	**883,988**	
	GFA NOR	70,284	
	GFA Development Sites	180,112	
	GFA Additional (CAT)	633,592	
	Resi:Non-Resi Split	257,513	376,080
	GFA Removed	240,814	
	Total Additional GFA output less GFA removed	**643,174**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	105%	
	Do Something	74%	
	Do Something +	56%	

Plot area LV/CV =>0.75
444,178

Average Floor Area Ratio: 1.99

- Residential
- Mixed-Use/Commerical
- NOR
- Planned development sites

Theoretical Uplift Potential (LVU 2031)

Requirements (Urban Do Min)	Total	GFA
Homes	5,900	472,000
Jobs	5,300	143,100
Requirements (Do Something)		
Homes	7,600	608,000
Jobs	9,700	261,900
Requirements Do Something +		
Homes	10,200	816,000
Jobs	12,200	329,400

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	914,165	
	Total Additional GFA (CAT + NOR + Development Sites)	**888,359**	
	GFA NOR	70,284	
	GFA Development Sites	180,112	
	GFA Additional (CAT)	637,963	
	Resi:Non-Resi Split	261,724	376,239
	GFA Removed	243,059	
	Total Additional GFA output less GFA removed	**645,300**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	105%	
	Do Something	74%	
	Do Something +	56%	

Plot area LV/CV =>0.75
449,458

Average Floor Area Ratio: 1.98

- ■ Residential
- ■ Mixed-Use/Commerical
- ▢ NOR
- ■ Planned development sites

Theoretical Uplift Potential (LVU 2041)

Requirements (Urban Do Min)	Total	GFA
Homes	5,900	472,000
Jobs	5,300	143,100
Requirements (Do Something)		
Homes	7,600	608,000
Jobs	9,700	261,900
Requirements Do Something +		
Homes	10,200	816,000
Jobs	12,200	329,400

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	914,165	
	Total Additional GFA (CAT + NOR + Development Sites)	**900,224**	
	GFA NOR	70,284	
	GFA Development Sites	180,112	
	GFA Additional (CAT)	649,828	
	Resi:Non-Resi Split	270,384	379,445
	GFA Removed	245,652	
	Total Additional GFA output less GFA removed	**654,572**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	106%	
	Do Something	75%	
	Do Something +	57%	

Plot area LV/CV =>0.75
454,816

Average Floor Area Ratio: 1.98

Legend:
- Residential
- Mixed-Use/Commerical
- NOR
- Planned development sites

Theoretical Uplift Potential (LVU 2051)

Requirements (Urban Do Min)	Total	GFA
Homes	5,900	472,000
Jobs	5,300	143,100
Requirements (Do Something)		
Homes	7,600	608,000
Jobs	9,700	261,900
Requirements Do Something +		
Homes	10,200	816,000
Jobs	12,200	329,400

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	914,165	
	Total Additional GFA (CAT + NOR + Development Sites)	**905,471**	
	GFA NOR	70,284	
	GFA Development Sites	180,112	
	GFA Additional (CAT)	655,075	
	Resi:Non-Resi Split	273,561	317,065
	GFA Removed	247,482	
	Total Additional GFA output less GFA removed	**657,989**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	107%	
	Do Something	76%	
	Do Something +	57%	
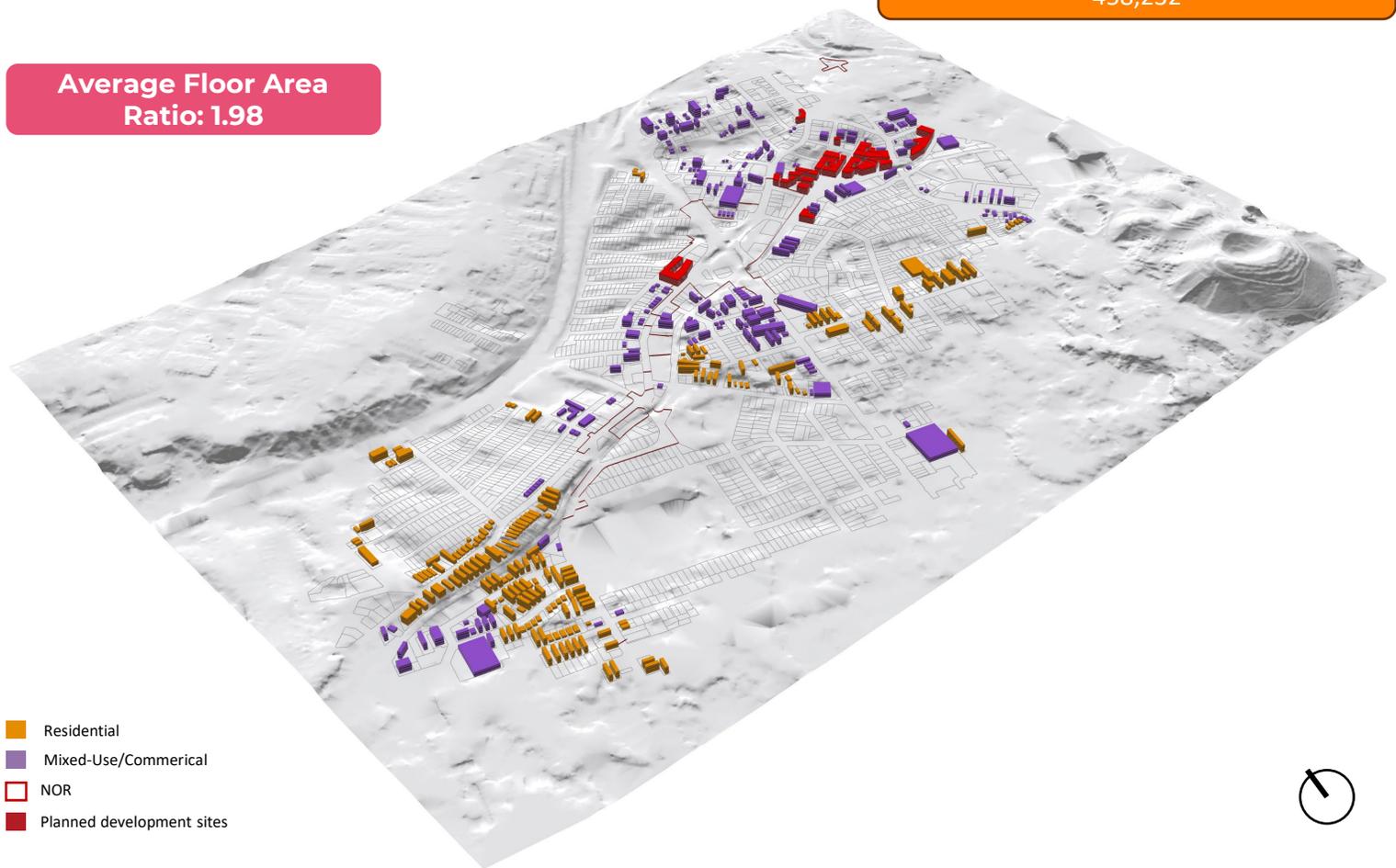
Plot area LV/CV =>0.75
458,232

Average Floor Area Ratio: 1.98

- 🟧 Residential
- 🟪 Mixed-Use/Commerical
- ⬜ NOR
- 🟥 Planned development sites

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Dominion Junction and Kingsland Scenario 2

Theoretical Uplift Potential (LVU 2021)

Requirements (Urban Do Min)	Total	GFA
Homes	5,900	472,000
Jobs	5,300	143,100
Requirements (Do Something)		
Homes	7,600	608,000
Jobs	9,700	261,900
Requirements Do Something +		
Homes	10,200	816,000
Jobs	12,200	329,400

	Summary	m2	
	Existing GFA	914,165	
Theoretical Uplift Potential (LVU 2021)	Total Additional GFA (CAT + NOR + Development Sites)	1,233,397	
	GFA NOR	140,000	
	GFA Development Sites	193,659	
	GFA Additional (CAT)	899,738	
	Resi:Non-Resi Split	361,124	583,614
	GFA Removed	240,814	
	Total Additional GFA output less GFA removed	992,583	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	161%	
	Do Something	114%	
	Do Something +	87%	

Plot area LV/CV =>0.75
444,178

Average Floor Area Ratio: 2.78

Theoretical Uplift Potential (LVU 2031)

Requirements (Urban Do Min)	Total	GFA
Homes	5,900	472,000
Jobs	5,300	143,100
Requirements (Do Something)		
Homes	7,600	608,000
Jobs	9,700	261,900
Requirements Do Something +		
Homes	10,200	816,000
Jobs	12,200	329,400

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	914,165	
	Total Additional GFA (CAT + NOR + Development Sites)	**1,233,941**	
	GFA NOR	140,000	
	GFA Development Sites	193,659	
	GFA Additional (CAT)	900,282	
	Resi:Non-Resi Split	317,500	582,783
	GFA Removed	241,684	
	Total Additional GFA output less GFA removed	**992,257**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	161%	
	Do Something	114%	
	Do Something +	87%	

Plot area LV/CV =>0.75 446,250

Average Floor Area Ratio: 2.77

- 🟧 Residential
- 🟪 Mixed-Use/Commerical
- ▢ NOR
- 🟥 Planned development sites

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Theoretical Uplift Potential (LVU 2041)

Requirements (Urban Do Min)	Total	GFA
Homes	5,900	472,000
Jobs	5,300	143,100
Requirements (Do Something)		
Homes	7,600	608,000
Jobs	9,700	261,900
Requirements Do Something +		
Homes	10,200	816,000
Jobs	12,200	329,400

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	914,165	
	Total Additional GFA (CAT + NOR + Development Sites)	**1,262,299**	
	GFA NOR	140,000	
	GFA Development Sites	193,659	
	GFA Additional (CAT)	928,640	
	Resi:Non-Resi Split	339,021	589,620
	GFA Removed	249,073	
	Total Additional GFA output less GFA removed	**1,013,226**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	165%	
	Do Something	116%	
	Do Something +	88%	

Plot area LV/CV =>0.75
460,483

Average Floor Area Ratio: 2.74

- 🟧 Residential
- 🟪 Mixed-Use/Commerical
- ⬜ NOR
- 🟥 Planned development sites

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Theoretical Uplift Potential (LVU 2051)

Requirements (Urban Do Min)	Total	GFA
Homes	5,900	472,000
Jobs	5,300	143,100
Requirements (Do Something)		
Homes	7,600	608,000
Jobs	9,700	261,900
Requirements Do Something +		
Homes	10,200	816,000
Jobs	12,200	329,400

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	914,165	
	Total Additional GFA (CAT + NOR + Development Sites)	**1,270,972**	
	GFA NOR	140,000	
	GFA Development Sites	193,659	
	GFA Additional (CAT)	937,313	
	Resi:Non-Resi Split	345,250	592,064
	GFA Removed	252,525	
	Total Additional GFA output less GFA removed	**1,018,447**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	166%	
	Do Something	117%	
	Do Something +	89%	

Plot area LV/CV =>0.75
465,210

Average Floor Area Ratio: 2.73
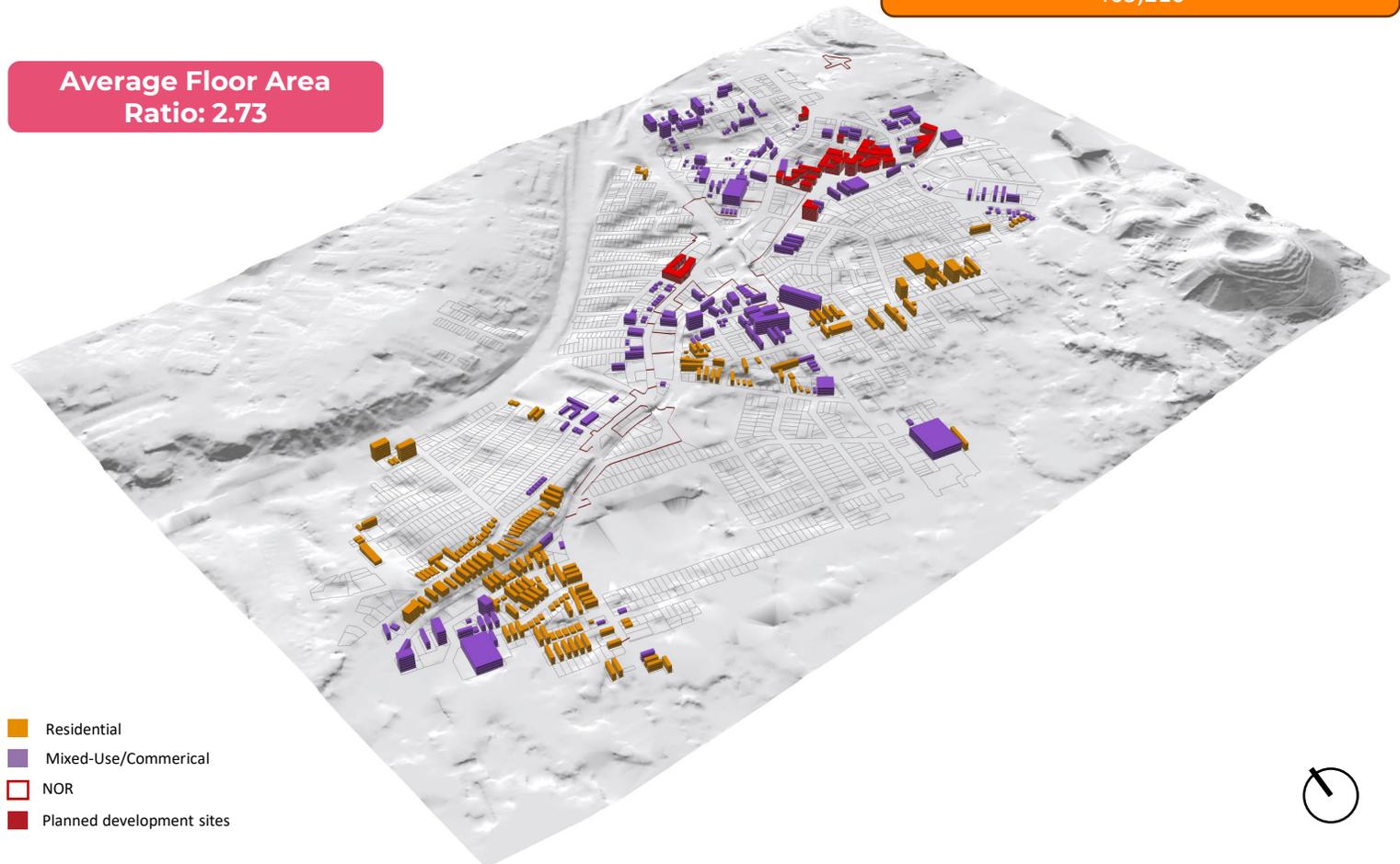
Legend:
- Residential
- Mixed-Use/Commerical
- NOR
- Planned development sites

Balmoral and Sandringham South

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Model Outputs Summary

Scenario 1:

- Based on the modelling assumptions:
  - The do minimum, do something and do something + scenarios scenario can be accommodated within the walkable catchment

- Under this scenario – additional interventions will not be required to unlock supply in these catchments.

- Additional testing should be completed in further stages to investigate what assumptions within the model could be changed to accommodate further growth in the catchments. For example – Lower LV/CV ratio (0.7), testing of removal of Height Sensitive Areas, testing of removal of Special Character Areas, additional Typology testing.

Balmoral and Sandringham South Scenario 1

Theoretical Uplift Potential (LVU 2021)

Requirements (Urban Do Min)	Total	GFA
Homes	3,400	306,000
Jobs	-600	-19,800

Requirements (Do Something)	Total	GFA (m2)
Homes	4,800	432,000
Jobs	2,300	75,900

Requirements Do Something +	Total	GFA (m2)
Homes	6,400	576,000
Jobs	2,900	95,700

Average Floor Area Ratio: 1.64

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	587,706	
	Total Additional GFA (CAT + NOR)	**1,826,062**	
	GFA NOR	11,483	
	GFA Additional (CAT)	1,814,624	
	Resi:Non-Resi Split	1,762,451	52,173
	GFA Removed	587,706	
	Total Additional GFA output less GFA removed	**1,238,356**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	433%	
	Do Something	244%	
	Do Something +	184%	

Legend:
- Residential
- Commercial/Mixed Use
- NOR

Theoretical Uplift Potential (LVU 2031)

Requirements (Urban Do Min)	Total	GFA
Homes	3,400	306,000
Jobs	-600	-19,800

Requirements (Do Something)	Total	GFA (m2)
Homes	4,800	432,000
Jobs	2,300	75,900

Requirements Do Something +	Total	GFA (m2)
Homes	6,400	576,000
Jobs	2,900	95,700

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	587,706	
	Total Additional GFA (CAT + NOR)	1,900,388	
	GFA NOR	11,483	
	GFA Additional (CAT)	1,888,950	
	Resi:Non-Resi Split	1,829,456	59,495
	GFA Removed	309,563	
	Total Additional GFA output less GFA removed	1,590,825	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	556%	
	Do Something	313%	
	Do Something +	237%	

Plot area LV/CV =>0.75
1,159,011

Average Floor Area Ratio: 1.64

- Residential
- Commercial/Mixed Use
- NOR

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Theoretical Uplift Potential (LVU 2041)

Plot area LV/CV =>0.75
1,291,835

Requirements (Urban Do Min)	Total	GFA
Homes	3,400	306,000
Jobs	-600	-19,800
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	4,800	432,000
Jobs	2,300	75,900
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	6,400	576,000
Jobs	2,900	95,700

Average Floor Area Ratio: 1.64

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	587,706	
	Total Additional GFA (CAT + NOR)	**1,958,770**	
	GFA NOR	11,483	
	GFA Additional (CAT)	1,947,332	
	Resi:Non-Resi Split	1,887,837	59,495
	GFA Removed	323,277	
	Total Additional GFA output less GFA removed	**1,635,493**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	571%	
	Do Something	322%	
	Do Something +	243%	

Legend:
- ■ Residential
- ■ Commercial/Mixed Use
- □ NOR

Theoretical Uplift Potential (LVU 2051)

Requirements (Urban Do Min)	Total	GFA
Homes	3,400	306,000
Jobs	-600	-19,800

Requirements (Do Something)	Total	GFA (m2)
Homes	4,800	432,000
Jobs	2,300	75,900

Requirements Do Something +	Total	GFA (m2)
Homes	6,400	576,000
Jobs	2,900	95,700

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	587,706	
	Total Additional GFA (CAT + NOR)	**1,990,443**	
	GFA NOR	11,438	
	GFA Additional (CAT)	1,979,005	
	Resi:Non-Resi Split	1,910,790	68,215
	GFA Removed	329,297	
	Total Additional GFA output less GFA removed	**1,661,146**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	580%	
	Do Something	327%	
	Do Something +	247%	

Plot area LV/CV =>0.75
1,207,060

Average Floor Area Ratio: 1.65
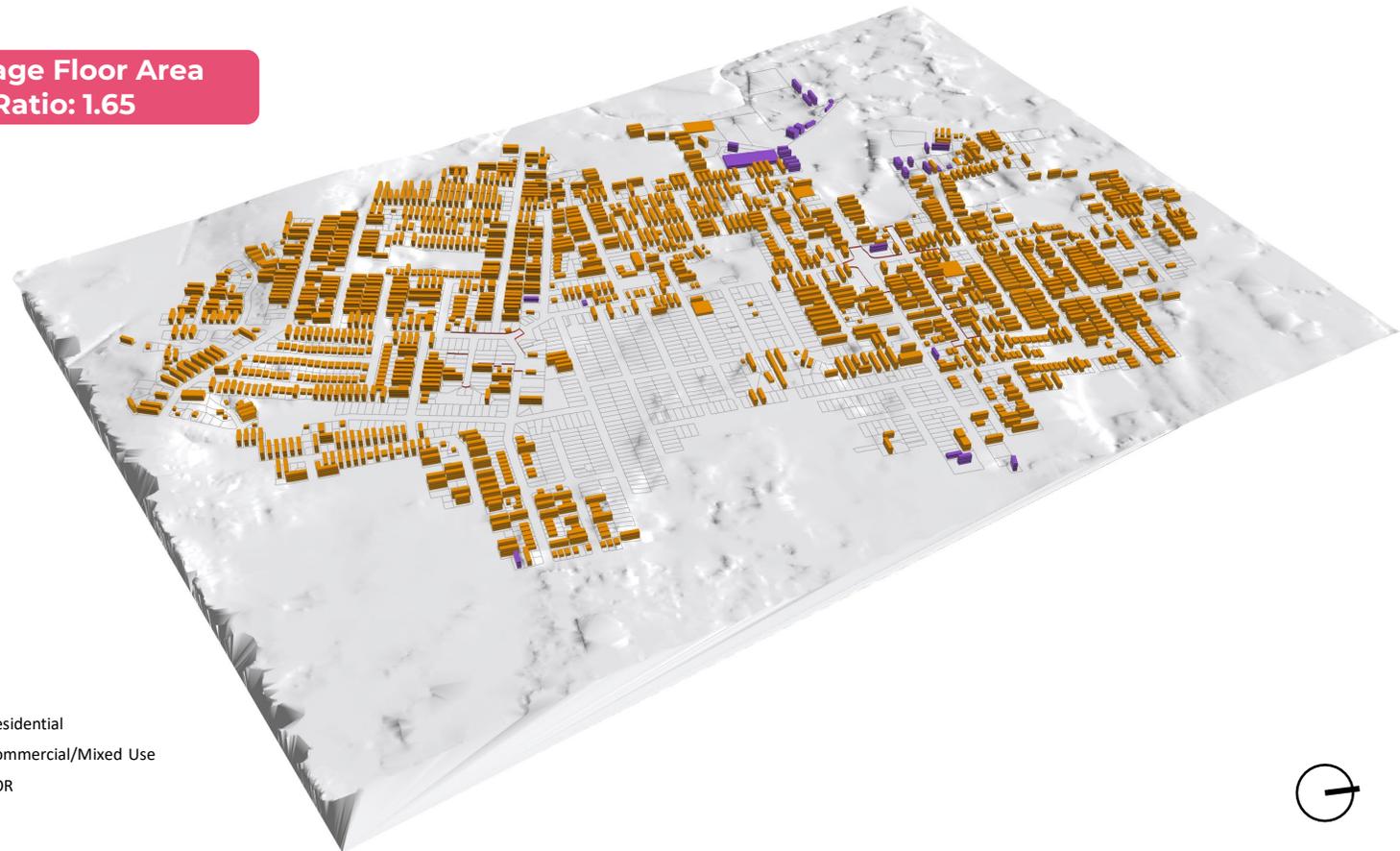
- Residential
- Commercial/Mixed Use
- NOR

Wesley, Puketāpapa and Hayr Road

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Model Outputs Summary

Scenario 1:

- Based on the modelling assumptions:
    - The do minimum, do something and do something + scenarios scenario can be accommodated within the walkable catchment

- Under this scenario – additional interventions will not be required to unlock supply in these catchments.

- Additional testing should be completed in further stages to investigate what assumptions within the model could be changed to accommodate further growth in the catchments. For example – Lower LV/CV ratio (0.7), testing of removal of Height Sensitive Areas, testing of removal of Special Character Areas, additional Typology testing.

Wesley, Puketāpapa and Hayr Road Scenario 1

Theoretical Uplift Potential (LVU 2021)

Requirements (Urban Do Min)	Total	GFA
Homes	5,700	513,000
Jobs	1,600	52,800
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	6,200	558,000
Jobs	3,000	99,000
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	8,400	756,000
Jobs	3,700	122,100

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	689,552	
	Total Additional GFA (CAT + NOR + Development Sites)	**2,069,016**	
	GFA NOR	4,162	
	GFA Wesley Masterplan	373,149	
	GFA Additional (CAT)	1,691,705	
	Resi:Non-Resi Split	1,363,968	327,737
	GFA Removed	290,285	
	Total Additional GFA output less GFA removed	**1,778,731**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	314%	
	Do Something	271%	
	Do Something +	203%	

Plot area LV/CV =>0.75
1,154,183

Average Floor Area Ratio: 1.79

■ Residential
■ Commercial/Mixed Use
▢ NOR

Theoretical Uplift Potential (LVU 2031)

Requirements (Urban Do Min)	Total	GFA
Homes	5,700	513,000
Jobs	1,600	52,800
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	6,200	558,000
Jobs	3,000	99,000
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	8,400	756,000
Jobs	3,700	122,100

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	689,552	
	Total Additional GFA (CAT + NOR + Development Sites)	**2,211,464**	
	GFA NOR	4,162	
	GFA Wesley Masterplan	373,149	
	GFA Additional (CAT)	1,834,153	
	Resi:Non-Resi Split	1,377,893	456,260
	GFA Removed	373,638	
	Total Additional GFA output less GFA removed	**1,837,826**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	325%	
	Do Something	280%	
	Do Something +	209%	

Plot area LV/CV =>0.75
1,231,457

Average Floor Area Ratio: 1.80

- Residential
- Commercial/Mixed Use
- NOR

Theoretical Uplift Potential (LVU 2041)

Requirements (Urban Do Min)	Total	GFA
Homes	5,700	513,000
Jobs	1,600	52,800
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	6,200	558,000
Jobs	3,000	99,000
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	8,400	756,000
Jobs	3,700	122,100

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	689,552	
	Total Additional GFA (CAT + NOR + Development Sites)	**2,230,930**	
	GFA NOR	4,162	
	GFA Wesley Masterplan	373,149	
	GFA Additional (CAT)	1,853,619	
	Resi:Non-Resi Split	1,392,461	461,159
	GFA Removed	336,651	
	Total Additional GFA output less GFA removed	**1,894,279**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	335%	
	Do Something	288%	
	Do Something +	216%	

Plot area LV/CV =>0.75
1,248,138

Average Floor Area Ratio: 1.79

- Residential
- Commercial/Mixed Use
- NOR

Theoretical Uplift Potential (LVU 2051)

Requirements (Urban Do Min)	Total	GFA
Homes	5,700	513,000
Jobs	1,600	52,800
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	6,200	558,000
Jobs	3,000	99,000
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	8,400	756,000
Jobs	3,700	122,100

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	689,552	
	Total Additional GFA (CAT + NOR + Development Sites)	**2,248,951**	
	GFA NOR	4,162	
	GFA Wesley Masterplan	373,149	
	GFA Additional (CAT)	1,871,640	
	Resi:Non-Resi Split	1,399,336	472,305
	GFA Removed	343,482	
	Total Additional GFA output less GFA removed	**1,905,469**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	337%	
	Do Something	290%	
	Do Something +	217%	

Plot area LV/CV =>0.75
1,260,770

Average Floor Area Ratio: 1.78

Residential
Commercial/Mixed Use
NOR

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Onehunga

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Model Outputs Summary

Scenario 1:

- Based on the modelling assumptions:
  - The do minimum scenario can be accommodated within the walkable catchment
  - The do something and do something + scenarios can not be accommodated with in the walkable catchment
- Under this scenario – additional interventions will be required to unlock supply in these catchments.
- In a Do Minimum growth scenario additional interventions to unlock demand may be required.
- Scenario 2 should be deployed to understand how more enabling parameters can support higher levels of growth.

Scenario 2:

- Scenario 2 deployed to retest a more enabling set of urban parameters.
- Based on the modelling assumptions:
  - The do minimum scenario can be accommodated within the walkable catchment
  - The do something scenario can be accommodated within the walkable catchment
  - The do something + scenarios cannot be accommodated within the walkable catchment.
- Additional testing should be completed in further stages to investigate what assumptions within the model could be changed to accommodate further growth in the catchments. For example – Lower LV/CV ratio (0.7), testing of removal of Height Sensitive Areas, testing of removal of Special Character Areas, additional Typology testing.

Onehunga Scenario 1

Theoretical Uplift Potential (LVU 2021)

Requirements (Urban Do Min)	Total	GFA
Homes	4,800	432,000
Jobs	400	15,200

Requirements (Do Something)	Total	GFA (m2)
Homes	4,700	423,000
Jobs	2,000	76,000

Requirements Do Something +	Total	GFA (m2)
Homes	5,600	504,000
Jobs	2,500	95,000

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	402,968	
	Total Additional GFA (CAT + NOR)	**482,493**	
	GFA NOR	22,780	
	GFA Additional (CAT)	459,713	
	Resi:Non-Resi Split	64,319	395,394
	GFA Removed	137,563	
	Total Additional GFA output less GFA removed	**344,930**	

% of Growth Scenario (within 800m catchment without potential for further investment)		
Do Min	77%
Do Something	69%
Do Something +	58%

**Plot area LV/CV =>0.75
278,104**

Average Floor Area Ratio: 1.73

Legend
- Residential
- Commercial/Mixed Use
- NOR

Theoretical Uplift Potential (LVU 2031)

Requirements (Urban Do Min)	Total	GFA
Homes	4,800	432,000
Jobs	400	15,200
Requirements (Do Something)	Total	GFA (m2)
Homes	4,700	423,000
Jobs	2,000	76,000
Requirements Do Something +	Total	GFA (m2)
Homes	5,600	504,000
Jobs	2,500	95,000

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	402,968	
	Total Additional GFA (CAT + NOR)	**488,780**	
	GFA NOR	22,780	
	GFA Additional (CAT)	466,000	
	Resi:Non-Resi Split	70,606	395,394
	GFA Removed	139,652	
	Total Additional GFA output less GFA removed	**349,128**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	78%	
	Do Something	70%	
	Do Something +	58%	

**Plot area LV/CV =>0.75
284,045**

Average Floor Area Ratio: 1.72

- 🟧 Residential
- 🟪 Commercial/Mixed Use
- ▭ NOR

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Theoretical Uplift Potential (LVU 2041)

Plot area LV/CV =>0.75
289,869

Requirements (Urban Do Min)	Total	GFA
Homes	4,800	432,000
Jobs	400	15,200
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	4,700	423,000
Jobs	2,000	76,000
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	5,600	504,000
Jobs	2,500	95,000

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	402,968	
	Total Additional GFA (CAT + NOR)	**495,023**	
	GFA NOR	22,780	
	GFA Additional (CAT)	472,243	
	Resi:Non-Resi Split	76,717	395,526
	GFA Removed	142,185	
	Total Additional GFA output less GFA removed	**352,838**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	79%	
	Do Something	71%	
	Do Something +	59%	

Average Floor Area Ratio: 1.71

Residential
Commercial/Mixed Use
NOR

Theoretical Uplift Potential (LVU 2051)

Plot area LV/CV =>0.75
291,869

Average Floor Area Ratio: 1.72

Requirements (Urban Do Min)	Total	GFA
Homes	4,800	432,000
Jobs	400	15,200
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	4,700	423,000
Jobs	2,000	76,000
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	5,600	504,000
Jobs	2,500	95,000

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	402,968	
	Total Additional GFA (CAT + NOR)	**500,835**	
	GFA NOR	22,780	
	GFA Additional (CAT)	478,055	
	Resi:Non-Resi Split	82,529	395,526
	GFA Removed	142,791	
	Total Additional GFA output less GFA removed	**358,044**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	80%	
	Do Something	72%	
	Do Something +	60%	

Legend:
- Residential
- Commercial/Mixed Use
- NOR

Onehunga Scenario 2

Theoretical Uplift Potential (LVU 2021)

Requirements (Urban Do Min)	Total	GFA
Homes	4,800	432,000
Jobs	400	15,200
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	4,700	423,000
Jobs	2,000	76,000
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	5,600	504,000
Jobs	2,500	95,000

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	402,968	
	Total Additional GFA (CAT + NOR)	**723,109**	
	GFA NOR	40,000	
	GFA Additional (CAT)	683,109	
	Resi:Non-Resi Split	67,910	615,200
	GFA Removed	137,563	
	Total Additional GFA output less GFA removed	**585,546**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	131%	
	Do Something	117%	
	Do Something +	98%	

Average Floor Area Ratio: 2.60

Plot area LV/CV =>0.75
278,104

- 🟧 Residential
- 🟪 Commercial/Mixed Use
- ▭ NOR

Theoretical Uplift Potential (LVU 2031)

Requirements (Urban Do Min)	Total	GFA
Homes	4,800	432,000
Jobs	400	15,200
Requirements (Do Something)	Total	GFA (m2)
Homes	4,700	423,000
Jobs	2,000	76,000
Requirements Do Something +	Total	GFA (m2)
Homes	5,600	504,000
Jobs	2,500	95,000

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	402,968	
	Total Additional GFA (CAT + NOR)	**729,229**	
	GFA NOR	40,000	
	GFA Additional (CAT)	689,229	
	Resi:Non-Resi Split	74,030	615,200
	GFA Removed	139,397	
	Total Additional GFA output less GFA removed	**589,832**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	132%	
	Do Something	118%	
	Do Something +	98%	

**Plot area LV/CV =>0.75
283,460**

Average Floor Area Ratio: 2.57

■ Residential
■ Commercial/Mixed Use
□ NOR

Theoretical Uplift Potential (LVU 2041)

Requirements (Urban Do Min)	Total	GFA
Homes	4,800	432,000
Jobs	400	15,200

Requirements (Do Something)	Total	GFA (m2)
Homes	4,700	423,000
Jobs	2,000	76,000

Requirements Do Something +	Total	GFA (m2)
Homes	5,600	504,000
Jobs	2,500	95,000

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	402,968	
	Total Additional GFA (CAT + NOR)	**737,562**	
	GFA NOR	40,000	
	GFA Additional (CAT)	697,562	
	Resi:Non-Resi Split	81,107	616,456
	GFA Removed	143,182	
	Total Additional GFA output less GFA removed	**594,380**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	133%	
	Do Something	119%	
	Do Something +	99%	

Plot area LV/CV =>0.75 291,062

Average Floor Area Ratio: 2.53

- 🟧 Residential
- 🟪 Commercial/Mixed Use
- ⬜ NOR

Theoretical Uplift Potential (LVU 2051)

Requirements (Urban Do Min)	Total	GFA
Homes	4,800	432,000
Jobs	400	15,200

Requirements (Do Something)	Total	GFA (m2)
Homes	4,700	423,000
Jobs	2,000	76,000

Requirements Do Something +	Total	GFA (m2)
Homes	5,600	504,000
Jobs	2,500	95,000

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	402,968	
	Total Additional GFA (CAT + NOR)	**749,237**	
	GFA NOR	40,000	
	GFA Additional (CAT)	709,237	
	Resi:Non-Resi Split	92,782	616,456
	GFA Removed	144,030	
	Total Additional GFA output less GFA removed	**605,207**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	135%	
	Do Something	121%	
	Do Something +	101%	

Average Floor Area Ratio: 2.55

Plot area LV/CV =>0.75
294,284

- 🟧 Residential
- 🟪 Commercial/Mixed Use
- ▢ NOR

Model Outputs Summary

Scenario 1:

- Based on the modelling assumptions:
    - The do minimum, do something and do something + scenarios scenario can be accommodated within the walkable catchment

- Under this scenario – additional interventions will not be required to unlock supply in these catchments.

- Additional testing should be completed in further stages to investigate what assumptions within the model could be changed to accommodate further growth in the catchments. For example – Lower LV/CV ratio (0.7), testing of removal of Height Sensitive Areas, testing of removal of Special Character Areas, additional Typology testing.

Te Ararata and Māngere Town Centre Scenario 1

Theoretical Uplift Potential (LVU 2021)

Requirements (Urban Do Min)	Total	GFA
Homes	3,600	432,000
Jobs	-100	-3,400
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	6,400	768,000
Jobs	1,900	64,600
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	8,300	996,000
Jobs	2,400	81,600

	Summary	m2	
	Existing GFA	242,767	
	Total Additional GFA (CAT + NOR + Development Sites)	**1,272,163**	
	GFA NOR	3,749	
Theoretical Uplift Potential (LVU 2021)	*Mangere Town Centre (6 stories)*	343,770	
	GFA Additional (CAT)	924,644	
	Resi: Non-Resi Split	850,042	74,603
	GFA Removed	97,991	
	Total Additional GFA output less GFA removed	**1,174,172**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	274%	
	Do Something	141%	
	Do Something +	109%	

Plot area LV/CV =>0.75
757,223

Average Floor Area Ratio: 1.68

■ Residential
■ Commercial/Mixed Use
□ NOR

Theoretical Uplift Potential (LVU 2031)

Requirements (Urban Do Min)	Total	GFA
Homes	3,600	432,000
Jobs	-100	-3,400
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	6,400	768,000
Jobs	1,900	64,600
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	8,300	996,000
Jobs	2,400	81,600

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	242,767	
	Total Additional GFA (CAT + NOR + Development Sites)	**1,271,200**	
	GFA NOR	3,749	
	Mangere Town Centre (6 stories)	343,770	
	GFA Additional (CAT)	923,681	
	Resi: Non-Resi Split	849,079	74,603
	GFA Removed	98,178	
	Total Additional GFA output less GFA removed	**1,173,022**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	274%	
	Do Something	141%	
	Do Something +	109%	

Plot area LV/CV =>0.75
756,985

Average Floor Area Ratio: 1.68

- 🟧 Residential
- 🟪 Commercial/Mixed Use
- ▢ NOR

Theoretical Uplift Potential (LVU 2041)

Requirements (Urban Do Min)	Total	GFA
Homes	3,600	432,000
Jobs	-100	-3,400
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	6,400	768,000
Jobs	1,900	64,600
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	8,300	996,000
Jobs	2,400	81,600

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	242,767	
	Total Additional GFA (CAT + NOR + Development Sites)	**1,287,765**	
	GFA NOR	3,749	
	Mangere Town Centre (6 stories)	343,770	
	GFA Additional (CAT)	940,246	
	Resi: Non-Resi Split	865,478	74,768
	GFA Removed	100,984	
	Total Additional GFA output less GFA removed	**1,186,781**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	277%	
	Do Something	143%	
	Do Something +	110%	

Plot area LV/CV =>0.75
768,509

Average Floor Area Ratio: 1.68

Legend:
- ■ Residential
- ■ Commercial/Mixed Use
- ▢ NOR

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Theoretical Uplift Potential (LVU 2051)

Requirements (Urban Do Min)	Total	GFA
Homes	3,600	432,000
Jobs	-100	-3,400
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	6,400	768,000
Jobs	1,900	64,600
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	8,300	996,000
Jobs	2,400	81,600

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	242,767	
	Total Additional GFA (CAT + NOR + Development Sites)	**1,289,958**	
	GFA NOR	3,749	
	Mangere Town Centre (6 stories)	343,770	
	GFA Additional (CAT)	942,439	
	Resi: Non-Resi Split	867,671	74,768
	GFA Removed	101,418	
	Total Additional GFA output less GFA removed	**1,188,540**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	277%	
	Do Something	143%	
	Do Something +	110%	

Plot area LV/CV =>0.75
770,313

Average Floor Area Ratio: 1.67

■ Residential
■ Commercial/Mixed Use
▢ NOR

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City Centre

Aotea and Universities

Auckland
LIGHT RAIL
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Model Outputs Summary

Scenario 1:

- Based on the modelling assumptions:
    - The do minimum, do something and do something + scenarios scenario can not be accommodated within the walkable catchment

- Under this scenario – additional interventions will be required to unlock supply in these catchments.

- Additional testing should be completed in further stages to investigate what assumptions within the model could be changed to accommodate further growth in the catchments. For example – Lower LV/CV ratio (0.7), testing of removal of height limitations in line with buildings identified in Case Studies (page 75) and additional Typology testing.

NPS-UD Theoretical Uplift Potential (2021)

Requirements (Urban Do Min)	Total	GFA
Homes	16,200	1,296,000
Jobs	53,400	1,441,800
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	17,400	1,392,000
Jobs	53,500	1,444,500
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	22,000	1,760,000
Jobs	67,200	1,814,400

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	2,970,444	
	Total Additional GFA (CAT + NOR)	**2,727,114**	
	GFA NOR	14,594	
	GFA Additional (CAT)	2,712,520	
	Resi: Non-Resi Split	70,220	2,642,300
	GFA Removed	281,734	
	Total Additional GFA output less GFA removed	**2,445,380**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	89%	
	Do Something	86%	
	Do Something +	68%	

Average Floor Area Ratio: 9.01

Residential
Commercial/Mixed Use
NOR

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NPS-UD Theoretical Uplift Potential (2031)

Requirements (Urban Do Min)	Total	GFA
Homes	16,200	1,296,000
Jobs	53,400	1,441,800
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	17,400	1,392,000
Jobs	53,500	1,444,500
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	22,000	1,760,000
Jobs	67,200	1,814,400

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	2,970,444	
	Total Additional GFA (CAT + NOR)	**2,877,346**	
	GFA NOR	14,594	
	GFA Additional (CAT)	2,862,752	
	Resi: Non-Resi Split	70,220	2,792,533
	GFA Removed	292,660	
	Total Additional GFA output less GFA removed	**2,584,686**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	94%	
	Do Something	91%	
	Do Something +	72%	

Average Floor Area Ratio: 9.05

- Residential
- Commercial/Mixed Use
- NOR

Theoretical Uplift Potential (2041)

Requirements (Urban Do Min)	Total	GFA
Homes	16,200	1,296,000
Jobs	53,400	1,441,800

Requirements (Do Something)	Total	GFA (m2)
Homes	17,400	1,392,000
Jobs	53,500	1,444,500

Requirements Do Something +	Total	GFA (m2)
Homes	22,000	1,760,000
Jobs	67,200	1,814,400

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	2,970,444	
	Total Additional GFA (CAT + NOR)	**3,020,699**	
	GFA NOR	14,594	
	GFA Additional (CAT)	3,006,105	
	Resi: Non-Resi Split	70,220	2,935,885
	GFA Removed	323,204	
	Total Additional GFA output less GFA removed	**2,697,495**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	99%	
	Do Something	95%	
	Do Something +	75%	

Average Floor Area Ratio: 9.08

Legend:
- Residential
- Commercial/Mixed Use
- NOR

Theoretical Uplift Potential (2051)

Requirements (Urban Do Min)	Total	GFA
Homes	16,200	1,296,000
Jobs	53,400	1,441,800
Requirements (Do Something)	**Total**	**GFA (m2)**
Homes	17,400	1,392,000
Jobs	53,500	1,444,500
Requirements Do Something +	**Total**	**GFA (m2)**
Homes	22,000	1,760,000
Jobs	67,200	1,814,400

	Summary	m2	
Theoretical Uplift Potential (LVU 2021)	Existing GFA	2,970,444	
	Total Additional GFA (CAT + NOR)	**2,978,309**	
	GFA NOR	14,594	
	GFA Additional (CAT)	2,963,715	
	Resi: Non-Resi Split	70,220	2,893,495
	GFA Removed	317,885	
	Total Additional GFA output less GFA removed	**2,660,424**	
% of Growth Scenario (within 800m catchment without potential for further investment)	Do Min	97%	
	Do Something	94%	
	Do Something +	74%	

Average Floor Area Ratio: 9.05

- 🟧 Residential
- 🟪 Commercial/Mixed Use
- ▭ NOR

Case Studies

These studies have been provided as a reference for recent development being delivered in Auckland City Centre. Many of these buildings are non-compliant against the Auckland Unitary Plan provisions the model adopts.

With this as context – although the quantity of growth in the City Centre, as modelled in this study is not meeting the Do Something+ Scenario, there are many existing mechanisms that are already proof that the 'supply' that has been modelled is likely to exceed that in reality.

Case studies

The Pacifica

Constructed in 2017, it is currently New Zealand's tallest residential building.

Use - Residential (273 apartments)

GFA – 44,138m2

Height – 178m (57 storeys)

Case studies

PwC Tower

The PwC Tower is part of Commercial Bay, a new precinct on Auckland's waterfront comprising five connected office towers.

Use - Retail and Office (10,000 workers)

GFA – 39,000m2

Height – 180m (39 levels)

Case studies

Hotel Britomart

The development comprises a 10 storey hotel and the accompanying transformation of the adjacent historic Buckland and Masonic buildings, an existing site first built in the 1800s, into an office building. The ground floor includes retail spaces and restaurants.

Use - Mixed use (99 rooms)

Height – 11 levels

Case studies

Seascape

Currently under construction, it is expected to be New Zealand's second-highest building after the Sky Tower. The redevelopment of a 2729sqm corner site fronting Customs Street East comprises a new tower and integrates two existing buildings. The smaller tower has been redesigned as a new hotel and the heritage building on the corner of Gore Street will be retained.

Use - Mixed-use (221 apartments)

GFA – 46,635m2

Height – 187m (52 levels)

Case studies

Aotea Central (future)

The design includes 60 apartments, commercial and retail space, and a public plaza.

Use - Mixed-use

GFA – 45,292m2

Height – 21 levels

Case studies

Ngā Wharenoho

Open in February 2023, it is New Zealand's largest new student housing project. The project aims to respond to the high demand for students accomodations
while incorporating new design elements such as cinema rooms, gaming areas, retail, communal kitchens, music rooms, e-bike storage, study and artistic spaces.

Use - Residential (4,500 beds)

Height – 39 levels

Case studies

Whitaker Place

Completed in 2016, this building provides facilities to accomodate up to 300 students in self-contained studio apartments. It also provides for common areas including a resident lounge with large screen TVs and a pool table, resident kitchen, quiet study area, on-site gym and an outdoor BBQ area.

Use - Residential (300 beds)

GFA – 7,016m2

Height – 15 levels