Comments on Productivity Commission Inquiry: Land for Housing

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Greenfields versus Brownfields

The Inquiry needs to better distinguish between brownfields versus greenfields. Brownfields is about development capacity, greenfields is about land supply.

There are different constraints and opportunities at play. Put simply:

- Greenfields - main constraint can be infrastructure availability/funding
- Brownfields - existing communities are often the critical barrier.

This is simplistic in that in both greenfields and brownfields areas there are always a number of issues including:

- Costs of infrastructure - new or upgraded
- Natural environment issues
- Amenity/existing residents concerns.

However one of these issues tends to dominate in any specific case.

In all three cases, there needs to be incentives for these issues to be resolved.

Auckland is different from elsewhere in the country. The sheer physical scale of the city has an impact on land and house prices that is not evident in other cities. Coupled with a fast pace of growth, simple solutions are unlikely to address systemic issues. In particular unlocking brownfelds redevelopment opportunities is key, and much more important to house prices and affordability than greenfields.

Incentives are needed

It is not possible to try to get around the barriers to increased supply through legislative imperatives (e.g. ensuring adequate supply of land as part of the RMA or faster processing times for resource consents) or reductions in legislative ambit (e.g. removing scope for local community input, restricting the scope and scale of development contributions).

In all of the above, the RMA / LGA process - even if amended - will allow for landowners, developers, homeowners, infrastructure providers , community and environmental groups to push and pull the system to better meet their needs (to grab more of the “pie”).

There are not many incentives for these parties to work together to achieve good outcomes (a bigger pie) where costs are minimised and benefits maximized. Good planning can help to co-ordinate and align outcomes and timelines, but if the push from government is to reduce regulatory barriers, then there needs to be a replacement means of co-coordinating effort. Given the mix of public and private goods involved in housing development, it cant just be the premise that the “market will sort it out”

Incentives are harder to develop and maintain than other tools, but over the long run should be much more beneficial to outcomes.

The incentives need to be considered from the point of view of the multiple parties involved in the housing development process, as well as the multiple steps involved.

Incentives are needed

A simple typology of the people and organizations involved, separate from the council may be may be as follows. This is as valid for greenfields as it is for brownfields.

Current landowner	Land banker(s)	Subdivider /developer	House builder	Home owner

- Bulk infrastructure provider
- Lender / financier
- Network utility provider
- Environmental groups
- Neighbours, Residents groups

These steps (along the top) and parties (down the sides) all have different drivers in terms of risks that they wish to avoid / minimise. Most often their behaviour is driven by a desire to minimise these risks . They know that the benefits of growth will flow, but that the benefits are widespread, yet risks and costs can be felt by a local area or specific party.

How do we 'spread' the benefits around more, while reducing perceived risks?

Incentives need to align across the steps and parties. While increased competition from having more land on the market may reduce land banking behaviour, this approach is likely to cause bulk infrastructure providers to be even more cautious in their planning.

Incentives are needed

Taking this simple typology, a taxonomy of barriers and incentives could be created to help reduce friction in the system and to improve co-operative behaviour. The following are some examples that come to mind.

Party	Barrier / risk	Incentive
Land banker	Perception that land values will rise faster than holding costs	Increased competition for development opportunities (e.g. development auction type processes whereby the planning authority determines how much land or housing is needed, but not where. It then calls for expressions of interest to determine proposals with greatest net benefit to the community).
Neighbours / residents	Local infrastructure cant cope and will not be upgraded	Local infrastructure bonus (i.e. for every extra house built in an area, there is xyz discretionary grant made to local community). Equally for each house that is objected to and not built, there is a reduction in discretionary grant.
Environment groups	Effects of new development are only mitigated, there is no enhancement of environments	Funding of enhancement works from a land uplift levy or similar. More development = more uplift = bigger enhancement fund.
Bulk infrastructure provider	Forced to deliver infrastructure that they are not funded to deliver	Ability to co-ordinate RMA with LGA to create funded infrastructure upgrade and extension programmes tied to growth patterns/expectations. Secure funding sources that are out of political hands.

Greenfields

Sections are more expensive in Auckland. See Table 1. A section in Auckland costs around $350,000 (based on Quotable Value NZ figures). In other larger cities, sections are in the order of $200,000.

Figures are not easily obtainable on the price per square metre, and so values may not be directly comparable. Auckland's higher median section price may also be inflated by the higher priced sections closer into the city. It would be reasonable to say that on the edge of Auckland, section prices are more like $300,000.

In most other cities, section prices and houses combine to deliver a median priced house in the $350,000 to $400,000 mark, with section costs roughly 50% of total costs. This is to be expected as land is a residual value after accounting for construction costs. If a standard house costs roughly $200,000 to construct ($1,500 per square metre), and if a $400,000 house is affordable to many, then the land cost will be $200,000.

Given infrastructure / civil engineering costs of around $100,000 per section, (which should be much the same across the country) then the land component in Auckland is around $200,000 to $250,000, or twice that of most other cities.

Table 1

City	Median Section price	Median House price	Section as % of House price
Auckland	$365,000	$637,000	57%
Hamilton	$226,000	$384,000	59%
Tauranga	$185,000	$390,000	47%
Porirua	$232,000	$396,000	59%
Kapiti	$180,000	$357,000	50%
Christchuruch	$206,000	$432,000	48%
Selwyn	$170,000	$519,000	33%
Waimakariri	$150,000	$409,000	37%
QlDC	$198,500	$572,000	35%
Tasman	$210,000	$387,000	54%
Nelson	$185,000	$350,000	53%

Source: Quotable Value

Greenfields

Household incomes may account for part of this difference, as Auckland's large concentration of employment creates agglomeration benefits. Auckland's household income are therefore higher, and this will be reflected in house and land prices.

The table to the left shows median house prices, median household incomes and an estimate of what may be an affordable housing product based on a ratio of income to house prices of 5. This ratio is at the upper limit of current banking lending criteria (and reflects historically low interest rates).

In all cases median house prices sit above affordability criteria. The ratio of median house price to affordability criteria is around 1.3 to 1.4. For Auckland it is around 1.7. Auckland's higher ratio may be partly the result of the upper end of the market dragging up the median. If a ratio of 0.75 was used, then for Auckland between median and affordable house prices, then a median house price of $510,000 would result.

Based on the $510,000 figure, an estimate can be made of what this would translate into in terms of the cost of a section, i.e. about $250,000. There is therefore around $50,000 difference between the section prices, as expected given incomes and as based on actual values (see Table3).

Table 2

City	Median House Price	Median Income	Affordability Criteria	Ratio House price to affordability
Auckland	$637,000	$76,500	$382,500	1.67
Hamilton	$384,000	$64,100	$320,500	1.20
Tauranga	$390,000	$55,100	$275,500	1.42
Porirua	$396,000	$78,900	$394,500	1.00
Kapiti	$357,000	$53,400	$267,000	1.34
Christchuruch	$432,000	$65,300	$326,500	1.32
Selwyn	$519,000	$85,000	$425,000	1.22
Waimakariri	$409,000	$68,800	$344,000	1.19
QIDC	$572,000	$73,300	$366,500	1.56
Tasman	$387,000	$53,500	$267,500	1.45
Nelson	$350,000	$54,300	$271,500	1.29

Table 3

	Auckland	Other Cities
Median household income	$76,500	$65,000
Affordable house	$382,500	$325,000
National ratio median/affordability	0.75	0.75
Adjusted house price	$510,000	$433,333
Ratio - section versus house	0.5	0.5
Section cost	$255,000	$216,667

Greenfields

The question is whether this differential between Auckland and elsewhere is justified because of other costs, is the result of Auckland's size, or is the result of planning policies.

To understand this issue, is first necessary to develop a control - what is likely to occur if normal market processes were followed.

Land development is a complex process and it is possible for land to pass through a number of hands as it transitions from rural to urban. Thus a rural landowner needs to be incentivized to sell. They are likely to ask for a price in excess of alternative uses, like rural residential. The land may then be held by a land banker, perhaps seeking a plan change from rural to urban. This could take time and involve holding costs. The land banker may just seek a profit from the exercise, or expect a capital gain from land price inflation.

The land may then be purchased by a developer/ sub divider. They face infrastructure and civil costs, as well as financing costs, as well as their own profit/loss margin. GST will be payable on the final section.

In each step of this process, land prices inflate. The table on the next page is a hypothetical example where the rural land has an alternative use value of $100,000 per hectare. Through the steps outlined, the final section price is just under $200,000. Through this process, land prices per hectare go from $100,000 to over $2m for land post subdivision.

Greenfields

Table 4

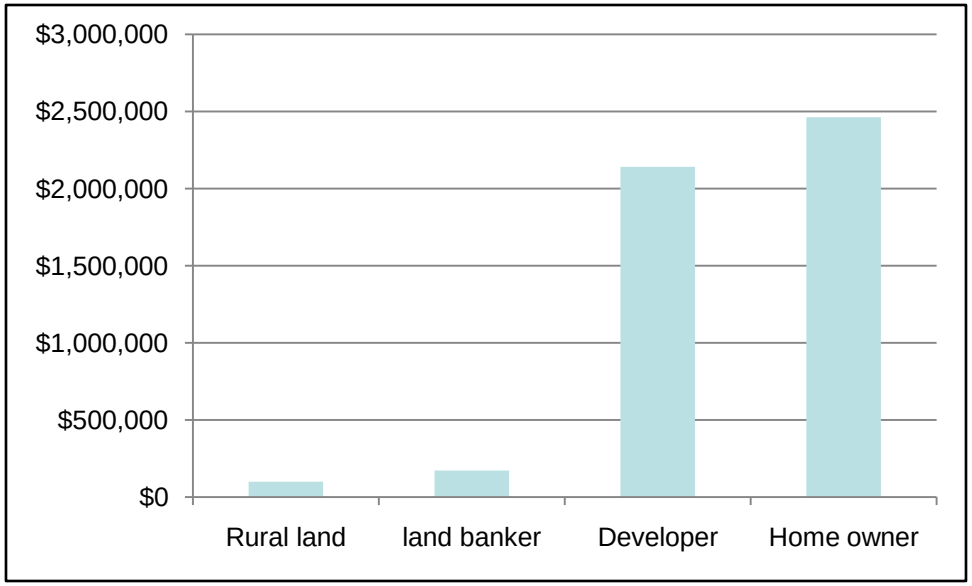
Step	Component
Rural land ($ per ha)	$100,000
Profit for landowner	20%
Sell to land banker ($ per ha)	$120,000
2 year holding costs	$24,000
Profit (20%)	$28,800
Sell to developer ($ per ha)	$172,800
Sections	12
Infrastructure costs	$1,200,000
3 year financing costs	$411,840
Profit (20% of costs)	$356,928
Total ($ per ha)	$2,141,568
Per section ($)	$178,464
GST ($)	$26,770
Section cost ($)	$205,234

To the left (Table 4) is a simple pro forma analysis of land development. It is assumed that interest rates for finance is 10%, while infrastructure costs per section are $100,000.

It is also assumed that bulk infrastructure is available, and not paid for beyond the assumption of $100,000 per lot.

In this case, the main step up in value is associated with the sub divider and developer, and their addition of local infrastructure to the land. At this point there is at least an eight fold increase in land value reflecting this investment.

Figure 1: Base case land prices



Greenfields

Step	Component
Rural land ($ per ha)	$200,000
Profit for landowner	20%
Sell to land banker	$240,000
7 year holding costs	$168,000
Profit (20%)	$81,600
Sell to developer ($ per ha)	$489,600
Sections	14
Infrastructure costs	$1,400,000
3 year financing	$566,880
Profit (20% of costs)	$491,296
Total ($ per ha)	$2,947,776
Per section	$210,555
GST	$31,583
Section cost	$242,139

Table 5

This exercise can be repeated for land that has a higher starting price, and where the holding period between initial purchase and subdivision is longer (i.e. Auckland context)

If $200,0000 is the alternative use value for rural land (for example rural-residential) and there is a 7 year land banking period, then the final section price is around $240,000 per section. This assumes 14 sections are created, rather than 12, to reflect the higher land prices (that is, density adjusts upwards to compensate). The resulting value of the section is close to the theoretical price that the Auckland median incomes would support.

No account is made of land price inflation, during this period but if land prices rise faster than holding costs, then there is a greater incentive to hold onto the land.

What this analysis doesn't explain the difference between the actual price of sections (e.g. $300,000 on the edge of Auckland and the price estimate of $250,000).

The difference suggests a longer land banking period, higher development costs or the ability for households seeking a new section to pay a higher price.

Greenfields

The figures generated from this analysis can be compared to land values in the Auckland Region. No reliable figures are available of market prices, with the most accessible being Council valuation role data (2014).

A spot check of rateable land values in the south of Auckland suggest the values in the table to the right (Table 6). If raw block land is around $1,250,000 per ha, then the simple pro forma set out on the previous page would estimate section prices in the order of $340,000.

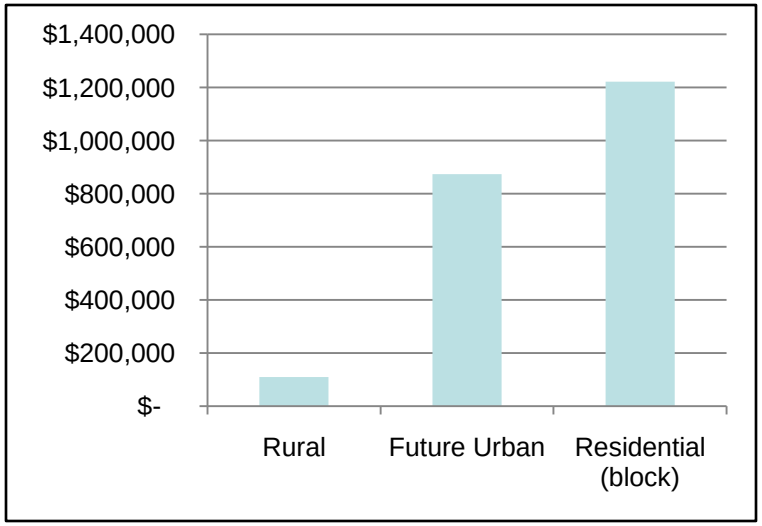
What is apparent when these figures are considered against the hypothetical example outlined previously is the high cost of future urban land. There is a huge difference between the land banked value of $180,000 under the non-Auckland case, the $500,000 figure suggested by the Auckland hypothetical base case, and the numbers in Table 6.

This suggests that land banking is a major issue, and the major source of price inflation . Increased supply opportunities are often proposed to reduce the incentive to land bank. It is noted that the above land value figures are from 2014, after announcement of the Proposed Auckland Unitary Plan and its significantly expanded pool of future urban land. The pool of future urban land is over 10,000 ha.

Table 6

Type of land	Lower ($ per sqm)	Upper ($ per sqm)
Rural	$100,000	$200,000
Future Urban	$600,000	$800,000
Residential (raw block)	$1,000,000	$1,500,000
Residential (subdivided)	$3,600,000	$4,200,000

Figure 2: Peripheral Urban Land Prices



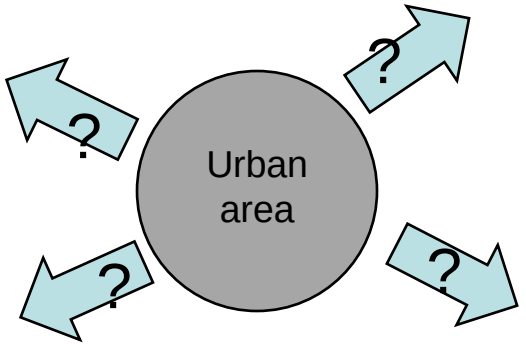
Greenfields

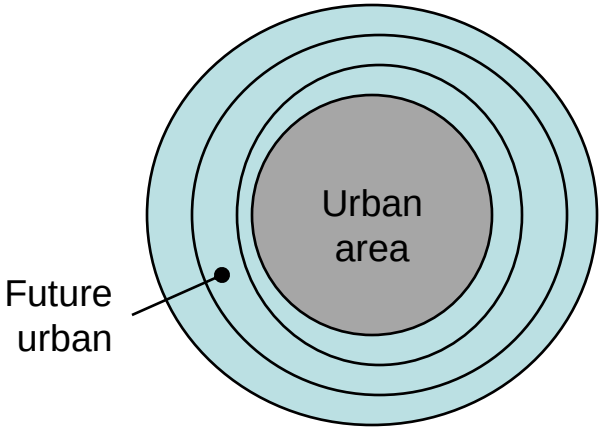
All of this additional future urban land cannot be serviced by bulk infrastructure providers under current funding envelopes.

The identification of the large pool of future urban land is likely to be fostering a strategy of increased benefits from land banking – the pool of urban land has been increased (lessening risks and uncertainties as to which land will be earmarked for growth), but not increasing the rate at which land may be developed because of bulk infrastructure constraints means that supply remains constrained, and hence values will continue to rise, even if development is some time off.

Under the old MUL system, MUL shifts were not certain and so there was more risk associated with land banking. The main issue with the MUL shifts were their relative slow speed.

Either there needs to be a much greater commitment to funding bulk infrastructure (eg significant new funding streams, including central government commitment to transport and social infrastructure), or the nature and extent of urban greenfields growth needs to be made less certain and more competitive. A system of land auctions may help, whereby the amount of land needed, along with infrastructure costs is identified, then proposals are called for by a stand alone land development authority, who then chooses proposals on the basis of overall benefit.





Brownfields

Turning to brownfields, in the case of Auckland at least, the rate of brownfields redevelopment is likely to be having more of an effect on rising land and house prices than the rate of greenfields development.

As cities grow, then it can be expected that land values will increase. The basic steps of population growth can be set out as follows:

- The population of the city increases
- More houses are needed to accommodate these people
- House and land prices rise due to the increased demand
- Developer's respond to the higher prices by building more houses, and adjust to the higher prices by economising on the land component within the city boundaries, while also pushing out the city footprint
- As a result of the price rise, to maintain affordability people accept the need for smaller sections within the current urban area
- The city expands both upwards and outwards

Currently Auckland's land values are increasing by over 10% per year. One NZ Study of the relationship between population growth and house prices found that:

> *We find that a one percent increase in an area's population is associated with a 0.2 to 0.5 percent increase in local housing prices*

If the rise in house prices is reflected in land prices, then this means that a 10% increase in population should see house prices rise by about 3 to 4%, holding other things equal. Over the next 20 years, Auckland's urban population could grow by up to 40% under a high growth scenario. A 10 year figure of 20% population growth therefore implies house price increases of 6 to 8% increase.

Source: Housing Markets and Migration: evidence from New Zealand

Brownfields

The gap between the expected rate of land value increase and the actual rate may be partly explained by Auckland's constrained geography which tends to concentrate development. It may reflect limited transport costs. However it may also reflect constrained supply opportunities

It is not just the rate of increase which is important, it is also the profile of land prices as they fall from the CBD which is important.

Setting aside local amenity benefits (like proximity to beaches) land values should reflect transport costs, with land costs falling away from central areas as transport costs rise.

Auckland's residential land prices (2011) – see Figure 3 - follow this pattern, with land values rising steeply towards the centre.

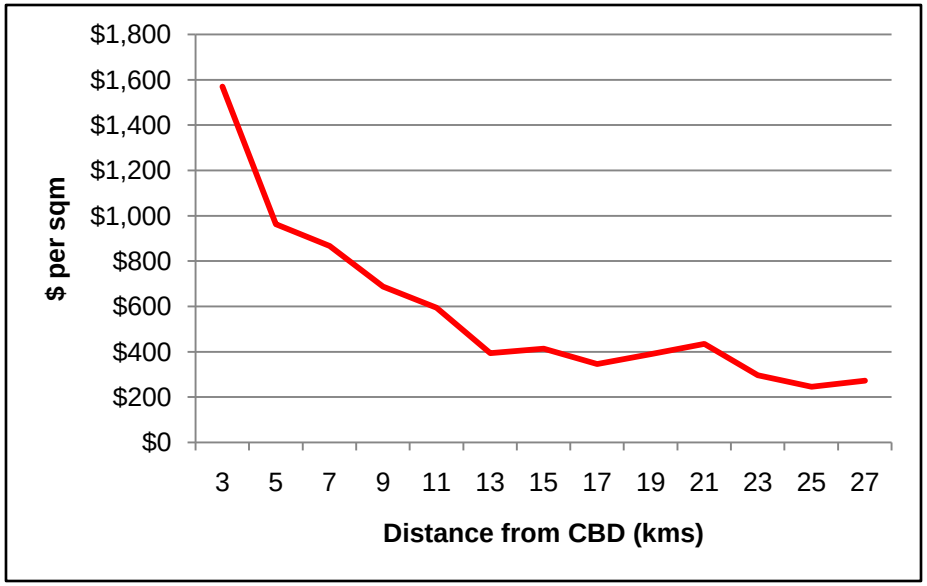


Figure 3: Auckland's residential land prices (2011)

Table 2: Hypothetical development options -land value of $300 per m²

Brownfields

Brownfields redevelopment is driven by the value of the land. When land values re low, there is no incentive to redevelop to higher densities. The two case studies to the left illustrate this. The first assumes land values are in the order of 300 per square metre. At this level, a stand alone house is cheaper than an apartment. This is because the higher build costs of the apartment do not off set the reduced land costs per unit.

However once land values are above $1000 per square metre, apartments become more viable. The second case study assumes land values are in the order of 1200m² per square metre. In this case the apartment is cheaper than the stand alone house. However the apartment is not an affordable unit in an absolute sense; it is relatively more affordable.

For land values around the $500 per square metre mark, town house and terrace type housing are likely to be the most affordable. Capacity in mid priced urban areas is critical for affordability.

	Stand alone house	Terrace house	Apartment
Storeys	1	2	4
Number of units	1	2	8
Land area per unit (m²)	500	250	63
Floor area (m²) per unit	130	130	100
Build costs ($ per m²)	1,800	2,500	5,000
Total building costs	$234,000	$325,000	$500,000
Fees/charges/profit	$292,500	$406,250	$625,000
Land $ per m²	300	300	300
Land cost	$150,000	$75,000	$18,750
Total cost	$442,500	$481,250	$643,750

	Stand alone house	Terrace house	Apartment
Storeys	1	2	4
Land area per unit (m²)	500	250	63
Floor area (m²)	130	130	100
Build costs per m²	$1,800	$2,500	$5,000
Total building costs	$234,000	$325,000	$500,000
Fees/charges/profit	$292,500	$406,250	$625,000
Land - $ per m²	$1,200	$1,200	$1,200
Land cost	$600,000	$300,000	$75,000
Total cost	$892,500	$706,250	$700,000

Brownfields

When actual urban density (dwellings per ha) is compared to land values, then it is apparent that there is a significant deviation occurring close to the CBD.

The densities in this area have not adjusted to the higher land prices. This is likely to be the result of the heritage zoning in this area. This suggests a significant imbalance between supply and demand, one that is likely to drag up the median house price. This tension is not easily resolved as the heritage suburbs are highly valued for their character.

Elsewhere, from about 5 to 7kms out, residential densities better reflect land values. However, as land values increase, then densities need to adjust (continually).

Community resistance to rezonings and redevelopment is a significant issue. Urban planning needs to be seen to be a dynamic process, one tied to land values

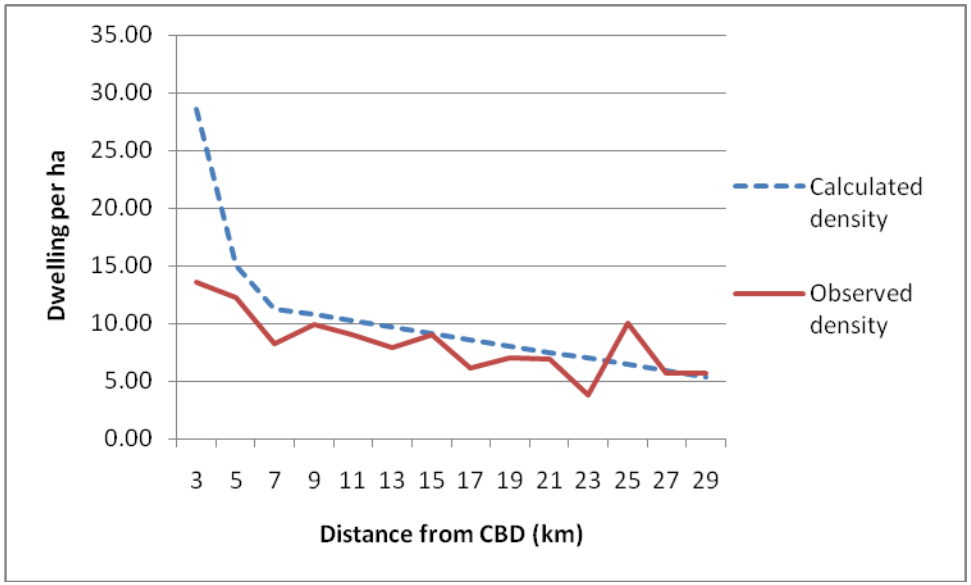


Figure 4: Auckland's Urban Density

Brownfields

Addressing barriers to brownfields redevelopment is not an easy task. Considerable sophistication is needed.

Incorporating neighbours and resident groups views into redevelopment is important, and needs to happen at a plan-wide as well as development by development level. Trying to shut out parties who perceive some form of effect will always be challenged. While much input is NIMBY-related, there is usually also a healthy dose of local practical experience which can help to shape development to better fit the area. Neighbours perhaps should have limited submission rights – that is, rights that do not extend to appeals to environment court level. For wider community groups (who are more likely to balance costs with benefits), participation is valuable. More positive engagement would come if they could see more of a benefit - a new homes bonus for example.

Zoning and development controls need to continually adjust. For a growing city, density (e.g. area per dwelling unit) cannot be held static for any period of time. A fixed area per lot gives too much appearance of certainty to the community. Once this area becomes decoupled from development feasibility, then it become redundant and adds to price increases. It may be that density is allowed to shift upwards by 5% each year, mirroring land values in an area, for example. Small incremental steps and changes to density are likely to be more acceptable than big leaps.

Density and zoning controls need to become either much more fine grained, or much more flexible. The former may prove to be more acceptable to people and communities. This suggests a zoning / density control system that is based on various trigger points and thresholds, rather than set numbers. Zoning and density could be more related to physical characteristics that help to ensure increases in density are more readily absorbed into communities. For example corner sites with two road frontages can take more density than mid bloc sites; north facing slopes better accommodate more dwellings than south facing slopes.