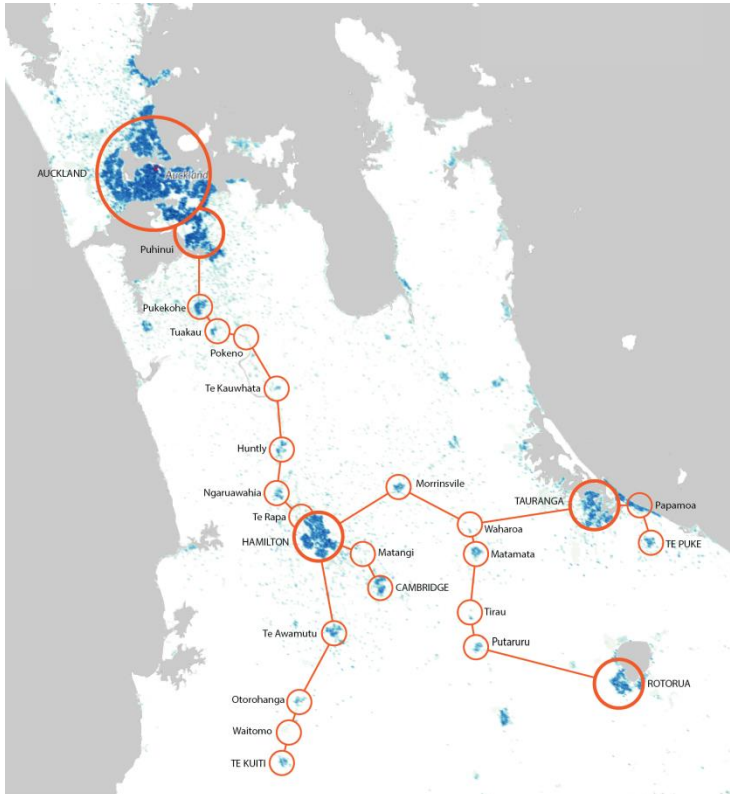


# Inter-Regional Planning

## Uniting both Urban and Provincial Centres

Looking at how to solve pressures and problems in Urban and Provincial Centres while linking to Sustainability and Planning



Ben Ross. 2017

<http://voakl.net>

Twitter: [@BenRoss\\_AKL](#)

Facebook: [Talking Auckland](#)  
[@BenRossAKL](#)

Source: Greater Auckland

Ben Ross. 2017. Transport Pressures and  
Problems in Auckland

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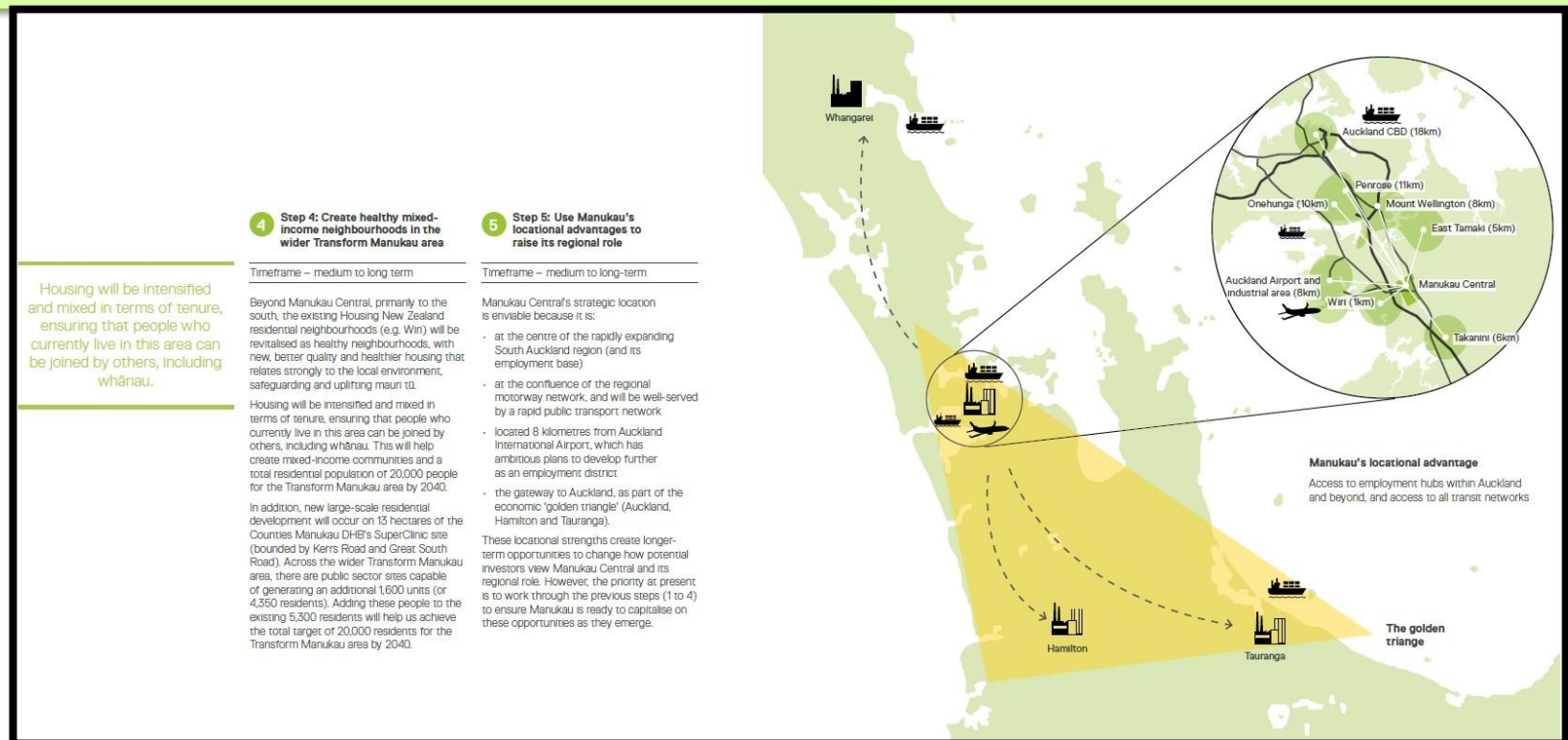
A map of the Auckland region in New Zealand, showing the city of Auckland, surrounding suburbs, and the surrounding water bodies. The map is overlaid with a semi-transparent grey box containing the title 'Geography of Auckland'.

# Geography of Auckland

- 1.524m people as of 2016
- 2m people by 2030
- 37% of national GDP (7.4% in Auckland CBD, 7.4% in Manukau (40% of AKL GDP combined))
- Southern Auckland houses 38% of population and forecast to be at 45% by 2042
- ~800 new people a week in Auckland
- Four State Highways
- Four heavy rail lines carrying ~19m passengers as of 12 months ending July 31, 2017
- One bus way carrying 4.2m as of 12 months ending July 31, 2016
- Unitary Plan went live November 2016 allowing capacity for 422,000 new homes by 2042

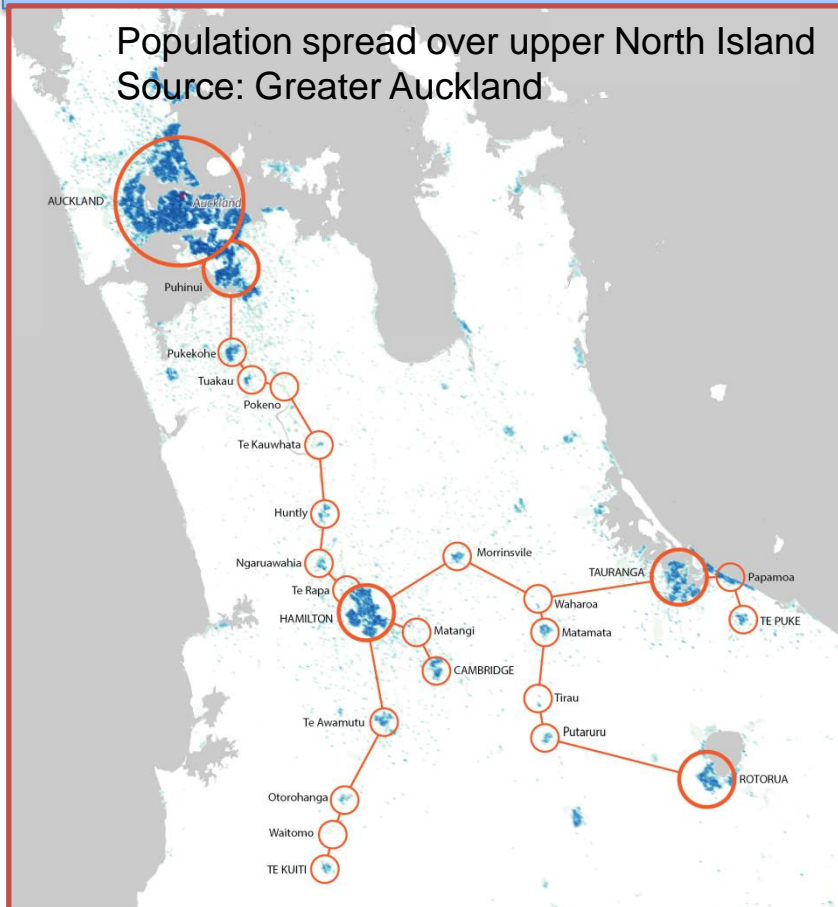
# Geography of the Golden Triangle and wider NZ

- Six main urban centres house ~2.8m or 60% of New Zealand population
- Golden Triangle houses 50% of NZ's population and around 50-60% of national GDP
- Golden Triangle linked by three main State Highways (SH1, 2 and 29), the North Island Main Trunk Line and the East Coast Trunk Line to Tauranga



# Political Geography

- Election 2017 under-way
- National is still very mono-modal (roads, cars and trucks) in investment into transport (\$10b into RoNS)
- Labour and Greens pledge Congestion Free Network 2.0 and Regional Rapid Rail



Transport Pressures and  
Issues in Auckland

# Questions

**What transport issues and/or environment issues concern you?**



**How can planning link to sustainability with transport?**

## Focus: the Upper North Island

The central themes around this inter-regional planning are the following:

- Most urban growth both residential and industrial will be in Southern Auckland
- Industry is decamping from the Southdown-Onehunga complex and moving into Southern Auckland as land use competition with residential and commercial heats up on the Auckland Isthmus
- Heavy industry seeks out lower land values with good connections and little land-use competition as mentioned above
- Population is spilling out of Southern Auckland and like industry will seek provincial places in the northern Waikato
- State Highways 1, 2 27 and 29 form the road spines while the North Island Main Trunk Line and the East Coast Main Trunk Line form the rail spines between Auckland, Hamilton and Tauranga
- The Golden Triangle forms 50% of the national population and 50-60%% of national GDP
- Role of Manukau City Centre into the future



## Consequence

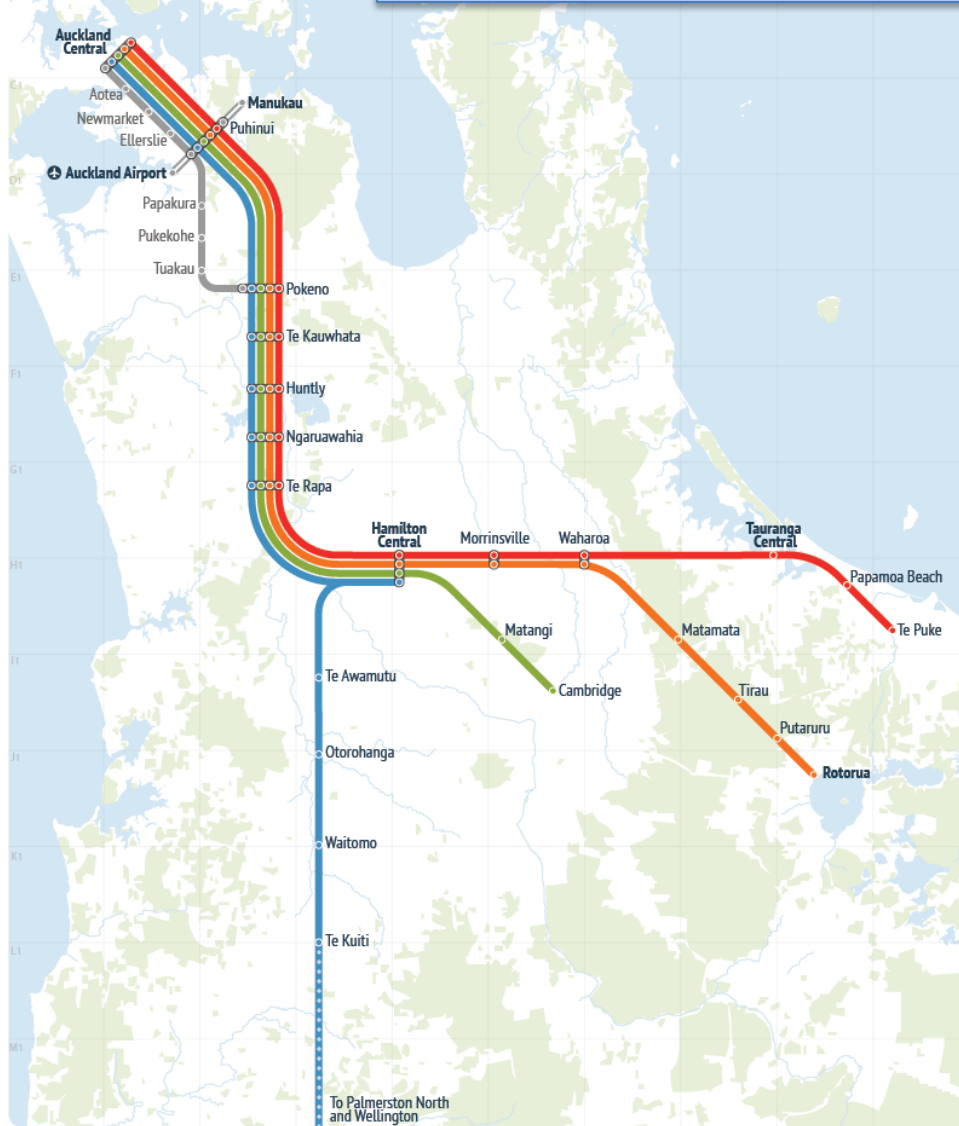
As Auckland continues to boom satellite towns like Pokeno, Huntly and Morrinsville will re-establish themselves especially as the other major centres (Hamilton and Tauranga) continue to become major satellites to Auckland. The good thing is those places are on both established road and rail links making their connectivity back to Auckland rather straight forward. Cue the Regional Rapid Rail concept linking the smaller and larger satellites back up to Auckland.



Ben Ross. 2017. Transport Pressures and Problems in Auckland



# Regional Rail and Inter Regional Planning



- [From Greater Auckland lobby group](#)
- [Rolled out over three stages](#)
- Linking three main urban centres with smaller provincial centres
- Caters for commuting, tourism and recreational travel
- Connection to Auckland Airport or Manukau City Centre via Southern Airport Line at Puhinui Station

# Commute Times

Travel times:

- **Auckland to Hamilton**

- 90 minutes with stage two
- 70 minutes with stage three

- **Auckland to Tauranga**

- 2:30 hours with stage two
- 2 hours with stage three

- **Auckland to Papakura with the EMUs**

- 53 minutes pre City Rail Link
- 43 minutes post City Rail Line

- **Auckland to Hamilton by car**

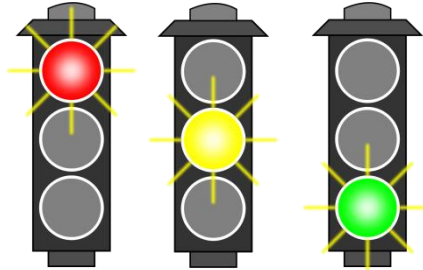
- 90 minutes
- 60 minutes from Papakura
- 70 minutes from Manukau

Note: Auckland = Britomart Station or Hobson Street On-ramp



The Third Main at Middlemore. Source: Kiwi Rail

# Population load spreading – saving the Provinces and Auckland at the same time



- Rapid urbanisation has seen provincial centres without decent industry hollow out while the main urban centres continue boom and expand. This is not healthy for either and can create imbalances both economic and social that impair the economy.
- Whether industry moves to the provincial centres or not population load spreading (that is Auckland loses some of its population to its Satellites in the south) can act as a control rod to the reactors that are our major urban centres. As noted it above Auckland to Hamilton would be 70 minutes
- If Manukau City Centre and its big industrial complexes step up then a commute from Huntly to Puhinui or Manukau becomes even shorter.
- If a smaller satellite is not for you then Hamilton or even Tauranga is always available for you to live while being connected back to Auckland via the rail system.

# Employment and Industry spreading



- Like with population rapid urbanisation consolidated heavy industry away from small towns and into the big urban centres gutting those smaller towns. Projects like the Waikato Expressway will bypass and further harm these towns (like Huntly) so enter rail to turn things around.
- Remember: *Assist the creation of affordable housing supply that is well-connected by congestion-free transit. Use transit focused residential development to catalyse the local economies of northern Waikato towns, which face potential economic decline by being bypassed by the new Waikato Expressway.* Source: Greater Auckland
- Heavy industry as Auckland continues to expand will seek out places where land-use competition is not intense. Smaller provincial centres connected up by decent passenger and freight rail would be in the box seat to receive these industries as they move around. This has two positive consequences:
  1. Smaller urban centres increase their local employment base
  2. Diversified employment base better protects the smaller centres from the fluctuations of the economy



# Tourism



- Two hours to Tauranga by train. I will certainly take that on a Friday evening returning to Auckland late Sunday or early Monday when taking a weekend away from Auckland compared to the two and a half hour drive by car I will have to do next month by car.
- **Play the cards right and you could have a premium service going down on Friday and returning Sunday that serves food and well booze for a slightly higher fare.** This would tap into the large tourism potential Tauranga offers but the smaller Centres connected by Regional Rapid Rail need not miss out. Rotorua, Cambridge, Waitomo and even Huntly should be able to tap into niche tourism offerings of various sizes that the rail system would allow.
- Again diversifying your employment base gives you as a smaller centre better protections from the swings of the economy.

# Productivity and environmental impacts – transforming and unlocking places!



- Heavy Rail is the most efficient form of moving people and goods over long distances compared to road travel. Whether it be lower emissions, able to do work on your laptop, relax on the trip or simply beat congestion on the Southern Motorway productivity and (lesser) environmental impacts are winners from Regional Rapid Rail. Lowering the road toll (which costs the economy dearly) is another outcome of providing rail alternatives whether freight or passenger.
- A rail corridor also has less environmental severance than a four lane highway does as well as less scarring. So not only does rail promote productivity and encourage lower emissions while travelling, rail also is less visually destructive to the rural environment than a four lane highway.
- But the impact that might not be realised as quickly is the transformation and unlocking of potential for the Centres connected to Regional Rapid Rail network.



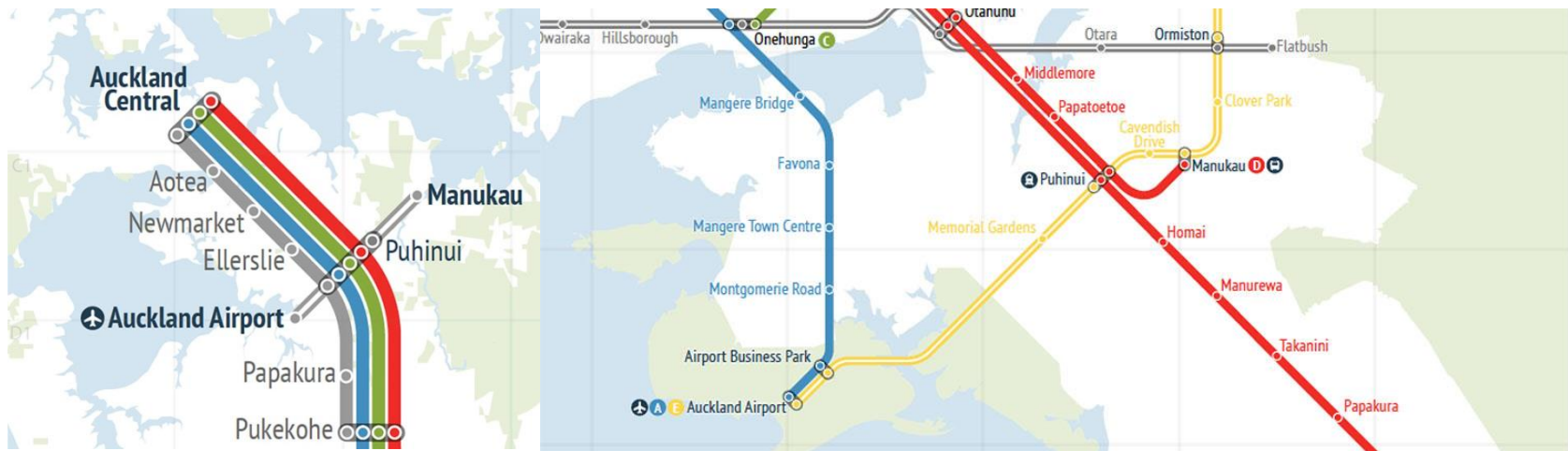
# Productivity and environmental impacts – transforming and unlocking places!

- Being able to connect up to the large residential, employment and industrial base in Southern Auckland (let alone the rest of Auckland) opens up both the larger and smaller urban centres connected to the Regional Rapid Rail Network to opportunities not currently available. No matter what niche a provincial Centre takes up being able to be connected to a large population, employment and/or industrial base would allow those Centres to unlock their full potential and transform themselves through: ***Linking regional transportation to well-planned communities with good urban outcomes. This should not just be a rapid train network but the means to create vibrant, livable towns and cities that are economically and socially sustainable***. Source: Greater Auckland
- Vibrant places are productive and environmentally positive places.



# The Southern Airport Line, Puhinui Station and Auckland International Airport

- The Southern Airport Line is a rapid transit link (most likely light rail) from Manukau to the Airport via Puhinui Station that connects up with both the commuter rail/bus services and the Regional Rapid Rail lines.
- This means you could catch a train from the Waikato or Tauranga up to Puhinui Station, transfer to the Southern Airport Line at Puhinui and continue on a second train to the Airport without the hassle of driving or arranging van shuttles (subsequently risking fouling of any of the State Highways on the way to the Airport).



Regional Rapid Rail and Congestion Free Network. Source Greater Auckland

# Regional Rail, The Southern Airport Line and Manukau City Centre



Manukau City Centre  
Source: Panuku

- This next bit of urban geography doesn't immediately stand out but it is a crucial one. This one links to the RRR's first principle of: **Connect major employment and population centres, including central business districts, growing metropolitan areas, employment areas and satellite towns in the Upper North Island.** Source: Greater Auckland
- Major employment centre: Manukau City Centre and its industrial complexes that generation 20% of Auckland's GDP or 7.4% of national GDP (the main City Centre also generates the same as a comparison)
- Major population centre: All of Southern Auckland as it currently houses 38% of Auckland's population and due to hit 45% in 2040
- Benefit: Both connected by the rail line and State Highway One into the Waikato and Bay of Plenty

## Opportunities



### Majority of land in public ownership

The majority of land in and around Manukau Central, and the significant greenfield areas to the south, are held by Auckland Council (95 hectares) and the Crown (100 hectares). This creates major potential for comprehensive redevelopment and transformational change, without the constraints of fragmented ownership.

### Significant development opportunities

Under-development in Manukau Central leaves large areas relatively unencumbered and well-suited to comprehensive redevelopment. This is supported by a host of enabling planning provisions in the *Auckland Unitary Plan*. Together, these factors ensure there is no shortage of development opportunities in Manukau Central.

### Well connected to rest of the region

Manukau Central has always been well connected to the motorway network. The opening of the Manukau rail station in 2012 represented a step-change in public transport provision for the area (40 minutes to Britomart Transport Centre). The coming bus interchange (with inter-city bus terminal) will bring a similar transformational shift, building the frequency and access of public transport to and from Manukau Central. It will also drive new foot traffic and pedestrian circulation patterns within the centre itself. Proximity to the airport further strengthens connections beyond Auckland.

### Locational advantages

The location of Manukau Central, and its connections to the rest of the region, bring natural locational advantages. These include as a natural gateway to the Waikato region and the 'golden triangle' (economic zone of Tauranga, Hamilton and Auckland); through proximity and passing trade to the airport; proximity to a huge industrial and manufacturing employment base in surrounding areas; and as a sub-regional centre of choice for a vast residential catchment. This is reflected in Manukau's significant concentrations of retail, employment and educational activity.

Transform Manukau Framework Plan  
Source: Panuku Development Auckland



#### 4 Step 4: Create healthy mixed-income neighbourhoods in the wider Transform Manukau area

Timeframe – medium to long term

Beyond Manukau Central, primarily to the south, the existing Housing New Zealand residential neighbourhoods (e.g. Wiri) will be revitalised as healthy neighbourhoods, with new, better quality and healthier housing that relates strongly to the local environment, safeguarding and uplifting mauri tū.

Housing will be intensified and mixed in terms of tenure, ensuring that people who currently live in this area can be joined by others, including whānau. This will help create mixed-income communities and a total residential population of 20,000 people for the Transform Manukau area by 2040.

In addition, new large-scale residential development will occur on 13 hectares of the Counties Manukau DHB's SuperClinic site (bounded by Kerrs Road and Great South Road). Across the wider Transform Manukau area, there are public sector sites capable of generating an additional 1,600 units (or 4,350 residents). Adding these people to the existing 5,300 residents will help us achieve the total target of 20,000 residents for the Transform Manukau area by 2040.

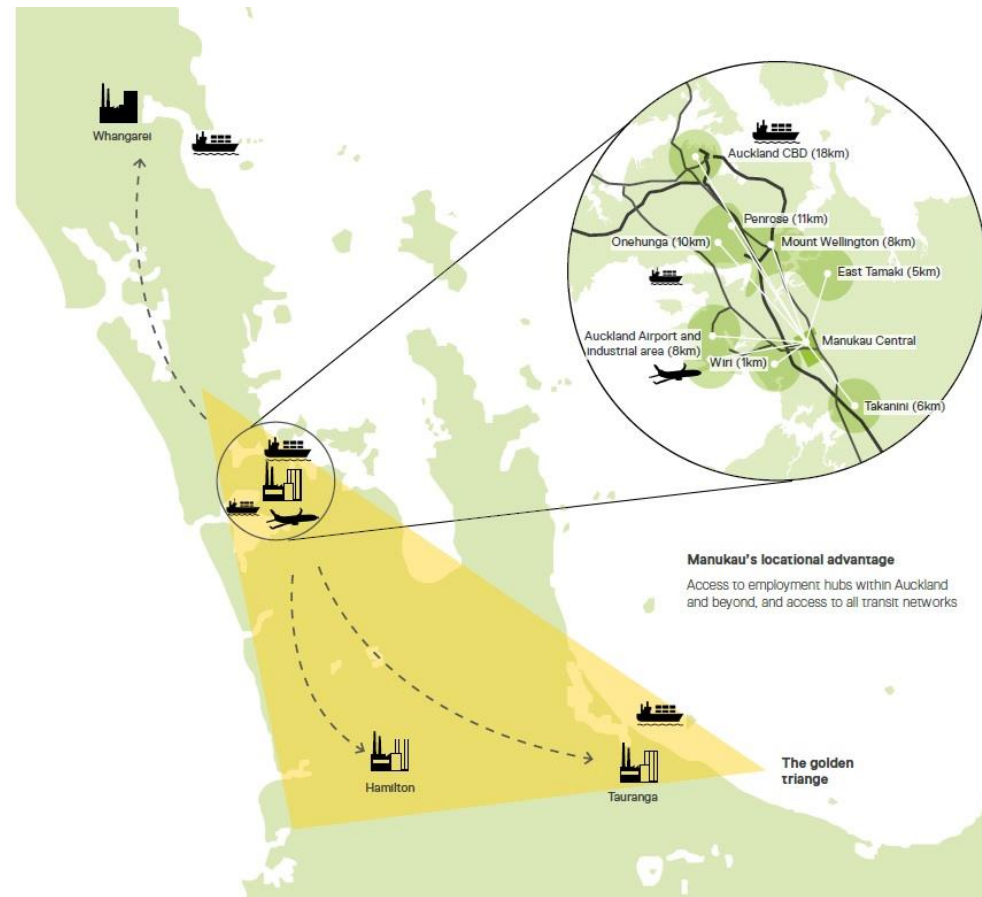
#### 5 Step 5: Use Manukau's locational advantages to raise its regional role

Timeframe – medium to long-term

Manukau Central's strategic location is enviable because it is:

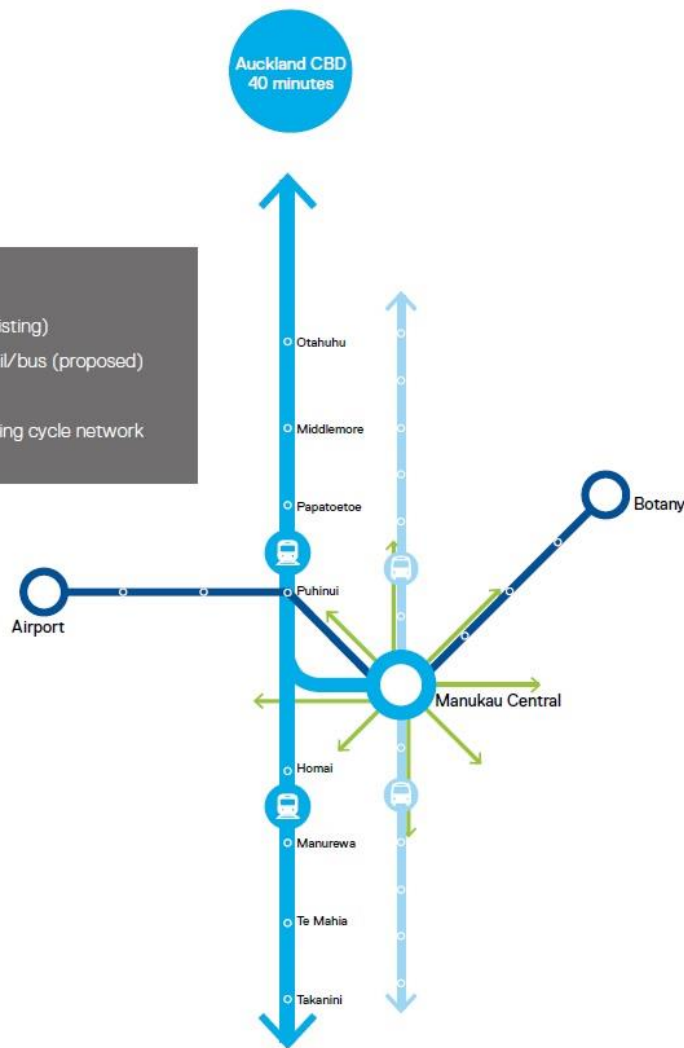
- at the centre of the rapidly expanding South Auckland region (and its employment base)
- at the confluence of the regional motorway network, and will be well-served by a rapid public transport network
- located 8 kilometres from Auckland International Airport, which has ambitious plans to develop further as an employment district
- the gateway to Auckland, as part of the economic 'golden triangle' (Auckland, Hamilton and Tauranga).

These locational strengths create longer-term opportunities to change how potential investors view Manukau Central and its regional role. However, the priority at present is to work through the previous steps (1 to 4) to ensure Manukau is ready to capitalise on these opportunities as they emerge.



## Transform Manukau Framework Plan

Source: Panuku Development Auckland



### Delivering a mass-transit route

In the long-term, but ideally sooner, an east-west mass-transit route will provide a high-quality connection from the airport to Manukau Central and onwards to Botany. This connection will provide significant improvements and options for the mobility of local communities and labour force. The route may be either a bus-based or a light rail system. It is expected that its development could be a catalyst for a new cycle of development within Manukau Central, particularly if light rail is selected. While the planning is at early and preliminary stages, options within Manukau Central are expected to consider:

- connectivity to key growth nodes and trip generators
- integration with a connected network, e.g. proximity of the existing train station and bus interchange
- efficiency of movement from east to west
- capacity of corridors to cater for the network, taking into account both quantitative and qualitative capacity.

This could see some of the following alignments within Manukau considered:

- Cavendish Drive – may be a catalyst for growth and regeneration within the northern part of Manukau Central

- Ronwood Avenue – more central and accessible to the heart of Manukau Central
- Manukau Station Road – proximity to the transport hub for transfers and close to the heart of Manukau Central.

Transform Manukau Framework Plan  
Source: Panuku Development Auckland

# Planning Ministry

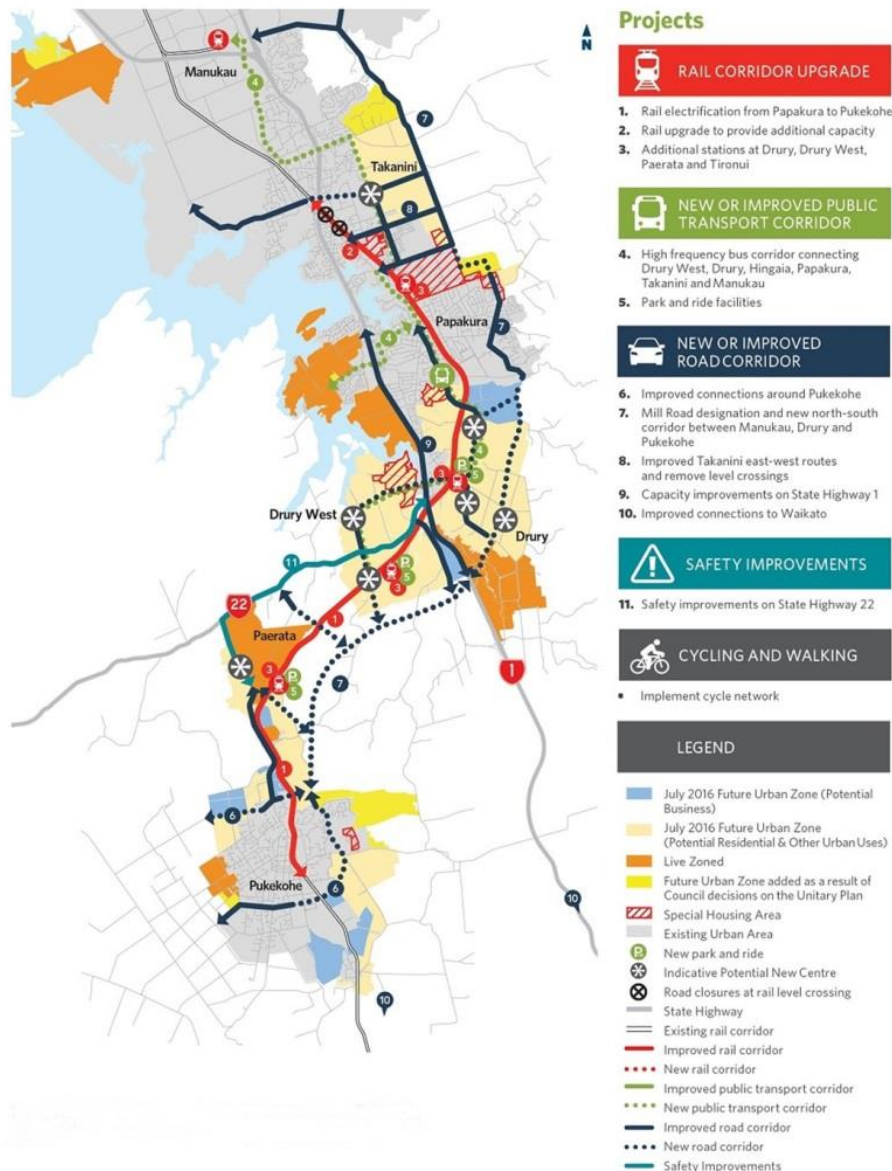
Formally it would be known as the Ministry of Planning and the Environment and it would have four major departments.

- The **Geography Department** as the overall watchdog, enforcer and coordinator when two or more of the departments are involved
- The **Department of the Environment** to handle the Resource Management Act (which is meant to manage the effects on the Natural Environment)
- The **Department of the Urban/Built Environment and Building** to handle a new Urban/Building and Building Environment Act (managing the urban environment and also absorbing the Building Act)
- New Zealand Infrastructure Agency (chief agency overseeing and investor of roads, rail tracks and sea ports)

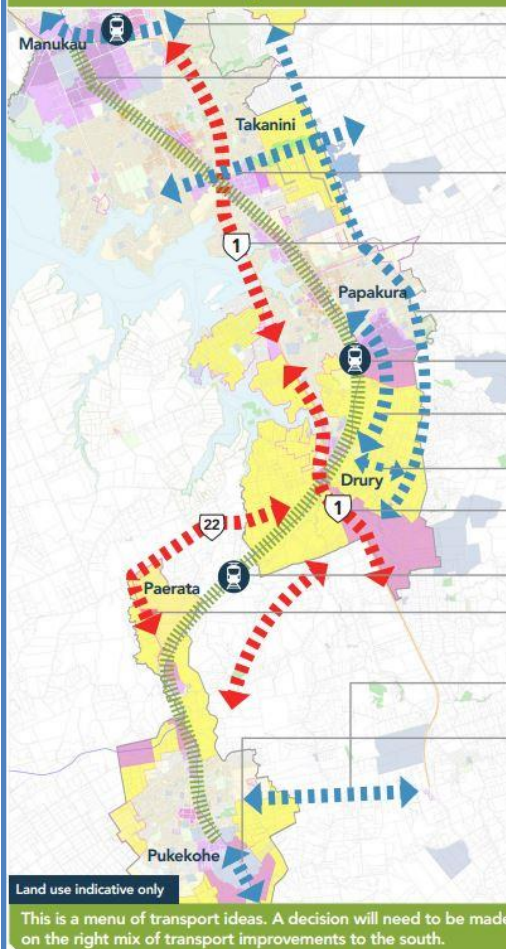
Transport functions like licensing, Road User Charges and registrations remain with NZTA and the Ministry of Transport.



# Transport for Future Urban Growth (Southern Auckland)



## A range of potential improvements to the Southern Transport Network



- Rapid transit between Airport, Manukau and Botany with good connections to rail?
- Easier public transport journey from Manukau to the south?
- Improve Takanini east-west routes?
- Increase public transport or freight provision on SH1?
- New north-south corridor between Manukau and Drury?
- Additional stations between Takanini and Pukekohe?
- Improve local connections between Papakura and Drury?
- Improve Drury east-west routes?
- Extend capacity and safety improvements on SH1?
- Express services on the rail corridor?
- New or improved routes from Pukekohe to SH1?
- Improve Pukekohe east-west route?
- Improve connections to Waikato?
- More walking and cycling paths?
- More capacity on existing roads?
- More park and ride?
- New public transport routes?

New Zealand Government

Source: Auckland Transport



# Cities Skylines and Planning

- Urban Simulator that turned more into an urban transport simulator
- Successor to Sim City 4 (released in 2003)
- Mod-able with high amount of user creator content
- Transport Mods allow for as-near-as realistic as possible with managing individual transit lines, transit systems and even simulating 24-7 day a week cycle that has weekend day rush hours, and random events generating traffic
- If Rain Fall mod is operating rain and storm events have consequences including localised or city wide flooding that affects the transport system
- Game used by cities internationally to simulate transit systems or model new/renewed districts (<http://www.pcgamer.com/cities-skylines-used-by-swedish-city-planners-to-design-new-city-district/> )

# Cities Skylines and Planning

## **Cities: Skylines used by Swedish city planners to design new city district**

By [Joe Donnelly](#)

See Stockholm's Norra Djurgårdstaden modelled in the city-builder.

Intuitive Cities: Skylines players have [recreated real life locations](#) within the city-builder in the past, however the Swedish Building Service Svensk Byggtjänst is now using the game to plan the development of a new city district.

Alongside Paradox and officials from the city of Stockholm, a workshop is set to run on September 3 and 4 to “explore possible methods for this district to become sustainable, and versatile enough to support the needs of its residents,” according to a statement.

Norra Djurgårdstaden will add 12,000 new homes and 35,000 workspaces to help combat accommodation shortages in the area, and the idea is to simulate the district in-game to test different scenarios.

Source: <http://www.pcgamer.com/cities-skylines-used-by-swedish-city-planners-to-design-new-city-district/>

# References

- Trains to the Planes – Greater Auckland: <https://www.greeterauckland.org.nz/2017/08/25/trains-to-the-planes/>
- [Introducing Regional Rapid Rail – Greater Auckland](#)
- Cities: Skylines used by Swedish city planners to design new city district  
<http://www.pcgamer.com/cities-skylines-used-by-swedish-city-planners-to-design-new-city-district/>
- Panuku – Transform Manukau: <https://www.panuku.co.nz/manukau>
- [Supporting growth in the south – Auckland Transport](#)
- [How those rail lines to the airport will actually work – The Spinoff](#)