Think Piece Paper

HOW PLANNING SUPPORTS DENSITY AND TRANSPORT EQUITY

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Abstract

The amount of people living in urban areas in New Zealand is increasing, with Auckland alone accounting for approximately one third of the country's population. Associated with this is an increased demand for transportation and the need for higher-density urban areas to accommodate everyone.

Urban planning plays a critical role in enabling best practice transport outcomes, usually by facilitating the provision of higher density development to support transportation networks, reducing the need for the private vehicle. Auto dependent cities tend to encourage urban sprawl, which can lead to more sedentary lifestyles, increased pollution, and transport inequity due to the reduced viability of transport choice. Higher density land use that better enables and supports transportation choice is more likely to contribute to improvements in the health and well-being of the people, through more active lifestyles and transport options.

The Government's National Policy Statement on Urban Development (2020) sets out steps for encouraging higher density developments close to public transport and community facilities. In some locations, this practice has already been encouraged. In Auckland, the Unitary Plan was established in 2016, encouraging higher density in certain zones. Since then, how has urban density changed, and how does it relate to the availability of public transport?

This presentation will explore how planning practices have better enabled density to support these desired transport outcomes. This will be achieved through comparing areas that have achieved greater density, and how they relate to transport, and will cite both positive and negative examples. It will draw linkages between planning, density and transit, and how they contribute to Te Whare Tapa Whā[1].

[1] a Māori health model of the four dimensions of wellbing

INTRODUCTION

The number of people living in urban areas in New Zealand and around the world is increasing. Auckland alone accounts for approximately one-third of New Zealand's population. Associated with this increase in population is the increase in demand for transportation. Historic underinvestment, combined with rapid population growth in Auckland, has resulted in many transport challenges facing the city, such as access to and the quality of public transport services, and a road network at capacity (ATAP, 2019).

With the increase in population, there is a need for greater urban density to transition away from urban sprawl. Urban sprawl has been shown to be unsustainable, creating auto-centric cities, increasing congestion, increasing pollution, and reducing transport choice (Rafferty, 2021). Higher density urban areas coupled with well-connected public transport and active mode access can create better-connected cities and neighbourhoods, which contributes to improved travel choices (ATAP, 2019).

This paper will explore how planning practices have better enabled density to support the desired transportation outcomes. It will look at whether Auckland has increased in density in the past decade and where this increase in density has occurred. Finally, it will look at an example in Auckland that has achieved greater density, as well as an example of an area that has good transport connections with a real opportunity for increased density, and how they relate to transport and Te Whare Tapa Whā.

TRANSPORT ACCESS IN AUCKLAND

The transport system is key to making Auckland (or any urban area) more accessible and facilitating continued growth. The continued population and job growth in certain locations have put the car-orientated transport network under significant pressure, resulting in congestion, delays, and unreliable travel times, reducing the quality of people's life. However, improvements have been made to the transport system over the last two decades to provide alternative mode choices.

Rapid transit can efficiently move large numbers of people to intensely developed locations such as the city centre and other major centres. It provides fast and reliable travel options that encourage people not to use their cars. It is more beneficial if the densest neighbourhoods and commercial areas are located around RTN stations. These neighbourhoods increase the number of people within walking and cycling distance of stations, which has the potential to reduce vehicle trips (which can be consumptive of carbon and cause other negative outcomes such as congestion and increased road safety risk).

There has recently been investment in the development of a quality public transport system. According to Auckland Council (2021), Auckland's Rapid Transit Network (RTN) was barely used over a decade ago (Auckland Council, 2021c) but investment in the rail network and the Northern Busway has meant the public transport system now carries over 26 million passengers per year, with the only exception being during lockdowns (Auckland Council, 2021b). However, since 2020, public transport patronage has not reached the same levels previously achieved before the pandemic (Figure NZ, 2022). This could be due to several reasons, such as more people working remotely, the bus driver shortage in Auckland in 2022 and a change in commuter habits.

During 2022, Auckland and New Zealand experienced a shortage of bus drivers. This shortage resulted in many daily cancellations of public transport services. The numbers vary, but during July 2022, there were over 2000 cancelled public transport services per day in Auckland (Niall, 2022). These cancellations made journey times unreliable, resulting in Aucklanders losing trust in the public transport system. Furthermore, in 2022 Kiwi Rail and Auckland Transport announced that the Auckland rail system will be progressively shut down to rebuild or repair tracks starting in 2023 (KiwiRail, 2022). The Greater Auckland Transport blog states, "*closing lines for months on end is only going to severely erode confidence in the network and make it all that much harder to get people to use it again once the work is finished*" (Lowrie 2022, para. 7). Cities that want to encourage density would prioritise public transport, ensuring it is always reliable and providing quality services to the community.

IMPORTANCE OF DENSITY

Density has become a buzzword in recent years. In an urban planning context, density is a measure of quantified human presence divided by a land area. Density and transit are related. Transit serves an area unevenly, providing value around stops and stations and less value everywhere else. As a result, density should be increased around public transport and in urban areas so that transit outcomes are optimised.

Intensification can be both a social and environmental benefit. If designed well, this can help enable more walkable and accessible communities that have good access to services and amenities. This is especially true in mixed-use neighbourhoods (areas that have both residential and commercial/retail spaces) that also have good transportation connections.

NATIONAL POLICY STATEMENT AND PLANNING POLICIES

There has been a policy shift in Auckland and New Zealand to increase the density of cities, which is a marked change from the traditional low-density neighbourhoods and developments. The National Policy Statement for Urban Development (NPS-UD) which came into force in August 2020 sets out the objectives and policies for urban development under the Resource Management Act 1991 (RMA), which Councils must give effect to. The NPS-UD aims to ensure that New Zealand's urban areas are, "well-functioning environments that meet the changing needs of our diverse communities" (Ministry of Housing and Urban Development, 2021).

Careful planning is required to achieve quality density outcomes. If an area does not have good transport connections, high density is not always appropriate. The NPS-UD enables the development of buildings of at least six storeys in height within the walking catchments of existing or planned rapid transit stops. This will help to enable better housing choices, in locations which will be best suited for higher density.

The Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill (2021) (RMA Amendment Bill) enables Tier 1 urban area landowners to build up to three houses of up to three storeys on their site (Parliamentary Counsel Office, 2021). However, without consideration of wider transport planning objectives, this may result in increased density in areas that may not be appropriate. Growth must be carefully planned and in the right areas to limit poor outcomes (Maharaj & Martin, 2021). Therefore, questions should be raised about how higher density developments are structured and where they are located, rather than focussing on the density of the overall city. A growing population is the product of the desirability and economic potential of a region. To inform this discussion in Auckland, it is important to examine whether high density areas are being developed in areas with quality transit options and in people-friendly environments which promote the use of public transport or active modes.

DENSITY CHANGE IN AUCKLAND

Error! Reference source not found. below shows the population change between the 2013 and 2018 censuses which is overlaid with the RTN bus and train routes in Auckland. Ideally, the greatest increases in population would be located around the RTN routes as this creates neighbourhoods that are within walking or cycling distance to an RTN, increasing accessibility and transport equity. **Error! Reference source not found.** shows that some of the areas that have experienced the greatest population change (more than 30% change) are accessible to RTN services (around a 5km radius) such as Albany, North Harbour and Penrose, but not many of these are residential areas. It also shows that there are other high growth areas around Auckland such as Long Bay, East Tamaki, and Flatbush, to name a few, which are not near RTN. Ideally, these locations would have quality transportation connections other than roads, linking them to wider Auckland. However, this is not always the reality.

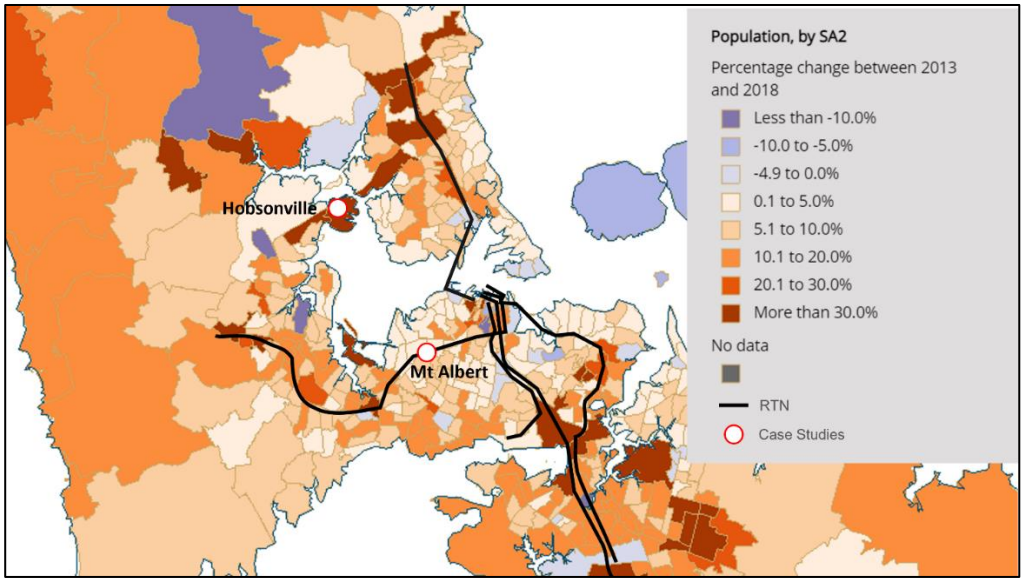

Figure 1 Population Change between 2013 and 2018 Census with RTN Overlaid (Stats NZ, 2018)

Hobsonville Point is another area with some of the greatest population change, which, while it does not have a RTN connection, it does have a commuter ferry service which connects to Auckland's Central Business District (CBD). **Error! Reference source not found.** also shows the two case studies that are examined later in this paper, which are Hobsonville Point and Mt Albert.

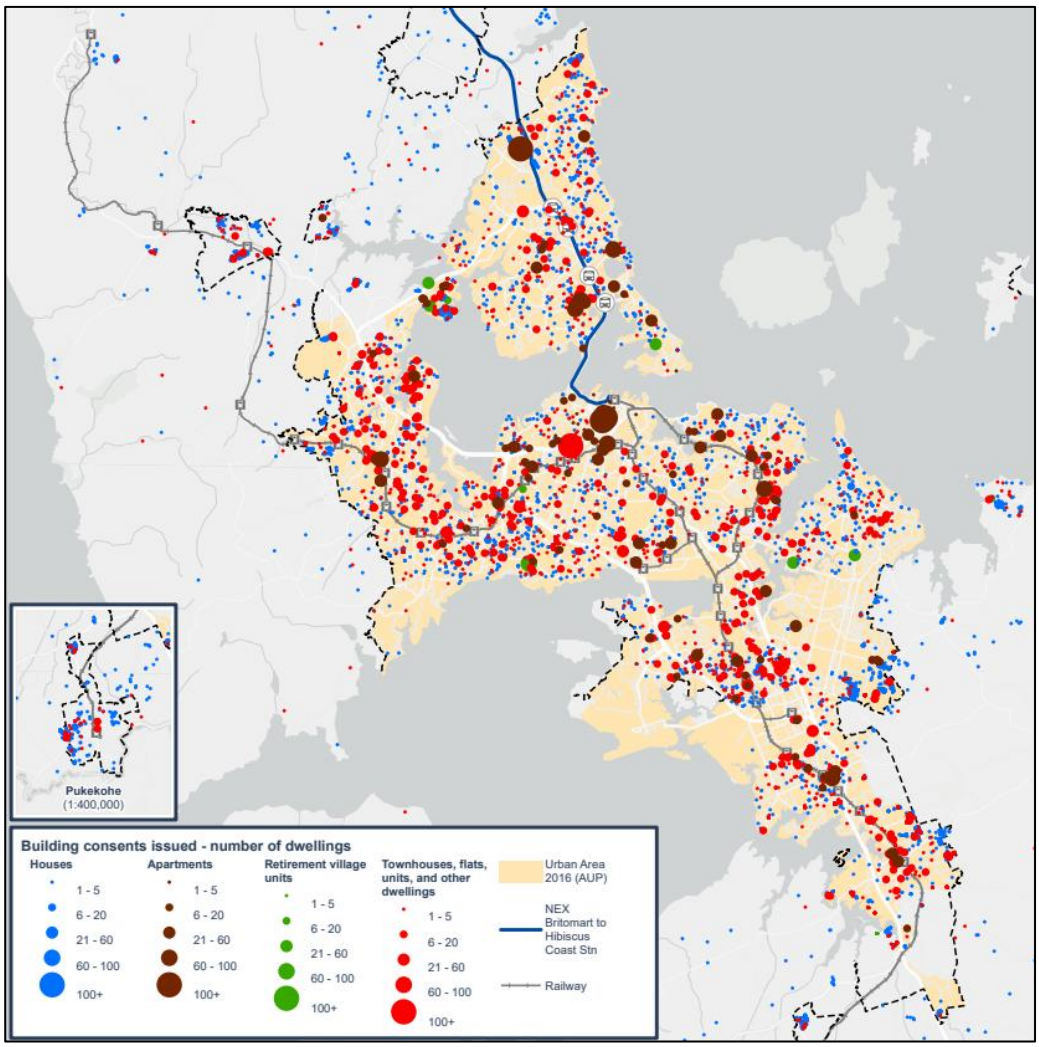

Figure 2 Dwellings consented, by type and size, 1 July 2010 - 30 June 2021 (Auckland Council, 2021e)

Figure 2 shows the residential dwellings consented in Auckland by type and number from 2010 to 2021 and is overlaid with the train lines and the northern busway (RTN). The map shows that residential consents in Auckland are widespread across the urban environment. Of most significance is the red and brown dots which represent higher density dwellings such as townhouses and apartments. Concentrations of apartments and townhouses are seen to be located around public transport, indicating a trend towards better public transport accessibility. In 2020/2021, 85% of residential dwellings consented within a 1500m catchments of train stations and the Northern Busway stations were apartments and townhouses (Auckland Council, 2021e). General catchments for walking are 400m (5-minute walk) for low frequency public transport, 800m (10-minute walk) for high frequency public transport, and 1,200m (15-minute walk) for high frequency rapid public transport (Waka Kotahi, 2021). This shows that there has been an increase in density in the right areas. This will likely only increase with the changes to the NPS-UD and the recent RMA Amendment Bill.

From Figure 2, apartments with a high number of units (more than 100) tend to be concentrated around the city centre, enabling more people to live within active mode distance from jobs. This map also indicates that there has been a greater number of large, high density development dwellings consented compared to single dwellings over the past 10 years, showing an increasing trend to create higher density developments.

On a note of caution, Figure 2 tends to show a more random spread of medium density townhouses around Auckland which do not always correlate with RTN. Some of these increased density developments may be occurring in locations which do not have adequate transport infrastructure or options in place to accommodate the increase in density. Furthermore, the RMA Amendment Bill (2021) enabling the development of three homes of up to three storeys on most sites may result in more dense developments occurring in areas that may not be suited for increased density. This can include areas that are more suburban, lack good public transport options or may have a road network close to capacity. Density in these areas may put a strain on the transport network that is designed for a lower annual average daily traffic, negatively impacting the community.

Overall, Figure 2 indicates that the planning policies in place are increasing density in Auckland.

HOW DENSITY CAN AFFECT TE WHARE TAPA WHĀ AND TRANSPORT EQUITY

Te Whare Tapa Whā is a model of the four dimensions of wellbing. The four dimensions include:

- Taha tinana (physical well-being)
- Taha hinengaro (mental and emotional well-being)
- Taha wairua (spritual well-being)
- Taha whānau (social well-being)

Neighbourhoods and transport systems that link with the rest of the urban area are fundamental to people's health and wellbeing. Higher density neighbourhoods, especially mixed-use neighbourhoods, can improve transport equity and increase accessibility to amenities. This can positively affect people's overall health and wellbeing. For example, density better enables environments where everything is close together, reducing the need for vehicle trips, as everyday needs are accessible to people within a short trip of home. These amenities can include medical facilities, community centres, retail, and public space, as well as access to public transport. Higher density also means that more people can be located close to public transport, making the use of these services more effective. A study undertaken by Allen interviewed 57 people living in medium density neighbourhoods and concludes, *"the majority of those interviewed would trade-off standalone living for low-rise apartment or terraced house living… if urban amenities were integrated into their neighbourhoods"* (Allen, 2015, p. 97). This conclusion highlights the importance of having good public amenities in areas with greater density.

Poorly designed density in areas with inadequate transport connections, such as a lack of public transport, low permeability, or lack of active mode facilities, can negatively impact people's health and wellbeing. Additionally, neighbourhoods that have increased density without open public spaces or green spaces can negatively impact people's hauora (a Māori philosophy of health and well-being). "*Poorly designed and maintained open spaces, lack of investment in green spaces… can have a detrimental effect on the community*" (Regional Public Health, 2010, p. 17).

PLANNING PRACTICES SUPPORTING DENSITY IN AUCKLAND

The Auckland Unitary Plan (AUP) introduced in November 2016 and the Auckland Plan 2050 acknowledge that Auckland cannot continue the unchecked sprawl that has been happening. The Introduction of the AUP included the re-zoning of the majority of Auckland to allow the creation of more dense housing typologies such as townhouses and apartments. The AUP introduced the Terrace Housing and Apartment Building (THAB) Zone which permits multi-storey apartments. The AUP typically has these zones located around transit to help encourage increased density in these areas where they will have the most benefit. However, not all areas faced the same scale of up-zoning.

When looking at a planning map seen in Figure 3, the majority of areas are yellow (Residential – Mixed Housing Suburban Zone). This zoning type does not encourage the creation of denser developments. Additionally, there are large areas of white (Single House Zone, in which multiple dwellings on a single site are non-complying activities) around Ponsonby and Grey Lynn, areas close to current and future RTN, and Auckland CBD. Furthermore, a large proportion of the area in the central isthmus around the CBD has a heritage overlay, which prevents increased residential development in these areas. These are urban areas which would be most beneficial to have greater density if Auckland is to decrease car usage. However, with the recent RMA Amendment Bill which will enable three storey houses to be developed in most locations, Auckland may begin to see greater density development in areas best suited to increased density that were not previously possible.

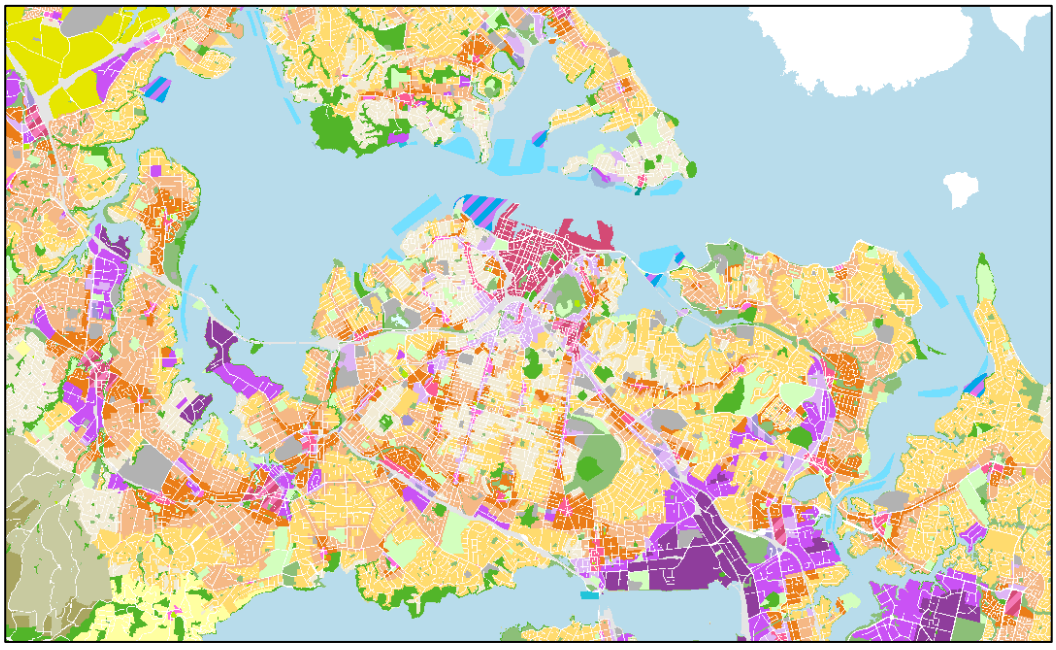

Figure 3 Auckland Unitary Plan Map (Auckland Council, 2022f)

The AUP currently allows for better utilisation of existing urban areas, facilitating denser development in many brownfield areas (a site that has been built on before), which will help reduce urban sprawl. It is apparent that density is increasing in Auckland. Even in the pandemic, the number of dwellings consented in Auckland has increased, with growth concentrated in multi-unit dwellings (townhouses and apartments) in brownfield areas.

Auckland's development

The last three years in Auckland have been the three highest years for consented dwellings during the period 2005-2021, as shown in Figure below. The graph shows that the number of new residential consents has been rising since around 2011. In 2021, 19,036 new residential dwellings were consented, around a 29% increase from 2019/2020 and about double the number of dwellings consented in 2016 when the AUP was introduced.

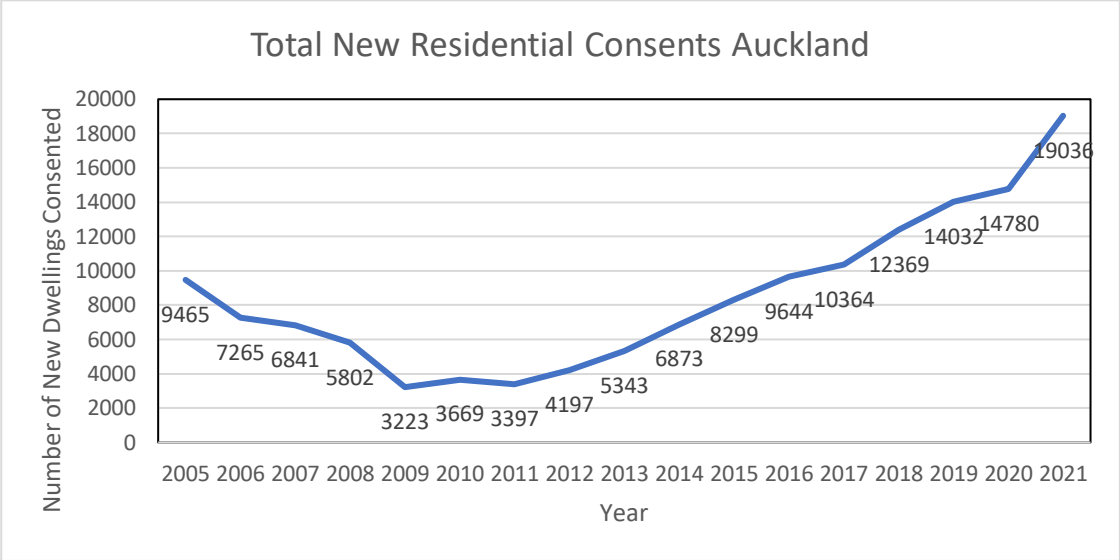

Figure 4 Total New Residential Consents in Auckland (Stats NZ, 2021)

Auckland has also seen an increase in the number of multi-unit dwellings (townhouses, apartments and units) being consented. Figure shows that the percentage of higher density development has been increasing from around 2011, with the percentage of higher density development being greater than 60% of all new residential developments in 2021. In 2020/2021, 4793 dwellings were consented within a 1500m catchment of train stations or Northern Busway stations. Of these, 85% were apartments and townhouses, indicating densification is already occurring (Auckland Council, 2021e).

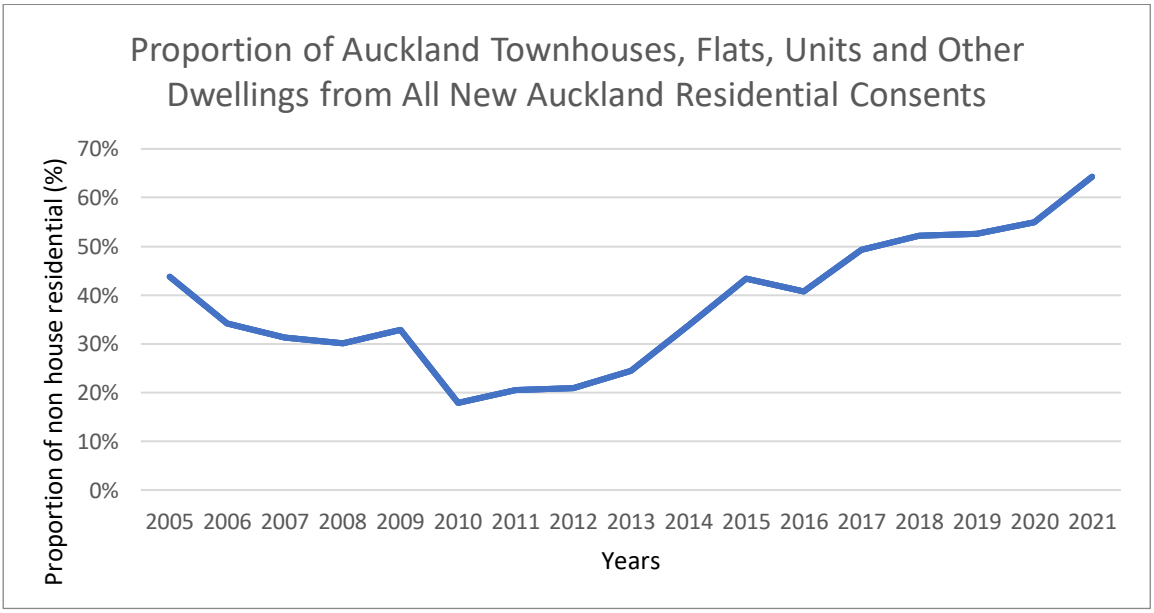

Figure 5 Proportion of Townhouses, Flats, Units and Other Dwellings from All Residential Consents in Auckland (Stats NZ, 2021)

In the three years before the adoption of the AUP the proportion of development occurring in brownfield areas was decreasing (Martin & Norman, 2018). From 2017, the market appeared to strongly respond to the AUP re-zoning, with substantial growth in the number of brownfield consents, together with an increase in number of total building consents, demonstrating the effect of the AUP.

CASE STUDIES

Medium density housing has become an increasing option of choice in New Zealand urban development. Medium density is a term used to refer to a type of residential development that typically includes multi-unit dwellings of up to six storeys (MBIE, 2019). Below is an example of an Auckland neighbourhood that has increased in density in the past few years, and another example of a neighbourhood that has good transport connections with a real opportunity for increased density. The location of the two areas can be seen in Figure 1.

Hobsonville Point

Hobsonville Point is located in the northwest of Auckland, between Whenuapai and West Harbour, approximately 22km away from Auckland's CBD. It is an area that has dramatically increased in density over the last decade and is an example of a master-planned community. Such developments deliberately plan for a mix of residential homes, parks, open spaces, schools, public transport, and businesses.

Hobsonville Point has been designed as a medium-density suburb. It is intended to be a people friendly and walkable neighbourhood. The development includes detached dwellings, townhouses, apartment buildings, and retirement homes. There are two supermarkets in the area and various cafes, bars, and other retail scattered around the neighbourhood.

Transport

Hobsonville Point is served by two connector buses which have a frequency of at least every 30 minutes, a commuter ferry connecting to Auckland CBD, and is located near the North-western Motorway (State Highways 16 and 18). Hobsonville Point has small street block sizes (around 70-100m) which creates a permeable walking network. This is supported by wide footpaths and narrow streets, which creates a more attractive walking environment which encourages slower vehicle speeds. However, Hobsonville Point lacks leading public transport infrastructure.

Hobsonville Point is an example of a master planned community that was developed before sufficient transport options were created. It seems to be an area which was designed with the intention of not needing cars much yet lacks adequate alternative transportation options. The two bus services and commuter ferry do provide some access out of the development but not to a scale appropriate to truly achieve good levels of mode shift. Master planned communities are best when they align with transport development at the same time.

From the 2018 census data on departures (for both work and education) of Hobsonville Point, it shows approximately 54% of people drive, 10% are a passenger in a car/truck/van/company bus, 7% catch the bus, 10% work from home, 11% walk, 6% catch the ferry and 2% cycle (Cooper, 2021). This shows that the majority of people still use a car (approximately 64%) to leave Hobsonville, with 26% using other modes. These percentages could be a result of the distance of the area from central business districts, inadequate public transport options or RTN connection, the high price of the commuter ferry, low frequency of the ferry services, and time duration of public transport.

Mt Albert Central

Mt Albert is an inner suburb of Auckland located approximately seven kilometres to the southwest of Auckland's CBD. Though not as densely developed as Hobsonville Point, Mt Albert is an example of an established community with existing transport options such as the western rail line, good bus route connections and is located close to the north-western cycleway. Mt Albert has various facilities along New North Road such as restaurants, retail, medical services, and a supermarket. There are

several green spaces and public parks in the area including Mt Albert (Owairaka domain) and Harbutt Reserve and several schools.

In terms of the AUP zoning, Mt Albert contains THAB Zones areas running alongside the Western train line/New North Road and a THAB Zone around St Lukes Road which encourages increased density development. However, there is also a large area in Mt Albert which is zoned as the Single House Zone and some areas zoned as Residential – Mixed Housing Zones. These zones in the past restricted the ability of increased density developments.

Unlike Hobsonville Point, Mt Albert is well suited to handle increased density developments with the existing transport network and access to RTN. With the new planning amendment allowing developments of three homes up to three storeys and the NPS-UD allowing developments of six storeys by Rapid Transit stations, Mt Albert may start to see more increased density developments.

Transport

Mt Albert is located close to the city centre with short commute times. The Western Rail Line runs through the suburb and connects to the CBD. Mt Albert has multiple bus routes that service the area, including frequent services and has many more public transport options when compared to Hobsonville Point.

Like Hobsonville Point, Mt Albert has a relatively good street block size and arrangement. The block sizes are relatively small (but not as small as Hobsonville Point) which enable a permeable walking network.

From the 2018 census data on departures (both for work and education) from Mt Albert, approximately 46% of people drive, 12% are a passenger in a car/truck/van/company bus, 10% catch the bus, 6% catch the train, 6% work from home, 16% walk, and 2% cycle (Cooper, 2021). These numbers show that most commuters still drive (around 58%), and around 34% use alternative modes to travel. Of the two case studies, Mt Albert has the higher proportion of people using alternative modes. Unlike Hobsonville Point, Mt Albert has a greater range of transport options and is located closer to the CBD. The area is in a prime location for increased density developments with the established transport network providing alternative options for travel.

CONCLUSION

With urban populations increasing, greater density is needed to help stop urban sprawl. With the introduction of the AUP in 2016, Auckland has experienced an increase in the amount of new residential dwellings and an increase in the number of higher density dwellings such as townhouses, terraced houses, and apartments. However, greater density needs to be located in the right areas with good transport connections in order to create positive outcomes and support Te Whare Tapa Whā. An area which increases in density with no alternative transportation modes apart from the private vehicle takes away peoples' transport choice and equity, impacting their wellbeing. It is important that transport infrastructure or networks be developed prior to or alongside developments that increase density.

Auckland has also increased investment into the public transport system and the RTN in recent years. This investment has resulted in improvements in transport infrastructure and services such as the Northern Busway, train lines and bus and ferry routes. However, does Auckland prioritise public transport enough and will Aucklander's lose faith in public transport with the unreliable buses and future rail closures? Does Auckland need to prioritise public transport more before increasing density? In addition, areas around RTN and public transport have increased in density. These developments are important as the RTN can quickly and efficiently transport people to major urban areas like the CBD of Auckland. Being close to RTN and public transport provides transport choice to people, enabling them to not be reliant on a car which supports their Taha Hinengaro (mental) well-being. This is critical as Auckland is already at capacity on the roads during peak hours. With the implementation of the NPS-UD and the new RMA Amendment Bill, more higher density developments will hopefully occur around public transport and RTN.

The two case studies chosen (Hobsonville Point and Mt Albert) are areas with changing density that currently have different transport options with mixed implications on the health and wellbeing of the people. Hobsonville Point is an example of a medium density master planned community, while Mt Albert is an existing community with great potential for increased density due to the existing transport connections. Both neighbourhoods achieve a good pedestrian network with small block sizes and narrow streets, as well as easy access to public green space which is important for liveability outcomes in higher density neighbourhoods.

The existing RTN and public transport options as well as the close proximity to the CBD makes Mt Albert an ideal place for increased density development. The public transport options provide the area with alternative mode choices for people other than the use of a car. With the implementation of the NPS-UD and the new RMA Amendment Bill, greater density development will hopefully begin to occur in this neighbourhood and other neighbourhoods with similar opportunities and transportation connections. Conversely, Hobsonville Point has experienced increased density development ahead of any true RTN connections or adequate public transport options that would promote mode shift. This is reflected by the differing percentage of mode splits for the two areas, with Mt Albert having 34% of residents using alternative modes when travelling (on departure), compared to Hobsonville Point with 26%. Higher density developments should occur in conjunction with or after the creation of quality and efficient public transport or be located within active mode distance of urban areas with a high number of jobs. This helps these developments to not be dependent on cars.

In summary, Auckland is increasing in density. Density is a good thing if done well. It can create communities where all people's needs are within a short distance of their homes, help stop urban sprawl and provide more housing. To be done well, developments with increased density should have quality public transport or RTN connections. These transport networks/connections should be created prior to or at the same time as the developments. The recent NPS-UD will help enable the creation of higher density developments around RTN which is the optimal location for greater density. The latest RMA Amendment Bill enables landowners to build three houses of up to three storeys. This is both a positive and a negative for Auckland and New Zealand. The bill will enable increased density in areas which are well suited for development that haven't been able to intensify in the past. However, it will also likely enable increased density in areas that do not have a good transport network or transport connections.

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