

ARUP

A Report for Tātaki Auckland Unlimited

Economic Masterplan

Southern Auckland

April 2023



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Southern Auckland's economic development context

Why Southern Auckland

Southern Auckland is strategically located within the Golden Triangle of Auckland, Hamilton, and Tauranga; where over half of New Zealanders live. The location on the growing Hamilton to Auckland economic corridor, and the availability of developable land, makes the area desirable to live and do business.

Private interest

The desirability of Southern Auckland for economic activity is proven with significant private interest in development across the area. This development is strengthening the east-west economic corridor.

Public interest

Council and Government are, and will continue to, respond to market interest in the area by providing infrastructure to support development. Significant investment in rail and road is underway, and investment will continue in utilities, social infrastructure, additional transport infrastructure, and public sector-led development. This, in turn, will catalyse further private sector investment.

Focusing future investment

This Economic Masterplan provides an opportunity to focus future investment within the wider Drury area, to contain growth and prompt infrastructure delivery in a more compact and sustainable way. It will direct and incentivise development of economic land to provide employment opportunities for local residents.

NZ Steel

560ha are optimised to allow for innovative, highly productive economic activity on already live-zoned land

Waiuku

100ha of industrial land under development
Plan change underway for 910 dwellings

Patumahoe

Plan change underway to enable:
2.5ha light industrial land, accommodating 100 jobs
250 dwellings

Pukekohe

Plan changes underway for 20ha light industrial and 93ha residential land

Tuakau

30ha of industrial land under development

Papakura

Growing metropolitan centre with 30 resource consent applications over the last 5 years for new business, commercial, or industrial activities

Drury West

Development underway for homes, jobs, and a town centre

Fisher & Paykel Healthcare

Plans for a 105ha campus of R&D and manufacturing

Waipupuke

Plan change underway to enable 1400 dwellings, 170 jobs, and a medical and specialist centre

Drury and Opāheke

Structure Plan to provide 22,000 homes and 12,000 jobs
Rail and State Highway upgrades underway

Paerata & Pukekohe

Structure Plan plans for 12,500 new dwellings & 5,000 new jobs by 2027

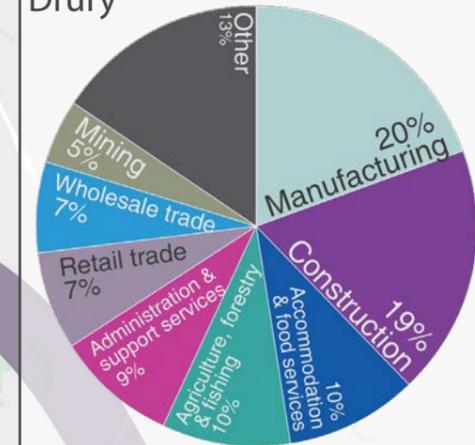
Ardmore Airport

15ha commercial development to enable industrial, commercial, technology, aviation, education, retail, and accommodation activities

Private Plan Changes:

Drury South, Drury Centre, Drury East, Waihoehoe
Planned private investment in Drury will see 250ha of industrial development, 8,000 homes, and 4,000 jobs

Current employment in Drury



Hamilton to Auckland Corridor

Regionally significant economic corridor, of which Drury is identified as a priority development area

ECONOMIC CORRIDOR



Introduction

Report purpose

This report presents a possible economic and urban future for the focus area in Southern Auckland. It will be used in engagement with the public sector and private investors to support future economic, infrastructure, and urban development planning, to promote positive economic, environmental, and social outcomes. Future stages of work will address methods of implementation, action owners, and funding sources.

Background

In 2021 Arup was engaged by Tātaki Auckland Unlimited (TAU) to build on previous economic analysis work done for Drury by MartinJenkins. The purpose of this second phase of work is to further investigate economic opportunities for the wider Drury area of Southern Auckland, and to outline implementable potential to realise the vision of the MartinJenkins report.

Phase 2 includes the Narrative Report, which was issued in December 2021, and this report, which is the Economic Masterplan report. Refer Appendix 1 for the Narrative Report.

Next steps

This report will conclude the Economic Masterplan stage of the wider initiative for job creation led by TAU. Next steps in the initiative include policy guidance as outlined in figure 2.

This report will be used for the business attraction step, involving market engagement with possible private and public sector investors, within New Zealand and globally. This will be achieved through engagement with potential anchor tenants, key industry players, and relevant Government departments that can facilitate business attraction and establishment. Following this, TAU will work with MBIE to identify policy needed to support the implementation of the Economic Masterplan and business attraction strategy. TAU will also focus on identifying and ringfencing land for job interventions and activation with private land owners and public sector partners under the ‘thriving community’ mandate.

Additional steps:

1. Institutionalise steering group
2. Revisit the live document every six to twelve months
3. Continue to seek and formalise partnerships

Report assumptions

This report assumes a snapshot in time in terms of current planning, funding, and construction of infrastructure and urban development within the Southern Auckland area. It is understood that plans for infrastructure servicing and urban development will continue to advance after the publishing of this report, which may affect the rationale behind decisions made in the Economic Masterplan.

Proposals for development in the Economic Masterplan are aligned with the Future Urban Land Supply Strategy (FULSS) and the Drury-Opāheke Structure Plan (DOSP). It assumes that future development will only happen in line with the timing of development readiness under these two documents. This means that this report is aligned with Council’s future planning for infrastructure.

This report acknowledges that development can occur out of sequence with FULSS and DOSP through private plan change approvals, fast track consent approvals and re-timed infrastructure investment. It is also acknowledged that FULSS is being reviewed as part of Council’s Future Development Strategy, which may result in it being reformed or removed. This may affect the implementation of the Economic Masterplan, and should be considered accordingly.

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Figure 1
Process of the Economic Masterplan.

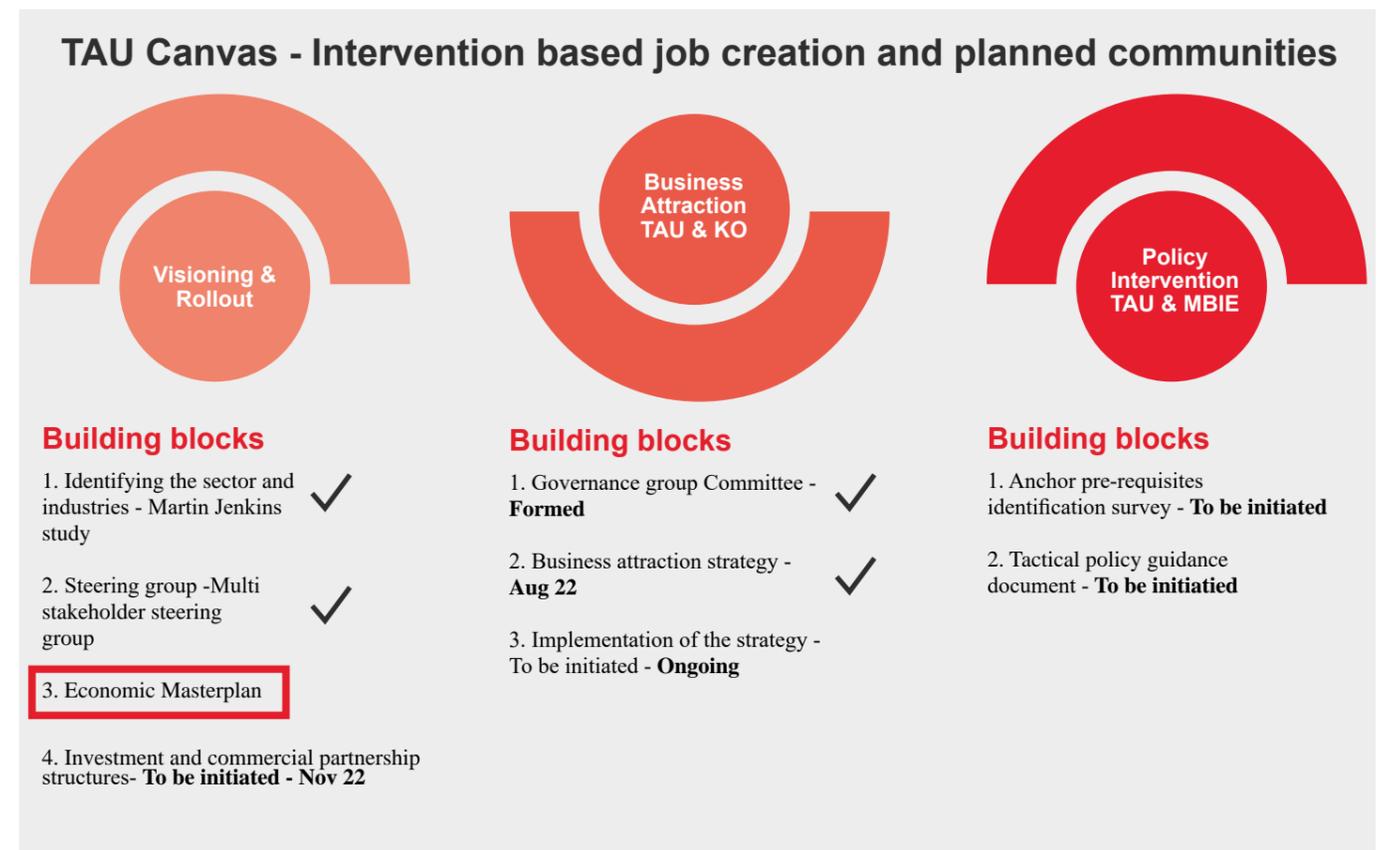


Figure 2
TAU Canvas - Intervention based job creation and planned communities

Stakeholder Engagement

Engagement overview

Two Steering Group meetings have been held during the development of this report, in March and August of 2022. In these meetings, work done to date on the Economic Masterplan was shared, discussion was facilitated, and feedback was received.

Members of the Steering Group are shown below.



Iwi



Private developers



Further information on the role of each Steering Group member in the Economic Masterplan is outlined in the Narrative Report, Appendix 1.

One-on-one meetings have been conducted with key Steering Group members and stakeholders to further understand their interest and involvement in the economic development of Southern Auckland. This includes meeting with:

- Ngāti Te Ata, to understand their aspirations for their rohe and people, and to understand how this Economic Masterplan can support the realisation of these aspirations
- Ngāi Tai ki Tāmaki to also understand their aspirations and how the Economic Masterplan can support the realisation of their aspirations
- NZ Steel, to understand their plans for development on their 560ha site at Glenbrook, to inform our understanding of commercial and industrial activity in the Southern Auckland area
- Kiwi Property, Fulton Hogan and Oyster Capital are developing 328ha in Drury East as transit oriented metropolitan centre including high density residential and town centre
- Ardmore Airport, to also understand their plans for commercial and industrial development
- Made, who are currently undertaking the Auranga development, to ensure our Masterplan aligns with their plans and aspirations
- Kāinga Ora, to understand their land holdings and intentions for development within the area
- Auckland Council’s RIMU (Research and Evaluation Unit) to discuss what data might be helpful to inform the Masterplan, regarding trends in economic activity in the Southern Auckland area
- Auckland Council’s DPO (Development Programme Office) to understand planned and future infrastructure, and the infrastructure funding and financing climate, to inform what and where development is enabled
- Te Tupu Ngātahi Supporting Growth and Waka Kotahi to understand the status and certainty of transport investment.

This engagement is in addition to Steering Group and one-on-one engagement undertaken during the development of the Narrative Report. Key themes of feedback received are outlined in the Narrative Report (Appendix 1), which have been integrated into the Economic Masterplan.



Driving principles

Drivers of change

Seven drivers of change were identified in the Narrative Report, that represent common objectives from national and local policy around economic and urban development. These shape the Economic Masterplan to drive positive economic, social, and environmental outcomes. Refer Appendix 1: Narrative Report for further explanation and the policy context behind the drivers of change.



Enablers of potential

Four key enablers of potential must be established to support Southern Auckland to reach economic targets. Success of the Economic Masterplan is heavily reliant on the provision of the enablers.



Challenges for implementation

Some barriers and challenges may arise in the implementation of the Economic Masterplan. Consideration will need to be given to minimise the risks these pose.



Supporting mana whenua aspirations

Economic development in Southern Auckland must provide good cultural, social, and economic outcomes for mana whenua through meaningful engagement and careful consideration of the natural environment. Development must promote the protection, preservation, and appropriate management of natural and cultural resources in a manner that recognises and provides for mana whenua's cultural and traditional relationship to these areas, and to enable mana whenua input into the physical, cultural, social and economic regeneration of Southern Auckland.

Mana whenua aspirations and outcomes are captured in a framework of five pou (pillars). The Masterplan aims to achieve wellbeing within these five pou, both for Māori communities within the Southern Auckland area, and for future residents and workers.

The economic future for Southern Auckland presented in this Masterplan must achieve good outcomes across the five pou for Māori communities in Southern Auckland. There are many opportunities that can be harnessed with economic development in the area to achieve these good outcomes. Some of these opportunities are outlined below.

1. Governance

Partnership and co-governance with mana whenua can empower Māori planners, designers, economists, entrepreneurs, and other professionals to play an influential role in the urban and economic development of Southern Auckland. This can provide employment and education opportunities during development processes, and can ensure planning and design prioritises Māori needs and desires around culture, lifestyle, housing, natural environment, and economic opportunities.

2. Culture and identity

Economic development must go alongside high quality urban development that represents Māori identity and provides for culturally diverse housing and community needs, through a range of housing typologies, and provision of public space and a range of amenities.

3. Natural environment

The natural environment provides resource and opportunities for economic prosperity. Interventions to improve sustainability such as regenerating streams, waterways, and wetlands can provide employment, recreation space, and support a visitor economy.

4. Economy

Key sectors for mana whenua include medical, education, construction and trades, and tourism. Investment in these sectors can provide skilled employment opportunities for Māori. Investment in the Health sector can also bring wellbeing benefits for Māori populations, who historically have worse health outcomes than other groups.

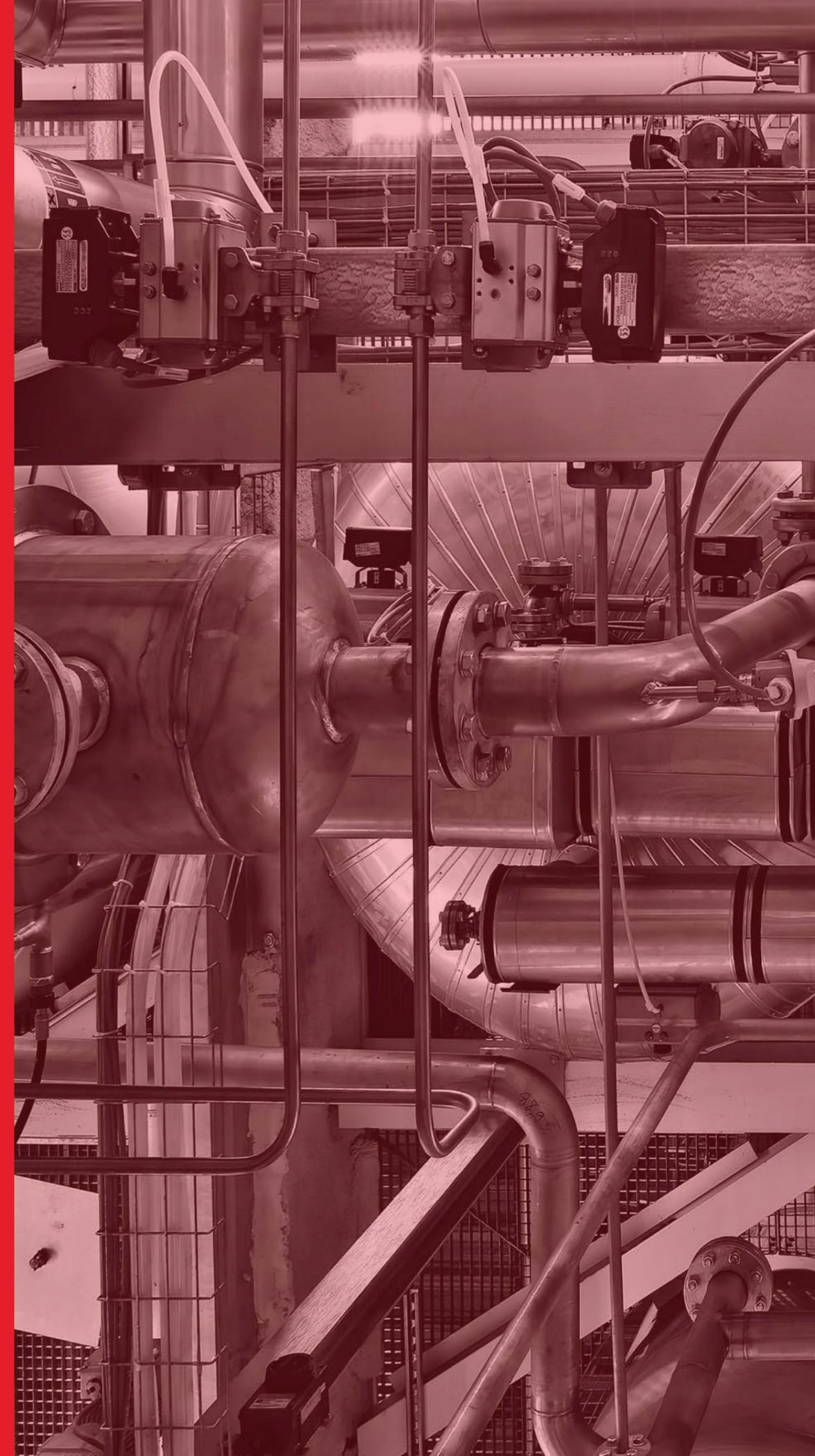
5. Wellbeing

Economic development in Southern Auckland must provide opportunities for upskilling and education to support meaningful and fulfilling employment.



Economic Opportunities

This section sizes the economic opportunities presented in the MartinJenkins and Narrative reports to investigate their potential for New Zealand, and explores how Southern Auckland can harness these opportunities.



Methodology

This section presents the sizing of key economic segments identified as most suitable for the Economic Masterplan. Through a precedent study of international markets, the segments were scaled to reveal their potential size in New Zealand. The Economic Masterplan aims to capture as much of this potential as possible.

Four sectors were identified in the Narrative Report as suitable for the Economic Masterplan, along with specific segments under these sectors. This was informed by industries identified in the MartinJenkins report as providing the most opportunity for Southern Auckland. These include:



Sector sizing

Exemplar countries for each four sectors were chosen that are highly productive or innovative in that sector. These exemplars represent the desired future for Southern Auckland, with an aspirational shift to new economic sectors with increased productivity and R&D activities. The GDP, size of the sector, and population were the key data points in comparing the exemplar countries to New Zealand. The sector sizes, in dollars, were scaled to the country's population and GDP, to establish 'scaling factors'. These scaling factors indicate the size of the sector per capita and in proportion to the country's GDP.

The scaling factors were used to calculate the potential size of the sectors in New Zealand, by comparing that to an exemplar country. Where these countries had more productivity or innovation in this sector, the scaling factor is larger. The difference between this potential sector size and the current sector size in New Zealand represents the

potential national opportunity to increase the GDP and number of jobs in that sector. The Economic Masterplan aims to harness as much of these opportunities for each sector as possible, to contribute to economic growth and development and help New Zealand meet its economic targets as outlined in the Narrative Report.

The mathematical process for the sizing of each sector is as follows:

1. New Zealand's population, GDP, and sector size in USD are identified
2. The sector size is divided by population to identify the **population scaling factor** (i.e. the sector's GDP per capita)
3. The sector size is divided by total GDP to identify the **GDP scaling factor** (i.e. the sector's size as a proportion of GDP)
4. This same process is undertaken for each exemplar country identified for the sector
5. The population and GDP scaling factors of the exemplar countries are averaged, excluding any countries that are exceptionally productive or unproductive in the sector
6. These average scaling factors are sized to New Zealand, by multiplying the population scaling factor by New Zealand's population, and the GDP scaling factor by New Zealand's GDP
7. These two values are averaged to give the potential sector size for New Zealand, which is converted to NZD
8. The current sector size in New Zealand is subtracted from this value to show the potential opportunity for the sector in New Zealand
9. To find the potential additional employees for New Zealand in the sector:
 - a. For each exemplar country, the number of employees in the sector is divided by total GDP, to give the number of employees for unit of GDP
 - b. This value is averaged across the exemplar countries
 - c. This is then multiplied by the potential opportunity for the sector in New Zealand, to give the potential additional employees.

Sectors in practice

The eight segments within the four sectors were investigated for what they could look like in practice. This includes investigation into:

- Facilitators, such as innovation networks and organisations, that can enhance productivity and innovation
- Types of skills needed to encourage innovation
- Typologies and sizes of anchor tenants that can drive significant sector growth
- Typologies and sizes of small to medium enterprises
- Typologies of start-ups that can bring innovative ideas and processes to the sector
- Ways of integrating circular economy principles into the sector
- Success factors that must be put in place to ensure the economic opportunity can be fully realised.

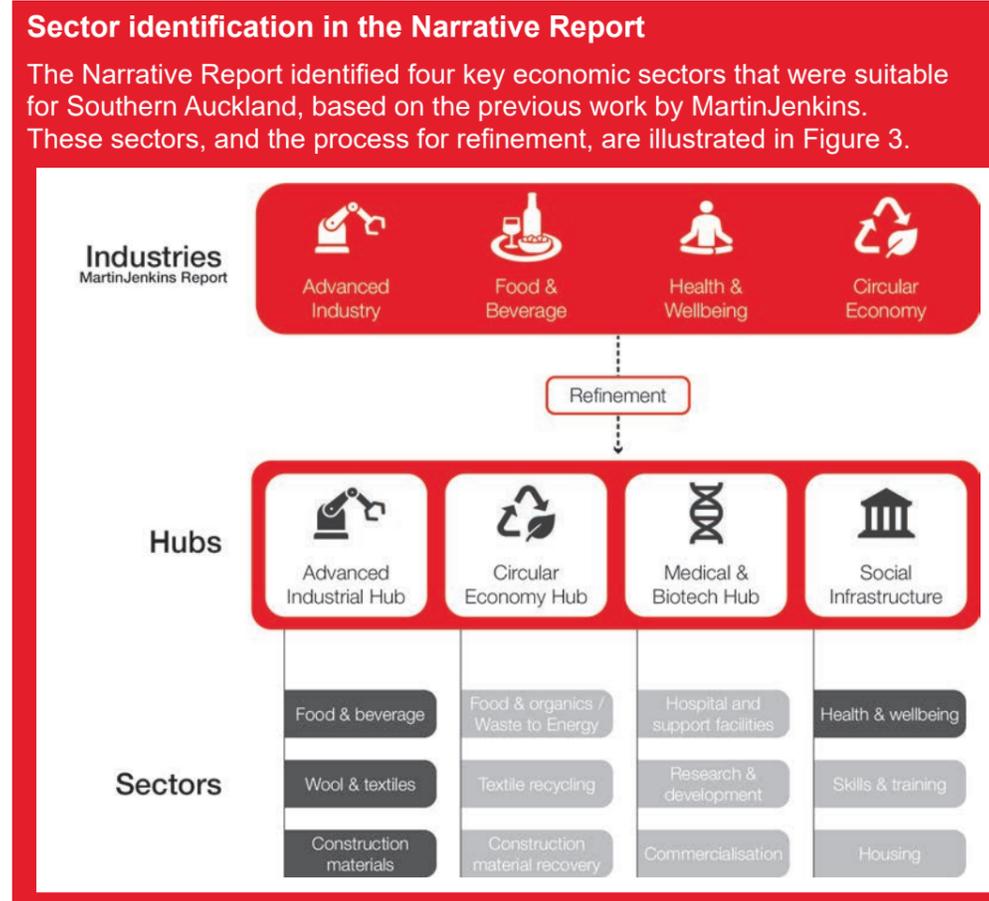


Figure 3
Sector refinement undertaken in the Narrative Report.

Health

Industry sizing

The health and wellbeing sector presents an opportunity to focus on the provision of new facilities that would serve the needs of a growing population in Southern Auckland and surrounding areas.

Global references

The Netherlands, Germany, Switzerland, and the United States scored as the top four countries on the Global Health Innovation Index. Their performance and strength can be attributed to the level of government expenditure, privatisation of the system, and research and development.

The Netherlands

**\$91bn
USD**

**592,000
employees**

The Netherlands has a strong base in biochemistry and genetics. They are home to innovative healthcare organisations.

Switzerland

**\$54bn
USD**

**185,600
employees**

Switzerland has high quality infrastructure and top talent to support healthcare production. They are pioneers for regulation in the industry.

United States

**\$4.1tn
USD**

**22,000,000
employees**

Privatisation of healthcare in the US has encouraged innovation. They are leaders in developing rapid and advanced technology.

Germany

**\$411bn
USD**

**5,600,000
employees**

Germany has an innovative health sector, and is home to major international companies. They are leaders in research and development.

Industry scaling

The sizes of the Health sector in the case study countries are scaled to New Zealand's size, in terms of population and GDP. The scaling factors show the industry size per capita and as a proportion of GDP.

Table 1

Health industry scaling factors for case study countries.

	Industry Size (\$USDb)	Population (m)	GDP (\$USDb)
New Zealand	\$9.6	5.12	\$212.5
<i>Scaling Factor</i>		<i>1,874</i>	<i>4.52%</i>
Netherlands	\$90.56	17.44	\$912.2
<i>Scaling Factor</i>		<i>5,193</i>	<i>9.93%</i>
Switzerland	\$54.3	8.636	\$748
<i>Scaling Factor</i>		<i>6,288</i>	<i>7.26%</i>
United States	\$4,100	329.5	\$20,910
<i>Scaling Factor</i>		<i>12,443</i>	<i>19.61%</i>
Germany	\$460	83.24	\$3,806
<i>Scaling Factor</i>		<i>5,669</i>	<i>9.76%</i>

● *The US is excluded given its proportionally high healthcare spend per capita*

Success factors



Complementary hubs



Technology shifts



New health hub

National economic opportunity

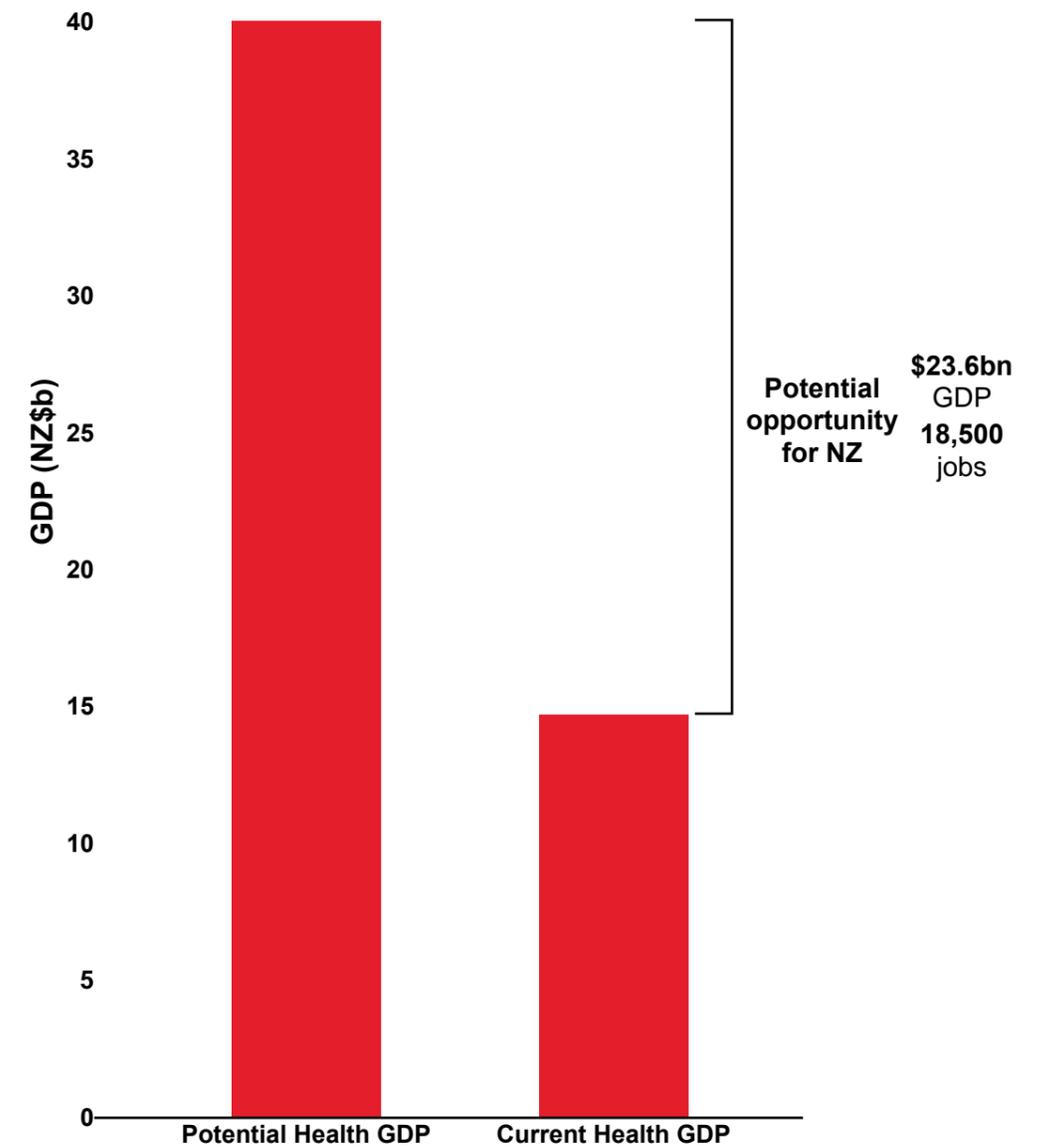


Figure 4
Potential Health sector growth in New Zealand.

What this means for Southern Auckland

New Zealand's Health sector is currently performing at a much lower productivity rate compared to the exemplar countries. This provides a large opportunity for Southern Auckland to establish Health sector activities, to increase New Zealand's productivity in the sector.

Health

Sector in practice

Hospitals are often partnered or co-located with teaching facilities and Universities, as well as research institutes. Producers of pharmaceuticals and medical equipment can be located separately, however there is an opportunity to create agglomeration economies through a health campus. Education and training facilities as well as secondary healthcare are considered anchors as opposed to a mix of start-ups and SMEs.

Examples of facilitators for the sector include:

- Callaghan Research Institute supports businesses of all sizes at each stage of growth. They support office spaces and multi-purpose sites. The Gracefield Innovation Quarter provides 34,000m² of laboratories, office space, workshops and pilot labs
- Other facilities such as the Medical Research Institute of New Zealand are co-located at Universities

Table 2

Example business types and sizes in the Health sector.

	Education, Training, and Secondary Healthcare	Producer
Skills	Doctors, biotechnology, software engineering	PhD chemists, pharmaceutical analysts, process development and GMP (good manufacturing practice) manufacturers
Anchors	Co-located spaces such as a health precinct Example hospitals size: 55,000 to 104,000sqm ⁸ Capacity: 130 to 1,100 beds ⁸ 17,000 to 44,000 students ⁸	Large scale laboratories and manufacturing sites that integrate research Example facilities size: 14,000 to 25,000sqm ⁹ Employment capacity: 800 employees ⁹
Small-medium enterprises	Generally all organisations are anchors	Laboratory and manufacturing spaces, similar to those for food and beverage Example facilities size: 3,000sqm+ ¹⁰ Employment capacity: 400 employees ¹⁰
Start-ups	Medtech and biotech startups range in services and space provision Julp, a platform as-a-service business has an office space, whilst Morgate BioTech, which is focused on life science, biotechnology, research and pharmaceuticals, requires a laboratory and warehouse.	
Circular economy	Healthcare is dependent on single use products to ensure sanitary processes. However, there is opportunity for reuse of equipment such as re-use of anaesthetic glass, remanufacture of scanning equipment, or recycle of packaging.	

⁸Auckland City, Christchurch, Timaru, Wellington hospitals

⁹Pfizer Australia

¹⁰Glycosyn Technologies Limited

What this means for Southern Auckland

Southern Auckland will need a hospital in the future to serve the area's growing population. This will support other Health sector activities relating to education, training, and the production of healthcare goods and technologies, developing skills in the sector which are in high demand, and supporting productive businesses. These activities will be located within a walkable catchment of a rail station to maximise accessibility.



Construction

Industry sizing

Southern Auckland has an opportunity for innovation, technology, and the promotion of sustainable construction practices to support the development of the area. Construction demand, planned transport investment and the proximity to raw materials add to the opportunity.

Global references

The Construction sector is dominated by China, who produces 50% of the world's cement. Both the Netherlands and the UK have a strong focus on innovation and integrating circular economy principles into material production, while Australia is weaker on this front.

China

\$2tn
USD

35m
employees

China has the largest construction and construction materials sector globally. The industry is experiencing strong growth - a growth rate of 8.6% per annum until 2030 is expected.

Australia

\$244bn
USD

1.1m
employees

Construction is Australia's third largest sector, although innovation is slow. 1 in 10 jobs in Australia are in the construction sector.

Netherlands

\$134bn
USD

410,000
employees

The Netherlands has strong aims to adopt circular economy principles through design. They are aiming for a 50% reduction in use of raw materials by 2030.

United Kingdom

\$154bn
USD

2.4m
employees

The United Kingdom has a strong focus on technological innovation in the Construction sector with 73% of the industry using BIM technology. They are adopting artificial intelligence such as AEMP APIs and Machine Cloud technology.

Industry scaling

The sizes of the Construction sector in the case study countries are scaled to New Zealand's size, in terms of population and GDP. The scaling factors show the industry size per capita and as a proportion of GDP.

Table 3

Construction industry scaling factors for case study countries.

	Industry Size (\$USDb)	Population (m)	GDP (\$USDb)
New Zealand	\$10.75	5.12	\$212.5
<i>Scaling Factor</i>		<i>2,099</i>	<i>5.06%</i>
Netherlands	\$133.21	17.44	\$912.2
<i>Scaling Factor</i>		<i>7,638</i>	<i>14.6%</i>
● Australia	\$244.51	25.6	\$1,330
<i>Scaling Factor</i>		<i>9,518</i>	<i>18.38%</i>
UK	\$153.96	67.22	\$2,708
<i>Scaling Factor</i>		<i>2,290</i>	<i>5.68%</i>
China	\$2,000	1,400	\$14,720
<i>Scaling Factor</i>		<i>1,429</i>	<i>13.59%</i>

● Australia is excluded as the construction sector is disproportionately large, given high government spending in the sector and association with mining activities

Success factors



Workforce supply



Technology shifts



Raw materials supply

National economic opportunity

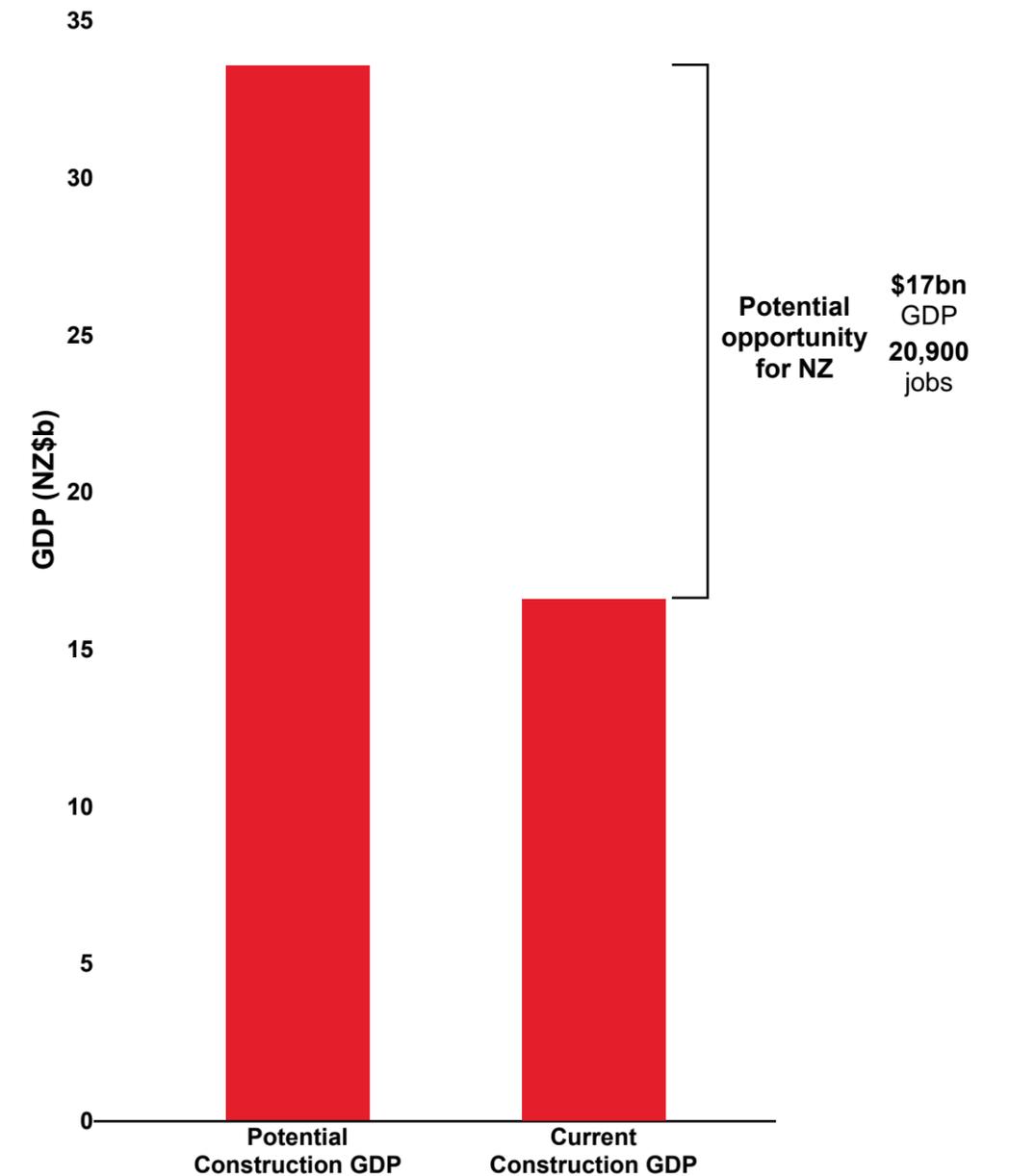


Figure 5
National economic opportunity

What this means for Southern Auckland

New Zealand has a significant opportunity for growth in the productivity of the construction materials sector. Attracting innovative construction materials businesses to Southern Auckland can foster economic growth while providing skilled jobs in the area. Significant development in Southern Auckland will providing a jump start for the Construction industry.

Construction

Sector in practice

The Construction sector typically requires flexible warehousing spaces with moveable walls and areas that are large enough to integrate machinery. Research & development activities can be contained within the spaces, or in specific innovation hubs or think tank locations.

Examples of facilitators for the sector include:

- BRANZ, an independent research organisation that aims to improve the performance of New Zealand’s building system.

Table 4
Example business types and sizes in the Construction sector.

	Building material production	Development and construction
Skills	Circular design for construction, polymer processing, additive manufacturing	Architecture (design-for-disassembly), space optimisation strategies, software engineering (BIM, digital twins), energy audits, data analytics
Anchors	Large factory with automation, machinery, workshops Example facilities size: 11,000sqm to 6ha ⁶ Employment capacity: 10,000 employees ⁶	Headquarters and regional branches Example facilities size: 800 to 2,500sqm ⁶
Small-medium enterprises	Large factory for production of materials with machinery with different sale sites Example facilities size: 680 to 1000sqm ⁷ Employment capacity: 400 to 10,000 employees ⁷	Office building headquarters or branches Example facilities size: 400 to 800sqm ⁷ Employment capacity: 2,000 employees ⁷
Start-ups	Tech start-ups are entering the market creating innovative products using robotics and automation, 3D printing, and time and energy saving methods	
Circular economy	Environmentally responsible and resource-efficient infrastructure that can reduce the overall waste and emissions from the construction industry by integrating recycled materials and innovative technology	

⁶Fulton Hogan, Australia and New Zealand

⁷Fletcher, Australia and New Zealand

What this means for Southern Auckland
Southern Auckland can support a range of businesses types and sizes in the Construction industry, including company headquarters, factories, and small scale innovative start-ups. Existing nearby industry such as NZ Steel in Glenbrook can support innovation in construction materials

Food and Beverage

Industry sizing

Southern Auckland's physical location and availability of space creates the unique opportunity to create an ecosystem around food and beverage. Southern Auckland has proximity to the FoodBowl and agricultural activity to support innovative food processing and packaging.

Global references

The Food and Beverage sector has clear strengths in Australia and Ireland, given the level of natural resources, and in the Netherlands and Singapore, where the level of research and development in the sector is high. The sizes of this sector in these countries is outlined below.

The Netherlands

\$49bn
USD

636,000
employees

The Netherlands is a leader in efficiency and productivity in food and beverage production. They have a strong focus on research and development, and are home to 30% of the top 40 food and beverage multinationals.

Australia

\$17bn
USD

229,000
employees

Australia produces high quality food and beverage products and produce. It has strong trading relationships around the world.

Ireland

\$3.6bn
USD

167,500
employees

Ireland is a leader in dairy production. They have significant farming ability due to an abundance of resources.

Singapore

\$9.9bn
USD

38,800
employees

Singapore has an ongoing focus on research and development and is home to regional food manufacturing hubs. The productivity of the food manufacturing sector has a multiplier effect on their broader economy.

Industry scaling

The sizes of the Food and Beverage sector in the case study countries are scaled to New Zealand's size, in terms of population and GDP. The scaling factors show the industry size per capita and as a proportion of GDP.

Table 5
Food & Beverage industry scaling factors for case study countries.

	Industry Size (\$USDb)	Population (m)	GDP (\$USDb)
New Zealand	\$7.862	5.12	\$212.5
<i>Scaling Factor</i>		<i>1,535</i>	<i>3.70%</i>
• Netherlands	\$49.029	17.44	\$912.2
<i>Scaling Factor</i>		<i>2,811</i>	<i>5.37%</i>
Australia	\$16.57	25.6	\$1,330
<i>Scaling Factor</i>		<i>645</i>	<i>1.25%</i>
Ireland	\$3.58	5.69	\$340
<i>Scaling Factor</i>		<i>630</i>	<i>1.05%</i>
• Singapore	\$9.88	5.008	\$418.6
<i>Scaling Factor</i>		<i>1,972</i>	<i>2.36%</i>

• Given their lower productivity than New Zealand's existing levels, Australia and Ireland have been excluded

Success factors

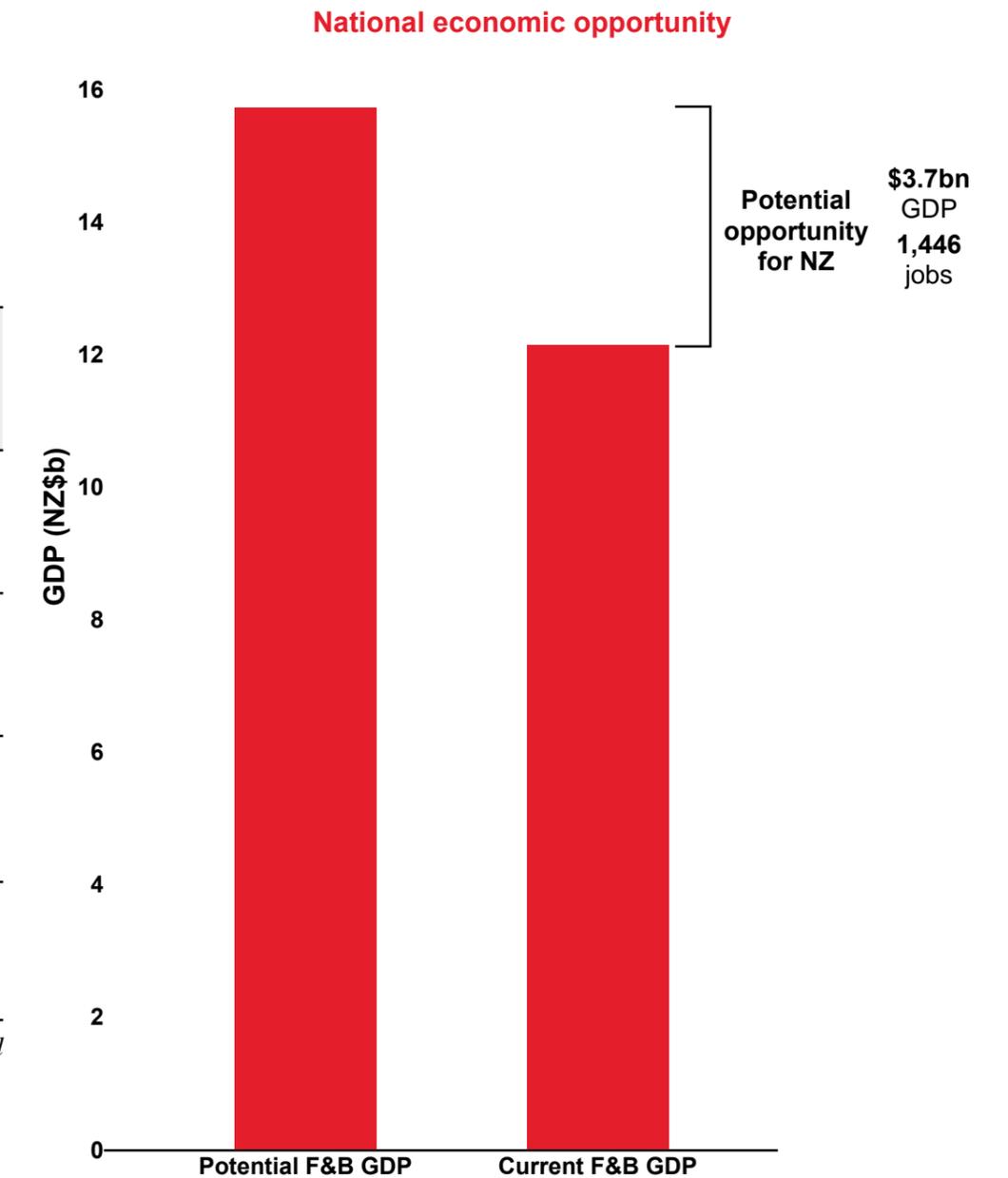


Figure 6
Potential Food & Beverage sector growth in New Zealand.

What this means for Southern Auckland

Southern Auckland is located near highly productive agricultural land to capture New Zealand's Food & Beverage opportunity. A focus on innovation will help support F&B businesses in Southern Auckland to be more productive, and provide skilled processing and manufacturing jobs for the local population.

Food and Beverage

Sector in practice

The Food & Beverage sector typically requires flexible warehousing spaces with moveable walls and areas that are large enough to integrate machinery. Research & development activities can be contained within the spaces, or in specific innovation hubs or think tank locations.

Examples of facilitators for the sector include:

- NZ Food Innovation (FoodBowl) - includes large scale manufacturing and office spaces
- Waikato Innovation Park, which is a 17ha campus style facility with a mix of businesses and research organisations, ranging from early stage companies through to multinationals.

Table 6
Example business types and sizes in the Food & Beverage sector.

	Processing	Packaging
Skills	Robotics, software engineering for monitoring systems, automation, food chemistry	Software engineering, automation technologies and digital solutions, robotics, energy management
Anchors	Private/dedicated food and science park Example facilities size: 250 to 300ha ¹ Employment capacity: 10,000 to 15,000 employees ²	Large manufacturing space with distribution Example facilities size: 17,000 to 27,000sqm ² Employment capacity: 15,000 to 30,000 employees
Small-medium enterprises	Private/dedicated food and science park Example facilities size: 55,470sqm ³ Employment capacity: 2,000 to 10,000 employees	Large manufacturing space with distribution Example facilities size: 9,000 to 17,000sqm Employment capacity: 6,800 to 15,000 employees
Start-ups	Start-ups can generate new markets in everything from gourmet delicacies to time-saving food delivery services through technological innovation. Example: Remedy Organics - plant based beverages	
Circular economy	Integration of food waste processes, sourcing food grown regeneratively and locally where appropriate, and alignment with the Eco-Park	

¹AgriBusiness Precinct, Western Sydney

²Food Valley, Netherlands

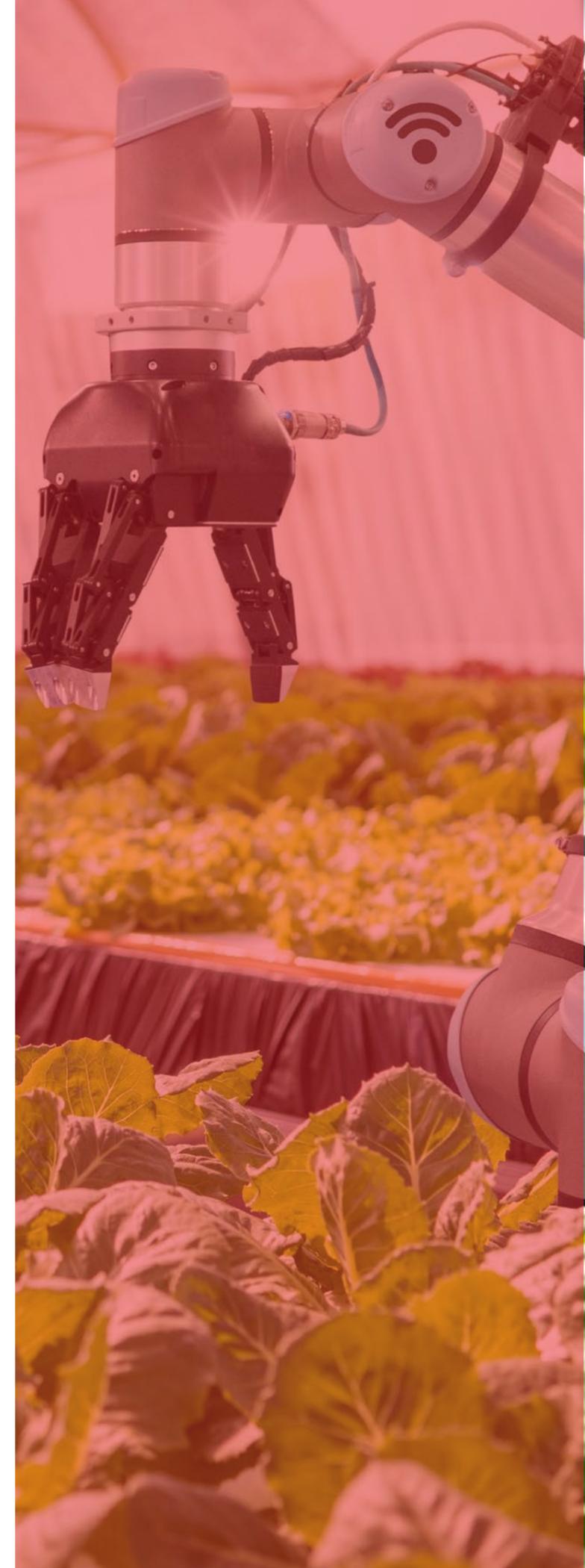
³V2 Food, Wodonga, Victoria

What this means for Southern Auckland

F&B businesses locating in Southern Auckland can build on existing agricultural production to support the evolution of this sector towards the production of high value goods and food-based R&D. The extensive nearby coastline may provide opportunities for aquaculture

Supporting Māori business

Māori business in Aotearoa is growing, with the majority of growth from the food and fibre sectors. The Rautaki mo te Taurikura action plan, a collaboration between government and the Māori Primary Sector Forum, will provide investment in these sectors to generate good outcomes for sustainability and Māori business. This investment is from the Sustainable Food and Fibres Fund from MPI.



Wool and Textiles

Industry sizing

New Zealand is one of the world's major producers of strong wool, and Auckland plays an important role in this sector. The increasing use of natural and sustainable material among the leading textile manufacturers in the world, along with New Zealand's unique farming economy provides, a significant opportunity for Southern Auckland to harness.

Global references

China, Australia and the USA are used as exemplars for the Wool and Textiles sector. China is the largest producer and exporter of textiles, whilst Australia has strong and high quality wool. The USA is a global leader in research and technical textiles.

China

China is a global leader in textile production, making up 37% of world exports. They have a strong focus on research and development.

\$278bn
USD, 2020

5.5m
employees

Australia

Australia produces high quality crossbred wool, and 60% of all apparel wool.

\$18.4bn
USD, 2020

489,000
employees

USA

The USA is the third largest producers of wool. They are leaders in research and development.

\$6.7bn
USD, 2016

529,600
employees

Industry scaling

The sizes of the Wool and Textiles sector in the case study countries are scaled to New Zealand's size, in terms of population and GDP. The scaling factors show the industry size per capita and as a proportion of GDP.

Table 7
Wool & Textiles industry scaling factors for case study countries.

	Industry Size (\$USDb)	Population (m)	GDP (\$USDb)
New Zealand	\$2.7	5.12	\$212.5
<i>Scaling Factor</i>		<i>527</i>	<i>1.27%</i>
China	\$278.07	1400	\$912.2
<i>Scaling Factor</i>		<i>199</i>	<i>1.89%</i>
Australia	\$18.4	25.6	\$1,330
<i>Scaling Factor</i>		<i>719</i>	<i>1.39%</i>
USA	\$6.7	329.5	\$340
<i>Scaling Factor</i>		<i>20</i>	<i>0.03%</i>

● *The USA is excluded given its proportionally low Wool & Textile production per capita*

Success factors



Facilitators



Technology shifts



Advanced manufacturing hubs

National economic opportunity

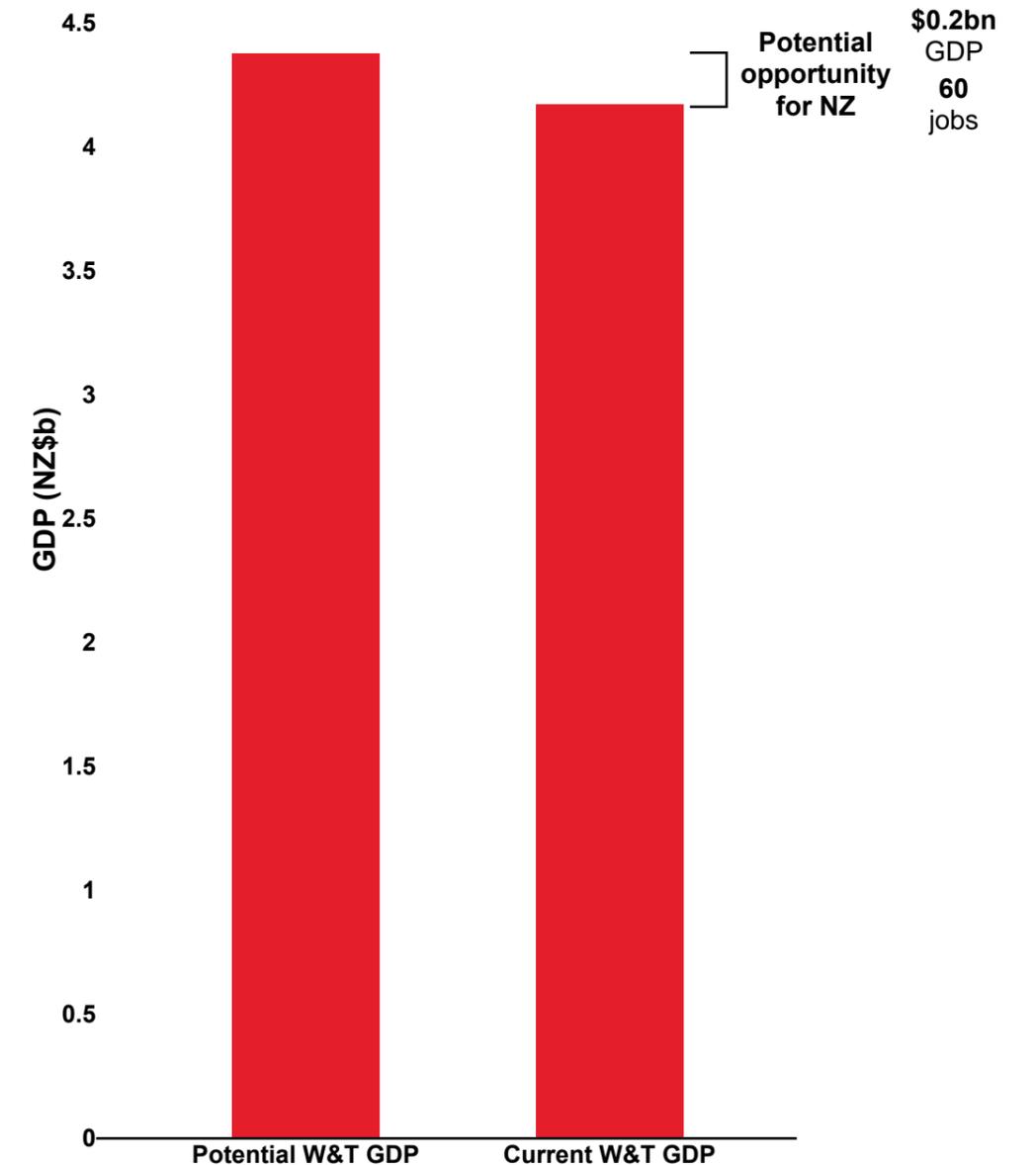


Figure 7
Potential Wool & Textiles sector growth in New Zealand.

What this means for Southern Auckland

The current opportunity for Wool & Textiles growth in New Zealand has been realised to almost full capacity. The original MartinJenkins report identified this sector for future growth in New Zealand, but the current understanding is that this would equate to a low level of growth. Exploration of this sector as a supporting industry may be investigated in Southern Auckland.

Wool and Textiles

Sector in practice

The Wool & Textiles sector typically requires flexible warehousing spaces with moveable walls and areas that are large enough to integrate machinery. Research & development activities can be contained within the spaces, or in specific innovation hubs or think tank locations.

Examples of facilitators for the sector include:

- Wool Research Organisation of New Zealand (WRONZ) and Australia Wool Innovation (AWI) who fund research
- Pilot plant facility typically in a University, such as the Wool Source facility at Lincoln University, Canterbury

Table 8
Example business types and sizes in the Wool & Textiles sector.

	Production
Skills	Soft robotics, designers, researchers, scientists, smart fabric technology, environmental management, nanotechnology, computerised machinery, thermocromic dyeing
Anchors	Manufacturing mill, dye house, wet and dry finishing warehouse for storing designer fabrics Example facilities size: 3,000 to 5,000sqm ⁴ Employment capacity: 160 employees
Small-medium enterprises	Factory with dye house, blending, carding, spinning and winding for wool / yarn manufacturing Example facilities size: 1,500sqm ⁵ Employment capacity: 80 to 100 employees ⁵
Start-ups	Start-ups can use innovation and R&D to create new and smart textiles that are led by technology, automation, and interactive manufacturing Example: Confitex, a New Zealand firm that produces market-leading hyper-absorbent fabric
Circular economy	Incorporation of circular economy principles to commercial textile waste repurposing. E.g. BlockTexx aims to recycle around 4,000 tonnes of textiles, with 30 employees and \$43m revenue in the first year

⁴Waverly Mills, Australia; Interweave, New Zealand

⁵Woolyarns Factory, Lower Hutt

What this means for Southern Auckland
The opportunity for Wool & Textiles in New Zealand is currently low, but investment in new technology or other forms of innovation may accelerate the economic opportunity for this sector.

Summary of economic sizing

The Health and Construction sectors provide the greatest opportunity for Southern Auckland to achieve economic growth and job creation. While Food & Beverage and Wool & Textiles provide a smaller opportunity, investment in these sectors will still contribute to the economic development of Southern Auckland, while supporting a resilient and strong local economy.

Health



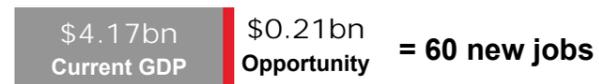
Construction



Food & Beverage



Wool & Textiles



Implementing the four sectors

Both public and private sector investment will be needed to bring these four sectors to life in Southern Auckland. Early investment will be needed to initialise these sectors in the area, and ongoing investment can foster steady growth and innovation through R&D.

Investment in advanced manufacturing can support growth and innovation in these four sectors. Shared technologies and advanced manufacturing facilities can support businesses in developing advanced and innovative products that appeal to national and international markets.

The manufacturing of products will be underpinned by circular economy processes and principles. This means reducing waste from manufacturing processes, and facilitating the reuse and repurposing of waste products. This can help reduce New Zealand's waste production to achieve better environmental outcomes.

Circular Economy

The Government has strong aims around encouraging circular economy processes in economic development. This involves supporting activities around material repurposing and recycling, to reduce waste. The sectors proposed for Southern Auckland provide many opportunities to incorporate circular economy processes.

Kaitiakitanga over the natural environment must also be achieved, above and beyond circular economy processes. Long term maintenance and enhancement of the natural environment will drive long term social, cultural, and environmental wellbeing while creating economic opportunities for local populations.

Circular economy for a more sustainable New Zealand

Each New Zealander produces an average of 3.5 tons of waste each year, over two thirds of which ends up in landfill. Landfill waste increased by nearly 50% over the last decade. New Zealand also isn't good at recycling - only about 58% of packaging is recycled.

Our waste problem is a climate problem. New Zealand does not have the right facilities to recycle all recyclable materials we consume, so they are shipped offshore to be recycled, which requires huge amounts of energy. Around 45% of New Zealand's emissions are generated in the production of goods, which circular economy principles aims to minimise.

This waste issue can be mitigated with circular economy processes. This includes innovation in producing low-waste products, and developing facilities that repurpose waste into new products.

Circular economy in Southern Auckland

The original MartinJenkins report identified the need for the Economic Masterplan to enable circular economy processes, to support the achievement of national and local agendas around waste, climate change, and decarbonisation. This involves providing infrastructure and methods for circular and regenerative practices in a range of industries to reduce waste.

This report proposes significant economic development with public sector involvement. This provides an ideal opportunity for Government- and Council-led implementation of circular economy activities that can have a real impact on Auckland's carbon profile, and set a precedent for future economic development throughout New Zealand.

Circular economy in the Economic Masterplan

Southern Auckland provides significant opportunity to establish circular economy activities. The four sectors identified for Southern Auckland are well placed to incorporate circular economy principles and processes. Existing local businesses can further support this; for example, NZ Steel in Glenbrook can provide opportunities for scrap steel recycling, hydrogen manufacture, sustainable aviation fuel, and renewable energy.

Food & Beverage

There is an opportunity to link circular economy solutions into both the processing and packaging segments. This includes the opportunity for advanced packaging reusing and recycling facilities, as well as the development of new packaging forms that are easily reused and recycled.

Wool & Textiles

Facilities for the recycling of by-products can be established. Southern Auckland can support the manufacturing of clean, ethical and traceable natural products in the wool and textiles sector, which can attract manufacturers locally and globally. Circular economy principles can be integrated by using regenerated waste materials in new wool and textile manufacturing.

Construction Materials

Creating renewable or recycled construction materials and supporting advanced material recycling are two opportunities that can promote circular economy principles in the construction sector. This can include materials recycled from construction sites, demolitions, or by-products from production processes, as well as the integration of waste products into the construction process. New Zealand is already at the forefront of change in the construction sector, with innovations in e-waste (for example by Mint Innovation) and heavy industrial processes (for example by Avertana).

Health

Advancements in health technologies can drive innovation to develop low waste healthcare products. It can enable processes for the recycling of products used in healthcare.

Circular economy and advanced manufacturing

Supporting advanced manufacturing in Southern Auckland can in turn support the implementation of circular economy processes. Advanced manufacturing can enable technologies and processes that support the reduction, re-use, and recycling of waste materials in the manufacturing and production of goods.

Case Study:

RMIT Circular Economy Hub

RMIT University in Melbourne, Australia has a circular economy hub which brings together experts and researchers within the University to research and develop innovative methods to support circular economy practices. Their work has informed forums at national and global levels.

The hub brings together a range of schools within the University, including textiles, media, communications, design, engineering, and construction, among others. The colocation of these sectors within one University encourages a high level of collaboration and a strong governance structure, which encourages innovation.



Advanced Manufacturing

The Government recognises the important role of advanced manufacturing to drive innovation, productivity, and skilled job growth. The sectors proposed for Southern Auckland lend themselves to investment in advanced manufacturing processes.

Advanced manufacturing in Southern Auckland

Advanced manufacturing is defined by Tātaki Auckland Unlimited as ‘business processes, technology, materials and capabilities used across a value chain in the design, manufacture or handling of a product or service’, and typically involves a high level of research & development and a heavy reliance on STEM (science, technology, engineering and mathematics) workers. It is becoming an increasingly popular activity for countries and businesses to improve productivity and innovation. Supporting advanced manufacturing in Southern Auckland can help attract and foster innovative and productive businesses.

Manufacturing in Auckland is regionally and nationally important, consisting of 83,000 employees and 37% of New Zealand’s manufacturing GDP. There is excess capacity for improved productivity through advanced manufacturing. Southern Auckland can harness this opportunity to help the city and country meet targets for economic growth, higher household incomes, and higher value industries.

Southern Auckland is ideally placed for advanced manufacturing. Interest in manufacturing and industrial activity in the area is well evidenced, with a large number of resource consents, plan changes and masterplans underway in Drury, Ardmore, Papakura, Pukekohe, Patumahoe, Glenbrook, and Waiuku for industrial development. Drury has an existing concentration of manufacturing activities in the town centre which can be built upon with investment in advanced manufacturing. NZ Steel at Glenbrook already undertakes advanced manufacturing activities, so activity in the focus area can build on this to support advanced manufacturing across complete supply chains. The greenfield nature of the majority of the focus area provides space for large-format development needed to house advanced manufacturing activities.

The Advanced Manufacturing Industry Transformation Plan

The Advanced Manufacturing Industry Transformation Plan (ITP) by MBIE outlines a long-term vision for advanced manufacturing, underpinned by six key priorities. Initiatives outlined in the Economic Masterplan will contribute to the achievement of this vision.

The vision is ‘a thriving Aotearoa New Zealand advanced manufacturing sector of world-class creators, innovators and makers delivering quality products, sustainable solutions and intergenerational wellbeing’. The six key priorities and how the Economic Masterplan can achieve these is outlined below.

1. Improved understanding and perceptions of advanced manufacturing

The Economic Masterplan will promote advanced manufacturing as a feasible and attractive way to improve productivity by making it a core part of sector processes.

2. Increasing investment in advanced technologies and processes to lift productivity and wages

The Economic Masterplan will require public and private investment to enable the procurement and use of advanced technologies to foster productive businesses.

3. Making innovation, R&D and science work for advanced manufacturing

The Economic Masterplan promotes collaboration between industry and facilitators of innovation. Land use principles around containment and clustering will encourage sharing ideas and facilities.

4. Attracting and developing a diverse high-skilled and high-wage workforce

Business attraction methods in the Economic Masterplan will attract highly skilled workers, while providing opportunities for education and up-skilling.

5. Creating a leading sustainable circular net-zero emissions sector

The Economic Masterplan is underpinned by circular economy principles and promotes industries and land uses that are compatible with net zero processes and ways of living.

6. Enhancing global connectivity and opportunities

The Economic Masterplan will attract highly innovative multi-national businesses to the area.

Advanced manufacturing in the Economic Masterplan

The four sectors proposed in the Economic Masterplan have great opportunities to incorporate advanced manufacturing.

Food & Beverage

Productivity in Food & Beverage manufacturing can be improved with processes to improve rapid response times and reduce waste. Technologies can use IoT (Internet of Things), advanced data analytics, and smart sensors for more optimised processes. Advanced manufacturing can improve the use of biodegradable smart packaging, advanced automation control systems, distributed control systems and food safety inspection features.

Wool & Textiles

Research & development can enable opportunities in creating new and smart textiles, led by technology, automation, and interactive manufacturing. The process of additive manufacturing can become a potential methodology to improve the sustainability of clothing and extended lifecycles. Technological advancements in the textile industry include digital printing, 3D printing, and nanotechnology which can enhance the creation of fire or water repellent items, as well as enabling more energy efficient production.

Construction

Using AI, 3D printing and BIM (Building Information Modelling) technologies can improve efficiency through the visualisation of models. Major construction trends also include construction robotics and green building, which are enabled through global growth in start-ups and scale-ups. New Zealand is already driving innovation in this space, with the development of materials such as the latest glass spacer technology (which is suited to New Zealand’s climate) and Solace Low-E (thermal, energy efficient glass technology) formulated by NZ manufacturing company FMI.

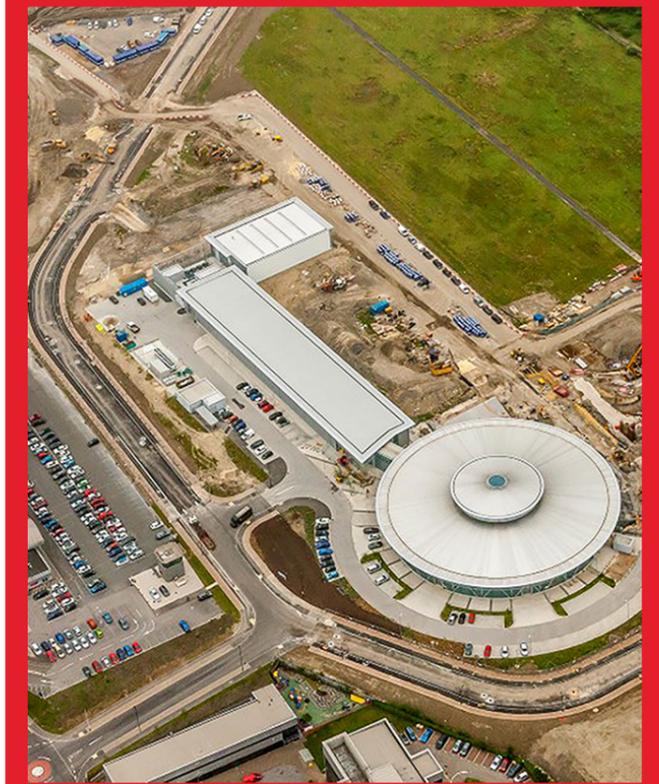
Health

Advanced manufacturing has a range of uses in the medical sector, from digital integration into existing machinery to robotics and 3D printing. 3D printing allows for the production of customised and highly complex parts in highly regulated industries. Potential uses for the medical sector include 3D printed prosthetics and implants such as retinal implants or hearing aids, and applications in dental laboratories.

Case Study:

Sheffield Advanced Manufacturing Research Centre

The AMRC consists of a world-leading research and innovation network, with more than 120 industrial partners. Close collaboration with the University of Sheffield and private sector firms brings talent and innovation. The Centre generates knowledge and research to support a highly productive exporting industry around manufacturing.



Spatial Opportunities

This section presents a land use plan and rationale to spatially locate the economic opportunities.



Methodology

This section presents an idealised land use plan for the focus area, which includes a range of residential, commercial, industrial, and mixed uses. This process is outlined below.

Opportunity framing

This section presents the land use and staging plans for the focus area. This is informed by six principles for development, which were formed to ensure good urban outcomes, and five opportunity nodes, which are locations or features in the focus area that provide the greatest potential for economic and urban development.

Establishing land use typologies

A set of six land use typologies are outlined that make up the land use plan for the focus area. These are designed to enable a range of commercial and industrial activities, while providing for supporting residential and community activities.

Local planning context

Areas that are planned for current or future urban development are identified, to inform the spatial location of interventions under the Economic Masterplan.

Potential land use plan

A potential land use plan is proposed for Southern Auckland, to provide for proposed economic activities and other urban land uses. This land use plan is informed by the identified opportunities and local planning context, and consists of the six proposed land use typologies.

Development readiness

The timing and location of infrastructure and development readiness of land in the focus area is outlined. This informs the staging plan, and when and where development under the Economic Masterplan can occur.

Opportunity Framing

Southern Auckland provides significant economic opportunities for a range of sectors and commercial activities. Sufficient land must be provided in appropriate locations to accommodate these activities.

Principles

The Economic Masterplan aims to create high quality employment with innovative and productive businesses. It is underpinned by agendas around efficient resource usage, positive environmental outcomes, and wellbeing, as directed in relevant national and local policy. To achieve these agendas around environmental, social, and economic wellbeing, six principles were developed, which are the foundations for decision making around land use in the Economic Masterplan.



Infrastructure

Aligning with existing infrastructure and planned infrastructure investment



Liveability

Colocation of jobs, homes, and services to support living local



Access

Centralising economic activity around rapid transit and arterial roads



Land

Ensuring sufficient land capacity for industries with large land demands, including currently planned land



Planning

Catalysing and adding value to existing planning, including the Structure Plan and developer intentions



Clustering

Colocating businesses and industries that work together to achieve economies of agglomeration

Land Use Typologies

To enable the economic opportunities and supporting residential, community, and commercial activities, six land uses are proposed for the focus area. These were formulated to ensure a wide range of industrial and commercial activities are enabled, while also allowing for residential, community, retail, and other uses to ensure the development of a resilient and vibrant urban environment. They provide for the agglomeration of activity to catalyse economic opportunities, while fostering compact development with a mix of activities. The land uses include:

- **Centre:** this land, located around the rail stations, provides for high density residential, commercial, and community activities, and will be walkable with a high quality public realm. Development of this land is outside the scope of the Economic Masterplan, due to the industrial nature of the activities proposed, but will be necessary to establish Southern Auckland as a desirable urban area to live, work, and play.
- **Enterprise:** this land will host highly innovative and productive economic activities, while still providing residential land and local services and amenities to create mixed use neighbourhoods.
- **Campus:** Campus areas will host businesses centred around a particular sector, to allow for agglomeration benefits. There is a strong focus on high quality public and open space to make it a desirable area for workers and businesses to establish. Locations within walkable catchments of rail stations is important to provide accessibility and reduce vehicle kilometres travelled by workers.
- **Industrial:** this land will host larger format economic activities, centred around manufacturing and other forms of light industry.
- **Logistics:** a logistics hub will allow for efficient transfer of goods into, out of, and within Southern Auckland.
- **Residential:** some areas of the Masterplan will contain residential dwellings, to support local living and working. Development of this land is outside the scope of the Economic Masterplan, but will be necessary to establish Southern Auckland as a desirable urban area to live, work, and play.

The interactions between these land uses are shown overleaf.

Compact urban form

Underpinning the principles and opportunity nodes is the need for urban containment. By promoting a compact urban form, the movement of goods, people, workers, and ideas within and between different land uses can be easy and efficient.

Movement of Goods

The land use plan promotes well connected supply chains, so goods don't have to travel far throughout the production process.

- 1 Raw materials and unrefined goods arrive at a Logistics area from the regionally connected State Highway 1, and are stored or prepared for distribution
- 2 Goods and materials are transported to a nearby Industrial area for refinement or manufacturing
- 3 Some goods may then travel to an Enterprise area or Campus for further processing, using more technologically advanced processes
- 4 Goods are transported to Centres for sale
- 5 Goods are taken home for consumption by residents, who can easily access their local centres by public or active transport.
- 5 Goods are also distributed throughout the wider region, country, and world.

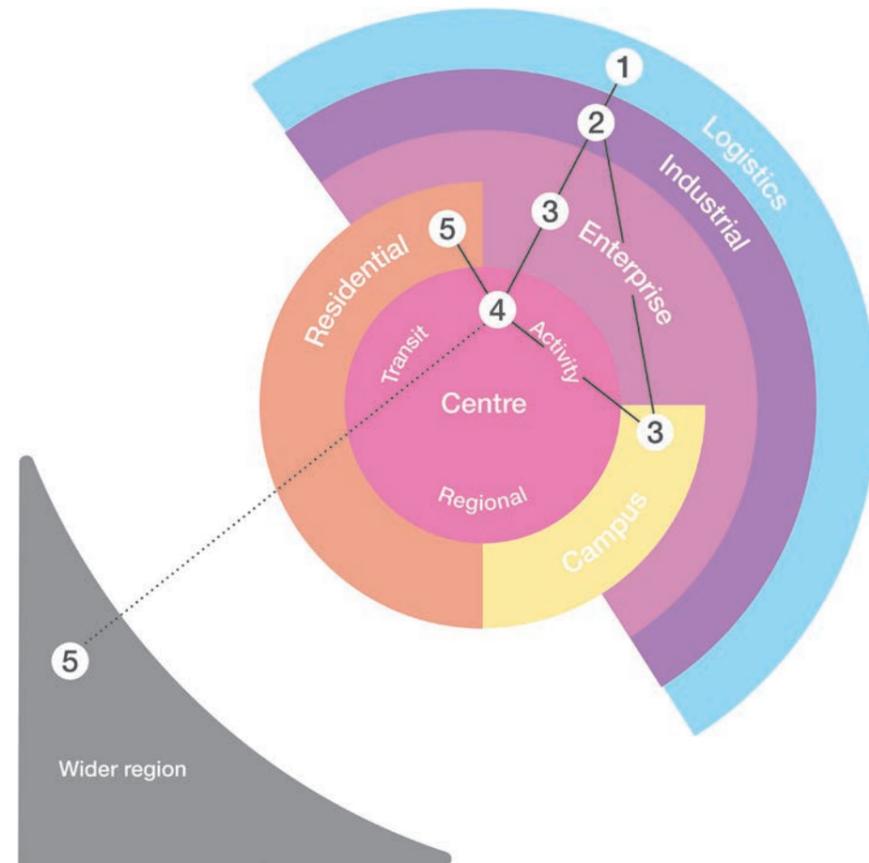


Figure 8
The movement of goods within the focus area.

Movement of Workers

Residents will live close to a wide range of employment opportunities, which means businesses have a wider pool of candidates to employ from.

- 1 Residents live in compact, high quality residential areas
- 2 Some residents work in Centres, which are walkable to residential areas
- 3 Centres are also hubs for public and active transport for residents to access other employment areas.
- a b Some residents live and work in Enterprise areas, so they can easily access employment by active transport.

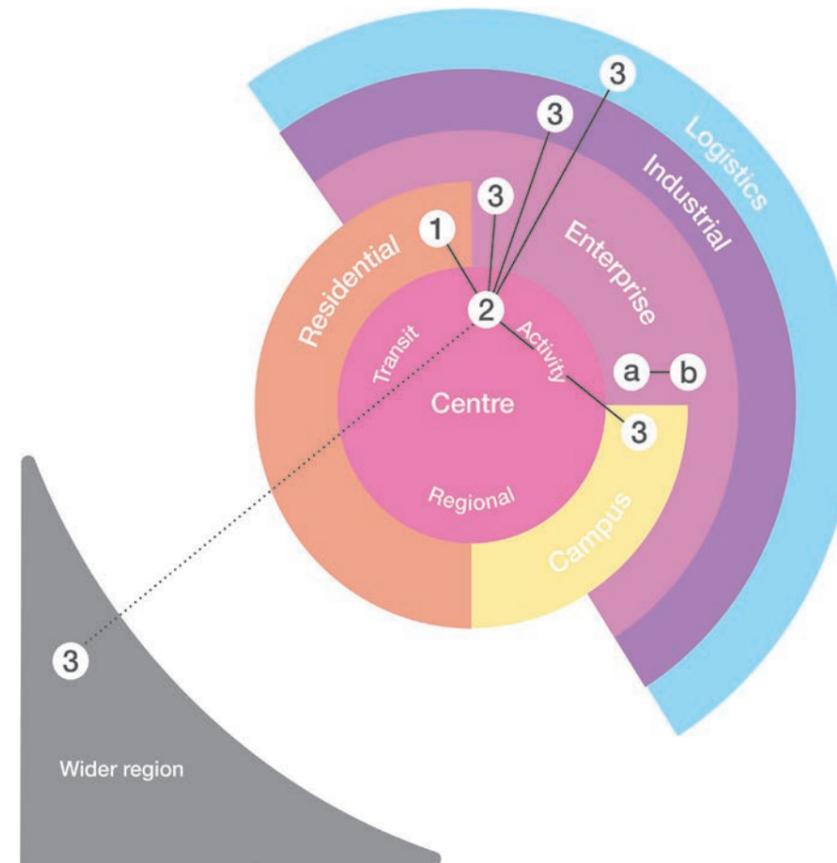


Figure 9
The movement of workers within the focus area.

Movement of Ideas

Containing and colocating education, research, and innovative commercial activities promotes cross pollination of ideas, to enhance economic productivity and development.

- 1 Innovative start-ups, think tanks, and research institutes produce new knowledge and ideas in collaboration with each other
- 2 This improves processes of production, and how people work and live.

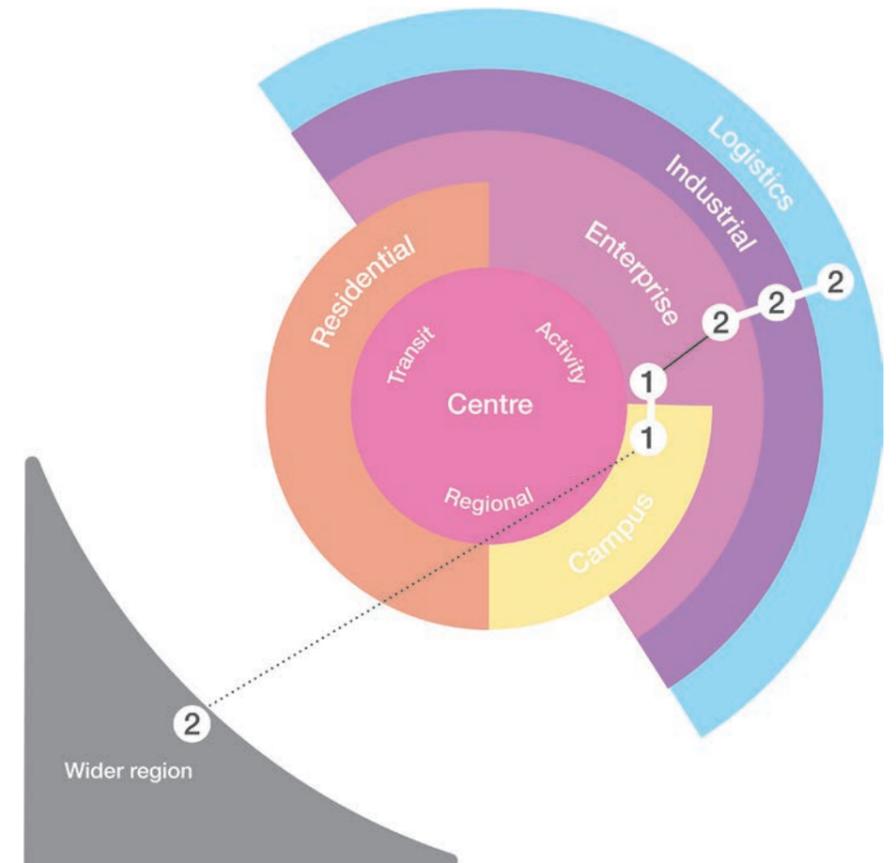


Figure 10
The movement of ideas within the focus area.

Characterising the land use typologies

This section presents each land use typology in more detail, to show how they may be characterised in Southern Auckland.

Centre

Land designated as Centre surrounds the future rail stations, and will form the foundations of high quality transit-oriented developments. Centre development will be high density and fine grain to promote walkability. It will contain a mix of residential, commercial, and community uses so residents can live close to jobs and services.

Activities

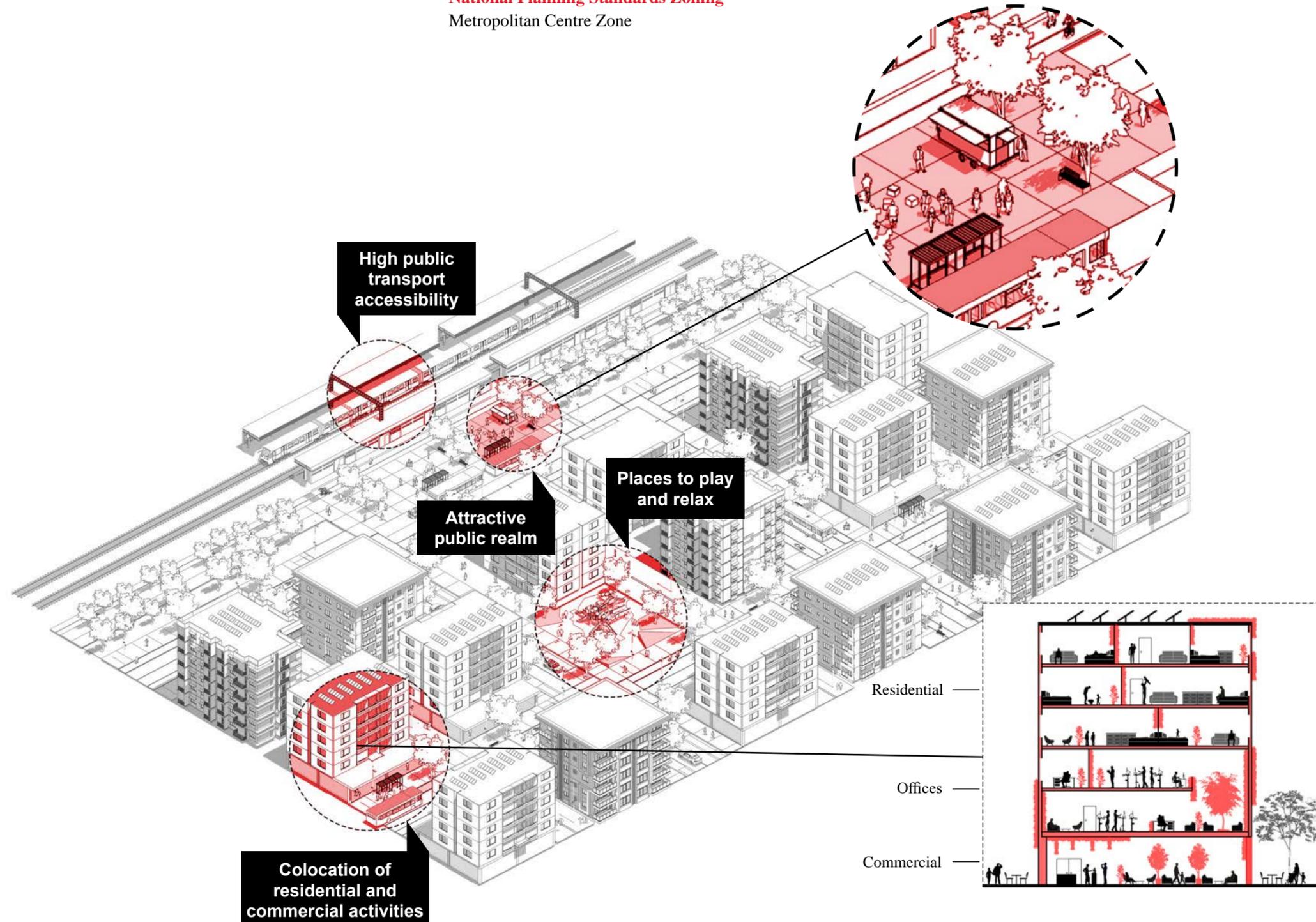
Office, retail, small-scale commercial, community facilities, residential

Auckland Unitary Plan Zoning

Metropolitan Centre Zone

National Planning Standards Zoning

Metropolitan Centre Zone



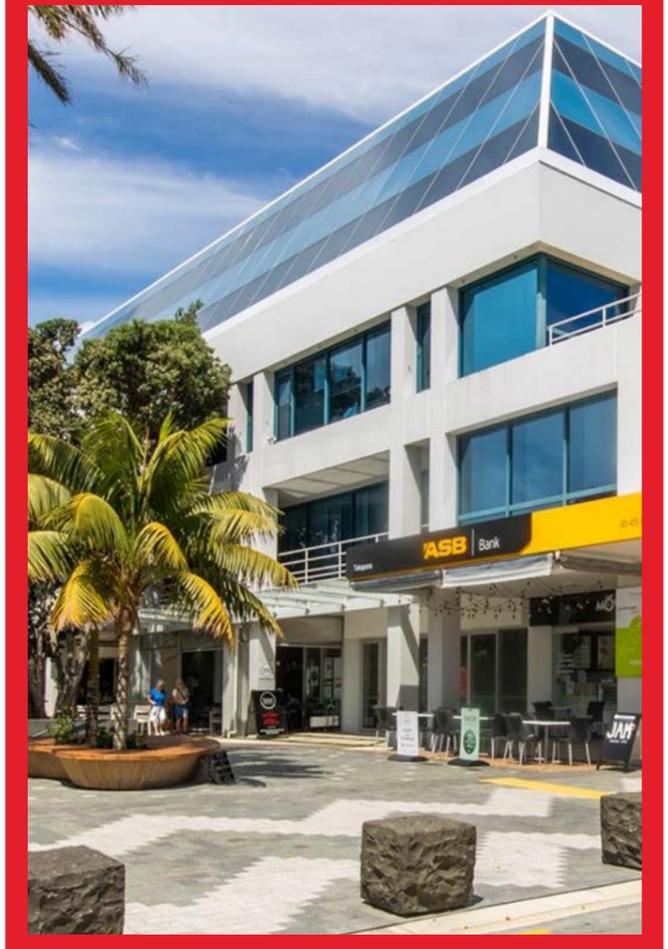
Case Study:

Takapuna, Auckland

Takapuna on Auckland's North Shore acts as a local hub for employment, entertainment, transport, and amenities. It contains a robust mix of housing and businesses, which means the centre is always busy and vibrant. Takapuna is an attractive place to establish a businesses because of the attractive public realm, and the proximity to workers, customers, and other businesses.

Learnings for Southern Auckland

Accessibility and a resilient mix of land uses makes for a successful centre, to support local services and more innovative and highly skilled businesses.



Enterprise

Large areas of the focus area are designated for Enterprise, which will provide the greatest opportunity for highly productive and innovative commercial activities. These areas will allow for a wide range of business types to co-exist, including offices, studios, workshops, laboratories, and small-scale manufacturing. Residential and community activities will also exist in Enterprise areas, fostering resilient, mixed-use neighbourhoods where people can live, work, and play within their local area.

Activities

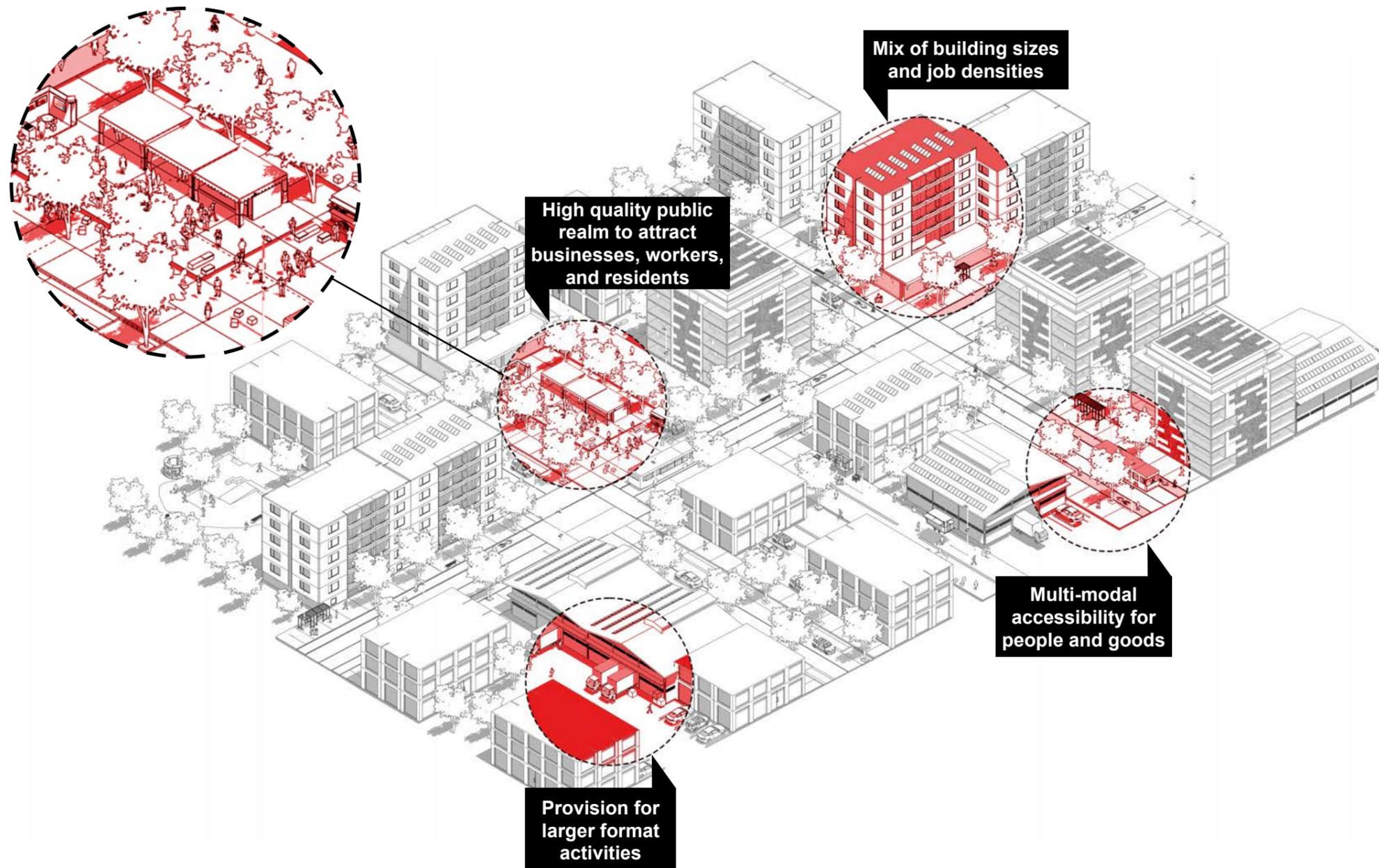
Small scale manufacturing, innovative commercial activity, offices, residential, local retail and services, education and research facilities

Auckland Unitary Plan Zoning

Business: Mixed Use Zone + some amendments

National Planning Standards Zoning

Mixed Use Zone



Case Study:

Ørestad, Copenhagen

Ørestad is a new neighbourhood of Copenhagen that has a mix of commercial, residential, retail, education, and open space uses. It is highly accessible by rail and bicycle to the rest of the city. The mix of uses means people don't have to travel far to live, work, and play. A high standard of architecture and urban design furthers the attractiveness of Ørestad for businesses, workers, and residents.

Learnings for Southern Auckland

Enterprise areas should be highly accessible with a high quality public realm to make them attractive to businesses and workers.



Campus

The land use plan provides for two campuses, which are innovation hubs centred around a particular product, sector, or process. The two proposed campuses are focused on Health and Research & Development. Campuses can help achieve economies of agglomeration by bringing together businesses in the same industry or production process, to increase collaboration and sharing of ideas, materials, and technology. Supplementary education and research institutes can further improve innovation. Providing plenty of open green space can make campuses more attractive for businesses and workers, and can increase the ability for stormwater to be absorbed, as the two campuses are located in areas with floodplains.

Activities

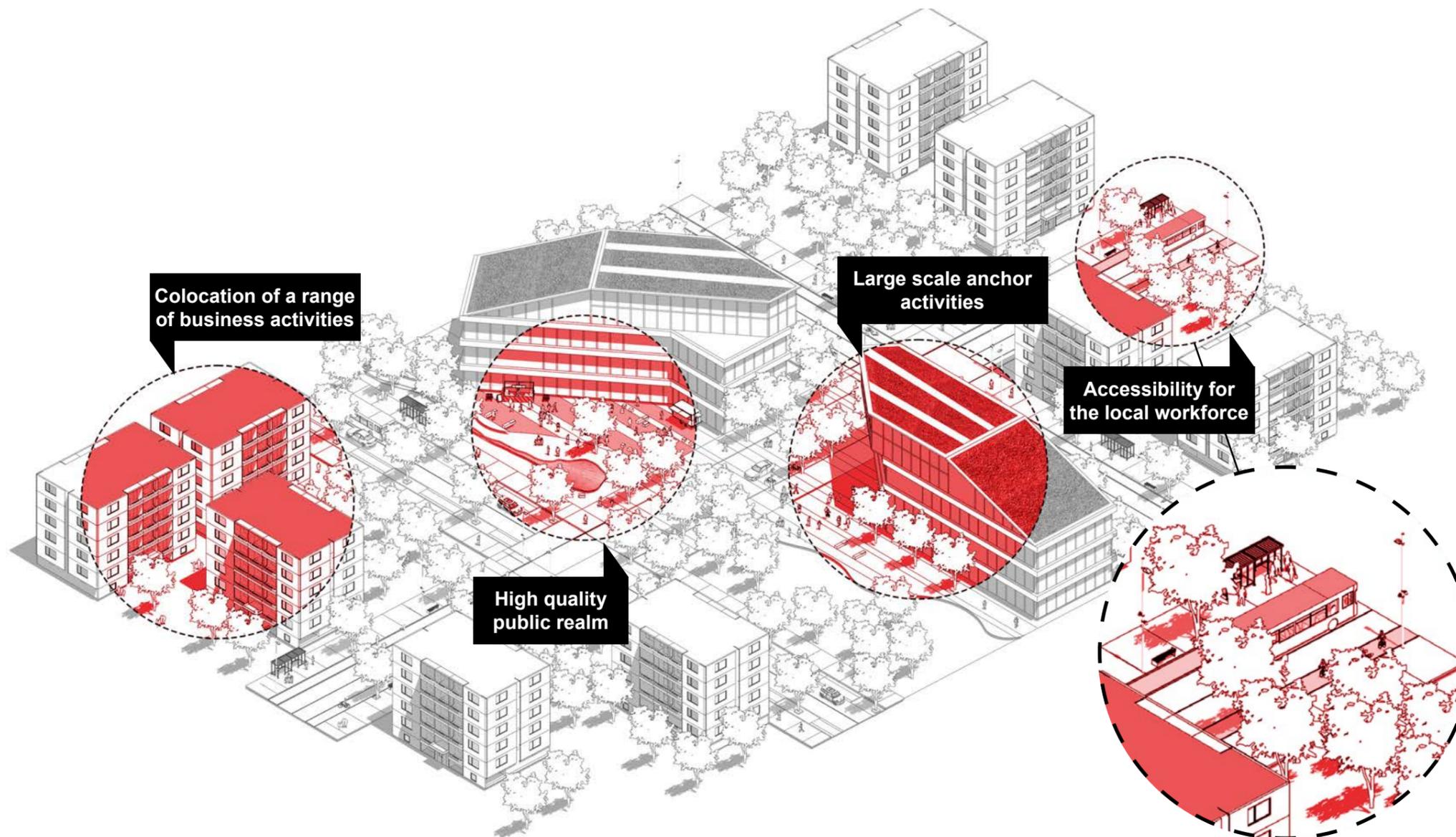
Office, small scale commercial, education and research institutes

Auckland Unitary Plan Zoning

Business: Business Park Zone

National Planning Standards Zoning

Commercial Zone



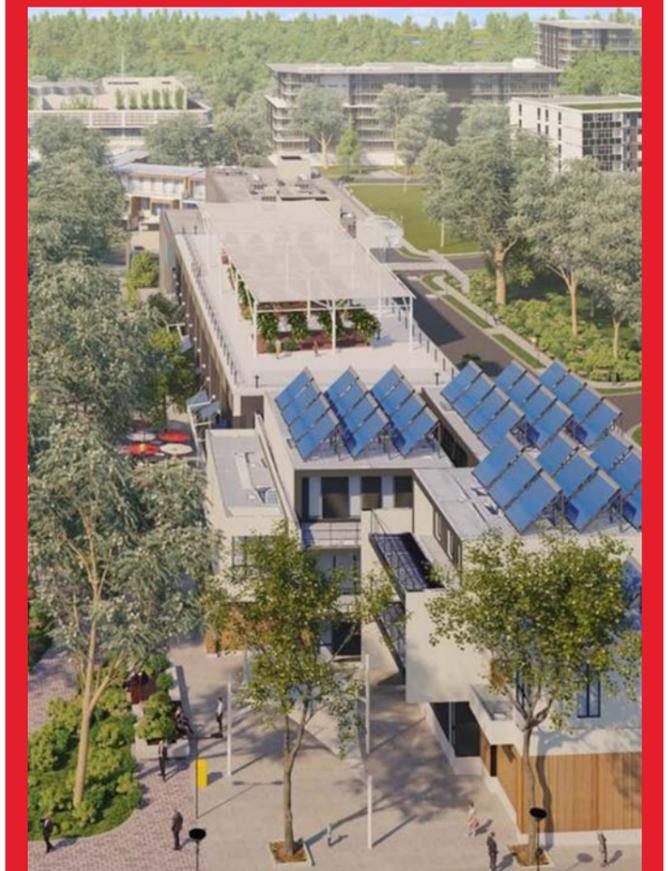
Case Study:

AgriBusiness Precinct, Western Sydney

This masterplanned precinct will accommodate up to 10,000 jobs near a new international airport, providing employment choices for residents of western Sydney. The precinct is centred around the production and value-adding of fresh produce and consumer foods. The proximity of the precinct to the new international airport means foodstuffs are well positioned for international export. The precinct has been comprehensively masterplanned, which will ensure a high quality public realm for workers to enjoy.

Learnings for Southern Auckland

The colocation of businesses within the same industry can bring many benefits of agglomeration. A well planned campus can support employment opportunities and a high quality public realm for workers to enjoy.



Industrial

Land is designated for light industry uses adjacent to Logistics and Enterprise areas, to encourage businesses along supply chains to locate close to each other. Industrial land is separated from Residential and Centre land to reduce reverse sensitivity effects.

Typical light industrial land is low density and car dependent. The Economic Masterplan elevates this, by proposing industrial land that is higher density, promotes collaboration and sharing of facilities with other businesses, and is accessible by public and active transport.

Activities

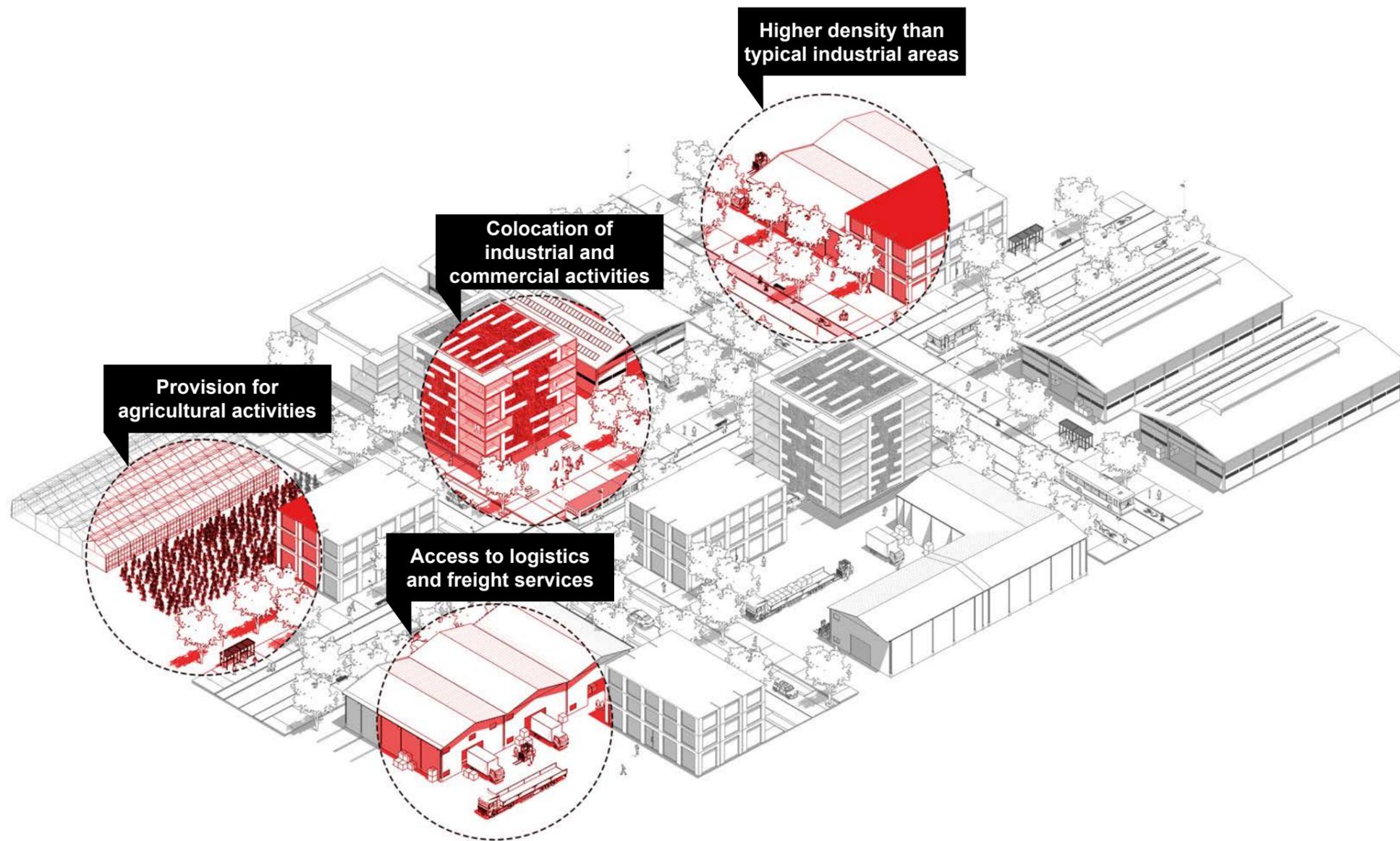
Warehousing, factories, manufacturing

Auckland Unitary Plan Zoning

Business: Light Industry Zone

National Planning Standards Zoning

General Industrial Zone



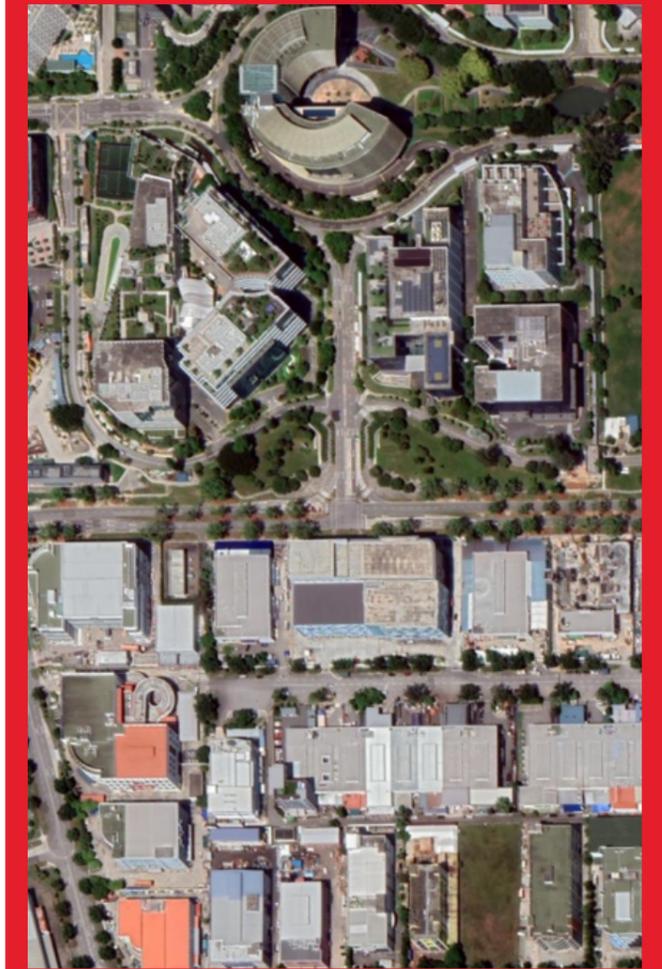
Case Study:

Changi Business Park, Singapore

Changi Business Park is located next to Changi International Airport, and contains a light industrial area adjacent to the Business Park's high density office buildings. The industrial area is relatively high density, with small lots and high building footprint coverage.

Learnings for Southern Auckland

Light industrial areas can be developed to a higher density than is standard in Auckland, to increase yield and provide more jobs. Adjacency to office and commercial areas can foster integration between businesses along supply chains.



Logistics

Land around existing and future motorway interchanges is designated for local logistics activities, which includes the handling and distribution of goods. The location at motorway interchanges means goods and materials can easily be moved to and from Southern Auckland. This land use would be complemented by regionally significant logistics activities located on the rail line.

The containment of shipping and logistics activities in these areas provides an opportunity to create low- or no-carbon zones. Goods can come off State Highway 1 or from rail freight facilities in trucks and be transferred to smaller, more carbon-friendly vehicles, such as electric vehicles, to be distributed throughout Southern Auckland.

Activities

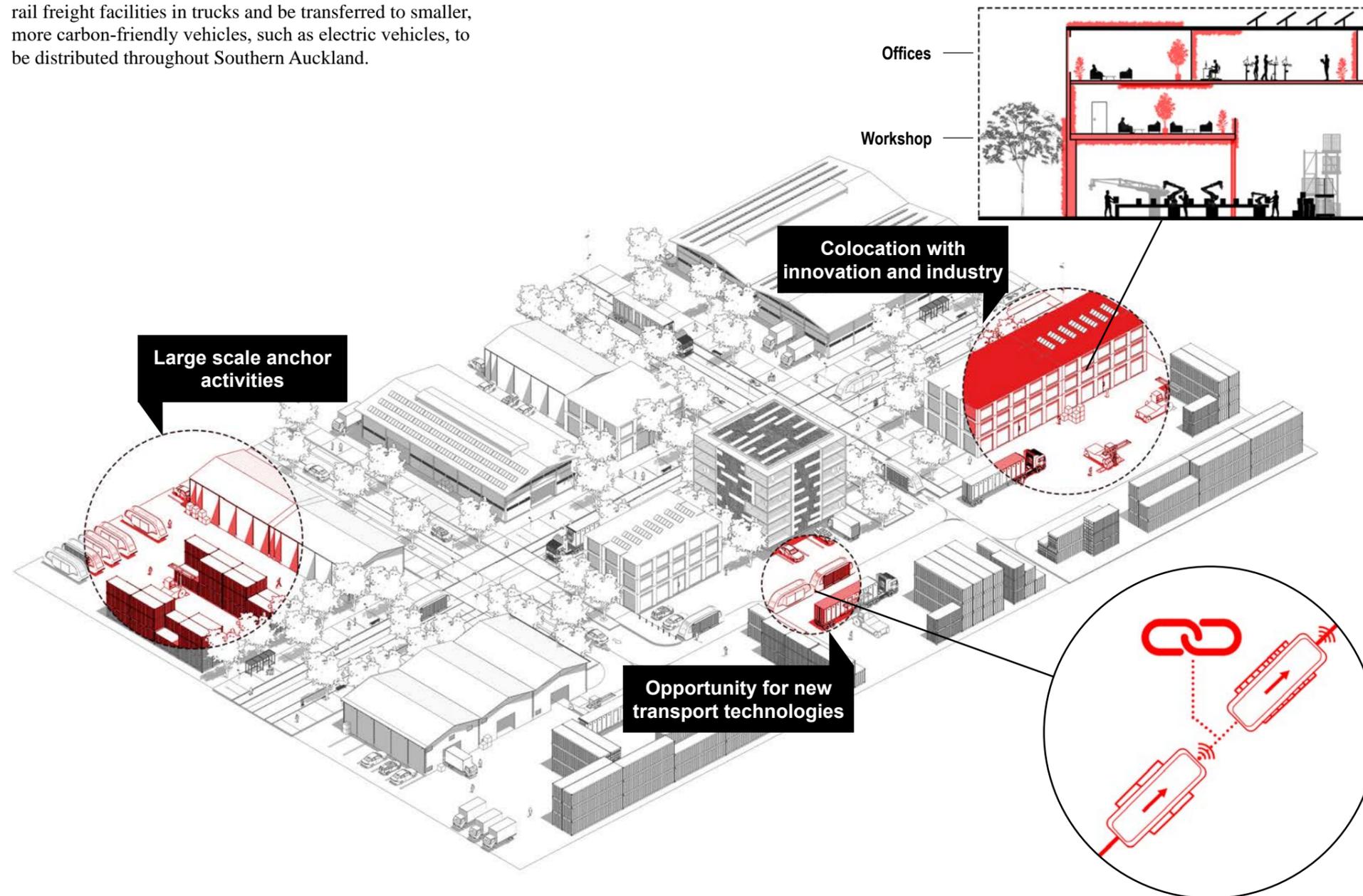
Shipping, logistics, distribution

Auckland Unitary Plan Zoning

Business: General Business Zone + some amendments

National Planning Standards Zoning

Light Industrial Zone



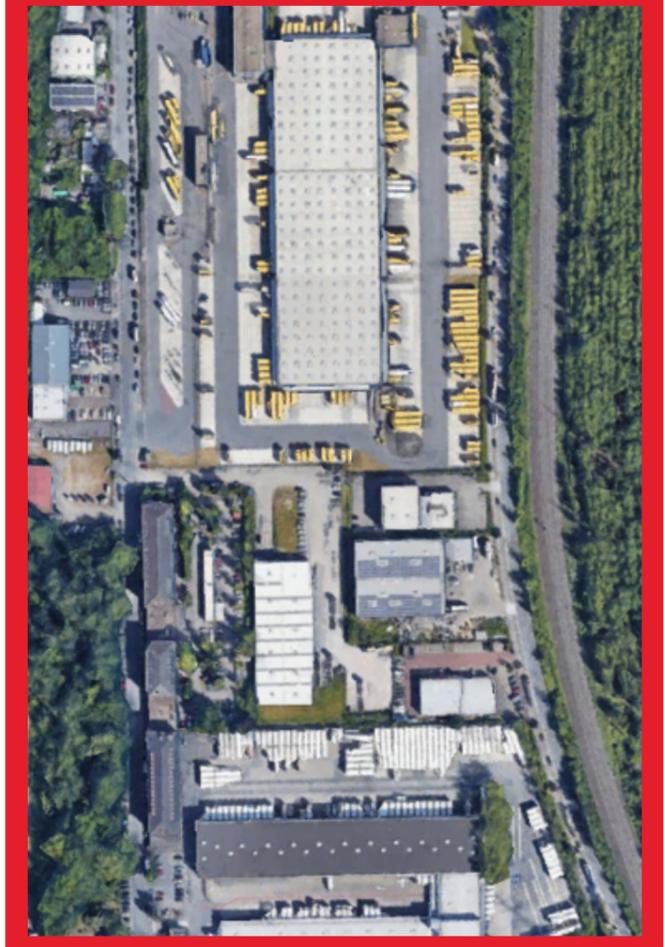
Case Study:

Dortmund, Germany

A small logistics area is located close to Dortmund's port. It is co-located with supporting businesses, such as suppliers of packaging, express delivery services, and a vocational school specialising in logistics. Its location near the port and adjacent to a national highway maximises accessibility and reduces the need for large trucks to travel along local roads. Development is compact and space efficient.

Learnings for Southern Auckland

Logistics and distribution centres can be compact and accessible. Colocation with supporting businesses and education facilities can encourage innovation and efficiencies.



Residential

Some residential land is provided for within the land use plan, to provide for great accessibility to jobs and short commutes. This should be medium to high density to provide for significant population growth. Residential land is all located around centres so residents can access all of their daily needs within a walkable catchment.

Housing typologies must be suitable and attractive for employees of businesses in the area, to support the economic growth and business attraction of Southern Auckland. This includes the provision of attractive executive countryside living, affordable housing, and a range of other typologies inbetween. Neighbourhood design must be high quality to be attractive to workers.

Activities

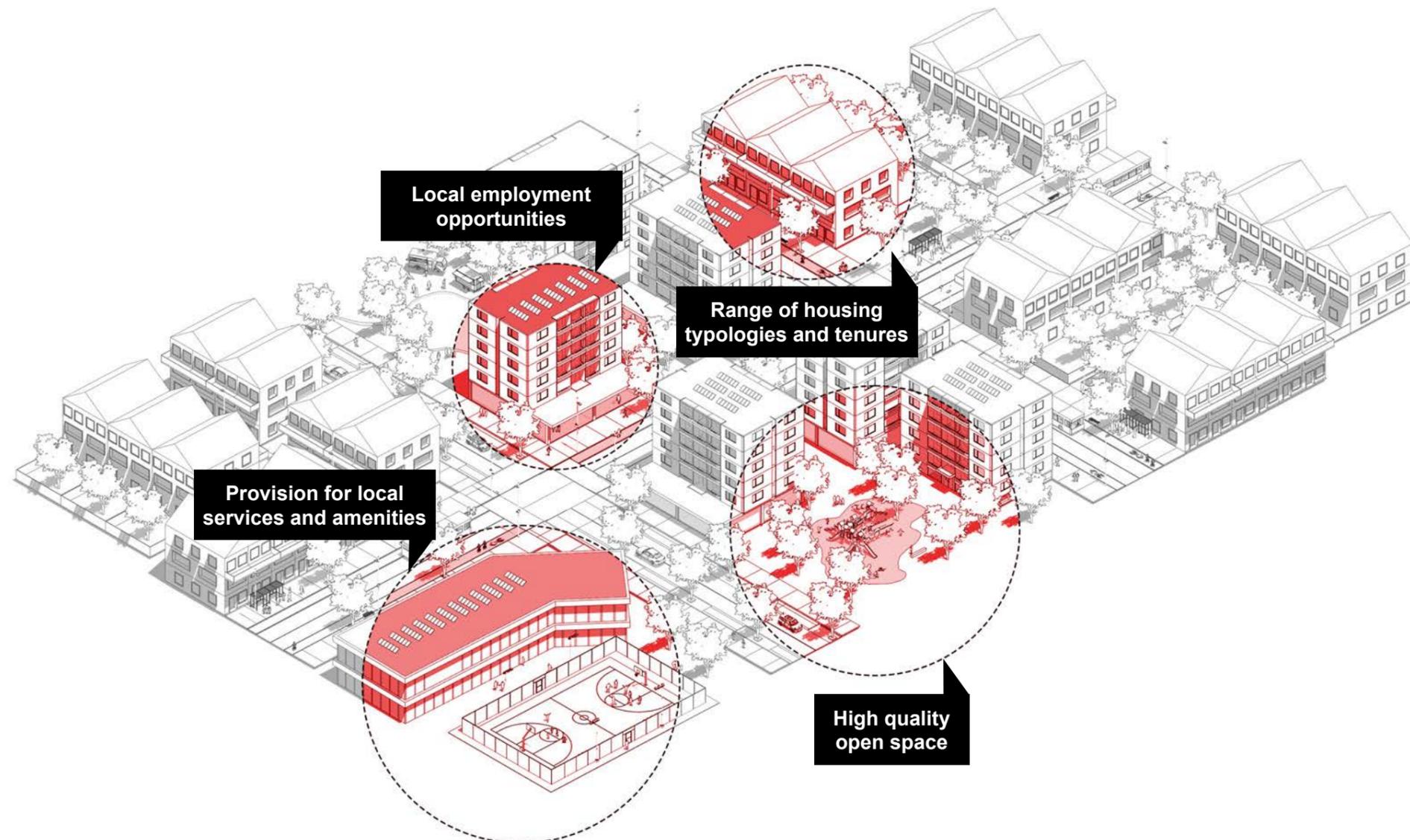
Residential, local services and facilities, public and open space

Auckland Unitary Plan Zoning

Terrace Housing & Apartment Zone, Mixed Housing Urban Zone, Mixed Use Zone

National Planning Standards Zoning

High Density Residential Zone, Medium Density Residential Zone, Mixed Use Zone



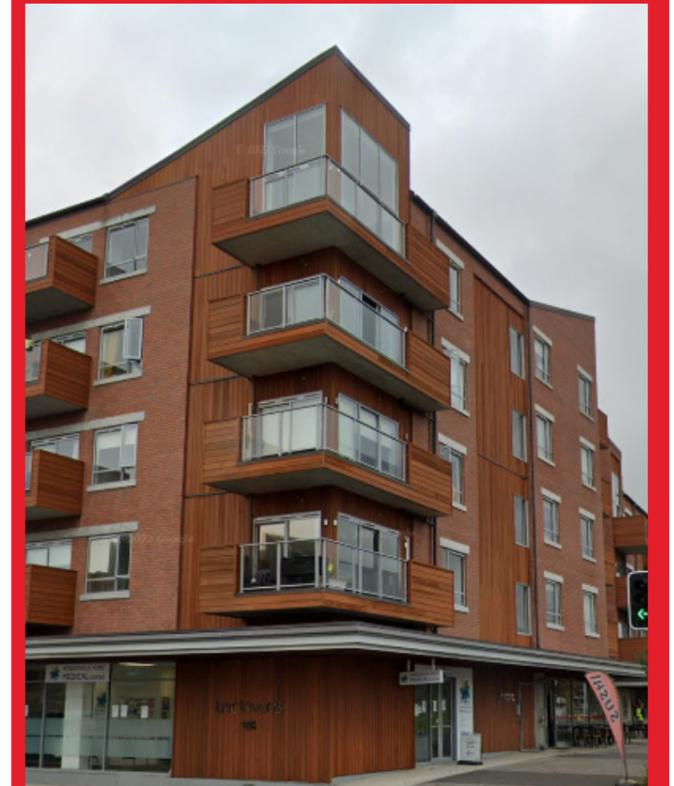
Case Study:

Hobsonville Point, Auckland

Hobsonville Point is a large masterplanned development in Auckland. It achieves a high density of housing, while providing a high level of amenity with plentiful public space and local shops and restaurants. The high density makes the neighbourhood vibrant, while providing a range of housing typologies to appeal to all household types.

Learnings for Southern Auckland

High density residential development and high quality design are important for creating vibrant and attractive neighbourhoods that cater to families of all sizes, stages, and incomes. More compact development supports greater accessibility to local services and amenities.



Local Planning Context

Development and planning for development in the focus area is already underway, through the Structure Plan and plan changes undertaken by private developers. Only planning within the focus area is considered in this section, as this is the only area considered for future development under this Economic Masterplan, as explained in the Narrative Report (Appendix 1)

Structure Plan

The Drury-Opāheke Structure Plan presents a land use plan and supporting infrastructure to guide future development from 2032 onwards. This, in turn, guides live zoning through the plan change process, and infrastructure provision by Council.

The Structure Plan anticipates the provision of 22,000 homes and 12,000 jobs. It is expected that 14,500 of these homes and 6,500 of these jobs are to be provided in the Masterplan's focus area, if development follows the Structure Plan's land use allocation. The Economic Masterplan aims to increase the density of the jobs in this area to provide for more economic opportunity, above and beyond the Structure Plan.

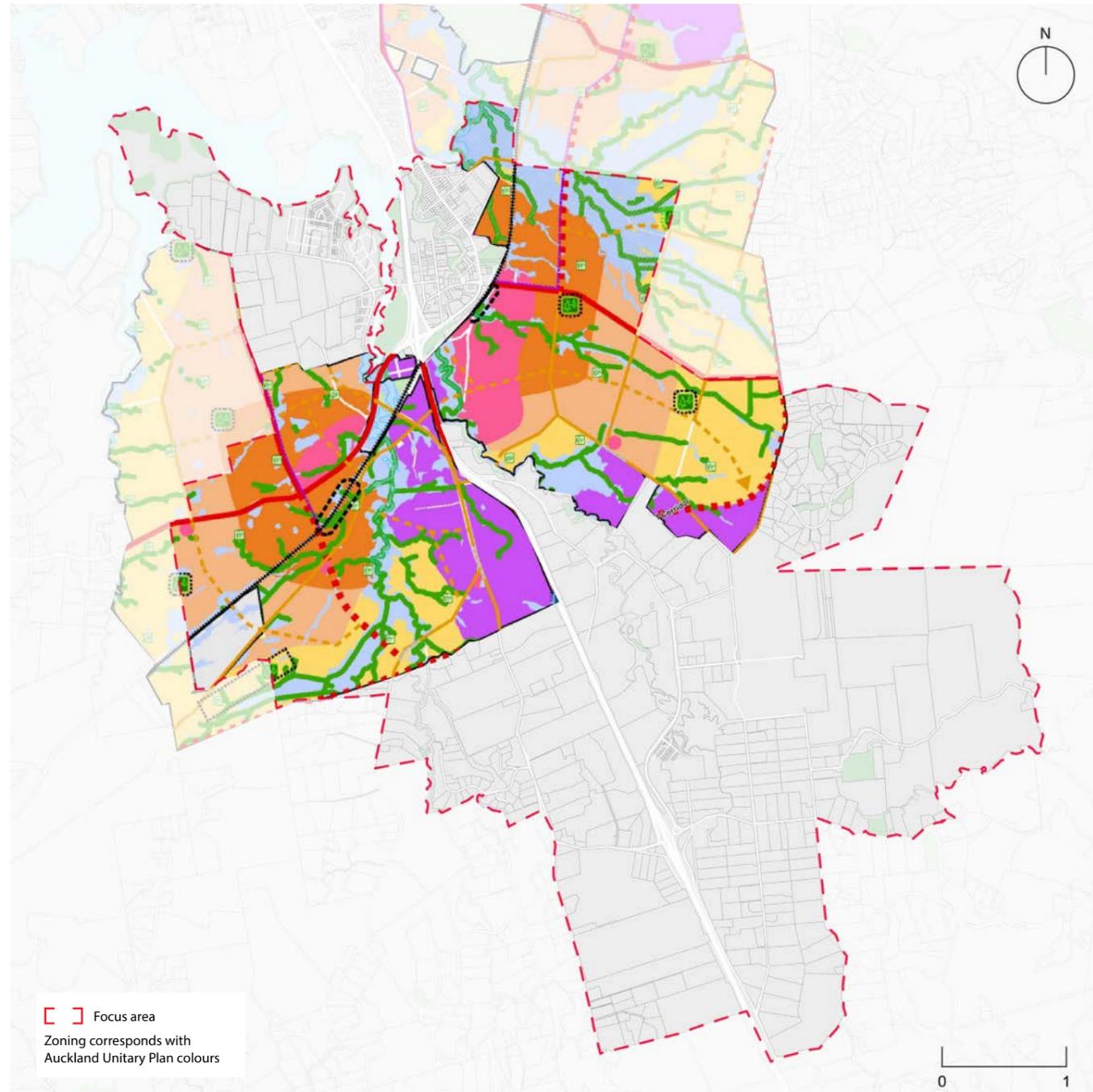


Figure 11
The Drury-Opāheke Structure Plan in context of the focus area.
Southern Auckland Economic Masterplan

Planned Development

A number of private developers are developing, or are planning to develop, within the focus area. Through the Private Plan Change process, land has been, or is in the process of being, live zoned for residential, commercial, and industrial development. 429ha of residential land, 199ha of industrial land, and 115ha of commercial land is planned or under construction.

The Economic Masterplan sees an opportunity to intensify and enhance industrial areas within the Plan Change Areas to achieve greater outcomes for the local economy.

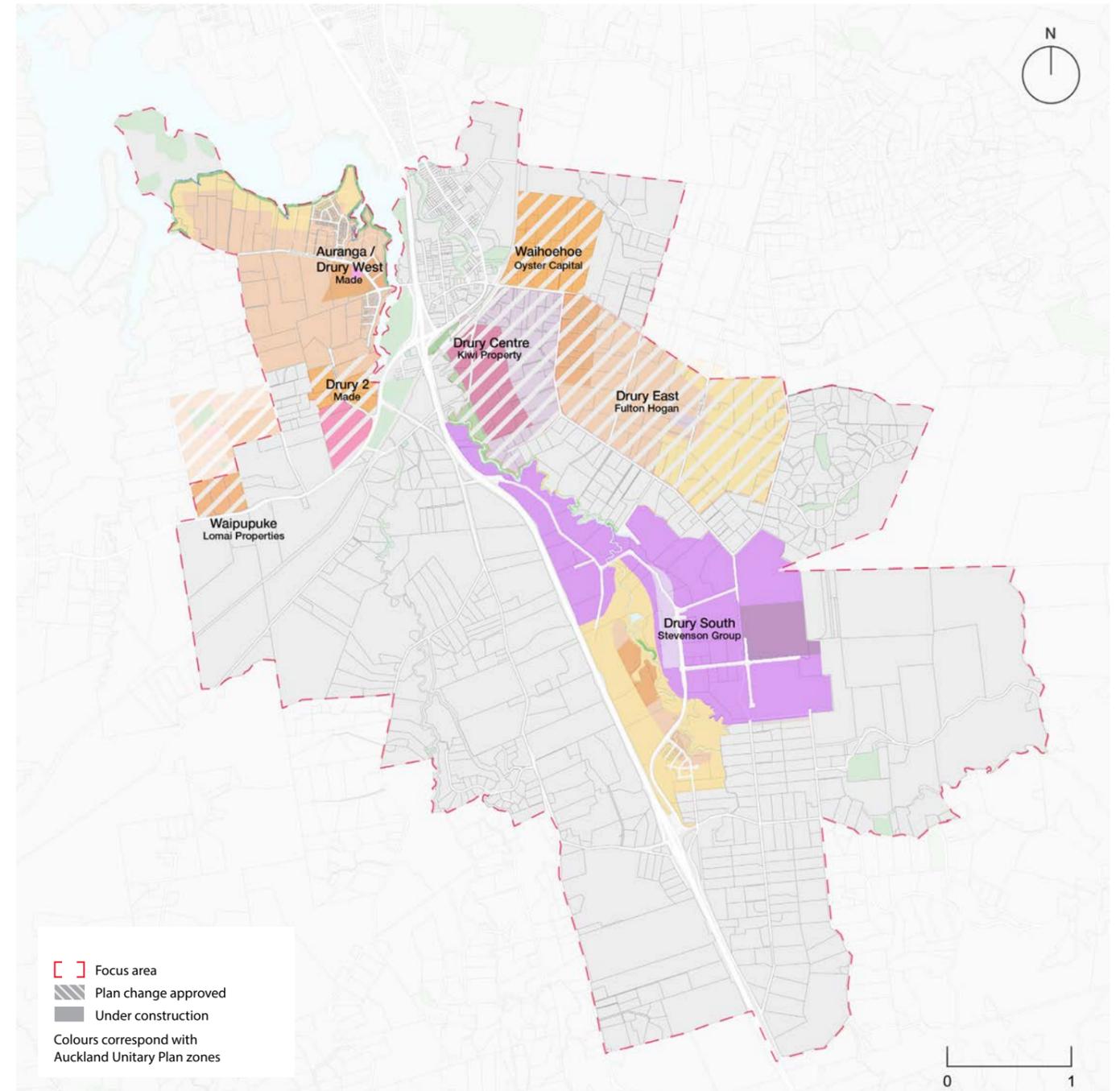


Figure 12
Development under construction or planned by private developers.

Planned Areas

The Structure Plan and private plan change areas account for roughly half of the focus area. These indicate various levels of certainty and timing of development within the Drury area. The Economic Masterplan seeks to work with the local planning context to ensure current and completed planning work is not overridden. The Masterplan identifies and harnesses opportunities to build on planned industrial areas, to achieve greater outcomes for economic development and productivity. The Masterplan also identifies economic opportunities outside of the Structure Plan and Plan Change Areas, which will require further infrastructure investment than is currently planned for.

Figures 13 and 14 illustrate the proportions of planned and unplanned land within the focus area.

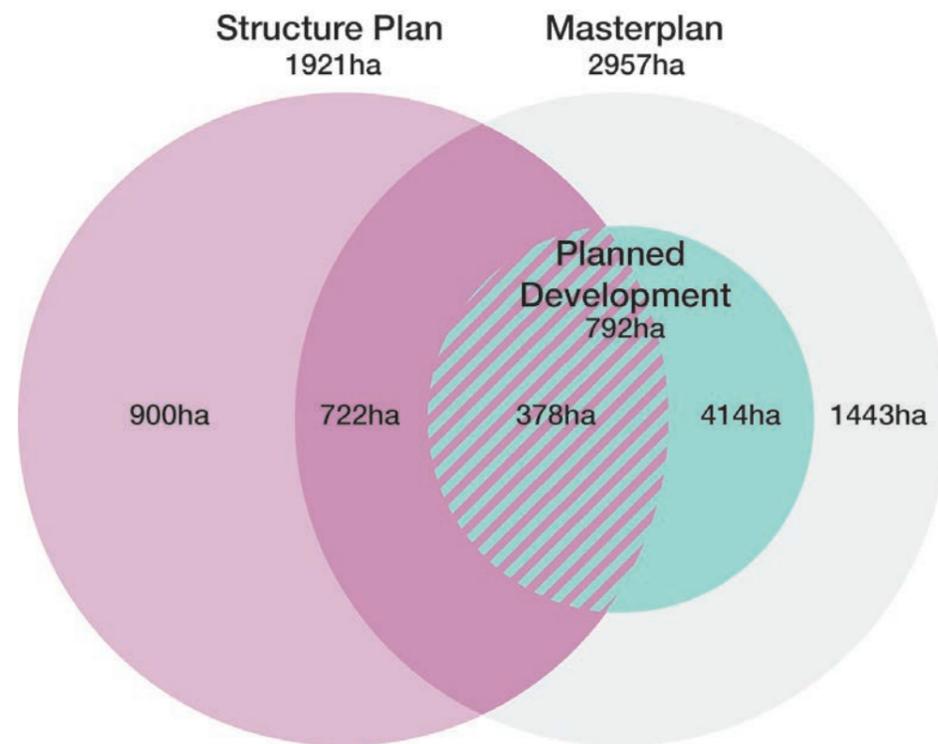


Figure 13
Proportions of planned and unplanned development in the Southern Auckland area.
Southern Auckland Economic Masterplan

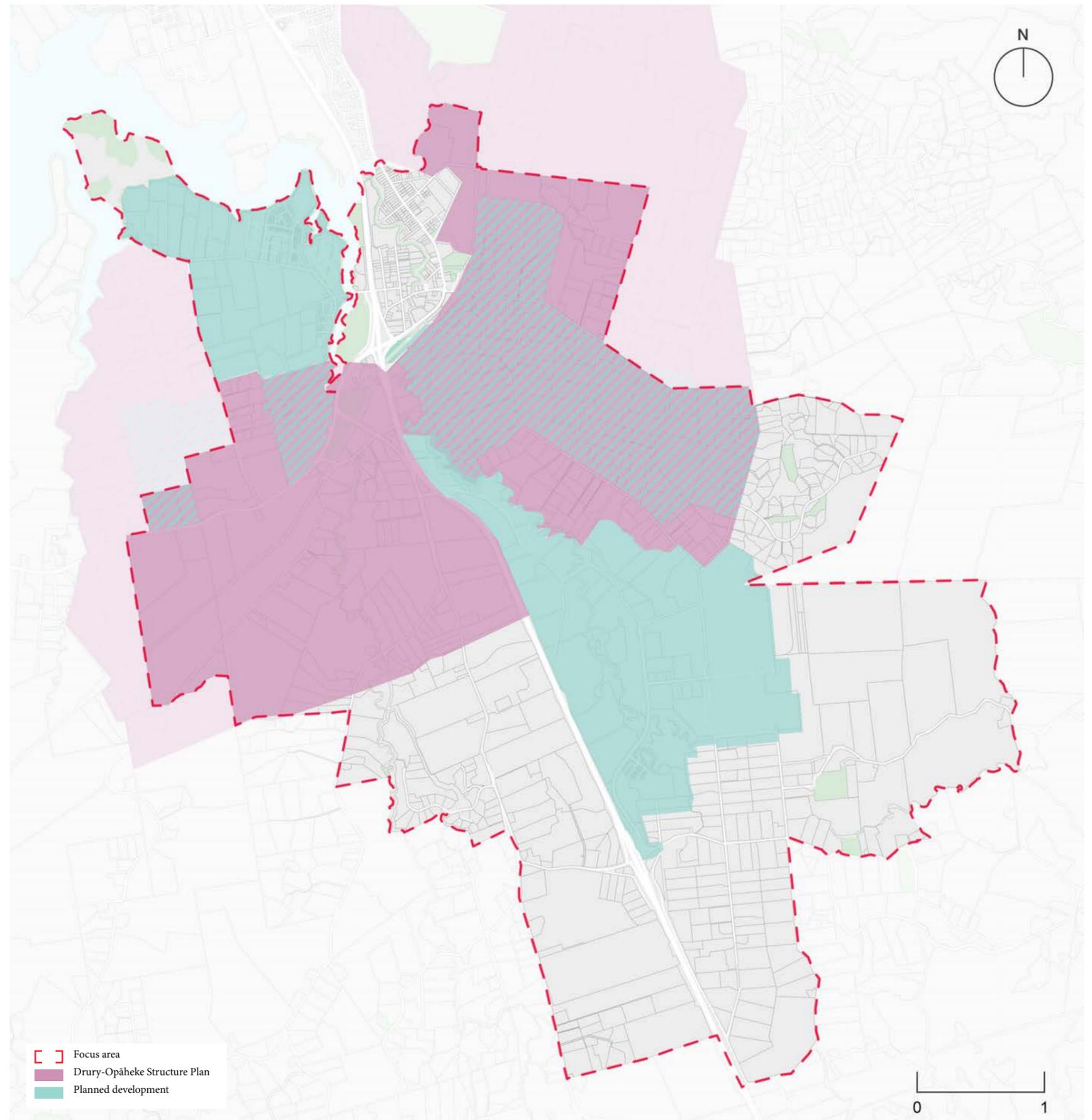


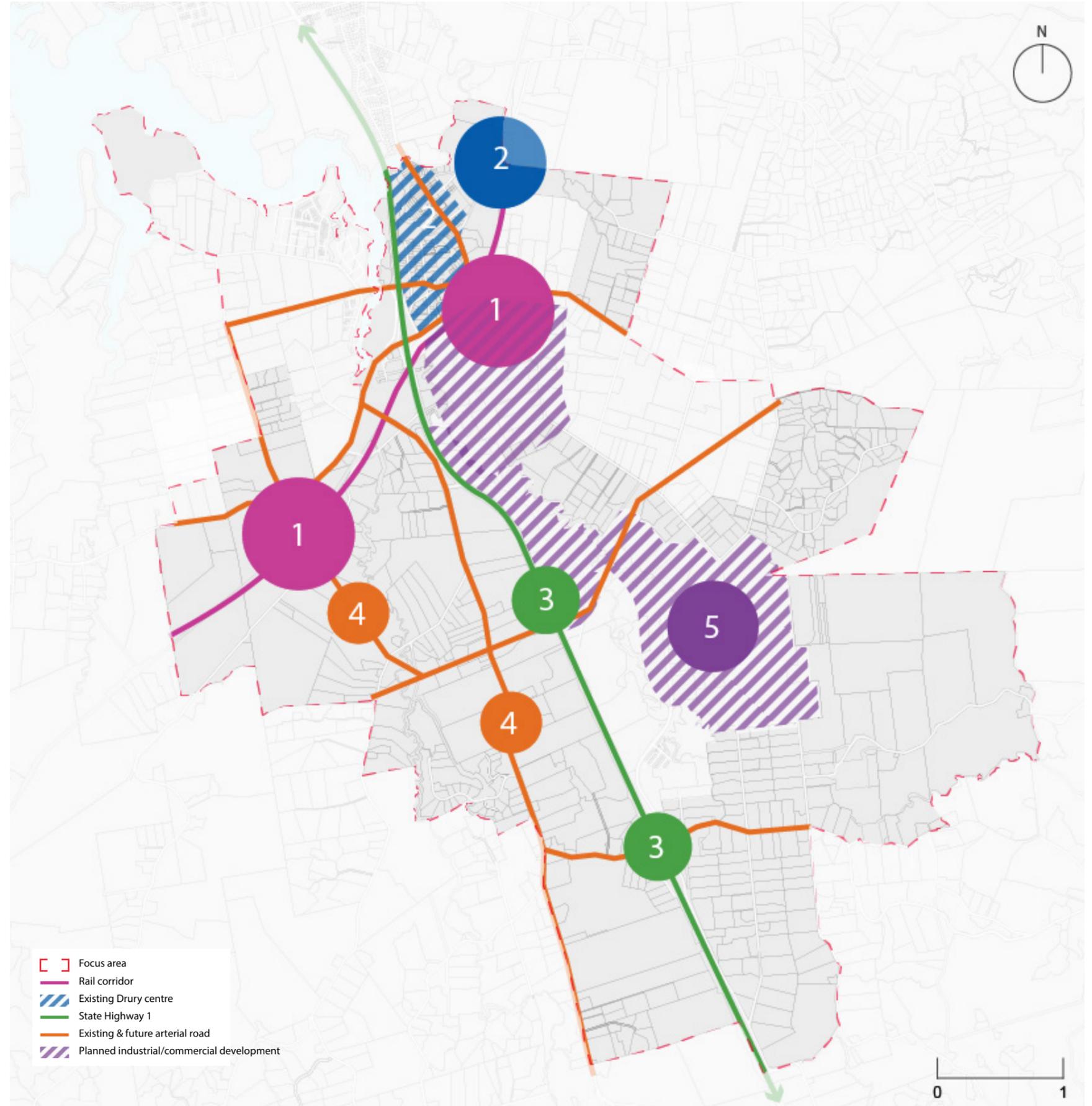
Figure 14
Southern Auckland's current planning context.

Opportunity Nodes

The focus area, while predominantly greenfield, provides some key nodes where economic uplift would be most efficient and effective. Each opportunity node is suitable for fulfilling certain principles with certain land uses, as outlined in Table 9. This section explores these opportunity nodes to understand how they can drive economic development to ultimately achieve New Zealand and Auckland's economic targets.

Table 9
Opportunity nodes.

Opportunity Node	Principles	Land Uses
1 Rail stations	  	Employment, Residential, Campus
2 Existing Drury Centre	  	Employment, Residential, Campus, Enterprise
3 Motorway interchanges	   	Logistics, Enterprise, Industrial
4 Arterial corridors	 	Employment, Enterprise, Industrial
5 Planned industrial development	 	Enterprise, Industrial, Commercial



Rail Stations

Two rail stations are planned within the focus area. These provide a significant opportunity to foster high density, high quality transit-oriented developments, to provide for homes and jobs that are highly accessible.

Land around rail stations can be used for temporary uses as their central roles in wider transit-oriented developments are established. Surrounding land may initially be used as a park and ride to service nearby rural settlement, before going through a timeline of low to high value activities in line with surrounding urban development.

Principles

-  Locating intensified development around rail stations will provide for high rail patronage, and reduce the need for multi-lane roads, parking, and other car infrastructure
-  High density, mixed use development around the rail stations will be highly liveable, with workers and residents being able to meet their needs within a small area. This can generate agglomeration benefits for social, economic and environmental outcomes
-  Development around the rail stations will be highly accessible to the rest of Auckland, and will contribute to reducing VKT

Land Uses

Development around the rail stations should cater for a high density of homes and jobs, to make the most of the accessibility to rail and to foster walkable live, work, play neighbourhoods. Suitable land uses include:

- Employment
- Residential
- Campus
- Enterprise



Existing Drury Centre

The existing Drury centre is well positioned with easy access to neighbouring Papakura and State Highway 1. It is already serviced by three waters and transport infrastructure, although upgrades will be required to service more intensive land uses proposed in this Masterplan. The centre currently consists of typical light industrial activities which support nearby agriculture. There is significant opportunity to build on this existing centre to foster economic activity that is more innovative, productive, and provides a higher density of employment.

Principles

-  Existing transport, three waters, and utility infrastructure can be utilised
-  The centre is located close to Papakura, an established metropolitan centre, and future commercial and residential development, so is well placed to foster local living
-  The large area of the centre provides opportunity to cluster businesses within the same sectors

Land Uses

Development at the existing centre should cater for a high density of homes and jobs, to take advantage of its strategic location. There is opportunity to provide for significant innovative and productive businesses that are attractively located for residents and workers. Suitable land uses include:

- Employment
- Residential
- Campus
- Enterprise



Motorway Interchanges

The existing motorway interchange at Ramarama, and a future interchange between Drury and Ramarama, provide an opportunity to unlock land for industrial and large format activities that are highly accessible to the wider region through State Highway 1. The future motorway interchange between Drury and Ramarama, which would connect the now-deferred Mill Road to State Highway 1, has also been deferred, but will likely be revisited in the future. The existing interchange at Drury is excluded from this opportunity node, due to its proximity to the future Maketuu Station and hence its unsuitability for large format industrial activities.

Principles

-  Larger format development around existing interchanges makes use of the existing State Highway
-  Development will be well connected to the wider region with high accessibility to the State Highway network, easily connecting goods and people to wider Auckland and the North Island
-  The greenfield nature of this land allows the unlocking of land for large format commercial activities. This development must be sensitive to excessive urban sprawl, increasing VKT and encroachment on elite soils
-  Large areas of developable land allow room for businesses within similar sectors to co-locate

Land Uses

Development around motorway interchanges should cater to larger format, lower density development due to the low level of active and public transport accessibility. Shipping and handling of goods is well suited for this node due to the high level of regional accessibility. Suitable land uses include:

- Logistics
- Industrial
- Enterprise.



Arterial Corridors

There are a number of existing and planned arterial roads in the focus area. Future upgrades can transform these to be main corridors for buses, cyclists, pedestrians, and cars. This will provide an opportunity for retail and commercial activities that are highly accessible for workers and customers. They also provide accessibility for the movement of goods.

Existing and future arterial roads have significant benefits for the wider region. They increase capacity and resilience of the southern corridor and connection between the golden triangle, Auckland, and beyond.

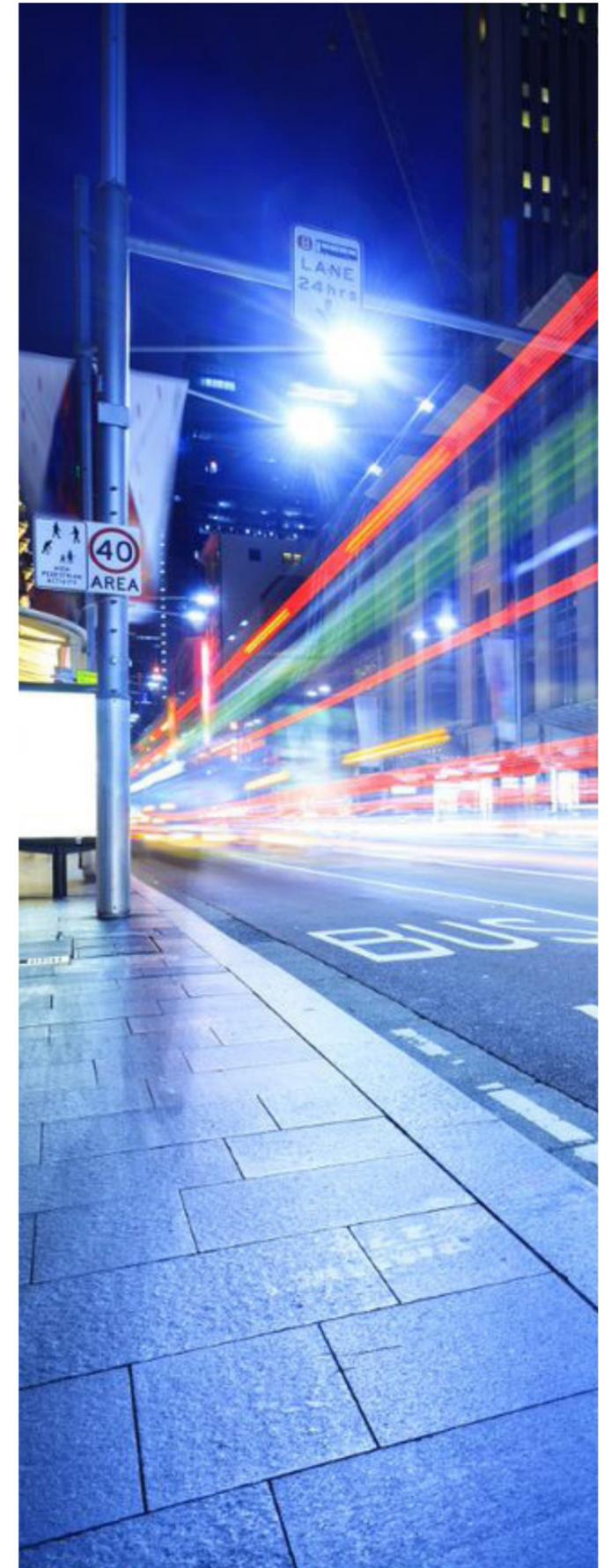
Principles

-  Development will make use of existing and planned transport networks
-  Arterial roads provide a high level of accessibility for all transport modes, ensuring development is well connected to the wider area

Land Uses

Arterial corridors provide accessibility for a wide range of land uses. They facilitate the movement of people, workers, and goods. Suitable land uses include:

- Centre
- Enterprise
- Industrial.



Planned Industrial Development

Large areas of industrial land are already planned within the focus area by private developers. The Masterplan will provide opportunities to build on and support this existing planning, to encourage more intensive, productive, and innovative commercial and industrial activities such as advanced manufacturing.

Principles



Development will be serviced by infrastructure that is already planned and/or funded, reducing the need for further infrastructure investment



Development will make use of existing planning work in plan change areas, rather than overriding it

Land Uses

The Masterplan proposes to build on planned industrial development, to foster similar but more productive and innovative activities. Suitable land uses are:

- Enterprise
- Industrial.



Potential development staging plan

Potential development is proposed to happen over three time horizons: 0-5 years, 5-10 years, and 10+ years. The staging of development aims to fulfil the six development principles.

Development principles



Infrastructure

Staging is aligned with planned infrastructure construction and upgrades



Land

Land can flexibly be unlocked in line with demand for commercial and industrial space



Liveability

Neighbourhoods should be liveable, with nearby jobs and services, as soon as residents move in



Planning

Staging is aligned with existing and future planning



Access

Development is staged to prioritise access by active, public, and private transport



Clustering

Development is staged in areas so industries can agglomerate in the same area at the same time

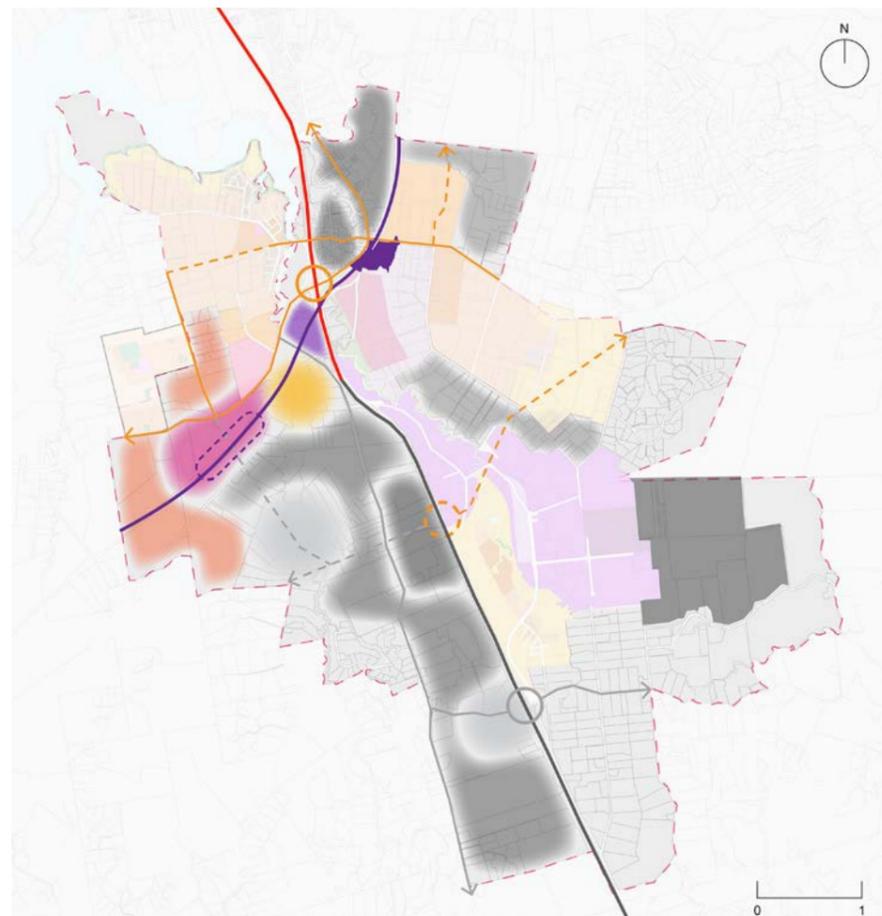


Figure 16
Stage 1: 0-5 years.
Southern Auckland Economic Masterplan

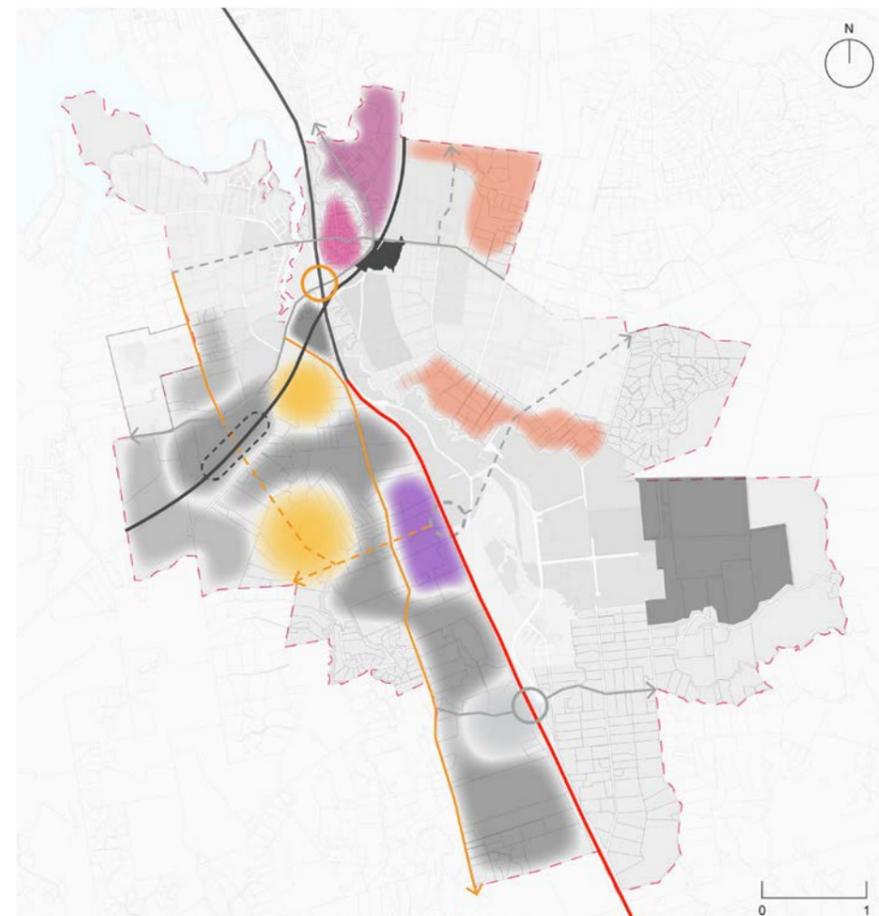


Figure 17
Stage 2: 5-10 years.
Arup

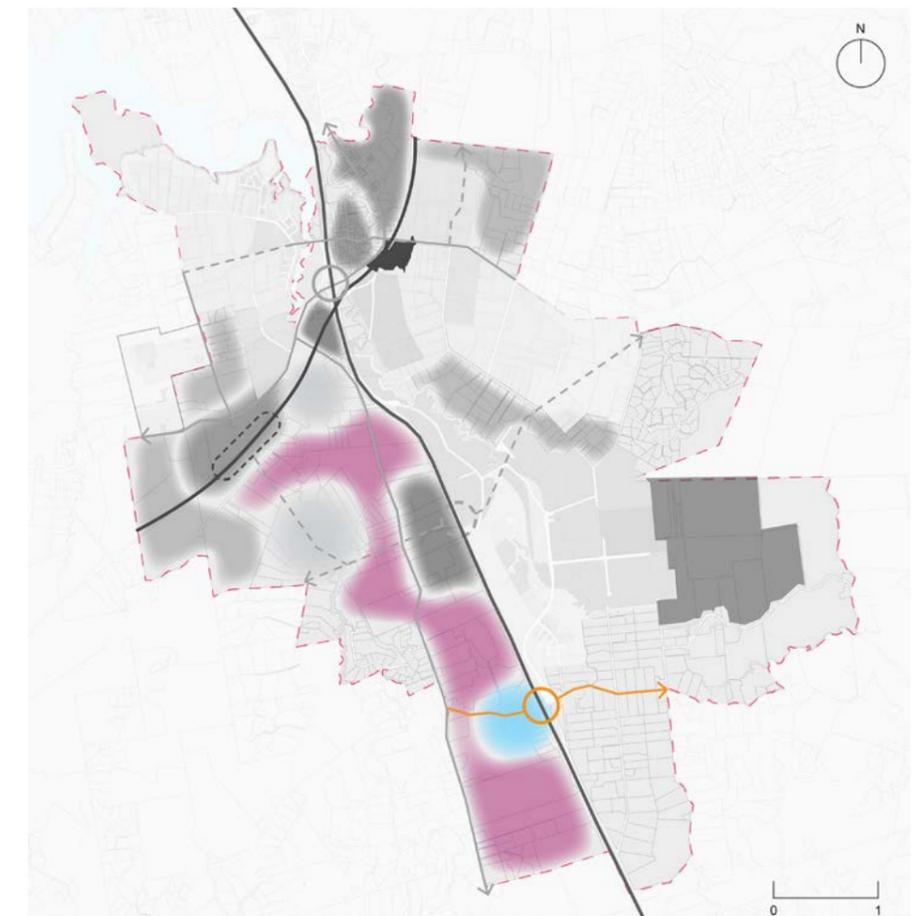


Figure 18
Stage 3: 10+ years.

Potential land use plan

The potential land use plan for the Economic Masterplan is shown in Figure 19. This plan indicates development around the opportunity nodes, which will enable the fulfilment of the principles for development.

The indicative land uses proposed in this plan differ from typical land use zoning in Auckland. It aims to foster more mixed use, compact, walkable development to stimulate greater economic activity within the focus area than conventional land use planning would enable.

Parts of the focus area have not been highlighted for development. It is suggested that this land be retained for rural use, to support food production, minimise urban sprawl, and provide opportunities for countryside living. This land may be unlocked in future stages for further urban development to further economic growth in Southern Auckland.

Economic Activity

Potential economic activities proposed in the masterplan are mostly made up of research, manufacturing, and industrial uses. These are best accommodated in the Enterprise, Industrial, Logistics, and Campus land uses typologies.

Residential and Centre land use typologies will not accommodate any economic activities proposed in the masterplan. These will provide supporting urban uses, such as housing, local businesses and services, community infrastructure such as schools, and office-based activities to support activities proposed in the economic masterplan.

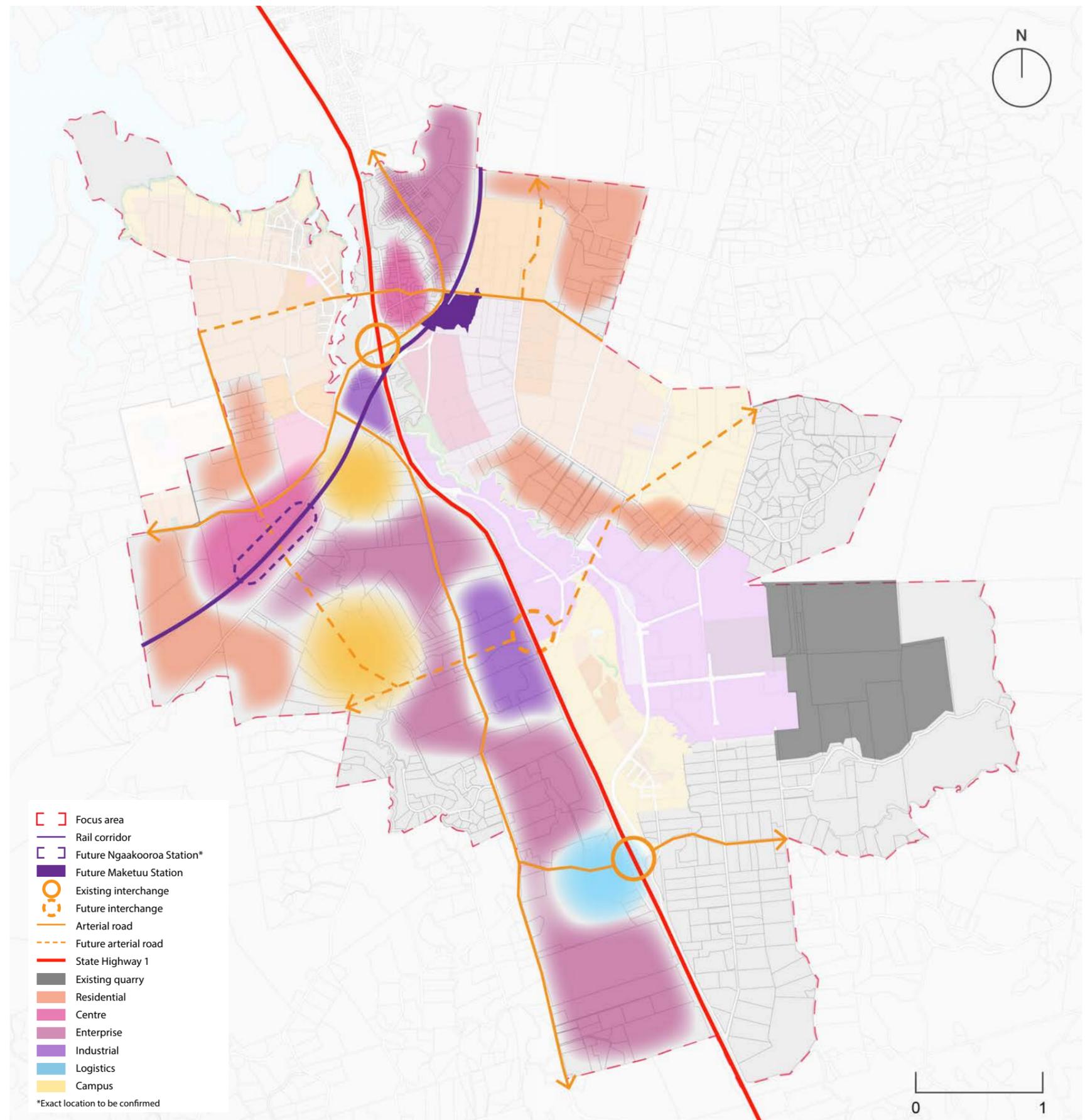


Figure 19
Suggested land use plan for the focus area.

Realising the opportunity nodes

The land use plan aims to focus appropriate development around the identified opportunity nodes, to ensure the full potential of the nodes can be realised. Figure 20 shows the land use allocations around each opportunity node, to show how this has been achieved.

By endorsing appropriate economic development around desirable locations such as the existing Drury centre and motorway interchanges, suitable businesses will be attracted to establish in Southern Auckland. This will incentivise market activity and private investment, further attracting more businesses, and hence will catalyse the formation of resilient economic networks.

Locating non-economic activity, including centres and residential land, around key opportunity nodes such as the rail stations will attract residents and local businesses to Southern Auckland. This will provide pools of workers and local business services for businesses, further attracting market investment, while also creating transit oriented developments that contain development and allow for reduced car dependency.

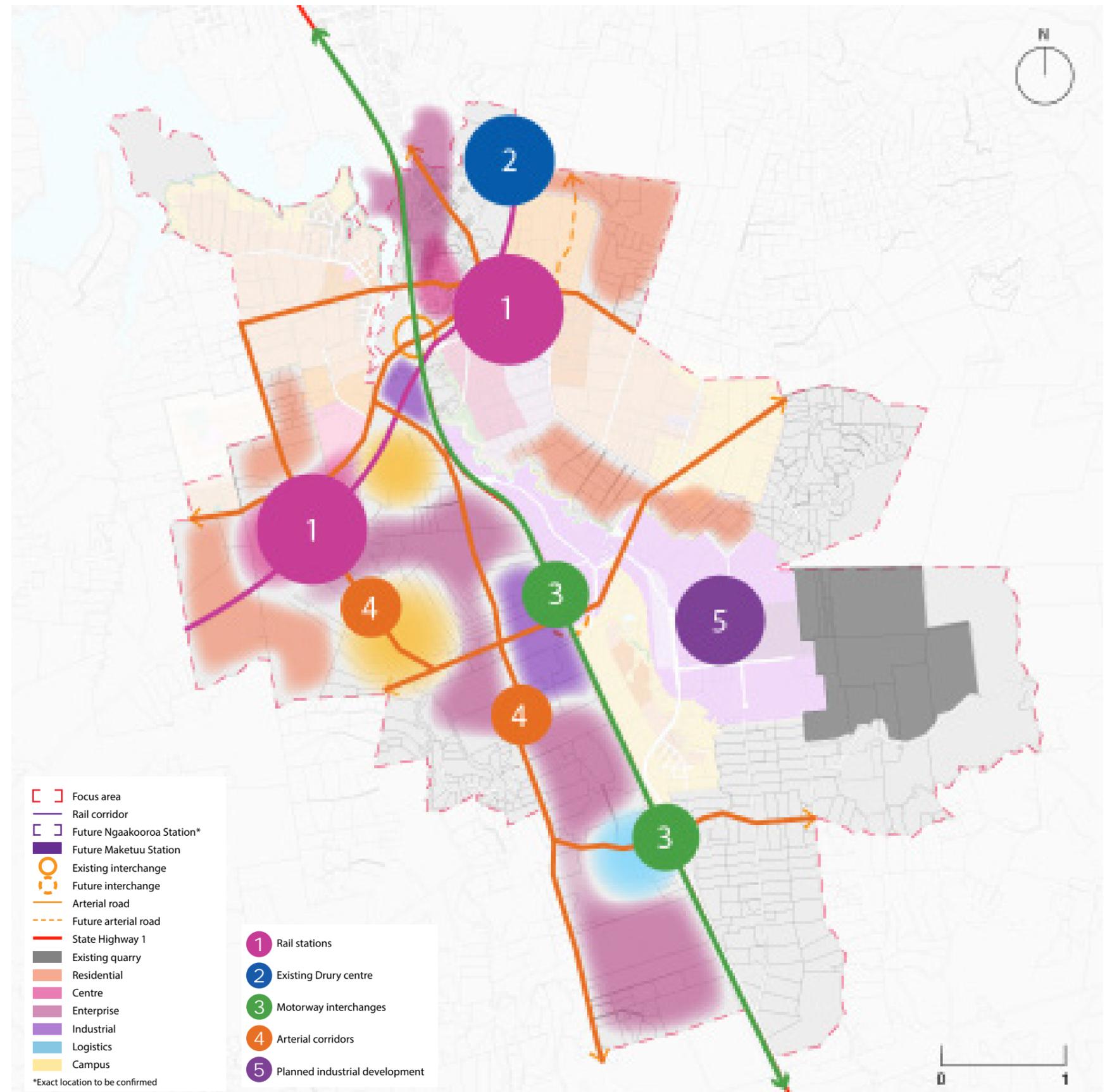


Figure 20
The implementation of the opportunity nodes in the land use plan.

Development readiness

Future Urban Land Supply Strategy

Auckland Council developed the Future Urban Land Supply Strategy (FULSS) in 2017. This identified a programme for sequencing future urban land, to indicate when greenfield land will be development ready through the provision of bulk infrastructure. This provides the Economic Masterplan with guidance on when and where development should happen. Figure 22 shows the staging of land for infrastructure provision under FULSS.

- Existing Drury centre**
The existing Drury centre provides the greatest immediate potential for development, as it is already serviced for existing light industrial development. It is unlikely that the existing infrastructure will be able to support more intensive land uses proposed in the Economic Masterplan, so infrastructure upgrades will likely be required.
- Development under construction**
Two plan change areas within the focus area are currently under construction. It is understood that sufficient infrastructure is, or will be, provided in these areas.
- Live zoned land - infrastructure secured**
This land has had a private plan change approved to live zone the land for development. Infrastructure provision is confirmed and the developer is moving forward with plans for construction.
- Future development ready land**
Orange land is indicated in FULSS to be development ready by the end of 2022. It is understood that this deadline is unlikely to be met.
Orange-red land is indicated in FULSS to be development ready by the end of 2032.
- Land not enabled for development**
The black line shows Auckland's rural-urban boundary. Any land south of this boundary is not enabled for development in any time frame, under the Auckland Plan and FULSS. There are no plans for infrastructure provision in any timeframe south of this boundary.

Development Contribution Policy

Developers in Drury must pay development contributions to support the provision of infrastructure. Auckland Council is proposing to increase development contributions for Drury to support the high cost of servicing the area. This policy is currently in consultation phase and will likely be implemented in late 2022.

As part of this work, Auckland Council are identifying the infrastructure required over the next 30 years to support growth within the Drury-Opāheke area. The infrastructure identified will cater to growth as indicated by Auckland Council Growth Model i11 and the Drury-Opāheke Structure Plan. Timelines for this information to be available have not been confirmed.

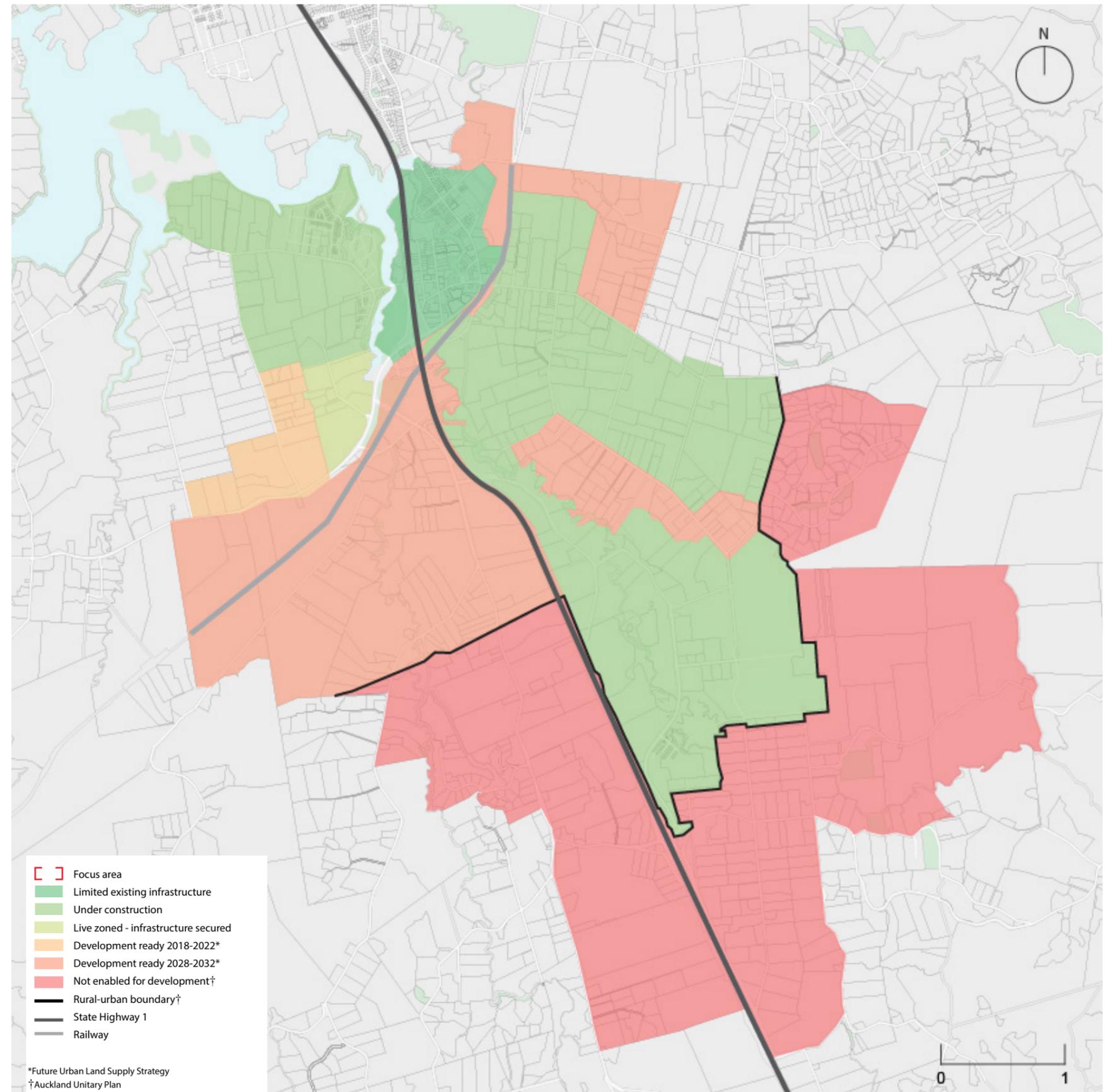


Figure 22
The staging of development ready land.
Information mapped in Figure 22 is sourced from Auckland Council's Auckland Unitary Plan, Plan Change 48, 49 and 50, Future Urban Land Supply Strategy and Made Group and Stevenson Group indications of development.

Future transport network

Significant planning and investment is currently underway within the focus area to support development under the Drury-Opāheke Structure Plan. Some projects are funded under the New Zealand Upgrade Programme (NZUP) or the Regional Land Transport Plan 2021-2031 (RLTP). Other projects are currently under investigation by Supporting Growth Alliance (SGA).

Current funding is insufficient even to support development that is currently planned. Significant funding of transport infrastructure will be needed to support the Economic Masterplan. The need for other utilities infrastructure is yet to be investigated.

Table 10

Future transport investment.

Project	Status	Completion	Funded?
1 New FTN (frequent transit network) ¹	NoR lodged, being considered for funding		●
2 Papakura to Pukekohe rail electrification	Under construction	2024	● \$371m
3 New rail stations ²	Maketuu Station: consented Ngaakooroa Station: NoR lodged	2025 2025	●
4 Walking & cycling corridor	DBC complete 2021		●
5 New north-south arterial ¹	NoR lodged, being considered for funding		●
6 Local infrastructure investment in Drury ¹	NoRs lodged, being considered for funding		●
7 SH22 safety upgrades ¹	NoR lodged, being considered for funding		●
8 Pukekohe Expressway ³	DBC underway		●
9 Mill Road upgrade	Deferred		●
10 SH1 Papakura to Bombay (northern section to Drury South)	Under construction Funded under NZUP	2026-27	● \$655m
11 SH1 Papakura to Bombay (southern section)	Funding for route protection confirmed under NLTF		●
12 New motorway interchange	Route protection underway (as part of SH1 Papakura to Bombay)		●
13 Drury local road improvements ⁴	Route protection only funded from 2027/28		● \$243m

¹\$874m is allocated through NZUP for route protection for safety upgrades to Mill Road outside the focus area, and transport upgrades to support development in Drury, connect to the rail stations, and support housing and local centres. It is not yet confirmed if this will fund projects in Drury.

²\$495m is allocated in NZUP for these two stations and Paerata Station outside of the focus area.

³The Pukekohe Expressway is currently being reviewed by Supporting Growth and the form, function, and location of this route may be subject to change.

⁴Funding from the RLTP. This is the key financing available for Plan Change / Structure Plan areas, and may be used to fund other projects identified on the map.

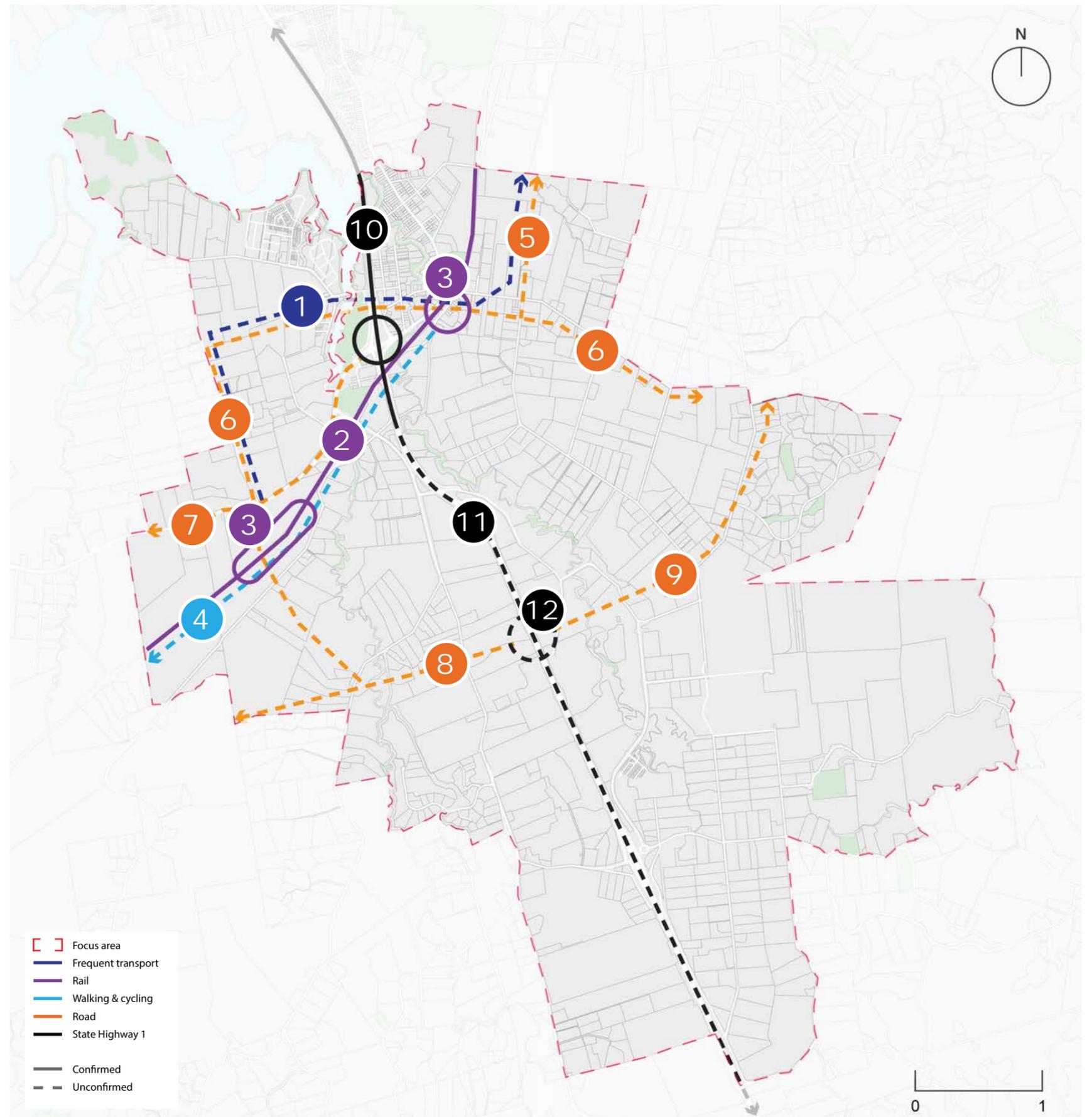


Figure 23
The future transport network.

Land division

Most land in Southern Auckland is held in private ownership by different owners.

Patterns of land ownership and lot division affect how interventions proposed in the Economic Masterplan can be implemented. Larger lots make large-scale comprehensive development easier to implement, whereas smaller lots can provide opportunities for smaller scale interventions. Most land in the focus area is held in private ownership.

The context

Land in the existing Drury centre at the north of the focus area is subdivided into single activity lots that average 1.5ha in size. They are mostly held in private ownership by different owners. These are considered to be small and may require interventions to consolidate lots to support activities proposed in the economic masterplan.

Land to the south of SH22 and west of SH1 contains the largest lots in the focus area, to accommodate agricultural and rural lifestyle activities, with an average size of 15ha. This enables large-scale comprehensive development.

The role of land value capture

Land value capture is expected to be utilised in the area. As the Plan Change areas are developed and planned infrastructure such as the rail stations are implemented, land values are likely to increase. This will reflect the increasing attractiveness of the area, as accessibility, amenity, and opportunity for jobs increases. This, in turn, will incentivise the conversion of existing farmland to higher yield, urban uses through private development. As has occurred with existing Plan Change areas, developers will likely amalgamate existing parcels of land to enable large-scale masterplanned development.

Robust structure planning, masterplanning, and staging of development will provide developers with certainty around when, where, and what they can develop. This will restrict piecemeal and uncoordinated development, encouraging a cohesive and contiguous urban form that is accessible and liveable.

The benefits of small parcels

The small land parcels in the existing Drury centre restrict the ability for large-scale comprehensive development. They provide an opportunity for investment in smaller scale interventions, such as the establishment of research institutions, start-ups, and small to medium enterprises to stimulate the growth of certain sectors. This can encourage organic growth that supports a high density of businesses within a small area.

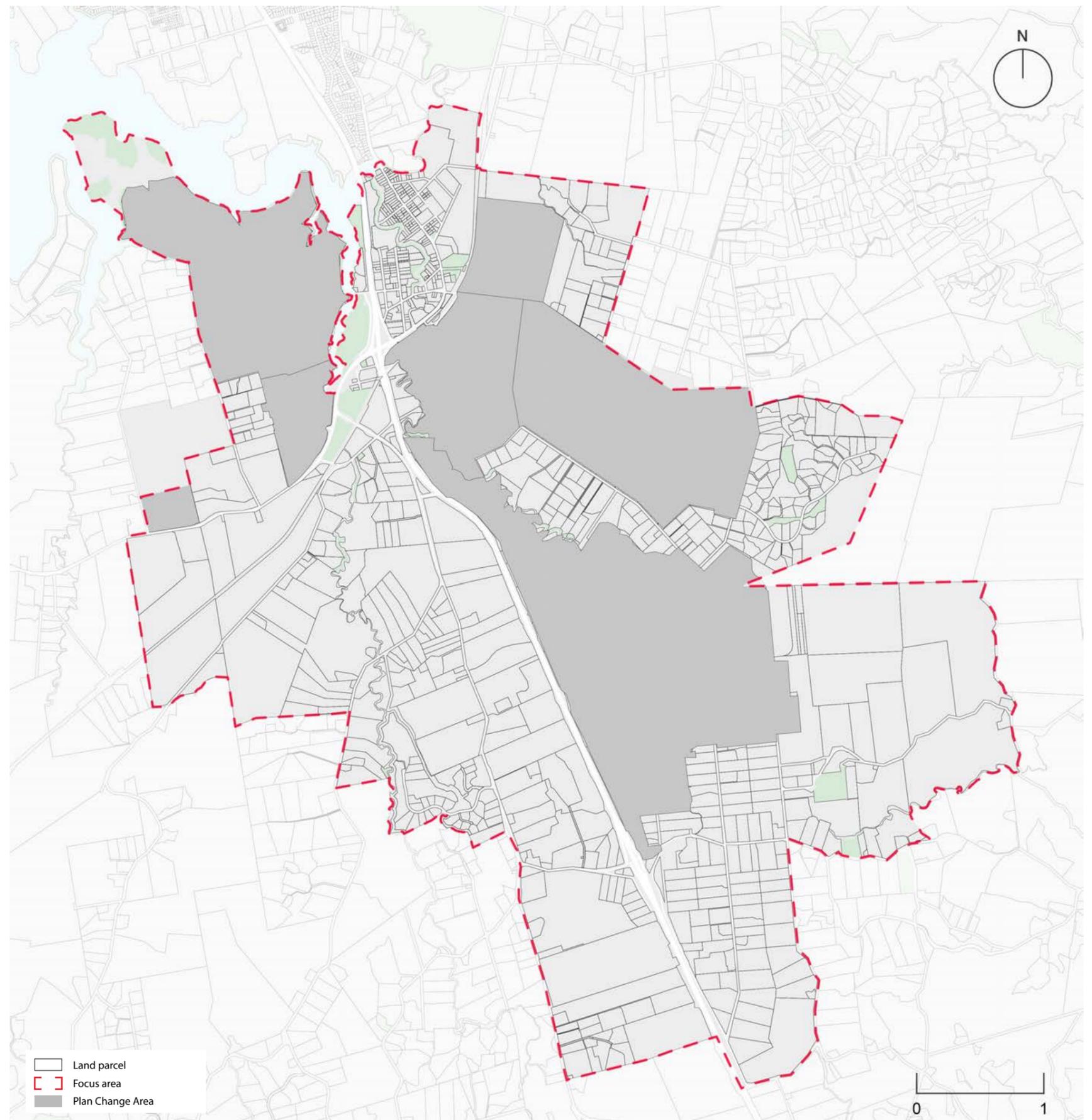


Figure 24
The division of land parcels in the focus area.

Implementing the Economic Opportunities

Proposed economic activities are identified for their investment needs, and their recommended locations and timings in the focus area. This will provide guidance for potential investors on what to invest in, and when.

Refinement of previous work

Opportunities for economic development, in the form of economic hubs and associated economic activities, were identified in the Narrative Report. These are further refined to ensure alignment with land use planning completed in this report, and alignment with Government agendas and plans for investment.

Investment analysis

Economic activities are classified for their suitability for public or private sector investment. Activities within the five economic hubs - Advanced Manufacturing, Circular Economy, Health, Logistics, and Innovation - are identified. This informs the locating and staging of economic opportunities.

Activity staging

Economic activities and hubs are located and staged in alignment with the land use plan and development staging outlined earlier in this report. Economic activities are located and staged based on four factors: which land use typology the activity aligns with, the investment readiness of the activity, the development readiness of Southern Auckland for the activity type, and the parcel size needed to support the activity.

Infrastructure needed to support this development is identified. The proposed activities, hubs, and supporting infrastructure form the investable packages that are recommended to realise the Economic Masterplan.



Refinement of work done to date

Work previously undertaken in the Narrative Report was refined to create alignment with the desired outcomes of the Economic Masterplan.

Proposed economic hubs

The Narrative Report refined industries proposed for Drury in the MartinJenkins report into economic hubs. These hubs are sectors or types of economic activity that lend themselves to colocation, to allow for the sharing of skills, facilities, knowledge, and ancillary businesses and services, and can contain economic activities across a range of sectors.

This stage of work has further refined these hubs following the sector and economic activity assessment. This refinement has aligned the hubs with spatial opportunities and land availability identified in this report, and current government policies and investment priorities. This refinement is shown in Figure 25.

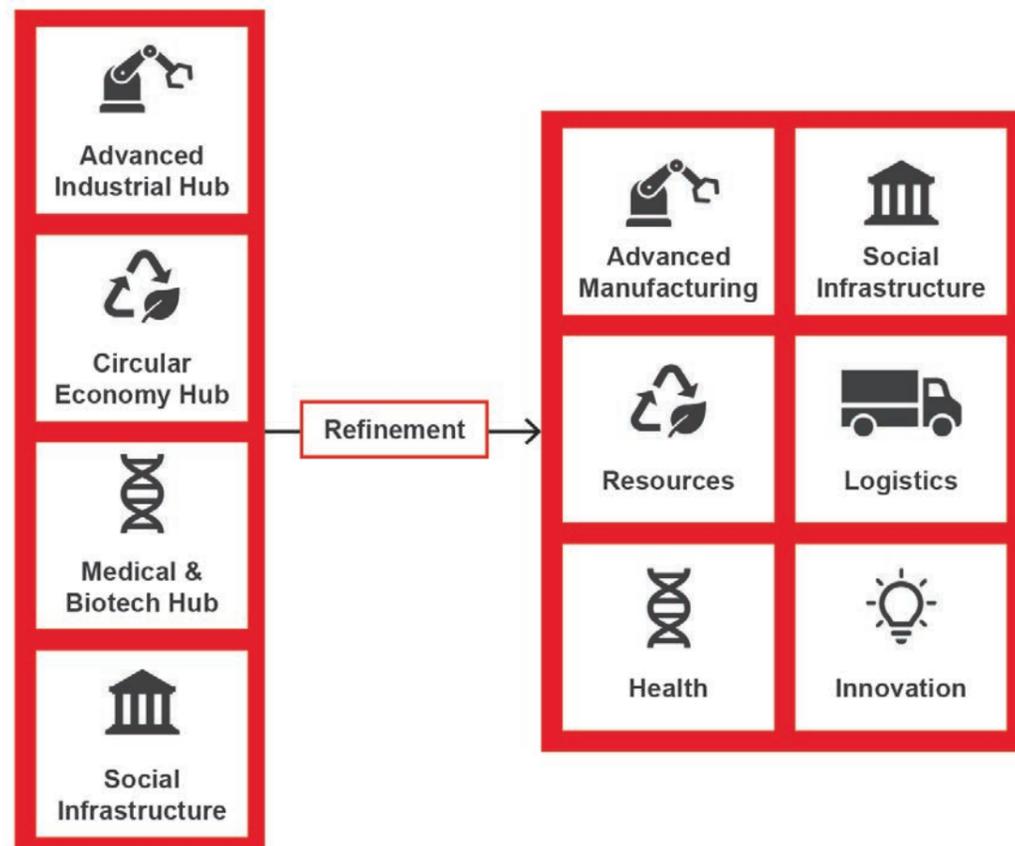


Figure 25
Refinement of economic hubs

Identification of economic opportunities

Four economic sectors were identified in the Narrative Report (Appendix 1) as being appropriate for Southern Auckland. The Narrative Report undertook a value chain assessment of these four proposed sectors, to identify the most attractive market segments within the sectors. This was informed by global and local trends in the sectors, key market players, and sector maturity.

The assessment identified 18 economic activities within these market segments which are expected to create the most significant economic opportunity for Southern Auckland. The activities are aligned with the proposed hubs shown in Figure 25. The activities are outlined in Figure 26.

Further opportunities

Economic activities identified in this Masterplan are identified as having the highest potential for realising Southern Auckland's economic opportunity. However, these are not the only economic activities that should locate in Southern Auckland. A wide range of sectors and activities should be supported to ensure a resilient, stable, and productive local economy.

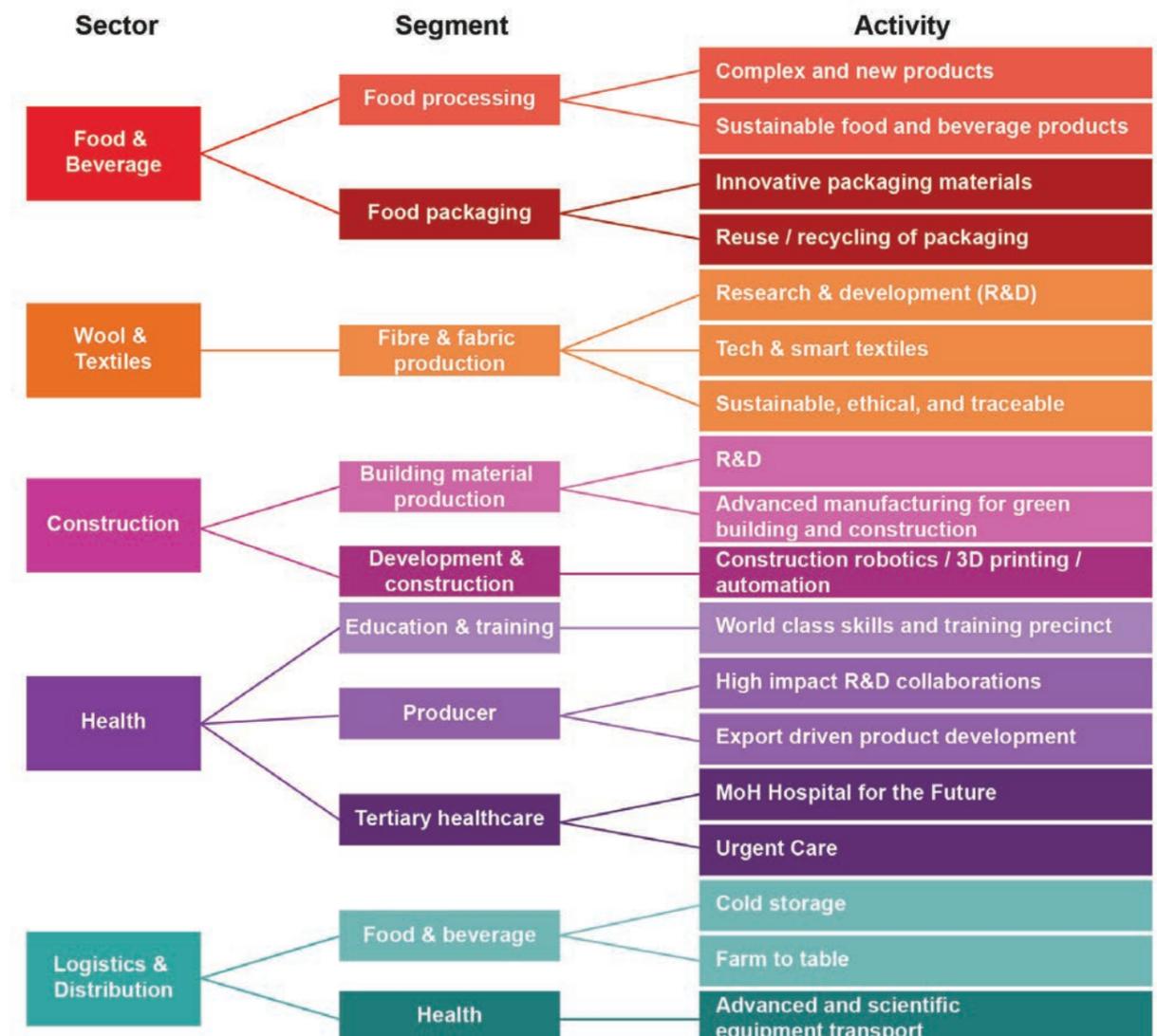


Figure 26
Economic activities recommended for Southern Auckland.

Investment Analysis

Both public and private sector investment is needed to ensure the full economic potential of Southern Auckland can be realised.

Each investor type lends itself to specific organisation typologies. These are defined as:

- **Facilitator:** a research organisation or think tank, most often funded by Government, to stimulate innovation and support research and development. An example is the Callaghan Innovation Agency
- **Anchor:** a large scale local or multi-national organisation, with more than 500 employees
- **Small and medium enterprises (SME):** an organisation with less than 500 employees
- **Start-up:** a newly formed business that offers a product or service that fills a particular market gap.

Public sector investment is recommended for facilitator and start-up businesses, as they typically need governmental support to be properly established and grow. This is more suitable for sectors and activities that are less mature in New Zealand, that may require significant resource and investment to become established. Public sector investment can be used for anchors, to quickly drive economic growth and job creation. Government investment can also be used to hold land, which will ensure control over economic outcomes around sectors, activities, and employment opportunities.

Private sector investment is recommended for SMEs and anchors, for sectors that have greater market maturity in New Zealand.

To capitalise on economic opportunities, a combination of investments across the business spectrum are necessary, to ensure sustained economic growth.



Figure 27
Public and private sector investment characteristics.

Characterising economic opportunities

Economic activities are characterised by their suitability for public or private sector investment, and which organisational typologies and hubs they align to.

Most compatible investment type

- Public sector
- Private sector

Hubs

- Advanced manufacturing
- Circular economy
- Health
- Logistics
- Innovation

Table 11
Investment characteristics of the proposed activities.

	Facilitator	Anchor	SME	Start-up	Rationale
FOOD & BEVERAGE					
Food Processing					
Complex and new products					Public sector investment will likely be required to provide facilities for start-up spaces, or funding for operations.
Sustainable food and beverage products					Public sector can provide facilitator workspaces, office spaces or funding to support research and development.
Food Packaging					
Innovative packaging materials					Lends itself to SMEs, which are typically private sector led.
Reuse / recycling of packaging					
WOOL & TEXTILES					
Fibre & fabric production					
Research and development (R&D)					Both private and public sectors are likely to be interested in this activity. This may be through the provision of facilitator workspaces by the public sector, with the private sector operating and funding research and development.
Tech & smart textiles					This would attract both start-ups and anchors, which would have both private and public interest. The anchor is likely to be driven by the private sector, but will require supporting infrastructure.
Sustainable, ethical and traceable					Private and public sectors will likely both be interested in this space. The public sector may provide seed or initial funding for facilities, and the private sector can fund operations.
CONSTRUCTION MATERIALS					
Building material production					
Research and development					Public sector can provide facilitator workspaces, office spaces or funding to support research and development.
Advanced materials for green building and construction					Private and public sector are likely to be interested in this activity, this may be through the public sector can provide facilitator workspaces, with the private sector operating and funding research and development. Anchor businesses would lend themselves to private sector investment.
Development and construction					
Construction robotics/3D printing/automation					Public sector will likely be required to provide facilitates for start-up spaces, or funding for operations.
HEALTH					
Education and training					
World class skills and training precinct					Given the nature of education and training, it is typically an anchor institute that would require public sector investment given it will benefit the broader community.
Producer					
High impact R&D collaborations					Producers have opportunities investment across the range of business types, with a mix of public and private sector led investment.
Export driven product development					
Secondary healthcare					
Hospital for the Future					The hospital will require investment from the Te Whatu Ora - Health NZ, supporting research and development to create a hospital for the future.
Urgent care					This will require public sector investment from the Ministry of Health to support the health precinct.
LOGISTICS AND DISTRIBUTION					
Food and beverage					
Cold storage					Logistics to support broader food and beverage will likely be public sector driven, as benefits are unlikely to benefit the wider community.
Farm to table					
Health					
Advanced and scientific equipment transport					Given the complexity of this activity, it will require an anchor business that will likely require public sector investment, as there are unlikely to be benefits for the wider community.

Activity staging rationale

Development is staged in three time horizons: 0-5 years, 5-10 years, and 10+ years. The 18 economic activities are each recommended for time horizons and locations within the focus area. These decisions are based on the following factors:

- **Land use typologies:** activities are aligned with suitable land use typologies in the land use plan
- **Investment readiness:** activities that are more likely to be fundable through existing Government funds are timed to happen sooner to take advantage of their fundability
- **Development readiness:** activities are located and timed to align with existing and planned infrastructure and transport
- **Parcel size:** land that is staged for early development in the existing Drury centre typically has a smaller parcel size than other land in the focus area. This is more suitable for small scale activities.

Some economic activities are prescribed to only one location in the land use plan. This includes the Health and R&D campuses, hospital, and logistics area. Other economic activities can be located in a number of locations, to allow for flexibility in investment.

It is noted that the staging plan only presents one possible timeline for development. This should be reconsidered throughout the timeline of the project to ensure employment land is released in line with demand.

Land use typologies

Each proposed activity lends itself to different land use typologies, as outlined in Table 12. The land use typologies, established earlier in this report, cater to different development forms and densities, and different accessibility requirements for people and goods. Some activities sit across multiple land use typologies as they can be undertaken in different sizes and forms.

None of the proposed activities align with the Residential and Centre land uses proposed earlier in the report. These land uses provide supporting urban and economic activities to ensure a resilient and attractive urban environment.

Investment readiness

The staging of activities is informed by the investment readiness of each activity, which is shown in Table 12.

Scoring rationale

The activities are scored on a scale of 1-5 based on the availability of Government funding, and the level of funding needed to establish the activity. It is understood that Government funding is currently available for Advanced Manufacturing and Circular Economy activities. Activities that require existing sector ecosystems are considered to be less investment ready.

The rationale for each score is as follows:

- 1: Significant investment is needed to establish the activity
- 2: Existing sector ecosystem is needed prior to investment
- 3: Moderate investment is needed to establish the activity
- 4: Activity aligns with **either** Circular Economy **or** Advanced Manufacturing
- 5: Activity aligns with **both** Circular Economy **and** Advanced Manufacturing.

Government investment

The Government has policy objectives around improving innovation, growing labour markets, and mitigating climate change, as outlined in the Narrative Report. This has led to the availability of funding for activities that incorporate Advanced Manufacturing and Circular Economy activities, which are respectively identified to increase innovation and reduce New Zealand's carbon profile.

Development readiness

Council and private sector planning have informed when areas within the focus area will be serviced and ready for development. This is based on planned and committed infrastructure upgrades and provision which have been outlined previously in this report.

The staging of economic activity aligns with the development staging previously outlined in this report, which responds to when land will be development ready. Further Government investment may be required to make some areas infrastructure ready sooner than anticipated, so the economic opportunity of the Masterplan can be realised.

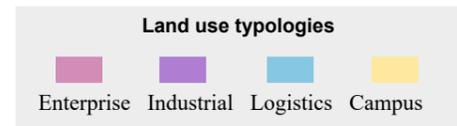
Parcel size

Parcel size influences how easily economic activities can be established. Smaller parcels lend themselves to smaller format activities, whereas larger parcels can accommodate larger format activities without the need to agglomerate land parcels that are typically held in fragmented ownership.

Table 12

Investment readiness of the proposed activities.

	Land use typology	Investment readiness	Comment
FOOD & BEVERAGE			
Food Processing			
Complex and new products	Enterprise	4	
Sustainable food and beverage products	Enterprise	3	
Food Packaging			
Innovative packaging materials	Industrial	5	
Reuse / recycling of packaging	Enterprise	5	
WOOL & TEXTILES			
Fibre & fabric production			
Research and development (R&D)	Enterprise	3	
Tech & smart textiles	Industrial	5	
Sustainable, ethical and traceable	Industrial	5	
CONSTRUCTION MATERIALS			
Building material production			
Research and development	Enterprise	3	
Advanced materials for green building and construction	Enterprise	5	
Development and construction			
Construction robotics/3D printing/automation	Logistics	4	
HEALTH			
Education and training			
World class skills and training precinct	Logistics	1	No clear commitment at this stage
Producer			
High impact R&D collaborations	Logistics	4	
Export driven product development	Enterprise	4	
Secondary healthcare			
Hospital for the Future	Logistics	3	No commitment yet to investment from Te Whatu Ora
Urgent care	Logistics	3	
LOGISTICS AND DISTRIBUTION			
Food and beverage			
Cold storage	Logistics	2	Requires surrounding ecosystem and sector growth
Farm to table	Logistics	2	
Health			
Advanced and scientific equipment transport	Logistics	2	



Potential investment: Stage 1

0-5 years

Stage 1 will initiate innovative economic development in Southern Auckland through the establishment of a Health Campus and Resources hub around Ngaakoeroa Station.

Table 13
Activities designated for Stage 1.

	Location
FOOD & BEVERAGE	
Food Processing	
Complex and new products	3
Sustainable food and beverage products	
Food Packaging	
Innovative packaging materials	1
Reuse / recycling of packaging	1
WOOL & TEXTILES	
Fibre & fabric production	
Research and development (R&D)	
Tech & smart textiles	1 3
Sustainable, ethical and traceable	1 3
CONSTRUCTION MATERIALS	
Building material production	
Research and development	
Advanced materials for green building and construction	1 3
Development and construction	
Construction robotics/3D printing/automation	
HEALTH	
Education and training	
World class skills and training precinct	2
Producer	
High impact R&D collaborations	2
Export driven product development	
Secondary healthcare	
Hospital for the Future	2
Urgent care	2
LOGISTICS AND DISTRIBUTION	
Food and beverage	
Cold storage	
Farm to table	
Health	
Advanced and scientific equipment transport	

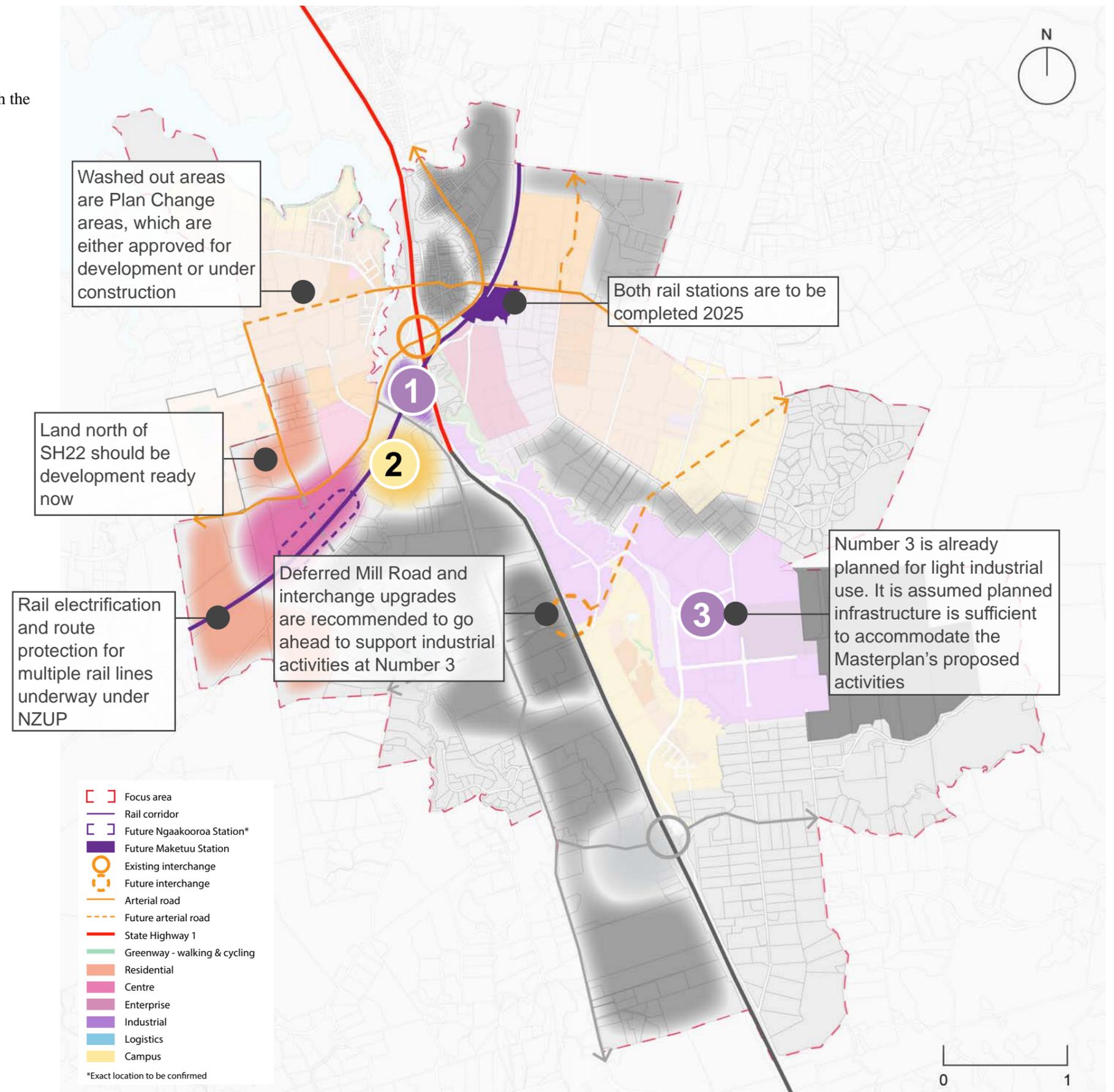


Figure 28
Stage 1: 0-5 years.

Potential investment: Stage 2

5-10 years

Stage 2 sees development continuing south with the establishment of an Innovation Campus and industrial and advanced manufacturing activities.

Table 14
Activities designated for Stage 2.

	Location
FOOD & BEVERAGE	
Food Processing	
Complex and new products	6
Sustainable food and beverage products	6
Food Packaging	
Innovative packaging materials	
Reuse / recycling of packaging	6
WOOL & TEXTILES	
Fibre & fabric production	
Research and development (R&D)	4 5
Tech & smart textiles	5
Sustainable, ethical and traceable	
CONSTRUCTION MATERIALS	
Building material production	
Research and development	4 5
Advanced materials for green building and construction	6
Development and construction	
Construction robotics/3D printing/automation	5
HEALTH	
Education and training	
World class skills and training precinct	
Producer	
High impact R&D collaborations	
Export driven product development	4 6
Secondary healthcare	
Hospital for the Future	
Urgent care	
LOGISTICS AND DISTRIBUTION	
Food and beverage	
Cold storage	
Farm to table	
Health	
Advanced and scientific equipment transport	

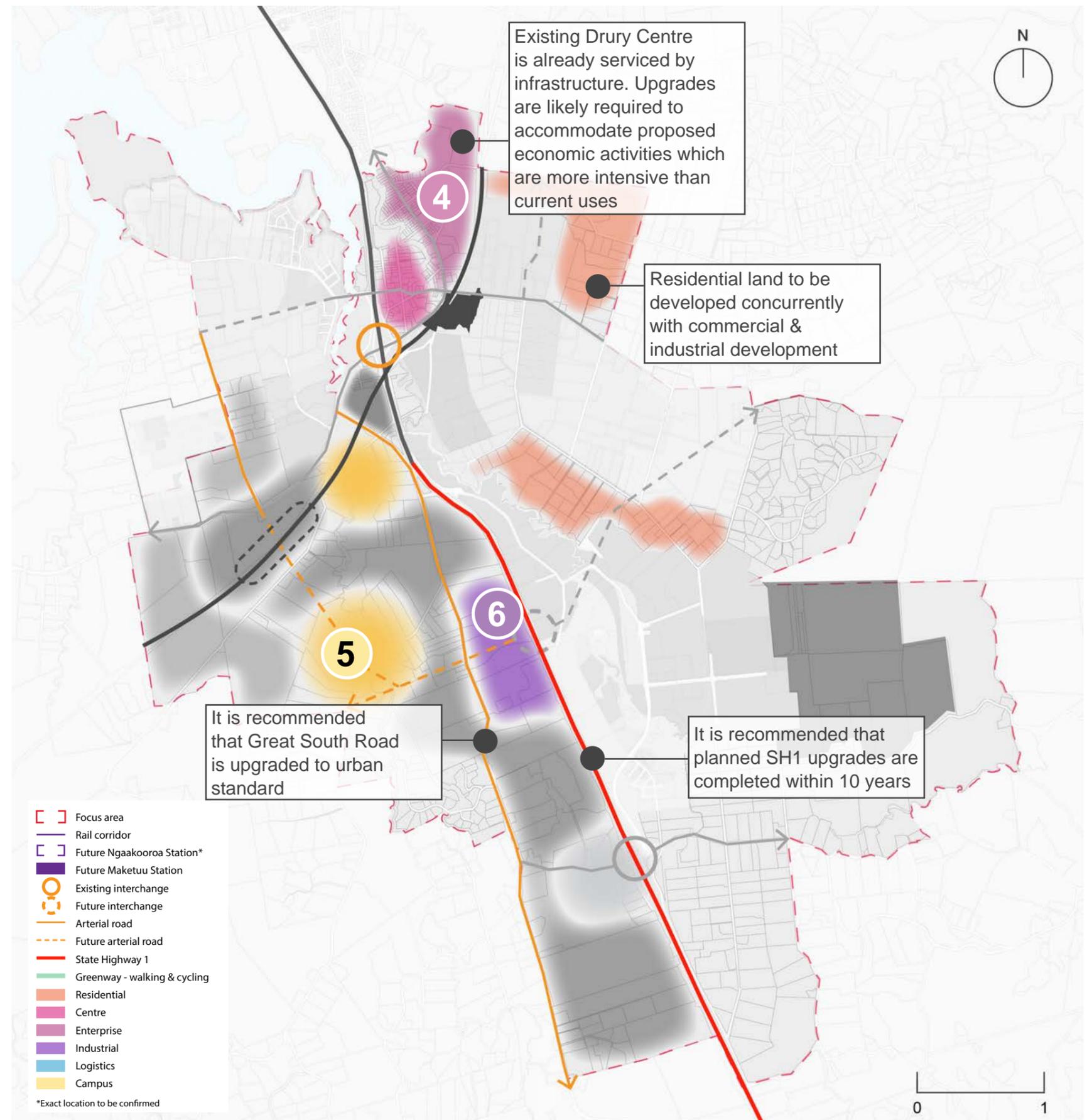


Figure 29
Stage 2: 5-10 years.

Potential investment: Stage 3

10+ years

Stage 3 unlocks more land further south for more economic and other development. This includes the establishment of a Logistics Hub to provide for regional, national, and international exchange of goods and materials.

Table 15

Activities designated for Stage 3.

	Location
FOOD & BEVERAGE	
Food Processing	
Complex and new products	
Sustainable food and beverage products	
Food Packaging	
Innovative packaging materials	
Reuse / recycling of packaging	7
WOOL & TEXTILES	
Fibre & fabric production	
Research and development (R&D)	
Tech & smart textiles	
Sustainable, ethical and traceable	
CONSTRUCTION MATERIALS	
Building material production	
Research and development	
Advanced materials for green building and construction	
Development and construction	
Construction robotics/3D printing/automation	
HEALTH	
Education and training	
World class skills and training precinct	
Producer	
High impact R&D collaborations	
Export driven product development	7
Secondary healthcare	
Hospital for the Future	
Urgent care	
LOGISTICS AND DISTRIBUTION	
Food and beverage	
Cold storage	8
Farm to table	8
Health	
Advanced and scientific equipment transport	8

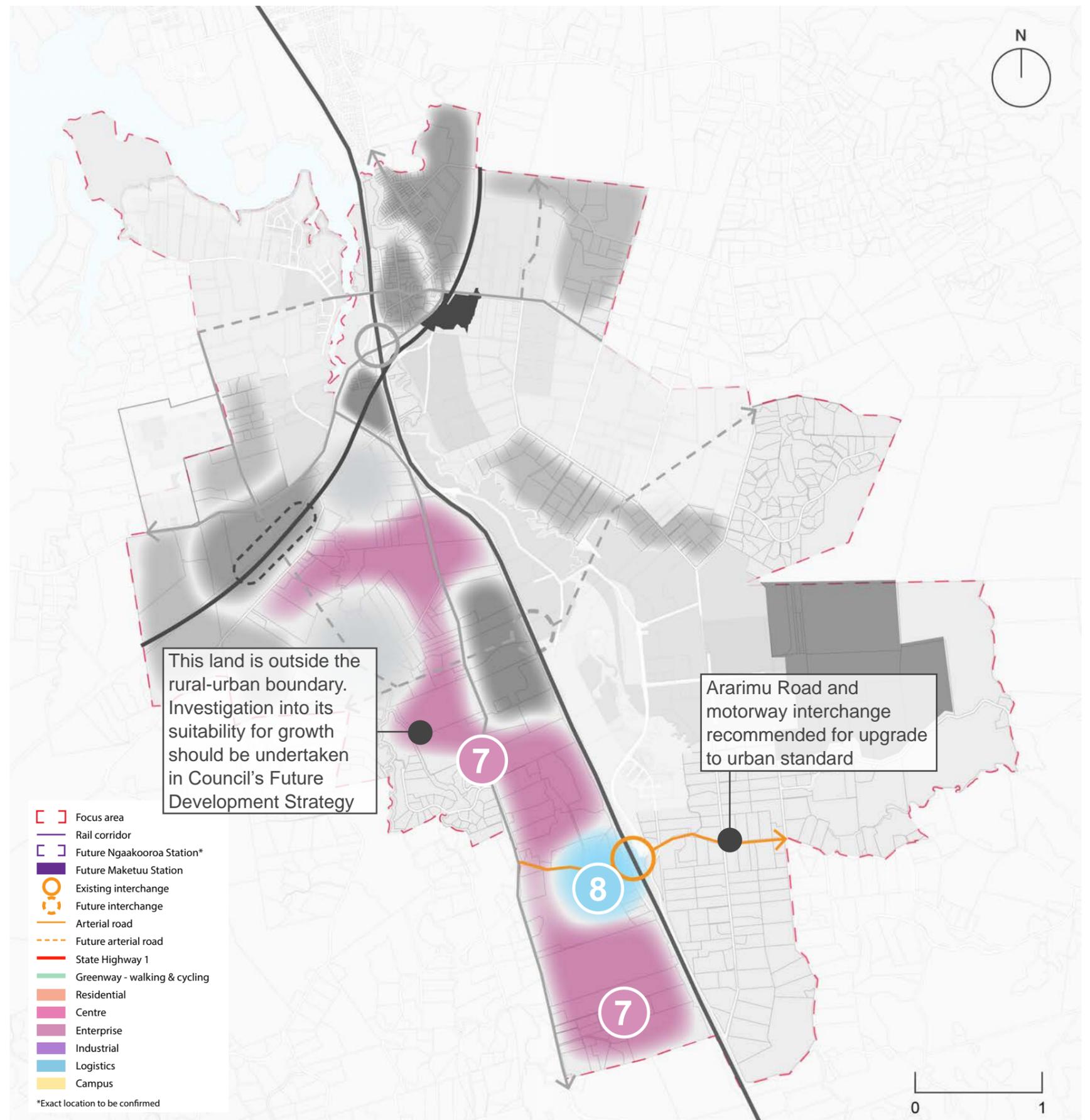


Figure 30
Stage 3: 10+ years.

All suggested economic investment

The economic activities proposed for Southern Auckland will ensure a highly innovative and productive local economy. The recommended activities will make up part of the area's economy, with provision for businesses in other sectors to support a resilient economy.

Table 16

All proposed economic activities.

	Location
FOOD & BEVERAGE	
Food Processing	
Complex and new products	3 6
Sustainable food and beverage products	6
Food Packaging	
Innovative packaging materials	1
Reuse / recycling of packaging	1 6 7
WOOL & TEXTILES	
Fibre & fabric production	
Research and development (R&D)	4 5
Tech & smart textiles	1 3 5
Sustainable, ethical and traceable	1 3
CONSTRUCTION MATERIALS	
Building material production	
Research and development	4 5
Advanced materials for green building and construction	1 3 6
Development and construction	
Construction robotics/3D printing/automation	5
HEALTH	
Education and training	
World class skills and training precinct	2
Producer	
High impact R&D collaborations	2
Export driven product development	4 6 7
Secondary healthcare	
Hospital for the Future	2
Urgent care	2
LOGISTICS AND DISTRIBUTION	
Food and beverage	
Cold storage	8
Farm to table	8
Health	
Advanced and scientific equipment transport	8

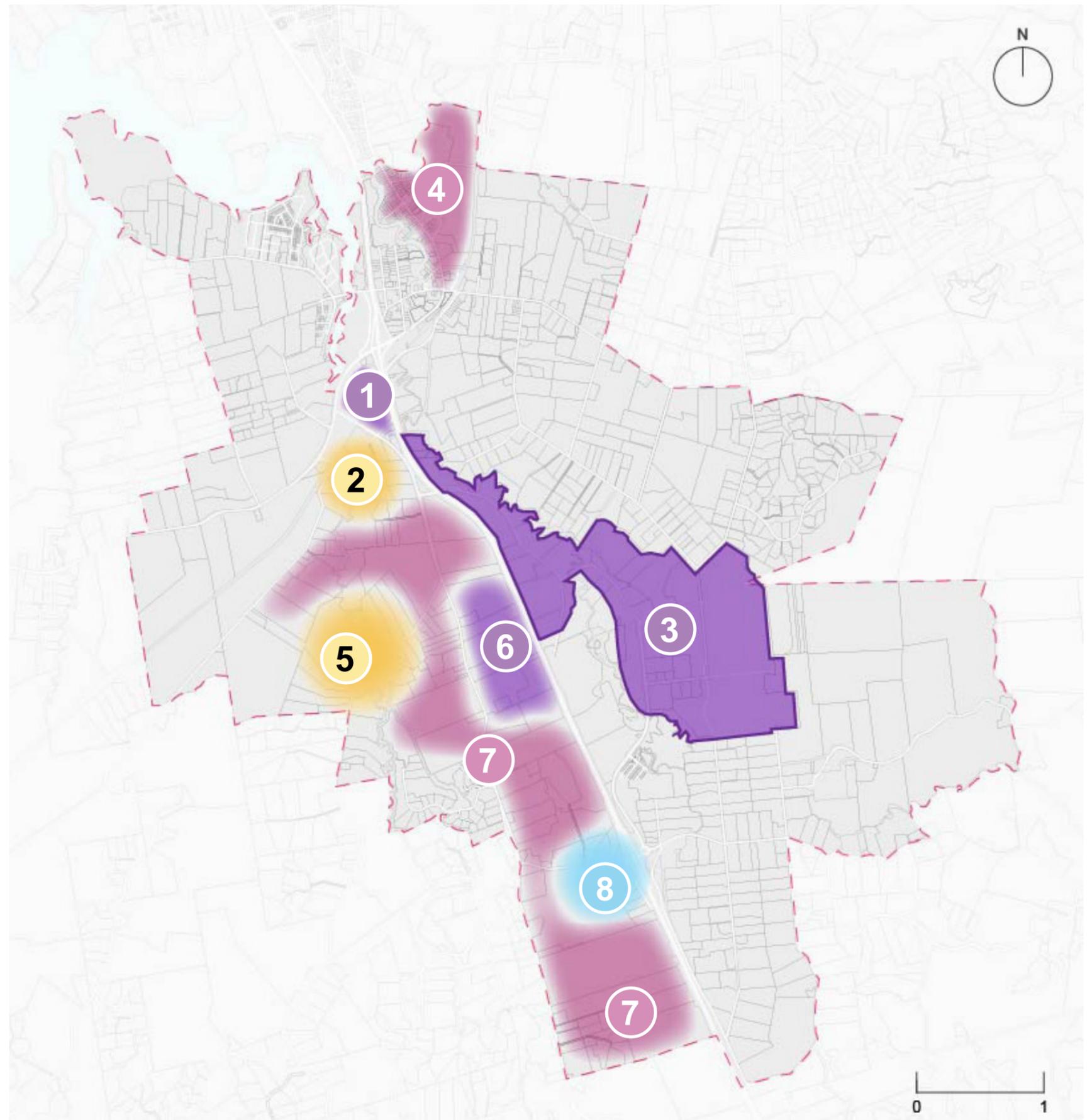


Figure 31
Locations of all proposed economic activities.

Staging Summary

Table 17

Summary of the staging of economic activities and supporting infrastructure needed.

	Stage 1	Stage 2	Stage 3
Timing	0-5 years	5-10 years	10+ years
Activities			
Food & Beverage	Food processing: complex and new products Food packaging: innovative packaging materials; re-use / recycling of packaging	Food processing: complex and new products; sustainable food and beverage products	Food packaging: re-use/recycling of packaging
Wool & Textiles	Fibre & fabric production: Tech & smart textiles; Sustainable, ethical and traceable	Fibre & fabric production: research & development; tech & smart textiles	
Construction	Building material production: Advanced manufacturing for green building and construction	Building material production: research & development; advanced manufacturing for green building and construction Development and construction: construction robotics/3D printing/automation	
Health	Education and training: world class skills and training precinct Producer: high impact R&D collaborations Secondary healthcare: Hospital for the Future; Urgent Care	Producer: Export driven product development	Producer: export driven product development
Logistics and distribution			Food & beverage: cold storage; farm to table Health: advanced and scientific equipment transport
Supporting infrastructure			
Transport and three waters	Recommend Mill Road & associated SH1 interchange go ahead to support planned industrial uses at Drury South Land that was indicated as being development ready by 2022 under FULSS must be serviced Rail stations to be completed by the expected 2025 deadline. The Masterplan assumes local transport and infrastructure investment, such as local roads and stormwater infrastructure, will be enabled in line with development.	Potential transport and three waters upgrades needed in existing Drury centre Upgrades to SH1 south of Drury South are recommended Recommended upgrade of Great South Road from rural to urban standard Timeframes of land to be development ready by 2032 under FULSS should be followed. Greater infrastructure capacity than currently indicated may be needed The Masterplan assumes local transport and infrastructure investment, such as local roads and stormwater infrastructure, will be enabled in line with development.	Ararimu Road & SH1 interchange upgrades needed to bring up to urban standard Land must be investigated for infrastructure needs and rural-urban boundary should be extended. The Masterplan assumes local transport and infrastructure investment, such as local roads and stormwater infrastructure, will be enabled in line with development.
Energy	Energy infrastructure will need to be provided to support development. Activities proposed in the Economic Masterplan may be more energy intensive than typical land uses. In particular, the Hospital and circular economy activities will likely have a higher than average energy demand. Activities and facilities in the wider Southern Auckland area can provide opportunities for local renewables such as offshore wind. Further investigation is needed to establish energy capacity needs		
Community & residential	Residential land as indicated in the Land Use Plan should be developed concurrently to commercial and industrial land, to ensure job opportunities for residents and pools of workers for businesses. This includes associated community infrastructure such as schools, local centres, community centres, and green and open space		
Commercial	Supporting businesses and industries must be enabled concurrently to the implementation of the Economic Masterplan. This includes businesses to support the four sectors, such as data centres or office based services like accountants and consultants; and businesses that provide for the everyday needs of households, such as supermarkets and other retail		

Economic hubs

The locating of economic activities in the land use plan fosters the creation of four economic hubs. These hubs include a Resources Hub, an Innovation Campus, a Health Campus, and a Logistics Hub. These are underpinned by Advanced Manufacturing and Social Infrastructure.

These six hubs were identified as being suitable for Southern Auckland in previous work by MartinJenkins and in the Narrative Report (see Appendix 1). The four spatially located hubs make up the four packages recommended for investment in this Economic Masterplan.

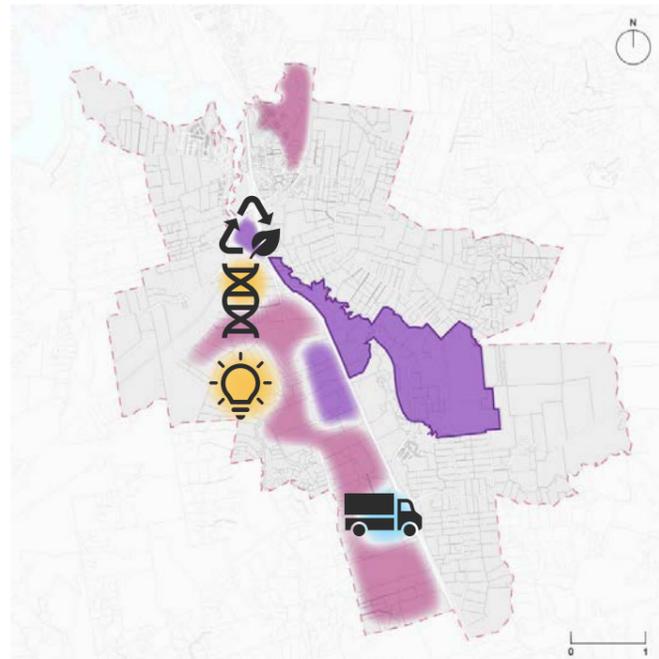


Figure 32
Locations of Economic Hubs.

Spatially clustered hubs



Resources Hub

Circular Economy activities across Food & Beverage, Wool & Textiles, and Construction sectors are collocated to allow the sharing of manufacturing, recycling, and waste facilities.



Innovation Campus

The innovation hub hosts a variety of activities relating to research & development. This is typically across the Wool & Textiles and Construction sectors, but land, premises and technology can be used across all sectors.



Health Campus

Secondary healthcare is collocated with education, training, and R&D health activities to allow collaboration, sharing of innovation, and easy on-the-job training.



Logistics Hub

Logistics activities are collocated to allow for shared vehicles and facilities, and to take advantage of the advantageous location at a motorway interchange.

Supporting hubs



Advanced Manufacturing

All hubs and areas in the Economic Masterplan are underpinned by advanced manufacturing, with advanced manufacturing activities being recommended across the focus area.

Advanced manufacturing activities cover a wide range of sectors and processes, and can be suitable for different land use typologies due to the wide range of scale of activities.



Social Infrastructure

All economic development must be supported by residential, community, and ancillary commercial activity.

Investable Package 1: Resources Hub



The Resources Hub consists of a range of activities involving the creation and disposal of materials and resources, across a number of sectors. By clustering these activities, a number of processes and facilities can be shared, including research and development around circular economy principles, waste reuse and disposal facilities, and advanced manufacturing technologies. Activities in this Hub are underpinned by circular economy principles and processes.

Economic activities

- Innovative food & beverage packaging materials
- Re-use / recycling of food and beverage packaging
- Technologically advanced & smart textiles
- Sustainable, ethical, and traceable textiles
- Advanced manufacturing for green building and construction

Land use typology

Industrial

Development horizon

0-5 years

Existing investment

- Flight Plastics recycling and washplant in Lower Hutt, which has the ability to transform used plastics into new products, and was partially funded by the Waste Minimisation Fund from MfE

Policy context

- MBIE's Economic Plan has drivers around supporting sustainable economies
- The Resource Management Act 1991 encourages the sustainable management of resources
- The Auckland Low Carbon Action Plan sets out targets for reducing carbon emissions

Potential partners and investors

- Ministry for the Environment
- Ministry of Business, Innovation, and Employment
- Callaghan Innovation
- Private investors
- Private developers
- Waka Kotahi
- Auckland Council



Figure 33
Location of the Resources Hub in the potential Land Use Plan.

Case Study:

Recycling and Renewable Energy Commercialisation Hub (REACH), Geelong

This hub is Australia's largest ecosystem of recycling and clean energy activities. The hub is driven by partnership between Deakin University, governments, industry, and education partners to drive innovation in business, underpinned by circular economy principles. The focus of the hub is to drive innovation in the production of advanced technology batteries, facilitate the storage and use of hydrogen as a power source, and reuse organic and inorganic waste in the production of higher-value products.

Project Cost

ManuFutures manufacturing hub, as part of REACH, will cost NZ\$22m for a 3000m² facility. Scaled to the size of the facility proposed in the Resources Hub, and accounting for cost of land, a hub of similar facilities could cost NZ\$207,000,000.



Investable Package 2: Health Campus



The Health Campus is located within a walkable catchment of the future Ngaakooroa Station. This campus can house a future hospital, which will be needed as the population of Southern Auckland grows. The campus will also house supporting skills, training, and R&D activities.

Economic activities

- Hospital for the Future
- Urgent care
- World class healthcare skills and training precinct
- High impact healthcare R&D collaborations

Land use typology

Campus

Development horizon

0-5 years

Existing investment

- A Health Precinct is planned in central Dunedin by the University of Otago, in partnership with Ngāi Tahu, MoH, the Southern District Health Board, and Dunedin City Council. Facilities include a medical research facility, health sciences buildings, laboratories, and a clinical and translational research centre, colocated with the new Dunedin hospital.

Policy context

- New Zealand Health Research Strategy 2017-2027, which sets out a vision for health research and innovation

Potential partners and investors

- Ministry of Health
- Health New Zealand
- Ministry of Business, Innovation, and Employment
- New Zealand Trade and Enterprise
- University of Auckland
- Callaghan Innovation
- Private investors
- Private developers
- Waka Kotahi



Figure 34
Location of the Health Campus in the potential Land Use Plan.

Case Study:

Westmead Health Precinct, Sydney

This precinct is one of the largest research, training, education, and health precincts in Australia. It has been identified as a State Significant Development, providing significant economic value to Western Sydney. It was developed through partnerships with a number of organisations, including hospitals, universities, research institutes, and local councils.

Project Cost

The Health Precinct cost NZ\$3 billion for development over 75ha. Scaling this cost to the size of Southern Auckland's Health Campus, and accounting for cost of land, a similar campus could cost NZ\$366,000,000.



Investable Package 3: Innovation Campus



The Innovation Hub hosts a variety of activities relating to research & development and advanced manufacturing. This is typically across the Wool & Textiles and Construction sectors, but land, premises and technology can be used across all sectors. The agglomeration of these activities within one campus allows for the sharing of resources and facilities to make innovative processes accessible to a wide range of businesses. The location near the future Ngaakooroa station makes it highly accessible to wider Auckland, and will have attractive open spaces and local services and amenities.

Economic activities

- Fibre & fabric R&D
- Tech & smart textiles
- Building material R&D
- Construction robotics/3D printing/automation

Land use typology

Campus

Development horizon

5-10 years

Existing investment

- Waikato Innovation Park in Hamilton fosters collaboration between businesses and research organisations to drive commercial growth. It focuses on agri-tech, IT, and food processing, and was established through partnership between local and national government and the private sector
- A partnership between Kāinga Ora and Callaghan Innovation has been established to advance innovation in the Construction sector

Policy context

- Advanced Manufacturing Industry Transformation Plan aims to foster productivity throughout the economy
- MBIE's Economic Plan aims to improve productivity

Potential partners and investors

- New Zealand Trade and Enterprise
- Ministry of Business, Innovation, and Employment
- Callaghan Innovation
- Employer and Manufacturer's Association
- Private investors
- Private developers



Figure 35
Location of the Health Campus in the potential Land Use Plan.

Example

University of Nottingham Institute for Advanced Manufacturing

The University of Nottingham, in collaboration with major global stakeholders such as Airbus and Rolls-Royce, has developed this institute to drive innovation in advanced manufacturing. They undertake R&D in a range of technology and manufacturing processes, across a wide range of industries. The centralisation of this R&D has driven many opportunities for innovation.



Example Project Cost

The Waikato Innovation Park in Hamilton is currently constructing a new building to support innovation activities. It will cost NZ\$14m for a 2900m² building. Scaled to the size of the facilities proposed in the Economic Masterplan, and accounting for the cost of land, an innovation hub could cost NZ\$771,500,000.

Investable Package 4: Logistics Hub



The Logistics Hub will support other economic activity planned in the Economic Masterplan. It will host activities around logistics and distribution, including more high value activities around the transport of goods that need special care and handling. Comprehensive planning of the hub can provide an opportunity for shared transport and logistics facilities, and the use of zero emissions vehicles.

Economic activities

- Cold storage
- Farm to table shipping and distribution
- Advanced and scientific equipment transport

Land use typology

Logistics

Development horizon

10+ years

Existing investment

- Waka Kotahi's Innovation Fund to encourage innovative transport and freight solutions
- Ruakura Superhub in Hamilton will create productivity through the clustering of logistics businesses, shared facilities, and innovative logistics processes. It is being developed by Tainui Group Holdings in partnership with Government, Council, and Port of Tauranga

Policy context

- MoT's freight and supply chain strategy, to reduce emissions and improve productivity and innovation
- The GPS on Land Transport aims to improve freight connections, to generate economic prosperity alongside resilience and environmental sustainability

Potential partners and investors

- Ministry for the Environment
- Ministry of Business, Innovation, and Employment
- Callaghan Innovation
- Private investors
- Private developers

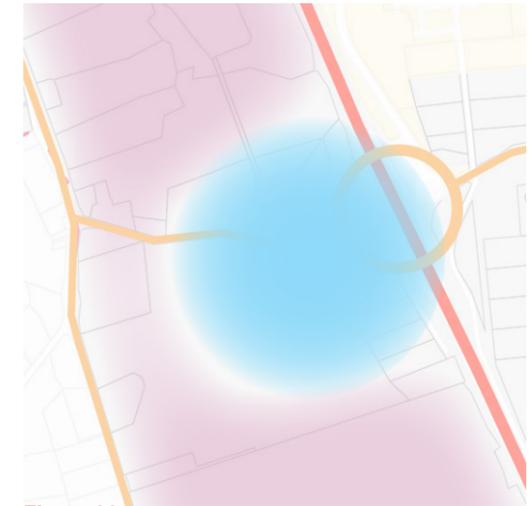


Figure 36
Locations of the Resources Hub in the potential Land Use Plan.

Example

Melbourne Business Park

Construction is underway for an NZ\$2 billion logistics precinct in Truganina, Melbourne. It's being built to support a growing number of businesses establishing in western Melbourne, and represents a growing need for integrated and centralised logistics facilities to support local networks of businesses, to increase connectivity to wider Melbourne and Australia.



Example Project Cost

Aldi Distribution Centre in north Cork, Ireland, hosts logistics and distribution activities. Its development cost NZ\$217 million for a 59,500m² facility. Scaled to the size of the facility proposed in the Economic Masterplan, and accounting for the cost of land, a logistics hub could cost NZ\$509,500,000.

Next Steps

The investable packages and economic activities identified in this report provide guidance for future public and private investment. Further investigation into each investable package is needed to establish next steps for investors. This may include the following:

- Identification and acquisition of land by Government to realise the Masterplan. This step should be prioritised to get ahead of rising land prices and piecemeal private development
- Partnership between Government and private sector to support planned development, and fund and finance future infrastructure and development
- Identification of other funding and financing tools that can deliver the investable packages, through investment structures
- Reformation of statutory planning tools to allow suggested development, such as zoning and the rural-urban boundary
- Refresh of the Future Urban Land Supply Strategy to refocus infrastructure investment to timeframes and locations that support the delivery of the Economic Masterplan
- Assessment of transport and utility infrastructure capacity and requirements to support the Economic Masterplan, and identification of funding opportunities
- Investigation into tools and methods for implementation, such as urban enterprise zones or special activation precincts
- Further engagement with Māori and Pasifika groups, to support their realisation of their aspirations
- Market engagement to identify interested parties, such as anchor tenants or Universities, both within New Zealand and globally.

Supporting mana whenua aspirations

Next steps to realise the Economic Masterplan must be done with meaningful engagement with mana whenua, to support aspirations around economic prosperity, equity, social and cultural values, and enhancement of the natural environment. Key steps to achieve this may include:

- Funding and supporting economic development reports for local iwi, to characterise their current status and propose actions which will realise their economic aspirations
- Recognising iwi as major economic investors and contributors, who play a large role in our national economy, and can therefore support the realisation of the Economic Masterplan in a way that supports good outcomes for Māori
- Establishing a co-governance model with mana whenua to pursue iwi interests in innovation, entrepreneurship, and eco-businesses. This may include:
 - Participation in tender evaluation for any tender development undertaken in the realisation of the Economic Masterplan
 - Providing procurement opportunities for Māori owned businesses.
- Acknowledging that Māori are historically disadvantaged in most key economic indicators including employment, saving, housing, and education; and economic development in Southern Auckland can play a large role in improving these outcomes.



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Appendix 1: Narrative Report