Further Down the Track

Explanatory Document

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RESEARCH QUESTION

Can the restructuring of a traffic corridor in Auckland positively contribute towards resolving existing issues surrounding transport and density in the locality?
Policies to allow Auckland to sprawl continue to dominate strategic planning and are, therefore, counterproductive to planning for public transport, placing people at the extremities of the city and stretching the public transport network over great distances, making it expensive and unreliable.

Years of suburban sprawl have resulted in spread out communities, reliant on the private motor vehicle. Car parking takes up large sections of land at a time when the price of land is rising faster than ever before, acting as pedestrian moats surrounding malls and other amenities while people are sitting through hours of traffic, travelling further and further each day trying to balance the cost of living versus the costs of travel.

This project investigates Auckland's density and growth around the focus of the private motor vehicle and looks at the current plan to solve traffic problems, the other proposed alternatives and how these could be used to get Auckland moving again. It will look at the principles of density and transport and how they can be aligned to assist each other and how the current transport corridors of the city can be used to achieve this.

The scheme looks at one of Auckland’s major transportation corridors, Dominion Road, and the effect that an upgrade to the public transport network would have. It looks at a series of locations for transport interventions to have the greatest impact on the corridor for the city. It examines, in more detail, the implementation of one of the interventions and the effect and opportunities that are created in the surrounding urban area due to this.
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# Table of Contents

**RESEARCH QUESTION** 3

**ABSTRACT** 5

**ACKNOWLEDGEMENTS** 7

**INTRODUCTION** 13

- Project overview .................................................. 13
- Aims and objectives .............................................. 15
- Scope and limitations ............................................. 15
- Methodology ......................................................... 17

**DENSITY IN AUCKLAND** 19

- Current population and projected growth patterns ............. 19
- Proposed density through the Unitary Plan ....................... 20
- Analysis of approach .............................................. 20

**DENSITY AND TRANSPORT PROBLEM** 23

- Density and transport working together ........................ 23
- Analysis .............................................................. 25

**TRANSPORT IN AUCKLAND** 27

- History of transport in Auckland ............................... 27
- The existing network and its problems ........................ 29
- Proposed transport solutions .................................... 29
- Transport solutions by Auckland Council and Auckland Transport .................................................. 31
- Proposed transport solutions by Government .................. 35
TRANSPORT CORRIDORS

What are they? .......................................................... 39
Connector ................................................................. 41
Implications of the connector: ...................................... 41
Commuter ................................................................. 43
Implications: ............................................................. 43
District circulator .......................................................... 45
Implications: ............................................................. 45
What is the problem with them? .................................. 47
Selected transport corridor .......................................... 47

DOMINION ROAD

Location ................................................................. 51
History and culture of Dominion Road ......................... 55
Dominion Road and density (Unitary Plan) ..................... 57
Dominion Road and transport ..................................... 58
Dominion Road current transportation context ............... 61

TRANSIT ORIENTED DEVELOPMENT (TOD)

Transit Corridors and TOD’s ........................................ 63
What brought about TOD? .......................................... 64
Why are we interested in TOD in Auckland? ................. 65
Summary of the benefits of TOD: ................................. 67
INTRODUCTION

Project overview

This research project addresses the problems Auckland is facing: the need to intensify and the lack of an alternative to the private car. It supports the current push for intensification; however, not in the locations currently proposed. It also supports the idea of providing a coherent and efficient public transport system. It aims to identify whether an upgraded public transport system and intensification surrounding it, would allow Auckland to be the world’s most liveable city.

Auckland is New Zealand’s largest city and will continue to be the fastest growing region, accounting for three fifths of the country’s population growth between 2016 and 2043. It currently has a population of 1.57 million and is projected to reach 2 million by 2030. This means that Auckland makes up 34% of the country’s population, increasing to 37% by 2030 and further to 40% by 2043.¹

This population increase requires major planning of Auckland’s urban and architectural environment, including transport, centres, amenities, infrastructure, housing and density. This project focuses on the housing and density aspects and on aligning these to work with transport.

The Auckland Plan², adopted in 2012 by the Council and discussed later, proposes the Unitary Plan,³ recently approved, for use. The Unitary Plan proposes to solve Auckland’s current housing problems by expanding the rural urban boundary and increasing density across the city, with major focus points, or ‘special housing areas,’ where it plans to build a large number of homes. It focuses density on nodes, such as New Lynn, along the existing train routes as spread out locations. These nodes act as a focal point and contain a mix of activities (e.g. businesses, cafes, libraries, shops, Government facilities). These are areas of denser land use and taller buildings, servicing a large catchment area of the surrounding low density suburbs. These nodes provide better access to amenities and create an opportunity for community.⁴

Many of these nodes are located at existing town centres and are scaled to suit existing needs. While they generally perform well economically and provide amenities to the immediate surrounding areas they tend to be points of high density surrounded by moats of lower density. This project attempts to utilise this principle, but uses it to improve the density levels along the existing transport corridors, rather than the Unitary Plan’s focus on merely densifying existing sub centres in Auckland.

⁴ Ibid.
Aims and objectives

This research aims to build on the Council’s plan to align density with public transport. It will attempt to provide people with a place to live, work and play in areas that are part of a larger transport network to keep Auckland moving. Currently, the ideas being proposed to solve Auckland’s housing and transport problems are controlled by minimum standards required by political and financial influences rather than responding to what is actually needed. This project will evaluate these ideas and aims to provide a more radical approach that breaks down the stigma and preconceived notions regarding the levels of density and transport within Auckland.

Scope and limitations

The research approach is about building on the plan to upgrade Auckland’s public transport network, introducing a rapid transport network to the city, and aligning this with the density growth with the Unitary Plan. The design result is focused on Dominion Road in Auckland’s central isthmus zone. However, the project is also about developing an understanding of how this might be applied to creating a framework for future growth. It will provide an example of principles that can be applied to other areas to achieve an overall ideal city.

The plans currently in place to upgrade the network by 2040 are considered insufficient for the city when projected population growth is taken into account. This project works with the idea that the proposed upgrades to the city could be implemented today rather than 2040.

The focus of this project is the design of a transport station on Dominion Road and the immediate surroundings. In order to achieve this the design needed to look at the road as a corridor, and also Auckland as a city in order to understand the general requirements for intensification and transport.


Methodology

Research of existing
Research will first be conducted on the existing transport network, its locations and capacity, to assess the current problems of the city from a transport perspective. An analysis of the current proposed changes and solutions will be completed to understand the future of public transport for Auckland. An assessment will be undertaken of the current densities of Auckland and the projected growth and changes under the current Unitary Plan, their locations and how these align with the proposed changes for the city’s transport network.

Research through text
A study of how the alignment of density and transport can benefit the city, its people and economy will be completed through researching current information and literature.

Research through precedents
Analysis of precedents of designing around transport and around individual transport stations will be conducted. Research into precedents of designing around transport will provide evidence for this project’s realistic application. These precedents will provide an understanding of the densities applied to the city currently, what has been done overseas, and what can be incorporated into the final design of the project. Research will then be conducted on Auckland’s main transport station and on a similar design proposal completed for a similar Australian station. These are done to understand their current capacity and functional requirements and what can be done to further encourage the ideas of the final design.

Research through design
Research of the transportation network and proposed growth of Auckland will lead to the influence of selecting the larger corridor location, where a more detailed analysis of the context, functional requirements, density levels and transport network will be conducted. A study of how the proposed transport network, functional requirements and density levels could integrate with the corridor will then be completed to identify an individual site location for an architectural intervention.

Outcomes and design goals will be taken from the literature and precedent reviews, combined with site analysis, to drive the development of the project. Although the design will start with a larger network the final design will be site specific, it will respond in a way that can be applied to other locations.

Research will be conducted through sketching, diagrams and 3D modelling to respond to design goals and site implications to provide an applicable solution.
Figure 1: Percentage change in population density
DENSITY IN AUCKLAND

Current population and projected growth patterns

Auckland’s population is increasing every day. With population increasing so rapidly it is inevitable that housing supply will be an issue, new homes need to be built and density needs to increase to allow for this.

Currently Auckland has a population of around 1.57 million people and increasing at the rate of 800 new residents each week,7 with two thirds of this growth being accounted for from our birth rate and internal migration, and one third from international immigration.8

Between 2001-2013 Auckland’s urban footprint increased by 33%9 and Auckland’s population increased by more than 20%,10 this would indicate that Auckland’s average density has actually decreased by 10%.

However, this is not the case, statistics show that as the city is growing outwards it is also growing upwards. Intensification accounts for around 60% of the growth (meaning that existing developed areas got 12% denser) and the remaining 40% occurs in the low density areas and expanding the footprint by 33%.11

Auckland, located on a land-bridge, has traditionally sprawled this 33% footprint expansion north and south of the city. Generally, this is due to cheaper land costs, but raises infrastructure costs in order to have these areas function as part of the city and increases people’s commuting costs drastically.12 By 2040 Auckland’s population is projected to reach to the 2.3 million mark, meaning this sprawl is projected to continue and, at some point, reach a critical point where commute times and the associated costs outweigh development costs and become unacceptable.13

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9 Peter Nunns, Population-Weighted Densities in New Zealand and Australian Cities: A New Comparative Dataset (Auckland NZ: MRCagney Pty Ltd, 2014).
10 Fei Xu, Population Change by Territorial Authority(Auckland, NZ: Environmental Health Indicators New Zealand, 2014).
The Proposed Auckland Unitary Plan (PAUP) is a planning document to be used by Auckland Council as a means to control land use. It divides the city up within the rural urban boundary (RUB) into zones and targets development location, intensity and housing typologies.

Under this plan the general principle is a minor increase in density across the board, higher density at key locations in the city and with special housing areas pushing outside of the RUB to the northern and southern extremities.

The rising population growth projects a requirement for 400,000 more dwellings to be built by 2040, with around 130,000 of these being built in special housing areas outside Auckland’s city boundary, the difference generally being located at the extremities of the boundary.14

Currently 76% of the housing stock in Auckland is detached single dwellings and 14% four storey or above.15 Under the Unitary Plan a large percentage of this single zone is re-zoned to allow for higher density living. However, Auckland’s Isthmus zone, one of the largest zones closest to the CBD, is largely remaining single, detached dwellings.
Analysis of approach

While the principles of densification in the Unitary Plan are good and align with the future of Auckland, the proposal to conduct comparatively low densification of one of the largest zones closest to the CBD, seems to be counter intuitive to a growing city. Placing people further away from the CBD increases the load on the city’s transport network and means the costs of creating new infrastructure will rise to counter any drop in land prices as you move further from the city centre.

Proximity to amenities, density and efficient use of land should be the prime considerations when considering the costs of development. Inflated housing costs in the city are only promoting gentrification within the city. Building on the city fringes means the costs of transport increase for families who are already struggling. This pushes them away from the ability to access public transport easily and, in turn, results in having to rely on the car as their sole means of transport. To put this in perspective the number of dwellings being built outside the city limits is approximately the same as it would be to double the number of dwellings in the Isthmus zone.

The market for higher density, mixed-use living in the different centres of Auckland consists principally of young adults, professionals and the ageing baby boomer generation who want high amenity and low maintenance lifestyles. This market is growing as Auckland grows and people begin to move away from the quarter acre dream mentality that was traditionally strongly ingrained in New Zealand culture. Currently the idea of densifying towards the extremities of the city may make financial sense for developers, but it is inevitable that people are going to want to move closer to the city and the idea of a single detached dwelling in Auckland’s Isthmus zone will be a memory.

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16 Nunns, “Are Cities Really Getting Less Dense?”.  
Figure 4: Percentage change in population
Currently Auckland relies heavily on the car as the primary form of transport for most people and traffic congestion is worsening daily with peak hour travel times expanding constantly. The current public transport system is overcrowded, unreliable and costly. The Government’s proposed solution to upgrade the motorway networks will cater for slightly less than the current loads once they have added 130,000 new homes in the next 30 years and around 1 million more cars, overloading the new system.

If the proposed densification plan from the Unitary Plan is laid over the proposed transport network, it is clear that the city is densifying away from the Isthmus area. The proposed transport network is designed to service the density at the extremities of future development to a level comparable to that of today, not to resolve any of the problems currently faced by the city.

It is essential for the future of the city that density and public transport should be considered at the same time. Without public transport the density and gentrification of the city becomes a problem, and without density public transport does not have the patronage to be economically viable.

Without high numbers of passenger trips, a new rail investment will fail to deliver benefits to the city. Dense concentrations of people and jobs around transport stations is particularly important. “Nothing is so conducive to the relative economy of rail transit as high volumes and population density. High population density increases the costs of all urban transportation, but substantially less for rail than for other modes.”

Rail has high upfront costs, but with a high passenger capacity and costs less than buses or cars only in corridors with high travel demands, i.e. Auckland’s existing corridors such as Dominion Road.

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22 Ibid.
Analysis

It is very clear Auckland has a sprawl problem as well as a traffic congestion problem. There is a need to reduce the load on the existing road network whilst also increasing density. Therefore, the goal is to implement a faster and more efficient transport network, reducing the loads on the road network and focusing the required densification around this new efficient transport network to allow for population growth.
TRANSPORT IN AUCKLAND

History of transport in Auckland

Early settlers congregated within walking distance of the harbour. The military first built the major roads north and south, trailed by railway lines in the 1870s, bringing together several of the villages on the Isthmus into one network. Ferries were used to connect villages on the North Shore to the centre city.

The implementation of an electric tram service in 1902 to 1956 connected the Waitemata to Manukau, giving Auckland the world’s only coast to coast tramway system at that time. Rail at that time was also the only main freight mover.

After World War II private cars and buses began to replace trams and trains. These changes were reflected in 1955 by a Master Transportation Plan that included a new motorway network. In 1959, the Harbour Bridge opened up the North Shore to development. Suburban sprawl rapidly occurred all over Auckland in the post-war period, including dispersed work places that could only be reached by car.

In the 1960s and 1970s, the bulk of the freight moved from the rail lines to the roads. This led to the growth in light industrial and warehousing development close to Auckland’s new motorway network. During the 1980s, the transport system had sufficient capacity to handle the growing traffic volume, but road deaths had reached record levels.

By the end of the 20th century road deaths had decreased, but traffic congestion and the impacts associated with the private motor vehicle on the environment and people’s health had started to emerge as new issues. Road freight, car use and investment decisions had become interconnected to make the city highly dependent on a road system.

24 Ibid., 22.
Figure 5: Auckland's existing transport network
The existing network and its problems

The physical shape of Auckland’s isthmus area has large lengths of coastline creates multiple chokepoints, this, combined with high levels of car ownership, have resulted in the existing network being based around several major motorways as the main arteries. Public transport consists of a bus network servicing the suburbs and two train lines running west and south.\(^\text{25}\) Attempting to get around the city can be difficult for commuters, with those that choose to use public transport complaining about its unreliability and overcrowding. Some say that it is not cheap enough to lure them out of their car, even with the congestion at peak traffic which is beginning earlier and finishing later than ever before.\(^\text{26}\)

Auckland needs, in fact desperately needs, a solution to its congested transport network, this would be an alternative transport option for commuters to enable them to step out of the existing car-based traffic chaos. It is widely accepted that another mode of travel that is faster, more reliable and reduces the burden of getting around the city is needed for Auckland. If the current situation deteriorates much further, it will have an unacceptable impact on people’s daily lives and on the economic functionality of the city.\(^\text{27}\)

Statistics from the 2013 NZ Census shows Auckland’s current problem of people’s dependence on private transport. Only one in seven people travelling to work is a passenger (including public transport) while only one in every 16 cars has a second person.\(^\text{28}\)

Proposed transport solutions

There are currently two official proposals underway, one from Auckland Council through Auckland Transport and the second from the New Zealand Government. While these are similar the Council’s proposal focuses more on management and upgrades with the Government’s proposal focusing more on where and what should be implemented.
Figure 6: Proposed ITP plan - One System (Integrated)
Transport solutions by Auckland Council and Auckland Transport

Auckland Transport (AT) set out a 30-year spatial framework for the growth and development of Auckland. This is known as AT’s Integrated Transport Programme (ITP)\textsuperscript{29}, and proposes two major strategies to meet existing problems: the management of transport as one system and the development of a transport programme to 2040.

The ITP has a one system approach, focusing on the integration of planning, efficiency and interchangeability. This integration will, it is proposed, develop transport networks that are planned and implemented to shape and serve sustainable land development efficiently, travel across the transport networks will be seamless, with interchanges and pedestrian/cycle crossings working coherently throughout Auckland.\textsuperscript{30}

There is a focus on four key priorities:
- First, to have a single system network approach to manage current congestion problems.
- Second, to integrate transport planning with land-use planning.
- Third, to prioritise and optimise investment across transport modes.
- Fourth, to implement a new transport funding mechanisms that works towards solving Auckland’s problems.\textsuperscript{31}

Alongside AT’s integrated transport proposal, there is a study underway looking into proposing a rapid transit network for Auckland.\textsuperscript{32}

Currently Auckland has 82kms of rapid transit lines, running north, east, west and south. Over the past 10 years there has been a consistent growth in people travelling into the city at peak times on public transport while the number of cars has stayed relatively unchanged,\textsuperscript{33} indicating an overall decline in car usage.

\textsuperscript{29} Auckland Transport, 2012-2041 Integrated Transport Programme.
\textsuperscript{30} Ibid., 15.
\textsuperscript{31} Ibid., 16-18.
\textsuperscript{33} Ibid.
Figure 7: Proposed Rapid Transport Network system
This proposed network includes heavy rail, light rail and busways that are entirely separated from other traffic, handling high frequency of trips (at least every 10 minutes) very reliably. A rapid transit line can move large amounts of people (10,000-15,000 an hour) in each direction, the equivalent of 5 motorway lanes.34

The overall plan is to add 166kms of rapid transit lines to the existing network, over three decades. 41kms in the first decade, 84kms in the second and another 41kms in the third.35

Phase one of the project includes the city rail link upgrade, light rail from Britomart, down Dominion Road to Mt Roskill, a crosstown rail line, north-western busway and an eastern busway.

Phase two will include an upgrade to the southern train line, northern busway extension, north-western busway extension, eastern busway extension and a new rail line to extend a train link to the airport.

Phase three includes a new upper harbour bus rapid transit and a new crosstown isthmus bus rapid transit network.36

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34 Ibid.
35 Ibid.
Figure 8: NZCID

Southern Motorway looking South

113 People
[ 87 Cars x 1.3 Avg. Occupancy ]
7,800 People/hr

750 People
[ 460 seated, 290 standing ]
18,000 People/hr

2,600 people / lane x 3 lanes
24 trains / hour per direction, post CRL.
Proposed transport solutions by Government

To provide for an additional one million Aucklanders by 2050 the New Zealand Council for Infrastructure Development (NZCID) put together a report labelled Transport Solutions for a Growing City. This report identifies these existing problems and also identifies another: land use provisions, as set out in the Auckland Unitary Plan are worsening transport pressures across the region. The proposals to increase density are concentrating vehicle traffic and putting more load onto an existing, faltering transport network, highlighting that AT’s ITP plan, specifically the integration of light rail, is not working in conjunction with the Unitary Plan. “Post-Unitary Plan development reinforces and exacerbates suboptimal land use-transport alignment.” [insert image fig 38.] ref ITP plan

However, after addressing all these problems in great detail and criticising AT’s proposal, they then list their near ludicrously inadequate keys to ‘Improving Auckland’s Transport Future:’

1. Revise and integrate land use and transport planning and investment.
2. Enhance capacity in the road network.
3. Build the eastern motorway corridor.
4. New harbour tunnel.
5. Implement road pricing.

While these priorities in principle seem like a great solution to Auckland’s transportation problems, the implementation of the plan does not. There is a four stage process to implement this, stretching over 40 years. Stage one: operate, maintain and renew infrastructure optimally (essentially just make sure the existing system is working as it should, but not increase its capacity at all). Stage two: make better use of networks (take the existing network and maximise its capacity, ignoring that it has been demonstrated in the report that the existing network is not capable of meeting existing demands). Stage three: manage demand efficiently (taking this so called increase in capacity and managing it safely). Stage four: invest in new infrastructure, services and technology “enhance public transport and better facilities for walking and cycling. This will relieve pressure on the road network and ensure choice.”

Therefore, by around 2030-35 Auckland will start to see a capacity increase in a type of network that is currently not working for Auckland.

There is some hypocrisy surrounding in the NZCID proposal. It clearly states that their opinion on AT’s plan is that it does not identify the problems of Auckland, nor address them in a realistic manner. However, the NZCID report identifies the problems itself, but the proposed solutions do not just address them, they worsen them.

The reason the problems identified in this NZCID report exist today is because the policy shifted to motorways, which is also what this NZCID report proposes, again.

This motorway proposal by the NZCID report is due to political pressures indicating that the country should not spend money on public transport. However, even if someone decides that they do not want to use the system themselves, it is expected that they should support public transport in the hopes that other people will use it. As cars and motorways are not sustainable for the city, public transport is beneficial as it is reducing the number of vehicles on the roads and decreasing travel times also.

38 Ibid., 25.
Conclusion

Neither Auckland Transport’s nor the Government’s plans have been confirmed to go ahead. This leaves the future of Auckland’s transport problems under a level of uncertainty. This research project concludes that it is safe to say that during the next local elections the transport options throughout the city will be a significant voting focus.

To define a more rational plan for the future of the city’s transport, it is safe to assume that a rapid transport network will be implemented at some point in the near future. Both Council and Governmental reports seem to identify the problems the city currently faces coherently and draw the conclusion that a rapid transport network is the best solution from an efficiency point of view, just not from a political point of view.

In the absence of rational comprehensive plans at either the local or national level it is assumed by this research that an upgraded bus network, combined with an upgrade of the existing western train line will service the west of the city. A light rail system, combined with extensive bus upgrades and a dedicated bus lane, will service the north. Either a dedicated bus or train system will service the east. An upgrade to the existing train line south will be implemented and light rail running north and south with an east west crosstown bus will cover the central isthmus area, connecting through to the airport. All will be serviced through the upgraded city rail link CBD system.

With this system, implemented within the next few years, it is hoped that a dramatic shift in the pattern of the city’s development will occur. Car ownership should decrease from the current 89% to levels that are more comparable with those of Copenhagen’s 26%.

The resulting requirements for car parking, or the need for car-based streets, can be removed, turning areas into walkable neighbourhoods where the average person’s daily commute will be by public transport. This project is based upon this possible outcome and examines how the city should be designed to coherently accommodate these assumptions.

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Survey: Travel to Work, by Main Urban Area Results (3-Year Moving Average), New Zealand Household Travel Survey: Travel to Work, by Main Urban Area Results (3-Year Moving Average), last accessed September 5, 2016, http://nzdotstat.stats.govt.nz/wbos/Index.aspx?DataSetCode=TABLECODE7432

40 Statistics New Zealand, "New Zealand Household Travel
TRANSPORT CORRIDORS

What are they?

Transit corridors are a component of the planning of a larger transit network that serves the main objectives of the city. Planning is required at this scale in order to optimise the potential of each individual station in the transport corridor. This is because each station’s role is related to the next and also to the whole corridor.

The definition of a transport corridor is a route that has one or more different modes of transport which share a common course. As corridors can carry large numbers of people, development commonly occurs in their proximity. A corridor is then best defined as the developed areas around different modes of transport which share a common course.

Corridors have 5 main objectives when being considered as part of a larger transit network:

- guide growth and development
- support regional economic growth
- enhance regional and local equity
- promote reinvestment and increase spending power
- maximize development potential and benefits

Corridors can be classified into three basic types:

- The connector.
- The commuter.
- The district circulator.

Each is defined by what it connects to and how these connections can influence the overall possibility of the corridor. Each creates different opportunities. Corridors can be an individual type or a combination of types.

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42 Ibid., 5.
Connector

The connector type links residential neighbourhoods to multiple activity centres within the city. These centres are generally mixed in their uses and therefore result in higher trips per day as they service the 9-5 workers as well as others trips that are made throughout the day.\footnote{Ibid., 6.}

Implications of the connector:

- Demand for new development will likely be highest in the stopping areas identified as ‘destinations’, especially if they are walkable activity centres with good connections to the surrounding neighbourhoods.
- Higher-density development is more likely to occur along destination connector corridors due to increased market demand for locations with access to job and activity centres.
- Destinations outside of downtowns have a stronger potential market for new development if they are centres that people want to visit regularly.\footnote{Ibid.}
Figure 13: Commuter corridor -
Commuter corridors generally serve only one major activity centre, with commuters travelling into the CBD in the morning and out of the CBD at the end of the day. These are better suited to high frequency transport options with larger ridership such as heavy rail. They tend to focus on the 9-5 workforce and provide for better transport options during the peak times, but do not have the passenger numbers to sustain this throughout the day.\textsuperscript{45}

Implications:
- New development along these corridors will be mostly residential with medium-high density (depending on the current market).
- Transit service focus on morning and evening hours, this makes it more difficult to achieve the land use benefits of development.
- Feeder services (park and ride) are usually required as many riders travel longer distances.\textsuperscript{46}
Figure 14: District circulator corridor
District circulator

District circulator corridors allow for movement within a neighbourhood, such as the city rail link around Auckland’s CBD, making it easier to access amenities within a certain area without a car. They can connect with other neighbouring activities or nodes, generally through a bus network. They are also good at maximising the potential within a neighbourhood as they connect all the key destinations within a location to a larger amount of developable land.\textsuperscript{47}

Implications:

- Key component of a city-wide parking plan, making it possible to decrease parking ratios and boost retail sales without providing more parking.
- Only able to attract highly rated development if they can connect important destinations to available land.
- Can only increase transit ridership for the city if they can connect to the larger transport network.\textsuperscript{48}

\textsuperscript{47} Ibid., 7.

\textsuperscript{48} Ibid.
What is the problem with them?
Currently Auckland’s transport corridors are car focused due to the public transport systems being inefficient and overburdened. Motorways have cut through the city north, south and west with larger 4 or 5 lane roads cutting deeper again. These roads divide communities and act as barriers for pedestrians attempting to move through the area, which is dominated by stopped traffic during peak hours and lined either side with car parking for the surrounding businesses. Transport corridors through the city have become outdated and unmaintained. They are focused heavily on the transport that is detrimental to the immediate surrounding areas.49

Selected transport corridor
The biggest disappointment with the Proposed Unitary Plan was how little up-zoning occurred in the parts of Auckland that have the best transport options and are market attractive to higher density development, specifically the central isthmus.50 This was a direct contradiction of the Auckland Plan’s development strategy which highlighted the isthmus as a key location for growth.51

The Auckland Transport Alignment Project report outlines that there is a shortfall of 50,000 dwellings in the Isthmus Zone of the Unitary Plan and the Auckland Plan.52 Therefore, a significant change in what was proposed under the Unitary Plan is required to allow for this. Dominion Road is the key opportunity for this type of densification with its link to a high frequency public transport network.
Dominion Road is one of the transport corridors of Auckland where public transport has the highest number of travellers during peak hours. Currently approximately 2.2 million passengers per year are carried along it by public transport (3% of the city’s public transport trips).53 However, the number of passengers is still expected to grow by 30% without a change in transport options.54

54 Auckland Transport, Dominion Road Update (Auckland, NZ: Auckland Council, 2011).
Dominion Road 2000’s

Figure 16: Dominion Road 2000’s
Location Map
DOMINION ROAD

Location

Dominion Road is one of the roads that characterise Auckland. There have been songs and books written about it and it represents an incommunicable landmark for the city.\(^5\) It does not have the affluence of other shopping destinations, but has long represented a certain aspect of solidity to the city, both in economic and architectural terms. It runs for 7 kms from Eden Terrace to Waikowhai, almost the full length of the Auckland Isthmus zone and contains a mixture of retail and residential alongside a variety of community facilities.

Dominion Road tells a story of Auckland’s growth over 150 years and is a diverse collection of neighbourhoods, buildings and communities. It is the focus and setting for communities and activities that contribute to the character of Auckland.

Auckland’s continuing growth suggests that Dominion Road, and many other parts of the city, will need to cope with more road users and more activities. This further suggests that Auckland Transport and Auckland Council will need to provide an alternative mode of transport and allow for large increases in density to service it.\(^6\)


View South looking over balmoral road

View from intersection with Milton Rd looking south

View south from valley road intersection

View from intersection with Herbert Rd looking south
House along Dominion Road

Typical house to business conversion along Dominion Road

Typical shops along Dominion Road

Saint Alban the Martyr, Anglican Church
History and culture of Dominion Road

Dominion Road has a long and strong historical link with Auckland, and was one of the first major transport routes, dating back to the early 1800s when the area was farmland, with horse and carriage being the usual means of transport, extending approximately to Mt Albert Road. From the 1860’s the farms of Mt Eden, Balmoral and Sandringham were subdivided and developed into residential suburbs as the middle class moved out from the inner city. By the 20th century the farms had been replaced completely by residential housing.\(^{57}\)

Horse-drawn ‘buses’ were the early mode of transport along Dominion Road and connected the workers to the city. Early in the 20th century these were upgraded to trams and began running between Mt Eden, Balmoral, Kingsland, Mt Albert and into the city. Access to transport, induced growth along Dominion Road that was usually commercial development with shopping areas that form at intersections and tram stops such as Valley Road and Balmoral, residential suburbs filled the spaces between the stops and intersections.\(^{57}\)

This means that this road has not only been recognised as an important transport corridor for Auckland as this population growth occurred, it has always been a well-established location for people to live, work and interact.

During the 1840s through to the 1960s only a small number of non-British immigrated to New Zealand. These small numbers meant ethnic precincts did not feature as part of the historical development of Auckland. Ethnic precincts in Auckland did not occur until the immigration policy changed in 1986, after which immigrant communities grew in size and influence and created a focused immigration destination around the original tram stop at Balmoral. The size of these communities today now provides an important base for the development of commercial activity on Dominion Road within Auckland.\(^{59}\)

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\(^{59}\) Trudie Cain et al., Half-Way House: The Dominion Road Ethnic Precinct (Auckland, NZ: Massey University, University of Waikato, 2011).
Dominion Road and density

(Unitary Plan)

The Unitary Plan re-zoning of areas focuses heavily on the hierarchies of centres. These are the focus for a lot of the future growth and allow for a mix of uses. This, however, has maximum height limits set at 16.5m, only a minor 1.5m above what is proposed under the existing District plans.\(^60\) The re-zoning of Dominion Road largely from Business to Mixed-Use does allow for an increase in density. However, that is now hindered by resource consent issues. A large increase in height and density along Dominion Road is required in order to provide for a substantial number of the 50,000 dwelling shortfall that has been identified.\(^61\)

\(^{60}\) Council, *Proposed Auckland Unitary Plan*.

In the 1960s the possibility of converting Dominion Road into a motorway was considered. While this never came to fruition, the removal of the trams meant the road became heavily car focused and less and less accessible to pedestrians. Due to a lack of parking, the road became a thoroughfare instead of a destination.\(^6^2\)

In 2004, Dominion Road was designated for a 24-hour public transport route. This meant the Council had the legal right to reclaim 1-2m of store frontage from shops alongside Dominion Road to create a bus or light rail corridor. It also designated some land around Valley and Balmoral Roads for bus or train stations behind Dominion Road.\(^6^3\)

2010 brought with it the bus and bike movement. There was a huge social push to provide bike routes. These were installed on approximately half the length of the road. The basic aim of this upgrade was to try and create high quality bus lanes that would support intensified development; however, as it was only installed in small sections, it created disconnects between the zones down the road.\(^6^4\)

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In 2011, AT scaled down the movement, retaining on-street parking and only extending bus lanes around key locations during peak hours. AT also only aimed to provide cycle lanes where ‘room allows.’ These would not have been cycle lanes as such, due to lack of physical separation from buses, they would provide 5m wide bus lanes for cyclists to share.\(^{65}\)

In 2012, AT announced that they had approved an even more scaled-down version of the project which would extend the bus lanes slightly at peak time, retain on-street car parking and involve small upgrades for the cyclists on surrounding streets, but not on Dominion Road.\(^{66}\)

And now, in 2016, a light rail, tram system is proposed to accommodate the increasing population. This proposal allows for 8 stop locations on Dominion Road, the locations of which are proposed, but yet to be determined.\(^{67}\)


\(^{66}\) S, “Dominion Road: A Progression of Disappointments”.

Valley Road deviation

Balmoral Road deviation
Dominion Road current transportation context

The 2004 designation is based on requirements for a light rail or bus system to operate on its own, dedicated right of way. Generally, the width of the road is to be widened by up to 2.4 m to a total of 22.5m. Its aims were to increase Dominion Road’s ridership capacity, choice of transport options and provision of associated facilities to enhance the transport system.68

Deviations have been proposed at Valley Road and the Balmoral shops. These were developed subsequent to public submissions in response to the 2010 proposed upgrades and propose to remove cars from Dominion Road at points to allow public transport to work effectively.69

Deviations like these to the road provide great opportunities for better integration of land use with transportation. They remove the hierarchy of the car from the road, relieve pressure on intersections and allow for high capacity public transport to become the main form of transport on the road. Integration of pedestrian linkages, co-ordinating the stops with retail and residential areas, will be key to the success of these spaces. Co-ordination of existing and proposed utilities within areas, and their role between areas along the road, will be critical to the success of the development of Dominion Road and its role in the city.

68 S, “Dominion Road: A Progression of Disappointments”.
These proposals on Dominion Road are consistent with Transit oriented development (TOD). TOD was proposed in the United States and has been adopted as a planning initiative by multiple states to solve housing and transport issues. They are defined as compact developments with a mix of offices, commercial, different housing typologies and other facilities, all combined into a walkable neighbourhood located within walking distance of transit stations, generally considered 900m.\textsuperscript{70}

TOD is designed to maximise and enhance access to public transport. It has been created to offer people from all sectors of the population a convenient, reasonably priced and safe place where people can be part of a community.

Transit Corridors and TOD’s

Planning for TOD’s occurs at the scale of the region or the corridor, the station area and the individual land parcel. These different levels of planning should be coordinated to attain the most successful outcomes.

Regional scale planning serves to integrate the different goals or problems of the city. Problems such as traffic congestion, population growth and the locations of business centres all need to be considered. Planning is required at this scale in order to optimise the potential for TOD at the individual stations as each station’s role is relative to the next in order for the greater corridor to function to its potential.

The bulk of the planning for TOD frequently takes place at the station area level. This is where it is easiest to understand the benefits to the local area, such as reduced transportation costs for residents and the creation of a sense of place and community.72

Development projects for the actual station are planned at the scale of the land parcel. Understanding the potential at this level is integral to the project as ideas such as circulation, land uses and densities are required to work together in order to achieve a station that functions well. This is important as these projects are usually the instigators for the larger TOD.73

"When local planners consider TOD at the corridor scale, they enhance their understanding of how transit will influence the TOD, ridership and market potential at each station. When planners only consider the station area they can miss this important broader context.74 “

71 Ibid., 4.
73 Ibid.
74 Center for Transit-Oriented Development, Transit Corridors and TOD: Connecting the Dots Is Important, 8.
What brought about TOD?

The biggest instigator for TOD is inward-migration, many people want to move back into the city because travel and commuting are becoming less affordable and appealing to people.

There is also a change in demographics as the baby boomer generation get older, this is generating a change in household type. The mum, dad and two children nuclear family is becoming less and less common, only around 25% in the United States of America (USA). With childless couples, single parents and single adults now making up 41% of the USA market. These smaller families and older baby boomer generation are now showing a preference for higher density housing near transit networks. This is due to people wanting the “room with a view” style of living within walking distance of coffee, restaurants, yoga and dog parks, moving towards a low maintenance lifestyle and away from the quarter acre dream mentality.

Due to infill financing getting easier, rises in petrol costs, capital for infrastructure getting harder to obtain and the fees associated with greenfield developments being so high, Auckland seems to be sprawling north and south and reinvesting in the central isthmus locations simultaneously. There is a shift towards redeveloping the central urban and suburban centres to accommodate the expected large increase in population.

75 Reconnecting America and Center for Transit-Oriented Development, TOD 201: Mixed Income Housing: Increasing Affordability with Transit, 10.
Why are we interested in TOD in Auckland?

As stated, the demand for housing near transit networks is rising rapidly. With the implementation of a rapid transport network in Auckland there is an unprecedented opportunity for the city to accommodate this population growth near stations. Creating a need to focus development and the accompanying tax source in a way that allows the city to capture the value created by transport investment TOD appeals to different parties for different reasons.

Developers have a preference for sites near transit as they usually permit higher densities with lower parking ratios and other benefits that improve the financial feasibility of a project.

Auckland Transport now understands that people who live in TOD’s are 5 times more likely to use public transport while people who work in TOD’s are 3.5 times more likely to do so.77 Auckland Council are beginning to understand that TOD’s have the opportunity to spark economic development and increase their tax revenue, providing them with the ability to leverage private investment for public benefits, such as housing affordability and public space.78

Finally, people are wanting to buy and rent in TOD’s because of their convenience, affordability and access to all amenities. This presents the opportunity for pricing to be leveraged against developers, lowering costs for first home buyers, while adding to the overall housing supply, which helps to keep average home and rent prices more affordable across Auckland.

In fact, this means more to Auckland as a city and is not just about adding housing supply to keep prices down. It is about providing the opportunities for families to find housing and to be able to get to and from jobs and services. Maintaining these opportunities means that planning for land use and transit services must be done in a coordinated and collaborative approach at all levels of planning.

77 Reconnecting America and Center for Transit-Oriented Development, TOD 201: Mixed Income Housing: Increasing Affordability with Transit, 11.
78 Ibid., 12.
Figure 25: District circulator corridor and associated development
Summary of the benefits of TOD:

- Increases local efficiency for walking, biking and use of public transport.
- Allows for an increase in public transport ridership and minimising traffic congestion.
- Provides housing, jobs, shopping and recreation all in one location.
- Adds value for the public and private sectors for both existing and new residents.
- Opportunity to create real communities.
- Offers flexibility in affordability of housing costs (if combined with changes in planning regulations).
- An opportunity to increase the sustainability of the city by lowering regional congestion and transport pollution.
- Allows for a healthier lifestyle (better exercise opportunities created).
- Increased access to jobs and economic opportunity for low-income people and working families.
- Different transport choices reduce dependence on the car, reduce transportation costs and free up household income for other purposes.
TRANSIT-ORIENTED PLACES

Typologies of TOD’s need to be analysed at two different scales: The first from a larger corridor perspective, the second on a station by station basis. However, the types of corridor can be defined from a variety of contexts.79

The types of place:

1. Regional centres - the primary centres of economic and cultural activity, with primary transport interchanges, served by multiple transit models.

2. Urban centres in the larger region around the regional centres – a mix of residential, employment, retail and entertainment, usually slightly lower densities than regional centres, with lesser commuter transport sub interchanges serviced by multiple transit models.

3. Suburban Centre – a mix of residential, employment, retail and entertainment. They serve as both origins and destinations for commuters. Generally serviced by one public transport mode and cars.

4. Transit town centres – function more as local centres of economic and community activity. They attract less destination and origin trips, have lower residential densities and have a mix of family and single family residential with retail and smaller scale employment.80

80 Ibid., 4-6.
5. Urban Neighbourhood – primarily residential areas, well connected to regional centres and urban centres. With a mixture of medium/high residential densities and mixed in with local retail.

6. Transit Neighbourhood – primarily a residential area, served by multiple transit models that connect at one location. Densities are generally a concentration of high with retail around the station.

7. Special use / employment district – single use, low to moderate density employment, education or entertainment (stadium) service.

8. Mixed-Use corridor – focus on economic and community activity, but have no distinct centre. Typically, moderate density buildings that house services, retail, employment and civic uses. Especially suited for rapid transport networks.

transit station
primary transit
secondary transit
feeder transit
land use intensity
Combination of Places along a corridor
Dominion road and TOD

From these typologies the current Dominion Road would be considered at a corridor level as a series of urban neighbourhoods with suburban centres scattered in a straight line out from the CBD, with low density residential transitional zones in between. However, after the implementation of a rapid transport network, the addition of light rail, to the road it is a great opportunity for it to be a mixed-use corridor. With an upscaling of the existing centres of the road, and increased ridership of a network with more stops, the load on the surrounding corridor will grow exponentially, expanding local retail opportunities and bringing higher density housing. This will, in turn, require better planning for the station areas and their role along the corridor.

Principles of planning should address housing types, access and circulation, urban design and place making of public spaces. It should maximise transit ridership, gaining community involvement, design streets for use by everyone, create opportunities for affordable living, manage car levels and capture the value of transit.
While a good transport service is critical to the success of a TOD, it is also important to understand the different types of households or families that want to live near transit and to ensure that new developments cater to this demand. This is critical to creating an environment where people actively want to be and to successfully build on anew and enhance an existing community.

Traditionally singles or childless couples have created the bulk of the demand for higher density housing and use of public transport, families with children have generally sought lower density housing types. However, as stated earlier, this ideology is now starting to change for various reasons.
Breakdown of households:

Easiest to attract

- Transit dependent – generally the lower income families with children who do not have a private car option as an alternative and rely on public transport to get to work. (mostly renters)
- Value timely, clean public transport and a community aspect around housing.
- Yuppies (young urban professionals) – they like the city and want to live in urban neighbourhoods. They normally have access to multiple forms of transportation, but have no negative feelings about using public transport.
- Value quality community amenities and are more adaptable in where they live and tend to have higher education levels.

Possible to attract:

- City dwellers – like the city and place high value upon urban amenities, have adaptability about how / where they live. They generally have children, but are young and well educated. They tend to own a private form of transport, yet enjoy the vibrancy of a high quality public transport system.
- Fairly large up and coming market segment, but are harder to attract to TOD’s as they place high value on being located near parks, schools and other community amenities on a large scale.

Hard to attract:

- Nuclear families – households that usually have children and place high value on them and their education. They favour less dense neighbourhoods with single dwellings and easy access for the private car. Transit options do not rate highly on their list of importance compared to children, cars and schools. Tend to have higher incomes and own two or more cars.
- These families could choose to live near TOD’s if the education and other amenities are high quality, but will avoid public transport as they often have an image associated with it with which they do not wish to associate.  

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A successful community which would be attractive to families is one where opportunities flourish, everyone has access to good quality housing, education, work, retail and public space.

While individual TOD’s aim to complete this goal, in reality many communities are built with access to transit to outsource a small number of these to nearby stations within the same corridor. It is identified that the quality of education plays a large role in people’s housing choices.\(^82\)

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**Attractive communities for families offer:**

- A sense of place
- High levels of safety
- Access to schools which are integrated into the community
- Transit accessible regional amenities e.g. the zoo
- Convenience – access to groceries, retail and everyday needs
- Access to employment

\(^{82}\) Ibid., 15.
PRECEDEDETS

While some transport corridors in Auckland are focused for upgrading currently (i.e. New Lynn) the bulk of the corridors, especially those through the Isthmus Zone, are consistently getting busier and more crowded. Dominion Road is currently at a point where it is widely considered time to upgrade, providing an opportune moment to look at what it could become.

TOD in New Lynn

The vision of New Lynn is to create a sustainable urban place with the focus, or centre, being a successful transit interchange by 2030, capable of attracting and maintaining a population of 20,000 residents and 14,000 workers, within the area.\textsuperscript{83}

The Council’s planned transformation programme includes a mixture of projects focused around business, shopping, recreation and housing, aiming to create a new heart for New Lynn while bringing it into the 21st century. It is considered a vibrant and cosmopolitan place that reflects the community characteristics of the surrounding area.\textsuperscript{84}

New Lynn is designed to deliver the TOD approach and urban regeneration with a focus on public space, with 10 spaces (5 green, 5 hard) within 500m maximum walk from the transit interchange. This is to focus life into the area and create a destination rather than a pass through station. The centre core focuses on an employment hub at high densities, surrounded by the mixed-use Merchant Quarter precinct.\textsuperscript{85}

- At least 4,000 new homes will be built across New Lynn, with Crown Lynn Precinct transformed as a showcase sustainable residential neighbourhood
- The town centre core will be a high density employment hub, including the vibrant mixed-use Merchant Quarter sitting alongside the shopping centre\textsuperscript{86}


\textsuperscript{84} Auckland Council, New Lynn Urban Plan 2010-2030 (Auckland, NZ: The Council, 2010).

\textsuperscript{85} Council, Proposed Auckland Unitary Plan.

\textsuperscript{86} Auckland Council, New Lynn Urban Plan 2010-2030.
Transit Interchange / Merchant Quarter

Lynn Mall

New Lynn Master Plan
New Lynn - Merchant Quarter Development Massing

Lynn Mall  Merchant Quarter  Transit Interchange
New Lynn Merchant Quarter Development Artist Impression
TOD in Perth - Subi Centro

Subi Centro is a development based on the TOD model of design. The focus and centre of the project is a new underground railway station. Opened in 1998 the project consists of residential, commercial, retail and mixed-use functions alongside public amenities. The successful planning of this development combines residential housing, cafes, shops restaurants and businesses with attractive civic spaces to create a vibrant urban lifestyle. 87

Higher densities for residential living mean the quarter acre dream with everyone having their own backyard has gone, made up for by a public green belt and semi-private gardens, while also making spaces conducive to creating communities. Included in these spaces are a number of artworks, play areas and lighting that reflects the cultural heritage and history of the area.

Key Facts:

- Project Area: 84.5hec
- Dwellings: 1975
- Commercial/retail space 287,000m²
- Workers: 6,800
- Government Investment: $2m
- Investment attraction: $1b

Figure 31: Subi centro

Figure 39: Slow roll
Copenhagen – intensification around traffic corridors into the city

The aim was to reduce car traffic and enhance urban development, particularly on the island of Amager where there was only a limited bus service.

While the TOD is a United States born idea, Copenhagen’s ‘finger plan,’ formed in 1947, makes it a showcase of sustainable transport policy. It has been a leader in central city pedestrianisation and has managed to keep car ownership at consistently low levels, while being considered one of the most bicycle friendly major cities in the world.  

Copenhagen manages to provide walking distance (900m maximum) access to regular public transport to 3 out of 4 residents and has reduced car ownership to 26%, compared to Auckland’s 89%. Copenhagen is also a great example of a pedestrian city. It has been over 40 years since the decision to reform the main street into a pedestrian thoroughfare, changing the city from being car orientated to people friendly.

Alongside implementing an effective and available public transport system a 10 step program for a more pedestrian friendly city program was implemented slowly. This allowed for extensive research to be done, completed by Danish architect Jan Gehl, “In Copenhagen, we have pioneered a method of systematically studying and recording people in the city,” and “After twenty years of research, we’ve been able to prove that these steps have created four times more public life.”

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89 Statistics New Zealand, “New Zealand Household Travel Survey: Travel to Work, by Main Urban Area Results (3-Year Moving Average).”


Copenhagen’s 10-step program\textsuperscript{92}
1. Convert streets into pedestrian thoroughfares
2. Reduce traffic and parking gradually
3. Turn parking lots into public squares
4. Keep scale dense and low
5. Honour the human scale
6. Populate the core
7. Encourage student living
8. Adapt the cityscape to changing seasons
9. Promote cycling as a major mode of transportation
10. Make bicycles available\textsuperscript{93}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{copenhagen_plan}
\caption{Five finger plan of Copenhagen}
\end{figure}

\textsuperscript{93} Ibid.
Figure 41: Bike path

Figure 42: Walkable streets
Britomart Transport Centre, Auckland, New Zealand

Britomart Transport Centre is the centre of Auckland’s transport plan and incorporates multiple modes of transport. While the trains have recently been electrified, it was “the only underground diesel station in the world,” it is capable of carrying up to 10,500 passengers at peak hour. Located in Auckland’s CBD it has become a precinct with a diversity of urban public spaces associated with it. It offers a variety of transport modes, it creates an ease of transfer between bus and train, with close proximity to the Ferry Terminal.

Completed in 2003 with the conversion of the Chief Post Office building, it became Auckland’s newest transportation infrastructure, but was originally considered underutilised and too costly. Since then the focus has swayed slightly towards public transport, away from the private car, and Britomart is now seen as successful. It is projected to reach its infrastructure capacity prior to the completion of the City Rail Link (CRL) upgrade project, currently underway. Currently, at peak Britomart can only have 21 trains per hour because trains can only go in, stop and back out again. The CRL upgrade will allow trains to pass through, allowing many more to use the station, unlocking the full potential of the station.

The station houses 236m2 of retail space at ground level and four individual train lines on the lower, underground level. Above the rail line a precinct of retail shops and public open spaces has formed. Buses arrive and depart from three sides of the station, making it harder to integrate the public space into the larger CBD.

96 “Increasing Rail Capacity”.
The architecture of the station follows elements of Auckland’s natural history. Eleven skylights are used to get light into the underground level, but also represent the city’s volcanoes. The external walking streets, lined with columns, link the station with the public space, lit with different colours creating a sense of drama at night, while also providing security lighting. Although successful as a transportation centre, the surrounding precinct has become equally successful for the life and development of the city over the last 10 years.
Figure 48: Britomart light wells

Figure 49: Britomart light wells

Figure 50: Britomart light wells
Figure 51: Britomart Circulation
The ‘Courtyard Within a Station,’ a proposal by Eduardo Velasquez, Manuel Pineda and Santiago Medina was entered into a design competition for the Flinders Street Station revitalisation in Melbourne, Australia. The entry was not chosen as the overall winner, but did achieve the people’s choice award.

The station is located on the northern side of the Yarra River and not only connects buses, trains and ferries together in an efficient manner, but “The increased facilities provided on the site will transform Flinders Street Station into an exciting destination rather than just a transitory transport hub as it is at present.” “The idea was to not only make the station a significant transportation node within Melbourne but a new social and cultural centre for the city.”

The design is for a large concourse and deck that cover the station platforms, with large holes cut in, allowing air and light to pass below. One of the most successful parts of the design is the connection that was created to the west to activate the western precinct and draw people into the development from Queens Bridge and Flinders Street, creating links to the nearby parks from the station.

The proposal of the western concourse is a great example of public and private levels of privacy and also investment. The use of the rooftop of the station as an urban public space allows for a successful addition to the city and a “highly accessible and usable public space that enhances both the everyday commuter and the visitor’s experience of Melbourne and contributes to its status as one of the world’s most liveable cities.”
Figure 58: Flinder Street section

Figure 59: Flinder Street aerial

Figure 60: Flinder Street aerial -
Aims for design

- Liveable options with better access, closer to the city
- Increase in density – stop Auckland’s housing sprawl
- Mixed-use
- Utilities located along Dominion Road at each stop – bring people to the area, move people around the area
- Retain Dominion Road’s sense of identity
- Preserve existing culture – don’t want to create a negative effect to the culture when densifying
- Increase public transport usage along Dominion Road
- High quality public space – need public space for wellbeing, making people want to use it more
- Pedestrian focused street – safer, used more, random interaction
- Wayfinding – not to lose sense of place
- Transport stops made a focus
- Trams down Dominion Road – increase ridership for both short and long trips
- Diverted traffic – reduce the importance of the car
- Existing Breakdown, Overlay stops and show new breakdown.
- Allow for lower income housing – gentrification.
Figure 61: Dominion Road 1900’s
Figure 62: Dominion Road 2000's
Site Analysis

Dominion Road current densities and uses

Current densities along Dominion Road reinforce the problem of not densifying within the Isthmus Zone. While there are a few higher density buildings scattered along the road (usually around the locations of the historical tram stops) on the scale of the density required for Auckland these levels are not considered high.

The bulk of the road is then made up of low densities, which indicate large gaps of properties that have floor area ratio density levels of less than around 1:1. In order to support an efficient and effective light rail public transport option, these areas are going to have to densify to provide enough people to service the transport.
Floor Area Ratios:

- FAR = >1.50
- FAR = 0.75-1.50
- FAR = <0.75
Dominion road current functions

Current uses along Dominion Road indicate that the existing road functions as a strong commercial strip for Auckland, highly focused on the food service industry in conjunction with commercial businesses. These functions are serviced not only by the immediate surrounding catchment area of the strong residential element along the road, but also become a destination which has a much wider catchment area.

The functions of the development also seem to be grouped together, going from north to south you start with:

1. Small to medium commercial businesses
2. Low density residential housing
3. Commercial – “informal Chinatown”
4. Small commercial

The architecture also helps define the cultural differences as you move down the road.

The Unitary Plan’s densification changes also indicates that the new mixed-use zoning of the district plan will provide a different atmosphere along the road, which will need a new identity.

The areas of low densities indicated earlier seem to generally align with areas of residential developments. This suggests that the requirement to densify these residential areas could have the greatest overall impact on the road corridor.
Road hierarchy

DOMINION ROAD

BALMORAL ROAD

NORTH WESTERN MOTORWAY

CENTRAL MOTOWAY JUNCTION
View to Mt Albert

View across city

View down road

Natural views

View to city
Contours and views
Catchment areas to existing public transport

- 200m catchment
- 400m catchment
Built form
Analysis of existing condition of Dominion Road

The patterns of built form indicate a greater building density and footprint size at the north end of the road, this aligns with the change of use.

Historic tram stop locations have influenced the past patterns of development with the built form increasing around Mt Roskill, Balmoral and Valley Road.
Summary of Dominion Road characteristics

- 7 kilometres long and straight with undulating topography. It presents landscape interest and opportunities for significant views along the road and off site to connect with key urban landmarks, landscape features and urban panoramas.
- Longest straight road in Auckland enforcing view corridors and providing identifiable characteristics.
- Multi-modal corridor and regional arterial route, carrying large volumes of public and private road users.
- Collection of 3 villages along the length of the road provide character highlights and further road corridor identity.
- Road is located amongst a field of volcanic cones, contributing significant views.
- Neighbourhood communities along length with support facilities such as schools, retail areas and churches assist Dominion Road to function as a 'living street'.
- Sky Tower provides a highly visible landmark to the north and connection with the CBD.
- Historical settlement patterns have led to a diversity in architectural styles and densities along the road.
- Mix of cultural influences and socio economy gives sense of graduation and change along the road and have characterised village centres and residential communities which form identifiable precincts.
- Significant green areas contribute to the open space on Dominion Road.
Introducing the trains
Train station locations
Chosen stations
Increasing the density

As explained above the surrounding area is required to densify in order to support a public transport network and stop sprawl to the city. The density around the site will be massed to the appropriate floor area ratios required, while the immediate connections to the station will be designed in more detail.
Proposed
Integrating the trains

The integration of the trains to the street has to be carefully considered in order to not create a physical barrier dividing the communities. This provides the opportunity to manipulate the levels at key points to allow people to move underneath and a vertical connection between different modes of transport.
Mixing up the uses

A mixed-use environments play an important role in the success of a TOD. It provides education, cultural and spiritual needs as well as the ability to live, work and play in one location. It is both critical to building a community and also provides enough capacity to support an efficient public transport system throughout the whole day.
Public spaces and amenities

In order for Dominion Road to work as a successful transport corridor for the city it requires multiple amenities along its length. Schools, libraries and religious buildings are located at different stations areas to create each as a destination. With daily amenities such as shopping and retail located at each area. The chosen site currently has a school and RSA located in the immediate proximity and the introduction of a food street or night bazaar build of the existing ethnic food culture and create a destination.
With the increasing of density access to public space becomes more important. The chosen site is located next to a large existing park which will remain and help to build on the community. Smaller public spaces have been located to be next to higher density residential areas to promote public interaction.
Removing the car

With the implementation of an effective rapid transport network to the city it is considered that the car is no longer a priority. Walking and biking will be the new standard mode of transportation within the surrounding area. Therefore, road diversions have been implemented to allow for any through traffic to be diverted, and a very low speed limit will be introduced. Prioritising the pedestrian over the car.
Chosen site - Balmoral Rd / Dominion Rd Intersection
The chosen site for an architectural intervention is the intersection of Dominion Road with Balmoral Road. This allows the station to have direct integration between the crosstown bus link and the train network, while also acting as a central hub for the TOD.
Initial concept

Perspective of station exterior
Second level plan - not to scale
Perspective from station south to night bazaar
Perspective of station exterior
Lessons learnt

After completing this design, it became apparent that the location of the station is best located at the intersection of Balmoral Road and Dominion Road as this allows for integration between the crosstown bus link and the train line.

The massing of the building is required to be kept small. The initial concept created a large floor plate and shadows the intersection, acting as an uninviting place to be and creating a divide between the park and night bazaar.

Circulation through the site is key to the function of the building, access from the park to the station is required alongside access to the retail and night bazaar without restricting access through the station from the bus network to the trains.

Raising the trains to the third level at this station was beneficial as it allows the ground level of the station to act as circulation underneath with separation from the circulation that links between the different modes of transport for passengers passing through. Also allowing workers in the buildings located next to the station to arrive by train and pass through the building to work directly.
CONCLUSION

Years of motorway dictated transportation policy has made Auckland a car dominated city. This dominance is not only shown in the congested roads and disgraceful public transport network, but also the lack of political policy associated with transport that has not been able to break away from the past. Many politicians and community groups have wished to make such a break, but are consistently restricted from doing so by policies which give the impression that such strategies are radical and outrageous.

This is a similar discourse to that surrounding densification of the city. There are no options if we want to make housing affordable again. Supply must be increased. The idea of greenfield developments outside the current rural boundary are a band-aid solution to the larger problem, one that, in the near future will only hinder any future developments of a proper public transport system.

The Isthmus zone must be densified, not to maximum limits as set out in the Unitary Plan, but to minimum levels as to provide adequate concentrations of population to support an effective public transport network.

This research proposal has researched the politically instigated proposals currently underway. These are identified as insufficient and do not solve the issues surrounding density and public transport in Auckland. Instead this research proposes a radical and possibly outrageous alternative for the future development of the city. It focuses on the architectural component of this solution and proposes an instigator project to begin this shift in development.

There must be a change in the public mind-set surrounding density and public transport for the city, this proposal is a detailed alternative but does not claim to tell the whole story (for example, more work is required around the issue of finance), but at the least this project draws attention to the topic and the need to change.
FINAL DESIGN

Living by the park
Commercial Precinct
Train Station
Arriving by Train
Public Square
Night Markets
BIBLIOGRAPHY


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LIST OF FIGURES

Figure :1 Percentage change in population density - http://schiff.co.nz/wp-content/uploads/2013/11/akldensity1.png ................................. 18
Figure :2 Unitary plan density Isthmus Zone - Auckland Council viewer ................................................................. 20
Figure :3 Unitary plan void - http://transportblog.co.nz/wp-content/uploads/2016/07/ap-paup.jpg ............................................... 21
Figure :4 Percentage change in population density - http://transportblog.co.nz/wp-content/uploads/2016/05/NZCID-ATAP-response-Land-Use-Train.jpg ............... 22
Figure :5 Percentage change in population density - http://image.slidesharecdn.com/simonwoodaecom ........................................ 28
Figure :6 Proposed ITP plan - Auckland Council Plan .................................................. 30
Figure :7 Proposed RTN system - Auckland Council rapid transport network ........................................ 32
Figure :8 NCID - http://transportblog.co.nz/wp-content/uploads/2016/05/IMG_20160510_091715.jpg ................. 34
Figure :9 Transport and density - http://transportblog.co.nz/wp-content/uploads/2016/05/NZCID-ATAP-response-Land-Use-LRT.jpg ........................................ 35
Figure :10 Auckland motorway traffic jam - https://assets.blog.hemmings.com/wp-content/uploads//2013/05/AucklandNZ1980s_2000.jpg .......................... 36
Figure :11 Proposed light rail Auckland CBD - http://www mikelee.co.nz/wp-content/uploads/2015/05/05-4-low-res.jpg ......................... 37
Figure :12 Connector corridor - https://nextstl.com/wp-content/uploads/Screen-Shot-2016-06-20-at-2.28.52-PM.png .......................... 40
Figure :13 Commuter corridor - https://jarredwilliamson5.files.wordpress.com/2013/09/transport-williamson-dieselfuture.jpg ....................... 42
Figure :14 Distric circulator corridor - https://annettewoodford.files.wordpress.com/2013/12/dcc01958-f.jpg ............................... 44
Figure :15 Dominion Road 1990’s - http://s.hougarden.cn/uploadImg/newsBody/26557/172651yd939hbtqpiqmi.jpg ............ 48
Figure :16 Dominion Road 2000’s - http://transportblog.co.nz/wp-content/uploads/2015/05/History-Alive-Dominion-Rd.jpg .................. 49
Figure :17 1960’s motorway proposal - https://fedora.digitalcommonwealth.org ................................. 58
Figure :18 2004 road widening http://transportblog.co.nz/wp-content/uploads/2014/04/Dominion-Rd-design-image.jpg ....................... 58
Figure :19 2010 bus / bike - https://www.bikeauckland.org.nz ............ 58
Figure :23 TOD - http://railvolution.org/rv2011_pdf/s/2011910_8a_BendMark_Olson.pdf .................. 62
Figure :24 TOD station - http://cdn.callisonrtkl.com/wp-content/uploads/sites/1/2015/08/beijing-changyang-station-TOD-1.jpg .................. 63
Figure :25 Distric circulator corridor - http://www.stantec.com/content/dam/stantec/images/projects/0003/stadium-village-station-78301.jpg ........................... 66
Figure :26 Dominion road playground - https://pertharchitectures.files.wordpress.com/2009/12/subi3.jpg ....................... 72
Figure :27 Communities - http://2.bp.blogspot.com/-vyOQmVWx4A4/UaZAsxyKhtI/AAAAAAAABbb/hfoKdFj2iLE/s640/cartoon.jpg ............. 74
Figure :28 Merchant Quater - New Lynn Plan .......................................................... 76
Figure :29 Aerial image - New Lynn Plan .................................................................. 78
Figure :30 Subi centro - https://pertharchitectures.files.wordpress.com/2009/12/subi3.jpg .............................. 80
Figure :31 Subi centro plan - http://assets.mra.wa.gov.au/production/ac8362d1838eb020ebc278bc1768842068/subi-centro-fact-sheet.pdf .......................... 81
Figure :32 Subi centro - https://271daysofadventure.files.wordpress.com/2010/12/img_0559.jpg ............................. 82

From Auckland Council’s GIS viewer and Google Maps, edited by the author, not to scale

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