Proposed Kāpiti Coast development delivers economic benefits

Report to The Wellington Company

October 2024

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Key points

Kāpiti road development increases supply, improving affordability…

- The Wellington Company is proceeding with a development at Kāpiti road enabling 950 dwellings across a range of typologies and an additional 300 aged care residential units.
- Housing affordability across the region remains challenging. High interest rates simply shift housing costs from the sticker price of homes to borrowing costs.
- Policy has responded and enabled more development opportunities, including zoning the Kāpiti road site for development in the operative District Plan.
- But potential gains in housing capacity can be undone. Policy gains in the District Plan will only yield a benefit to the district if followed through with reasonable consent pathways.

Our analysis suggests material benefits from the development…

- We were commissioned to estimate the key economic benefits of the development at Kāpiti road.
- We use an existing framework and standard approaches to – where possible – provide quantitative estimates of the benefits.
- We find:
    - Up to 1,083 new jobs across the Wellington regions' economy, bringing a boost to GDP of $141m a year.
    - Agglomeration benefits that lift the productivity of the local workforce. This adds about $500,000 a year or $7.3 million over a thirty-year period to GDP.
    - A boost to local hospitality and retail spending of about $33.7 million dollars.
    - The potential for reduction in Greenhouse Gas Emissions from buildings and transport, up to 2,700 tonnes CO_2-e at a value of $1.2m per year.

…large benefits accrue from lower infrastructure costs per dwelling

- Since housing markets across the region are constrained, we assume additional housing capacity is filled by new residents arriving from outside the region.
- In this instance, we find enabling density brings benefits from lower infrastructure costs. The development taps into economies of scale in transport and three waters infrastructure. This is good for (i) ratepayers; (ii) homeowners; and (iii) tenants.
- Likely per dwelling costs of local roads for the new development are very low. Density also enables water provision at low cost. Benefits from stormwater runoff from density are less apparent but the development supports the Wharemauku stream and wetland, mitigating much stormwater runoff.
- Overall, these infrastructure costs are likely to be considerably lower than development that proceeds in line with average growth in the District Plan.

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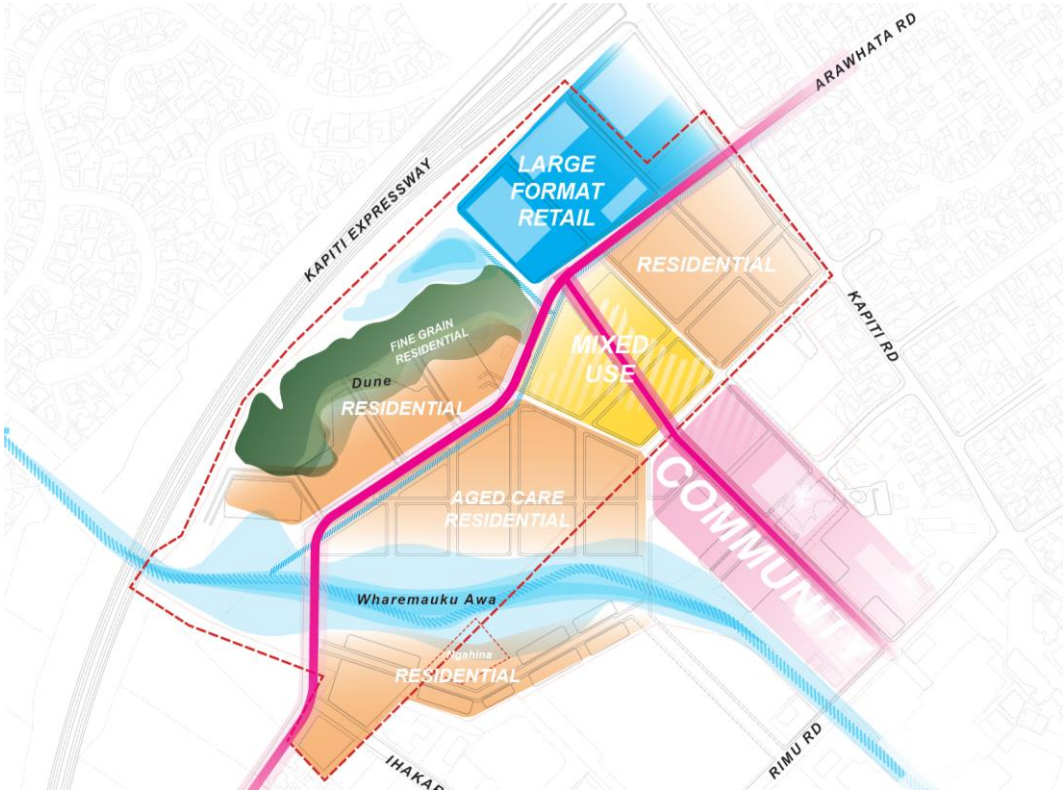
Kāpiti road brings vitality to Paraparaumu's urban core

The Wellington Company is proceeding with a proposed development at Kāpiti Road. This 28-hectare site will enable about 950 dwellings across a range of residential typologies. In addition, the development will include 300 aged care residential units. These dwellings are supplemented with large format retail and mixed-use areas to create a 15-minute community.

A key aspect of the development is the restoration of the Wharemauku stream and wetland. This restores the ecological function of the wetland, with benefits for stormwater management and biodiversity. The development will also play host to Whale Song, an ambitious project to celebrate the ocean environment of the Kāpiti Coast and boost tourism (see Box A).

Figure 1: The Kāpiti road development brings many residential and commercial opportunities
Kāpiti Road development proposed scheme plan (As at April 2023)

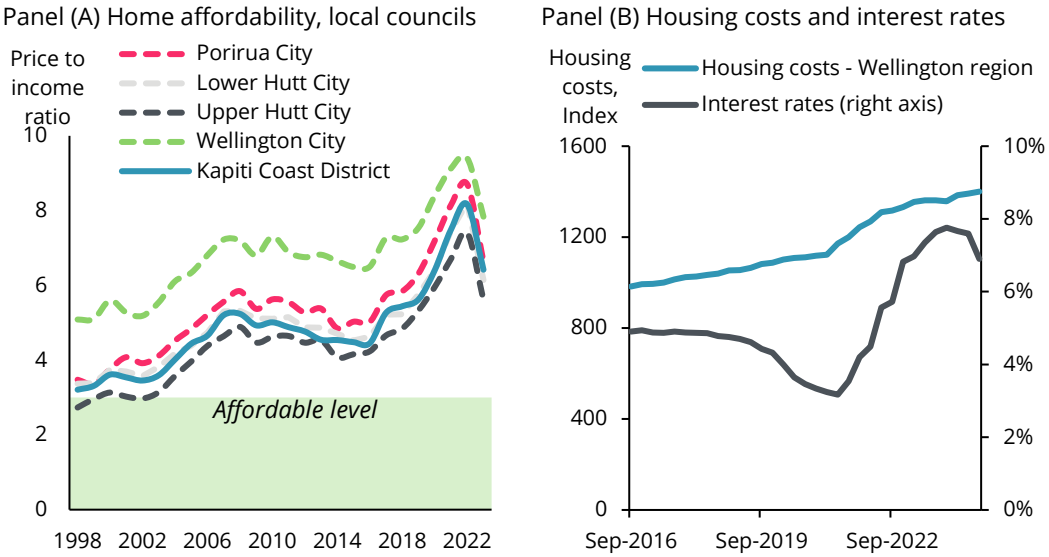


Source: The Wellington Company, Athfield Architects.

Kāpiti road is a crucial step in Kāpiti's housing journey

Home affordability boosts collective welfare and is achieved by increasing the supply of housing. House prices have fallen recently. But these price declines are not the same as improvements in affordability. High interest rates simply shift housing costs from the sticker price of homes to borrowing costs. Housing affordability has not improved (see Figure 2).

Figure 2: Housing remains unaffordable in the Kāpiti coast and many other councils



Source: Statistics New Zealand, REINZ; Sense Partners Analysis

Policy recognises this and has enabled more development opportunities in recent years. This is why the site is zoned for development in the operative district plan.

Realise policy gains by following through with action

The Kāpiti Coast District Council's operative district plan provides for an estimated 32,673 realisable dwellings across the district. This estimate, provided in the 2023 Housing and Business Capacity Assessment,[1] is a substantive improvement on the 7,818 realisable dwellings estimated in the 2022 HBA update.[2]

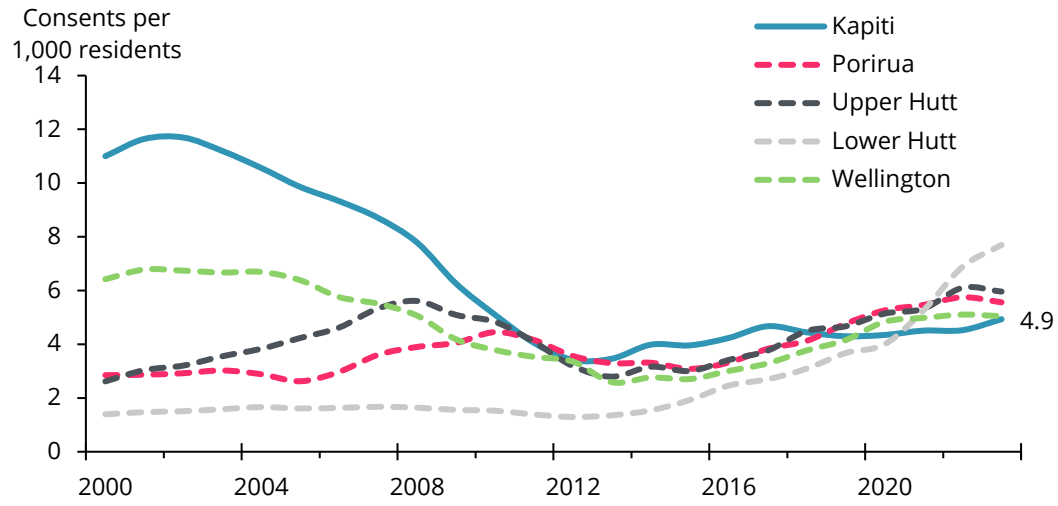
The gains in housing capacity, alongside a fall in demand due to the pandemic, shift the district from a shortfall of 8,367 dwellings to a surplus of 18,785 over the next 30-years. The development at Kāpiti road sits on a site zoned Metropolitan Centre Zone.[3] As such, the development's contribution to housing is an integral part of this capacity estimate.

The policy gains in the district plan, while promising, will only yield a benefit to the district if followed through with reasonable pathways to consent. **Progress in policy can be undone by poor implementation**. As Figure 3 below shows, consents relative to population, a key indicator of progress in realising policy, remains subdued.

[1] Kāpiti Coast District Council (2023) *Wairarapa-Wellington-Horowhenua Region – Housing and Business Development Capacity Assessment – August 2023*. Chapter 5: Kāpiti Coast District Council HBA.
[2] Kāpiti Coast District Council (2022) *Regional Housing and Business Development Capacity Assessment – Housing update May 2022*.
[3] Kāpiti Coast District Council (2021) *Operative Kapiti Coast District Plan 2021: Part 3 – MCZ Metropolitan Centre Zone.*

Figure 3: Development has remained subdued when compared with population growth

Consents per 1,000 residents, 5-year rolling average, selected councils



Source: Statistics New Zealand; Sense Partners analysis

Our analysis investigates a range of Kāpiti road benefits

Our analysis of the key economic benefits of the development at Kāpiti road draws on an analytical framework developed by MRCagney, shown in Table 1. Not all benefits are readily or reliably quantified. Our analysis focuses on agglomeration benefits, infrastructure costs, emissions from transport and buildings, and ecosystem services.

Given how constrained Kāpiti's housing supply remains in practice, we expect that every new home is an opportunity for a new resident to move into the community. The core of our estimates is based on the development enabling new residents to move into the district. We expect the displacement from other parts of the district will be minimal.[4]

However, the Council faces an important choice in *how* to accommodate new residents. Our analysis for Greater Wellington Regional Council showed that urban form plays an important role in shaping infrastructure costs.[5] It also affects the costs that households face and can influence the level of carbon emissions.

Low density and greenfield sprawl may come with higher costs than density within the core. Our analysis includes comparative estimates that explore how the development at Kāpiti road enables Council to achieve growth at a lower economic and environmental cost.

[4] Some of our previous analysis assumed that not all occupants were new to the district, with displacement from elsewhere generating a lower benefit. However, with further consideration of the housing shortfall, we consider a counterfactual with zero displacement to be more appropriate in the Kāpiti Coast context.

[5] Sense Partners (2024) *Infrastructure Costs and Urban Form: A Proof-of-Concept Model*. Report for Greater Wellington Regional Council.

Table 1: We use a standard framework to assess benefits of the Kāpiti road proposal

Group	Type
Internalised benefits	• Housing costs • Transport costs • Amenity benefits
Agglomeration benefits	• Agglomeration in production • Agglomeration in consumption • Growth in declining areas
Congestion costs	• Infrastructure/services costs • Transport network effects • Crowding
Environmental impacts	• Transport emissions • Built environment emissions • Ecosystem services.
Distributional impacts	• Transfers between renters and landlords • Transfers in economic activity between suburbs/sectors

Source: MRCagney

2. New neighbours: stronger economy

A larger community supports greater economic activity

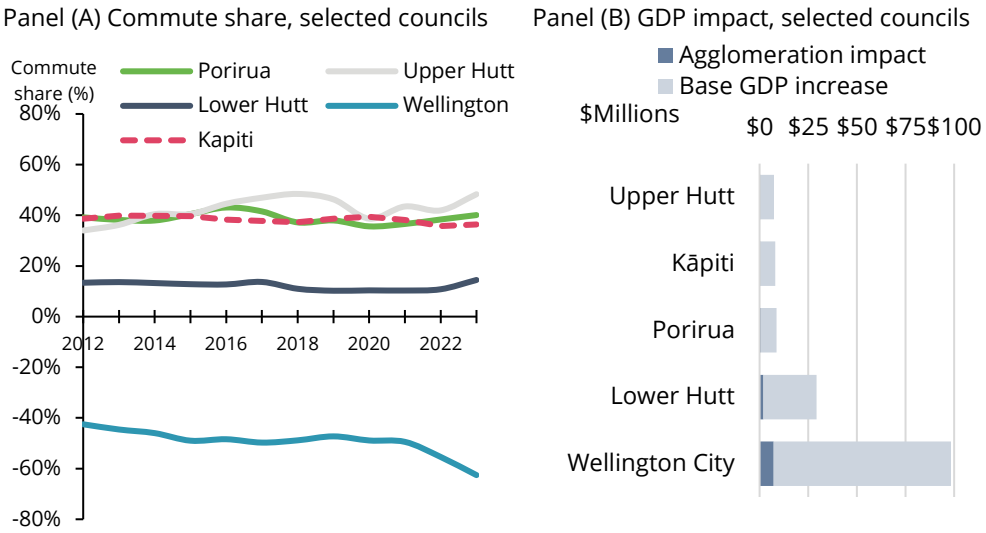
More people means more workers, more entrepreneurs, and more customers. People are the essential ingredient in an economy, and accommodating new residents will grow the economy directly. We estimate the development increases the size of the Kāpiti economy, with an extra **218 new jobs within Kāpiti** by 2033.

Measured in GDP, this amounts to an **increase of $7.6 million** by 2033, or $11,000 per new job. This represents a 0.4% increase Kāpiti Coast's GDP. These are perpetual, annual benefits. Over a 30-year period they amount to $103.7 million.[6]

These benefits extend across the whole region. The left pane of Figure 4 below shows the net portion of each Wellington Region districts' employed workforce who commute out of their district for work. 36% of employed Kāpiti residents commute outside the district. This is indicative of a region that functions as a cohesive economic and labour market area.

As a result of this tight economic integration, the benefit of new workers is spread across the wider region. We estimate a total of **1,083 new jobs across the region**. At $130,000 per job, this yields a **total boost to regional GDP of $140.9 million**. Over 30 years, this sums to $1.9 billion.

Figure 4: Net commuter share and economic benefits across the region



Source: Statistics New Zealand, Sense Partners

In addition to growth through size, a larger population creates "agglomeration" benefits. This is typically broken into two categories: production and consumption. Agglomeration of consumption describes the benefits to people of being in an urban area from a consumer

[6] Present value, discounted at 4%.

perspective. Larger urban areas often have a larger range of goods, services, and amenities available compared to smaller towns. This is typically very difficult to measure reliably.

Agglomeration of production describes the benefits of businesses being close together. This includes being closer to suppliers, closer to customers, and closer to a larger pool of skilled workers. There is also the potential for closer collaboration leading to innovation. This benefit is more readily and more reliably measured.

We use the model of economic productivity from the Waka Kotahi Monetised Benefits and Costs Manual (MBCM)[7]. We estimate the development **unlocks agglomeration benefits of about $0.54 million in Kāpiti**, approximately $7.900 per new worker.[8] This is a recurring annual benefit. Over a 30-year period, this represents added value of $7.3 million.[9]

As with the baseline growth, this agglomeration benefit also spreads across the region. In total, we estimate **an agglomeration boost of $10.8 million across the whole region**. At the region level, the per worker gain is $9,957.[10] Over 30 years this is a $147.3 million benefit.

A boost to local spending is a tangible outcome of growth

As the local economy grows, so too does the opportunity for spending. Kāpiti's retail and hospitality sector is likely to benefit from this increased spending, with more residents meaning customers spending more money within Kāpiti.

Our GDP boost estimate above includes the increase in incomes available to be spent. However, it assigns this value to the area where the jobs are located, not to Kāpiti, where the new residents will live thanks to the development.

Using the Household Economic Survey (HES),[11] we estimate that the 1,250 new households will spend approximately **$33.7 million annually within the region's hospitality and retail sector**. This is a recurring annual benefit, and over a 30-year period, this represents an added value of $460 million.[12]

[7] Waka Kotahi New Zealand Transport Agency 2023.
[8] We pair the Waka Kotahi agglomeration model with a gravity model and logit mode-choice model estimated using census travel data at the SA2 level across the Wellington region.
[9] Present value, discounted at 4%.
[10] This is similar to the Treasury CBAx recommended value of $9,399 per new worker. See: Treasury 2023.
[11] Statistics New Zealand 2023 "Household expenditure for group and subgroup by broad region", *Household Economic Survey*. Data extracted 18-Oct-24. Our estimate assumes a mix of owner-occupier and tenanted dwellings, using corresponding measures from the HES. We also adjust for money spent online and tourism outside the
[12] Present value, discounted at 4%.

Box A: Proposal helps realise *Whale Song* benefits

Whale Song is a proposal to install a life-size sculpture of a pod of hump-back whales. This would be an integral part of the revitalisation of the Wharemauku stream, and of the wider development.

A separate report by Infometrics, commissioned by Kāpiti Coast District Council, estimated the economic benefits of Whale Song.[13] Benefits include between 51 and 462 new jobs, and additional tourism spending of between $5.7 million and $51 million.

As noted in the report, a key constraint in realising the benefits is the available capacity within Kāpiti to cater to demand. Increasing visitor numbers by 150,000 people annually, a 59% increase, will require a proportionate increase in capacity if the benefits are to be realised.

Whale Song sits inside the development at Kāpiti road (see Figure 5). The additional space for retail and hospitality activity provided will play a part in expanding capacity to cater to new visitors.

Without the development, we expect that the realised economic benefit of Whale Song is likely to be lower than if the development proceeds.

Figure 5: Whale song within the Kāpiti road development – concept

Source: Whale Song Pakake Waiata Charitable Trust

[13] Infometrics 2023.

3. Enabling density brings benefits at lower cost

Urban form choices influence infrastructure costs

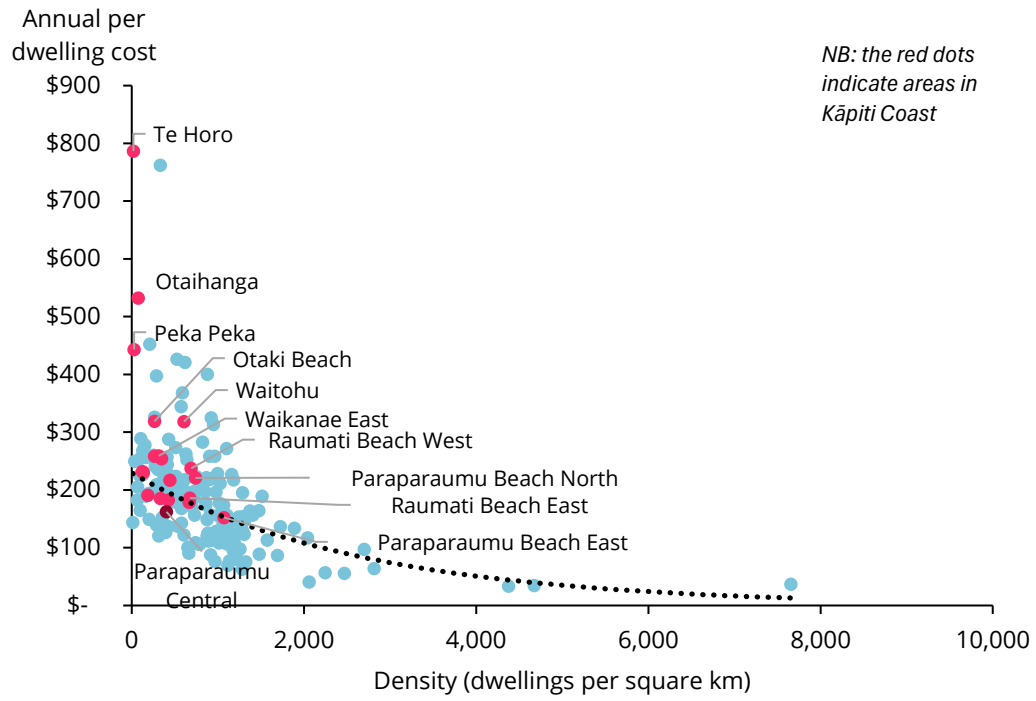
Realising the economic benefits of a larger community mean ensuring the infrastructure is in place to enable new dwellings. How Council chooses to accommodate this new growth will influence its total cost. Our work for Greater Wellington Regional Council found that urban form can influence the cost of infrastructure.[14]

Higher density enables councils to tap into economies of scale in transport and three-waters infrastructure. The development at Kāpiti road is an opportunity to realise the benefits of growth at a considerably lower cost. This is good for rate payers, homeowners, and tenants. All of whom bear the burden of expensive infrastructure.

Figure 6 shows our estimate of the annual per dwelling cost of local roads faced by local councils across the Wellington Region. These represent the expected annual cost that each local council faces in building, maintaining, operating, and renewing the local road network.

Figure 6: Dense locations have lower local road costs on a per dwelling basis

Local roads – annual per dwelling cost to council



Source: Sense Partners

[14] Sense Partners 2024.

In Kāpiti, these range from $152 per dwelling per year in Paraparaumu Beach, to $787 in Te Horo. Over 36% of employed Kāpiti residents commute to other parts of the region,[15] some 86% of them via the road network.[16] The distance, low density, and mode share of driving mean the road cost per-dwelling in Kāpiti is typically toward the higher end of our estimates.

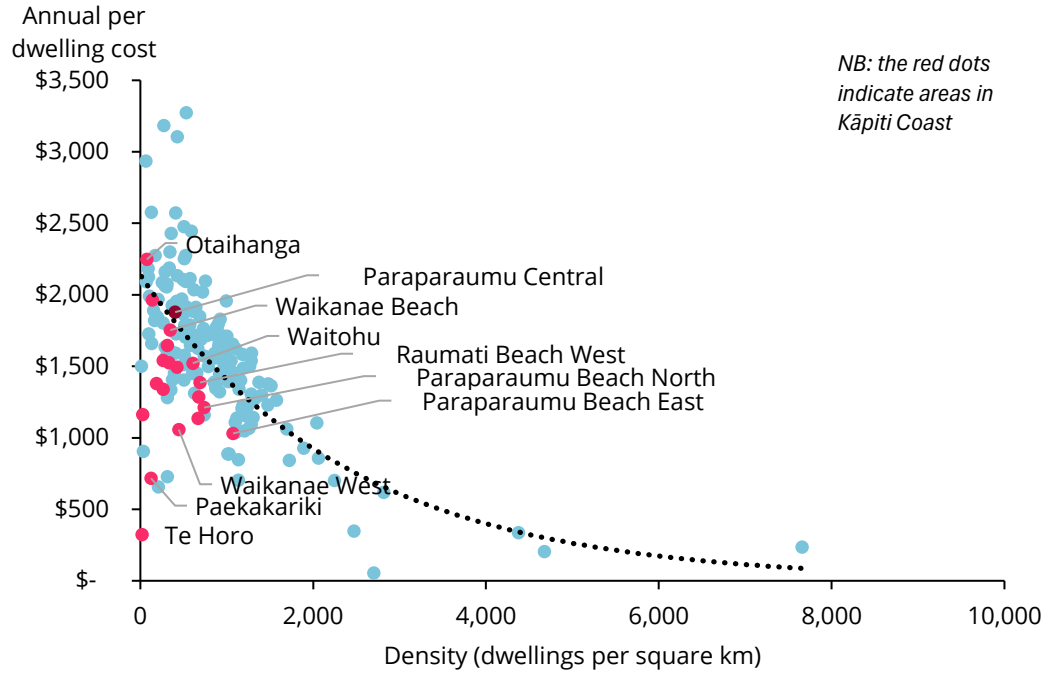
With 50% of local roads projects funded by Waka Kotahi, these figures double for the all-of-Government cost. Alongside this, each dwelling incurs a cost for a share of the State Highway network in proportion to its neighbourhood's average use. These vary between $1,748 per dwelling in Paraparaumu Beach to over $7,000 in Raumati Beach.

Figure 7 below shows our estimate for the three-waters pipe network. While higher density helps to tap into economies of scale in water provision, it does have implications for stormwater costs. The increased share of impervious surfaces in high density areas means more stormwater infrastructure is needed to manage water runoff.

This has helped Kāpiti to perform well compared to the wider region, as its relatively low density helps mitigate the need for more intensive stormwater infrastructure. This means the wetland restoration aspect of the development is important. It offers a way to achieve higher density and its transport and three waters benefits, while offsetting the stormwater costs.

Figure 7: Without offsets like wetlands, more density can mean higher stormwater costs

Three waters – annual per dwelling cost to council



Source: Sense Partners

[15] Sense Partners estimates from Statistics New Zealand data.
[16] Sense Partners estimates from Statistics New Zealand Census 2018 data

Kāpiti road enables high density: an affordable growth path

Infrastructure typically has high fixed costs. An increase in the number of users can spread this fixed cost over more people, reducing the financial burden faced by both households and council.

Adding density in Paraparaumu Central takes advantage of this effect to lower per-dwelling costs for all houses in the area, not just new dwellings.

We estimate a current annual per-dwelling cost of $3,730 for local roads, state highways, public transport, and three waters infrastructure in Central Paraparaumu.

This will change as the district grows. By growing through increased density, the development reduces this to $3,180 per dwelling.

In comparison, aiming to accommodate the 1,250 dwellings in a more dispersed pattern would result in a higher-per dwelling infrastructure cost.

We estimate a more disbursed growth scenario would give costs nearer $3,500 per dwelling. Going for higher density means reducing infrastructure costs - a $320 yearly saving per dwelling in Central Paraparaumu.

This shift to density does entail a slight reallocation of density benefits that would have been realised had those dwellings been spread out within the existing urban area. This means the per-dwelling cost may be a little higher in other areas where those dwellings may otherwise have located. Despite this offset, the saving remains: across the whole district, the per-dwelling average cost falls from $3,460 to $3,440.

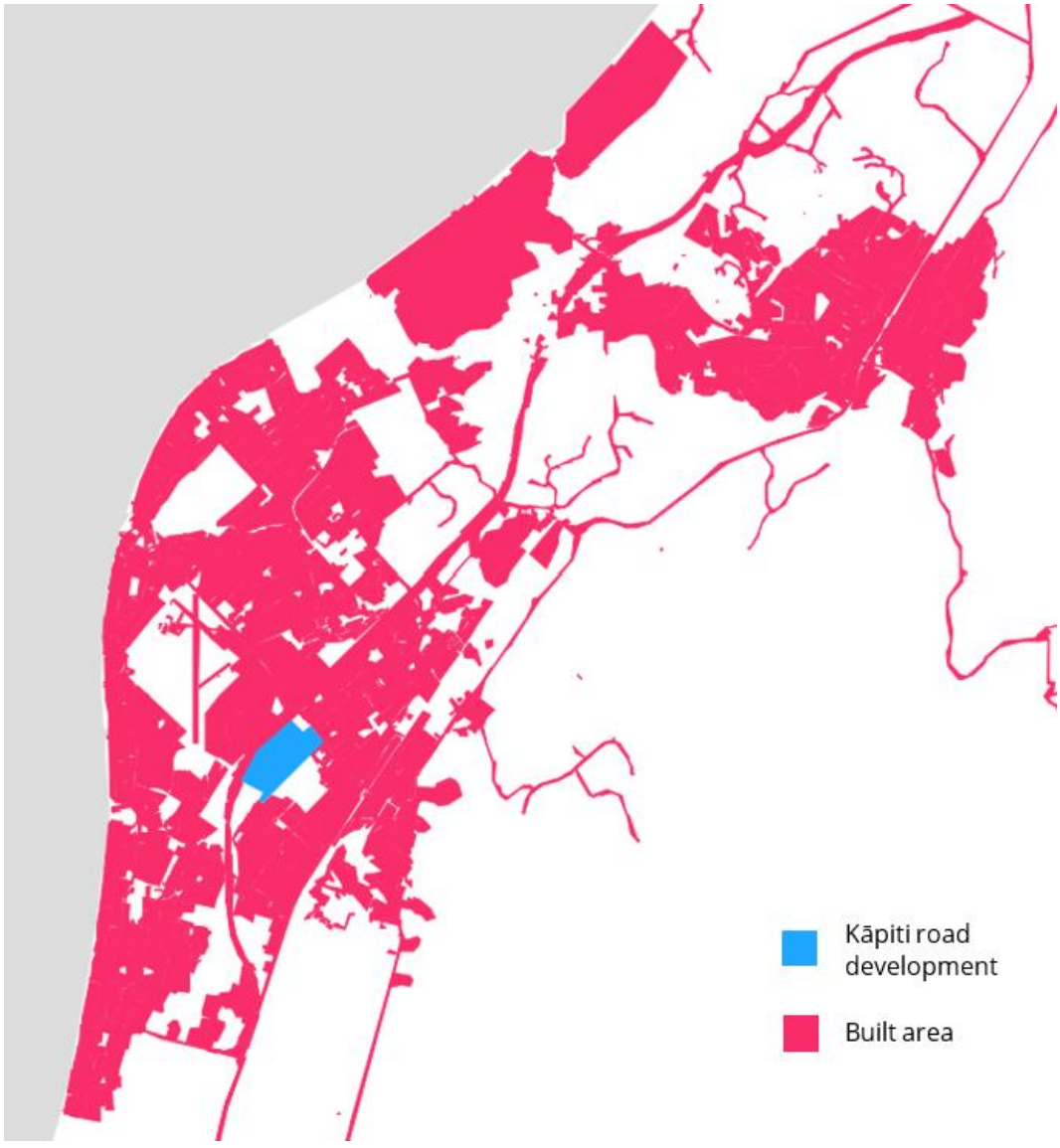
On an annual basis we estimate this saving is a little over $312,000. This modest saving does accumulate, and over 30 years amounts to $4.3 million in savings.

4. Kāpiti road boosts the environment

The 28ha site represents just 0.85% of Kāpiti's built area

When considering how to accommodate future growth, it is important to keep environmental impacts in mind. A key consideration in the district's growth strategy is promoting a compact urban form.[17] This development is a good example of a compact urban form, adding just 0.85% of the regions-built area for an additional 4.3% increase in housing (see Figure 8).

Figure 8: The proposed development is a small fraction of the built environment



Source: Sense Partners estimates from LINZ data.

[17] Kāpiti Coast District Council (2022) *Te Tupu Pai: Growing Well*.

The development restores the Wharemauku stream wetland

An important aspect of the development is the restoration of the Wharemauku stream to a more natural, meandering alignment. This expands the area occupied by the stream and creates a new wetland environment. Wetlands can create a range of significant economic and ecological benefits which we aim to account for.

A study by Patterson & Cole (2013)[18] draws on local and international evidence to place an approximate monetary value on the economic and ecological services that New Zealand wetlands provide. Table 2 sets out their estimates, which we draw on to estimate a value of the wetland aspect of the development.

Using the net value of wetland services, which avoids double counting, and adjusting to 2024 dollars, yields a value of **$41,000 per hectare in annual benefits**. By comparison, the Treasury CBAx tool recommends a value of **$67,100 per hectare**.[19] This represents the avoided cost of replacing wetland ecosystem services with physical infrastructure.

Using these two measures as a range, we estimate a **value over 30-years** between **$2.8 million and $4.6million** in total benefits from the wetland restoration.

Table 2: The total economic value of New Zealand wetlands

Ecosystem service	Gross value	Net value
	$2012 millions	
Water provisioning	14	14
Recreation	218	218
Cultural	787	787
Gas regulation	118	118
Disturbance regulation	3,242	3,242
Waste treatment	743	743
Refugia	195	0
Water storage & retention	3,403	0
Total	**8,720**	**5,122**

Source: Patterson & Cole (2013)

[18] Patterson, M. & Cole, A. (2013) "Total Economic Value of New Zealand's land-based ecosystems and their services," *Ecosystem services in New Zealand – conditions and trends.* Manaaki Whenua Press.
[19] Treasury (2023) *CBAx tool impacts database*.

The development aims for a walkable 15-minute community

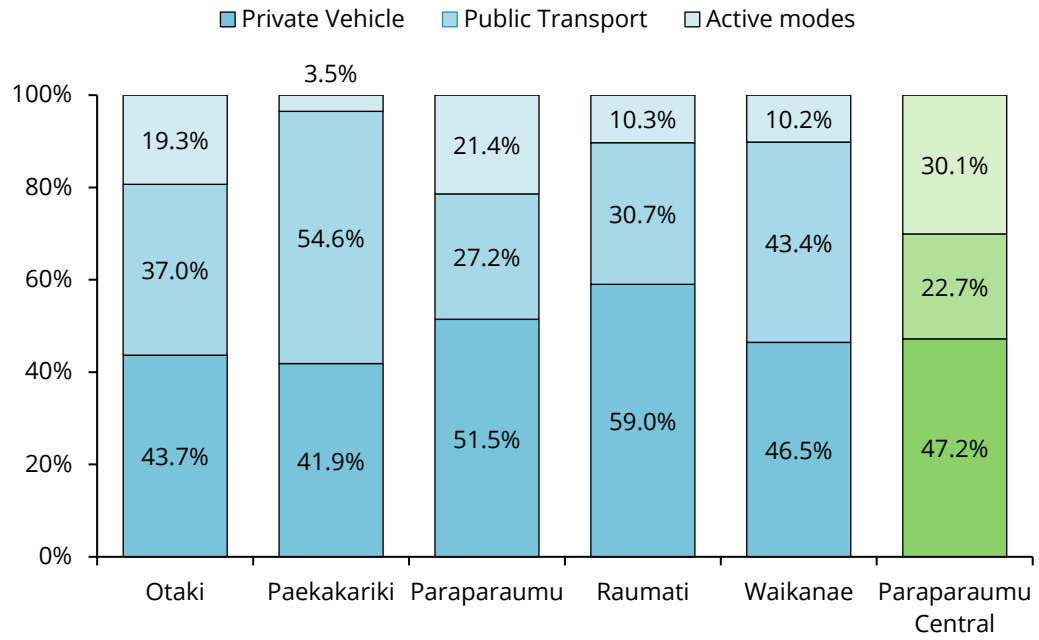
The development combines residential, retail, and mixed-use commercial activities with a location right next to Paraparaumu town centre. This gives the development the potential to become a walkable community, with a high share of active modes and public transport.

To analyse the transport impacts of the development, we use a high-level transport model that conforms to the typical 4-stage pattern. For trip generation, we draw on the Sense Partners demographic projections across the Wellington Region.

For trip distribution, we estimate a gravity model using 2018 census travel to work/education data, OSM data of the 2018 road network, and Metlink GTFS data of the public transport network. We pair this with a multinomial logit mode choice model, similarly, estimated with census and network data.

Figure 9 below shows our model results for Kāpiti with the development complete. Paraparaumu Central has a high share of active modes, with 30% of school and work commute trips by cycle or walking. Notably, the model predicts a relatively low share for public transport. This is explained by the sites' proximity to the Kāpiti Expressway onramp, making travel by private vehicle attractive.

Figure 9: Predicted mode share weighted by predicted trips across Kāpiti



Source: Sense Partners

We compare these transport outcomes to an alternative way of accommodating housing growth, through more disbursed development. The prominence of active modes results in a

small decrease in annual GHG emissions from private vehicle travel (3.6 tonnes CO_2-e), and a modest decrease in emissions from public transport (314.5 tonnes CO_2-e).[20]

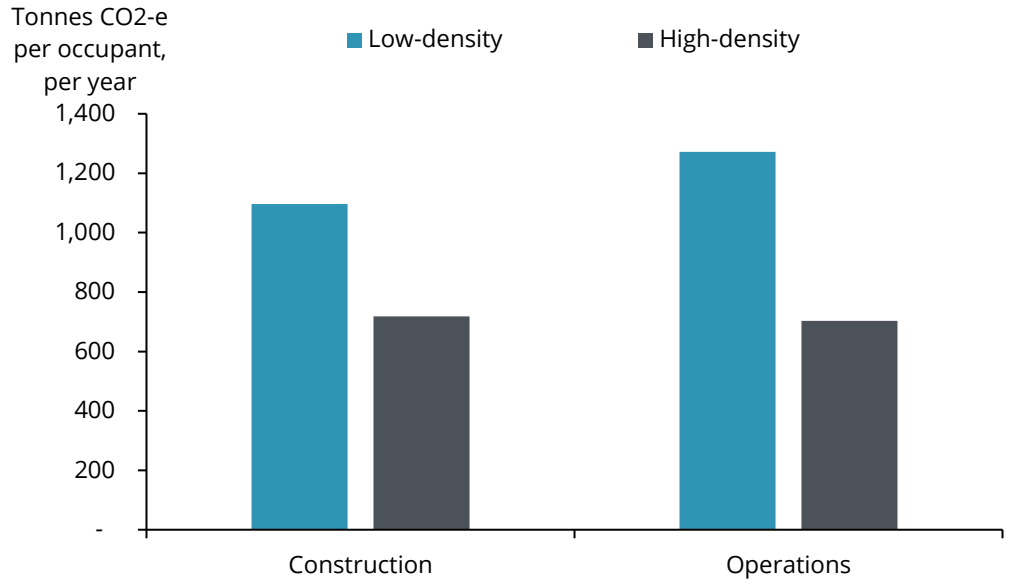
Allowing density enables emissions reductions

When looking at building emissions, there are two key categories: construction emissions, and operating emissions. Higher density dwellings have higher per m^2 construction emissions, but overall lower emissions. This is mostly due to smaller dwelling sizes, even when accounting for lower occupancy. Operating emissions are the dominant source of building emissions, accounting for 70-90% of lifecycle emissions.[21]

We use data on household and construction emissions from Statistics New Zealand to estimate the operating and construction emissions of the average New Zealand dwelling[22]. Our estimate of emission per person per year (50-year lifespan) are shown in Figure 10 below. These estimates yield a **reduction of 2,366 tonnes of CO_2-e per year** arising from the development.[23]

Figure 10: Higher density dwellings have higher construction but lower operating emissions

Building emission by density



Source: Sense Partners

[20] This is based on a public transport emissions factor at a per passenger km level. In reality, public transport vehicle kilometres are not perfectly sensitive to changes in demand, meaning lower demand for public transport may not result in corresponding reductions in public transport emissions. However, when considering marginal impacts, a per passenger kilometre emissions factor remains a useful approximation of the long run impact on emissions.

[21] Adalberth, Almgren, and Petersen 2001.

[22] Data on the split between high- and low-density dwellings in the New Zealand context is not available, so we use the relative shares estimated by Norman et al. (2006).

[23] This estimate is based on a reduction in operating emissions of 1,420 tonnes and a one-off 47,300 tonne reduction in construction emissions spread out over 50 years.

Combined, our estimate of transport and building emissions reductions **totals 2,686 tonnes CO_2-e per year**. With a carbon price between $218 and $453 per tonne by 2030,[24] the monetised impact of this reduction is between $0.59 million and $1.2 million per year. Over 30 years, the present value is between $7.0 million and $13.9 million.

Under the NZ emissions trading scheme (NZETS), the total level of emissions is set administratively. This means that these emissions impacts won't lower total emissions. Any emissions savings caused by this development will be freed for use elsewhere in the economy.

However, it does mean that total emissions can be reduced at a lower total cost. Where Council's enable more emissions-efficient urban forms, they make an important contribution to lowering the cost of decarbonisation.

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