Quarter One: July 2021

Infrastructure Quarterly

A quarterly snapshot of issues and trends for New Zealand's infrastructure sector by the New Zealand Infrastructure Commission, Te Waihanga.

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CE, Te Waihanga

Foreword - Ross Copland

Welcome to the first edition of Te Waihanga Infrastructure Quarterly. Our team is regularly interacting with government, decision makers, councils, contractors, and procuring agencies as we provide advice, collect information for the Pipeline and develop the New Zealand Infrastructure Strategy.

From these experiences we draw unique insights about what's on the horizon which we think will be of value to the sector. This report is our way of sharing this with you, giving you visibility of both the opportunities and challenges across sectors and regions based on the latest information available.

A big part of this comes from the Infrastructure Pipeline. Pipeline data is updated quarterly and has reached a total of $61 billion. There is plenty we can learn from data in the Pipeline – we can see regions that are likely to face resource pressure, and sectors that might have excess capacity. We can consider the potential impact of projects we know are likely to happen but for which infrastructure providers don't have the certainty required to upload them to the pipeline just yet. We have also included an economic insights section from our Principal Economist, Peter Nunns that will help make sense of the infrastructure and construction economic data.

We hope you enjoy this first issue and we welcome your feedback so we can continue to provide meaningful insights to the sector.

What's in the Pipeline

Our Pipeline pulls together key information on the infrastructure projects planned for New Zealand and sources project data direct from government, councils, utilities and others. The Pipeline has grown from approximately 176 projects and $6.1 billion in 2019 to more than 2500 projects and $61 billion of total value in 2021.

The Pipeline includes projects that have a level of certainty around timing. For projects with a longer horizon such as Let's Get Wellington Moving (Tunnel, Mass Transit etc.) and Auckland Light Rail, the ANZIP Pipeline and others can be a useful source of information.

We are continuing to build on and improve the data in our Pipeline and it remains a useful one-stop summary of what's coming up for industry.

You can find the pipeline on our website.

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Pipeline snapshot

2,586 projects

143 organisations

$61b total projects

$24b under construction

$7.8b water projects

$27b transport projects

$5.4b housing projects

$4.3b education projects

207 shovel ready projects

$3.4b shovel ready projects

Recent changes

Our Pipeline is updated quarterly. Key changes since the last update include:

- 19 organisations have updated the information about their projects. Hamilton City Council increased the value of their project by $1 billion, and it's now $1.7 billion, Ministry of Health upped theirs by $500 million, and Auckland Council $600 million.
- 23 projects worth $200 million have been completed and removed from the pipeline
- The total value of projects in the pipeline has risen from $56 billion to $61 billion
- The Ministry of Justice has been added to the pipeline. They are currently planning or delivering 35 projects worth $700 million, including major upgrades in Rotorua, Waitakere, and the Auckland High Court.

Auckland's per capita investment highest in New Zealand

We've modelled the projects in the Pipeline to estimate the time and location of construction spending. Infrastructure providers tell us they are planning to rapidly ramp up spending over the next two years. Projected spending declines in later years as project certainty declines.

While all regions are expected to experience significant spending, pipeline projects are concentrated in Auckland, the Waikato, and Canterbury. This data under-estimates expected construction activity in some regions because we're still working to get all infrastructure providers to contribute. For example we haven't got data from Wellington City Council, but their Long Term Plan indicates approximately $2.66 billion in total capital expenditure over 10 years, around $1.5 billion of which is expected to be invested over the next five years.

This difference in the levels of coverage is shown by this table displaying per capita Pipeline spending per region:

REGION	PER CAPITA
Auckland	$17,428
Bay of Plenty	$5,656
Canterbury	$6,863
Gisborne	$4,959
Hawke's Bay	$3,514
Manawatū - Whanganui	$12,215
Marlborough	$5,378
Nelson - Tasman	$1,823
Northland	$8,008
Otago	$14,521
Southland	$3,555
Taranaki	$7,177
Waikato	$11,648
Wellington	$11,290
West Coast	$4,891

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Auckland powers ahead of other regions with projects in Pipeline

0 projects | 1-9 projects | 10-49 projects | 50-99 projects | 100 > projects

Ashburton District Council	1
Auckland Council	688
Bay of Plenty Regional Council	4
Bike Northland Incorporated / Whangarei District Council	1
Buller District Council	3
Carterton District Council	-
Central Hawke's Bay District Council	-
Central Otago District Council	-
Chatham Islands Council	-
Christchurch City Council	2
Clutha Community Hub Charitable Trust and Clutha District Council	1
Clutha District Council	-
Dunedin City Council	22
Far North District Council	6
Gisborne District Council	2
Gore District Council	2
Greater Wellington Regional Council	3
Grey District Council	4
Hamilton City Council	55
Hasting District Council	2
Hauraki District Council	-
Hawkes Bay Regional Council	4
Horizons Regional Council	4
Horowhenua District Council	1
Hurunui District Council	1
Hutt City Council	2
Invercargill City Council	1
Invercargill City Council and Invercargill Central Ltd	1
Kaikōura District Council/ Kaikōura Community Charitable Trust Board	1
Kaipara District Council	4
Kapiti Coast District Council	1
Kawerau District Council	-
Mackenzie District Council	-
Manawatū District Council	13
Marlborough District Council	2
Masterton District Council	2
Matamata-Piako District Council	-
Napier City Council	1
Nelson District Council	1
New Plymouth District Council	1
Northland Regional Council	3
Ophir Welfare Committee / Central Otago District Council	2
Opotiki District Council	1
Ōpōtiki District Council	2
Otago Regional Council	4
Otorohanga District Council	-
Palmerston North City Council	67
Porirua City Council	-
Queenstown Lakes District Council	28
Rangitikei District Council	1
Rotorua Lakes Council	2
Ruapehu District Council	-
Selwyn District Council	-
South Taranaki District Council	2
South Waikato District Council	-
South Wairarapa District Council	-
Southland District Council	-
Stratford District Council	2
Taranaki Regional Council	1
Tararua District Council	1
Tasman District Council	1
Taupo District Council	-
Tauranga City Council	1
Thames Coromandel District Council	1
Thames-Coromandel District Council	-
Timaru District Council	-
Upper Hutt City Council	1
Waikato District Council	-
Waikato Regional Council	8
Waimakariri District Council	1
Waimate District Council	-
Waipa District Council	-
Wairoa District Council	-
Waitaki District Council	-
Waitomo District Council	-
Wellington City Council	-
West Coast Regional Council	3
Western Bay of Plenty District Council	1
Westland District Council	3
Westland District Council and Franz Josef Developments Ltd	1
Whakatane District Council	-
Whanganui District Council	1
Whangarei District Council	3

Transport spending dominates

Transport projects represent the largest single category of projects, followed by water. Transport investment is expected to be consistent over the next five years, while water investment is expected to ramp up in coming years. There are also significant ongoing opportunities in housing and vertical construction.

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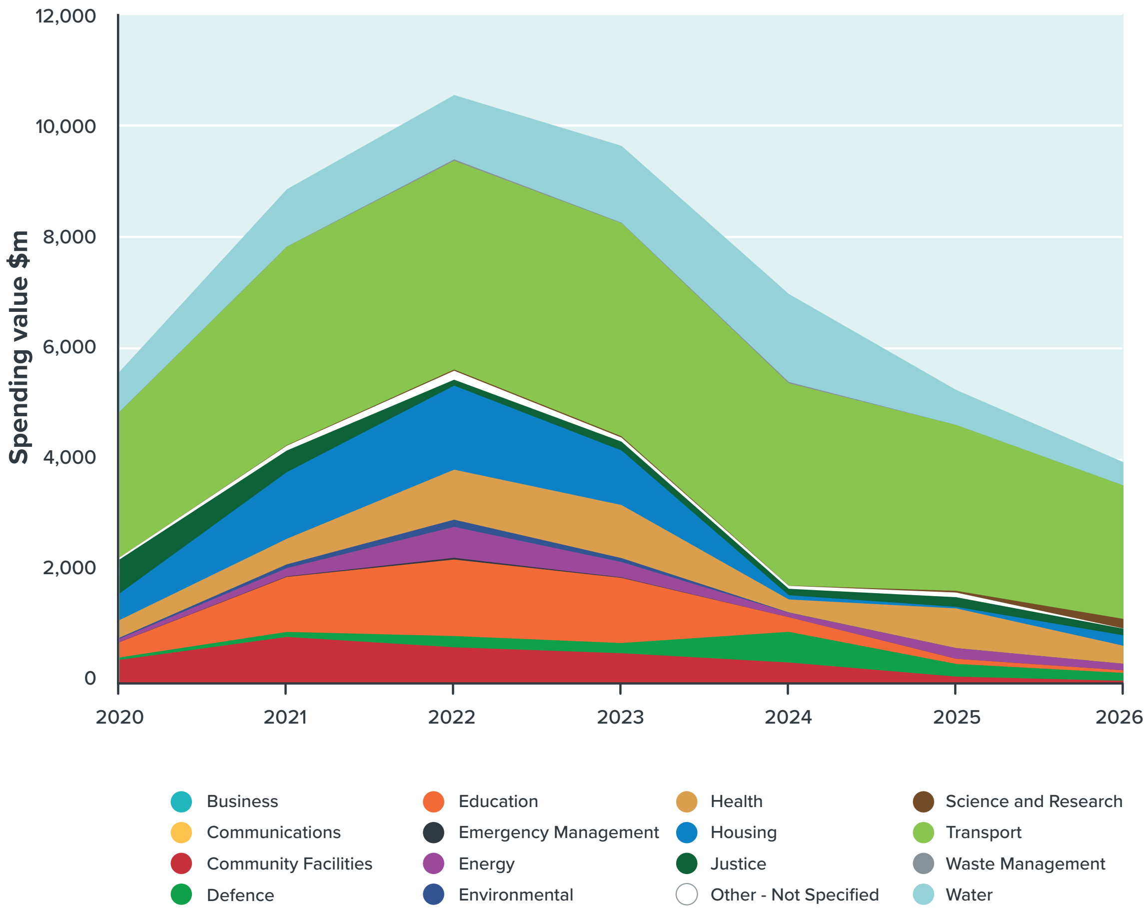
Forecasted spend by sector



While we have attempted to show an exhaustive number of projects some projects are missing because they are not part of our Pipeline.

Digging deeper

Looking beyond the Pipeline, some interesting insights into the sector can be found in data recently released by Statistics NZ.

Their release on building activity shows that non-residential building activity rose 2.6% in the March 2021 quarter. However, the data also reveals that in the year ending March 2021 the value of non-residential work was down 8.9% compared to the previous year. This was largely driven by a decrease in Auckland even as the value of residential construction rose in the region.

Another recently released Statistics New Zealand report also provides some insight into the perceived impacts of COVID-19 on our construction sector, with the greatest impacts being felt in Auckland's residential sector. In a survey of builders, developers, and owners, around half of those involved in building new homes in Auckland have reported a moderate to severe impact associated with COVID-19. However, the same results show that 32% of those working in non-residential construction in Auckland reported no impact, and 34% felt it was only small.

Regional Spotlight: Manawatū

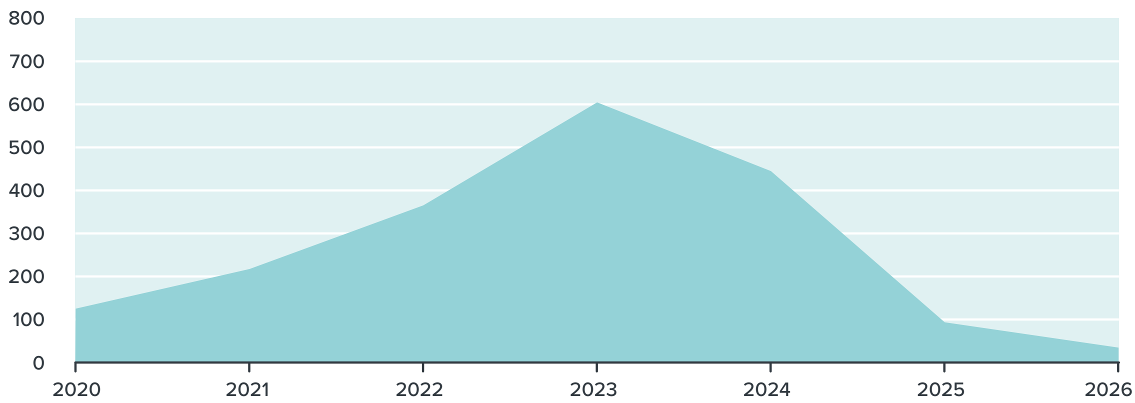
The Manawatū region has a number of significant projects occurring concurrently. There appears to be some resource pressures happening, and the rapid rise of house prices there (up 35.6%) may well be a symptom of this increase in project activity. The major projects in Manawatū are:

PROJECT	DELIVERY AGENCY	VALUE	PROJECT START DATE*
Manawatū Gorge	Waka Kotahi/New Zealand Transport Agency	500 Million – 1 Billion	Q2 2017
Central North Island Freight Hub	KiwiRail	500 Million – 1 Billion	Q4 2018
Consolidated Logistics Project (CLP) Linton Regional Supply Facility (RSF)	New Zealand Defence Force	50 – 100 Million	Q2 2020
Double Hangar and Offices (Facilities for the P8-A)	New Zealand Defence Force	50 – 100 Million	Q3 2020
Investment Ohakea Housing	New Zealand Defence Force	50 – 100 Million	Q3 2021
Turitea Wind Farm	Mercury Energy	250 – 500 Million	Q1 2009
Palmerston North Hospital Upgrade	Midcentral District Health Board	25 – 50 Million	Q1 2020
Countdown distribution centre	Progressive Enterprises Ltd	100 Million	Q1 2020

**Note project start date does not necessarily mean construction start*

Below is a breakdown of expected project spending by year (estimated based on the listed projects only).

Manawatū - Whanganui Region Forecasted Project Spending ($m)



Project Spotlight: Dunedin Hospital

Dunedin Hospital is the largest hospital build project ever undertaken in New Zealand's history. The scale of the project means it will have significant ripple effects beyond its site.

$1.47b Total project value

The hospital will include:*

421 beds | **16** theatres | **30** ICU beds

6,000 worker supply/demand gap

The business case predicts that the peak annual impact will be around $100 million, which is 1.6% of Dunedin's GDP.

Delivering a project of this scale and complexity in a small construction market like Dunedin is challenging and risky. A large labour force will need to be recruited and accommodated, but the local construction market is currently constrained. There appears to be a lack of depth in some specialist subcontractor markets (both in the workforce size and the apprenticeship pipeline) and a general shortage of supervisory resources with the experience to manage teams on a large project.

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BCITO Chief Executive Toby Beaglehole says, "The supply and demand gap in the Dunedin construction sector sits within the context of a $28.3 billion infrastructure and construction project pipeline in the wider Otago region and a workforce supply and demand gap of over 6,000 workers based on current intentions."

This will create challenges across the market for projects that are competing for those resources and Beaglehole notes that "While work is being done to attract career changers, school leavers, tertiary graduates and job seekers no intervention is likely to meet the current workforce demand in the short to medium term meaning not all projects in the region will proceed as planned."

It is probable that during construction, projects will face inflationary pressures as competition for skilled labour increases. The influx of labour will need to be carefully planned and managed to avoid creating other problems, such as pressure on housing supply.

The Dunedin City Council led a project in 2019/2020 to forecast construction and infrastructure sector workforce numbers in light of the New Dunedin Hospital project. Since then the skills and jobs hub linked to the Hospital project has been established and an Otago Regional Skills Leadership Group has been established.

Clear and regular communication between all projects in the market will be essential to ensure risks around resource capability can be managed. Equally important is thinking about what happens after the build. While the "sugar hit" of stimulus from construction will be welcomed by many, it could have a recessionary impact when finished.

Clear planning is required to consider how both Dunedin – and the wider construction market – can be left materially better off when the build is done.

In this lies potentially Dunedin Hospital's greatest opportunity.

Over the course of the hospital build, there is likely to be more than 10,000 construction workers who pass through the site. These workers represent a significant portion of the future of our industry.

How can the opportunity of bringing each of them through the biggest hospital project in our history be leveraged to catalyse the industry and workers we need for tomorrow?

** The hospital will include 421 beds, 16 theatres (expandable to 21) and 30 ICU or high dependency beds (expandable to 40)*

Economic insights

It's an exciting time for industry with infrastructure providers planning more projects than ever. However, the growing pipeline of work coincides with major constraints to scaling up and significant competing pressure for resources.

COVID-19 continues to place pressure on skilled migration and construction material supply chains. Limited managed isolation and quarantine capacity and visa processing bottlenecks make it more challenging to source skilled workers.

The Skills Shortage, Recruitment & Immigration Challenges in the Construction Sector Report (July 2021) found that there are 3229 current vacancies across 135 firms. 90% of these firms are having difficulty recruiting in New Zealand, with 66% getting no domestic applicants.

Of those trying to recruit from overseas, more than half say the exception process is too complex, a quarter say the process takes too long and costs too much, 65% asked for clearer guidance from Immigration New Zealand, and 53% want contact with officials who can help them through the process.

Work is underway to train more local workers, but overall growth in construction employment appears to be slowing. These supply-side constraints are driving up prices and pushing out project timeframes. The 2021 CCNZ Teletrac Navman Construction Industry Survey indicated that while 50% of respondents are confident in the outlook of the construction industry, 80% said shortages of people and skills were a key challenge facing the industry. Key industry participants highlight the severity of these challenges:

"The shortage of skills and people is impacting on all aspects of the industry, design, engineering, construction and maintenance. It is likely to increasingly act as a handbrake on the delivery of central and local government projects and programmes as we ramp up our infrastructure investment."

Peter Silcock, Chief Executive of Civil Contractors New Zealand

"In our business, we have vacancies for senior and experienced project managers down to drainlayers, asphalt operators and labourers. You simply can't train for a lot of the roles we need – highly experienced engineers, project managers, specialist infrastructure skills and professional services. This is why that MIQ quota is so critical for ensuring we can deliver the Government's stimulus programme which will benefit all New Zealanders."

Peter Reidy, Chief Executive of Fletchers Construction

A second challenge is labour productivity in construction, which declined in 2019 and 2020. Productivity growth could help us solve some of our capacity challenges by allowing us to do more with less. In a constrained market, we can't afford to lose productivity.

Lastly, residential construction continues to rise, responding to unprecedented increases in demand for housing. Increased home-building will help to address New Zealand's housing deficit, but some infrastructure projects may face increased competition for resources as a result. There's a real need to balance these competing pressures.

Te Waihanga is considering issues such as these as we work to develop a New Zealand Infrastructure Strategy. With New Zealand lacking a lot of the critical infrastructure we need, removing roadblocks and building capability will be essential. This will be a long-term challenge, and in the meantime, industry will need to think hard, plan carefully and look at the steps they can take to make these projects a reality.

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Macroeconomic update

Economic activity has rebounded from COVID-19

- Total economic activity in the March 2021 quarter was 8.8% up from the previous year
- Construction activity continues to grow more slowly than the overall economy

Productivity is going backwards

- There was zero economy-wide labour productivity growth in 2020
- Construction productivity declined by 2.8%

Private investment is up, but government investment continues to lag behind

- Private sector investment in the March 2021 quarter is up 11% relative to last year
- Residential construction is leading the investment boom: new dwelling consents rose 17.6% in the December 2020 quarter relative to the previous year
- Government investment was 1.9% lower in March 2021 quarter relative to last year

Construction employment grew through Covid and more women are entering the trades

- Over the last five years female employment in construction rose by 4.9% per year, while male employment rose 3.5% per year
- One in seven construction sector workers is female, and there is approximately 16% lower pay for full-time female workers, averaged across all trades and roles.

Construction prices and house prices are still inflating

- Residential and non-residential building prices are still rising faster than consumer prices
- The civil construction price index is rising more slowly, which doesn't reconcile with anecdotes about cost pressures for infrastructure
- House prices are still rising at double-digit rates despite measures to cool the market.

ECONOMIC OUTCOME	CHANGE RELATIVE TO SAME QUARTER IN PREVIOUS YEAR			AVERAGE ANNUAL CHANGE LAST 5 YEARS
	MAR-21	DEC-20	MAR-20	
Real gross domestic product				
Total economy	+8.8%	-3.5%	+5.4%	+4.6%
Construction sector	+2.2%	-0.5%	+0.4%	+2.3%
Real investment				
Private sector	+11.4%	-3.1%	-2.0%	+4.7%
Central and local government	-1.9%	+1.2%	+0.4%	+2.4%
Labour productivity				
Total economy			+0.0%	+0.8%
Construction sector			-2.8%	+0.7%
Construction employment				
Male	+2.0%	+6.9%	+6.5%	+3.5%
Female	+11.9%	+17.4%	+4.1%	+4.9%
Total	+3.3%	+8.2%	+6.3%	+3.7%
Construction wages				
Male	-6.3%	+0.6%	+1.0%	+2.2%
Female	+6.9%	+0.7%	-0.7%	+5.1%
Total	-4.5%	+0.4%	+0.6%	+2.5%
Construction activity				
New dwelling units		+17.6%	+1.2%	+7.9%
New dwelling floorspace		+14.1%	+1.6%	+5.0%
New non-residential floorspace		-23.6%	-7.5%	-3.3%
Prices				
Consumer price index	+1.5%	+1.4%	+1.4%	+1.8%
Residential building construction	+3.0%	+3.0%	+2.4%	+4.2%
Non-residential building construction	+1.6%	+1.9%	+2.4%	+4.2%
Civil construction	+0.8%	-0.1%	+0.4%	+2.0%
House price index	+22.0	+15.5%	+10.7%	+8.1%

Sources: Statistics New Zealand; Reserve Bank of New Zealand