

# Advice to TEC for training investment in construction and infrastructure in 2025.



**WAIHANGA ARA RAU**

Construction and  
Infrastructure

Workforce Development Council

November 2023

# SECTION A – CONTEXT

## A1. Context that supports our advice

Waihanga Ara Rau is responsible for advice on mode<sup>1</sup> and scale of provision<sup>2</sup> for all qualifications in our coverage, formally through the [Tertiary Education Commission](#) (TEC) investment advice and informally through mechanisms such as out-of-cycle investment advice.

We have provided specific investment advice on a small set of qualifications as per TEC guidance. This has concentrated on those combinations of industries, regions and projects facing significant<sup>3</sup> shortages and where there has been an increase, or projected increase, in training uptake. This does not imply that there will not be growth, an associated need, or skills shortages in the industries that are not explicitly mentioned in the investment advice section [B].

### Benchmarking of reference data to 2021

Investment advice submitted to TEC for delivery in 2025 is based on **'growth or decreases' recommendations benchmarked on the 2021 delivery year, being 67,805 total learners and 32,035 EFTS (effective full-time students)**.

This reference point allows for the inclusion of Targeted Training and Apprenticeship Fund (TTAF) and Apprentice Boost initiatives impacts. It also creates a justified target for delivery across all [Construction and Infrastructure sectors](#) in 2025. This also accounts for fluctuations in 2023 and 2024 delivery volumes as the economy recovers, and the industry adjusts to the [end of TTAF](#).

With TTAF ending in 2022 alongside worsening economic conditions, learner numbers and training volume have fallen below forecasts in 2023 data. However, the underpinning drivers of housing shortages, the pipeline of construction and infrastructure projects, weather event recovery and infrastructure investment remain. The drop in mortgage rates forecast for 2025 will also likely add to the demand for workforce training in 2025.

### Supporting Data

*Supporting data for volume delivery, learner numbers, five-year pipeline of work and supply Vs demand workforce can be found in [Appendix 1](#).*

In terms of the five-year project pipeline value, this has grown from \$204B in July 2020 to a peak of \$296B in December 2022, and \$277B in August 2023.

The workforce has not been able to keep up with demand, with a gap of 326,000 people forecast in quarter one of 2025, based on industry intentions and 97,000 based on our 'most likely' modelling in the [Workforce Information Platform](#).

## A2. Strategic Sector and Regional Context that supports our advice.

Please refer to [Appendix 2](#) of this advice for a summary for each [Strategic Sector](#). This summary provides general context for each Strategic Sector. However, in many cases, it also directly supports investment advice provided herein.

<sup>1</sup> Mode refers to the delivery mode of qualifications, credentials, and programmes. Some of the modes include work-based and provider-based.

<sup>2</sup> Scale of provision refers to the investment into qualifications measured by the total number of EFTS (effective full-time students), which is a learner undertaking a course totalling 120 credits.

<sup>3</sup> Significant being 20 or more people in a specialist occupation and/or specific region often for a specific project, e.g. cyclone recovery.

## SECTION B – Investment Advice

### BI. Specific qualifications and credentials we want to see **growth** in (that can be supported by TEC investment in 2025)

Qualification / Credential	Mode(s)	Region(s)	Scale of change	Evidence of workforce need	WDC Priority
<b>Level 2</b>					
Introduction to Infrastructure Works Micro-credential (4430)	Provider based in school environment and work-based learning	Hawke's Bay and Tairāwhiti (Gisborne)	Increase of <b>500</b> learners	In 2021 there were a total of 2,463 infrastructure workers: <b>1,884 in the Hawke's Bay and 579 in the Tairāwhiti region</b> . At the same time, there were 345 learners. <sup>4</sup> The <b>demand for labourers is forecast to increase from 331 in 2023 to 3,339 in 2025</b> a 900% increase which is far from BAU <sup>5</sup> . If 14% of the peak recovery forecast (10,838 <sup>6</sup> ) were in training in 2025 this would equate to 1,517 people.	High
New Zealand Certificate in Infrastructure Works (Level 2) (2522)	work-based learning			Please refer to: <a href="#">Appendix 3: Workforce Demand with Weather Recovery Evidence</a>	
<b>Evidence that this provision will meet the workforce need</b>					

*As at the date of this advice, it is not clear what the exact mix will be between the two listed qualifications.*

Waihangara Ara Rau is working with the Transport Rebuild East Coast Alliance (TREC) to embed a training culture in the East Coast recovery project, in the same way the Stronger Christchurch Infrastructure Rebuild Team (SCIRT) built training into the Christchurch rebuild.

This advice has been reviewed and confirmed by the TREC People and Culture team. They are in an establishment phase, with:

- \$400M in funding approved
- 23 sites underway (target of 60 by the end of 2023) and
- 160 underway in early 2024.

As the project gears up to having 1,000 people on the ground across multiple sites by the end of 2024, the project team sees the provision of pre-trade, transitional and introductory training as a key focus for building the capacity of the workforce.

Advice from industry currently supports the New Zealand Certificate in Infrastructure Works (Level 2) as the preferred onboarding point for new learners but the Introduction to Infrastructure Works Micro-credential is forecast to replace this as the preferred transition point. Both are at level 2, meaning funding allocation by level wouldn't be impacted by the flexibility in advice. However, we would support the allocation of funding by qualification against any combination of either qualification. The TREC project team sees the workforce development focus transitioning to level 3 to 6 qualifications as the project progresses, but the initial focus is on building capacity.

<sup>4</sup> Equating to 14% of the workforce during COVID but essentially a BAU situation. Source Nga Kete learner data and Waihangara Ara Rau Workforce Information Platform.

<sup>5</sup> Source Te Waihangara Infrastructure Recovery workforce forecasting.

<sup>6</sup> The recovery workforce forecast peaks at 10,838 in 2025 – [Appendix 3](#)

Level 3					
New Zealand Certificate in Infrastructure Works (Level 3) (4440)	Work based learning	Hawke's Bay and Tairāwhiti (Gisborne)	<b>500 learners</b>	This is <b>less than 17% of the 3,407</b> estimated recovery workforce on the East Coast TREC project in 2025.	High
New Zealand Certificate Infrastructure Works Plant Operation (Level 3) (4436)			<b>250 Learners</b>	This is <b>less than 12% of the estimated 2,053</b> recovery workforce on the East Coast TREC project in 2025.	
NZC Civil Infrastructure Bulk Earthworks L3 [4439]			<b>200 Learners</b>	This is less than 10% of the estimated 2,053 machinery operators forecast TREC project in 2025. This percentage is less than other sectors due to the presence of skilled forestry earthworks operators in the region, who are already transferring from forestry earthworks to the TREC project. <sup>7</sup>	

#### Evidence that this provision will meet the workforce need

If the designing of the Transport Rebuild on the East Coast (TREC) is the prelude to this story and chapter one is introductory training, then this is chapter two where the workforce starts to specialise.

A representative from the TREC alliance stated the project is targeting 1,000 people with “boots on the ground” in 2024 (this will be the focus of out of cycle advice to TEC for 2024 delivery as discussed) as these new workers will enter through one of the level 2 pathways. There will need to be pathways for industry to help workers specialise in one of a range of skills and progress their careers. Industry endorse the following qualifications as the preferred entry points for entrants to the profession:

- **New Zealand Certificate in Infrastructure Works (Level 3) (4440)**
- **New Zealand Certificate Infrastructure Works Plant Operation (Level 3) (4436)**
- **NZC Civil Infrastructure Bulk Earthworks L3 [4439]**

See Supplementary [Appendix 4 Civil Career pathway](#) or [here](#).

In the [2023 Construction Industry Survey](#) 36% identified skill shortages and the availability of workers as the main challenge their business faced and another 36% as a need. When asked what skillset was needed most 28% identified machine operators and 63% identified them in the top three skillsets needed.

By the start of the delivery cycle for this advice Q1 2025 Te Waihanga is forecasting over 7,000 people will be needed on the TREC project across Tairāwhiti and the Hawke's Bay with two villages built in Wairoa and Gisborne to help accommodate them.

<sup>7</sup> Source for all three evidence pieces is from Te Waihanga Infrastructure Recovery workforce forecasting.



Supporting Evidence						
Impacted Industries	Impacted Roles		Additional equipment Operator forecast			
<ul style="list-style-type: none"> <li>Civil Infrastructure</li> <li>Demolition</li> <li>Forestry Earthworks</li> <li>Traffic Management (TTM)</li> <li>Traffic Incident Management (TIM)</li> <li>Bitumen Plant Production and Surfacing</li> <li>Road Construction and Maintenance</li> <li>Bulk Earthworks</li> <li>Deep Piling and Foundations</li> <li>Civil Engineering Laboratory</li> <li>Roadmarking</li> </ul>	<ul style="list-style-type: none"> <li>General hand</li> <li>Equipment operator including excavator, grader, hydro excavation, heavy machine, multi-skilled and mobile plant operators.</li> <li>Civil infrastructure tradespeople including civil carpenter, concrete worker and formworker.</li> <li>Asphalt plant and bitumen plant operators</li> <li>Asphalt and bitumen product manufacturing</li> <li>Health and safety coordinators</li> <li>Forestry earthworks leading hand</li> <li>Site traffic management supervisors and traffic incident managers</li> <li>Roadmarking assistants, operators, and senior road marking operators</li> <li>Civil site supervisor</li> <li>Civil engineers</li> </ul>					
			<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>
		Backhoe Operator	705	532	492	437
		Bulldozer Operator	482	349	306	240
		Concrete Pump Op ..	304	242	153	117
		Crane, Hoist or Lift ..	1,478	1,252	797	559
		Earthmoving Plant ..	1,500	1,183	1,058	982
		Excavator Operator	2,802	2,120	1,749	1,503
		Grader Operator	482	349	306	240
		Loader Operator	705	532	492	437
		Mobile Plant Operator	635	479	383	279
		Paving Plant Operator	608	634	606	604
		Road Roller Operator	755	677	604	597

#### Level 4

New Zealand Certificate Infrastructure Works (Level 4) (Civil) with strands in Earthworks, Road Construction, Road Maintenance (2725)	Work based learning	Hawke's Bay and Tairāwhiti (Gisborne)	<b>250</b> learners	This is less than 13% of the estimated 2,053 machinery operators forecast TREC project in 2025. <i>Source Te Waihangara Infrastructure Recovery workforce forecasting.</i>	High
New Zealand Certificate in Infrastructure Works (Bitumen Surfacing Construction) (Level 4) (3775)			<b>40</b> learners	This is less than 5% of the estimated 881 technicians forecast TREC project in 2025. <i>Source Te Waihangara Infrastructure Recovery workforce forecasting.</i>	Medium
New Zealand Certificate in Piling (Level 4) (3966)			<b>40</b> learners	This is less than 5% of the estimated 881 technicians forecast TREC project in 2025. <i>Source Te Waihangara Infrastructure Recovery workforce forecasting.</i>	

#### Evidence that this provision will meet the workforce need

In July 2023, [Waka Kotahi Acting Group General Manager Transport Services said](#), "a lot of work has gone into setting the Alliance up for success, one of the key aspects of the Alliance is the East Coast first philosophy regarding how work will be delivered.

The East Coast has a strong pool of hard-working, skilled, and experienced contractors, consultants, and businesses who understand both road building and the East Coast whenua.

Locally owned and operated contractors will be prioritised when it comes to delivery of the physical works. There are considerable opportunities for these businesses and the East Coast first approach gives them the confidence to invest in their people, in their machinery, and in their region."

The challenge of the East Coast first philosophy in the need to upskill a significant amount of people in the region Infometrics sector Profile for Infrastructure identified 1,521 filled roles in the Hawke's Bay in 2022 and 452 in Gisborne.

The qualifications listed are the industry endorse options to meet the workforce needs for Machinery operators, Technicians, and trade workers for the TREC project in 2025:

- New Zealand Certificate Infrastructure Works (Level 4) (Civil) with strands in Earthworks, Road Construction, Road Maintenance (2725)**
- New Zealand Certificate in Infrastructure Works (Bitumen Surfacing Construction) (Level 4) (3775)**
- New Zealand Certificate in Piling (Level 4) (3966)**

This advice was developed in consultation with the [Civil Infrastructure SRG membership](#).

Supervision					
New Zealand Certificate in Infrastructure Works (Single Site Supervision) (Level 4) (2617)	Work based learning	Hawke's Bay and Tairāwhiti (Gisborne)	<b>100 learners</b>	<p>Traditionally, contractors have used a craft-to-foreman ratio which can vary from 8-to-1, to very large crews 15-to-1 this suggests at peak in 2025 the TREC project alone will require between 543 to 1,018 supervisors in 2025.</p> <p>This demand for supervisors will start to be realised in 2024 but increase 460% in 2025 meaning there would be workplace demand for both new people leaders to be developed and for the progression of the <i>2023 New Zealand Certificate in Business (Introduction to Team Leadership) (Level 3) (2453) graduates</i> to the Single Site Supervision qualification to fill the demand and get the new delivery site open.</p> <p>Greenlist straight to residence status for ANZSCO 133112 Project Builder which including Building Project Manager and Site Foreman is a further indication of workforce need.</p>	Medium

#### Evidence that this provision will meet the workforce need

Project Director of the TREC alliance, identifies **people leadership as a critical enabler of building both capacity and capability.**

In April 2022, the [Developing a skilled civil construction workforce](#) report by Civil Contractors NZ and the Civil Workforce Forum noted *there is an urgent need to establish well targeted pathways for training and employment for hands-on civil infrastructure construction trade skills. But a lack of connection and skilled people at supervisor or trainer level is hampering efforts to scale up. At a time when skills development is being built into procurement and there is a huge need to bring new workers on board, the industry risks only being able to train for existing workforce requirements.*

In the [2023 Construction Industry Survey](#) undertaken by Civil Contractors New Zealand and Teletrac Navman showed that 56% of industry identified Supervisor/team leader in the top three skill sets they needed and were recruiting for.

These qualifications have been endorsed by industry as the preferred options for developing team leaders and single site supervisors are considered by industry to be the most appropriate pathway to meet the people leadership and supervisor needs nationally but relating specifically to this advice the Hawke's Bay and Tairāwhiti (Gisborne) regions (*refer to [Appendix 3](#)*):

- **New Zealand Certificate in Infrastructure Works (Single Site Supervision) (Level 4) (2617)**
- **New Zealand Certificate in Business (Introduction to Team Leadership) (Level 3) (2453)** – See [section F1](#)

This advice was developed in consultation with the [Civil Infrastructure SRG membership](#).

Residential rebuild in the Hawke's Bay and Tairāwhiti					
New Zealand Certificate in Carpentry (Level 4) with optional strand in Metal Roof Cladding Installation (2738)	Work based learning	Hawke's Bay and Tairāwhiti (Gisborne)	70 Learners	This is less than 15% of the estimated 450 carpentry and steel framing workers forecast in the <a href="#">WIP platform Emergency Workforce Calculator</a> as part of the Hawke's Bay and Tairāwhiti (Gisborne) residential recovery workforce in 2025.	High
New Zealand Certificate in Plumbing (Level 4) (2663)			25 Learners	This is less than 15% of the estimated 152 additional plumbers and drainlayers forecast in the <a href="#">WIP platform Emergency Workforce Calculator</a> in 2025.	Medium
New Zealand Certificate in Drainlaying (Level 4) (2661)			25 Learners		
New Zealand Certificate in Painting and Decorating (Level 4) with strands in Spray Systems, Wallcoverings, and Specialised Coatings Painters (3568)			20 Learners	This is less than 15% of the estimated 170 painting forecast in <a href="#">WIP platform Emergency Workforce Calculator</a> 2025	

#### Evidence that this provision will meet the workforce need

The residential construction recovery workforce is forecast to peak in 2024 at an additional 1,470 people this equates to an additional 42% of the business-as-usual workforce.

The **qualifications highlighted in this section are the pathway and upskilling requirements to fulfil, meet and adequately undertake some of roles (Carpentry, Plumbing, Drainlaying, Painting and Decorating) needed to meet the construction workforce needs**, for the Residential rebuild in Hawke's Bay and Tairāwhiti (*highlighted in [Appendix 3](#)*)

The training demand for these qualifications are expected to remain high into 2025.

The relevant industries for each qualification listed, endorse these qualifications as the preferred ones for the professions/roles listed above.

The New Zealand Certificate in Carpentry (Level 4) with optional strand in Metal Roof Cladding Installation (2738) meets the [Licenced Building Practitioner Site Licence Class AOP 1 Competencies](#), a Site LBP is recognised as a competent professional in their chosen field. This advice was developed in conjunction with and supported by the [Onsite SRG Industry membership](#) (includes Carpentry).

[Journeyman registration](#) allows people to be registered and get licenced as a journeyman in one or more areas of specialisation when they have completed the **New Zealand Certificate in Plumbing (Level 4) (2663)** and/or **New Zealand Certificate in Drainlaying (Level 4) (2661)**, but haven't yet passed the Plumbers, Gasfitters and Drainlayers Board (PGDB) theory examination. Please note the Gas option is not included in this advice as increases can be covered within the baseline funding allocation.

This advice was developed in conjunction with and supported by the [Plumbing, Gasfitting, and Drainlaying SRG members \(Plumbers and Gasfitters\)](#).

The **New Zealand Certificate in Painting and Decorating (Level 4) with strands in Spray Systems, Wallcoverings, and Specialised Coatings Painters (3568)** provides the painting and decorating sector with tradespeople who can complete specific painting and decorating work to the level required of a commercially competent tradesperson. This advice was developed in conjunction with and supported by the [Finishing Trades SRG membership \(Including Painting\)](#).

**Supporting Evidence**

As noted in section A1. Context that supports our advice, there are many occupations that will experience workforce growth which we believe the funding for training can be managed within the benchmark funding. While we have only listed additional training where we have evidence of exceptional growth in a region or nationally, we note that many occupations will experience workforce growth particularly in areas responding to weather events (Northland, Auckland, Hawke’s Bay and Gisborne) and in areas with large projects these include:

Industries:	Roles:			
<ul style="list-style-type: none"> <li>• Painting &amp; Decorating</li> <li>• Flooring</li> <li>• Carpentry</li> <li>• Roofing</li> <li>• Building</li> <li>• Concreting</li> <li>• Brick laying &amp; Stonemasonry.</li> <li>• Glazing</li> <li>• Plumbing</li> <li>• Gasfitting</li> <li>• Drainlaying</li> <li>• Electrical Trade</li> <li>• Engineering</li> <li>• Civil Engineering</li> <li>• Architectural Technology</li> <li>• Quantity surveying</li> </ul>	<ul style="list-style-type: none"> <li>• Carpet and resilient flooring installer</li> <li>• Flooring planner and designer, site assessor and estimator</li> <li>• Trowel applied resin applicator; flow applied resin applicator.</li> <li>• Moisture treatment operator, underlayment system installer, mechanical preparation contractor, concrete polishing contactor</li> <li>• Timber floor installer, composite floor installer, fine floor sander and finisher.</li> <li>• Painter and decorator</li> <li>• Tiler, exterior plasterer</li> <li>• Licensed and certified plumbers</li> <li>• Qualified stonemasons</li> </ul>	<ul style="list-style-type: none"> <li>• Licensed and certified gasfitters</li> <li>• Licensed and certified drainlayers</li> <li>• Electricians, including advanced level and apprenticeships.</li> <li>• Electrician supervisor</li> <li>• Switchgear fitter and electrical installers</li> <li>• Explosive atmosphere electricians (dust, gas, or vapours may exist)</li> <li>• Data cabling</li> <li>• Entry level building, construction, and allied trades workers</li> <li>• Licensed building practitioners (LBP)</li> <li>• Qualified roofing installers</li> <li>• Kitchen and bathroom designer</li> </ul>	<ul style="list-style-type: none"> <li>• Construction co-ordinators, administrators, and project managers</li> <li>• Main contract supervisors and business owner operators</li> <li>• Carpentry site supervisors, site foreman or supervisors and operations supervisors</li> <li>• Concrete trade workers</li> <li>• Plant supervisors</li> <li>• Supervision management</li> <li>• Professional glaziers</li> <li>• Plaster manufacturers</li> <li>• Interior linings fixers or finisher</li> <li>• Ceiling installer</li> <li>• Brick and block layers, tilers, exterior plasterers, ferro-cement tank installers</li> <li>• Engineering technicians (civil, electrical, electronics, mechanical or fire)</li> </ul>	<ul style="list-style-type: none"> <li>• electrical engineers, electronics engineers, mechanical engineers and fire engineers</li> <li>• Hydrographic surveyors</li> <li>• Assistant surveyors</li> <li>• Land surveyors and surveying technicians</li> <li>• Building surveyor, building inspectors, building consultants and compliance officers</li> <li>• Technical support officers</li> <li>• Construction site managers, construction management assistants and construction project management assistants</li> <li>• Quantity surveyors</li> <li>• Architectural technicians</li> <li>• Asset managers</li> <li>• Infrastructure procurement</li> <li>• Structural detailers</li> </ul>

Qualification / Credential	Mode(s)	Region(s)	Scale of change	Evidence of workforce need	WDC Priority
New Zealand Certificate in Infrastructure Works (Pipeline Construction and Maintenance) (Level 4) with strands in Drinking-Water, Stormwater and Wastewater, and Trenchless Technologies (3858)	Work based learning	This allocation has a focus on the Hawke’s Bay and Tairāwhiti (Gisborne) but has wider application through projects to future proof the national water infrastructure.	<b>500 learners</b>	This line item includes two main drivers. 1. The East Coast rebuild which is a short-term focal point and the wider upgrade of water assets which at the end of October 2021, saw 8,117 infrastructure projects at planning stage, with a combined value of \$104b. This is an increase in 43% in planned project value since 2020. 2. The operational workforce will also need to increase. As capital projects come online, the new infrastructure will require additional staff and skill sets to operate, maintain, and monitor. See <a href="#">Appendix 5</a> Te Waihangara Project Pipeline Data October 2023 Water Sector. Water service transformation will require thousands of New Zealand workers. Employment in the wider economy is expected to rise under water service transformation, with the reform scenario providing 5,849 to 9,260 additional FTE jobs over the next 30 years (DIA).	High



### Evidence that this provision will meet the workforce need

The workforce within sector has increased by 25% over the four years to 2020 ([Water NZ National Performance Review](#)).

The priority learning pathways for the future workforce to meet this demand is the **New Zealand Certificate in Infrastructure Works (Pipeline Construction and Maintenance) (Level 4) with strands in Drinking-Water, Stormwater and Wastewater, and Trenchless Technologies (3858)**

In the year to September 2021, overall online vacancies for technicians and tradespeople across all industries increased 46%. 59% of water sector employees have no qualifications listed with their employer. See also Water Sector data in [Appendix 5 Te Waihangara Project Pipeline Data October 2023](#)

This advice was developed in conjunction with the and supported by the [Water Services SRG Industry membership](#).

This advice impacts the following:

- Industries: Pipe laying & pipe maintenance
- Roles: Installer and maintenance of pipelines and Pipe installer

### Steel Fixing/Reinforcement Installation

Steel Fixing/Reinforcement Installation for Construction and Infrastructure (Entry Level) (Micro-Credential) [Ref 4842]	Work based	National	300	<p>Te Waihangara Insights Platform has identified that an additional 85 steel fixers are required for the NI weather events alone.</p> <p>In addition to this, the development of the micro-credential was partly in response to addressing the skill gap for steel fixing industry. A role which was identified in the original <i>Construction Sector Accord: Build our people; build our future</i>, as being heavily reliant on overseas workers<sup>8</sup>.</p> <p>Related to this is the labour shortfall in related sectors such as <a href="#">concrete workers</a> (likely to always require reinforcing as part of the process).</p> <p>During the development phase of the micro-credential, Waihangara Ara Rau's engagement identified the capacity to supply at circa 250-300 across the country.</p>	High
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### Evidence that this provision will meet the workforce need

The purpose of this micro-credential is to provide a formal credential for steel fixers/reinforcement installers already working in the industry, those who are new to the industry, and to encourage school leavers into the industry.

The **Steel Fixing/Reinforcement Installation for Construction and Infrastructure (Entry Level) (Micro-Credential) [Ref 4842]** addresses an identified skill gap for **steel fixers and reinforcement installers** in the construction and infrastructure industries. The micro-credential is an entry level stand-alone credential and may lead to further qualifications in construction and infrastructure.

Waihangara Ara Rau has worked with industry, technical advisers, Strategic reference Groups, Associations (ConcreteNZ) and employers in the steel fixing/reinforcement **installation industry that identified the need for this micro-credential**.

This advice was developed in conjunction with and supported by the Tactical Industry Group to meet the industry standard for these sectors:

- Delta Contractors Limited
- Loaded Steel (Fraser Watene)

<sup>8</sup> Included as one of the roles for [Skilled Migrant Category Resident Visa](#)

- Kalmar Construction Ltd
- Harbour Concrete Constructions Ltd
- AWF Steel Fixers Canterbury Complete Reinforcing

Customer Premises Systems					
New Zealand Certificate in Customer Premises Systems (Level 4) with strand in Wireless Systems (2769)	Applies to workplace training supported by off-job training. Apprenticeship model.	National	<b>Identified need for 30 to 50 apprentices per year. Largely new delivery.</b>	<p>Following on from the recent cyclone events it was identified a need for a secure digital radio communications network to provide frontline emergency responders with a missions critical and highly available communications system.</p> <p>There has been a limited training network in place previously however there is now an urgent need to upskill and replace the current ageing workforce.</p> <p>There has been little to no training in this field for many years and with the award of a major Government contract to deliver a key part of a new Public Safety Network, we are seeing strong demand from employers for a fit-for-purpose, accessible training pathway.</p>	High

#### Evidence that this provision will meet the workforce need

The **New Zealand Certificate in Customer Premises Systems (Level 4) with strand in Wireless Systems (2769)** was developed in collaboration with the Radio Frequency Users Association of New Zealand (RFUANZ) and major employers, such as Kordia and KiwiRail, to address critical skills shortages within an ageing workforce.

*Note: This is a new delivery for 2024, a bid for strategic funding for the relevant equipment has been submitted seeking our support.*

This advice was developed in conjunction with and supported by the [Electrotechnology SRG](#) and Tactical Industry Group.

**The qualification meets the industry standard to practice in these roles:** Network Installation Technician, Master Antenna Television Technician, Radio Technician, and Home Automation Technician and Communications.

## B2. Specific qualifications and credentials we want to see decreases in (that can be supported by TEC investment in 2025)

Qualification or credential	Mode	Specific regions?	Scale of change you are seeking for 2025	Evidence of workforce need – include as text below the table or an attachment	Evidence that this provision will meet the workforce need
New Zealand Certificate in Plumbing, Gasfitting and Drainlaying (Level 3) (2660)	Provider-based	All Regions	<p>Implementation of a funding cap for 2025 applicable to all existing providers set at the lower of:</p> <ul style="list-style-type: none"> <li>The 2022 actual learner numbers (585) and volume of delivery (340) or</li> <li>The 2023 forecast learner numbers and volume of delivery.</li> </ul>	<ol style="list-style-type: none"> <li>The expansion of level 3 delivery to new sites in 2023 is impacting the implementation of the 2022 review recommendations. specifically, that Year 3 and Year 4 level 4 apprentices should be given priority with regards to the completion of their block courses.</li> <li>The progression rate for those enrolled in the level 3 to level 4 qualification has fluctuated between 13% and 26% for the past eight years. The progression rate for those completing the level 3 programme is even lower approx. 8% currently for 2022 cohort. The poor conversion rate during a time a rapid industry growth demonstrates a poor return on investment for the industry for the TECs investment in tutor time and organisation resources.</li> <li>The Plumbing, Gasfitting, and Drainlaying Review<sup>9</sup> completed by Waihanga Ara Rau in March 2022</li> </ol>	<p>The diversion of tutor and associated delivery resources from level 4 to the level 3 Plumbing, Gasfitting and Drainlaying qualification is perpetuating the negative impact on level 4 learners.</p> <p>There is a need for investment across most providers in facilities, IT systems, and resources, especially if additional capacity within the system is to be realised. We ask for TECs support to:</p> <ul style="list-style-type: none"> <li>Encourage Level 3 only providers to move into L4 training.</li> <li>Discourage new providers and existing providers from offering the level 3 programmes at new sites.</li> </ul> <p>TEO resources in the Plumbing, Gasfitting and Drainlaying provision are constrained especially the availability of tutor/assessors. If we are to address the catastrophic failure of the system which still saw 938 apprentices needing support with 938 still requiring additional support post June 2023 (when the intervention project finished) The industry would like to see level 3 enrolments capped at 150, the 2020 number they were provided in error. However, we believe that capping numbers at that level would cause disproportionate impacts on TEO exacerbating the issues.</p>

<sup>9</sup> TEC Final Report and Final Project supplied by email as attachments to this advice.

### B3. Which specific qualifications and credentials do you want to see changes in?

Qualification or credential	Mode	Specific regions?	What is the change you are wanting to see?	Evidence of workforce need – include as text below the table or as an attachment
<p>New Zealand Certificate in Water Treatment (Small Scale Systems) (Level 3) with strands in Drinking-water, and Wastewater (2240)</p> <p>New Zealand Certificate in Drinking-water Treatment (Level 4) (4138)</p> <p>New Zealand Diploma in Drinking-water Treatment (Level 5) (4139)</p> <p>New Zealand Certificate in Wastewater Treatment (Level 4) with optional strand in Multistage Processes (4142)</p> <p>New Zealand Diploma in Wastewater Treatment (Level 5) (4143)</p> <p>New Zealand Certificate in On-site Wastewater Management Systems Design (Level 4) (4216)</p>	Workplace	All regions	<p>Increased Māori and Pacific learner enrolment – Small Scale Systems focus.</p> <p>Industry has voiced the need to see changes in delivery models; there may need to be strategic funding for development of learning material resources and regional training facilities.</p> <p><b>Please note that reviewed qualifications will be:</b></p> <p>4138 –2, 4139 –2 or their replacements.</p> <p>4142 –2, 4143 –2, 4216 –2 or their replacements.</p>	<p>The workforce need for diversity is a general focus, but it has a specific focus for Māori in the need for the operation of Small-Scale Water Treatment Systems as this will include marae.</p> <p>Water Services Act 2021 introduced regulatory changes for Small-scale Operators. <a href="#">All water suppliers must seek registration as a water supplier from 2025.</a></p> <p>Under the Water Services Act 2021 section 69 there is a requirement for prescribed skills, qualifications, or experience in respect of drinking water supply or wastewater network. This requirement is predicted to drive an increase in need for appropriate and relevant qualifications across wastewater and drinking water supplies.</p> <p>There is already a <a href="#">shortage of labour supply</a> across the country.</p>

## SECTION C – New Providers

### C1. Are there qualifications or credentials that you want TEC to consider new providers for?

Qualification	Mode	Specific regions?	Rationale for inclusion	Evidence
New Zealand Certificate in Business (Introduction to Team Leadership) (Level 3) (2453)	Workplace	East Coast focus but all areas.	While this qualification is administered by Ringa Hora there are active workplace providers offering this qualification within our sectors. We support increased provision in this area but would also like to see other providers offering contextualised programmes across the construction and infrastructure sectors.	<p>The construction and infrastructure sectors have attracted over 80,000 new entrants on average each year since 2015 however only 25% +/- are still in the sector workforce five years later.</p> <p>We are investigating the why behind the choice to leave but we know already that the onsite culture and management style of people leaders influence retention., especially for the cohort who leave after one year in employment.</p> <p><a href="#">Waihangara Rau Dashboard</a> and <a href="#">WIP Platform</a></p>



## SECTION D – New Qualifications and Credentials

### DI. Are there qualifications or credentials that you are developing or plan to develop that will be available in 2025?

#### New Qualifications and Credentials added November 2023

Area of provision and/or qualification/ credential name	Level	Mode	Full Qualification	Estimated Availability Date	Description	Name of replaced qualification / credential	Comments
<b>Crane Microcredential (TBD)</b>	2 or 3	Mixed mode	Yes	March 2025	Crane Safety Microcredential	TBD	Crane industry request for microcredential to establish pathways for school leavers, Māori, and Pacific Peoples into the Crane industry.
<b>Reticulated Gas Certificate of Competence (CoC) framework. 17 micro-credentials to be developed.</b>	3 & 4	Mixed mode	No	2025	provide a framework for competency in relation to safe working on reticulated gas systems.	TBD	Working with the Gas Association of New Zealand training committee Refer also <a href="#">GasNZ Reticulated Gas - Competence Protocol GIP009 - Appendix 3 US Version 3 - September 2023</a>
<b>Exterior Cleaning Microcredential (TBD)</b>	3	TBD	No	March 2025	To credentialise people working on residential/commercial roof cleaning and Spray Cleaner roles.  The lack of specific regulation for the cleaning industry and the absence of industry standardised practices, training, and Provider offering of any training for the exterior cleaning industry leaves large training gaps in the sector at the pre-entry (level 2) and operator (level 3).	TBD	The Exterior Cleaning Industry Association (ECIA) has published a <a href="#">Code of Practice (CoP)</a> developed in consultation with various organizations and industry stakeholders such as, Auckland Council, Tauranga Council, WaterCare, RANZ, and the NZMRM.

## New Qualifications and Credentials Advice provided in April 2023

The table below highlights 'Have Regard' advice that was submitted to TEC in April 2023. Information has been added and/or amended to align with updated guidance provided by TEC, for the November 2023 advice round.

Title	Provision / Qual Name	Level	Mode	Full Qual or Cred	Timeframe	Description	Name of replaced qual / cred
<b>Concrete Pump Operators - H&amp;S needs</b>	New Zealand Certificate in Concrete (Specialist) (Level 4) with strands in Concrete Sawing and Drilling, Prestressed Concrete, and Precast Concrete, and Concrete Pump Operation (Line Delivery System), and Concrete Pump Operation (Boom Delivery System) [4186-3]	4	likely to be work-based learning	Yes	2024 - 1st quarter	Create a pathway for the recognition of trained competent concrete pumpers, for both line delivery systems and boom delivery systems.	Two additional strands in New Zealand certificate in Concrete Specialist (Level 4) [4186-2]
<b>Demolition: fit for purpose</b>	New Zealand Certificate in Demolition (Level 3) (TBD)	3	mixed mode workplace, distance, and face to face programme	Yes	2024 - early	Develop the first qualification to support training pathways in this high-risk industry.	N/A – New qualification
<b>Flooring cassettes</b>	New Zealand Certificate in Timber Structure Manufacture (Level 3) with strands in Wall Frame Manufacture, Roof Truss Manufacture, and Flooring Cassette Manufacture [4319-2]	3	mixed mode workplace, distance, and face to face programme	Yes	2023 - 4th quarter	Provides recognition of skills and knowledge for manufacturing flooring cassettes.	An additional strand of the NZC Timber Structure Manufacture (L3) and standards [4319-1]
<b>Underground Utility Location</b>	Underground Utility Location (Micro-credential) (4924)	3	mixed mode workplace, distance, and face to face programme	Yes	2024 - early	Utility locators do not have a pathway for recognition. introduction of a micro-credential will support skills of utility locators.	N/A – New micro-credential

<b>Temporary Traffic Management (TTM) Risk</b>	Temporary Traffic Management Risk Assessment (Micro-Credential) (4923)	4	development of a mixed mode workplace, distance and face to face programme will need to be brokered	Yes	2024 - early	New work-based micro-credential that includes two (maybe three) purpose-built standards in response to the new Waka Kotahi industry guidelines New Zealand Guide for Temporary Traffic Management.	N/A – New micro-credential
<b>Temporary Traffic Management (TTM) Design</b>	Temporary Traffic Management Design (Micro-Credential) (4922)	4	Development of a mixed mode workplace, distance and face to face programme will need to be brokered	Yes	2024 - early	New work-based micro-credential that includes at least one purpose-built standard in response to the new Waka Kotahi industry guidelines New Zealand Guide for Temporary Traffic Management.	N/A – New micro-credential
<b>Floating Floors and Carpet Tiles</b>	TBD	3	likely to be work-based learning	Yes	2024 Q2-Q4	Floating Floor and Carpet Tile installation are techniques not included in current qualifications. Develop micro-credentials to meet these specialised skills.	TBD
<b>Flooring Fundamentals &amp; Introduction to Flooring</b>	TBD	2	TBD	Yes	2024: Q1-Q2	Develop a set of micro-credentials to meet the needs of the new flooring qualifications that provide training pathways from pre-apprenticeship to apprenticeship.	TBD
<b>Trades Essentials (pre-trade micro-credential)</b>	Trades Essentials (Micro-credential) (TBD)	2	Likely to be mixed mode workplace and face-to-face delivery	Yes	2024 - early	Relevant training for new people to construction and engineering trades to prepare them to undertake basic construction and fabrication tasks, as well as provide essential employability skills for the trades, such as time management and communication.	N/A – New micro-credential

<b>Permeable Paved Surfaces</b>	TBD	TBD	likely to be work-based learning	Yes	2024: Q3-Q4	Development of skills standards and the registration of a qualification or credential.	TBD
<b>Joinery detailing</b>	TBD	TBD	blended mode of delivery with on-job components	Yes	2024: Q3-Q4	Work with industry to develop fit for purpose qualification that recognises the skills and knowledge of a joinery detailer.	TBD
<b>Introductory Crane micro-credential</b>	TBD	TBD	TBD	Yes	2024: Q3-Q4	Provides recognition of the essential entry level knowledge and skills, comprised of skill standards, mixing practical and soft skills.	TBD
<b>Tube and Coupler Scaffolding Installers</b>	Tube and Coupler Scaffolding Installers	TBD	TBD	Yes	2024: Q3-Q4	implement a micro-credential for tube and coupler scaffolding by VHNZ.	TBD
<b>Edge Protection Installers</b>	Edge Protection Installers	TBD	TBD	Yes	2024: Q3-Q4	VHNZ: implement a micro-credential for Edge Protection Installers.	TBD
<b>Trainer Assessor Capabilities</b>	Trainer Assessor Capabilities	TBD	TBD	Yes	2024: Q3-Q4	development of an assessor/trainer micro-credential for technical experts who are close to retirement.	N/A
<b>Structured Data Cabling</b>	New Zealand Certificate in Data Cabling (TBD)	3	TBD	Yes	2024: Late or early 2025	Provide a career and learning pathway for structured data cabling, and also provide a pathway for future career development of qualified electricians.	N/A – New qualification

Please note: some qualifications and credentials have codes allocated by NZQA as part of the evaluation process, but they are not yet registered on the NZQF.

## SECTION E – Future Workforce Needs

### E1. Can you tell us about any **emerging skill needs** or **major projects** for your sectors which you expect to impact workforce needs and tertiary education in the future?

Area of need or project	Expected occupations or skills that may be impacted	Timeframe	Who is involved (from tertiary education) e.g., WDC, providers etc
<p><b>Major Projects</b> impacting workforce needs see <a href="#">Appendix 5</a> Te Waihangara Project Pipeline Data October 2023 for a list of projects over \$250M by sector</p>	<p>All Infrastructure, construction, and service occupations and professions.</p>	<p>2020-2030 and beyond</p>	<p>All</p> <p>As shown in Section A1. Context the Construction and infrastructure five-year pipeline of work is currently valued at \$270B more than \$10B higher than the end of 2021 which was the benchmark for our forecast training volumes.</p> <p>Within the overall pipeline of work there are 146 projects across a mix of health, social development, electricity supply water and transport sectors valued at over \$100M and 27 valued at over \$500M which does not yet include the \$3.6B Transport Rebuild East Coast (TREC) project (see <a href="#">Appendix 5</a> Te Waihangara Project Pipeline Data October 2023).</p> <p>As noted in Section A1. Context the construction, infrastructure and services workforce has not been able to keep up with demand, with a gap of 344,000 people forecast in June 2024</p> <p>Several high-profile projects including hospitals (e.g., Palmerston North, Taranaki, Whangarei, Nelson and Dunedin see <a href="#">Appendix 5</a> as a project specific example) weather event recovery infrastructure such as TREC and regional projects such as Riverlink in the Hutt Valley and the City Rail Link in Auckland will feature in Regional Skills Leadership Groups advice.</p> <p>We do not in any way wish to diminish the regional impact of these projects and we support the regional advice relating to the associated training needs however in this advice we have tried to focus on change rather than increase which we believe is catered for in the benchmarking of 2021 training.</p>



			<a href="#">Appendix 6</a> <i>Project Specific Context Example for The New Dunedin Hospital</i> is an example of the workforce demand profile for a construction project. Multiple entities are working on this project to create an asset and leave a regional legacy.
<p>Increase in the capacity of:</p> <ul style="list-style-type: none"> <li>Power generation including distributed power generation and</li> <li>The national grid and regional distribution</li> </ul>	<p>Wind turbine service technicians          Technical specialists, blade repair technicians, commissioning engineers and site managers          Plant operators and control room operators          Network controllers          Transmission line mechanics          Substation maintainers          Line mechanics          Cable jointers          Fault response technicians and switching operators.          Live line workers</p>	<p>To meet future energy demands and decarbonisation targets, as much generation capacity will need to be built in the next 15 years as was built in the past 40 years. (Source: Transpower) Informatics forecasts over 6,300 total job openings by 2028.</p>	<p>There are established providers in the Electricity Supply sector that may not utilise TEC funding. However, we identify these qualifications in our advice to TEC as they are publicly published and of direct relevance to all Tertiary Education Organisations.</p>
<p>Weather event response project particularly those on the East Coast</p>	<p>All Infrastructure, construction, and service occupations and professions</p>	<p>2023–2030 and beyond</p>	<p>Transport Rebuild East Coast Alliance (TREC), Iwi, Hapu, Regional and Local Councils, Industry &amp; RSLGs.</p>
<p>Water and Wastewater treatment.</p> <p>There is a wide variation in water service scale, capability, quality, and charges throughout the country, with approximately 720 medium to large</p>	<p>Drinking Water and Wastewater treatment operators.</p>		<p><a href="#">Taumata Arowai</a> is the new water services regulator for Aotearoa New Zealand. They have an oversight role in relation to the environmental performance of drinking water, wastewater, and stormwater networks.</p> <p><a href="#">Water New Zealand</a> is the country's largest water industry body. They are a not-for-profit organisation, with approx. 3,000 corporate and individual members drawn from all areas of the water management industry including regional councils and territorial authorities, Crown Research Institutes, consultants, suppliers, government agencies and scientists.</p>

<p>suppliers providing for 80% of the population.</p> <p>Assessing and bringing small suppliers to compliance will bring additional complexity to an already fragmented sector.</p>			
<p>Technology / productivity advancement in Offsite Construction Sector (including automation within Detailing sector)</p>	<p>Offsite manufacturing, modular panels, light steel framing, structural insulated panels, or cross-laminated timber, Detailers.</p>	<p>There is no specific timeframe, more details are expected to emerge over the next two years</p>	<p>Waihanga Ara Rau is working with Hanga-Aro-Rau, and support organisations, to scope these industries and explore the skills need to inform future product development. These could include:</p> <ul style="list-style-type: none"> <li>• developing a micro credential covering joinery basics.</li> <li>• programming / coding. The role of a detailer will develop more over time with new systems and machines being introduced. Detailing requires a sound understanding of software and the advanced detailers are writing their own code.</li> <li>• Offsite Construction Apprenticeship: Particularly in prefabricated space where an 'allrounder' is needed which includes carpentry, plumbing and electrical skills.</li> <li>• How to incorporate digital literacy, modular build components, design, logistics and supply chain management.</li> </ul>
<p>Pihi Kaha Whangarei Hospital Redevelopment – Pacific Peoples Broader Outcomes</p> <p><i>Please note this Future Workforce Needs element of advice is focused on the Broader Outcomes for Pacific Peoples multiple hospital and other major projects are noted above and detailed in <a href="#">Appendix 5</a></i></p>	<p>All with a focus on entry level carpentry / trades qualifications (Level 2 and 3) with a pathway to 'higher' qualifications.</p> <p>Our engagement to date has centred on Broader Outcomes discussions related to the build, with a <b><u>specific focus on Pacific Peoples</u></b>, but this is not to say it will not be expanded to include</p>	<p>Within next 12–18 months</p>	<p>Te Whatu Ora, Ministry of Social Development, Te Pukenga</p> <p>The project encompasses a 'Broader Outcome Framework' which seeks to improve health equity and economic impacts by creating 2,781 jobs in the Northland region, increase access for businesses, construction skills and training and quality of employment outcomes. Intended employment targets will be set for each priority group.</p> <p>One of the existing barriers for Pacific learners in the Northland Region, from a cultural standpoint, is the fact there are no Pasifika NZQA qualified providers that deliver construction/trades programmes.</p> <p>A cross-agency/community group has been established to work towards creating a strategic plan for Pacific people in the region, which will include:</p> <ul style="list-style-type: none"> <li>• Pacific Business capability building</li> <li>• Pacific community provider capability building.</li> <li>• Upskilling of Pacific workforce.</li> </ul>

	other priority groups, as discussions evolve.		<p>As highlighted above, one aspect of the project is to prepare Pacific providers over the next 12-18 months to be able to deliver some of the basic trades' programmes, and pathway them into the skills/jobs needs for the Pihi Kaha Project.</p> <p>The Pacific providers that currently exist in the region largely deliver work-readiness and pastoral care programmes. Conversations have commenced with existing providers in Northland (particularly Te Pukenga), to formalise and accelerate relationships with Pacific providers, to ensure delivery of construction courses that are fit-for-purpose for Pacific communities in Northland.</p> <p>A formal arrangement between this 'collective' will be finalised over time which may lead to future advice, particularly in sections [B] for regional growth and [C] New Providers, likely to expand provision to new and/or existing providers that must have regard for 'Pacific context'.</p>
Waihanga Ara Rau: Building Pathways Project	NZC Carpentry L4 NZC Construction Trade Skills L3 NZC BCATS LI-3 NCEA VP Construction and Infrastructure L2 Construction Micro-credentials (x5) All onsite construction qualifications	12-18 months	<p>Waihanga Ara Rau and industry.</p> <p>This project is effectively looking to <b>create a single set of building blocks (skill standards) that will support flexible pathways into and through the construction sector</b>. It consists of four workstreams:</p> <ol style="list-style-type: none"> <li>1. Construction skills need investigation</li> <li>2. Skill standards for the NZC in Carpentry</li> <li>3. Skill standards for BCATS</li> <li>4. Investigation of BCATS in wharekura.</li> </ol>
<b>Water sector qualifications review:</b> Change in industry is occurring from the Water Services Act 2021 which is making it necessary that the water operators of small-scale drinking water be accredited by 2025	Small-scale Water Operators and those listed in section [B3]	Jan 2024 - June 2025	<p>Taumata Aromai, Watercare Water Industry Operations Group, Water Safety NZ, Wellington Water, Department of Internal Affairs, MBIE.</p> <p>MBIE estimates there are as many as 80,000 small scale systems around NZ.</p>
<b>Access Trades qualifications:</b> Major infrastructure projects for the East Coast Re-	Riggers, Dogman, Crane operators and supervisors, Piling rig operators, Scaffolders	Jan 2024 - June 2025	<p>SARNZ, Te Pūkenga, Vertical Horizons, ISS, Technical Rigging Services, DJ Rigging.</p> <p>Rigging industry is also working with Waihanga Ara Rau to review the qualifications and the unit standards and make them fit for industry purpose.</p>

build leading to demand for access trades.	and Rope access technician.		
<b>Level 5 Plumbing, Gasfitting, and Drainlayers Qualifications</b>	Plumbers, gasfitters and Drainlayers	2024	<p>In 2024, discussions will take place regarding whether the current qualifications and programmes that have been approved, will still meet the requirements of the industry/Board during 2024. This may include ‘reintroduction’ and/or changes to the Level 5 qualifications, which may lead to the replacement of the current board and legislative requirements to become certified (<b><i>New Zealand Certificate in Plumbing (Level 5), New Zealand Certificate in Gasfitting (Level 5), New Zealand Certificate in Drainlaying (Level 5)</i></b>).</p> <p>If the Level 5 qualifications become a pathway to certification, there may be supplementary advice:</p> <ul style="list-style-type: none"> <li>• around ‘changes’ to the existing qualifications</li> <li>• a requirement for new level 5 provision/funding in 2025</li> <li>• which could lead to approximately <b>500-600 learners per year across the three pathways.</b></li> </ul> <p>This accounts for the fact that some learners would be undertaking three pathways (Plumbing, Gasfitting, Drainlaying – a separate pathway for each).</p>
<b>Plumbing and Drainlaying qualifications:</b> A change in industry that is needed for better Storm and surface water management	Tradesman Drainlayer/Certifying Drainlayer Roofers who work with stormwater off roofs	Jan 2024 - Dec 2025	PGD Board, MBIE, Masterlink, Rinnai, The Gas Guys, Hydroflow, Back Flow Prevention, Rick Thomas Gas, Whitehead Plumbing and Gasfitting, Plumber Ella Ltd, ICE, Unitec, Morrinsville Plumbers, Te Pūkenga.
<b>Gasfitting:</b> A significant shift in the skill needs of the industrial gas sector, considering that installation, testing, commissioning, and fault finding of commercial gas fired appliances is more suited to that of a Certifying gasfitter or a	Certifying gasfitter Specialist commercial gas installer.  Could impact New Zealand Certificate in Gasfitting (Level 4) (2662) qualification.	Jan 2024 - Dec 2025	PGD Board, MBIE, Masterlink, Rinnai, The Gas Guys, Rick Thomas Gas, Whitehead Plumbing and Gasfitting, Plumber Ella Ltd, ICE, Unitec, Morrinsville Plumbers, Te Pūkenga.

Specialist commercial gas installer. Specialist gases such as hydrogen and bio-methane.			
The <b>transition away from Natural Gas and Liquid Petroleum Gas (LPG)</b> to renewable gases.	Impacting most roles in the gas production, gas distribution and gas fitting sectors.	2023 - 2030	Master Plumbers, Hutt Gas and Plumbing, Plumbing & Gas Works, Whitehead Plumbing & Gas Ltd, Tauranga Hardware & Plumbing Ltd, Director, Pipe Masters, Circular Solutions, Powerco, Rinnai New Zealand, Genesis Energy, GASNZ and Firstgas.
<b>Energy</b> – the transition to renewable energy.	Farmers; electricity generation workers; energy manufacturers and workers; fuel retailers; ICT systems developers; gasfitters and others	2025 onwards.  Aotearoa New Zealand (NZ) has set a target of zero net Greenhouse Gas emissions by 2050 (excluding methane from agriculture) and faces further targets for international transport.	Five WDCs – Waihangara Ara Rau, Muka Tangata, Toi Mai, Ringa Hora, and Hanga-Aro-Rau – have occupations and industries that will be affected by GHG reduction targets in Aotearoa and a transition to renewable energy.  All five WDCs are working together with the energy sector to ascertain immediate, mid-term and long-term skills needs for those workplaces and occupations (existing and future) that will require workforce development as the transition takes place.  This will result in new qualifications and credentials being developed, and changes made to existing qualifications and credentials.
All work and learning environments should be inclusive. A transformation of the manufacturing, engineering, logistics, construction, and infrastructure industries, involving the <b>removal of barriers so that disabled people, Tāngata Whaikaha</b>	Engineering, manufacturing, logistics, construction, and infrastructure. However, it is expected that insights will inform other skills and occupations.	Research, led by Hanga-Aro-Rau and Waihangara Ara Rau, to be completed within the next 12 months will identify where focused investment is required for 2026 advice.  New initiatives and pilots to be proposed for delivery in 2024.	Almost a quarter of the population living in Aotearoa New Zealand is disabled (National Ethics Advisory Committee, 2019; Office for Disability Issues, 2016). The phrase ‘disabled people’ is often used to emphasise that people with impairments are often disabled by their environment, rather than being ‘disabled’ themselves (Office for Disability Issues, 2016).  To be successful in elevating employment and learning opportunities for disabled people, Tāngata Whaikaha Māori, and Tāngata Moana, there needs to be systemic change within vocational education and the industries we work with. These groups are an untapped talent pool that could fill critical skills and labour gaps with the right support applied.  Hanga-Aro-Rau and Waihangara Ara Rau WDCs are working towards equitable outcomes for disabled people, Tāngata Whaikaha Māori, and Tāngata Moana.



<p><b>Māori, and Tagata Moana</b> thrive in learning and working environments is necessary.</p>			<p>Aligning with the framework set by the Kia Ōrite Toolkit, we are working with an expert panel of people with diverse lived and sector experience to create our own Disability Action Plan (DAP).</p> <p>There is substantial resource already available to us. Leveraging on the learnings from Te Rito and other resources available, the development of a DAP and its implementation will be evidence based and look to complement the DAPs already in place in the Vocational Education sector to ensure the whole system works in unison to make impactful change.</p> <p>To inform our DAP we will conduct research to understand what accessible infrastructure in learning and working environments entails and will include those that are neurodiverse. As part of this we will:</p> <ol style="list-style-type: none"> <li>1. Provide insights into the barriers employers in our industries experience providing reasonable accommodations for disabled people, Tāngata Whaikaha Māori, and Tagata Moana to potentially reduce the current and future skills shortages industry faces.</li> <li>2. Provide insights into employee experiences that will lead to changes in the working and learning environment that will provide a level of safety, so employees feel safe to disclose.</li> <li>3. Provide insights into the experience of seeking accommodations, and how this might be improved from the perspective of disabled people, Tāngata Whaikaha Māori, and Tagata Moana.</li> </ol> <p>We expect this research will allow Workforce Development Councils to identify:</p> <ol style="list-style-type: none"> <li>1. To what extent qualifications are accessible, provide equitable learning outcomes and where more investment could be focused to provide greater opportunities for disabled people, Tāngata Whaikaha Māori, and Tagata Moana.</li> <li>2. Heightened awareness and ultimately investment in how they are delivered by providers. Our role will be in terms of how that translates into our industries and the accessibility of the working environments.</li> <li>3. Provide us with information we can share with education providers, industry, and wider communities to influence and support an aligned and consistent ecosystem.</li> </ol>
<p><b>Lean Manufacturing</b> in Offsite Construction Sector</p>	<p>A list of some of the roles that may be impacted:</p> <p>Project Managers</p>	<p>2024-2026</p>	<p>Offsite NZ, Hanga-Aro-Rau, industry, and other Government agencies are exploring opportunities to <b>conduct further research into the impact of lean methodologies in construction.</b></p> <p>Lean manufacturing is effectively an approach that applies principles derived from the manufacturing industry to improve efficiency, reduce waste, and enhance</p>

	Site Supervisors Architects and Designers Engineers Quality Control Inspectors Estimators		<p>productivity in construction projects. It involves optimising processes, minimising delays, and reducing material waste.</p> <p>Currently the sector still operates using traditional construction methods. This causes a huge amount of waste of time and materials, which is something adopting a lean mindset could help with. Things that could help with quicker adoption are:</p> <ul style="list-style-type: none"><li>• Upskilling in digital literacy</li><li>• Upskilling builders to deal with modular builds (including components)</li><li>• Upskilling in design, logistics and supply chain management</li></ul>
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## SECTION F – Other

### F1. Is there **anything else** you would like to advise TEC of (in relation to investment in vocational education and training)?

#### Electrical Supply Qualification Reviews

There have been some qualification reviews which have been completed (or nearing completion): (*NZC in Electricity Supply (Introductory) (Level 2) (2136)*), (*NZC in Electricity Supply (Network Control) Level 4) (7321)*) which have led to the possible need for micro-credentials at level 2 which would cover the rest of the unit standards for New Zealand Certificate in Electricity Supply (Introductory) (Level 2) (2136) and others. This may result in future investment advice which may impact 2025 delivery however this needs to be finalised.

Upcoming reviews of the Zealand Certificate in Electricity Supply (Traction Line) (Level 4) (3988) and New Zealand Certificate in Electricity Supply (Line Mechanic Distribution) (Level 4) (2197) with optional strand in Live Low Voltage Lines, may have impacts similar to those discussed above.

#### Establishment of 10 Water Entities

It is important to note the work happening at the Department of Internal Affairs (DIA) to support the transition of sixty-nine Council organisations into the 10 reformed Water entities, and any potential disruptions that may occur from October general elections. The focus is to prepare them for the upcoming changes because of the reform and align them with the expectations of the new water entities.

DIA are working with Taumata Arowai and providers regarding training delivery needs of the sector. They are also the monitoring department for Taumata Arowai who oversee the Water Services Reform Programme which has four key outcomes:

- safe, reliable drinking water
- better environmental performance of wastewater and stormwater services
- efficient, sustainable, resilient, and accountable multi-regional water and sewage services
- making it affordable for future generations.

#### The New Zealand Trade & Industrial Waters Forum (NZTIWF)

New Zealand Trade and Industrial Waters Forum (NZTIWF) is a collaborative platform consisting of various stakeholders. It's 150+ members which include industrial and food manufacturers of trade waste, regional and local councils, regulators, trade waste consenting authorities, liquid waste operators, process engineers, environmental scientists, town planners, students, and interested individuals from the public. NZTIWF are focused on providing real time solutions to issues facing the water industry, developing national standards, and working together as an industry to develop sustainable processes that protect personnel, infrastructure, and the environment.

NZTIWF are looking into what could make up a **training programme by discussing competencies** with current trade waste officers along with reviewing what is required under the new Water Services legislation. The need for a training program has been discussed for a number of years by trade waste officers as they see the need to standardise throughout NZ what is required for their role and give guidance for those that are interested in the role.

The use of micro-credentials will be most relevant rather than trying to develop a full qualification. Micro credentials will fill in the gaps as trade waste officers don't all have the same background qualifications and bring different skills to the role.

### Māori Business Engagement

The Māori (and Pacific) workforce development plan is currently in its 'insights gathering' phase, with many interviews being conducted across the motu. Regional Māori insights gathered to date, particularly in the East Coast, supports some of the advice provided in [section \[B\]](#), from a workforce need and qualification perspective.

An early analysis of interviews completed to date has highlighted some initial themes. Where applicable, these have been integrated into the below sub-sections, with other including:

- The integration of tikanga (Māori customs and values) into learning and business practices, that is also respectful of diverse cultural practices.
- Promotion of Te Reo - the importance of speaking basic Māori and normalising its use on construction sites.
- Cultural integration is seen as a means of creating a more welcoming atmosphere, where both Māori and Pākehā (non-Māori) workers can feel comfortable.
- Empowerment throughout one's learning and career 'journey' is vital. This the importance of collaboration and genuine support between Māori organisations, construction businesses, and industry stakeholders will play a crucial role in empowering aspiring Māori professionals.
- Practical, hands-on experience resonates better with Māori learners. This aligns with the concept of 'ako,' where the learner and teacher role are interchangeable, emphasising the collaborative nature of education.

It is acknowledged that broader advice similar to the above, has been provided in past advice rounds, at a high-level. Notwithstanding that, further work will be done over the coming months to solidify the key themes from Māori businesses, and how these, if any, may result in future investment advice.

### Supervisory Skills for Construction and Infrastructure

We have provided Investment Advice for the New Zealand Certificate in Infrastructure Works (Single Site Supervision) (Level 4), specifically for the Hawke's Bay and Tairāwhiti (Gisborne). However, a review coming up for this qualification with the actual project to extend broader to identify skill/training gaps in this supervisory space. In particular, to prepare people for entering supervisory roles.

As this project evolves, relevant advice is likely to follow which could consist of 'Changes' and/or 'Growth' Investment advice.

### Pastoral Care and Mentorship

The pastoral care and mentorship of work-based learners has been raised by businesses across the sectors, **particularly Māori business owners**, who have noted that authentic 'pastoral care' by the right mentors provides essential guidance, not just in skills but also in life and can transform lives.

Work is being done to further understand different models and approaches. However, a number of things have already been highlighted:

- Prioritise funding for pastoral care, including mental wellbeing support, to enhance student retention completion rates, particularly for priority learner groups.
- Youth Empowerment: Challenges faced by young individuals, particularly Māori in terms of work ethic and confidence indicate a need for empowerment programmes, mentorship, and supportive educational initiatives.
- Youth Job Placements: Facilitate networking between youth coaches/mentors and industry professionals/employers to assist youth in securing job placements and working with them as they transition into the workforce.

- Soft Skills for Youth: Complementing the development of people leadership skills and the embedding of soft/life skills, including time management, budgeting, and reliability training as a component of programmes focused on youth transitions into the workforce.
- This includes accessible and flexible learning options but predominantly means funding for wrap-around support services, especially for mental wellbeing.
- Mentorship: Mentors provide essential guidance, not just for skills but also for personal lives.
- The terms 'Awhi and Manaakitanga' are preferred to 'Pastoral care' in a Māori business/learner environment.

### Cultural Competency and Identity

Waihangara Ara Rau wants TEOs to focus on **cultural competency especially te ao Māori**. Cultural competency is the acceptance and respect for difference, a continuous self-assessment regarding culture, attention to the dynamics of difference, the ongoing development of cultural knowledge, and the resources and flexibility within service models to meet the needs of minority populations.

For example, **Whakawhanaungatanga**, the concept of building and maintaining relationships, is an important value which is embodied by many Māori and shapes their worldview (**te ao Māori**). This form of cultural identity shapes perspectives on learning, work, relationships, and community. It showcases a deep connection to the **Māori worldview**, which emphasises collectivism, communal responsibility, and a holistic view of life.

### Equity

Waihangara Ara Rau wants TEOs to **focus on specific areas of achieving system-wide equity** including the attraction of women, rainbow and takatāpui communities, disabled people (especially tāngata whaikaha Māori and Tāngata moana) into trades training, the progression and completion of Māori and Pacific learners, and targeted transition and upskilling of career changers entering the construction and infrastructure sector.

### Zero Carbon

Waihangara Ara Rau wants TEOs to work with partners and industry **to develop zero-carbon, sustainability and mātauranga taiao skill profiles for industry segments**. As skills profiles are developed and resources become available, we would expect programmes to integrate these components.

### People leadership capability development

Waihangara Ara Rau wants TEOs to work with partners and industry to **identify fit for sector models that enhance sector leadership capability especially on-site leadership capability** which in turn achieves increased productivity, retention, progression, diversity, and qualification completion rates.

The below links to advice provided by Ringa Hora as the Standard Setting Body for the current qualification.

Qualification or credential	Mode	Specific regions?	Scale of change you are seeking for 2025	Evidence of workforce need – include as text below the table or an attachment	Evidence that this provision will meet the workforce need	WDC-assigned priority level (for this advice)

New Zealand Certificate in Business (Introduction to Team Leadership) (Level 3) (2453)	Work based learning	Hawke's Bay and Tairāwhiti	300 learners	<p>Allowing for supervisors trained as forecast in 2024 300 supervisors are forecast in 2025.</p> <p>While this qualification is administered by Ringa Hora there is one active workplace provider offering this qualification contextualised to the infrastructure sector.</p> <p>We support increased provision in this area but would also like to see other providers offering contextualised programmes across the construction and infrastructure sectors.</p>	<p>We are working with the Transport Rebuild East Coast Alliance (TREC) to embed a training culture in the East Coast recovery project in the same way the Stronger Christchurch Infrastructure Rebuild Team (SCIRT) built training into the Christchurch rebuild.</p> <p>People leadership is a critical component of building capacity and capability it has also been identified as a key component of developing retention and providing progression pathways.</p> <p>Waihangara Ara Rau has is working with Ringa Hora to ensure the New Zealand Certificate in Business (Introduction to Team Leadership) (Level 3) (2453) is supported as a component of the wider East Coast Recovery Project.</p> <p>This component is supported by the Hawke's Bay and Tairāwhiti Regional Skills groups.</p>	High
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In exploring sector models, **TEOs need to particularly consider mātauranga Māori frameworks/models**. Our engagement with Māori businesses and communities has highlighted the important of Tuakana/teina relationships, and how this underscores a profound understanding of **leadership as a communal effort**. This approach creates a supportive network where leadership qualities are nurtured organically through trust, respect, and shared knowledge. Such an environment fosters a sense of belonging and loyalty among learners, employees, and wider communities.

### Trades Essentials (pre-trade micro-credential)

As mentioned in section [D], Waihangara Ara Rau is developing the **Trades Essentials (pre-trade micro-credential)**, expected to be registered in 2024. Waihangara Ara Rau wants TEOs to work with industry partners to develop fit for purpose programmes supporting its delivery.

### Work Integrated Degree and Post Graduate study (AKA degree apprenticeships)

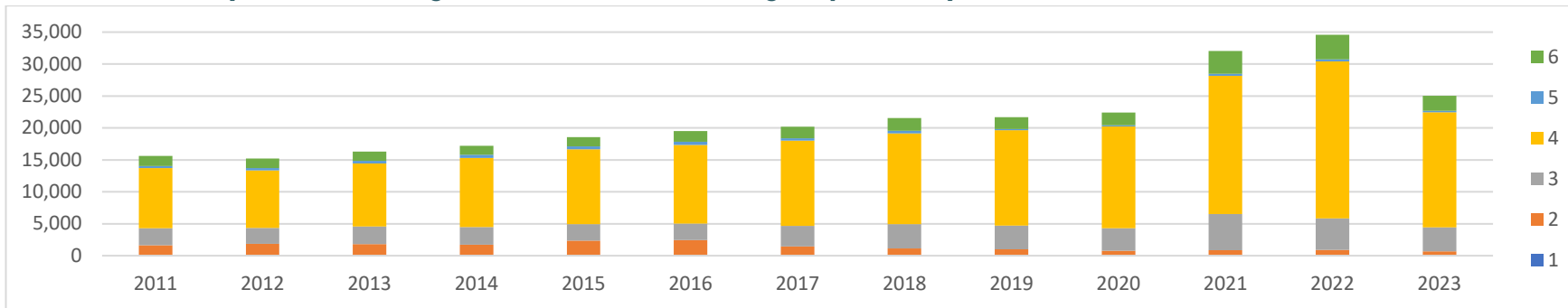
Engineers, Designers, and other professions are experiencing workforce shortages which are in turn impacting the delivery of projects. We would like to explore degree apprenticeships i.e., delivery that enables learners to gain a full undergraduate or master's degree while at work. Degree apprenticeships in the United Kingdom take three to six years to complete, depending on the course level. People spend approx. 80% of their time working and 20% studying part-time. For example, studying one or two days per week, or in short blocks, such as a week at a time.

England and Wales both offer degree apprenticeships, with the most options currently available in England. In Scotland, degree apprenticeships are known as Graduate Apprenticeships and Northern Ireland offers higher level apprenticeships (HLAs) that offer qualifications up to Level 7 which is the equivalent of a master's degree. However, the majority are at Level 5 which is equivalent to a foundation degree.

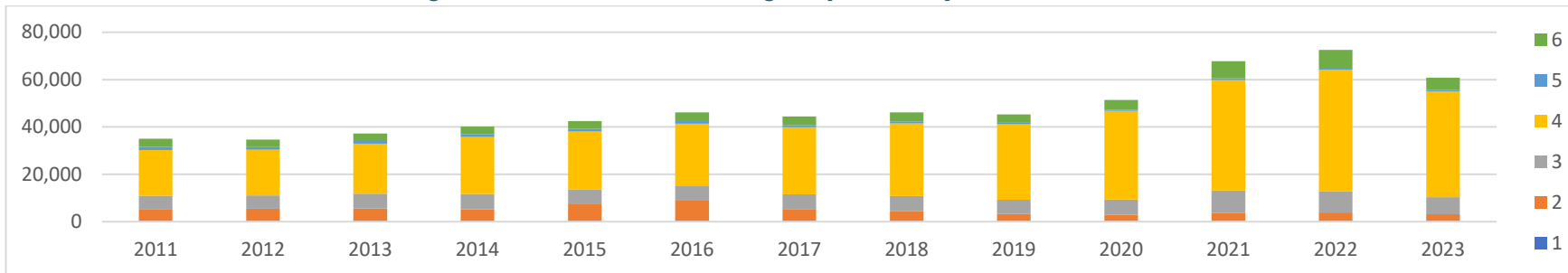
# Appendices

## Appendix 1 Supporting Context

**Volume of delivery within Waihangara Ara Rau Standard Setting Responsibility NZSCED to level 6<sup>10</sup>.**



**Number of learners within Waihangara Ara Rau Standard Setting Responsibility NZSCED to level 6<sup>11</sup>.**

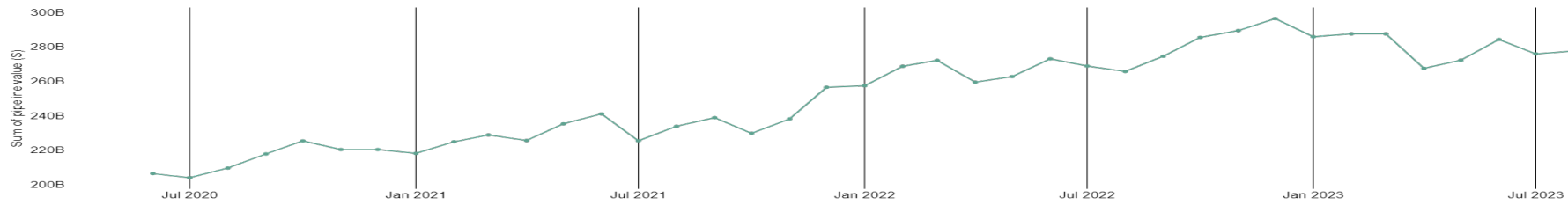


<sup>10</sup> Level 7 sub degree is not an option in the Nga Kete Enrolment trends over time app.

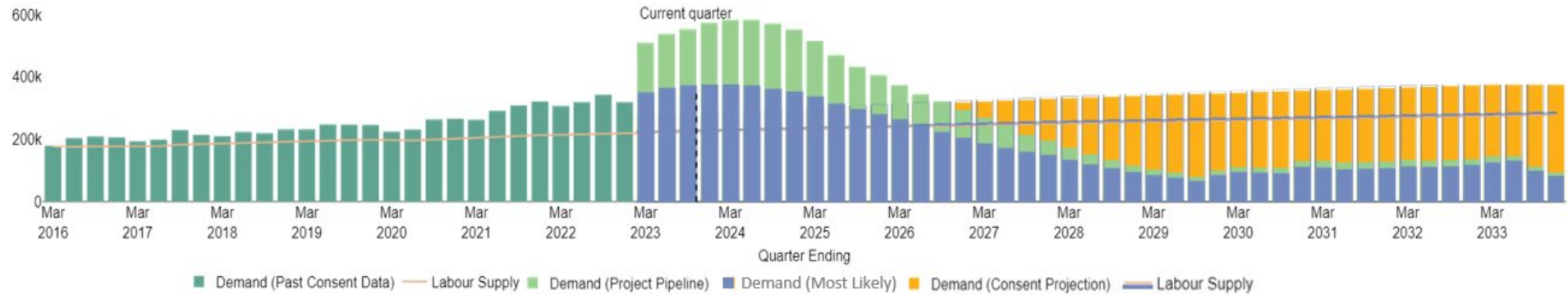
<sup>11</sup> Level 7 sub degree is not an option in the Nga Kete Enrolment trends over time app.



### Construction and infrastructure five-year pipeline of work and supply Vs demand workforce graph



### Construction and infrastructure five-year project pipeline of work



## Appendix 2 Strategic Sector Specific Content

### The overarching issues for **Construction** sectors include:

- *There is an expectation that cyclone and flooding recovery efforts will create further pressure on current worker shortages.*
- *Investment in training for this sector remains a priority.*
- *There are growing issues around recruitment and retention of workers, reflected in high competition between businesses.*

### On Site Construction

#### Sector Priorities

- Increase investment in programmes that enable upskilling and reskilling to support career changers within the industry.
- Increase (or continue) pre-employment programmes with a focus on Construction and Infrastructure.
- Identify and invest in initiatives that remove barriers to rangatahi entering and completing training.
- Increase investment in provision for Māori to enter and succeed in the workforce. Desire for Māori entities to become providers of training. Mā Māori Mō Māori.
- Address the lack of gender diversity within construction.
- Ensure types and methods of training delivery are suitable for learners.
- Invest in skills for supervision, management, pastoral support, and project management and recognising these with credentials.
- Greater use of micro-credentials to encourage engagement into learning and allow greater responsiveness to training needs.
- Ensure training is accessible to industry learners, especially in remote areas, even when it is not conducive to optimal cohort sizes.
- Ensure clear pathways into and through careers within construction.
- Support employers and learners engaged in work-based learning.
- Promote driver's licences in schools.

Workforce Development Plan information for this sector is in development [here](#).

### Offsite Construction

There is a lack of delivery options for this sector, particularly for Offsite Manufacturing, and Detailing. Work is being done to explore the sector's skills needs more broadly. Some of this work includes:

- Uptake of specialised skills such as joinery detailing. We are currently exploring commonalities with detailing in other industries to determine whether a general or industry specific qualification is most suitable for learners, providers, and industry.
- The need to incorporate the impacts of modern construction methods and adapting to technology advancements.
- Work in the wider carpentry review that will impact multiple sectors.
- Technology solutions are already being explored within the sector, such as Lean Manufacturing and automated error detection. Advancements such as these mean that current roles will evolve and possibly the expansion and/or creation of new roles such as CNC operators, programmers, and designers.
- All this work is inter-connected to relevant advice provided regarding Floor Cassettes and Joinery detailing in Section [D]

Workforce Development Plan information is in development and can be found [here](#)

## Finishing Trades

### Sector Priorities

- Increase availability of supervisory type training. Businesses are finding it hard to employ staff with existing supervisory skills.
- More support may be required for employers who have work-based learners in their employment.
- Continuous professional development programmes enabled through shorter qualification durations and stackable credentials.
- Partner with appropriate Workforce Development Councils to ensure micro-credentials for business skills are fit for purpose for the Finishing Trades.
- Promote and accommodate different learning styles.
- Several of the Finishing Trades have expressed an interest in becoming a Licensed Building Practitioner trade.
- Tiling industry is reporting a considerable number of failures in projects due to poor waterproofing practice.
- Increase focus around hospital projects (e.g., Palmerston North, Taranaki, Whangarei, Nelson, and Dunedin) – a need for more Finishing Trade workers will be required for hospital redevelopment and rebuild projects around NZ.
- The sector would like to see improved visibility of the diverse types of jobs and opportunities available in Finishing Trades, especially for school leavers.
- “Keep it Decent” – Guidelines for a Safe and Respectful Workplace, has generated interest amongst the Finishing Trades and is a field of work industry representatives are keen to continue building momentum around.

Workforce Development Plan for this sector is in development and can be found [here](#).

## Plumbing, Gasfitting and Drainlaying

Members of the industry had expressed their concerns about the current training model and were particularly concerned about apprentices not being able to complete their apprenticeship within reasonable timeframes. This was further amplified by the expansion of delivery of the New Zealand Certificate in Plumbing, Gasfitting and Drainlaying (Level 3) to new sites in 2023. This appeared to contradict some of the 2022 review recommendations specifically that Year 3 and Year 4 level 4 apprentices should be given priority with regards to the completion of their block courses.

As a result, in-and-out cycle investment advice has been provided – noted in [section \[B\]](#).

It is particularly important that we highlight the issue regarding the **over duration for level 4 learners**. There is a need to use appropriate mechanisms and levers to ensure resources and support are prioritised for these learners, particularly in situations where TEO's receive funding for learners who are in the 'over-duration' period i.e., greater than 5 years.

The PGD sector / board also intend to discuss a review of the Level 5 qualification(s) in wider certification conversations. It is important to note that these discussions may lead to:

- Changes to the Level 5 qualification(s) and/or
- Growth in 2025 provision for these qualifications (currently no provision)

More details provided in [section \[F\]](#).

In addition to this, the transition/adoption of renewable gases (biogas, biomethane, renewable LPG and hydrogen) within the sector has impacts on future skill requirements. The current and future workforce / learners are likely to require upskilling with work already being done to explore specialist micro-credentials. This further highlights the importance of ensuring Level 4 learners are prioritised.

Workforce Development Plan information is in development and can be found [here](#).

## Electrotechnology

There will be a review and realignment of the whole suite of electrical suite qualifications in beginning in 2024. This is in line with the strong desire across the sector to ensure more transparent, logical training and career pathways, with clear common competencies being aligned between qualifications.

These will be reviewed in line with the introduction of step licensing by EWRB (Electrical Workers Registration Board). Some of this work will also include:

- Working with industry bodies to develop strategies for skill standard development.
- Skill cluster investigation for electrical pathways – and micro-credential developments to respond to the new endorsement categories approved by EWRB.
- Identify shared competencies across pathways and potential for shared credentials (e.g.) Electrical Pre-trade and Electrical Trade (L4) and L4 Electrical Qualifications).

There is also wider work happening in the telecommunications space regarding upcoming qualifications reviews and non-delivery of existing L4 qualifications.

There is a willingness to investigate provision of the Industrial Measurement & Control (IMC) training in other regions by the current provider with discussions around the sharing of specialist equipment and resources underway.

Workforce Development Plan information is in development and can be found [here](#).

## Access Trades

Waihanga Ara Rau has gathered useful insights through industry engagements. Some of the key insights centred around TEC investment advice are:

- **Improve Access Trades Sector Data:** There is only one ANZSIC code for the sector. An expansion of this should help provide more robust workforce data and forecasts, to support investment and policy decisions.
- **Clarify required changes within current VET products:** Reviews of some Cranes and Rigging qualifications will be completed in the coming months. Clarifying key changes required will be important.
- **Growing the suite of Access Trades training products and vocational investment:** There is work that still needs to be done in refining industry needs. As mentioned above, current qualification reviews within the sector should help identify some gaps, such as a Crane micro-credential.

More information can be found [here](#).

There are broader issues within the sector, which have implications for vocational investment however these need to be unpacked further. In some cases, these may not directly result in investment advice, these include:

- [Skills Shortages](#)
- [Attraction and Retention](#)
- [Regulation and Policy](#)

## The overarching issue for Infrastructure sectors is:

*The infrastructure sector is facing significant shortages of workers as a result of a growing pipeline of work compounded by the East coast cyclone and flooding recovery efforts. Skills shortages still reported as the major challenge for future growth but significantly declining since 2022 (72% vs 84%). Workforce pressures are expected to continue to grow over the near future, with a majority of the projected Civil Infrastructure recovery work peaking between 2025-27. Of specific concern is the shortages of supervisors, as a result, investment in training for people leaders (Leading Hands, Team Leaders, and Forepersons) in this sector remains a priority.*

## Civil Infrastructure

### Sector Priorities

- Invest in the domestic East coast recovery workforce by supporting training programmes that grow the workforce, including new entrants and people leaders.
- Government procurement practises need to be consistently implemented to support the sector's workforce development aspirations around career pathways development.
- Lift the performance, understanding and buy-in of the Civil Infrastructure Apprenticeship suite of programmes. The sector is seeking increased focus on the design and delivery of the actual learning journey. It has been highlighted that there is no lived experience between managers and their apprentices (introduced in 2015). Managers need more support to mentor their apprentices, and this could be supported through bite size pieces of learning.
- New micro-credentials are continuing to be developed, which industry supports alongside the review of the micro-credentials that are already on the NZQA framework.
- The sector is seeking increased pre-employment and entry level programmes. There needs to be improved linkages between schools and TEC and/or MoE funding. Industry supports the establishment of more trades academies with a specific infrastructure focus.
- Improved support for learners. Industry representatives believe that young people communicate, behave, and learn differently to previous generations. This needs to be acknowledged and considered in the review of training provision.
- Increased investment is needed in the development of trainers for the sector. Capability building is needed to enable the upskilling of new entrants to sectors.
- Industry is investing in new technologies to improve productivity; training provision needs to evolve at a similar pace to support the upskilling of staff while ensuring support for different learning styles.

*Workforce Development Plan is under development and available [here](#).*

*Developing a Skilled Civil Construction Workforce (2022) written by CCNZ and the Civil Workforce Forum is available [here](#) and the 2023 Construction Industry Survey is available [here](#).*

## Electricity Supply

A foundational workforce development plan has been developed for the sector (Re-Energise Report 2022) with Transpower also publishing reports. A summary of key points across these reports are highlighted below. To meet the Paris Agreement goals by 2050, New Zealand must prioritise decarbonisation, focusing on increased electrification leveraging its renewable energy resources.

### Project Investment

Transpower have indicated that achieving this will require at least:

- 40 new grid connected generation projects by 2035.
- 30 connections to accommodate increased electricity demand.
- 10-15 new transmission interconnections and other network investments needed to enable energy to reach consumers.

### **Workforce**

New Zealand's electricity industry workforce is estimated to include at least 8,000 people split between: Transmission, Distribution, Generation companies, and Contract service providers (who provide the utility companies with professional services including engineering design, project management and delivery and asset maintenance).

The investment highlighted above requires the requisite skills and workforce, without which the sector will not meet the targets agreed, in the timeframe required. It is estimated that thousands more highly skilled people are required by 2035 to meet the growth. This is on top of ensuring the industry securing 'resources' to manage material levels of retirement over the next 15 years.

### **Training**

The approach to training needs to be reimagined - the existing training pathways are not sufficient or appropriate for the increased workforce numbers required in a short period of time and increasingly diverse skills required.

Some of the work to help bring to life some of the recommendations has already commenced, particularly with the work undertaken with qualification reviews of which are highlighted in Section [F], and previous advice provided in April 2023, particularly around growing investment in several of Level 4 Electrical Supply qualifications.

The sector has been challenged to:

1. Clarify the workforce capability and capacity required to meet the demands of growth.
2. Attract interest in the sector. Positioning it as an attractive place to work and pursue a career, targeting broadly and with those populations which are under-represented within the workforce demographic (women and Māori).
3. Provide entry pathways to the sector to attract and secure a greater percentage of the working population and school leavers to the sector.
4. Accelerate the development of workforce skills using different training methodologies and develop new skill development pathways and programmes to meet emerging skills areas.
5. Retain the workforce through the provision of multiple career pathways and interoperable qualifications & skills.

### **Gas Infrastructure**

The sector is relatively small compared to other Construction and Infrastructure sectors, consisting of Gas Supply and Reticulated Gas pipelines (more commonly referred within the industry as transmission, distribution, and conditioning). Discussions are taking place, particularly with Hanga-Aro-Rau regarding the development of hydrogen qualifications however for now, this lies within Hanga-Aro-Rau.

The sector is currently looking at future skills and training needs and how the Certificate of Competence (CoC) framework managed by GasNZ can be complemented by 17 'stackable' micro-credentials and ensure alignment to existing, reviewed or new qualifications.

*Workforce Development Plan information is in development and can be found [here](#).*

### **Water Services**

There is an urgent call for this sector to discuss issues around training needs. The sector in tandem with the new regulations, integrating Te Mana o te Wai Framework, means that training and workforce development needs require clear prioritisation.

There is a need to achieve common understanding of which qualifications to prioritise ahead of the upcoming qualifications review. **These are within the document and this area is a high priority for Waihanga Ara Rau.** While these are all important, discussions need to be had around the prioritisation of sub-sectors with potentially an initial focus on the stormwater/wastewater sector.

The discussions are progressing regarding new ideas (such as micro-credentials) and ensuring delivery partners are meeting industry needs. The [We Are Water Report](#) highlights these, among other things which are summarised in our Workforce Development [website](#), and touches on points such as:

- [Intuitive Career Pathways](#) and being intentional about
- [Career Progression](#).

## Construction & Infrastructure Services

### Shortage of workers

*The capability and capacity of New Zealand's Construction and Infrastructure Services Sector is a critical part of our country's ability to build resilient and expanding provisions of a sustainable built environment. Construction and Infrastructure Services professionals work across the full lifecycle of construction and infrastructure programmes and projects, bringing together a large variety of high demand skills both in New Zealand and globally.*

### Sector Priorities

- Strengthen collaboration between sector associations, educational institutions, and government agencies to develop initiatives and programmes that promote awareness of the sector.
- Highlight career opportunities and provide relevant training pathways to attract school leavers and career changers.
- Improve career guidance and education. Enhance career guidance resources in schools, ensuring that learners are aware of the various roles and career paths available in the sector.
- Actively engage with Māori and Pacific community organisations to understand and address the barriers to their participation in the sector.
- Recognise the importance of diversity in the sector and strive to ensure it reflects the broader society. Implement initiatives to increase diversity in leadership positions, addressing gender and ethnic disparities. Foster inclusive work environments where individuals from diverse backgrounds can bring their authentic selves, ideas, and perspectives.
- Establish mentoring initiatives to provide guidance and support for individuals from underrepresented groups. Create networking events and platforms that facilitate connections and collaboration among professionals from diverse backgrounds.
- Invest in upskilling and reskilling programmes. Develop targeted programmes to address the skills gap in the mid-career and senior management levels.
- Promote the support of digital skills. Support training programmes and certifications that focus on digital skills and emerging technologies relevant to the sector. These programmes can help those joining the sector have the necessary digital skills to implement future technologies effectively.
- Establish clear standards and qualifications for various roles, such as building surveyors and project managers, to safeguard consumers and promote sector-wide competence. Involve sector associations and experts in the formulation of regulations to ensure they align with sector needs and best practices. Regularly review and update regulations to adapt to changing sector dynamics and emerging challenges.
- Offer training and support programmes to assist businesses in navigating complex regulatory frameworks effectively.
- Enhance educational programmes. Incorporate practical training and real-world experience into educational curricula to bridge the gap between theoretical knowledge and practical skills. Collaborate with sector professionals and associations to ensure that educational programmes align with sector standards and evolving needs.



- Address Skills Shortages and STEM Education. Implement initiatives to attract more learners to science, technology, engineering, and mathematics (STEM) disciplines, starting from an early age. Enhance the visibility and appeal of technical subjects by providing engaging learning experiences and practical applications. Foster collaborations between educational institutions and sector organisations to develop hybrid training models that combine classroom learning with workplace experience.
- Incorporate cultural competency training into educational curricula to foster understanding and collaboration with Māori and Pacific communities. Integrate soft skills development (communication, teamwork, and leadership) into educational programmes to enhance the overall capabilities of professionals in the sector.
- Promote learning and occupational pathways and work integrated learning at all NZQF levels.

*Workforce Development Plan information for this sector is in development [here](#)*

## Appendix 3: Workforce Demand with Weather Recovery Evidence

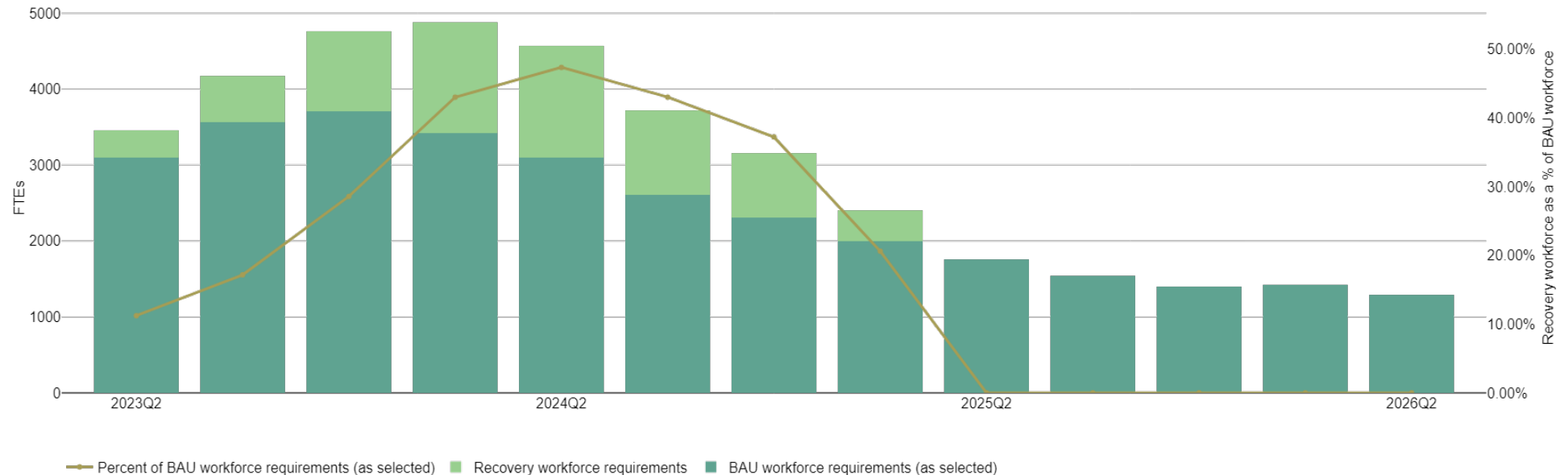
### East Coast Recovery Workforce Forecast for 2023 North Island Weather Events (NIWE).

#### Waihangara Rau and Te Waihangara have collaborated to provide recovery workforce projections for 2023 North Island Weather Events

To support regions, families and infrastructure providers affected by the 2023 North Island Weather Events (NIWE) in their planning efforts, Waihangara Rau has collaborated with Te Waihangara, the Construction Sector Accord NZ Insurance Council and regional data providers to produce workforce projections that estimate the construction workforce that could be needed to deliver potential recovery projects, such as the repair or replacement of residential buildings, damaged public assets including road construction and maintenance, bridges, water and energy infrastructure. The projections will increase understanding of market capacity and inform and support ongoing coordination to make decisions on investment, prioritisation, and timing of projects; and those in the construction sector investing in delivery capability and capacity, including developing the future workforce.

The **residential construction recovery workforce** for Hawke’s Bay and Tairāwhiti (Gisborne) is based on a combination of New Zealand Insurance Council and Rapid Building Assessment data using Workforce Information Platform modelling (WIP). The residential construction recovery workforce peaks in 2024 at an additional 1,470 people this equates to an additional 42% of the business-as-usual workforce. The residential recovery workforce modelling in WIP has been built to allow scenario modelling with user specified data or loading actual event data to support planning for and more rapid responses to future events.

#### Waihangara Rau Residential Recovery Workforce with BAU comparison

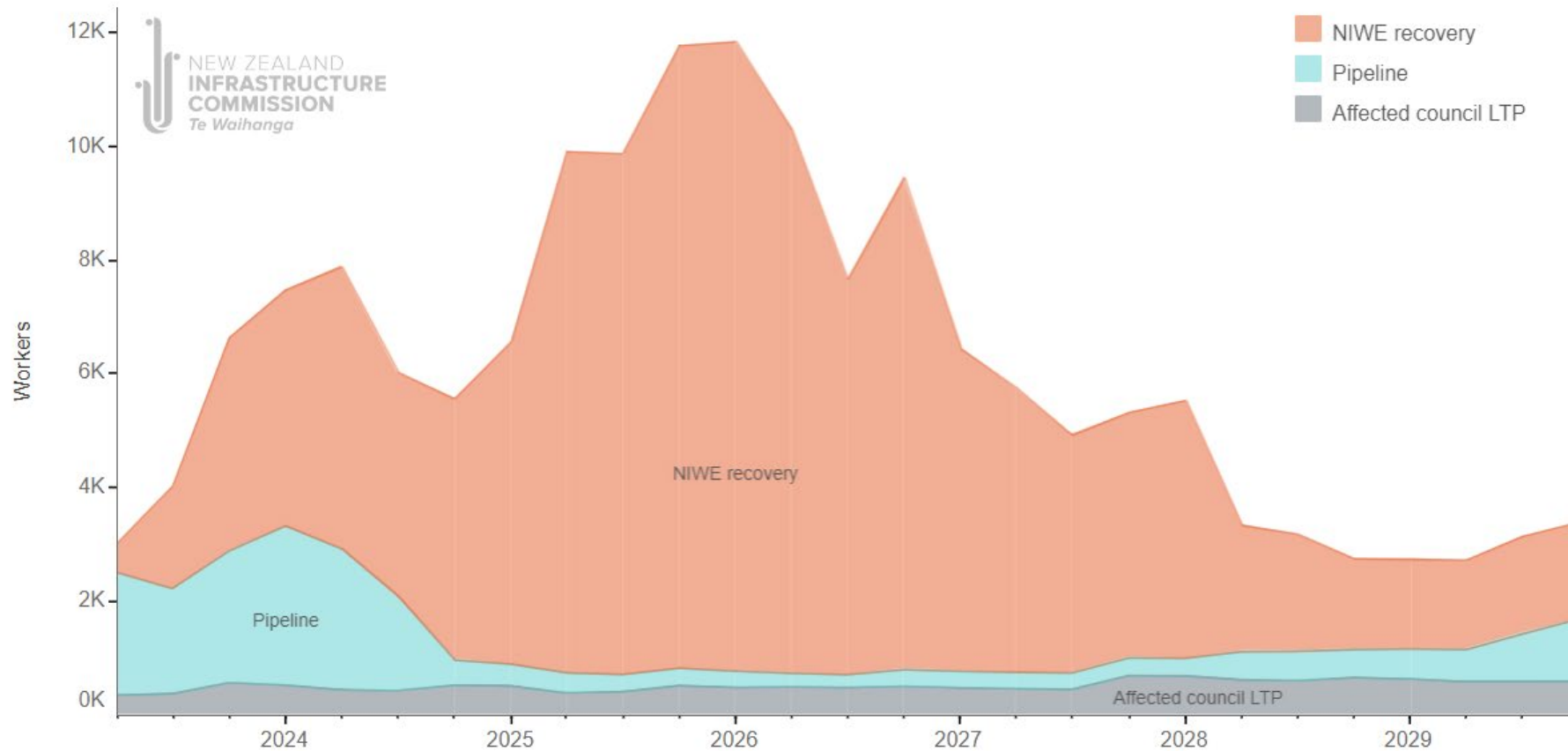


<https://wip.org.nz/emergency-calculator?page=Inputs&region=Hawke%27s+Bay+Region&region=Gisborne+Region&types=Residential&scenario=unadjusted>

The following construction roles are highlighted in the data (link previous) as they either require significant workforce numbers or a significant increase by percentage of the existing workforce: **Flooring workers, Wall, and floor tilers, Drainlayers, Steel framing workers, Machinery operators, Bricklayers, Electricians, Quantity surveyors, Concrete workers, Plasterers, Plumbers, Painters, and Carpenters.**

The projected **infrastructure recovery workforce** for Hawke’s Bay and Tairāwhiti (Gisborne) has a planning focus out of region in 2023/24 but builds in region 2025/28 with a total workforce forecast peaking at 10,838 in 2025 of which 10,073 are associated with the NIWE recovery.

**Te Waihanga infrastructure Recovery Workforce with BAU comparison**



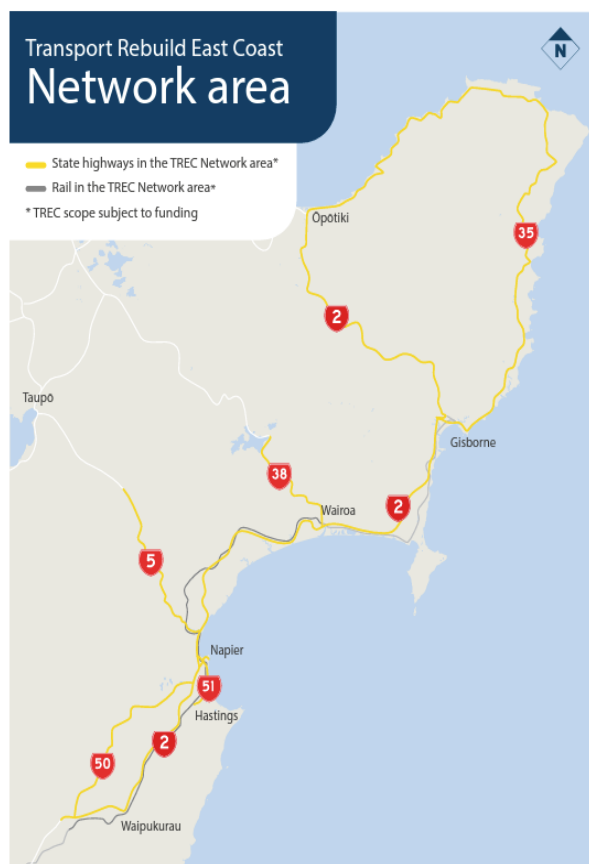
<https://insights.tewaihanga.govt.nz/>

**The following infrastructure roles are highlighted in the data (link above) Civil labourers, Machinery operators, Technicians and trade workers, supervisors, engineers, architects, Project Managers and Designers.**

Please note:

While we have estimated numbers for the Construction and Infrastructure workforce in Section [B1] there is a significant number of roles which have less than 100 workers forecast for the recovery workforce qualifications as this is too granular for forecasting only qualifications with over 20 additional learners have been included in the Construction qualifications forecast but there are nearly 1,500 recovery workers forecast in the residential construction sector suggesting on the average number of workers in training we could expect to see an increase of approximately 220 learners a number of qualifications where increases would be expected including:

- New Zealand Certificate in Trowel Trades (Level 4) with strands in Brick and Block Laying, Floor and Wall Tiling, Proprietary Plaster Cladding Systems, Ferro-cement Tank Manufacture, Refractory Installation, and Solid Plastering (with optional strands in Fixing Cavities and Substrates, and Decorative Mouldings) – (3137)
- New Zealand Diploma in Construction (Level 6) with strands in Construction Management, and Quantity Surveying (2420)
- New Zealand Certificate in Concrete Construction Skills (Level 3) with strands in Formwork, Reinforcing, Placing and Finishing, Specified Concrete Finishes, Concrete Product Manufacture, Concrete Sawing and Drilling, and Precast Concrete Manufacture (4189)



## Who does what on the East Coast?

**Transport Rebuild East Coast TREC is responsible for:**

- Short term recovery to keep state highways and rail open and running.
- Longer-term investigation, design and rebuild of affected parts of the state highway network to build back stronger and smarter for the future.
- Maintenance and operations of the state highway network day to day
- Longer-term investigation, design and rebuild of the rail line in Hawke's Bay impacted by Cyclone Gabrielle to create a safer and more resilient network.

Procurement TREC are working with local skilled and experienced contractors, suppliers, and professional services who understand road and/or rail building and the East Coast whenua. Following contractor/supplier sessions in Gisborne, Napier, and Wairoa, along with meetings in Te Karaka and Ōpōtiki, TREC are forming a Physical Works Panel of local businesses interested to work with them. It will be an open panel and suppliers may be added during the TREC work programme as required.

Waka Kotahi will continue: Safety, resilience and walking and cycling projects which were underway before Cyclone Gabrielle.

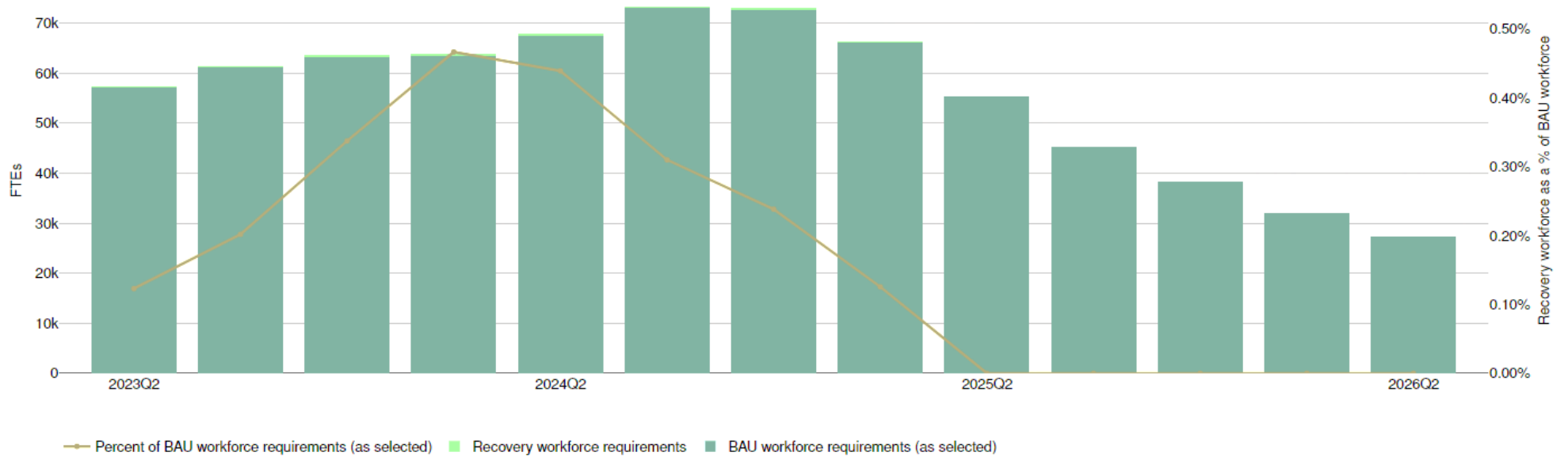
Local councils are responsible for maintaining local roads, which are not state highways. TREC is working with East Coast councils to coordinate the recovery and rebuild of roads across the region to limit disruption and ensure everyone has enough resource to deliver this work.

## Auckland and Northland Recovery Workforce Forecast for 2023 North Island Weather Events (NIWE).

### Waihanga Ara Rau and Te Waihanga have collaborated to provide recovery workforce projections for 2023 North Island Weather Events

The **residential construction recovery workforce** for Auckland is based on a combination of New Zealand Insurance Council and Rapid Building Assessment data using Workforce Information Platform modelling (WIP). The residential construction recovery workforce peaks in 2024 at an additional 296 people this equates to 0.47% of the business-as-usual workforce. This number of additional workers is not significant enough in itself to recommend additional training numbers in the Auckland region as a result of weather event recovery alone.

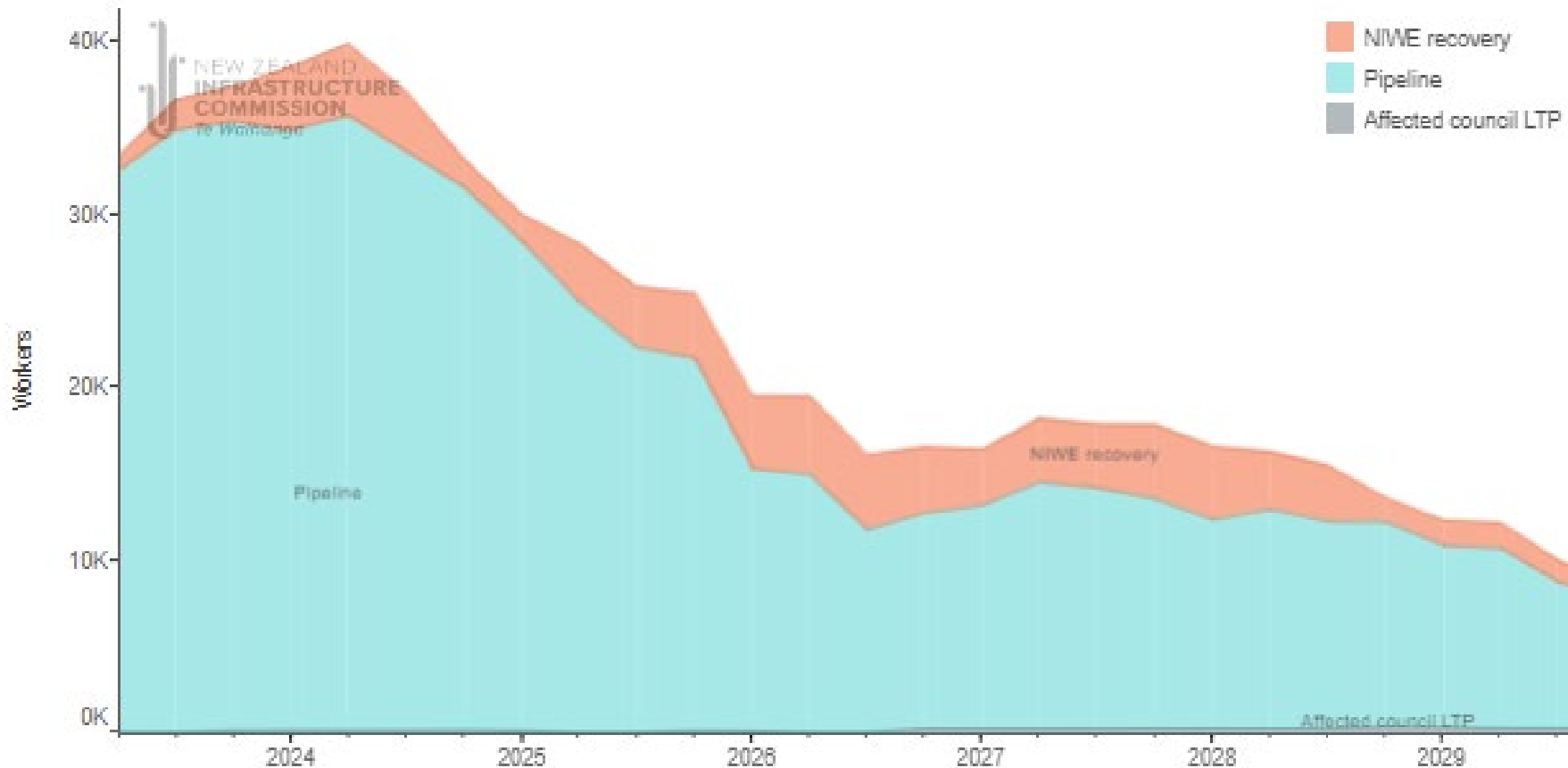
### Waihanga Ara Rau Residential Recovery Workforce with BAU comparison



<https://wip.org.nz/emergency-calculator?page=Outputs&region=Auckland+Region&types=Residential&scenario=unadjusted>

### Te Waihanga infrastructure Recovery Workforce with BAU comparison

The projected [infrastructure recovery workforce](#) for Auckland and Northland has a planning focus out of region in 2023/24, but builds in region 2024/28 with a the NIWE recovery workforce forecast peaking in quarter 4 2025 of 4,189 people (this equates to 11% of the business-as-usual workforce). RSLG Investment Advice, particularly for Northland but predominantly Auckland, advocate for an increase in a number of Infrastructure qualifications. We support this advice but as it falls within the baseline growth, we have not specified growth numbers against specific qualifications.



**The following infrastructure roles are highlighted in the data:** Civil labourers, Machinery operators, (including Backhoe Operators, Bulldozer Operators, Concrete pump operators, Crane/Hoist/Lifting operators, Earthmoving Plant operators, Excavator operators, grader operators, loader operators and Mobile plant operators) Technicians and trade workers, supervisors, engineers, architects, Project Managers and Designers.

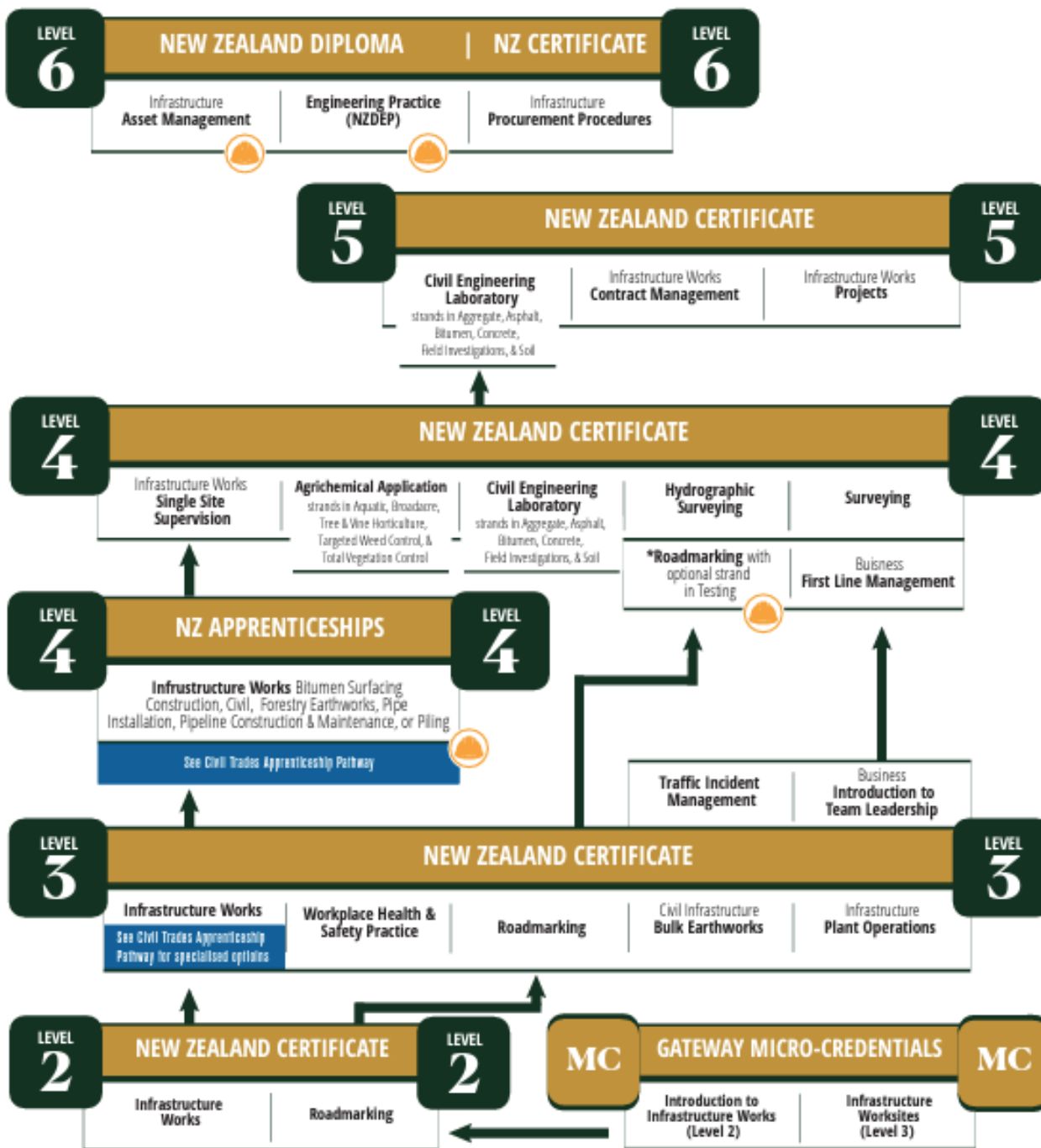
## Appendix 4 Civil Career and Trades pathways

# Civil Career

## PROGRESSION PATHWAY



VISIT THE FEES FREE WEBSITE TO CHECK YOUR ELIGIBILITY



\*This programme is recognised as an NZ Apprenticeship when the optional strand is completed

Valid as of July 2023



# Civil Trades Career PROGRESSION PATHWAY

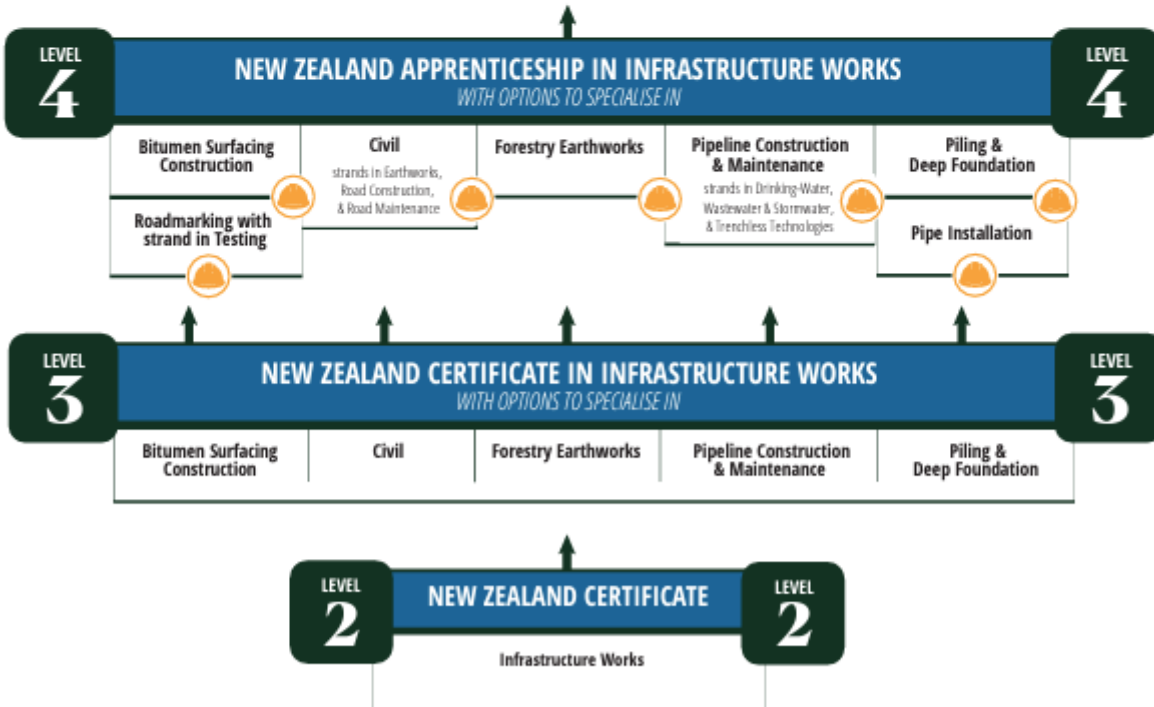
**FEES FREE.**  
govt.nz  
VISIT THE FEES FREE WEBSITE TO CHECK YOUR ELIGIBILITY

**HIGHER LEVEL QUALIFICATIONS**  
See Civil Career Progression Pathway

**NEW ZEALAND CIVIL TRADES CERTIFICATION**

Road Construction & Maintenance	Road Surfacing	Pipeline Construction & Maintenance
---------------------------------	----------------	-------------------------------------

Civil Trades Certification is offered by Civil Contractors New Zealand. Head to [civilcontractors.co.nz](http://civilcontractors.co.nz) for eligibility criteria and the application process



Valid as of July 2023

\*This programme is recognised as an NZ Apprenticeship when the optional strand is completed

connexis.org.nz  
0800 486 626



## Appendix 5 Te Waihanga Project Pipeline Data October 2023

### Table key:

#### Project phases

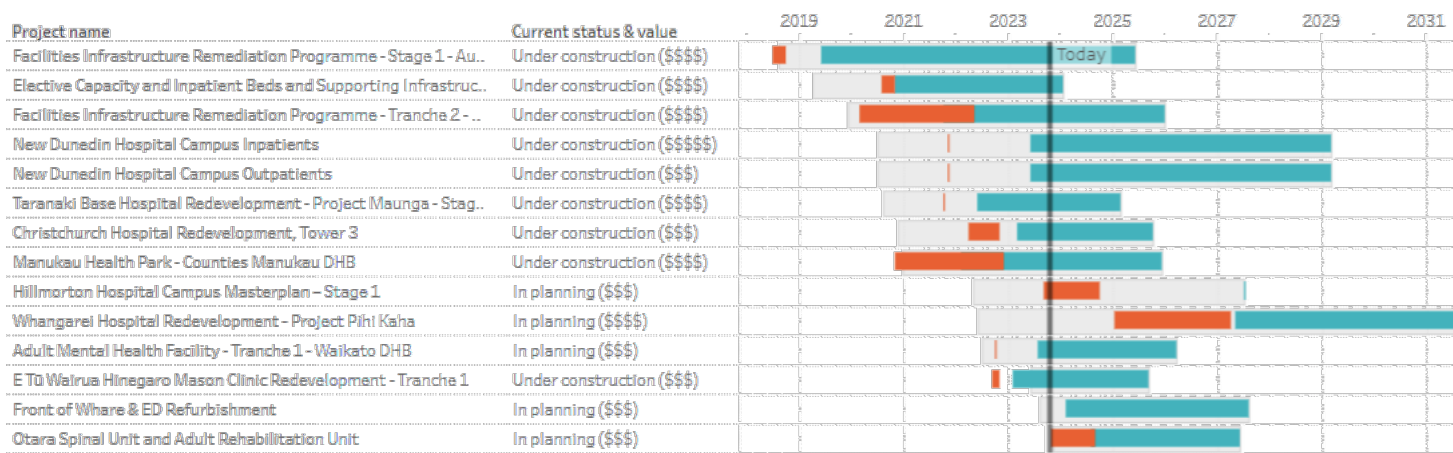


**Project Value Guide: \$\$\$ = \$100-250M - \$\$\$\$ = \$250M-500M \$\$\$\$\$ = \$1B+**

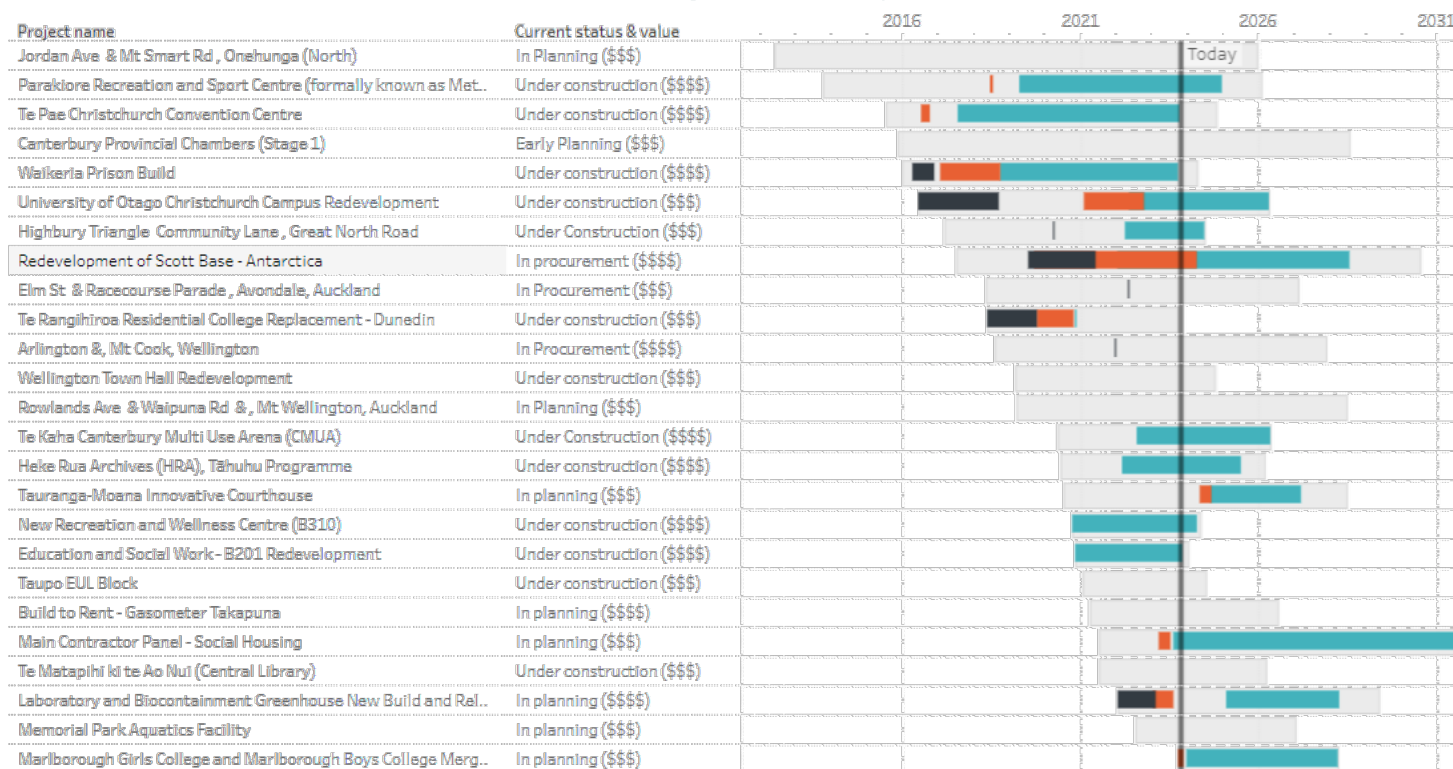
### Source:

#### Te Whatu Ora Health NZ (14 projects)

<https://insights.tewaihanga.govt.nz/>



#### Social Development (25 Projects)



### Electricity Supply (9 projects)

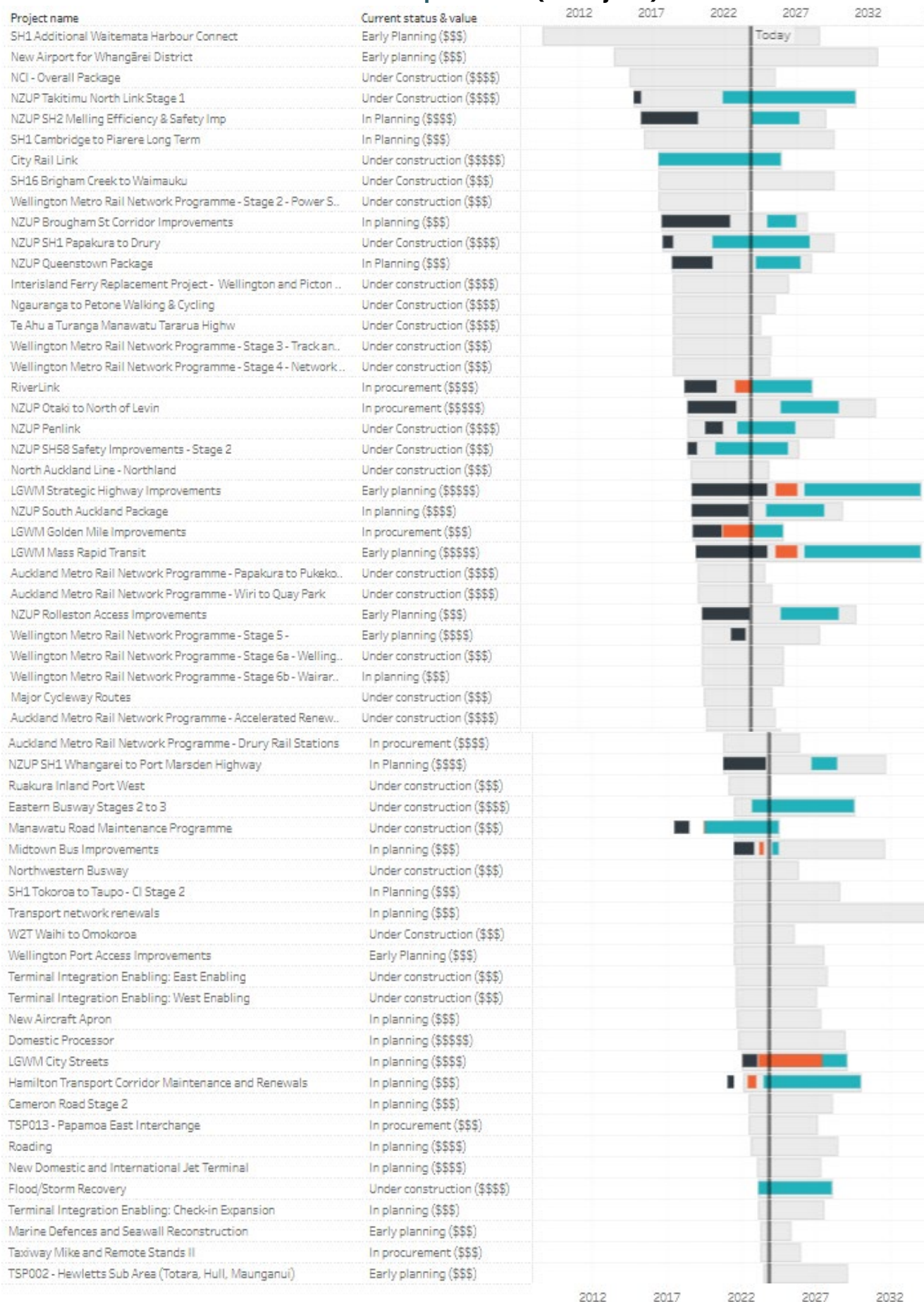
Project name	Current status & value	2018	2020	2022	2024	2026	2028	2030	2032
Voltage Management - Waikato and Upper North Island	Under construction (\$\$\$)				Today				
Tauhara Power Station	Under construction (\$\$\$\$)								
Harapaki Wind Farm	Under construction (\$\$\$\$)								
Ruakākā Energy Park Battery	Under construction (\$\$\$)								
Duplexing - Tokaanu-Whakamaru-A&B (Net Zero Grid Pathways)	In procurement (\$\$\$)								
Haywards Second STATCOM (Net Zero Grid Pathways) - Welling..	Early planning (\$\$\$)								
Waikato and Upper North Island - Series Capacitors on BHL-WH..	In planning (\$\$\$)								
Wairakei Ring - Phase 2 - Build	Early planning (\$\$\$\$)								
High Voltage Direct Current Cable Replacement - Cook Strait	Early planning (\$\$\$\$)								

### Water Sector (38 Projects)

Project name	Current status & value	2021	2026	2031	2036
Waimea Community Dam	Under construction (\$\$\$)		Today		
Central Interceptor Programme - Western Springs to Mangere	Under construction (\$\$\$\$)				
Clarks Beach New Waste Water Treatment Plant	In procurement (\$\$\$)				
Drinking Water network renewals	Under construction (\$\$\$)				
Installation of New Conveyance Sewer - Warkworth to Snells	Under construction (\$\$\$)				
Wastewater network renewals	Under construction (\$\$\$)				
Wastewater Treatment Plant Upgrade - Snells Beach	Under construction (\$\$\$)				
New North Harbour Number Two Watermain	In procurement (\$\$\$\$)				
New Watermain Connecting Woodlands Park Reservoirs to Gre..	In procurement (\$\$\$\$)				
Southwest Conveyance Phase 2b	In procurement (\$\$\$)				
Te Maunga WW Treatment Plant Programme	Under construction (\$\$\$)				
Waikato Water Treatment Plant A Raw Water Intake	In procurement (\$\$\$)				
Infrastructure Acceleration Funding	In planning (\$\$\$)				
Western Isthmus Point Erin Tunnel	In procurement (\$\$\$)				
Huia Water Treatment Plant Upgrade (Planning)	In planning (\$\$\$\$)				
NZ Battery	Under construction (\$\$\$)				
Hingaia Pump Station upgrade and Rising Main to Manurewa	In planning (\$\$\$\$)				
New Sludge Conditioning Process Construction - Mangere	In planning (\$\$\$\$)				
Orewa Number 3	In planning (\$\$\$)				
Pump Station and Rising Main Upgrade - Stanmore	In planning (\$\$\$)				
Rosedale Sludge Conditioning	In planning (\$\$\$)				
Upgrades of Separation and Wastewater Pipes to Reduce Wet ..	In planning (\$\$\$)				
Wairau Valley Diversion	In planning (\$\$\$)				
Wastewater Treatment Plant Upgrade - Army Bay	In planning (\$\$\$)				
Wastewater Treatment Plant Upgrades stage 1 - Beachlands	In planning (\$\$\$)				
Construction of Pipe Tunnel - Newmarket	In planning (\$\$\$)				
Upgrades of Separation and Wastewater Pipes to Reduce Wet ..	Early planning (\$\$\$)				
Biogas and Co-generation Expansion - Mangere	Early planning (\$\$\$)				
Flood Control / Drainage scheme - Heretaunga Flood Control Sc..	Early Planning (\$\$\$\$)				
Flood Control / Drainage scheme - Upper Tukituki Flood Control ..	Early Planning (\$\$\$)				
Flood Control / Drainage scheme - Wairua Flood Control Schem..	Early Planning (\$\$\$)				
Local Wastewater Network Renewals	Early planning (\$\$\$)				
WWS Upper Nihotupu Raw Watermain Replacement	Early planning (\$\$\$)				
Pukekohe Upgrade Stage 3	Early planning (\$\$\$)				
Construction of Reservoir Storage - Woodlands Park Reservoir	Early planning (\$\$\$)				
Mangere Precinct Stormwater Bundle	In Planning (\$\$\$)				
Helensville Wastewater Servicing Strategy	Early planning (\$\$\$)				
Waikato A Stage 1 - to 225 MLD	Early planning (\$\$\$)				



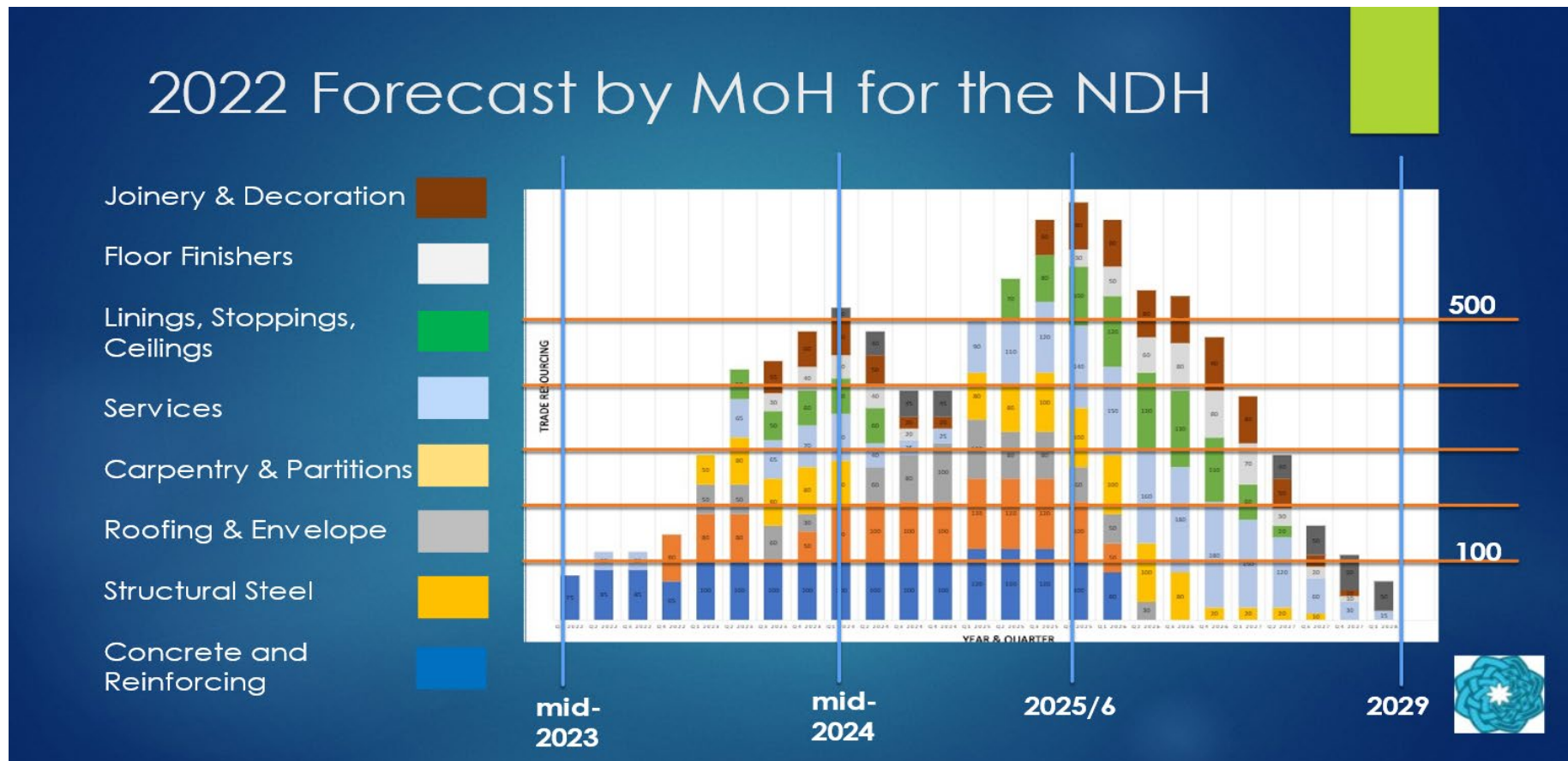
### Transport sector (60 Projects)



## Appendix 6 – Project Specific Context Example for The New Dunedin Hospital

The New Dunedin Hospital Project is a case in point where there is a significant workforce component but with the workforce demand spread over an extended period of time. The **resource graph below<sup>12</sup>** shows the modelling figures in April 2023. However, the project is running approximately six months behind the modelling meaning the initial growth in workforce numbers is expected to hit late 2023.

**The Workforce Central Dunedin goals include the employment of 300 local people and the 900 people inducted, trained, and upskilled through the project.** The project will utilise the Trades Essentials and Basic Construction micro credentials as workforce entry points then multiskilling people as project skills needs change. A percentage of people will take the opportunity to follow a career pathway in the trades they are introduced to leading to higher level training in specific trades.



<sup>12</sup> provided by Workforce Central Dunedin and the New Dunedin Hospital project team to Waihanga Ara Rau in April 2023.