

TRANSPORTATION 2021 CONFERENCE

PATHWAYS FOR CHARTERED TRANSPORT PROFESSIONALS IN NZ

(This paper has been peer reviewed)

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ABSTRACT

I have one of the best jobs around, but who am I?

I help communities design better streets and places for their neighbourhoods and centres, I advocate for and advise on sustainable low-carbon transport options for equitable and liveable communities, and I undertake safety audits and propose speed management changes to support safer roads in our rural environments.

Unlike my co-author, I am not an engineer in the traditional sense; I didn't study engineering as my first degree. I also generally don't try to "engineer" communities and streets (or policies/plans), so does that make me more of a planner? Planners think about the future, people, places and the environment, which sounds more like it. But many also deal with planning/RMA law, consenting processes, and managing valuable natural resources; all things I don't do...

The wider transport industry benefits in many ways because of our approach in shaping transport systems and streets and places. I am formally educated, have practical experience in my field and I value professionalism, ethics and continual learning, similar to the requirements of certified planners and engineers. Whilst my skills may be recognised by planners and engineers, are they valued in the same way as a Chartered Professional Engineer or a Full Member of the NZ Planning Institute?

The transportation profession incorporates people with diverse backgrounds and education, and this enriches our community, yet many don't have a clear way forward for professional development and recognition of who they are or what they do. How can the industry certify, encourage, build capability and mana for people right across the spectrum of expertise?

This think paper will explore and compare the experiences of New Zealand with other countries, where certification is offered for Transport Professionals, review findings from a survey of NZ transport practitioners, and suggest some options and ways forward for our industry here.

INTRODUCTION

As a consultant working within the area of transportation, I feel it is important to maintain professional standards and be aware of contemporary practices, philosophies and techniques. I joined a professional body many years ago and began to explore Chartership as some way of recognising my professional career in the industry. It also appeared to be a traditional thing that you 'did' as part of a conventional career path and achieve a status among your peers.

As someone with a planning degree that did not meet the first stage of having a 'Washington Accord'-equivalent degree (the global base standard for engineering degrees), I was asked to submit information that would be the first stage of a knowledge assessment. After several weeks, the assessor concluded that a full knowledge assessment was required because at this stage, *"it cannot be concluded if her depth and breadth of knowledge is equivalent or not to that of a graduate of a Washington Accord Degree."* Being fully aware of my sphere of practice, I was not entirely convinced that it would be a good use of my time to further my understanding with study in more specialised engineering knowledge such as fluid mechanics, thermodynamics, and geotechnics. In addition to the costs of completing these further studies, there is then the added costs of the Knowledge Assessment on top of standard member fees.

In wanting a little more than just an association to a technical sub-group of Engineering New Zealand (Transportation Group), I looked towards the New Zealand Planning Institute (NZPI) for a pathway to achieve a status. It was great that many of my skills, knowledge set, and values aligned with the requirements of full Member status. On the realisation that all the Continued Professional Development provided was around consents, assessing effects, plan making, preparing evidence, case law and natural resources, I began to wonder if this was the right pathway.

The question then becomes: if I am not an engineer or a planner in either traditional sense of those professions, who am I and where do I belong? Is there still a need for being considered a "professional" and having 'status' associated with it?

The clearest definitions come from the Australian Professional Standards Council (Professional Standards Council, 2021):

- A **profession** is a disciplined group of individuals who adhere to ethical standards. This group positions itself as possessing special knowledge and skills in a widely recognised body of learning derived from research, education and training at a high level, and is recognised by the public as such. A profession is also prepared to apply this knowledge and exercise these skills in the interest of others.
- A **professional** is a member of a profession. Professionals are governed by codes of ethics, and profess commitment to competence, integrity and morality, altruism, and the promotion of the public good within their expert domain. Professionals are accountable to those served and to society.
- **Professionalism** comprises the personally held beliefs about one's own conduct as a professional. It's often linked to the upholding of the principles, laws, ethics and conventions of a profession as a way of practice.
- **Professionalisation** is the pattern of how a profession develops, as well as the process of becoming a profession.

As many of those values and references resonate with my personal beliefs and the way I work, being deemed as a professional is still important for me, so I do need to belong somewhere.

Trying to understand the "somewhere" is more difficult - why can't I be recognised as a consultant working in the transport field in New Zealand rather than the more traditional 'engineer' or 'planner'? This think paper will explore and compare the experiences of New Zealand with other countries, where certification is offered for Transport Professionals, and suggest some options and ways forward for our industry here.

OVERSEAS EXAMPLES

There are a number of existing transport professional schemes overseas; this section summarises some of the key ones from comparable countries:

Transport Planning Professional (UK)

The Transport Planning Professional (TPP) qualification is achieved by demonstrating a level of competency in several technical areas and some management areas ranging from policy, laws, data, assessment, engagement, leadership, interpersonal skills, and conduct. It was developed by the Chartered Institution of Highways and Transportation (CIHT) and the Transport Planning Society (TPS) and is designed to provide professional recognition for transport planners in the same way that Chartered Engineer recognises the highest level of engineering competence.

There are a number of routes to TPP status. Candidates must be members of CIHT, TPS, or the Chartered Institute of Logistics and Transport (CILT) to apply for the TPP qualification. There are then four routes to achieving TPP status, which can be found on the website:

- **The standard route** – this is available to those with an approved transport master’s degree, or a first degree and a completed (approved) professional development scheme. These candidates are required to submit a Portfolio of Evidence before progressing onto a Professional Review interview.
- **The “portfolio of technical knowledge” route** – this is available to those with a first degree, but with no master’s qualification or a completed professional development scheme. These candidates are first required to produce a Portfolio of Technical Knowledge, before moving on to prepare a Portfolio of Evidence followed by the Professional Review interview.
- **The technical report route** – this is available to those without a first degree. These candidates are required to produce a Technical Report to demonstrate technical knowledge, before submitting the Portfolio of Evidence and progressing to a Professional Review interview.
- **The senior route** – this is for professionals in a “senior management position within transport planning who have very extensive experience”. These candidates are required to submit an application to demonstrate their breadth of experience, which is then judged by three members of the TPP professional standards committee.

The TPP Professional Development Scheme has become the industry standard training scheme for those new to the profession, as well as providing a framework for more experienced transport planners to review and if necessary, broaden their skill set. On completion, as well as receiving a certificate, the candidate is entitled to use the new post nominal IncTP (Incorporated Transport Planner). Organisations that have adopted this scheme include Councils, Transport for London, and large consulting engineering firms in the UK.

Professional Transport Planner (North America)

The Professional Transportation Planner (PTP) certification was developed by the Transportation Professional Certification Board (TPCB), supported by the Institute of Transportation Engineers, and designed for people who have a wide-range of education and experience in transport planning.

Applicants must hold a degree and have a number of years’ experience, which is dependent on the level of degree achieved (e.g. a Masters degree holder only needs three years, a Bachelors degree holder needs five years). They must then complete and achieve a pass score in an exam.

The purpose of voluntary certification by people working in transport planning (Transportation Professional Certification Board Inc 2021) is to:

“enhance public safety and welfare by providing assurance that the certification holder possesses the knowledge, skills and abilities required to provide services to the public at a professional level

with a competence which will safeguard life, health and property and protect the general public welfare.”

There are also two other different certifications available from the TPCB:

- Professional Traffic Operations Engineer (PTOE)
- Road Safety Professional (RSP, Level 1 and 2)

Previously the Board also offered the Traffic Operations Practitioner Specialist (TOPS) and Traffic Signal Operations Specialist (TSOS) certifications. Whilst these were initiated in response to requests for additional accreditation in the area of operations and traffic signals, uptake was low.

Certified Transport Planner (Australia)

CTP are the post-nominal letters that distinguish an individual as a Certified Transport Planner through the Australian Chartered Institute of Logistics and Transport (CILT Australia 2021). The CTP is a professional qualification that provides a definitive standard for measuring capability and experience in the Transport Planning profession. The CTP unifies the many disciplines — such as Engineering, Town Planning, Geography and Economics — that make up the profession.

CTP status indicates professional recognition, from peers and employers, of significant experience and capability to plan, implement, manage and improve transport planning initiatives. In New Zealand, recognition is provided through Chartered Membership of CILT.

The New Zealand website (CILT NZ 2021) states that:

“Persons aspiring to Chartered Membership require to have practical experience in the industry dependant on their qualifications. Their professional ability is established by reviewing their work experience against Key Performance Area criteria. The resulting assessment is a combination of academic, practical and management experience to demonstrate the achievement of a standard for the award of Chartered Membership that is recognised in all member countries and transferable between them.”

INDUSTRY SURVEY

An online survey was completed in late 2020 to understand the different types of people working in transport and what they think of current routes to chartership in New Zealand. The survey was initially sent out through an e-mail to the Transportation Group members but was circulated wider to known non-members or to colleagues of those that participated.

There were 190 responses to the survey. While the survey was open to anyone in the transport sector regardless of their background, given the stated context of the survey it is likely that responses received were weighted more towards people who identified difficulties in achieving chartered transportation professional status in New Zealand through existing mechanisms.

The characteristics of the survey respondents are summarised below. As shown in Figure 1, 70% of the respondents were male, which probably reflects the current gender imbalance within our profession.

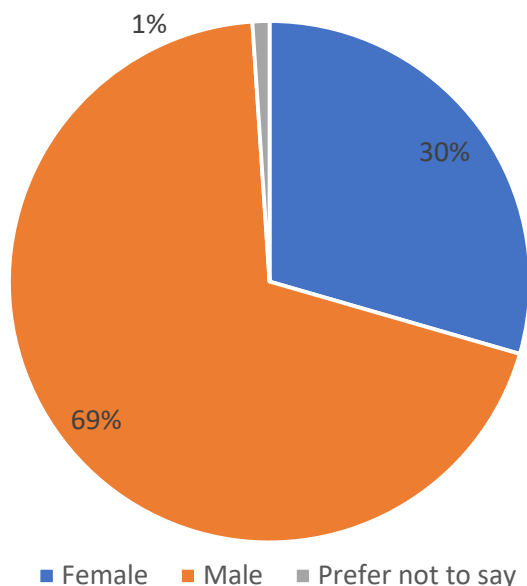


Figure 1: Genders of respondents

However, Figure 2 shows that the survey was completed by a range of ages across genders, although it is notable that the gender mix is somewhat more even in the younger groups.

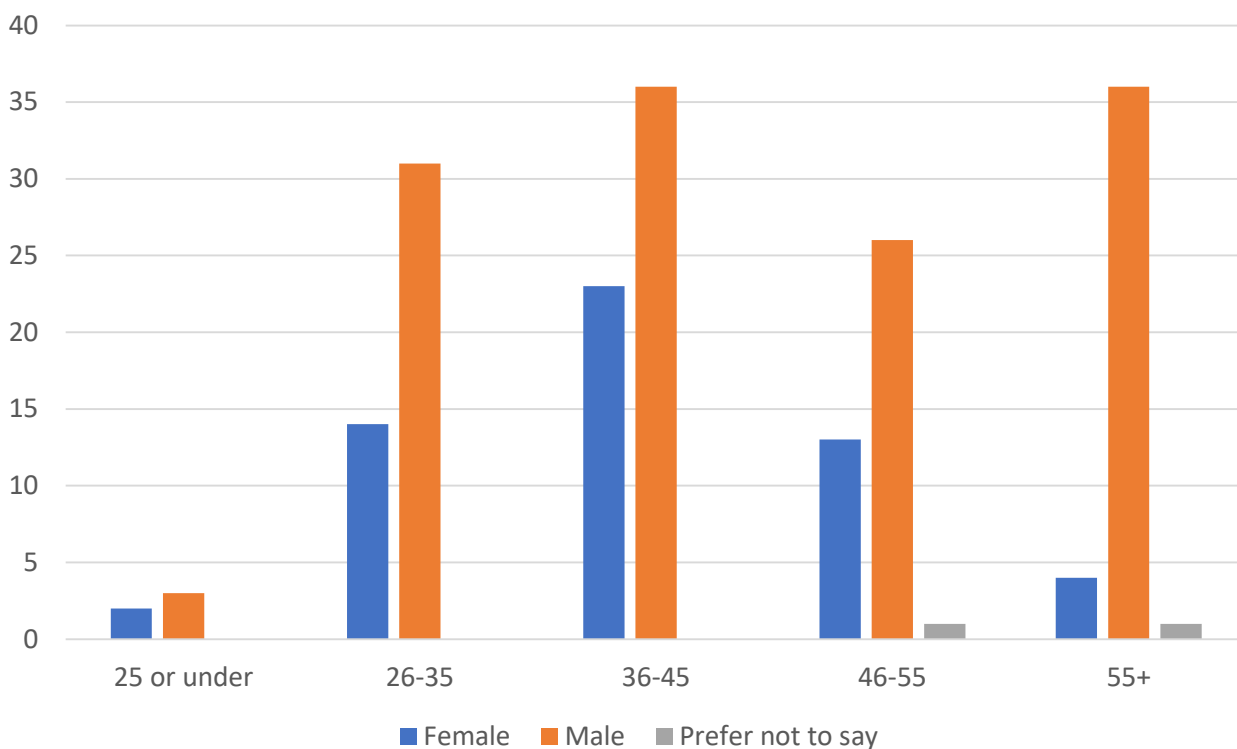


Figure 2: Genders of respondents by age

The 190 respondents work in a wide variety of transport roles (Table 1) and are members of a range of different professional bodies and with some belonging to more than one professional body (Table 2). There were no restrictions on the multiple different roles the respondents could choose.

Which area of transport do you work in mostly?	Number of responses
Traffic engineering	105
Business cases and funding applications	66
Road safety auditing	58
Transport policy	56
Network planning	54
Resource consents & outline development plans	41
Transport modelling (macro, micro and micro-simulation)	36
Travel planning & travel demand management	34
Public transport planning & operations (including rail)	32
Research	26
Human behaviours	17
Intelligent Transport Systems & Urban traffic control	16
Promotion & education	13
Traffic Management Co-ordinators	9
Freight and logistics planning	8
Academic/lecturer	6
Asset planning	4
Construction	4
Maintenance	3
Total responses	588

Table 1: Different areas of transport respondents work in

Professional body	Number of responses
Transportation Group NZ	146
Engineering New Zealand (ENZ)	120
Chartered Institute of Logistics and Transport (CILT)	33
New Zealand Planning Institute (NZPI)	11
Urban Design Forum (UDF)	9
Institute of Public Works Engineering Australasia (IPWEA)	8
Intelligent Transport Systems (ITS) New Zealand	6
Institute of Transportation Engineers (ITE)	6
Road Engineering Association of Asia and Australasia (REAA)	5
Institution of Civil Engineers (ICE)	4
Australian Institute of Traffic Planning and Management (AITPM)	3
Chartered Institution of Highways & Transportation (CIHT)	3
Australasian College of Road Safety (ACRS)	2
Total responses	356

Table 2: Professional bodies that respondents belong to

In terms of chartership, the numbers of Chartered Members of Engineering New Zealand (ENZ) and Chartered Professional Engineer that responded to the survey are relatively low as shown in Figure 3. As noted earlier, this may reflect the relative bias in who decided to complete the survey.

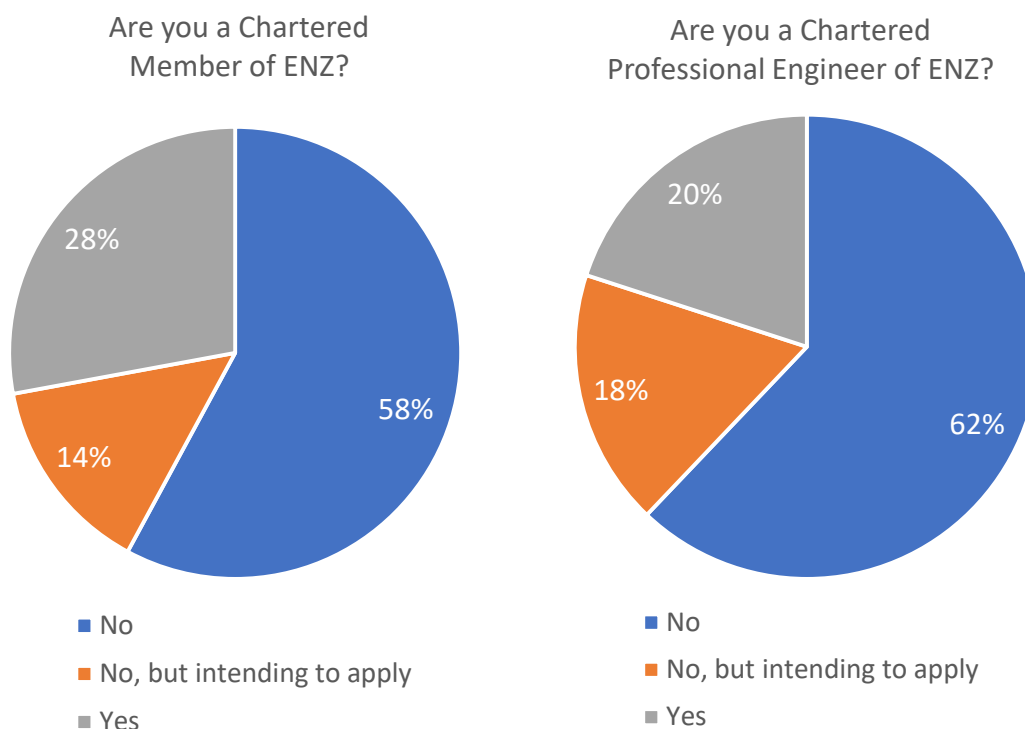


Figure 3: CMEngNZ and CPEng registration

Some of the reasons for people not being a Chartered Member (and similar to CPEng) include:

- *I am not an engineer.*
- *I am not an engineer and the chartership pathway appears better geared to engineers. The effort for a planner seems too great.*
- *Did not complete a Washington accord degree.*
- *I do not have a degree; gaining Chartered recognition requires a knowledge assessment. I probably will not go for it, as the cost is quite high and is on top of the normal assessment fee. There doesn't seem to be any financial benefit for me doing so.*
- *I have no interest in being a chartered member of an old boys' network that has been created to make it hard for everyone to get chartered. I don't see any point. Being chartered in my opinion does not add anything to my skills or recognition.*
- *I do not hold a degree, and despite being assessed as highly competent by my (chartered) peers, I am not learning vector calculus / other irrelevant things in order to pass a 'knowledge assessment'. My other area of engineering expertise (Digital Engineering) is not well serviced by Engineering NZ.*
- *See no value in being chartered.*
- *Currently see no need and too much unnecessary effort required for any benefit in my field*
- *There was no clear path for someone with my qualification (MSc Transportation Planning & Engineering UK) and no pressing need in my current role.*
- *There is no need to be a Chartered Engineer to perform my role.*
- *Membership of CILT sufficient and more appropriate for transport policy professionals*
- *My degrees are not Washington accord and to complete the assessment process requires experience with calculus. It just got too hard. I don't fall into planning, so chartered through CIHT. It feels there is a lack of suitable qualification path in NZ for transport professionals who did not come from a planning or engineering base. Many transport planners from my knowledge come from geography, environmental backgrounds and don't fit! I am a plangeneer!*
- *Not sure how to, cost, qualifications, benefits.*
- *Don't have an Engineering degree, so I assume I'm not eligible.*
- *Stuffy old boys' clubs?*

The core themes taken from the comments section are as follows:

- Many of us in transport are not engineers.
- Many of us in transport have completed other degrees that are not traditional engineering degrees and are therefore not considered Washington Accord. This in turn makes the process extremely difficult.
- As there is no requirement for Chartership status within the transportation industry, it isn't a priority.
- A diverse range of people and experience may not align with the traditional Engineering New Zealand requirements.

This also follows on as to why some respondents are not members of the Transportation Group (Table 3):

Reason for not being a member of Transportation Group	Number of responses
I don't understand the benefits of being a member of Transportation Group NZ.	17
I didn't think I was eligible as I am not an engineer	15
I don't know what this group is or what it does.	13
I don't consider myself an engineer, and thought the association with ENZ meant it would be very engineering focussed	11
I don't want to pay an additional fee to be a member when I am a member of another professional group/body.	6
I do not consider the membership to be relevant to my future career path.	4
There are no events run by this group that are relevant to me or my work.	2
Not sure what the benefits are other than networking	1

Table 3: Reasons for not being a member of the Transportation Group

Evidently there is still some misunderstanding about the composition of the Transportation Group, despite approximately half of the current membership not being engineers. Further work may be required to make the sector aware of the role of the Group and the benefits of being a member.

The breadth of study completed at bachelor's degree level as shown in Figure 4 is diverse and ranges from traditional engineering degrees to public policy, environmental management, sports and recreations, and psychology. The "other" field includes those with degrees in accounting, architecture, arts, marketing and customer experience and nautical studies.

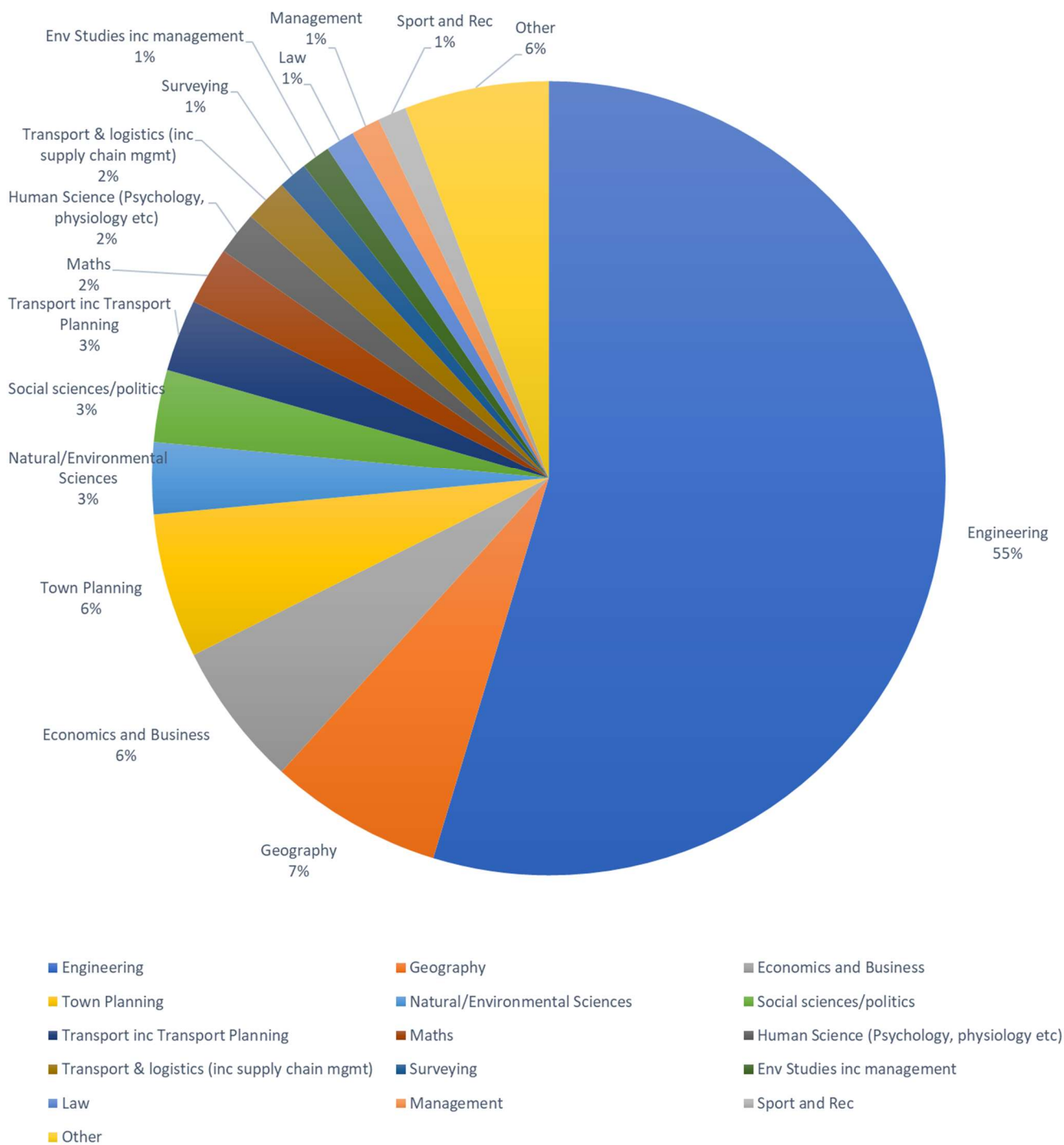


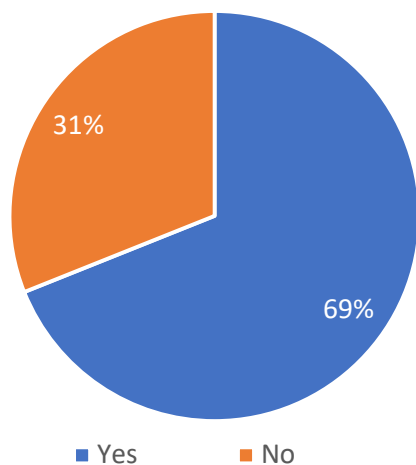
Figure 4: Range of bachelor's degrees completed by respondents

Question 14 of the survey asked the following:

If there was an alternative that provided professional recognition for people working within transport in NZ in the same way that Chartered Engineer recognises the highest level of engineering competence, do you think this would be of interest to you?

69% of respondents answered yes to this question as shown in Figure 5. This was followed up by Question 17 when asked “would you apply for this qualification if it existed?” The responses are summarised in Figure 5 also.

If there was an alternative that provided professional recognition would this be of interest?



Would you apply for this qualification if it existed?

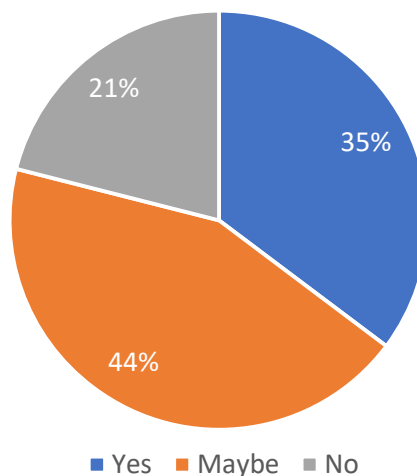


Figure 5: Response to new qualification pathways

Some of the reasons that people gave when answering no to question 17 include:

- *CMEng and CPEng should be top qualification, see this qual as fitting to those who have not achieved the benchmark required for the former*
- *I am recognised by my experience and expertise not the letters after my name.*
- *Not important in NZ. Most employers don't care.*
- *A separate qualification would undermine CPEng, and what they are trying to achieve, particularly around standardisation, managing competence levels and public confidence.*
- *Assessment of skill is already done by peer reviewers, team members and employers.*
- *It would be another administrative task and add further cost to membership of a group that is run by volunteers*
- *Learning in the industry in a practical way can be more beneficial than just theory*
- *I can make my own industry presence known / I don't need a badge to make it....*

However, for those who selected "maybe" the comments included:

- *I think this would be more in-line with what is done overseas and would be happy to be associated with other transportation professionals who don't have Civil Engineering degrees.*
- *Depends on any statutory requirement and industry recognition.*
- *It would depend on what was involved to get it, whether my employer would fund it, and whether it provided any advantage over CPEng.*
- *Probably a matter of cost benefit. Cost being how much effort, and benefit being how much learning or recognition received.*
- *I have not found acquiring chartership has adversely affected my career. I don't feel it provides proof of competence to employers.*
- *Depends on the requirements and what this meant. No point in having something that takes a huge amount of effort but isn't well recognised or respected. Or is given to people I wouldn't consider competent.*
- *Unsure if this will just confuse things with the already established quality marks.*

When looking at age and gender of the respondents to this question, younger females and males are more likely to consider applying for such a qualification if it existed as shown in Figure 6, whereas older females and particularly older males are unlikely to consider applying for such a qualification or certification (it is not clear whether this may reflect less priority at that stage in their career).

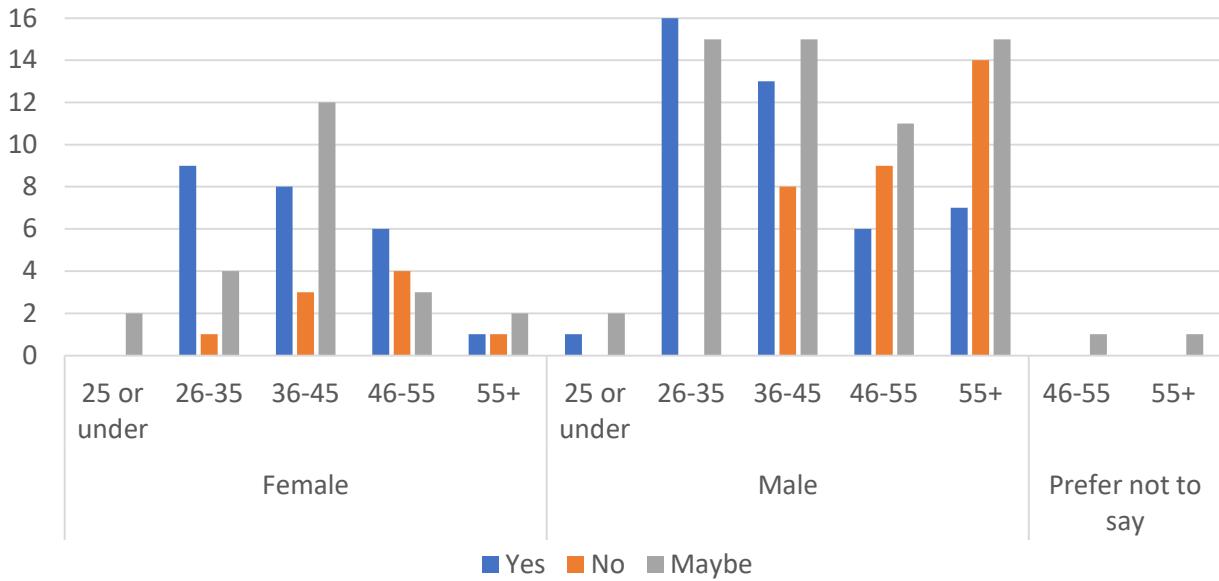


Figure 6: Who would consider applying for a new pathway (Q17)

When asked what the main benefits would be and how they would be in terms of importance to the respondent, the most important would be more awareness to employers/clients of capabilities and enhanced professional status as shown in Figure 7.

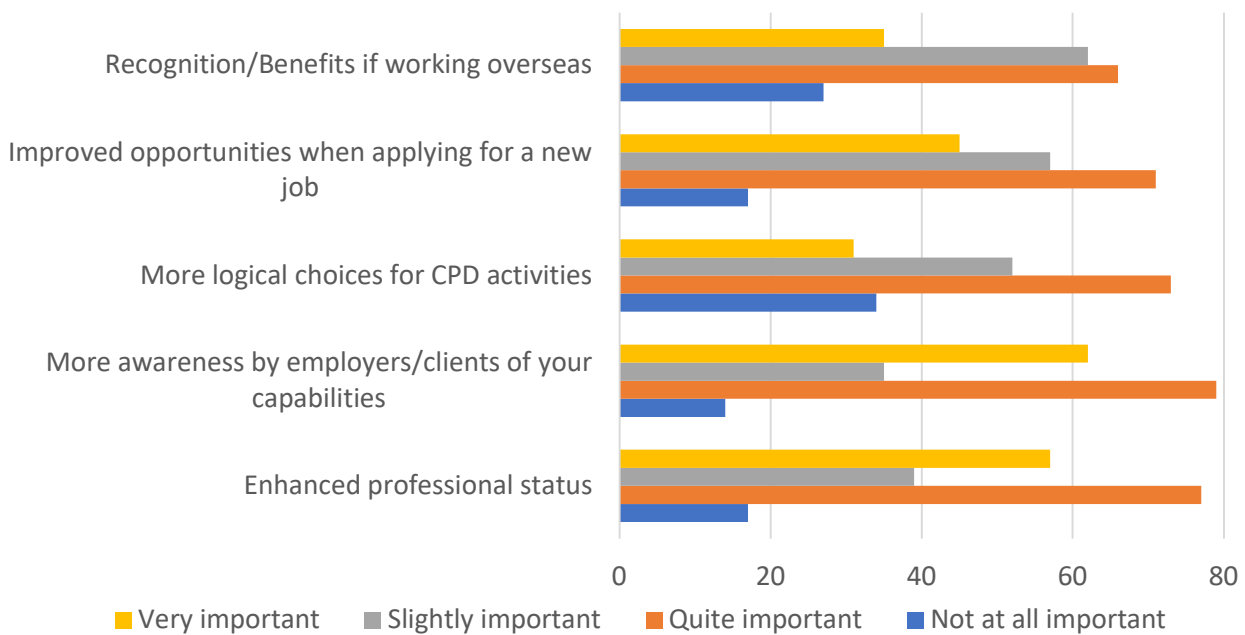


Figure 7: Benefits identified by respondents of a new pathway

This shows that respondents value the professional status and being able to demonstrate the capability to the employer and to clients.

Question 20 (Any further comments on the survey or topic?) received many interesting comments and some in support are provided below:

- *It's great that you're exploring this topic and I hope you can achieve better recognition of transportation professionals who haven't followed NZ's traditional civil engineering pathway!*
- *because of the 'different pathways' and the current trend of hiring people who have no idea, a qualification framework for some aspects which carry responsibility could be beneficial because that would give people some reassurance that if, for example, they hire a road safety*

auditor, that they have had specific training and assessment so should know what they're doing.

- a lot of good traffic engineers and transport professionals don't have a Washington accord degree and I don't think you need one to provide value in transport, so some form of recognition is required.*
- There needs to be real consequences for people operating outside the realm of their competence but as CPEng certification is only needed for a small portion of Engineering activities the current process is increasingly irrelevant to the industry. It is also still seen as an old boys' club where it is more important where you went to University than what you actually know.*
- I have no platform or opportunity to apply my craft, against a backdrop of very poor standards in matters of transport / land use integration, which is frustrating. Being on the autistic spectrum further disadvantages me and an improved path of chartership would help me obtain equal opportunities. This conversation has already happened elsewhere in the world, including the UK, which developed the chartered transport Planner opportunity. Transport Planning should be recognized as a specialism, not a generalist area.*
- Many people find it hard to talk about how good they are, and this seems to be true of a lot of engineers, so undertaking this exercise is overwhelming and doesn't feel right. It would be great to have a different easier process that still recognised the achievements of these people.*
- Very keen to see this progress. A massive gap in NZ.*

Other suggestions/recommendations received in the responses to question 20 include:

- My criticism of the Chartered Transport Planning Professional is that it requires transport planners to show high levels of ability across many of the subject areas and inherently favours those who are a 'jack-of-all-trades' and excludes specialists. It would be good for any NZ equivalent to avoid this pitfall.*
- It must be recognized worldwide and associated with special competencies*
- Existing transport engineering certifications should include more emphasis on multimodal transport planning and understanding how traffic engineering does not behave the same way as more "hard" engineering disciplines.*
- In general I would like some training opportunities for those who have been in the transport sector for quite a while and are finding they have an area of knowledge their study didn't cover or that is new, and a way to address that gap without having to enrol in an entirely new degree. Maybe this can assist in this area.*

DISCUSSION

This discussion is not about amending any existing pathways for Chartership status for Engineers or full membership for Planners. It is about a new approach to give recognition to and for continuing professional development to all people working in the transport profession that is accepted by our peers as an alternative to the traditional Chartered status.

There are several ways that a new pathway could be created based on models from overseas that responds to the comments and suggestions raised through the survey for a New Zealand approach to a certification or chartership model. It is recommended that such a pathway be developed by the industry so that the way forward is clear and that the required common "body of knowledge" (to cover technical, leadership and management, ethics etc) is accepted within the industry. Given the workload involved in setting up and managing a new professional pathway from scratch, it would seem sensible to have an existing professional body (or bodies) be responsible for its development, rather than relying on a new organisation or a volunteer-led one to take on the burden.

Any programme or pathway to a status should also consider the ongoing training requirement and the quality and recognition of this training. Currently, there is limited industry training in New Zealand in certain areas (e.g. intersection design, business cases, traffic signals, equity, modelling) with a reliance on conference formats and short knowledge building sessions rather than more traditional

workshop/learning-based approaches. Programmes of recognised and accredited lectures, workshops and micro-credentials could also contribute to an overall approach of building knowledge and capability within the industry, that could support a portfolio and interview approach to achieving a status.

The flexibility of the UK's TPP routes to professional status has a certain appeal, given the wide variety of backgrounds within the transportation sector; it may be worth exploring a similar "alternative routes" model for NZ. There may also be merit in having it jointly overseen by cross-discipline bodies (e.g. Engineering NZ, NZPI, CILT) to avoid concerns of discipline bias.

The US approach to providing targeted qualifications for Road Safety (RSP), Traffic Operations (PTOE), etc could be an optional opportunity to recognise those who are a specialist in a field such as Safe Systems, Road Safety Audits, Modelling, Business Cases, etc.

CONCLUSIONS & RECOMMENDATIONS

The main conclusion from the review of existing programmes and the response to the survey is that there are other ways available to give recognition to professionals who work in the area of transport and that further discussion around this would be welcome among the professional diversity that exists within our industry.

It is accepted that there may be some reluctance to move away from the standard CPEng or Chartered Membership route that Engineering New Zealand provides or the full membership option available from the NZPI, but the approach being suggested is not for professionals who have taken the more traditional approach through education into those fields and want to continue with this professional development. There is still a need for these highly regarded professions and the status that comes from the responsibility of being Chartered.

Building capability and mana in our industry and having opportunities for those both new to the industry or those wanting to increase their knowledge base, can only be a positive step in creating a trusted profession. There should be an ability for people to be recognised for what they bring to the industry regardless of their previous education and experience as this only adds further value and brings different conversations to the table.

It is recommended that an industry-wide approach be taken alongside existing professional bodies, academic institutions and training organisations (e.g. via a sector working group), to ensure that any new pathway be accepted and a common sector body of knowledge be agreed upon.

REFERENCES

Chartered Institute of Highways & Transportation (2021). *Transport Planning Professional* viewed 12 February 2021, <https://www.ciht.org.uk/transport-planning-professional/>

Chartered Institute of Logistics & Transport Australia (2021). *Certified Transport Planner (CTP)*, viewed 12 February 2021, <https://www.ciltapd.com.au/ctp/>

Chartered Institute of Logistics & Transport NZ (2021). *What's with this "chartered" business?*, viewed 12 February 2021, <https://cilt.co.nz/cilt/whats-with-this-chartered-business/>

Professional Standards Council (2021). *What is a Profession?*, viewed 12 February 2021, <https://www.psc.gov.au/what-is-a-profession>

Transportation Professional Certification Board Inc, (2021). *Frequently Asked Questions*, viewed 12 February 2021, <https://www.tpcb.org/faqs/#1>