



# Economic Cost-Benefit Analysis: Proposed Re-zoning of Land for Residential Use in Pukekohe

PREPARED FOR  
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# 1. Executive Summary

The key points to note in this report are:

- The Auckland Plan 2050 estimates that Auckland has a shortage of 35,000 dwellings. With recent construction rates (15,000 p.a.) tracking only marginally above demand (13,000 p.a.), this shortage continues to place upward pressure on housing prices in Auckland.
- Recent dwelling construction in Pukekohe has increased rapidly, from around 100 per annum in 2010, to 200 per annum in 2016, and around 350 per annum in 2019.
- Pukekohe is identified in the Auckland Plan as a priority satellite town, anticipated to grow to a population of 50,000 people by 2040 - more than doubling its 2013 population of 21,000 people. This equates to a growth of approximately 450 dwellings per annum.
- Based on the regional housing shortage, the recent rapid increases in new dwelling construction, and the Pukekohe-Paerata Structure Plan ("structure plan") anticipating 450 dwellings per annum, it is considered reasonable to anticipate that there will be ongoing demand for 450 new dwellings annually in Pukekohe.
- The Pukekohe-Paerata Structure Plan identifies the potential for an additional 13,500 dwellings. However, a public plan change process is required before this capacity is live-zoned, which would take at least several years.
- There are nine residential developments currently selling dwellings (or lots) in Pukekohe. Most developments are nearing completion. Paerata Rise is the only development with any significant remaining capacity and this one development currently accounts for 97% of Pukekohe's pipeline supply. This indicates that the Pukekohe housing market is highly concentrated and is unlikely to be competitive.
- Paerata Rise primarily supplies large stand-alone dwellings, and these typically range in price from \$900,000 - \$1,500,000. There are currently no developments providing affordable or high-density housing in Pukekohe, which are the key areas of unmet housing demand in Pukekohe.
- There is an estimated potential for around 1,900 additional infill dwellings in Pukekohe. Given the slow rate of development of infill dwellings, this capacity is insufficient to meet the current high rate of annual demand.
- Prices within the indicative dwelling yield would range from \$500,000 - \$880,000. This would provide relatively affordable housing to this market that is not currently available.
- Dwellings within the indicative dwelling yield would include a mix of terrace (71%) and stand-alone (29%).



- Dwelling sizes within the indicative dwelling yield range from 80m<sup>2</sup> to 180m<sup>2</sup>. These would enable small 2-3-bedroom units at the smaller end of the size range, and large 4-5-bedroom units at the larger end of the size range.
- 79% of the dwellings offered within the indicative dwelling yield would be supplied to the market under the \$700,000 First Home Grant cap for a new dwelling in Auckland.
- Only 6% of all terraced dwellings constructed in Pukekohe since 2016 are located within the existing urban area. This reflects a regional trend where terraced dwellings and apartments are primarily constructed as part of large masterplanned greenfield developments.
- A significant proportion of dwellings within large masterplanned developments in Auckland, in the order of 17-55%, are terrace houses and apartments. The indicative dwelling yield is well placed to provide additional high-density dwellings in Pukekohe, given its overall scale and proximity to the town centre.
- Pukekohe has a large town centre and other retail areas which include many of the main retail brands. Other amenities include 11 schools, several churches, one small hospital, a public library and one cinema.
- The plan change area is in close proximity to the Pukekohe train station which is in the process of being upgraded. This upgrade is being undertaken in conjunction with the completion of the electrification of the line from Auckland CBD to Pukekohe. Kiwi Rail indicates that this will lead to longer trains with more capacity and frequency of services, thus increasing the connectivity of Pukekohe to the rest of Auckland.
- Pukekohe has 9,800 local jobs and access to 179,000 jobs within a 30-minute drivetime.
- Existing capacity is heavily concentrated, with 97% of planned dwellings in one development (Paerata Rise).
- Objective 2 of the NPS-UD requires planning decisions to support competitive land and development markets. This objective is unlikely to be met if such a concentrated market occurs.
- The proposal would enable another large-scale residential development into the Pukekohe-Paerata market, which would reduce market concentration and enable the provisions of the NPS-UD to be better met.
- The ten-year Herfindahl-Hirschman Index scenario highlights the importance of the supply of both the number of competitors (developments) and the total quantity of lots to the market. In broad terms, while Pukekohe has a sufficient quantity of lots, an additional 4-5 medium-large developments would be required, in any one year, to ensure there is a competitive greenfield land market in Pukekohe. This is required to meet the provisions of Objective 2 of the NPS-UD.



- The proposal would enable a masterplanned development. Masterplanned developments are key to providing a diversity of housing choices by type, size, location, and price.
- The proposal would enable an efficient utilisation of existing infrastructure.
- The proposal would result in an NPV of \$334.8M.



## 2. The Proposal

The proposal is to rezone approximately 27.0 hectares of Future Urban Zone (FUZ) land earmarked as a Mixed Housing Suburban Zone (MHSZ) in the Pukekohe-Paerata Structure Plan, to a Mixed Housing Urban Zone (MHUZ). The proposed zoning aligns with both the Structure Plan and the anticipated changes as a result of the 'Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill'.

The total plan change area (red dashed line) would result in an additional 27.0 hectares of MHUZ land and would provide, as a conservative estimate, approximately 580 dwellings over the short-medium term.

Figure 1: Proposal



Source: Civix

Figure 2: Proposed Plan Change Area

	Land Area (Ha)
Plan Change Area	27.0

Source: Corelogic



### 3. Residential Land Supply & Demand

This section provides an analysis of the supply and demand for residential land in Pukekohe.

#### 3.1. Regional Housing Market Overview

The Auckland housing market has a shortage of 40,000 dwellings, a quantity that is approximately the size of Tauranga. Since the AUP became operative in 2016, house prices have continued to stay at record high prices, of around \$1.0 million on average. Auckland Council's most recent evaluation found that the price of new dwellings in Auckland will continue to be high, at \$1.2 million on average. This indicates that Auckland housing will experience ongoing upward price pressure.

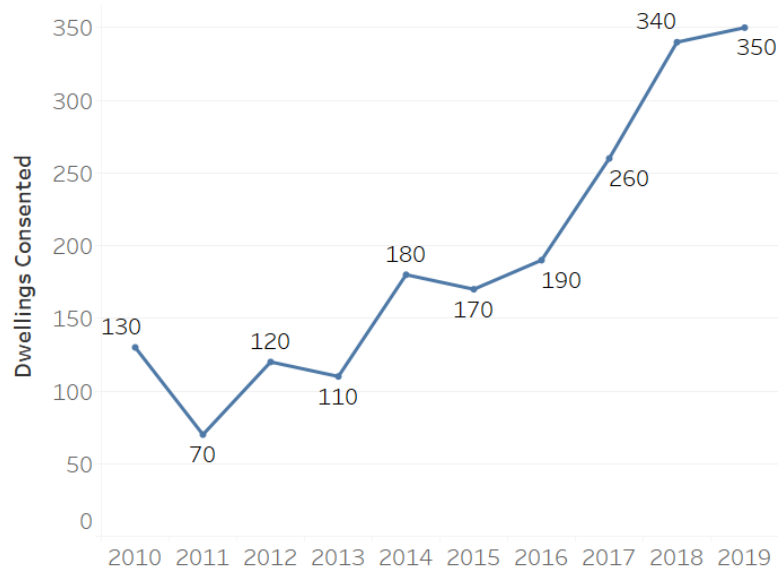
#### 3.2. Pukekohe-Paerata Housing Demand

The following figure shows the historical rate of new housing construction in Pukekohe-Paerata over the past decade. This shows that since 2010, the rate of new construction has increased rapidly. While the average over the past decade is 190 dwellings per annum, the average over the last five years is 260 dwellings per annum. This is double the number of dwellings consented in 2010.

Figure 3: Residential Building Consents 2010-2019

Year	Dwellings Consented
2010	130
2011	70
2012	120
2013	110
2014	180
2015	170
2016	190
2017	260
2018	340
2019	350
<b>Total</b>	<b>1,920</b>
<b>Per Annum</b>	<b>190</b>

Source: Statistics NZ,  
Urban Economics







The figure below shows that Statistics NZ forecasts in the order of 220 household demand per annum for Pukekohe-Paerata for the next 20 years.

Figure 4: Pukekohe Statistics NZ Population & Household Forecasts

	2020	2025	2030	2035	2040	2020 - 2030	2030 - 2040	20 Yr. p.a.
Population	26,650	29,270	31,970	35,080	38,180	5,320	6,210	580
Households	10,250	11,260	12,300	13,490	14,690	2,050	2,390	220

Source: Statistics NZ

The Structure Plan documentation contains only high-level indications of future dwellings and population. The “Pukekohe-Paerata Structure Plan Growth Themes Background Paper -Transport” States:

*“Pukekohe is identified in the Auckland Plan as a priority satellite town, anticipated to grow to a population of 50,000 people by 2040 - more than doubling Pukekohe’s 2013 population of 21,000 people. The revised Future Urban Land Supply Strategy (FULSS) anticipates that land to facilitate this growth will be available by 2027.” (Page 4)<sup>1</sup>*

This equates to an additional 25,000 people or 10,000 dwellings (approximately) over the next 22 years, or around **450 dwellings per annum**.

Based on the recent market construction trends, and the regional shortage for new competitively priced houses, and the significant increase in residential land and infrastructure planned in Pukekohe-Paerata, it is considered reasonable to anticipate that there is ‘upper end’ demand for 450 new dwellings annually in Pukekohe-Paerata, as estimated by the Auckland Council.

### 3.3. Pukekohe-Paerata Housing Supply

The following figure provides a broad estimate of the additional residential land planned for Pukekohe-Paerata, by zone. Assuming a net land yield of 55%, and various “Dwellings per Hectare” rates, there is estimated potential for an additional 13,500 dwellings and 33,750 people in greenfield development areas in Pukekohe-Paerata (note this includes the large Wesley/Paerata Rise development). This is slightly less (by 800 dwellings) than the estimated capacity enabled by the FULSS of 14,300 dwellings by 2027. This indicates that the planned infrastructure investment would not be fully utilised by the planned quantity of residential land, even over the long term (30 years).

<sup>1</sup> Figure 4, which uses Statistics NZ projections projects a more conservative growth rate, with the 2040 population estimated at 38,180 people. This is a different source of projections than is used by the FULSS.



Figure 5: Land & Dwelling Yield Estimates

Area	Zone	Land Area Gross	Land Area Net	Dwellings per Hectare	Total Dwellings
North Pukekohe	Paerata	300	170	20	3,400
	THAB	30	20	30	600
	MHU	310	170	20	3,400
	MHS	200	105	15	1,600
	SH	180	100	10	1,000
	Sub-total	1,020	565	-	10,000
South Pukekohe	THAB	0	0	30	0
	MHU	120	70	20	1,400
	MHS	225	120	15	1,800
	SH	50	30	10	300
	Sub-total	395	220	-	3,500
<b>Total</b>		<b>1,415</b>	<b>785</b>	<b>-</b>	<b>13,500</b>

Source: Auckland Council, Urban Economics

Overall, the potential supply of an additional 13,500 dwellings in Pukekohe-Paerata is equivalent to the Auckland Council's expected 30-year demand, which is estimated at 13,500 dwellings (450 per annum).

The amount of residential development enabled by the quantity of land zoned in the Structure Plan is less than the growth enabled by the FULSS. It is also less than the amount of growth expected under the Structure Plan over the next thirty years.

It is worth noting that the Structure Plan supporting documentation aims to enable a 30-year supply to ensure future demand is met:

*“The Auckland Plan aim is to provide for 30 years of growth capacity including providing for growth within existing urban areas and around 15,000 hectares of greenfield (mainly rural) land, identified for development. The south is the largest future urban growth area in Auckland with around 5,300 hectares of land identified for urban development and this translates to approximately 42,000 new homes and 19,000 jobs over 30 years. (P 12, Pukekohe-Paerata Structure Plan Growth Themes Background Paper -Transport, Emphasis added)”*

### 3.4. Current Development Pipeline

The following figure displays the residential developments currently underway in Pukekohe-Paerata. The key points to note are:

- There are nine residential subdivisions currently selling dwellings (or lots) in Pukekohe. Most of these developments (two-thirds) are of small size, of less than 200 dwellings.
- There are 281 dwellings currently on the market and 4,461 dwellings planned. In total, there are 4,742 dwellings currently selling or planned in Pukekohe.
- Most current developments are nearing completion. Excluding developments of less than 100 dwellings, only Rowles Road and Paerata Rise are less than two-thirds of the way through the development's life.



- This is further reflected in the development pipeline with Paerata Rise being the only development with notable planned expansion. As a result, it makes up 97% of the pipeline supply.

In summary, Paerata Rise is the only significant development currently within Pukekohe, indicating that the market is highly concentrated and is unlikely to be competitive. This will be placing upward pressure on prices and reducing the diversification of housing stock that would occur under a competitive market.

Figure 6: Current Residential Developments

Development	Total Dwellings	Sold	Proportion Sold	Currently Selling	Planned	Dwelling Types Offered	Number of Terrace
Paerata Rise	4,500	86	2%	105	4,309	Stand Alone & Terrace	Terrace dwellings planned
Belmont Park	766	681	89%	40	45	Stand Alone & Terrace	48
Anselmi Ridge	283	187	66%	11	85	Stand Alone & Terrace	9 + 18 planned
Rowles Road	135	56	41%	79	0	Stand Alone Only	0
Lisle Farm Drive	116	100	86%	6	10	Stand Alone Only	0
Regis Drive	105	86	82%	19	0	Stand Alone & Terrace	31
Calcutta Road	25	14	56%	11	0	Stand Alone Only	0
North Ridge	24	8	33%	4	12	Stand Alone Only	0
Prospect Terrace	10	4	40%	6	0	Stand Alone Only	0
<b>Total</b>	<b>5,964</b>	<b>1,222</b>	<b>-</b>	<b>281</b>	<b>4,461</b>	<b>-</b>	<b>-</b>

Source: Corelogic, Urban Economics, Developer Websites

### 3.5. Commercially Feasible Infill Capacity

The following two figures show the estimated 'commercially feasible' infill lots and dwellings by lot size and price for Pukekohe. The key points to note are:

- In total, there is potential for 3,000 commercially feasible infill<sup>2</sup> dwellings in Pukekohe as a result of the 'Resource Management Enabling Housing Supply and Other Matters Amendment Bill (2021)'. As some of these properties would not be available for development, as the owners would not sell these properties over the next decade, this would indicate that **there is practical potential for around 1,900 additional infill dwellings over the next decade.**
- This Bill will result in zones other than the Terrace Housing and Apartment Building (THAB) zone to operate as a 'de-facto' MHUZ. In broad terms, the minimum lot size is expected to be around 175m<sup>2</sup> in Pukekohe.
- The dwellings that are likely to be built on these lots would result in properties with a value of \$620,000
- Overall, it is concluded that there is low-moderate potential for infill development in Pukekohe, and future growth therefore will mostly be greenfield development.

<sup>2</sup> Infill development is development that occurs on lots of 5,000m<sup>2</sup> or less, and greenfield development is development that occurs on lots of 5,000m<sup>2</sup> or greater.



Figure 7: Plan Enabled & Commercially Feasible Infill Lots by Lot Price (Post Amendment Bill 2021)

Lot Size	Lot Price	Dwelling Price	Commercially Feasible Lots	Feasible Dwellings %
175 (MHUZ)*	\$310,000	\$620,000	2,790	93%
175 (THAB)	\$310,000	\$620,000	210	7%
<b>Total</b>	-	-	<b>3,000</b>	<b>100%</b>

Source, Corelogic, Urban Economics

\*All existing residential zones except THAB functioning as MHUZ

Figure 8: Commercially Feasible Infill Lots by Lot Price



Source: Corelogic, Urban Economics



### 3.6. Realised Infill Capacity

The following figures display the location of all new dwellings sold within Pukekohe since 2016. Areas where terraced dwellings have been constructed are circled in the figure below (in yellow). The key points to note are:

- Only four terraced dwellings, or 6% of all terraced dwellings constructed and sold in Pukekohe since 2016 are located within the existing urban area. This reflects a regional trend where terraced dwellings and apartments are primarily constructed as part of large masterplanned greenfield developments.
- The majority (or 71%) of dwellings have been constructed in greenfield areas, which reflects the normal development pattern for most towns and the economies of greenfield development.
- Figure 9: New Dwellings Built in Pukekohe-Paerata, (2016 - 2020)

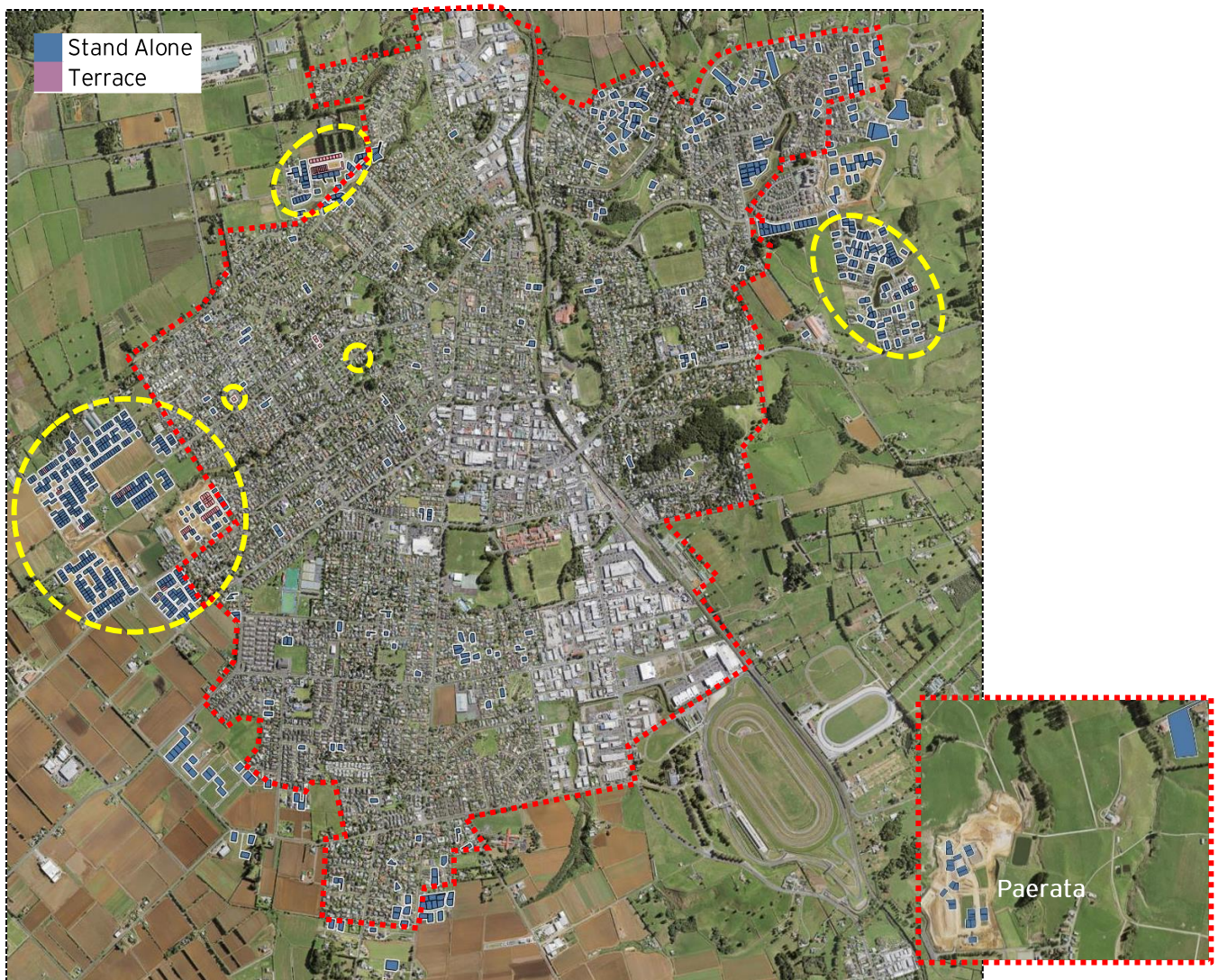




Figure 10: New Dwellings Built in Pukekohe-Paerata, (2016 - 2020)

			Proportion	
	Infill	Greenfield	Infill	Greenfield
Stand Alone	200	631	32%	68%
Terrace	4	71	6%	94%
<b>Total</b>	<b>204</b>	<b>702</b>	<b>29%</b>	<b>71%</b>

Source: Corelogic, Urban Economics

### 3.7. Achievable Price Points by Typology & Size

Demand for housing can be understood both in terms of quantity and price. This section evaluates the demand for housing in terms of **price**. Demand for housing by price is evaluated using an analysis of 'Location Deciles' that make up the Auckland region.

The Location Decile analysis shows the achievable price points for a new development, in terms of dwelling typology and size. Each Location Decile includes a group of suburbs that achieve the same prices for equivalent dwellings, for example:

- Location 'Decile 1' is the lowest priced suburbs and includes, for example, Waiuku, Ranui, Te Atatu South and Papakura.
- Location 'Decile 10' is the highest priced suburbs and includes, for example, Takapuna, Mount Eden, Ponsonby, and Parnell.

The Location Decile analysis enables an insight into the optimal dwelling mix, in terms of type and price.

The proposal site is estimated to have a **Location Decile 2**. The following figure presents the range of dwelling types and prices, as well as the corresponding dwelling size, lot size and lot price, for this Location Decile. The main points to note from Figure 11 are:

- Within Pukekohe-Paerata, a conventional stand-alone dwelling of 140m<sup>2</sup> would sell for \$760,000. This would have a lot value of \$380,000.
- Within Pukekohe-Paerata, a conventional terrace house of 120m<sup>2</sup> would sell for \$620,000. This would have a lot value of \$310,000.
- Within Pukekohe-Paerata, a small apartment of 50m<sup>2</sup> would sell for \$440,000. This would be an insufficient sale price to be commercially feasible, given the higher construction costs for apartments.



Figure 11: Pukekohe Location Decile 2 Dwelling Type, Size and Price Results Summary

Stand Alone												
Dwelling Size	80sqm	100sqm	120sqm	140sqm	160sqm	180sqm	200sqm	220sqm	240sqm	260sqm	280sqm	300sqm
Dwelling Price (\$000)	\$550	\$630	\$690	\$760	\$820	\$880	\$950	\$1,020	\$1,090	\$1,170	\$1,250	\$1,340
Dwelling Price per Sqm	\$6,910	\$6,250	\$5,760	\$5,400	\$5,120	\$4,910	\$4,750	\$4,630	\$4,550	\$4,500	\$4,470	\$4,470
Lot Price (\$000)	\$280	\$320	\$350	\$380	\$410	\$440	\$480	\$510	\$550	\$590	\$630	\$670
Lot Size (Sqm)	150	175	200	225	250	275	300	325	350	375	400	425
Terrace												
Dwelling Size	80sqm	100sqm	120sqm	140sqm	160sqm	180sqm	200sqm	220sqm	240sqm	260sqm	280sqm	300sqm
Dwelling Price (\$000)	\$500	\$560	\$620	\$680	\$740	\$800	\$860	\$920	\$980	\$1,050	\$1,130	\$1,210
Dwelling Price per Sqm	\$6,220	\$5,630	\$5,180	\$4,860	\$4,610	\$4,420	\$4,280	\$4,170	\$4,100	\$4,050	\$4,020	\$4,020
Lot Price (\$000)	\$250	\$280	\$310	\$340	\$370	\$400	\$430	\$460	\$490	\$530	\$570	\$610
Lot Size (Sqm)	125	150	175	200	225	250	275	300	325	350	375	400
Apartment												
Dwelling Size	40sqm	50sqm	60sqm	70sqm	80sqm	90sqm	100sqm	110sqm	120sqm	130sqm	140sqm	150sqm
Dwelling Price (\$000)	\$370	\$440	\$500	\$570	\$640	\$700	\$770	\$840	\$910	\$980	\$1,050	\$1,120
Dwelling Price per Sqm	\$10,180	\$9,710	\$9,360	\$9,100	\$8,900	\$8,760	\$8,650	\$8,570	\$8,520	\$8,490	\$8,490	\$8,490
Lot Price (\$000)	\$120	\$150	\$170	\$190	\$210	\$240	\$260	\$280	\$310	\$330	\$360	\$350

The implications for the Structure Plan are that although the prices are relatively low (or affordable) by regional standards, they are relatively high by national standards. For example, a moderately sized terrace house lot, of around 200m<sup>2</sup>, would have a value of around \$340,000, and a moderately sized stand-alone lot, of around 350m<sup>2</sup>, would have a value of around \$550,000. These prices are commercially feasible for development, by a significant margin, on greenfield (rural) land.

Based on the regional housing shortage, particularly in the low-mid price points, it is reasonable to expect that there is sufficient demand for dwellings across a range of prices, in Paerata-Pukekohe. There is also likely to be strong demand for the range of dwelling types and sizes enabled by the proposal, which are likely to predominantly be \$500,000 - \$900,000 price range.

### 3.8. Indicative Dwelling Yield by Type, Size & Price

The plan change area will have Mixed Housing Urban zoning which enables a range of stand-alone and terrace dwellings.

The following figure presents a conservative expected dwelling yield for the total plan change area. This accounts for the site location, market demand and the developers (Aedifice Development No. 1 Limited) experience developing medium-large scale high density housing projects. The main points to note are:

- Prices within the indicative dwelling yield would range from \$500,000 - \$880,000.
- Dwellings would include a mix of terrace (71%) and stand-alone (29%).
- Dwelling sizes range from 80m<sup>2</sup> to 180m<sup>2</sup>. These would enable small 2-3-bedroom units at the smaller end of the size range, and large 4-5-bedroom units at the larger end of the size range.



- The indicative dwelling yield would appeal to a range of demographics and household incomes. This is important to the overall success of a large masterplanned development and increases the overall sale rate for the development.

Figure 12: Indicative Dwelling Yield by Type, Size & Price

	Terrace				Stand Alone				Total
	125	150	175	200	200	225	250	275	
Lot Size (m <sup>2</sup> )	125	150	175	200	200	225	250	275	-
Dwelling Size (m <sup>2</sup> )	80	100	120	140	120	140	160	180	-
Price (\$000)	\$500	\$560	\$620	\$680	\$690	\$760	\$820	\$880	-
Dwelling Count	127	108	87	87	47	47	47	29	580
	22%	19%	15%	15%	8%	8%	8%	5%	100%

Source: Urban Economics, Phillips Associates

*It should be noted that given recent and forecast increases in construction costs, the size of the dwellings in the above figure may be reduced by 10-20% to enable the stated sale prices to be achievable.*

The following figure shows the number and percentage of dwellings within the indicative dwelling yield that would be supplied to the market within various price caps, namely under \$500,000, under \$600,000 and under \$700,000. Given the density of the indicative dwelling yield, a large proportion (79%) would be supplied to the market under the \$700,000 First Home Grant cap for a new dwelling in Auckland.

Figure 13: Indicative Dwelling Yield by Price Cap (Cumulative)

	Dwelling Price Cap (\$000)					
	\$500	\$600	\$700	\$500	\$600	\$700
Dwellings	127	235	457	22%	40%	79%

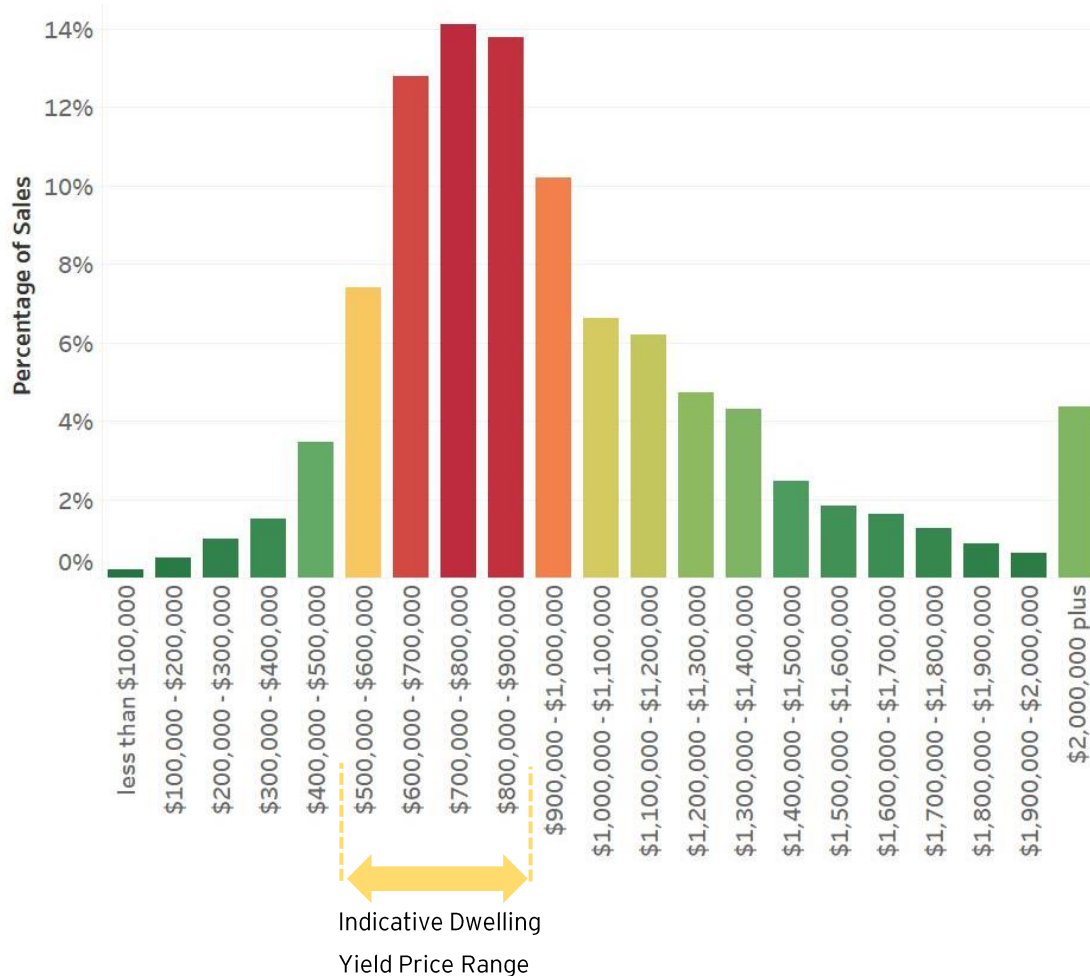
Source: Urban Economics, Phillips Associates

The following figure provides the distribution of recent dwelling sales in Auckland by price, for the 2019-2020 period. It is evident that the majority of sales occurred within the \$600,000 - \$900,000 range. The indicative dwelling yield price range is consistent with the regional sale prices. However, the indicative dwelling mix enables a large proportion of dwellings (79%) within the \$500,000 - \$700,000 range, which is relatively affordable within the Auckland market for new housing.





Figure 14: Auckland Urban House Sales (2019 - 2020)



## 4. Access to Amenity & Opportunity

Pukekohe is an attractive rural town location, offering a wide range of amenities that support residential development. For example:

- 11 schools, inclusive of Buckland School.
- A large town centre and other retail areas, including most of the main retail brands.
- Approximately 9,800 jobs locally, and access to 179,000 jobs within a 30-minute drivetime.
- The plan change area is in close proximity to the Pukekohe train station which is in the process of being upgraded. This upgrade is being undertaken in conjunction with the completion of the electrification of the line from Auckland CBD to Pukekohe. Kiwi Rail indicates that this will lead to longer trains with more capacity and frequency of services, thus increasing the connectivity of Pukekohe to the rest of Auckland.
- Other amenities include several churches, one small hospital, a public library, and one cinema.



## 5. Opportunities for Masterplanned Developments in Pukekohe-Paerata

The Structure Plan proposes a large quantity (1,427 hectares) of residential land. This is comprised mostly of MHSZ (54%) and MHUZ (30%) zone land.

Across the 1,427 hectares, the average parcel size is relatively small, at 6 hectares, reflecting the predominance of lifestyle blocks (see the figure below).

It is also important to note that across the 1,427 hectares, only 4% of parcels are '30 hectares or greater' in size (see Figure 15). This is particularly important in respect of large master planned developments, which tend to require sites of at least 30 hectares to enable in the order of 400 or more dwellings. To put this into context, the large master planned developments in Auckland tend to have 1,500 - 3,000 dwellings. For example, Hobsonville Point has 4,500 dwellings, Addison in Papakura has 1,500 dwellings, Stonefields in east Auckland has 2,500 dwellings, and Long Bay in the North Shore has 2,000 dwellings.

Enabling large masterplanned developments in Pukekohe-Paerata has a number of notable benefits, most notably:

1. Developers have a market incentive to produce a high quality development as they need to sell a large number of dwellings over an extended, long term period. By contrast, smaller developments, of 100-200 dwellings, often have a more basic design as there is no requirement for ongoing sales.
2. Large developments often enable a more diverse housing stock, as some buyers are willing to purchase a smaller town/terrace house in order to be in a highly regarded development. This is evident in large developments in Auckland over the past decade, which have started with larger stand-alone homes, and then over time introduced smaller terrace and town houses.
3. The housing design and road layout are better managed over a wider area.

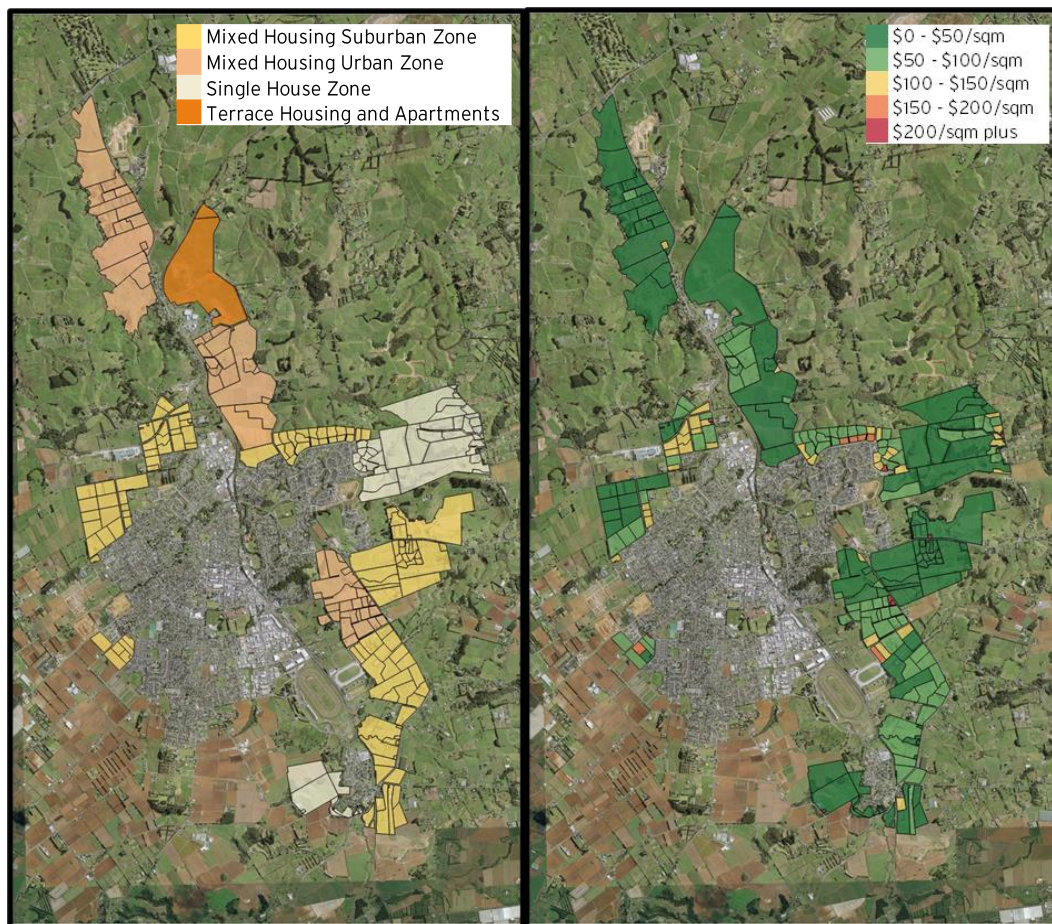
Figure 15: Additional Residential Land in Pukekohe-Paerata Structure Plan by Parcel Size

Parcel Size (Ha)	Count	Count (%)
0-10	204	86%
0-20	11	5%
20-30	14	6%
30-40	2	1%
40-50	4	2%
50-60	0	0%
60-70	2	1%
70-80	0	0%
80-90	0	0%
90-100	1	0%
<b>Total</b>	<b>238</b>	<b>100%</b>

Source: Corelogic  
52072.5.01



Figure 16: Structure Plan Proposed Residential Land by Residual Land Value and Zone



Source: Corelogic, Auckland Council

The total plan change area is approximately 27.0 hectares aggregated from 10 parcels. At present, this is one of the largest sites within the Structure Plan that has been identified to include a masterplanned development (refer to Figure 1). While there is potential for other large sites to be aggregated, this can be a difficult process, as some landowners do not want to develop in the short term or do not want to be commercially involved with a large number of partners. Given that 86% of parcels within the Structure Plan are less than 10 hectares in size, it is likely that there will only be a small number of large aggregated sites of the size of this proposal, that enable masterplanned developments.

One of the most notable benefits of large masterplanned developments is that they enable a diverse range of housing, in particular, high-density terrace and town houses. This is due to the quality of the environment that can be created with good urban design. Consequently, many buyers choose a terrace or town house in a large masterplanned development, rather than a conventional stand-alone house in a smaller development, even if the price is similar.

This trend is evident in Auckland with the large majority (around three quarters) of terrace houses being built in large masterplanned developments since the AUP became operative, which is perhaps one of the most interesting housing market trends to note at present, particularly in regard to new



developments making a significant contribution to the compact city objective. This is shown in the figure below, with 1,150 terrace houses being built in 'greenfield' locations in 2017 and only 240 being built in 'infill' locations.

Figure 17: Dwelling Completions for 2015-2017 by Infill and Greenfield

Typology	2015			2017		
	Greenfield	Infill	Total	Greenfield	Infill	Total
Stand Alone	2,740	1,380	4,120	3,150	1,510	4,660
Terrace	580	60	640	1,150	240	1,390
Apartment	170	340	510	340	650	990
<b>Total</b>	<b>3,490</b>	<b>1,780</b>	<b>5,270</b>	<b>4,640</b>	<b>2,400</b>	<b>7,040</b>
Stand Alone	52%	26%	78%	45%	21%	66%
Terrace	11%	1%	12%	16%	3%	20%
Apartment	3%	6%	10%	5%	9%	14%
<b>Total</b>	<b>66%</b>	<b>34%</b>	<b>100%</b>	<b>66%</b>	<b>34%</b>	<b>100%</b>

Source: Auckland Council, Urban Economics

The total plan change area is of a relatively large scale (27.0 ha) and would enable, as a conservative estimate, around 580 dwellings in the short-medium term. At this scale it would be a notable development, and of a scale similar to the other well-known masterplanned developments. It is anticipated that a significant proportion, in the order of 71% or 412 dwellings in the proposal would be terrace/town houses. These would be on smaller lots of around 125-200m<sup>2</sup> which would inherently in itself make a significant contribution to the compact city objective. It would also enable dwellings in the \$500,000 - \$600,000 price range, which has wider social and economic benefits.

It should be noted that as a general principle, buyers of dwellings near the urban periphery, such as Pukekohe, prefer larger houses. Historically, very few terrace or town houses have been built in Pukekohe, and other similar places, such as Pokeno, only offer 'large affordable sections. It is optimal that there is a predominance of MHUZ and MHSZ in the proposed Structure Plan, however, this zoning does not automatically mean that higher density housing will be built, as market factors, such as the general preference for large stand-alone dwellings, will continue to have a major influence on development trends. Given the historic trends, the opportunity for large masterplanned developments is likely to be one of the primary factors that will enable higher density housing in Pukekohe-Paerata over the next 1-2 decades.

The following figure places the proposal within the context of Auckland's largest masterplanned developments. It is also worth noting that these developments have achieved a significant proportion of terrace/town houses and apartments, which represent in the order of 17-55% of all dwellings. This is significantly higher than the regional average and highlights the importance of large masterplanned developments in achieving the compact city objective.



Figure 18: Large Development Dwelling Types Consented

Development	Stand Alone	Terrace	Apartments	Terrace + Apartments	Total	Stand Alone	Terrace	Apartments	Terrace + Apartments
Gulf Harbour	1,720	420	0	420	2,140	80%	20%	0%	20%
Hobsonville Point	670	610	210	820	1,490	45%	41%	14%	55%
Karaka	2,250	410	50	460	2,710	83%	15%	2%	17%
Millwater	1,770	380	50	430	2,200	80%	17%	2%	20%
Flat Bush	6,090	1,210	0	1,210	7,300	83%	17%	0%	17%
Stonefields	770	140	570	710	1,480	52%	9%	39%	48%
<b>Total</b>	<b>13,270</b>	<b>3,170</b>	<b>880</b>	<b>4,050</b>	<b>17,320</b>	<b>77%</b>	<b>18%</b>	<b>5%</b>	<b>23%</b>

Source: Statistics NZ

## 6. NPS-UD & AUP Provisions

The key provisions of the AUP and NPS-UD that relate to efficient land markets are as follows.

NPS-UD: *“Policy 2: Tier 1, 2, and 3 local authorities, at all times, [must] provide at least sufficient development capacity to meet expected demand for housing and for business land over the short term [1 to 3 years], medium term [3 to 10 years], and long term. [11 to 30 years]”*

*“Objective 2: Planning decisions improve housing affordability by supporting competitive land and development markets”*

AUP: *“B2.2.2.(1) Include sufficient land within the Rural Urban Boundary that is appropriately zoned to accommodate at any one time a minimum of seven years’ projected growth in terms of residential, commercial and industrial demand... after allowing for any constraints on subdivision, use and development of land”*

The following figure shows the estimates of ‘reasonably expected’ development capacity across both infill and greenfield land markets and compares this to dwelling demand. There is currently reasonably expected capacity for 1,900 dwellings from infill areas as a result of the ‘Resource Management Enabling Housing Supply and Other Matters Amendment Bill (2021)’, and 5,040 dwellings from greenfield areas (planned developments plus live zoned greenfield capacity). Live-zoned greenfield capacity is shown in Appendix 1.

With a demand of 450 dwellings per annum, this equates to 15.4 years of supply from existing land and 16.7 years of supply from existing land plus the proposed land. It is evident in Figure 19 that there is presently sufficient capacity for residential zone land to meet the requirements of the NPS-UD and AUP.



Figure 19: NPS-UD and AUP Development Capacity Analysis

Existing Capacity		Value	
<b>Dwelling Capacity</b>	Infill 'Reasonably Expected' for Development Capacity	1,900	
	Greenfield 'Reasonably Expected' for Development Capacity	5,040	
	Demand per annum	450	
	Years Supply	15.4	
<b>NPS-UD</b>	Land Provision Requirements	Short (0-3 year)	<b>Met</b>
		Medium (3-10 year)	<b>Met</b>
		Long (10-30 year)	<b>Met</b>
<b>AUP</b>	B2.2.2.(1) (7 year)	<b>Met</b>	

Existing Capacity + Proposed Land		Value	
<b>Dwelling Capacity</b>	Infill 'Reasonably Expected' for Development Capacity	1,900	
	Greenfield 'Reasonably Expected' for Development Capacity	5,040	
	Proposed Land	580	
	Infill & Greenfield Capacity + Proposed Land	7,520	
	Demand per annum	450	
	Years Supply	16.7	
<b>NPS-UD</b>	Land Provision Requirements	Short (0-3 year)	<b>Met</b>
		Medium (3-10 year)	<b>Met</b>
		Long (10-30 year)	<b>Met</b>
<b>AUP</b>	B2.2.2.(1) (7 year)	<b>Met</b>	

Source: Urban Economics, Auckland Unitary Plan

Figure 20 displays the capacity over the next ten years based on the expected demand of 450 per annum. The key points to note are:

- Infill development in Pukekohe is estimated to have a demand of 75 dwellings per annum. This results in a capacity of greater than 10 years.
- Paerata Rise is currently the largest greenfield development in Pukekohe and has approximately 35 years of capacity based on a maximum potential supply of 125 per annum.
- The demand for the other greenfield developments is approximately 250 per annum. This results in approximately 3 years of capacity.
- With the addition of the proposal to the greenfield market, the other greenfield developments market increases to 7 years of capacity.

Figure 20: Years of Capacity

	Year										Remaining Capacity
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
<b>Paerata Rise</b>	125	125	125	125	125	125	125	125	125	125	3,060
<b>Infill Development</b>	75	75	75	75	75	75	75	75	75	75	1,150
<b>Other Greenfield Developments</b>	250	250	232	-	-	-	-	-	-	-	0
<b>Other Greenfield Developments + Proposal</b>	250	250	250	155	125	125	9	0	0	0	0

Source: Various, Urban Economics



Figure 21 displays an analysis of the Pukekohe-Paerata land market with regard to the intention of Objective 2 in the NPS-UD (“Planning decisions improve housing affordability by supporting competitive land and development markets”). Although Pukekohe-Paerata has enough raw development land available to meet demand, the concentration of this land in the hands of one main player suggests that a competitive market is unlikely to arise. Highly concentrated markets can exhibit monopoly pricing, where holding a dominant market share enables developers to charge higher prices. As outlined in section 3.4, **Paerata Rise makes up 97% of planned development in the Pukekohe-Paerata residential land market.** A highly concentrated land market is unlikely to meet Objective 2 of the NPS-UD. As a result, in the short term, this objective is not met in either scenario. It is important to note that in both scenarios, Objective 2 is likely to be met in the medium-long term assuming the Pukekohe-Paerata Structure Plan allows 5-10 medium-large masterplanned developments to enter the market (however it should be noted that there is no certainty that this will occur).

Figure 21: NPS-UD Competitive Market Analysis

Existing Capacity			Value
NPS-UD	Competitive Market Requirements	Short (0-3 year)	<b>Not Met</b>
		Medium (3-10 year)	<b>Met</b>
		Long (10-30 year)	<b>Met</b>
Existing Capacity + Proposed Land			
NPS-UD	Competitive Market Requirements	Short (0-3 year)	<b>Not Met</b>
		Medium (3-10 year)	<b>Met</b>
		Long (10-30 year)	<b>Met</b>

Source: Urban Economics, Auckland Unitary Plan

The Herfindahl-Hirschman index<sup>3</sup> (H-H) is an industry best practice tool used to measure market concentration. Authorities that deal with regulating the competitiveness of markets such as the Commerce Commission domestically and the US Department of Justice internationally use the Herfindahl-Hirschman (HH) Index to measure when markets have or will become too concentrated if particular mergers occur in order to ensure competitive markets. The US Department of Justice considers HH index values between 1,500 – 2,500 to be moderately concentrated markets and values in excess of 2,500 to be highly concentrated.

Figures 22 and 23 display the H-H index values likely to occur in the Pukekohe Greenfield land market over the next ten years, both with and without the proposal. This is calculated based on the current live-zoned greenfield capacity (Appendix 1) and planned supply from greenfield developers (Figure 6) with an individual supply capped at 125 dwellings per annum. This generally reflects the maximum amount a greenfield developer can supply to the market in any given year accounting for physical and market limitations. It is important to note that in order to account for limitations for these potential developments to enter the market over the medium term, 50% of the estimated capacity has been applied to the developments outlined in Appendix 1 (shown in Appendix 2). This

<sup>3</sup> The Herfindahl-Hirschman index is calculated by squaring each supplier’s market shares and then summing them. The maximum value is 10,000.



accounts for ongoing farming and land banking on around 50% of the lots over the medium term. The Pukekohe residential greenfield land market is estimated to account for approximately 375 dwellings per annum, while the infill residential market is estimated to account for 75 dwellings per annum. The main points to note are:

- The H-H index indicates that at present the Pukekohe greenfield market is 'highly concentrated', with a value of 7,330. This is in large part due to the existence of only one large developer in Pukekohe (Paerata Rise). This value continues to increase as the number of competitors in the market decreases to one.
- With the addition of the proposal, the Pukekohe greenfield market remains 'highly concentrated', but falls to a value of 6,010. The market as a result is slightly more competitive than before and enables the Pukekohe residential land market to better meet Objective 2 of the NPS-UD.
- The number of competitors and the supply of lots in a residential greenfield market contribute significantly to the level of concentration that occurs. As shown below, the impact of one large development (the proposal) entering the market results in a notable decrease in market concentration. With the addition of more medium-large competitors, the concentration in Pukekohe would continue to fall, and a more efficient greenfield land market would result.
- This ten-year scenario highlights the importance of the supply of both the number of competitors (developments) and the total quantity of lots to the market. In broad terms, while Pukekohe has a sufficient quantity of lots, an additional 4-5 medium-large developments would be required, in any one year, to ensure there is a competitive greenfield land market in Pukekohe. This is required to meet the provisions of Objective 2 of the NPS-UD.

Figure 22: Herfindahl-Hirschman Index, Greenfield Residential Land Market (Without Proposal)

Year	Number of Competitors	Supply	Herfindahl - Hirschman Index
2021	11	5,040	7,330
2022	9	4,665	8,060
2023	8	4,290	8,950
2024	1	3,935	10,000
2025	1	3,810	10,000
2026	1	3,685	10,000
2027	1	3,560	10,000
2028	1	3,435	10,000
2029	1	3,310	10,000
2030	1	3,185	10,000

Source: Urban Economics





Figure 23: Herfindahl - Hirschman Index, Greenfield Land Market (With Proposal)

Year	Number of Competitors	Supply	Herfindahl - Hirschman Index
2021	12	5,620	6,010
2022	10	5,245	6,490
2023	9	4,870	7,070
2024	6	4,495	7,780
2025	2	4,120	8,600
2026	2	3,870	9,080
2027	2	3,620	9,660
2028	1	3,435	10,000
2029	1	3,310	10,000
2030	1	3,185	10,000

Source: Urban Economics

## 7. Residential Costs & Benefits

The following costs and benefits from the proposed residential rezoning are identified in this section:

- The proposal would enable the provision of affordable dwellings in the \$500,000 - \$700,000 range.
- The proposal would enable a wider range of dwelling types and sizes.
- The proposal would enable a masterplanned development that is notable within the wider sub-region. Masterplanned developments are able to produce a wider range of dwelling types and prices and produce additional internal amenities.
- The proposal would enable a more competitive residential land market. The current market is likely to experience an anti-competitive residential land market in the short-term without the proposal.
- The proposal would result in a more efficient utilisation of infrastructure. This is analysed in Section 8.

## 8. Efficient Use of Infrastructure

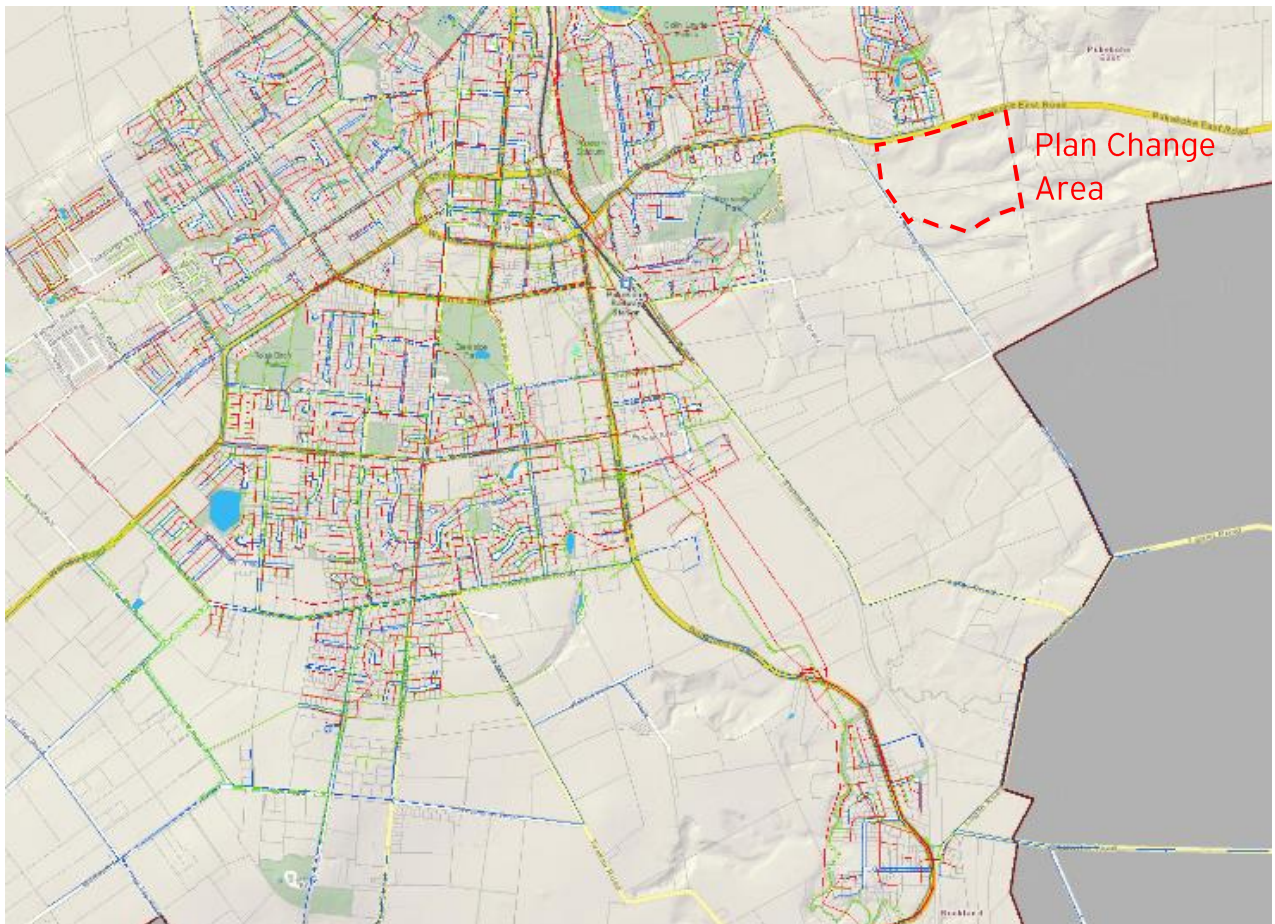
Auckland Council estimates that the city requires \$19.9 billion of expenditure on the infrastructure network for future urban areas (Auckland Future Urban Land Supply Strategy, July 2017, page 20). This equates to the expenditure of \$1.3 million per hectare of land (15,000 hectares / \$19.9 billion = \$1.3 million).

The proposed land presently has good options for connection to bulk infrastructure from Golding Road, as shown in the following figure.



As outlined in Section 3, the zoned residential land area in the Structure Plan provides for an additional 13,500 dwellings while the FULSS provides infrastructure to support 14,300 dwellings by 2027. This indicates that the planned infrastructure investment would not be fully utilised by the planned quantity of residential land, even over the long term (30 years). Enabling more dwellings provides a higher return on infrastructure investments increasing their efficiency.

Figure 24: Infrastructure Map



Source: Auckland Council

## 9. Economic Contribution & Employment Generation

The proposal would create a considerable number of jobs within the construction industry. The national 'value added per employee' for each sector has been used to estimate the full time equivalent (FTE) employment for this project. It is estimated the construction of 580 dwellings would generate approximately 816 FTE jobs. This number can be interpreted as the number of FTE jobs created on an annualised basis, i.e. if construction takes 5 years and is split evenly between the years then approximately 163 FTE jobs would be created in each year.

A base case of the proposed land has been considered. If the existing land were to be utilised for rural use, the FTE jobs estimated to be created would be for the total plan change area.



The net benefit of the proposal results in approximately 653 FTE jobs created.

Figure 25: FTE Employee Estimates from Construction

Scenario	Type	Product	Count	FTE Employees
Proposal	Terrace	80sqm	127	140
		100sqm	108	134
		120sqm	87	119
		140sqm	87	131
		<b>Subtotal</b>	<b>409</b>	<b>523</b>
	Stand Alone	120sqm	47	72
		140sqm	47	79
		160sqm	47	86
		180sqm	29	56
		<b>Subtotal</b>	<b>171</b>	<b>293</b>
	<b>Total</b>		<b>580</b>	<b>816</b>
Base Case	Rural Use		-	<b>163</b>
<b>Net</b>				<b>653</b>

Source: Urban Economics, Phillips Associates

Figure 26 shows the estimated national 'value added per FTE employee'. The value added per employee figures are used to estimate the FTE employees created by the construction of the project. Figure 26 shows that the construction sector has a \$18.5B contribution to national GDP and a workforce of 139,800 FTEs. This results in a value added of \$133,000 per FTE employee. Alternatively, the agricultural sector has a value added per employee of \$152,000 as a result of its \$12.6B contribution to the national GDP and workforce of approximately 83,200 employees. This has been used to calculate the economic contribution of the base case scenario.

Figure 26: Industry GDP and Value Added per Employee

Industry	Contribution to GDP (\$m)	FTE Workers	Value Added Per Employee
Construction	\$18,540	139,800	\$133,000
Agriculture	\$12,660	83,200	\$152,000

Source: Statistics NZ, Urban Economics

The following figure displays the net present value (NPV) expected as a result of the proposal. The key points to note are:

- The construction of 580 dwellings would take approximately 4.6 years to complete at a rate of 125 dwellings sold per annum. This results in a present value of \$101.1M, and an annual value added of \$23.4M.
- The household expenditure over a period of 30 years has a present value of \$248.6M, and an annual value added of \$23.3M.



- The cost of the proposal is the displacement of agricultural/rural use land. Over a period of 30 years, the total plan change area (55.4 Ha) has a present value of \$14.8M and an annual value added of \$0.8M.
- The NPV of the proposal over a 30-year period is \$334.8M. This is a considerable increase in value over the 'base case' scenario.

Figure 27: Economic Impact of Proposal

		Value Added per Annum (\$M)	Present Value (\$M)	Time Period (Years)	
<b>Proposal Benefits</b>	Construction Period	House Construction	\$23.4	\$101.1	4.6
	Ongoing Benefits	Household Expenditure	\$23.3	\$248.6	30
<b>Proposal Costs</b>	Agricultural/Rural Use Displacement		\$0.8	\$14.8	30
<b>Net Present Value</b>			-	\$334.8	30

Source: Statistics NZ, Urban Economics

## 10. Conclusions & Recommendations

Pukekohe-Paerata has capacity for approximately 6,940 dwellings which is sufficient to meet 15.4 years of demand. However, the majority of this capacity is held by one developer (Paerata Rise). This level of market concentration is leading to an inefficient supply of new dwellings in the market. The proposal would introduce the opportunity for another major development which would ensure competition. This would lead to significant economic benefits, including more affordable dwellings, and a wider range of dwellings in terms of size and type, are supplied to the market over the short-medium term. This would ensure the NPS-UD and AUP capacity requirements are met.

The proposal would result in net economic benefits in the Pukekohe residential market. It is therefore recommended for approval.



# 11. Appendix 1: Current Live Zoned Residential Greenfield Capacity in Pukekohe

Figure 28: Locations of Capacity



Source: Corelogic, Urban Economics, Auckland Unitary Plan



## 12. Appendix 2: Planned & Potential Capacity Development List (Medium Term)

Figure 29: List and Capacity of Current and Future Greenfield Development Competitors (medium term)

	<b>Developments</b>	<b>Capacity</b>
<b>Planned</b>	Belmont Park	45
	Anselmi Ridge	85
	Lisle Farm Drive	10
	North Ridge	12
	Pearata Rise	4,310
<b>Potential Capacity</b>	14 Belgium Road *	138
	215 Kitchener Road *	78
	222 Kitchener Road *	103
	286 Kitchener Road *	90
	57-59 Tuakau Road *	83
	66 Tuakau Road *	90
	<b>Proposal</b>	<b>580</b>

Source: Various, Urban Economics

\* Potential greenfield developments outlined in Appendix 1 have 50% of capacity to account for possibility of limitations to entering the market in the medium term (i.e. infrastructure constraints etc.)



# 13. Appendix 3: Current Development Pipeline Aerial Photographs

Figure 30: Current Development Locations





Figure 31: Anselmi Ridge & Lisle Farm Drive







Figure 32: Paerata Rise





Figure 33: Regis Park





Figure 34: Belmont Park Area





Figure 35: North Ridge, Rowles Road & Calcutta Road





Figure 36: Prospect Terrace

