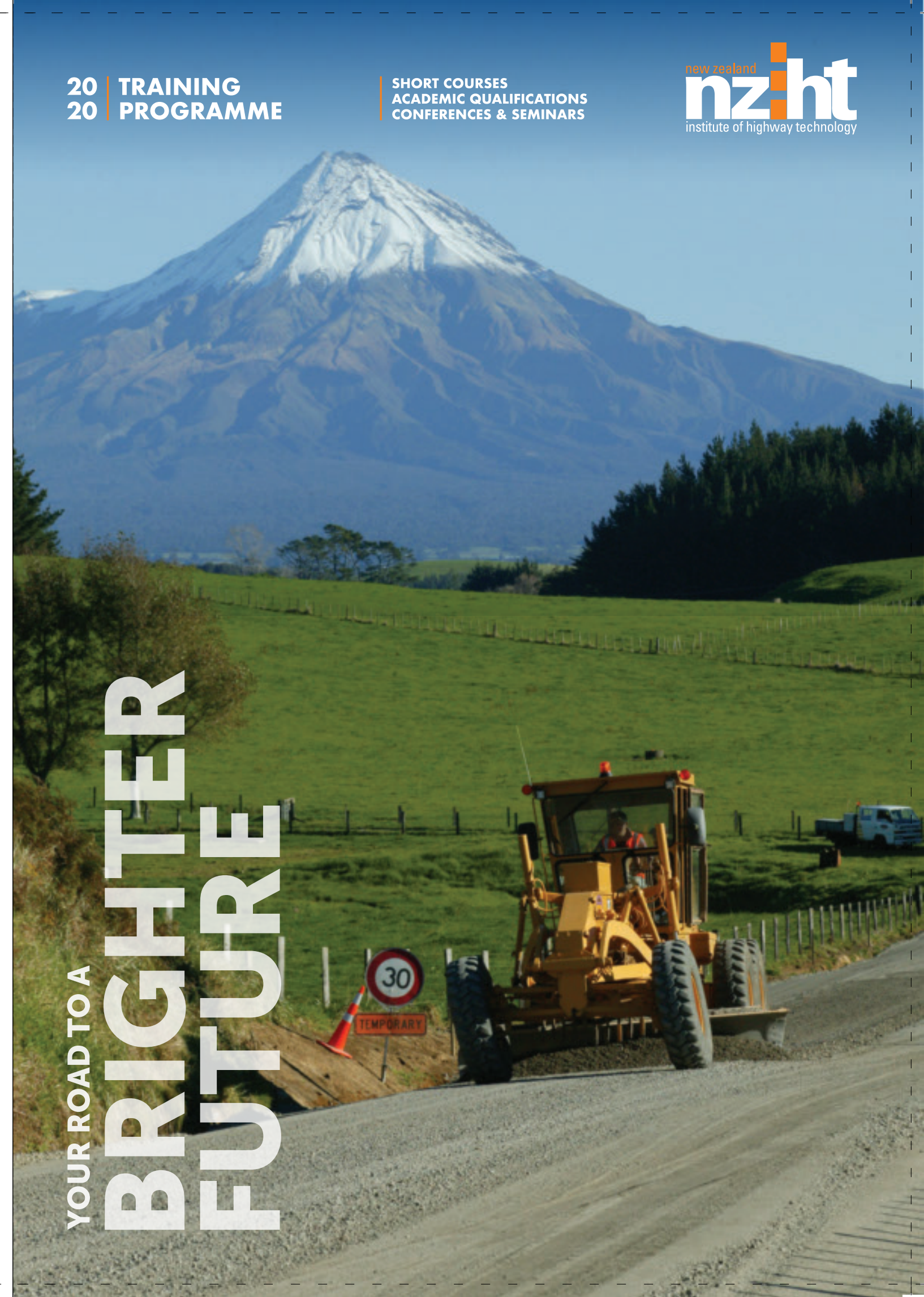


20 | TRAINING  
20 | PROGRAMME

SHORT COURSES  
ACADEMIC QUALIFICATIONS  
CONFERENCES & SEMINARS

new zealand  
**nz:ht**  
institute of highway technology

YOUR ROAD TO A  
**BRIGHTER  
FUTURE**





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A streamlined, web-based paperless system you can use from any smart phone/tablet, showing real-time reporting.

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- > Toolbox briefings
- > Generic TMP checking process
- > GPS links of location
- > Paperless reporting
- > OSR drag & drop function
- > Site pictures, real-time of your work site
- > Site summaries & overview map
- > 2 hrly checks (mandatory as per NZTA-CoPTTM)
- > All mandatory NZTA forms for TC/STMS
- > Toolbox briefings
- > Web-based



# ROAD DIRECT





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# OPEN LETTER TO INDUSTRY

**Welcome to the 2020 New Zealand Institute of Highway Technology (NZIHT) Training Programme. NZIHT specialise in the delivery of skills and training across all sectors of the Rooding, Engineering, Civil Construction, Oil and Gas industries**

NZIHT is an industry focused training organisation that delivers training both nationally and internationally.

- NZIHT offers formal qualifications from certificate level to post graduate level, our delivery model is well suited for those in full or part-time employment.
- NZIHT also offers a diverse portfolio of over 200 short courses for industry employees furthering their education and professional development. We are continually introducing more courses and are developing additional programmes to widen the portfolio to assist industry in capability building.
- NZIHT manages and coordinates national conferences, road shows, events and symposiums for the public and private sector, we can help you achieve success at your next corporate event.

Relevant and measureable quality training, education and professional development is not just about knowledge gathering but solutions, business growth and efficiencies, all of which create a resilient, well informed workforce and a competitive advantage.

We are continually introducing more courses and are developing additional programmes to widen the portfolio to assist industry in capability building.

As valued stakeholders we invite you to discuss, explore and target your business training and professional development needs with us. NZIHT remains committed and outcomes focused to industry, employers and our communities.

**Best wishes for the 2020 year.**



# ABOUT US

## OFFICES

### New Plymouth Office (Head Office)

PO Box 4273  
20 Bell Street  
New Plymouth 4340

P. 06 759 7065  
E. [admin@nziht.co.nz](mailto:admin@nziht.co.nz)  
[www.nziht.co.nz](http://www.nziht.co.nz)

### Hamilton Office

PO Box 9296  
500 Victoria Street  
Waikato Mail Centre  
Hamilton 3240

P. 07 850 8330

Every attempt has been made to ensure the information contained in this programme is up to date at publication.

Please contact NZIHT staff for any queries to ensure you have the most up to date information available.

## INTRODUCTION

The New Zealand Institute of Highway Technology (NZIHT) is a training organisation that delivers formal qualifications from certificate to post graduate level throughout multiple New Zealand sites. A great way to study for those in full or part time employment. NZIHT also offers a diverse range of public and in-house short courses for industry for delivery both on and off shore. NZIHT has a head office located in New Plymouth and an office located in Hamilton. NZIHT specialises in the delivery of skills and technical training across all sectors of the roading and civil construction industry. The Institute has been closely associated with the civil engineering industry for many years and more recently delivers health, safety and oil and gas training across industries. NZIHT also partners with agencies annually to manage and coordinate National conferences, events and roadshows, and produces year on year surplus to the parent company WITT.

## PRINCIPAL ACTIVITIES

Delivery of short courses to industry - off job or in-house training	Delivery of formal qualifications	Conferences/workshops
<ul style="list-style-type: none"><li>Civil and roading technology</li><li>Road Inspection</li><li>Safety in the trenches</li><li>Health and safety</li><li>Traffic control</li><li>Bitumen safety</li><li>Plant operation</li><li>Pavement design</li><li>Utilities/ codes</li><li>Management and construction supervision</li></ul>	<ul style="list-style-type: none"><li>Certificate in Infrastructure Works Level 2 &amp; 3</li><li>New Zealand Diploma in Engineering (Civil) Level 6</li><li>Graduate Diploma in Engineering (Highways) Level 7</li></ul>	Plan, manage and deliver 1-2 national conferences and roadshows per year in partnership with the industry.

NZIHT is 100% owned subsidiary of the Western Institute of Technology at Taranaki (WITT)

# RANGE OF QUALIFICATIONS DELIVERED BY NZIHT

The qualifications below are offered by NZIHT in association with the Western Institute of Technology in Taranaki (WITT) which is the accredited provider. All academic processes associated with course delivery are carried out in accordance with WITT's Quality Management System.

The range of qualifications delivered by NZIHT give a unique pathway of training for the civil engineering and highway construction industries. All NZIHT course delivery is in a mixed-mode format involving block course attendance followed by directed study. This mode of delivery caters specifically for full time employees or those who for other reasons are unable to attend conventional full-time study courses. Further details on each qualification can be found in this publication or on our website [www.nziht.co.nz](http://www.nziht.co.nz)

## **NEW ZEALAND CERTIFICATE IN INFRASTRUCTURE WORKS (LEVEL 2)**

This is a 41 credit qualification that gives the graduate an understanding of the infrastructure works industry and the health, safety and environmental knowledge required to work safely on site and with others, with limited supervision. This part time programme is delivered in five-block courses over 20 weeks. Students are required to attend all in-class training and complete all assessment work books to achieve this qualification.

## **NEW ZEALAND CERTIFICATE IN INFRASTRUCTURE WORKS (LEVEL 3)** with optional strand in Plant Operation (subject to approval)

This 75 credit qualification is the ideal next step for students who have completed the National Certificate in Infrastructure Works (Level 2) or NZ Certificate in Infrastructure Works (Level 2). Graduates of this qualification are able to work safely in a range of infrastructure works contexts with limited supervision. This part time programme is delivered in seven-block courses. Students are required to attend all in-class training and complete all assessment work books to achieve this qualification.

## **NEW ZEALAND DIPLOMA IN ENGINEERING (CIVIL) (LEVEL 6)**

This is a 240 credit Diploma which is equivalent to two years full-time study and can be studied part-time while employed. The aim of the NZ Diploma in Engineering is to provide skilled and competent engineering technicians specialised in civil engineering for the New Zealand engineering sector. Graduates will be capable of operating at a technician level scope of practice as outlined by the Dublin Accord (International Engineering Alliance, 2002).

## **GRADUATE DIPLOMA IN ENGINEERING (HIGHWAYS) (LEVEL 7)**

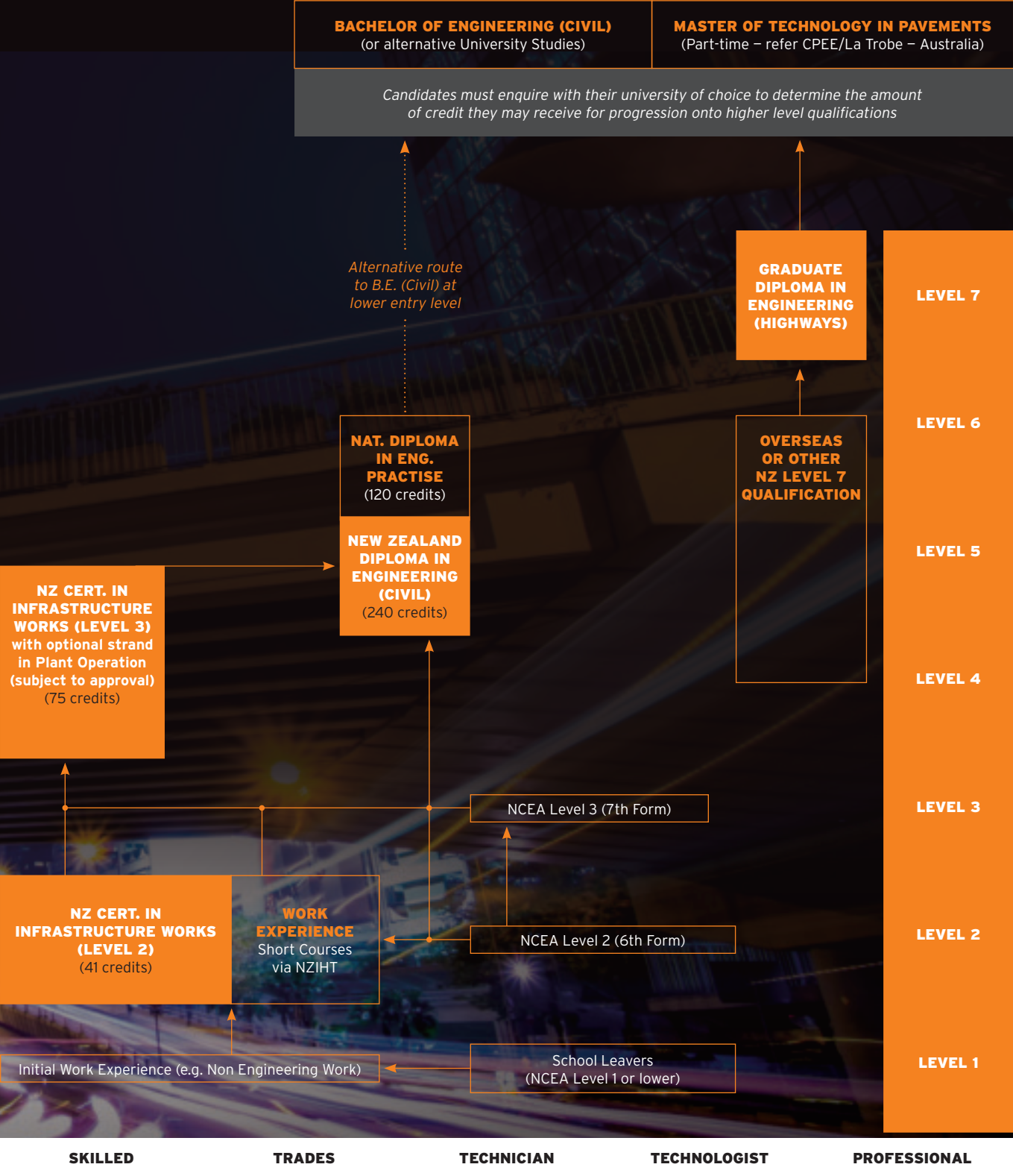
This is a 120 credit Graduate Diploma which is equivalent to one year full-time study and can be studied part-time. This programme is designed to provide holders of engineering qualifications an opportunity to acquire technical knowledge in highway engineering and general knowledge of applied management. It will provide a professional development opportunity for practitioners who hold a relevant tertiary qualification and who seek to broaden, or develop, their knowledge of highway engineering. The principal aim of the Graduate Diploma in Engineering (Highways) is to provide the highway engineering industry with a programme which will equip candidates with the technical and management skills to function at middle management level.



# NZIHT

## INTEGRATED QUALIFICATIONS

### PATHWAY DIAGRAM



# NEW ZEALAND CERTIFICATE IN INFRASTRUCTURE WORKS (LEVEL 2)

This qualification is for people commencing a career in the infrastructure works industry. They may be new to the industry, from school or another industry, or they may be already working in the industry without a qualification.

This qualification is also relevant to pre-apprenticeship programmes relevant to infrastructure works.

The qualification gives the graduate an understanding of the infrastructure works industry and the health, safety

and environmental knowledge required to work safely on site and with others. These people will work under direct supervision.

This is an entry level qualification to the infrastructure works qualification pathways, which leads to the New Zealand Certificate in Infrastructure Works (Level 3).

The New Zealand Certificate in Infrastructure Works (Level 2) is delivered over 20 weeks and requires attendance at five (5) block courses that are either one (1) or two (2) days in length

(ie no more than seven (7) off-job training days). Trainees must complete specified workplace experience tasks plus self-directed and unit standard assessment workbooks.

**ENTRY CRITERIA**

Entry is open to people working in the infrastructure works industries.

**Please note:** This programme is not approved for the enrolment of international students.

**New Zealand Certificate in Infrastructure Works (Level 2)**

All courses are compulsory		Level	Version	NZQF Credits	
BLOCK ONE: Attend TWO (2) days off-job training followed by self-directed study					
CIW2.100	Health and Safety for Infrastructure Works	2		12	12
22283	Demonstrate knowledge of occupational areas and structures in the New Zealand infrastructure works industry	2	2	2	
26720	Describe health, safety, and environmental care at an infrastructure works site	2	2	3	
20868	Demonstrate knowledge of emergency response in the infrastructure works industry	2	2	3	
17593	Apply safe work practices in the workplace	2	4	4	
BLOCK TWO: Attend ONE (1) day off-job training followed by self-directed study					
CIW2.101	Traffic Management	2		3	3
20877	Demonstrate knowledge of working safely at sites under temporary traffic management	2	2	2	
20878	Assist with temporary traffic management for low volume and Level 1 roads	2	1	1	
BLOCK THREE: Attend TWO (2) days off-job training followed by self-directed study					
CIW2.102	Communications and Quality Assurance	2		13	13
9677	Communicate in a team or group which has an objective	2	10	3	
12349	Demonstrate knowledge of time management	2	6	3	
17327	Apply communication skills on an infrastructure works site	2	3	3	
27329	Demonstrate knowledge of and apply quality assurance practices to own work area in an infrastructure works operation	3	2	4	



New Zealand Certificate in Infrastructure Works (Level 2) continued...

All courses are compulsory		Level	Version	NZQF Credits	
BLOCK FOUR: Attend One (1) day off-job training followed by self-directed study					
CIW2.103	Worksite Machinery	2		6	6
6475	Describe and complete work records for infrastructure works	2	5	2	
6469	Maintain small machinery used on infrastructure works site	2	6	2	
23285	Use and care for hand tools used for infrastructure works	2	3	2	
BLOCK FIVE: Attend ONE (1) day off-job training followed by self-directed study					
CIW3.104	Earthworks for Civil Construction	3		7	7
6477	Identify, hand spread, and assist in compacting materials for infrastructure works	2	6	3	
27500	Operate compaction equipment for infrastructure works	3	2	4	



Rana Siddharth



Haidee Ward

For further information and an information pack contact:

Jan Kivell, NZ Institute of Highway Technology  
PO Box 4273, New Plymouth 4310  
T. (06) 759 7065 Ext. 708 E. jan@nziht.co.nz

# NEW ZEALAND CERTIFICATE IN INFRASTRUCTURE WORKS (LEVEL 3)

with optional strand in Plant Operation  
(subject to approval)

**The purpose of this qualification is to provide the infrastructure works industry with people who have a broad range of infrastructure works skills, including the safe and effective operation of basic plant and equipment.**

It is the cornerstone qualification for those graduates wanting to move into technical roles in the civil works, surfacing construction and manufacturing, pipe installations and utilities maintenance contexts.

Graduates of this qualification are able to work safely in a range of infrastructure works contexts with limited supervision.

This qualification builds on the New Zealand Certificate in Infrastructure Works (Level 2) and leads to level four qualifications in the Infrastructure and/or Civil Works industries.

The New Zealand Certificate in Infrastructure Works (Level 3) is a part-time programme that requires attendance at seven (7) block courses that are two (2) days in length (ie fourteen (14) off-job

training days). Trainees must complete specified workplace experience tasks plus self-directed and unit standard assessment workbooks.

## ENTRY CRITERIA

Entry is open to people working in the infrastructure works industries.

Applicants should demonstrate an ability to succeed in tertiary study shown by the completion of any of the following qualifications or courses of study:

- National Certificate in Infrastructure Works (Level 2)  
**or**
- New Zealand Certificate in Infrastructure Works (Level 2)  
**or**
- NCEA Level 1 Literacy and Numeracy requirements

Applicants who do not meet the academic entry criteria may be admitted to the programme of study if they are able to demonstrate:

- Equivalent knowledge

- Equivalent knowledge/capability by the testimony of an employer.

**Please note:** This programme is not approved for the enrolment of international students.

## GRADUATES OF THIS QUALIFICATION WILL BE ABLE TO:

- Apply safe work practices and comply with environmental requirements on an infrastructure works site.
- Apply quality and industry best practice principles for infrastructure works.
- Apply work processes to carry out infrastructure works operations.
- Inspect, operate and maintain small plant for infrastructure works.

Full course details, including unit standards covered, will be available on request.

## For further information and an information pack contact:

Jan Kivell, NZ Institute of Highway Technology  
PO Box 4273, New Plymouth 4310

T. (06) 759 7065 Ext. 708 E. [jan@nziht.co.nz](mailto:jan@nziht.co.nz)



# NZ DIPLOMA IN ENGINEERING (CIVIL) (LEVEL 6)

The Western Institute of Technology at Taranaki (WITT), through the NZIHT, offers NZDE (Civil) in block course format. This method of delivery, which involves *Study Blocks* and structured *self-directed study*, caters specifically for the needs of students who are unable to attend a conventional full-time programme. It is ideally suited for cadetship type training.

## A Career in Civil Engineering

The NZDE (Civil) prepares a student for a career in the civil engineering industry. Civil engineers plan, design and construct the infrastructure in which we live and work. This includes the establishment of facilities like roads, railways, airports, water supply, drainage, wastewater disposal, bridges, dams, multi-storey buildings, tunnels and other public works.

Civil engineers are employed by a wide range of different organisations including district and city councils, engineering consultants, contractors, transportation agencies such as NZTA, academic institutions, environmental agencies, etc.

## MINIMUM ACADEMIC ENTRY CRITERIA

For entry to this programme, applicants are required to have –

NCEA Level 2\*, and:

- A minimum total of 48 credits at level 2 in four subjects including at least 12 credits in mathematics (preferably achievement standards in algebra, calculus or trigonometry, **or**
- equivalent qualifications (e.g. International Baccalaureate or Cambridge), **or**
- equivalent credits from appropriate trades training and/or demonstrated skills and experience.

\* including a minimum of 10 literacy credits at level 1 or higher (for those who achieved NCEA Level 2 before 2013).

## Notes

1. Applicants who do not have the required NCEA Level 2 mathematics skills will be required to complete the foundation course, Introductory Engineering – Mathematics (Level 3).
2. There is a “Special Admissions” category that caters for applicants who do not meet the normal admission requirements but have the potential for successful completion of the programme based on maturity, work experience and relevant prior learning.

## METHOD OF DELIVERY

### Block courses

The programme is delivered using a mixed mode format comprising contact sessions, called *Study Blocks*, and structured *self-directed study*. The self-directed and tutor-directed study component is undertaken in the student's own time at home with the aid of course notes and a structured work programme. Interaction with the course presenter and fellow students, as and when required, is encouraged via e-mail, telephone or the NZIHT Course Management System website (CMS).

The duration of the *Study Blocks* varies according to the requirements of individual courses. The typical duration is 5 to 8 days per course. The *Study Block* period for each course is normally split into two half blocks, called *Block 1* and *Block 2*. *Block 1* takes place during the first half of the semester, and *Block 2* towards the end of the semester. All courses are offered on a semester basis. Semester 1: February to June; Semester 2: July to November.

The Study Blocks can be scheduled to take place at venues throughout New Zealand so as to best suit the needs of stakeholders (industry, students and NZIHT). Current venues used for NZDE delivery includes Hamilton, Auckland, Palmerston North and Christchurch. This method of delivery is ideally suited for cadetship type training.

## For further information and an Information Pack contact:

The Programme Coordinator,  
NZ Institute of Highway Technology  
PO Box 4273  
New Plymouth, 4340

T. (06) 759 7065 E. [admin@nziht.co.nz](mailto:admin@nziht.co.nz)

Table 1 - NZ Diploma in Engineering (Civil) Programme

Code Key: C=Compulsory; E=Elective.

Code	Course Title	C or E	Level	Credits	Pre Or Co Requisites
12 Compulsories + FOUR electives (at least THREE at Level 6)					
COMPULSORY COURSES					
DEC4.101	Engineering Fundamentals	C	4	15	
DEC4.102	Engineering Mathematics 1	C	4	15	
DEC4.103	Technical Literacy	C	4	15	
DEC6.101	Engineering Management	C	6	15	
DEC6.102	Engineering Project	C	6	15	Minimum of 45 credits at Level 5 + DEC5.207, DEC4.201, DEC4.103
CIVIL DISCIPLINE COMPULSORY					
DEC4.201	Materials (Civil)	C	4	15	
DEC5.207	Geotechnical Engineering 1	C	5	15	
DEC5.201	Structures 1	C	5	15	DEC4.101
DEC4.202	Land Surveying 1	C	4	15	
DEC5.202	Civil & Structural Drawing	C	5	15	DEC4.103
DEC5.203	Hydraulics (Civil)	C	5	15	DEC4.101 (Co-), DEC4.102 (Co-)
DEC5.204	Highway Engineering 1	C	5	15	
Electives – four to be selected, of which three must be at level 6					
DEC5.205	Engineering Surveying	E	5	15	DEC4.202
DEC5.206	Structures 2	E	5	15	DEC5.201, DEC4.102 (Co-)
DEC6.201	Geotechnical Engineering 2	E	6	15	DEC5.207
DEC6.205	Water & Waste Water Systems	E	6	15	DEC5.203
DEC6.206	Water & Waste Water Management	E	6	15	
DEC6.202	Highway Engineering 2	E	6	15	DEC5.204
DEC6.203	Traffic Engineering	E	6	15	DEC4.102 (Co-)
DEC6.204	Structures 3	E	6	15	not offered by NZIHT in 2020
DEC6.207	Land Surveying 2	E	6	15	



# GRADUATE DIPLOMA IN ENGINEERING (HIGHWAYS) (LEVEL 7)

**The Graduate Diploma in Engineering (Highways) (GradDipEng (Highways)) is offered by NZIHT in partnership with the Western Institute of Technology at Taranaki (WITT).**

The GradDipEng(Highways) is a 120 credit one-year (full-time equivalent) qualification designed to provide holders of civil engineering qualifications an opportunity to acquire technical knowledge in highway engineering and general knowledge of applied management. It will provide a professional development opportunity for practitioners who hold a relevant tertiary qualification and who seek to broaden, or develop, their knowledge of highway engineering. The Graduate Diploma will also prepare them for further study at other institutions and universities in New Zealand and overseas.

Applicants will typically include:

- Bachelor of Engineering graduates, local or overseas, who have little or no highway engineering background;
- Non-engineering graduates, e.g. persons holding science, geology or similar degrees.

The principal aim of the GradDipEng (Highways) is to provide the highway engineering industry with a programme which will equip candidates with the technical and management skills to function at middle management level.

## DELIVERY FORMAT

The programme is delivered in block course format. Students can either complete the programme within a year or complete the programme part-time over a period of two to two and a half years.

A typical format for a 15-credit course will be one or more study blocks of approximately 5-10 days duration, combined with self-directed study with distance learning support.

The learning cycle during each term consists of the following:

- Study Blocks (class contact) of approximately 5-10 working days per course, arranged in a delivery permutation that best suits the requirements of the courses and the group.
- Self-directed study period during which students complete course work and set assignments in their own time, and prepare for the final examination. During this time course presenters are available via e-mail or telephone to attend to individual inquiries. An on-line Course Management System (CMS) provides a communication forum and a platform for on-line learning support.
- A final written examination at the end of course.

## TOPICS INCLUDE

- Wearing Surface Technology
- Highway Engineering Fundamentals
- Traffic Engineering
- Contract Management
- Drainage Design
- Geometric Design
- Pavement Design
- Land Surveying for Engineers

Entry and selection criteria apply.

## For further information contact:

Jill Warner, Programme Coordinator  
T. (06) 759 7065 ext 709  
[www.nziht.co.nz](http://www.nziht.co.nz)

## GRADUATE PROFILE

Graduate Diploma  
in Engineering  
(Highways)

Suraj (pictured right) is working on the Waikato expressway project.

# ROAD TO SUCCESS

**SURAJ LAMICHHANE** / Parbat District, Nepal

GRADUATE DIPLOMA IN ENGINEERING (HIGHWAYS)

Suraj Lamichhane successfully completed the Graduate Diploma in Engineering (Highways) at WITT's New Zealand Institute of Highway Technology (NZIHT) campus in Hamilton, in July 2016.

He is now employed as a pavement engineer for Higgins on the Waikato Expressway, one of New Zealand's biggest roading projects. Higgins specialise in large civil infrastructure projects including major roading projects, wind farms, airport runways and port infrastructure.

The Waikato project will eventually shave 25 minutes off the time it takes to drive the 180km journey from Tirau north to Auckland and the new road will

bypass urban centres, notably Hamilton.

It is being completed in seven stages and has been years in the making – a generation ago a Hamilton deputy mayor lamented the “goat track” between Auckland and Hamilton.

In contrast, the \$100 million-plus four lane expressway will become the key strategic transport corridor connecting Auckland to the agricultural and business centres of Waikato and Bay of Plenty.

“The main reason behind choosing WITT to study was because of the quality and widely recognised education, friendly and welcoming environment for international students,” he said.

“My qualification from WITT in Highway Engineering really helped me get my first job as a Civil Engineering Technician in the construction industry, where there is a skills shortage in New Zealand,” he said.

“The approach of the tutors at WITT really made a big difference.”

Suraj and his wife are originally from Parbat District, a hilly area of Nepal. They now enjoy living in Hamilton and plan to remain in New Zealand while he gains “as much knowledge as I can in the Engineering Field”.

FOR MORE INFORMATION PLEASE VISIT [WWW.WITT.AC.NZ](http://WWW.WITT.AC.NZ)





## It's a winding road from horticulture to renewing wastewater networks, but it's one that Stuart Skene has enjoyed taking.

Stuart has worked at New Plymouth District Council for 25 years – a council that believes in the value of continually investing in developing staff members' skills and capability.

"Continuous learning is important for a lot of sectors, and especially in technical areas such as engineering where technology and processes are always shifting and opening up new ideas," says Stuart.

"When I realised I wanted to build on the project management skills I'd learned through horticulture and landscape, I chose an engineering qualification so that I'd be able to deliver a wider range of projects successfully."

Stuart was a field worker in the council's Parks Team for more than a decade before becoming a Parks Project Manager.

Later he moved into a Projects Team that took on projects from across the council's business, and he realised that developing his engineering knowledge would

benefit both himself and the council as a whole.

"NPDC backed me all the way. They asked me to identify an appropriate course and it quickly became apparent that studying for the NZDE (Civil) with NZIHT via their extra mural programme was a good way to learn while working."

Stuart found the block courses and home study worked well. He got to enjoy the class room experience of the block courses, and study at home meant he could fit it around his family and social life.

"At my age I am far from the usual student enrolled in the study for this diploma and although I found parts of it challenging, I thoroughly enjoyed being in the learning environment and being proof that 'you can teach an old dog new tricks', which was very fulfilling," he says.

Stuart has undertaken a range of projects which include building construction and refurbishments, wastewater network renewals, and

cycling and walking on-road and off-road improvements – and still undertakes the occasional project for the Parks Team.

"I consider myself fortunate to be part of a learning-focused organisation that values supporting staff to increase their technical knowledge."

NPDC Infrastructure Manager David Langford says it's a no-brainer to make sure staff can meet the demands of a continually changing sector.

"There will always be future challenges in engineering and by investing in our staff members' continuing education, we're investing in our organisation's ability to respond and thrive no matter what surprises come our way," he says.

"With skilled staff who have the latest knowledge as well as broad experience, you can make the most of opportunities and turn significant challenges into world-leading solutions."

[newplymouthnz.com](http://newplymouthnz.com)



NewPlymouthDistrictCouncil



@NPDCouncil



Te Kaunihera-ā-Rohe o Ngāmotu

**New Plymouth  
District Council**





**Besafe in collaboration with NZIHT facilitate training to raise to the standard of health and safety within the work environment and wider community.**

**Taranaki Passport**

This one day course provides health and safety information for those working on Taranaki Oil & Gas and associated sites, and includes safety systems and procedures common to many sites in the region and promotes responsibility, safe working practices and behaviours.

**Hazard and Effect Management  
Process Safety**

This one day course includes the use of Job Hazard Analyses, toolbox meeting, step back 5 x and other common systems used to manage hazards in the workplace.

**Confined Spaces**

This two day course provides knowledge of confined spaces. Identifies control measures to eliminate, isolate, and minimise the risk of hazards in confined spaces. Monitoring testing requirements and the responsibilities of people entering confined and observing work being undertaken.

**Working at Heights**

This two day course provides the skills and knowledge required to install and use temporary height safety systems and safety harnesses while working at height according to statutory regulations and standards and manufacturers operating instructions.

For further information on any of these courses, or to discuss your training needs, contact:

**Joanna Brown** Oil & Gas Manager

**DDI.** 06 757 3258 or  
0800 948 896 ext 9065

**E.** [joanna.brown@witt.ac.nz](mailto:joanna.brown@witt.ac.nz)

# DOWNER YOUR FUTURE

## **Emma Weston**

Maintenance Engineer, Downer New Zealand



Emma is a Maintenance Engineer for Downer New Zealand based in the Central Waikato. After wrapping up high school at 18, Emma joined Downer with an open mind about what the next four years of her life would entail.

Emma joined the Downer Cadetship Programme, which supported her through her studies at NZIHT allowing her to complete her NZ Diploma in Civil Engineering in four years.

The Downer Cadetship Programme encourages cadets to rotate throughout the business, exposing them to different aspects of engineering and building a strong platform of practical knowledge. The diversity of these rotations allowed her the ability to experience new aspects of contracting and gain an understanding for the civil industry as a whole.

Emma took full advantage of these rotations and attempted to line up her papers with the practical knowledge she would gain from each rotation.

**“I found that it made the process of providing examples much easier during exams when I could pull from the experiences I was gaining in the field”**

**“Balancing study and work was a difficult aspect to navigate. There is a lot of self-learning required to prepare for the exams, but all of this provided me with an understanding of the value of strong time management. I took advantage of the**

**knowledge my tutors offered and also the support that my managers provided to succeed.”**

After completing her Diploma of Engineering at NZIHT, Emma was eager to continue her training and development and enrolled in her NZ Diploma of Engineering Practical. When asked what advice she would offer incoming cadets Emma says:

**“Take advantage of every opportunity that is presented to you. There is so much knowledge and experience within this business, it pays to invest time in building relationships. There are a lot of people who are willing to share their knowledge when you put your hand up and ask for it.”**



# DEVELOPING OUR PEOPLE FOR A BETTER TOMORROW

People are the heart of our business, and our most precious asset. Creating successful career pathways in the transport industry underpins our contribution and commitment to personal growth and sustainable communities. Broadspectrum has operated a successful cadet program for more than 40 years. This has helped build the capability of young, local talent by empowering them with the motivation, knowledge and skills to succeed in their careers.

One of our success stories centres on Tim Ward in Northland. Joining Broadspectrum 11 years ago from school, Tim studied and worked, gaining valuable work experience. With guidance and mentoring through our cadet program, Tim has achieved exceptional professional goals, directly attributable to the program, coupled with Broadspectrum's focus on people engagement and development. His rapid rise through the program has seen him develop as a well-rounded industry leader and branch manager in Kaipara, providing benefit to Broadspectrum and the community.

Success in business is all about people. At Broadspectrum we continually invest in our people as they are our biggest and most valuable asset.





# RANGE OF SHORT COURSES OFFERED BY NZIHT

## REGISTRATION DETAILS

### SHORT COURSE REGISTRATION FORM

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Identify, Locate and Protect Services (1 Day)	32
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Understanding the National Utilities Code (2 Days)	46

# SHORT COURSE REGISTRATION DETAILS

## REGISTRATION CLOSE-OFF DATES

Minimum numbers of participants are necessary for the delivery of any course. With this in mind, and to ensure participants are not inconvenienced due to last minute cancellations, we require registration for all courses five (5) working days prior to each course date. Late registrations will be accepted up to the course day only if spaces are available.

**NZIHT reserves the right to alter course dates, postpone or cancel courses due to unforeseen circumstances or where numbers are insufficient. Maximum attendance numbers may also be established to ensure optimum learning conditions for all participants.**

## DEBT RECOVERY

Attendees will be responsible for any debt recovery costs on outstanding invoices.

## CREDIT CARD SURCHARGE

A 3% surcharge will be applicable on all credit card transactions.

## CONFIRMATION OF ATTENDANCE

Confirmation of final course details will be dispatched from NZIHT five (5) working days prior to the course date. This is if minimum numbers for the course are met.

## CANCELLATION AND TRANSFERS

Participant withdrawals must be notified in writing. Withdrawals after the close-off date (5 working days prior to the course date) will be charged at 50% of the full course fee. Substitute or replacement participants will be welcome to attend. Non-attendance of participants on the course date will be charged at the full course fee.

## CONTACT

**Short Course Co-ordinators**  
**NZ Institute of Highway Technology Ltd**  
**20 Bell Street**  
**P O Box 4273**  
**NEW PLYMOUTH 4340**  
  
**P. (06) 759 7065**  
**E. [admin@nizht.co.nz](mailto:admin@nizht.co.nz)**  
**[www.nizht.co.nz](http://www.nizht.co.nz)**

## RANGE OF NZIHT TRAINING COURSES OFFERED

### TRAINING

We offer a range of training services to help achieve your goals of training and development.

### CONSULTANCY

NZIHT Technical and Educational staff are available to assist your company in an advisory capacity.

Services available include training needs analysis, technical support and unit standard based training.

Please contact us for a proposal.

### IN-HOUSE PROGRAMMES

All or parts of our short course can be customised to meet any organisation's local or special needs. Enquiries are welcome.

**A registration form for copying is on the next page of this programme, and there is also one at the back of the programme.**

## PRIVACY INFORMATION

The New Zealand Institute of Highway Technology Limited (NZIHT) is obliged under the Education Amendment Act to provide a variety of personal data and statistical information. We also exchange this information with other parties as listed below. Failure to provide all the information requested on the course registration form may result in non-enrolment. Information collected may be used by or exchanged with.

- NZ Qualifications Authority for Records of Learning.
- NZIHT staff (including use for marketing purposes) and their consultants.
- Industry Training Organisations, NZTA and Road Controlling Authorities.
- Education and Training Support Agency and scholarship providers.
- Staff of any other training providers whose course you may be involved with.
- Other agencies where disclosure is required for data matching or the maintenance of law and order as defined in the Privacy Act 1993.

You have the right to see and correct if necessary any information which you have provided. Names, addresses and programmes of study may also be available for approved research purposes.

# SHORT COURSE REGISTRATION FORM



I / WE WILL ATTEND THE FOLLOWING NZIHT SHORT COURSE

Please fill details in below.

COURSE NAME

COURSE LOCATION

COURSE DATE

NAME OF PARTICIPANT (1)

NAME OF PARTICIPANT (2)

NAME OF PARTICIPANT (3)

NAME OF PARTICIPANT (4)

ORGANISATION NAME & POSTAL ADDRESS

CONTACT PERSON (All correspondence will be forwarded to the Contact person)

CONTACT'S JOB TITLE

CONTACT'S PHONE NUMBER

CONTACT'S EMAIL

PURCHASE ORDER NUMBER

## TERMS AND CONDITIONS

**Note:** Late registrations will be accepted if space is available.  
**Please note:** Confirmation letters will be sent five working days prior to the course date.  
**Cancellations:** Participant withdrawals must be notified in writing. Withdrawals after the close-off date (5 working days prior to the course date) will be charged 50% of the course fee. Non attendance will also be charged the full rate. Substitute participants are welcome. Please refer to our current Training Programme for full registration details and conditions.  
Attendee will be responsible for any debt recovery costs on unpaid fees.  
The NZIHT reserves the right to alter course dates, postpone or cancel courses due to unforeseen circumstances or where numbers are not sufficient.

Course cost \$  
Plus 15% GST \$  
Cheque enclosed for: \$

Please make payable to NZ Institute of Highway Technology Ltd, or

Please invoice us for: \$  
\* NZIHT approved account holders only. Alternatively prepayment will be required.

Please charge my credit card: \$  
Name on card  
Card number / / /  
Expiry date / Security Code 3 digit number on back of card  
\* 3% surcharge will be applicable on all credit card transactions

Post or email back at least **two weeks** prior to the course date:

**The Course Co-ordinator**  
New Zealand Institute of Highway Technology Ltd  
P O Box 4273, New Plymouth, 4340

**P.** (06) 759 7065  
**E.** admin@nzihit.co.nz



# NZIHT SHORT COURSES

## AGGREGATES FOR PAVEMENT CONSTRUCTION 1 DAY

**PRESENTER** Clare Dring

This course identifies the properties and characteristics of aggregates and how these relate to performance of pavement and surfacing minerals. It covers the systems for quarrying, storage, selection and handling, so that these properties are not altered and their quality remains consistent until placements in the pavement.

Future specifications will incorporate statistical-based acceptance criteria and this course reflects this.

### TOPICS

- Function of structural layers in a pavement
- How aggregates influence pavement performance
- Selection of pavement aggregates - sealed and unsealed pavements
- Storage, handling and compaction of aggregate for pavements
- Source rock characteristics
- Aggregate production and properties of the product
- Role of clay minerals
- Quality assurance, quality control statistical-based process control and acceptance criteria
- Aggregates to meet NZTA requirements for M/4, M/6 and B/2
- Use of marginal and low quality aggregates

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand factors affecting pavement construction relating to aggregates
- Determine influences on aggregate layers
- Learn methods of selecting pavement aggregates
- Determine quality of aggregate resources
- Understand quarrying processes
- Relate understandings to pavement construction techniques

### WHO SHOULD ATTEND?

Design, construction and maintenance supervisors and engineers from local authorities, contracting organisations, laboratory technicians, consultants and road aggregate suppliers.

### COURSE COST

**\$520 per person + GST**

(minimum numbers apply before a course is confirmed)

## AGILE MANAGEMENT 2 DAYS

**PRESENTER** Steven Briggs

**Keen to improve productivity?  
Need to have a more engaged team?  
Have to deliver a project in a hurry or  
in a changing or uncertain environment?**

Agile is a methodology that's over 50 years old that has recently been rediscovered and applied in the IT sector. The good news is that the ideas can be applied in any situation to improve performance, results and the working environment.

This course explains the agile approach and how it can be applied to your workplace.

### TOPICS

- Starting with why
- Agile principles
- Self-managing teams
- Servant leadership
- Visual management
- Effective conversations
- Performance reporting
- Improving learning

### ON COMPLETION, PARTICIPANTS WILL HAVE LEARNED

- A simple approach to implementing agile
- How to engage the team
- How to manage workload
- How to manage change
- How to coach effectively
- How to make a realistic plan
- How to measure progress and track issues
- How to embed learning

### WHO SHOULD ATTEND

This course will be of assistance to anyone working in a project or development environment where you need to improve performance.

### COURSE COST

**\$995 per person + GST**

(minimum numbers apply before a course is confirmed)

## APPLYING BITUMEN EMULSIONS AND POLYMER-MODIFIED BINDERS 1 DAY

**PRESENTER** Phillip Muir

**Bitumen emulsions for chipsealing offer some significant advantages over hot bitumen cutbacks in terms of safety, total energy use, greenhouse gas emissions and reduced risk in damp and cool environments.**

Polymer-modified binders (PMB's) extend the range of engineering materials available to contractors and designers to solve many of the practical road-surfacing problems that arise due to such things as cracked pavements, high surface stresses and wide temperature ranges.

However, the ways that these particular materials behave, both when applying them and in service on the road, are markedly different from conventional bitumen binders.

It is essential that those designing and constructing surfacings incorporating PMB's or emulsions, have a good understanding of the material properties and in particular the limitations that these place on construction methodology and timing.

The course introduces the materials, looks briefly at manufacture and covers properties in detail with a strong emphasis on how this influences application techniques and on-the-road performance separately for emulsions and PMB's.

Guidelines are given to assist contractors to minimise the many risks associated with the use of these materials and show how to plan and successfully carry out this type of work. Effects on design are noted briefly.

### TOPICS

- Manufacture, properties and how they work
- Storage, handling, sampling and testing
- Planning the work – special preparations
- Chipseal and SAMI construction considerations
- Effects on chipseal design
- PMB's in Hot Mix Asphalt
- Trouble-shooting
- Treatment selection and design considerations
- Advantages and limitations
- Recent advances in technology
- Adhesion and Cohesion, how they work

Continued on next page...



#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand basic bitumen emulsion behaviour and how to handle it properly
- Advise on when to use or when not to use emulsions or PMB's
- Understand the basic principles of polymer modification of bitumen binders and how to handle properly
- Understand the practical effects of PMB's in Hot Mix Asphalt
- Make appropriate adjustments in chipsealing techniques to successfully apply emulsions and PMB's
- Understand the need for appropriate chipseal design adjustments for emulsions and PMB's

#### WHO SHOULD ATTEND?

All those involved in the supervision or design of bitumen emulsion chipseals; polymer-modified binder chipseals; stress-absorbing membrane interlayers; polymer-modified hot-mix asphalt mixes.

#### COURSE COST

**\$520 per person + GST**

(minimum numbers apply before a course is confirmed)

## ASPHALT PAVEMENT CONSTRUCTION ESSENTIALS

### 1 DAY

#### PRESENTER Phil Bull

**This course is designed to enable both new and novice construction personnel to learn and understand the basic concepts and requirements to lay a quality chipseal/ asphalt pavement. On occasion a new staff member is thrown into a crew and is given a basic task to perform, yet they never really get to understand the total picture of what they are working towards. This course is designed to create a better understanding of all aspects of the construction process.**

#### TOPICS

- Basic Bitumen Safety and Hazard ID
- Chipseal and Asphalt Surfacing Types
- Planning the Job - Materials, Equipment and Subcontractors
  - Selecting the right mix
  - Paver/s
  - Rollers – type and numbers
  - Trucking – match to production/ laying rate
  - Millers
- Marking out and measuring the Job
- Quality - Records and HOLD Points
- Chipseal Construction Basics:
  - Traffic Control/Hazard ID/Pre-Start
  - Binder types/heat/application rates/supply

- Seal design basics
- Single Coat/Two Coat
- Chip sizes/application/rolling
- QA
- Excess chip removal
- Line marking
- Asphalt Construction Basics:
  - Traffic Control/Hazard ID/Pre-Start
  - Preseal treatments
  - Asphalt type/thickness/density/tonnes required
  - AC Supply - manufacturer/deliver
    - Trucking - match production with laying rates
    - Mix temperature control
  - Mark out runs
  - Tack coating
  - Membrane sealing
  - Set up paver
  - Compaction Control
    - Using the correct roller
    - Mix laying temperatures
    - When to start/stop compacting
  - QA
  - Line marking
  - Client satisfaction

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Work safely on a surfacing job/project
- Distinguish; the various processes, roles and equipment used on surfacing sites
- Understand the basics of constructing a quality pavement surface

#### WHO SHOULD ATTEND?

Employees with limited surfacing knowledge who wish to gain a better understanding of the construction processes.

Employees, with 'hands on' experience, who wish to understand why these processes are being followed.

Engineers/consultants wishing to understand the practical aspects of bituminous surfacing.

#### COURSE COST

**\$395 per person + GST**



## BITUMEN – BASIC SAFETY

### INCLUDES HANDS-ON FIRE EXTINGUISHER TRAINING

### 1 DAY

#### PRESENTER Barry Gundersen

**It is absolutely essential that all those involved in any way with bituminous materials fully understand the significant hazards presented and the procedures used to ensure safety.**

This is a required comprehensive safety awareness course for all personnel in the road surfacing industry and is presented with the aid of practical demonstrations and videos.

This popular course has practical 'hands-on' fire extinguisher training. Every person on the course gets to practice putting out a fire with an extinguisher.

It is a pre-requisite for other advanced courses for those handling, operating, maintaining or working near bitumen equipment or supervising the use of bituminous materials.

This course will assist with compliance with individual and company Health and Safety responsibilities.

#### TOPICS

- Introduction to bituminous materials including emulsions
- Health hazards, personal precautions
- Hazards when working around bitumen plants and hot-mix plants
- Hazards associated with field operations
- Importance of appropriate training
- Dangers of water
- Detailed discussion of first aid and the subsequent management of bitumen burns and chemical burns incidents
- Dangerous goods, flash point, auto-ignition, safe distances
- Explosion hazards, empty tank hazards
- Maintenance hazards, spillage precautions and response
- Fire safety including 'hands on' experience in the use of portable fire extinguishers to fight flammable liquid fires
- Miscellaneous associated hazards encountered in the road surfacing industry

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Identify basic hazards associated with bitumen and hotmix road surfacing and stabilising
- Identify specific hazards and safety procedures associated with the handling, blending, transportation and spraying of bitumen
- Recognise hazards involved in the maintenance and repair of bitumen equipment
- Carry out procedures for fire-fighting with extinguishers

*Continued on next page...*

- Carry out first aid procedures for bitumen burns and know how to manage the interface with medical personnel
- Carry out first aid for chemical burns

#### WHO SHOULD ATTEND?

All personnel involved in any way with road surfacing, especially those working anywhere in contractor's depots and maintenance workshops, chipsealing and asphalt paving workers, as well as those managing or supervising road surfacing operations including local authority and consulting engineering personnel.

A separate course named "Bitumen – Managing the Risks" is designed for contractor managers and supervisors. This course covers due diligence management aspects of the above issues.

#### COURSE COST

**\$530 per person + GST**

*(minimum numbers apply before a course is confirmed)*

## BITUMEN – MANAGING THE RISKS 1 DAY

**PRESENTER** Barry Gundersen

**This is an essential risk awareness course targeted at managers, engineers and supervisors involved in managing businesses or operations that include the storage, transport and production of bituminous materials; and road surfacing works. A separate course "Bitumen – Basic Safety" is intended for all others involved in the road surfacing industry.**

It is absolutely essential that all those involved in managing or supervising bituminous operations or businesses, fully understand the significant hazards presented by the materials, related plant and equipment, the legislative requirements imposed and the due diligence procedures required to adequately manage the many risks involved.

This one day course is designed to help managers comply with Health and Safety responsibilities.

#### WHAT IS THE DIFFERENCE BETWEEN 'BITUMEN – BASIC SAFETY' AND 'BITUMEN – MANAGING THE RISKS'?

The "Bitumen – Managing the Risks" course differs from the "Bitumen – Basic Safety" course, in that it is aimed specifically at managers and looks at the management and due diligence issues associated with bitumen related risks.

#### TOPICS

- The CCNZ Code of Practice 9904 (Best Practice Guideline)
- Health and safety – summary of risks

- Safety legislation – personal responsibility of managers
- Importance of appropriate training
- Hazards of bitumen plants and hot-mix plants
- Hazards associated with field operations
- Dangers of water
- Managing bitumen burns and chemical burns incidents
- Dangerous goods regulations – management responsibilities
- Explosion hazards, empty tank hazards
- Plant maintenance hazards, spillage precautions
- Managing fire risk
- Miscellaneous associated hazards encountered in the road surfacing industry

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Identify basic hazards associated with bitumen and hotmix asphalt activities and understand what "due diligence" means with respect to managing these hazards
- Identify specific hazards and safety procedures associated with the handling, blending, transportation and spraying of bitumen and the production and laying of hot-mix asphalt
- Recognise hazards involved in the maintenance and repair of bitumen equipment – especially tanks and tankers.
- Understand principles of fire-fighting with extinguishers
- Understand the principles of managing a bitumen burns incident and the first aid treatment for bitumen burns and chemical burns.

#### WHO SHOULD ATTEND?

All senior management, middle management and supervisory personnel whose responsibilities are related to bitumen, hot mix, bitumen equipment or any related activities.

#### COURSE COST

**\$520 per person + GST**

*(minimum numbers apply before a course is confirmed)*



## BITUMEN BULK TANKER AND PLANT OPERATOR 1 DAY

**PRESENTER** Barry Gundersen

**The operation of bulk bitumen handling and transport equipment (tankers, storage and blending plants) demands a basic knowledge of the properties of bitumen and associated products and adherence to strict safety procedures.**

Production is improved if operators have the appropriate advanced knowledge and skill to accurately and safely use plant and equipment.

Quality is maintained by bitumen product knowledge, adherence to handling procedures, accurate blend calculation and careful record keeping.

Attendance at the "Bitumen – Basic Safety" course within the last five years is a pre-requisite for this course.

This course "follows on" from the "Bitumen – Basic Safety" course and is a pre-requisite for the "Bitumen Sprayer Operator" course.

#### TOPICS

- Bitumen, additives, polymers, emulsions
- Safe operation aspects of fixed plant
- The CCNZ Code of Practice 9904 (Best Practice Guideline)
- Loading, blending, heating and transferring
- Transfer hose safety and compliance
- Plant maintenance
- Storage and transportation
- Dangerous goods classification and labelling
- Measurement and control
- Safe tanker operation
- Sampling and documentation
- Calculation of blends
- Record keeping
- Plant maintenance safety

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the nature of bitumen products and safe operating procedures
- Understand plant for handling and transporting bitumen safely
- Understand ancillary plant functions, capacities and capabilities
- Identify plant safety and on-road responsibilities when using bitumen
- Understand blend calculations, measurements and documentation
- Safely undertake bitumen sampling
- Understand risks associated with plant maintenance.

#### WHO SHOULD ATTEND?

Persons who have completed their training for bitumen safety awareness and who wish to acquire specialist knowledge for operating road tankers and bitumen plants.

*Continued on next page...*

Also, experienced operators, who wish to update their knowledge and/or qualifications, will find this course appropriate.

#### PRE-REQUISITE FOR ATTENDANCE

- Participants **must** have completed the *Bitumen - Basic Safety* course (within the last five years) prior to attending this course.

#### COURSE COST

**\$520 per person + GST**

#### OR

**\$850 per person + GST to attend two consecutive days** (ie: Bitumen Bulk Tanker and Plant Operator followed by the Bitumen Sprayer Operator course)

*(minimum numbers apply before a course is confirmed)*

## BITUMEN RHEOLOGY AND PERFORMANCE

### 1 DAY

**PRESENTER** Darcy Rogers

**Bitumen is the primary sealing material used in New Zealand roads which comes in various grades and may be modified with polymers or other materials. Before 2016 bitumen was graded according to empirical consistency measures with no reference to traffic, shear or climate. Modified Binders too have been classified by empirical tests.**

The volumes of traffic in New Zealand are increasing all of the time, and this combined with the heavier trucks on our roads means that we need to ensure the effectiveness and longevity of the bitumen and PMBs we use every day.

In the 1990s the USA introduced performance bitumen - PG grades, and now New Zealand has also moved in this direction. This specification recognizes that the rheological properties of binders are key to its performance in either asphalt or sealing.

It is essential that those designing and constructing surfacing and structural asphalt layers have a good understanding of the material rheological properties to select the

correct binder and design the final product and handle it correctly.

This course introduces the concepts of rheology and shows how they relate to performance in asphalt and seals. This is related to the design of asphalt and selection of sealing grades. The new asphalt specification is discussed and how the testing is done, reported and controlled.

#### TOPICS

- Crude oil and processing – how the refinery works and how this affects performance
- Basic bitumen chemistry
- Basic bitumen rheology: first, second and third generation specifications
- MSCR – high and low temperature properties
- NZTA M1/A
  - Why
  - How
  - What
- Relationship to asphalt design and application M/10 2014
- Binder selection
- PMB – how PMBs are specified in M/1A
- Sealing performance grades of the future, how rheology affects seal performance

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand basic bitumen production and the effect of crudes and processing
- Understand the basic principles binder rheology and how its measured
- Understand M/1A asphalt Performance grades
- Have knowledge of the seal binder directions for performance
- Understand the practical effects of PMB's in Hot Mix Asphalt and Sealing based on rheology.

#### WHO SHOULD ATTEND?

Laboratory personnel, field supervisors, consultants, asphalt plant supervisors and management.

#### COURSE COST

**\$520 per person + GST**

*(minimum numbers apply before a course is confirmed)*

## BITUMEN SPRAYER OPERATOR

### 1 DAY

**PRESENTER** Barry Gundersen

**Precise and competent operation of the bitumen sprayer is essential to successful chipsealing operations. Sprayer performance is improved if operators have detailed knowledge of the principles of the chipsealing process and the appropriate knowledge to accurately use the equipment.**

Output quality is enhanced by bitumen product knowledge, adherence to safe handling procedures and careful record keeping.

#### PRE-REQUISITE FOR ATTENDANCE

- Participants **must** have completed the *Bitumen-Basic Safety* course (within the last five years) prior to attending this course.
- Participants **must** have completed the *Bitumen Bulk Tanker and Plant Operator* course prior to attending this course.

#### TOPICS

- Bitumen products for chipsealing
- Chipseal types and basic design principles
- Storage, blending and transportation
- Sampling and documentation
- Sprayer types, pumps & operating systems
- Troubleshooting
- Spray charts
- Correct spraybar set-up
- Hand-spraying
- Sprayer maintenance
- Operational safety
- CCNZ BPG3(E2) industry certification of sprayers
- Field measurement and control
- Calculation of hot spray rates for cutbacks and emulsions
- Spraying Hot PMB's
- Bitumen sprayer record keeping

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the nature of bitumen products and handling procedures

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- Understand sprayer principles
- Understand ancillary plant functions, capacities and capabilities
- Identify plant safety and on-road responsibilities when spraying bitumen
- Understand the correct operation of bitumen sprayer plant
- Calculate hot spray rate from design residual application rate
- Calculate required binder quantity
- Complete field measurements
- Maintain accurate documentation

#### WHO SHOULD ATTEND?

Persons with limited knowledge of sprayer operation. Also experienced operators who wish to update their knowledge and/or qualifications, will find this course appropriate.

#### COURSE COST

**\$520 per person + GST**

#### OR

**\$850 per person + GST to attend two consecutive days** (ie: Bitumen Bulk Tanker and Plant Operator followed by the Bitumen Sprayer Operator course)

*(minimum numbers apply before a course is confirmed)*

## BRIDGE INSPECTION AND MAINTENANCE PROCEDURES

**2 DAYS**

**PRESENTER Dave Charters**

**Bridges are valuable assets, which must be maintained and managed if they are to remain functional at optimal costs through their design life.**

Defects do occur which require attention during the life of a bridge. Some bridge components have a design life less than that of the bridge and require periodic replacement. Natural events such as floods and earthquakes cause damage.

The bridge corrosion environment can affect durability and must be recognised. These areas must be addressed and appropriate maintenance carried out to ensure continued public safety as well as to maintain the asset and minimise repair costs.

Whilst this course does include a module on the inspection process, this is not considered in detail. Completion of this course does not certify delegates to inspect NZTA bridges. The NZIHT sister course, "Bridge and Other Significant Highway Structures Inspection", is required.

#### TOPICS

- Asset management systems
- The inspection procedure
- Condition assessment for common bridge materials
- Repair procedures

- Coatings for steel structures
- Economic evaluation
- Durability and maintenance of bridging materials
- Maintenance requirements
- Waterway, drainage and seismic damage

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Identify the principles of bridge inspection and maintenance
- Carry out bridge inspections under supervision
- Understand the importance of the corrosion environment local to structures
- Gain an understanding of administration and management systems
- Follow NZ Transport Agency policy to inspect and evaluate bridge conditions and detect faults
- Prepare repair procedures under supervision
- Effectively prioritise maintenance requirements
- Detect potential instances of bridge failure
- Learn ways to enhance durability of materials used in bridge construction

#### WHO SHOULD ATTEND?

- Engineers and inspectors with responsibility for inspecting and determining maintenance requirements for both State Highway and Local Authority bridging.
- New and experienced bridge inspectors, engineers, technical staff and asset managers wishing to upgrade their knowledge should attend this course.

#### PARTICIPANTS NEED TO BRING

This course is based on NZ Transport Agency's Bridge Inspection and Maintenance Manual Revised Edition 2001, Code: SP/M/016

If you do not have a copy of this manual, it can be obtained from the NZ Transport Agency website [www.nzta.govt.nz](http://www.nzta.govt.nz).

It is essential that representatives from each organisation attending have at least one copy of this manual to refer to at the course.

#### COURSE COST

**\$895 per person + GST**

*(minimum numbers apply before a course is confirmed)*



## BRIDGE AND OTHER SIGNIFICANT HIGHWAY STRUCTURES INSPECTION

**2 DAYS**

**PRESENTER Dave Charters**

**Bridges and Other Significant Highway Structures are critical components of the New Zealand Road Network. Failure to inspect and identify any defects correctly could potentially result in dramatic damage and/or loss of life.**

This is a **new NZTA endorsed and certified** course designed to ensure the correct requirements are met for the inspection of bridges and other significant highway structures. The course will cover in depth the requirements outlined in NZTA policy Document S6 'Bridges and Other Significant Highway Structures Inspection Policy'. This course is assessed on day two and will qualify the successful candidates to undertake general bridge inspections specifically for NZTA but also other Road Controlling Authorities.

**NZTA now requires this training as a condition to inspecting NZTA structures.**

This course forms one of several components required of Structure Inspectors set out in NZTA Policy S6, Bridges and Other Significant Highway Structures Inspection Policy. This course is not intended to qualify those personnel who have minimal or no experience. Other requirements for Structure Inspectors set out in Policy S6 include experience in the construction, inspection and maintenance of bridges and other significant highway structures over a number of years.

The focus of this course is firmly on the inspection process and the identification of defects. Successful completion of the assessment component on the second day will enable inspectors to carry out General Inspections on NZTA bridges. Treatment of defects is dealt with in the NZIHT sister course, "Bridge Inspection and Maintenance Procedures".

#### COURSE CONTENT INCLUDES

##### – DAY ONE

- Course Introduction. Purpose of inspection. Definition of Structures.
- Inspection policy – NZTA S6 2015.
- The role of the different parties, Inspector and Bridge Inspection Engineer.
- Types of inspection. Focus on General and Principal Inspections. Responsibility for Structure Inspection.
- Routine Surveillance Inspections.
- Special Inspections.
- Effect of environment – intervention guidelines.
- Planning the inspection round.



- The inspection form – standard form from NZTA S6.
- Importance of recognising when more detailed study is required.
- Equipment. Camera, ladder, calipers, steel rule etc.
- Optimising the inspection process – adding value. Spotting loading plaques and recording.
- Reporting and Records overview.
- Safety.
- Systematic Approach of the Inspection procedures.
- Elements, Causes of Deterioration and Identification and Logging of defects in reinforced concrete.
- Problem with and Identification and logging of defects in steel structures.
- Problems with timber structures.
- Procedure for drilling timber structures to identify concealed decay.
- Hardware. Joints, bearings, holding down bolts, seismic restraints, service supports. Typical problems and logging of defects.
- Approaches, Foundations and Waterways – typical problems and logging defects.
- Specialist inspections/advice for particular structure types such as steel structures.

#### COURSE CONTENT INCLUDES – DAY TWO

##### Morning

INSPECTION – Structures of different types will be inspected as a group along with utilising the latest inspection results from the NZTA Regional Bridge Consultant.

##### Afternoon

ASSESSMENT – Each delegate will inspect a structure and be assessed on an individual basis. Attendees will be split up to provide integrity of assessment.

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the principles of bridge and other highway structure inspection.
- Carry out bridge and highway structure inspections under supervision.
- Gain an understanding of administration and management systems.
- Follow NZ Transport Agency Policy to inspect structures and identify defects.
- Detect potential instances of bridge failure.
- Identify where more detailed or specialist inspection or technical advice is required.

#### PREREQUISITE

Before attending this course, Delegates must have at least a one years' active experience inspecting bridges or other similar structures.

#### WHO SHOULD ATTEND?

- Engineers and inspectors with responsibility for inspecting and determining maintenance requirements for both State Highway and Local Authority bridging.
- New and experienced bridge inspectors, engineers, technical staff and asset managers wishing to upgrade their knowledge.

**All course delegates should be familiar with NZTA Policy S6. In particular be familiar with the terminology used in the bridge inspection proforma. Delegates must have at least a one years' experience inspecting bridge or other similar structures.**

#### PARTICIPANTS TO BRING

Hi-vis clothing, safety boots, wet weather gear, clipboard.

#### COURSE COST

##### \$1,200 + GST

(Maximum number of attendees for this course is 10)

Attendees will receive a copy of the Inspection Manual for Highway Structures – Inspectors Handbook and a Crack Gauge to keep after the course.

## CHIPSEAL DESIGN 2 DAYS

#### PRESENTER Barry Gundersen

**Factors affecting the design and the field performance of chipseal surfacings are complex. Local conditions can significantly influence the way a seal is designed to get the best performance.**

Prior detailed knowledge of chipsealing materials is an essential requirement for this course. A short preparatory course "Chipseal Materials" is available for those who wish to update their knowledge.

The treatment selection and design procedures from the textbook "Chipsealing in New Zealand" provide the basis for this course and a range of worked examples are included.

A problem-solving session in syndicate workgroups also aids understanding. In addition, the practical application of the NZTA P/17 performance-based specification will be covered in detail, including worked examples.

#### TOPICS

- Understanding the stresses on a road surface
- Skid resistance basics
- Assessing chipsealing needs
- Pre-seal treatments
- Importance of addressing adhesion issues
- Design processes and options
- Worked design exercises
- Plant used in chipsealing construction
- Construction of chipseal and reseals
- Analysis of faults, failures and fixes
- Quality assurance
- Contractual responsibilities and procedures for P/17
- Determination of acceptance criteria for P/17
- Acceptance testing and payment for P/17
- Worked P/17 examples

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Assess chipsealing needs
- Understand and undertake design steps required

- Determine pre-treatments required
- Determine appropriate surfacing treatments and binder application rates
- Calculate hot binder spray rates and chip application rates
- Identify essential spray preparation, spraying control, traffic control and compaction checks to ensure quality of seal
- Select plant for production requirements and job type
- Understand the contractual framework for P/17 contracts
- Determine P/17 acceptance criteria
- Carry out acceptance measurements and apply acceptance criteria to completed chipseals.

#### WHO SHOULD ATTEND?

- People with limited knowledge of chipseal design and experienced practitioners wishing to update their knowledge in line with the approach in the "Chipsealing in New Zealand" textbook and in the application of the NZTA P/17 specification.
- Personnel from Local Authorities, contractors and consultants will find this course particularly useful.

#### ENTRY RECOMMENDATIONS

- To fully understand and successfully complete this course, attendees must already have a sound knowledge of the nature and priorities of road surfacing component materials. Participants can gain this essential knowledge by first attending the NZIHT preparatory course "Chipseal Materials", as knowledge of this subject matter will be assumed.
- It is recommended that attendees should attend or have completed the "Bitumen-Basic Safety" course within the last five years.
- For maximum benefit it is recommended that participants have the mathematical ability of at least NCEA Level 1

#### PARTICIPANTS TO BRING TO COURSE

It is recommended that participants have access to a copy of the "Chipsealing in New Zealand" Text Book released by the NZ Transport Agency in 2006.

This book is now out of print, but a full copy is available on the NZ Transport Agency website: [www.nzta.govt.nz](http://www.nzta.govt.nz)

(Choose 'Resources & Manuals' and then 'Manuals'. Scroll down until you see Chipsealing in NZ.)

#### COURSE COST

##### \$850 per person + GST

#### OR

##### \$995 per person + GST to attend two and a half consecutive days

(ie: Chipseal Materials followed by the Chipseal Design course)

(minimum numbers apply before a course is confirmed)

# CHIPSEAL MATERIALS

AN ESSENTIAL INTRODUCTION FOR CHIPSEAL DESIGNERS

1/2 DAY

**PRESENTER** Barry Gundersen

This course provides an introduction to the materials and specifications used in chipseals and asphalt in NZ. It is intended for those who have not previously aquired the knowledge or had formal detailed training in this subject.

It is essential knowledge for those wishing to attend the NZIHT Chipseal Design course. It is intended to give a good understanding of the properties, specifications and performance of the component materials - bituminous binders, binder additives and mineral aggregates. Knowledge of the subject matter in this course is essential for those wishing to gain chipseal design skills.

### TOPICS

- Bitumen production, NZTA M1 specification
- Bitumen Performance Grade specification developments
- Penetration, viscosity, flash point, durability, DSR Testing
- Pumping, mixing and spraying temperatures
- Additives – cutters, fluxes, adhesion agents, antifoam
- Additives – polymers, natural rubber, fibres
- Water stripping, active adhesion, vialit test
- Aggregate pre-coating, primers (bitumen and emulsion)
- Bitumen emulsions, classification, on-road behaviour
- Production of sealing chip
- Source tests for rock for sealing chip
- NZTA M6 specification properties and tests
- ALD chip shape concepts in detail, and sieve analysis/grading
- Sampling aggregates
- Application of chip

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the basic properties of binders and aggregates for chipseals
- Understand the requirements of NZTA M1, M6 and M10 specifications
- Understand the tests used for road surfacing materials and how to interpret test results
- Understand how the material properties of binders and aggregates effect on-road performance

### WHO SHOULD ATTEND?

All those, whether contractor or client, who supervise chipseal and hotmix asphalt construction. Those who are involved in chipseal design and asphalt mix design.

### COURSE COST

**\$395 per person + GST**

or

**\$995 per person + GST**

to attend two and a half consecutive days (ie. Chipseal Materials followed by the Chipseal Design course)

(minimum numbers apply before a course is confirmed)

# COMPACTION – A KEY TO QUALITY ROAD PAVEMENTS

1 DAY

**PRESENTER** Ian Anderson

Compaction is a vital component necessary for the construction of quality roads. Compaction influences the performance of all stages of construction:

- Formation earthworks
- Subgrade
- Pavement layers
- Surfacing
- Service installation

This course examines the performance of each of the components of a road and shows the critical role that Compaction plays.

The presentation then looks at the way in which quality compaction can be achieved and how compaction performance can be monitored.

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE OF

- How materials achieve strength
- Problems that can develop with poor compaction
- Different types of compaction equipment and the appropriate areas of use
- Preliminary testing
- Monitoring of quality using various test methods
- How difficult materials can be handled

### WHO SHOULD ATTEND?

Personnel involved in the construction supervision and monitoring of compaction operations.

### COURSE COST

**\$520 per person + GST**

(minimum numbers apply before a course is confirmed)



# COMPETENT PIPELINE REHABILITATION

1 DAY

**PRESENTER** Bill Wright

Lining of ruptured underground drains and ducts provides a cost effective, less disruptive method for rehabilitation of the service.

This course will provide an insight into the range of drains and service ducts that may be suitable for rehabilitation by relining.

We will also be covering surveying, cleaning and assessment of failed drains and ducts, selection of rehabilitation methods and materials. Key safety aspects of materials use and installation.

### TOPICS

#### Drains and Ducts

- PVC
- Polyethylene
- Earthenware
- Concrete
- Brick
- Iron

#### Surveying and Cleaning

- CCTV
- As-Built Plans
- Hydro-jetting
- Safe confined space entry

#### Lining of Pipes and Ducts

- Correct selection of liner
- Correct selection of adhesive
- Safe use of adhesives
- Methods of inserting liners
- Bridging of voids
- Reinstatement of connections
- Commissioning of new lined drains and ducts

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Assess the suitability of drains and ducts for liner rehabilitation
- Safely install a variety of liner types using the appropriate adhesive
- Know the options available for reinstating service connections
- Know how to commission new lined drains and ducts

### WHO SHOULD ATTEND?

- Persons working in drainage and duct maintenance
- Drainage engineers and specifiers
- Network services contractors, engineers and specifiers

### COURSE COST

**\$520 per person + GST**

(minimum numbers apply before a course is confirmed)

# CONFLICT MANAGEMENT SKILLS

## 1 DAY

**PRESENTER** Fiona Knight

**The more people have to depend on each other to achieve results under pressure, the greater the chance of conflict.**

Given the complex working relationships in and between organisations today, there is ample opportunity for conflicts, big and small, to arise. Conflicts can show up as minor disagreements or heated debates. However they present themselves, if you mishandle conflict situations, you can damage work relationships, reduce your personal energy and focus and cause productivity to plummet.

People and organisations can greatly benefit from learning to handle conflicts skillfully and confidently.

This course will help you improve productivity and engagement. It will result in better collaboration and trust throughout teams, clients, contractors and the wider organisation.

Gain effective skills to support better communications, projects and improve your working relationships.

### MAJOR POINTS COVERED ARE

#### Communication skills

- Attitude and self-awareness
- Barriers to communications
- Listening skills
- Questioning techniques
- Giving and receiving feedback
- Personal work styles

#### Leadership and Team-Building

- Team dynamics
- Team building
- Management vs leadership
- Leadership characteristics
- Pitfalls to avoid
- Delegation skills

#### Conflict management

- What is conflict?
- Conflict resolution skills
- The drama triangle
- Conflict resolution styles

#### Stress and Anger Management

### WHO SHOULD ATTEND?

Engineers, contractors, supervisors, team leaders, managers, aspiring leaders. Any person who wants to improve their personal effectiveness as a manager and communicate better, with less interpersonal conflict.

### COURSE COST

**\$520 per person + GST**

*(minimum numbers apply before a course is confirmed)*

# CONSTRUCTION AND MAINTENANCE OF ROAD DRAINAGE SYSTEMS

## 1 DAY

**PRESENTER** Bill Wright

**Competent supervision skills are essential in producing a final product that meets all design and specification requirements. High levels of productivity can be achieved through the effective and efficient use construction techniques, gained through a combination of knowledge, good planning and organisation skills which best utilises the resources available to the supervisor.**

The drainage construction supervisor is responsible for the proper setting out, excavation, pipe laying and back filling of drainage trenches. Suitable compaction techniques are important if rework associated with settlement is to be avoided.

The supervisor should have a good knowledge of various types of pipes, jointing systems and a good knowledge of materials suitable for both bedding and backfilling.

The course attempts to highlight the aspects of construction that will have a significant effect on the quality of the finished product. In addition, Health and Safety issues are addressed as appropriate.

### TOPICS

- Initial setting out and survey
- Planning
- Levels and site rails
- Gradients
- Bedding and pipe laying
- Backfill
- Quantities
- Quality and safety
- Delays due to breakdown, adverse weather, project changes and unforeseen physical conditions
- Testing of pipework
- Allocating tasks to the work team

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Describe factors in road drainage system design
- Identify safety requirements of trench shoring
- Describe the construction of road stormwater systems
- Describe the construction of subsoil drainage systems
- Describe the drainage system structures and their connections
- Describe road drainage system maintenance and repair
- Demonstrate knowledge of subsoil drainage systems
- Describe piped culvert drainage systems

### WHO SHOULD ATTEND?

This course is targeting beginner/intermediate people involved in the construction of drainage and stormwater systems – representing either the contractor or the client. It will suit those wishing to gain some knowledge and understanding of drainage, eg. engineers, project managers, quantity surveyors, etc...

### COURSE COST

**\$520 per person + GST**

*(minimum numbers apply before a course is confirmed)*

# COST BENEFIT APPRAISAL FOR TRANSPORT PROJECTS

## 1 DAY

**PRESENTER** Dr Neil Douglas

**Cost Benefit Appraisal (CBA) helps decision makers select and compare alternative projects and policies. In transport, projects may range from road and bridge construction and maintenance to changes in bus and rail services to road and rail freight to bicycle lanes to airports and sea-ports. CBA can also be used to evaluate transport policy proposals such as speed reductions, seat belt legislation and electric vehicle subsidies.**

CBA helps determine the allocation of scarce resources and funding.

- The course will start from by showing how economic CBA takes a wider perspective than financial CBA by including benefits such as travel time savings, accident savings, air and noise pollution and greenhouse gas reductions.
- Willingness to pay, consumer surplus, price demand curves and generalized cost demand curves are described. The 'rule of a half' that is used to calculate the benefits to 'induced' demand is explained.
- Conventional CBA adds benefits and costs to 'whomsoever they accrue'. The course will discuss the concept of income compensation and show how 'equity' valuations are often used to give the same value for travel time savings and accident savings amongst the public.
- After converting time into money, user benefits can be added to vehicle operating savings and compared with construction and operational costs.
- The rationale and need for economic CBA (as opposed to financial CBA) lies in departures from 'perfect competition'. These departures will be discussed to demonstrate when and why the effects on other markets need to be taken into account. Road v rail competition is described here.

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- Costs and benefits accrue in different years which introduce the discount rate. The basis for setting the discount rates is discussed and how different rates affect the CBA result is demonstrated.
- Perspective is important in deciding whose benefits to include. Should a city evaluation be different from a regional evaluation or a national evaluation?
- The course then looks at different measures of a project's net worth can be calculated. The Net Present Value, Benefit Cost Ratio, Net Present Value of the Capital Investment, Internal Rate of Return and First Year Rate of Return are calculated.
- How the analyst should report the results remembering that CBA is only one aspect that decision makers may take into account.
- The NZ Transport Agency's Economic Evaluation Manual will then be introduced.

If you are in a role where you or your team needs to assess alternative solutions and/ or be able to understand the economic justification for projects, then this course will help you understand the fundamentals.

TOPICS

- Value of Travel Time
- Value of Statistical Life
- Defining options and a Base Case
- Discounting future costs and benefits
- Calculating economic measures NPV, BCR NPVI, FYRR
- The NZ Transport Agency's Project Evaluation Manual

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the concepts of discounting and Net Present Value
- Be aware of the procedures detailed in the NZ Transport Agency's Economic Evaluation Manual, and the tools available on their website.
- Understand the use of Simplified Procedures, and have participated in some workshop exercises
- Know when a project requires evaluation by Full Procedures, and have an overview of this process
- Know how to identify a preferred option through an incremental analysis
- Know how to calculate the First Year Rate of Return

WHO SHOULD ATTEND?

Transportation Engineers from Local Authorities, Consulting Engineers, Policy Analysts, Architects and Planners.

COURSE COST

**\$520 per person + GST**  
 (minimum numbers apply before a course is confirmed)

# EFFECTIVE LEADERSHIP

## 2 DAYS

PRESENTER **Steven Briggs**

**The most common reason employees give for leaving their job is their leader/ manager. Failing to inspire or engage with the team results in poor performance and all the issues that generate as a result. There is a whole industry of companies offering to measure the effectiveness of leaders and the engagement of teams. There are also a great number of theories on what makes a great leader. The challenge for the individual is where to go and who to believe – what is the best way forward for them?**

We've distilled the latest ideas down into a series of practical steps that anyone can take to improve their leadership skills and become more effective at leading their teams. We use DiSC as a self-discovery tool to help you with the process.

This course will help you learn how to lead yourself and your team, focus on the important things and develop strategies for dealing with everyday events. We appreciate the time pressure that everyone works under and so we give insights into effective processes that will yield results quickly, rather than theories that are difficult to put into practice.

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand your own strengths and weaknesses
- Understand how to effectively lead a change
- Understand how to develop and communicate your vision / objectives
- Understand how to build and motivate your team
- Be able to help your team become more productive and work more effectively
- Understand the importance of listening, being assertive and giving quality feedback
- Learn how to generate new ideas
- Learn how to ensure results are delivered
- Understand how to develop your team

COURSE STRUCTURE

The course is highly interactive with a range of exercises, games, role plays and practice sessions so that participants learn by doing, rather than through formal teaching methods.

COURSE COST

**\$995 per person + GST**  
 (minimum numbers apply before a course is confirmed)

# ENVIRONMENTAL RISKS OF CONSTRUCTION

PREPARING YOU WITH ON-SITE ESSENTIALS

## 1 DAY

PRESENTER **4sight Consulting – Emma Comrie-Thomson**

**Do you know the environmental risks and obligations of construction projects?**

This course provides participants with a practical understanding of the environmental aspects of civil construction.

Providing you the know-how to understand your legal obligations, raise environmental awareness and find workable solutions too many of the common risks on construction sites.

The course is designed for anyone involved in the construction industry, including contractors, project managers, regulators and consultants.

This course uses a number of real site examples and includes hands on discussions.

TOPICS

- Unique characteristics of civil contracting context
- How the RMA works including duties, rules and liabilities
- Impacts of rules and resource consents on daily activities
- Potential effects of common activities and minimum industry standards for their management including:
  - erosion and sediment control principles and key controls
  - stormwater catchpit protection
  - noise, vibration, odour and dust
  - basic hazardous substance rules for chemical and fuel storage
  - prevention and management of spills
  - works around watercourses
  - works around trees
  - pH effects of concrete, cement and lime work
  - asphalt cutting
  - dewatering
  - waste minimisation and disposal
  - resource efficiency
  - basic archaeological site discovery protocol
  - basic contaminated site discovery protocol
  - basic clean fill protocol
- Selected environmental management system procedures such as tracking compliance – why and how
- Practice identifying potential risks and solutions associated with common activities
- Real examples from projects and legal cases
- Emphasis on relevant regional issues

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#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Demonstrate an understanding of the principles, common control measures and risk assessment required to protect the environment at a civil construction works site
- Plan for and manage environmental risks associated with a project
- Demonstrate knowledge of environmental legislation relevant to an infrastructure works site
- Explain typical resource consents and permits required for an infrastructure works site
- Explain the consequences of non-compliance, non-compliance reporting, and enforcement powers and notices relevant to an infrastructure works site
- Describe and communicate environmental incidents and the impacts on the employee and to an infrastructure works site
- Describe the types of contaminant discharges, the impacts of discharges, and contamination mitigation measures on an infrastructure works site
- Demonstrate knowledge of environmental controls and work practices, maintenance schedules, and auditing and communication procedures of sediment control and maintenance schedules in an infrastructure works site

This is consistent with Unit Standard 27202.

#### WHO SHOULD ATTEND?

This course is essential for all civil construction site workers (foreman to engineers) all of whom have legal, contractual and/or practical responsibilities for project environmental performance.

#### COURSE COST

**\$595 per person + GST**  
(minimum numbers apply before a course is confirmed)

## GEOMECHANICS FOR NEW ZEALAND ROADING

**1 DAY**

**PRESENTER** Ian Anderson

**This course draws together the necessary soil investigation and geotechnical procedures for roading construction and maintenance. The course provides an up-to-date overview of investigative techniques and analysis.**

#### TOPICS

- Geotechnical engineering and pavement design
- Fundamental soil properties
- Compaction
- Planning geomechanical investigations
- In-situ investigation and testing

- Laboratory testing issues
- Effects and control of water movement
- Soil strength improvement
- Bearing capacity

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the role of engineering judgement to obtain effective solutions to soils and subgrade problems
- Identify fundamental properties of soils
- Plan a geotechnical investigation
- Apply geotechnical investigations to improve pavement construction
- Utilise pavement stabilisation techniques

#### WHO SHOULD ATTEND?

Engineers, technicians, supervisors and Local Authority staff involved in pavement design and construction.

#### COURSE COST

**\$520 per person + GST**  
(minimum numbers apply before a course is confirmed)

## GEOMETRIC DESIGN FOR ROADS

**2 DAYS**

**PRESENTER** Quintin Dettling

**This course covers geometric design principles specifically for the design of New Zealand roads.**

The aim of this course is to develop an understanding of the principles of geometric design, and apply these to design safe, functional and aesthetic road alignments in accordance with the requirements of the 2016 Austroads guidelines.

#### STANDARDS OVERVIEW

A brief summary of which highway design and line marking guides apply in New Zealand and in various Australian states

#### GEOMETRIC DESIGN OVERVIEW – AUSTROADS PART 3 AND NZTA SHGDM

- Design parameters
- Horizontal alignment design, super elevation design and application
- Spirals: when to use them and when NOT to use them; how to position them
- Vertical alignment design
- Co-ordination of horizontal and vertical alignments
- Speed parameters
- Earthworks and mass haul diagram
- Pavement boxing and the volumetric effects on cuts within cuts and on fills within fills and why this matters!

#### SOFTWARE DEMONSTRATION AND Q & A

- Open Roads demonstration

#### TOPICS

- How to avoid errors regularly identified by Road Safety auditors and fix them
- Understanding our limits – when to involve other professionals: Geotechnical Engineers, Traffic Engineers, Hydraulic Engineer and Structural Engineers
- What is a good highway design?
- Understanding road construction costs versus standards and the use of multiple minima
- Working together – Understanding the designers' interface between engineers and CAD team

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the fundamentals of geometric design
- Understand the significance of proper geometric design to enhance road safety
- Understand horizontal and vertical alignment design to ensure safe, functional and aesthetic roads

#### WHO SHOULD ATTEND?

- Engineers and pavement designers from Local Authorities
- Consulting Engineers and Contractors
- University and Polytechnic students

#### COURSE COST

**\$850 per person + GST**  
(minimum numbers apply before a course is confirmed)

## HOW TO CLAIM AN EXTENSION OF TIME IN A CONSTRUCTION CONTRACT

**1/2 DAY**

**PRESENTER** Dave Hooker

**How well can you prepare your claim for an extension of time?**

Can you:

- Identify the event that impacted on your programme and why it happened?
- Analyse the impact of that event?
- Identify possible alternative solutions?
- Undertake a delay analysis?
- Know what evidence to attach to a claim?

This course, from a practical and 'hands-on' point of view, will benefit Contractors needing to prepare a claim for an extension of time.

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TOPICS

- Seven reasons for Extension of Time
- When to Apply for an Extension of Time
- Supporting Information for Claim
- Is compensation for costs applicable
- Knowledge deemed known by a prudent Contractor
- Basis of Claim is Comprehensive programme at time of Tender
- Engineers options if Extension of time Claim made

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Identify the key components for making a claim for an extension of time in a construction or civil engineering project
- Identify the impact and costs of a claim
- Prepare a claim in terms of timeframe of Conditions of Contract
- Support their Claim with appropriate data

WHO SHOULD ATTEND?

Contractors and Project Managers, as well as experienced personnel wishing to improve their skills.

COURSE COST

**\$395 per person + GST**

*(minimum numbers apply before a course is confirmed)*

IDENTIFY, LOCATE AND PROTECT SERVICES  
1 DAY

PRESENTER **Bill Wright**

Civil construction sites are inherently dangerous places of work. Where excavations are present or where the work requires ground penetration, particularly by metal pegs, rods, stakes and the like, there is an immediate opportunity for potential conflict with existing utility services located underground.

These conflicts have caused many seriously harmful and fatal accidents to workers, resulting in criminal prosecutions and financial penalties imposed by the courts on individual workers, employers and principals. The resulting disruption to services continues to cause considerable inconvenience and costs to affected service users such as ratepayers, commercial enterprises, hospital and emergency facilities.

This course incorporates the new OSH guide for Safety with Underground Services. In addition, this course offers a systematic approach to location, identification and protection of underground utility services.

TOPICS

- Ring before you dig
- Permits and approval to dig

- Work instruction
- How to dig (hand dig only)
- Safe operating procedures (OSH and DOL requirements)
- Service plans and locators
- Hazards Safe working zones
- Trees scheduled and significant
- As built plans
- Reinstatement

TARGET OUTCOMES

To be able to safely locate, identify and protect all services where excavation is to take place, including scheduled trees and reinstatement.

- No loss of services to the consumer
- No damage of underground (or overhead) utility services
- No damage to property of the asset owner
- No harm to people, workforce or public
- No contract delays and associated costs due to disruptions to utility services
- No increases in insurance premiums due to claims made for damage to underground utility services

WHO SHOULD ATTEND?

Employees and self employed: forepersons, supervisors, inspectors, safety officers and work team members engaged in operations which involve potential conflict with underground services, such as excavation, trenching, poling, piling and thrusting. Principals, employers, and persons in charge of a place of work: Road Controlling Authorities, contractors/sub-contractors.

COURSE COST

**\$520 per person + GST**

*(minimum numbers apply before a course is confirmed)*



INSPECTING ROADS AND ESTABLISHING MAINTENANCE NEEDS

1 DAY

PRESENTER **Kingsley Hannah**

Inspecting roads effectively remains a critical skill in the management of the roading infrastructure. Developing knowledge to identify faults and target the right intervention at the right time is the objective of this course. This enables your teams to develop effective work programmes that deliver more value to the roading networks and minimize the inconvenience to our communities.

Fundamental pavement knowledge and an introduction to asset management provides context to the decisions our road inspectors make. These principles are challenged during the field exercise contained within the course. Participants are welcome to share their experiences in the interactive learning environment.

TOPICS

- Pavement and drainage fault identification
- Introduction to forward works programming
- Understanding levels of service
- Fundamentals of pavement types and materials
- Pavement failure mechanisms
- Pavement and drainage repair methods
- Introduction to economic considerations
- Field exercise to identify faults and possible remedial works

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Identify pavement and drainage faults
- Understand modules of failure
- Propose suitable remedial solutions
- Provide context to recommendations made in relation to customer, economic and technical requirements
- Undertake effective road inspections

WHO SHOULD ATTEND?

This introductory course is suitable for road inspectors, supervisors, new engineers and managers from the contracting, consulting and road controlling organisations.

COURSE COST

**\$520 per person + GST**

*(minimum numbers apply before a course is confirmed)*

# LAND BASED RADIO OPERATOR 1 DAY

**PRESENTER** Kane Turner

A land-based Radio is a piece of equipment used on Infrastructure Works sites that is often not utilised to its fullest. Mistakes can easily be made if the people communicating are not fully trained or understand the key components of using a radio system.

This course is an interactive day of personalised training to provide staff with the necessary knowledge and skills to be able to operate and communicate clearly via a Radio Network.

**TOPICS**

- Radio Communication Protocols
- Phonetic Alphabet
- Dealing with Emergency Situations
- Understanding Capabilities of Radio Networks
- Different Types of handheld and Mobile Radios
- Operation of handheld Radios
- Practical Exercises
- Written Assessment
- Practical One on One Assessment

**ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO**

- Operate a range of handheld and mobile radios
- Communicate clearly using radio communication protocols and the phonetic alphabet

**WHO SHOULD ATTEND?**

- Traffic Management Staff
- Traffic Incident Responders
- Road Construction and Maintenance Staff

**COURSE COST**

**\$520 per person + GST**  
*(minimum numbers apply before a course is confirmed)*



# LEADING HIGH PERFORMING TEAMS 1 DAY

**PRESENTER** Megan Dawson

This course is an operator's manual for people. It gives you step by step instructions on how to get the best performance out of each person. Work smarter with people and get more done. Learn how to do this in one day.

**Make certain that all members of your team are engaged in the way forward? Are you getting the results you want? Are you doing this in the least stressful way for yourself and your team?**

This very powerful seminar has participants construct their own personalised plan for their team. You can begin using the information right away.

Managers need many of the softer skills that are harder to train than technical ones. The assessment informs the manager of his or her own management style, strategies for directing and delegating, and for motivating and developing staff. It also provides insight into working with the respondent's own manager or senior leaders based on their DiSC styles.

- Examine how you manage your time during the day
- Identify ways that you use time effectively and ineffectively
- Determine specific ways you can improve your time management

**TOPICS**

- Your Management Style
- Directing and Delegating
- Motivation
- Developing Others
- Working with your Manager

**ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO**

- Increase your personal productivity on the job
- Help you enhance the quality of your team's work with less stress
- Give your team a sense of personal satisfaction and accomplishment

**WHO SHOULD ATTEND?**

New and Seasoned Managers who want to get more productive time out of each day, for themselves and their team with less stress and more enjoyment.

**PRE-COURSE WORK**

Attendees will complete an online assessment of your management style prior to the course.

**COURSE COST**

**\$695 per person + GST**  
*(minimum numbers apply before a course is confirmed)*

# LEVEL 1 – BASIC TRAFFIC CONTROLLER (TC) 1 DAY

**PRESENTER** NZTA approved

**This one day course promotes safe working practices, standards and operating procedures at roadwork sites.**

This is the NZ Transport Agency (NZTA) Level 1 Basic Traffic Controller (TC), which covers the standards and operating procedures required by the Code of Practice for Temporary Traffic Management (COP/TTM). Appropriately trained and qualified staff must be available to carry out temporary traffic management duties in compliance with the NZTA COP/TTM on all road worksites.

The course will assist with compliance with the Health and Safety at Work Act. This course is the pre-requisite for entry requirement for people wanting further training to Level 1 Site Traffic Management Supervisor (STMS) standard of the Code of Practice for Temporary Traffic Management.

**TOPICS**

- Health and safety principles
- Principles of temporary traffic management
- Component parts and layout of a worksite
- Setting up and worksite rules
- Authorised sign use
- Temporary traffic management equipment
- Manual traffic control
- Pedestrians and cyclists
- Static operations
- Mobile and semi static and special operations including inspection
- Night time protection
- Low Volume Roads

**ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO**

- Assist the STMS in the setting up of roadwork sites in accordance with approved Traffic Management Plans
- Develop a consistent approach to traffic control
- Analyse Traffic Management Plans in relation to various roading situations
- Apply exercises in the planning and setting up of roadwork sites to actual roading situations
- Understand the requirements for sign selection, placement, safe operating procedures and worksite protection for Level 1 roads.

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WHO SHOULD ATTEND?

Any person who carries out work on or within the boundaries of a road. These include NZTA State Highways and Local Authority roads.

COURSE COST

\$345 per person + GST

Course attendance fee

\$40 per person + GST

NZTA Registration fee is an addition to the course fee. This NZTA registration fee is necessary to enable you to be registered as a TC.

LEVEL 1 –  
SITE TRAFFIC  
MANAGEMENT  
SUPERVISOR (STMS)  
2 DAYS

PRESENTER NZTA approved

The NZ Transport Agency (ex Transit NZ) Code of Practice for Temporary Traffic Management (COP/TTM) requires that appropriately trained and qualified personnel must carry out and supervise Temporary Traffic Management duties on all road worksites.

The STMS has specific duties and has ultimate responsibility for overall traffic management at the worksite. This two-day course provides training to the requirements of the NZTA Code of Practice for Temporary Traffic Management, and covers the new standards and operating procedures for NZTA and Local Authority roads.

TOPICS

Basic components of a roadwork site

- Checking Traffic Management Plans provided
- Designing Traffic Management Plans for different work stages
- Setting up, checking and removing road works safety measures
- Controlling traffic at a worksite, including Stop/Go operations
- Working safely within the protected area
- Effectiveness of personal protective equipment
- Reporting and recording accidents and crashes
- Plant and work vehicle operation and safety
- Worksite safety audits

ON COMPLETION, PARTICIPANTS WILL  
HAVE THE KNOWLEDGE TO

- Selection and usage of authorised signage and site protection measures
- Developing and submitting Traffic Management Plans for approval
- Site specific, generic and generic/specific plans for static, semi-static, inspection and mobile worksites
- Relating Code of Practice standards to participants; actual worksite and developing practical options
- Checking and implementing Traffic Management Plans supplied
- Notification and response times required
- Briefing the work team about site traffic management
- Identifying and controlling traffic and other hazards
- Liaising with, and ensuring safety compliance of site visitors
- Setting up, checking, maintaining and safe removal of worksite protection measures
- Carry out or assist in making safety audits of worksites
- Understand and apply the standards for local roads

WHO SHOULD ATTEND?

Anyone person who carries out work on or within the boundaries of a road.

These include NZTA State Highways and Local Authority roads.

PRE-REQUISITE FOR ENTRY

NZTA requires that you must be registered on the NZTA database and hold a **current** Level 1 Basic TC (or TC Refresher) qualification or have held a Level 1 STMS qualification (at any time) in the past. To attend a Level 1 STMS course a person must have held their first TC qualification for a minimum of a month.

Please provide your NZTA Photo ID card number on your registration form.

COURSE COST

\$545 per person + GST

Course attendance fee

\$40 per person + GST

NZTA Registration fee is an addition to the course fee. This NZTA registration fee is necessary to enable you to be registered as a STMS.

MAINTENANCE  
AND SAFE USE  
OF SMALL PLANT  
AND MACHINERY  
1 DAY

PRESENTER Bill Evans

The effective maintenance of a roading network is very dependent on managing the risks associated with erosion and inundation from rivers and streams. This workshop will provide an overview of river and stream processes, hydrological and hydraulic analysis tools, risk management techniques and an outline of protection options.

TOPICS

- Selection of small plant and machinery
- Function, components, maintenance of small plant
- Pavement breakers, saws, pumps, small rollers, generators, chainsaws, vibrating plates, screeds, power rammers, etc
- Safe operation of small plant and power tools
- Routine inspection and servicing
- Reservoirs, cooling, lubricating and fuel levels
- Electrical and pneumatic systems
- Contamination and cleaning
- Productivity problems and wastage

ON COMPLETION, PARTICIPANTS WILL  
HAVE THE KNOWLEDGE TO

- Understand the basic mechanical safety requirements of the plant
- Operate a range of small plant safely
- Know correct procedures for storing and utilising small plant effectively
- Maintain and operate generators and compressors
- Use a pavement breaker safely and effectively.

WHO SHOULD ATTEND?

Both new and experienced operators.

COURSE COST

\$520 per person + GST

(minimum numbers apply before a course is confirmed)





# MANAGING FLOODING AND SCOUR RISKS AT BRIDGES AND CULVERTS

1 DAY

**PRESENTER** Kyle Christensen

The effective management of the risks associated with scour and flooding is vitally important for the protection of key infrastructure.

This course will provide an overview of river and stream processes, hydrological and hydraulic analysis tools, calculation of scour at bridges and culverts, design of scour countermeasures at bridges and culverts including geosynthetic solutions and the detailed design of rock rip-rap.

## TOPICS

### River Processes (Geomorphology)

- Form and function of rivers
- Estimating future behaviour
- Hydrology including description of methods
- Hydraulics including outline of different tools available
- Introduction to sediment transport

### Scour Calculations

- Outline of methods for calculating general scour, contraction scour and local scour at bridges

### Bridge and Culvert Countermeasures

- Solutions for lateral erosion, degradation, aggradation and local scour
- Outlet protection, inlet protection and fish passage at culverts
- Use of geosynthetic reinforced slopes and walls

### Detailed Design of Rock Rip-Rap

- Correct sizing of rock
- Specification of rock grading, thickness and quality
- Geotextile and granular filters

## ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Have a broad understanding of river processes and how they affect and are affected by adjacent infrastructure
- Awareness of the types of information that can assist with predicting future river behaviour
- Understand the range of hydrological and hydraulic analysis tools available and when to use them
- Calculate general, contraction and local scour at bridges
- Design scour countermeasures at bridges and culverts
- Detailed design of rock rip-rap for groynes and revetments

## WHO SHOULD ATTEND?

Engineers, planners, scientists, contractors and others responsible for managing flooding and erosion risks at bridges and culverts and road embankments adjacent to rivers.

## COURSE COST

**\$695 per person + GST**

(minimum numbers apply before a course is confirmed)

# MICROSOFT EXCEL – IMPROVING SPREADSHEETS

1 DAY

**PRESENTER** Rodney Penney

Is Excel frustrating you? Are you taking lots of time creating formulas? Can you quickly and easily create budgets, forecasts, expenses, analyses data, pricing for tenders? Your Excel skills may need improving.

This workshop will hone your skills. Move from the basics to the many advanced Excel functions, make Excel work for you. Learn how to analyse your data with functions, filters, Pivot tables, charting, navigating large spread sheets, save time, and become a confident Excel user.

This hands-on workshop provides participants with:

- Moving beyond the 'table with totals at the bottom' spread sheet
- Learn new techniques to make your spread sheets more efficient
- This is an intermediate/advanced workshop for Excel users who would like a new approach to spread sheet design
- Demonstrate techniques for automating processes
- Securing spread sheet applications
- Examines techniques for more efficient use of analysing data using Pivot Tables

## TOPICS

- Navigation to speed up your work flow
- Selection techniques
- Mathematical Rules – Thinking it through!
- Conditional Functions to analyse your data
- Using text functions
- Splitting, combining text eg. first and last names
- Name Ranges
- Hiding columns, rows and formulas
- Protecting workbooks/work sheets
- Saving on time – using lookup tables/lists
- Automating entries
- Auditing formulas – how does the formula work?
- Using multiple worksheets, applying formulas – 3D calculators
- Conditional formatting and data validation
- Sorting and Filtering data
- Subtotalling worksheets

- Manipulating data using Pivot Tables, Pivot Charts, Slicers
- Automation – recording MACROS

## THE SKILLS LEARNT ON THIS WORKSHOP WILL

Save you time, save you frustration, enhance your use of Excel and improve the stability and validity of your spreadsheets, and broaden your knowledge of Excel and its capabilities

## ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Navigate around workbooks/worksheets more efficiently
- Know the order of mathematical operations for Excel
- Using array formulas
- Understand Absolute and Relative Referencing – Locking a cell
- Naming ranges and cells for better understanding
- Using the many Goto options
- Creating conditional IF function statements
- Combining and splitting text using functions
- Formula auditing to find errors
- Figuring out how formulas work
- Protecting worksheets/workbooks/ formulas from being changed
- Use Lookup tables for faster data entry
- Hiding Rows/Columns/Sheets
- Formatting to display conditional values
- Ensuring that the data entered is specific
- Using data lists to remove entry errors
- Creating multiple worksheets
- Using 3D calculations through multiple worksheets
- Consolidating worksheets/workbooks into one summary file/sheet
- Subtotalling areas of data in one worksheet
- Sorting and Filtering data
- Grouping/Outlining data across a spread sheet
- Using data tables
- Understanding Pivot Tables and Pivot Charts
- Using Slicers
- Recording a macro to work more efficiently

## WHO SHOULD ATTEND?

Anyone who uses Excel frequently and would like to learn how to get the best from Excel using many tips and tricks.

Find out the power of Excel. Guaranteed to improve your Excel skills and productivity, particularly if you are self-taught.

## COURSE COST

**\$595 per person + GST**

(minimum numbers apply before a course is confirmed)

Note: Laptops will be provided for all participants to use

# MICROSOFT PROJECT – RESOURCE MANAGEMENT

## 1 DAY

**PRESENTER** Rodney Penney

**This intermediate level course is designed for advanced users who have attended Task Management (pre-requisite) and who need to work with budgets and use resources in detail.**

This course will continue on from the Task Management and add the Resourcing components. Manage in detail the project's resources, hourly rates, materials and costs; this forms a budget. Manage resource calendars, task types, resource tracking, and resource pool to show against the Baseline.

Attendees will create customised views, tables, details, groups, and filters to view and present project progress.

**THIS HANDS-ON COURSE PROVIDES PARTICIPANTS WITH A PRACTICAL UNDERSTANDING OF**

- Project Resource Management skills;
- The skills/tools for planning and controlling resources and tasks within projects that will meet the needs of stakeholders;
- Managing costs, budgeting, resource costs, tools for managing a variety of task durations, connectivity to other programs
- How to distribute resources between several projects
- Customising tables, fields, views
- Work break down structure and codes
- Filters, custom filters, grouping, custom grouping
- Monitoring costs
- Managing project progress
- Resource pools linked to projects
- Exporting/importing data

**ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO**

- Demonstrate an understanding of resource types, units, calendars and be able to assign to tasks
- Understand how Work, Units and Duration affects a project
- Demonstrate how Fixed Units, Fixed Duration and Fixed Work affect project timelines, resources and tasks
- Understand and use the resource assignment views
- Apply resource levelling to task and resources
- Track resources, costs and compare with the planned budget
- Customise project views, tables, codes
- Create filters and groups for better reporting and understanding
- Using resource pools between projects

- Track costs versus baseline costs to determine if over or under budget
- Comparing versions.

### WHO SHOULD ATTEND?

This intermediate level course is designed for users who have attended the Task Management course and who have created, run projects using MS Project. The attendees could be Project Managers, Business Managers and those responsible for planning, scheduling tasks and resources to meet planned goals for projects. MS Project can be used to manage the progress and budget of multiple projects eg: building bridges, roading sub-divisions, creating tenders, buildings etc.

### COURSE COST

**\$595 per person + GST**

*(minimum numbers apply before a course is confirmed)*

Note: Laptops will be provided for all participants to use.

# MICROSOFT PROJECT – TASK MANAGEMENT

## 1 DAY

**PRESENTER** Rodney Penney

**This course provides skills necessary to develop, implement, schedule and manage project plans for roads, bridges, land developments, buildings, marketing, tenders, maintenance etc.**

Task Management is a comprehensive introduction for Project Managers, Business Managers, or anyone responsible for scheduling tasks and resources.

This intermediate level course gives all participants the skills that will allow them to be able to create and manage projects successfully. With this hands-on course you will build a list of tasks, build task relationships, assign resources, manage the project against the Baseline, and use Project views and reports to present information to clients, managers and staff. A working knowledge of Excel would be an advantage.

**THIS HANDS-ON COURSE PROVIDES PARTICIPANTS WITH A PRACTICAL UNDERSTANDING OF**

- Project Task Management planning skills
- The skills/tools for planning and controlling tasks within projects that will meet the needs of stakeholders
- The rules of project planning
- Tools for managing common tasks
- Current best practices in the project industry

### TOPICS

- Navigating project views
- How project holds data
- Mouse and keyboard shortcuts
- Task filtering for information

- Starting a project
- Managing the master calendar
- Entering/editing task
- Adding different duration types
- Summary tasks
- Project summary task
- Linking of tasks on the Gantt chart
- Adding lag and lead times
- Understanding constraints
- Adding basic resources
- Adding basic costs
- Reviewing your current project
- Creating a baseline
- Tracking progress of tasks
- Adding hyperlinks/notes
- Formatting projects
- Creating critical/slack Gantt charts for tracking
- Printing your projects
- Communicating using reports
- Consolidating and linking projects to a master plan

**ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO**

- Demonstrate an understanding of the principles of project management
- Plan and manage tasks within a project
- Demonstrate knowledge of how to link tasks
- Demonstrate the use of lag and lead
- Structure a project with summary tasks for better management planning and reporting
- Use the Project Summary to show the total duration
- Explain the use of constraints on projects
- Add basic resources to tasks
- Understand the use of a baseline
- Add basic costs to projects
- Adding hyperlinks, notes to task
- Formatting Gantt charts for improved presentations
- Manage project tasks and being able to update project progress
- Communication project information a with stakeholders
- Transfer the master calendar to the basic template

### WHO SHOULD ATTEND?

This intermediate level course is designed for new, basic or self-taught users of Microsoft Project (MS Project). The attendees could be Project Managers, Business Managers and those responsible for planning, scheduling tasks and resources to meet planned goals for projects. MS Project can be used to manage the progress and budget of projects eg: building bridges, roading, sub-divisions, creating tenders, buildings, marketing, maintenance etc.

### COURSE COST

**\$595 per person + GST**

*(minimum numbers apply before a course is confirmed)*

Note: Laptops will be provided for all participants to use

## OPERATION AND SAFE USE OF A HANDHELD/ CONCRETE SAW

**PRESENTER** Bill Wright or Kingsley Hannah

People using concrete and masonry cutting equipment face a wide range of hazards, such as silica dust, toxic exhaust fumes, saw kick-back, blade fracture, vibration, noise, slips, falls and manual handling.

Most at risk are operators of hand-held concrete and masonry saws. This equipment is more prone to the violent forces unleashed when a saw blade jams inside a cut than from fixed saws.

These forces, commonly referred to as kick-back, push-back or pull-in, are difficult and sometimes impossible to control, and place the operator at risk of serious and potentially fatal injury from an out-of control circular saw.

Many minor roadwork and maintenance contract jobs require use of concrete saws for repairs and installation of services, drainage, crossings, kerbing, driveways, footpaths, manholes and concrete pipes, inspection chambers and kerb and channel construction.

This course aims to give workers knowledge of the safe use, kick back and injuries relating from the use of high powered saws.

### TOPICS

- Safe handling and use
- types of blades
- maintenance of saws
- environmental issues
- PPE requirements

### WHO SHOULD ATTEND?

All general workers – including roading, utilities and drainage contractors and supervisors, involved in construction works requiring the use of concrete saws in their daily activities.

### NEW ZEALAND QUALIFICATIONS FRAMEWORK

As an option to the training we are able to offer assessment of the below unit standard. This is additional \$195 +GST per person to the course fee. Participants must complete and pass an assessment workbook.

29028 Demonstrate knowledge of and operate handheld saw for infrastructure works

### COURSE COST

Because this course has a practical component which requires equipment to be used on site, this course can only be run on an in-house basis where there is a suitable site. Please contact us to obtain a quotation for this training.

## PAVEMENT AND REHABILITATION DESIGN

**2 DAYS**

**PRESENTER** John Hallett

Since the adoption of the Austroads Pavement Design guide in NZ, pavement and rehabilitation design requires an understanding of mechanistic analysis procedures and Austroads approved mechanistic analysis program.

This course covers pavement design and rehabilitation design in accordance with the latest version of the Austroads Pavement Design Guide and the associated NZ Guide to Pavement Structural Design and Guide to Pavement evaluation and Treatment Design and contains hands-on applications of mechanistic analysis in the design process.

### TOPICS

- Fundamentals of mechanistic analysis
- Materials characterisation
- Design traffic determination
- Design procedures for new pavements and rehabilitation treatments
- Hands-on mechanistic analysis applications

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Design new pavements and rehabilitation treatments using mechanistic analysis in accordance with Austroads and the NZ Guide requirements
- Appreciate the attributes of Mechanistic analysis and use it for design and analysis of different pavement configurations
- Apply the latest versions of the Austroads Pavement Design Guide and the NZ Guides

### WHO SHOULD ATTEND?

Engineers and technical staff involved in, or needs an introduction to, pavement design.

### COURSE COST

**\$1195 per person + GST**

(minimum numbers apply before a course is confirmed)

## PAVEMENT INVESTIGATION, DESIGN AND CONSTRUCTION TESTING

**1 DAY**

**PRESENTER** Ramiz Iskander

Understanding the main causes of road pavement failures and especially premature pavement failure is crucial in determining the correct design.

Why the design life is not met and various pavements including expressways are suffering from early pavement distress? What went wrong?

Ensuring that the pavement has been properly constructed to the quality and specifications and design is key to performance and longevity of pavements and surfacing. Holdpoints for each pavement layer is essential to achieve a high standard pavement with no failure surprises and embarrassment.

### TOPICS

- Best practice guidelines for pavement investigation and testing
- Pavement testing in the field and in the laboratory
- Pavement analysis using FWD back-calculation and Circly
- Pavement Failure in New Zealand Modes/Causes
- Pavement design options that are proven, sustainable and safe with low risks of failures
- Pavement and surfacing design for new roads, widening and rehabilitation
- Flexible and rigid Pavement
- An introduction to Circly 6
- Pavement layers Moduli
- Construction surveillance and testing requirements

*Continued on next page...*





ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Specify right pavement geotechnical investigations
- Understand Pavement Failure Causes and recommended solutions
- Ensure that pavements are constructed correctly
- What Moduli to be selected for various pavement layers and materials
- What testing and surveillance is required during and post pavement construction
- Holdpoints during construction

WHO SHOULD ATTEND?

This course is targeted for beginners to intermediate level. Contractors, Consultants, NZTA and local authority staff involved in roads and highways pavement investigation, design and construction.

COURSE COST

**\$695 per person + GST**  
*(minimum numbers apply before a course is confirmed)*

PAVEMENT SURFACING  
1 DAY

PRESENTER Phil Bull

**High quality pavements, along with the correct selection of pavement surfacing materials are critical to the safety, longevity and condition of New Zealand roads.**

This one day course will outline and identify the multiple types of surfacing currently in use, the variety of materials used in maintaining these pavements, as well as design, equipment use and surfacing type selection.

Asphalt and Chipseal practices will be covered at length including cutting and preparation, along with procedures for patching both of these surfacing types.

Current Health and Safety practices will also be covered in depth relating to these specific workplace environments.

TOPICS

- Health and Safety Practices
- Planning
- Records, QA
- Pavement Construction Fundamentals
- Intent and Limitations of Pavement Surfacing
- Types of Surfacing
- Materials – type and quantity
- Required testing of Materials
- Application Equipment and Methods
- Specification
- What does a successful pavement surface look like?

ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Be able to respond to fire incidents at a civil infrastructure work site
- Demonstrate knowledge of working safely at sites under temporary traffic management
- Describe bituminous materials
- Demonstrate basic knowledge of safety relating to bituminous materials
- Learn about pavement bandaging
- Demonstrate basic first aid relating to liquid bitumen and bitumen additives
- Demonstrate knowledge of the compaction of hot mix asphalt
- How to cut and prepare asphalt and chip seals
- Show a basic understanding of asphalt and chip seal patching procedures
- Understand the National Code of Practice within the reinstatement processes around the 1m rule.

WHO SHOULD ATTEND?

Project engineers, laboratory staff, specifiers, plant and laying supervisors, new engineers, council and NZTA staff concerned with road surfaces.

Asphalt paving crews seeking to gain a better understanding of pavement construction.

COURSE COST

**\$520 per person + GST**  
*(minimum numbers apply before a course is confirmed)*



## PROCESS IMPROVEMENT

### 2 DAYS

**PRESENTER** Steven Briggs

**Faster, cheaper, better value, more safely – the demands are always increasing. Often special extra tasks are introduced to ‘fix’ things and everyone ends up working harder to achieve the same result.**

**No wonder productivity is low. It's frustrating!**

On this course you'll quickly learn how to make dramatic improvements to your environment. The ideas are simple, easy to apply and deliver lasting results. You will be guided through the five step approach in our highly interactive two day course. It's a practical approach that is easy to apply to any situation.

#### TOPICS

- What, why and how of processes
- Defining the problem
- Getting the facts
- Quality tools
- Analysing the facts to determine likely causes
- Finding solutions
- Agreeing the fix
- Forming a plan
- Successful implementation
- Checking the problem stays fixed

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- A simple approach to improving processes
- An easy way (one page) to document the problem and track the solution
- How to determine the root cause of a problem
- Simple ways to capture information about the problem
- Techniques to measure the problem
- Techniques to find innovative solutions to problems
- How to present a solution to get buy-in
- How to make a realistic plan
- How to measure progress and identify issues
- How to make sure the problem is fixed
- How to prevent problems coming back to haunt you!

#### WHO SHOULD ATTEND?

This is a generic course and not solely for the roading industry. This course will be of assistance to anyone who leads a team or has to fix problems as part of their job.

#### COURSE COST

**\$995 per person + GST**

*(minimum numbers apply before a course is confirmed)*

## PRODUCTIVE CONFLICT

### 1 DAY

**PRESENTER** Megan Dawson

**Better understand how to respond in conflict situations. Learn communication strategies for efficiently dealing with conflict. Discover the destructive and the productive behaviors that are typical with different DiSC personality styles.**

Clearly one of the most stressful, awkward, and inevitable experiences in the workplace is inter-personal conflict. Now we have a tool and training materials focused on workplace conflict using the language of DiSC. With all the attention placed on conflict resolution maybe it is time to change our view of conflict and resolve how we can use it in a positive way in the workplace.

Learn how to leverage conflict so you can use it in a positive way in your organization.

Conflict may be influenced by an organization's culture, hierarchy, working styles, and everyday human relationships. While it is a common part of any working relationship, people's response to conflict is entirely in their control. Everything DiSC® Productive Conflict improves self-awareness around conflict situations, highlighting how DiSC® can help you recognize destructive conflict behaviors and make a decision to react differently.

#### TOPICS

- 15-page personalized profile
- A model for thinking about conflict behavior
- Opportunities for participants to evaluate their own and others' behavior in conflict
- Tips for productive conflict
- A framework for planning behavior change

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Respond to conflict situations in an effective way
- Improve self-awareness around conflict behaviors
- Developing positive conflict behavioral reactions while curbing destructive behaviors
- Improve workplace results and relationships

#### WHO SHOULD ATTEND?

Everyone who wants to get more productive time for themselves and their team, with less stress and more enjoyment.

#### PRE-COURSE WORK:

Attendees will complete an online assessment of their management style prior to the course.

#### COURSE COST

**\$695 per person + GST**

*(minimum numbers apply before a course is confirmed)*

## REFRESHER – LEVEL 1 STMS

### 1 DAY

**PRESENTER** NZTA approved

**Registration for Level 1 Site Traffic Management Supervisor (STMS) expires at the end of three years, at which time you will need to attend a one-day refresher course to regain this qualification.**

This course provides training of the major changes to the NZ Transport Agency (ex Transit NZ) Code of Practice for Temporary Traffic Management (COP/TTM). Including, low volume roads, local body roads, change in responsibilities, safety audit procedure, mobile operations and generic plans.

#### TOPICS

- Changes to the NZTA COP/TTM
- Low Volume roads
- Mobile Operations
- Signage
- Change in responsibility
- How to use generic plans
- Safety audit procedures
- Changes to HASIE Act and how you are affected as a road worker

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Recognise and understand the changes to the Code of Practice
- Apply the criteria for low volume roads
- Relate Code of Practice standards to participants; actual work site and developing practical options
- Apply the changes for mobile operations
- Brief the work team about site traffic management
- Apply generic plans
- Identify and control traffic & other hazards
- Understand the responsibilities following the amendment to the HASIE Act
- Set up, check and maintain work site protection measures
- Carry out or assist in making safety audits of work sites
- Understand the format of the local roads supplement to COPTTM

#### WHO SHOULD ATTEND?

Any person who is registered on NZTA database as a 'Level 1 Site Traffic Management Supervisor (STMS)' with their qualification about to expire.

#### PRE-REQUISITE FOR ENTRY

NZTA requires that you must hold a NZTA Level 1 STMS qualification (expired no longer than one year). Please provide your NZTA Photo ID card number on your registration form.

#### COURSE COST

**\$345 per person + GST**

Course attendance fee

**\$40 per person + GST**

NZTA Registration fee is an additional to the course fee. This NZTA registration fee is necessary to enable you to be registered as a STMS.



## REINSTATEMENT OF SERVICE TRENCHES

### 1 DAY

**PRESENTER** Ian Anderson

Poor trench reinstatement is an ongoing problem for many Rounding Authorities and service installers.

The tensions include road users and result in significant cost implications.

The course has a focus on “do it right the first time” and looks at significant aspects of trench construction including:

- The Geomechanics of the site
- Excavation procedures and precautions
- Trench foundation confirmation
- Selection of backfill materials
- Compaction theory
- Compaction plant selection and use
- Pavement theory and construction
- Surfacing theory and construction
- Quality testing

**ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO**

- Choose appropriate excavation plant and procedures
- Select suitable backfill materials
- Understand compaction theory and practice
- Be aware of appropriate testing and quality assurance

**WHO SHOULD ATTEND?**

New and experienced workers and technical management personnel from Local Authorities. Service Authorities contractors, consultant, inspectors and supervisors.

#### **COURSE COST**

**\$520 per person + GST**

*(minimum numbers apply before a course is confirmed)*

## ROAD CONDITION RATING – SEALED ROADS

### 1 OR 2 DAYS

**PRESENTER** Chris Scott

**Reliable identification of defects is vital to the proper functioning of NZ Transport Agency (NZTA) Road Assessment and Maintenance Management system.**

NZIHT trains all of this country's road condition raters directly. Successful workshop participants receive a Practising Certificate enabling them to undertake condition rating surveys of sealed roads on NZTA funded works on State Highways and Local Authority roads.

NZIHT welcomes enquiries for training from anyone wishing to be trained as a rater. The Institute maintains a register of currently certified sealed road raters for public inspection and will on request provide details to road controlling authorities prior to acceptance of any professional services tender for road condition rating.

#### **TOPICS**

- Condition rating parameters
- Road rating sections and locations
- Defect identification
- Data recording
- Field validation exercises
- Allowable limits of variation
- Competency assessment for certification

**ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO**

- Understand rating parameters
- Identify and locate rating sections and inspection lengths accurately
- Identify rated defects in sealed surfaces

- Accurately measure and record defects in sealed surfaces
- Obtain a practising certificate as an accredited rater

**WHO SHOULD ATTEND?**

Any person wishing to undertake condition rating surveys on sealed roads for NZ Transport Agency (NZTA) subsidised work.

#### **2 DAY COURSE**

New Raters (with less than 2 years experience) are required to:

- Attend the full two day Condition Rating Workshop
- Attend the one day “refresher” workshop the following year

After two consecutive years training raters are then considered experienced and only need to attend the one day “refresher” workshop every second year.

#### **1 DAY COURSE (2ND DAY)**

Experienced Raters are those who have attended two consecutive years training. To remain current, they must attend the one day “refresher” workshop every second year. ie: if you attended a 1 day workshop within the last 12 months, then you are not required to attend again until 2021.

#### **COURSE COST**

**\$520 per person + GST  
for one day course (2nd day)**

**\$850 per person + GST  
for two day course**

*(minimum numbers apply before a course is confirmed)*





# ROAD LIGHTING COURSE A – TO AS/NZS 1158 1 DAY

This one day course covers the series of AS/NZS 1158 Standards for lighting for roads and public spaces. The design of lighting for vehicle and pedestrian road users is covered as well as historical reasoning behind “why we light roads”.

It allows users to gain full advantage from the broad guidance the standards now provide. The course will cover the elements of good road lighting design for all parts of the road network using the computer techniques specified in the standard.

An understanding of the principles and benefits of road lighting is important. The New Zealand road lighting series of standards is continually being updated. The latest review of the standards commenced in 2012 motivated by a need to incorporate LED lighting. The review is now extending to other areas and is likely to lead to a number of changes to reflect the latest research results from New Zealand and overseas, and to incorporate user feedback on the original publications. Among other things the changes are likely to include a review of the NZ road reflection tables and it is important that designers and asset owners understand the reason for the changes and how best to deal with them. The 2015 course material will address all of the revisions both proposed and incorporated.

## TOPICS

- Why we light roads
- Safety benefits
- Photometric issues and principles
- Field measurements
- Developing a lighting hierarchy
- Outline of the new issue standards
- Light sources including LED lighting
- The basics of design methods
- Elements of good design
- The lighting of pedestrian crossings
- The basic principles for the lighting of tunnels and underpasses
- The road lighting asset and key measures to minimise lifetime costs
- Specific case studies (if submitted by the attendees)

## ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Knowledge of Public Road Lighting Standards and their application to Public Lighting Tasks
- Knowledge of the model behind the calculation of the light technical parameters for the various lighting levels in Category V and Category P
- A basic knowledge of the design principles in completing any public lighting design tasks (with emphasis on road lighting)

- An appreciation of the content and rules within the Standards and the reasoning for them.

## WHO SHOULD ATTEND?

Road lighting infrastructure asset owners, engineers, technicians and designers from local road controlling authorities, traffic and design engineers from consultants and architects involved in the design of road lighting for vehicle and pedestrian traffic.

## COURSE COST

**\$520 per person + GST**

**OR**

**\$850 per person + GST to attend  
2 consecutive days**

Participants are encouraged to bring copies of the AS/NZS 1158 series of standards and any case studies they may want to share or get the group to comment on.

*(minimum numbers apply before a course is confirmed)*

# ROAD LIGHTING COURSE B – DESIGN TRAINING 1 DAY

This Road Lighting Design Training course provides practical guidance for those involved in the detail of design process. Road Lighting Design is a skill that is essential for Asset owners of Road Lighting (Road Controlling Authorities, Councils and NZ Transport Agency) to have ready access to. The course concentrates of the design methodology for roads lit to both Category V and P – but also covers public space lighting, lighting of pedestrian crossings and tunnel lighting principles.

The luminance approach to road lighting design requires attention to the detail for all aspects of the project Every Category V lighting scheme requires specific analysis. For each and every design it is essential that:

- an adequate ‘design brief’ is established
- the asset owner has access to those with skills to define adequately a design brief
- the asset owner has access to those with appropriate training in the solution of a road lighting design task
- the asset owner can evaluate those solutions and correlate them to the brief originally established
- the asset owner has an understanding of any lifetime maintenance issues (costs) that the design promotes

For category P similar disciplines but different calculation techniques are used. This one day design course builds on the NZIHT Road Lighting Course A. It covers the design methodology of the series of AS/NZS1158 Lighting Standards and covers relevant material from the “right light” project.

## TOPICS

- Building a road lighting design brief
- Understanding a road lighting design brief
- For Category V tasks
  - using computer based solution finders to look at appropriate lighting options
  - using a computer tool to finalise selected design and ensure design is compliant and meets (and does not exceed) the design brief.
  - straight road and complex intersection analysis
  - implementation of the various layout rules
- For Category P tasks
  - using computer based information to establish appropriate lighting solutions
  - implementation of the various layout rules
- For Pedestrian Crossing lighting
  - an understanding of the LTP’s and methods to calculate them

Luminaire Photometrics and key components as necessary

- Specific case studies (attendees are **invited and encouraged** to bring their own tasks for consideration and to see solutions evolve)

## ON COMPLETION, PARTICIPANTS WILL HAVE

- A consolidated knowledge of design of Road and Public Space Lighting tasks
- An in depth knowledge of the design principles and methodology in completing any public lighting design tasks (with emphasis on road lighting)
- An appreciation of when designer inputs are required for interpretation of the standards for lighting tasks with particular requirements i.e thinking “outside the square”
- Observed appropriate design presentation methodologies that the client should be provided with.

## WHO SHOULD ATTEND?

Lighting Designers, or those wanting a more in depth understanding of the detail of the lighting design process.

Engineers and designers from local road controlling authorities, traffic and design engineers from consultants and architects involved in the design of road lighting for vehicle and pedestrian traffic.

## COURSE COST

**\$520 per person + GST**

**OR**

**\$850 per person + GST to attend  
2 consecutive days**

Participants are encouraged to bring any case studies they may want to comment on. The course references material in the AS/NZS 1158 series of standards. Road Lighting Design Software (Perfectlite as a training version) is demonstrated.

*(minimum numbers apply before a course is confirmed)*

# SAFETY IN TRENCHES

## 1 DAY

**PRESENTER** Bill Wright

**This course covers the safety aspects of working in and around trenches within the civil industry and covers drainage work from small pipe, small scale excavations to large storm water and deep excavations.**

The construction and instillation of shoring and retaining equipment and materials is covered in detail and there are exercises in design during the day. It is a detailed look at what can happen if the correct procedures are not taken. There have been many accidents and deaths involving work around trenches and with the correct training these accidents can be reduced.

From the Company's point of view all staff need to have this knowledge and training to make themselves safe.

From the staff members point of view the course provides critical information about safety and working in trenches. How to keep your self safe while working in trenches and also covers safety observer responsibilities.

### TOPICS

- Knowledge on dangerous excavations
- Environmental requirements for the handling of materials

- Requirements for storage of excavated materials
- Health and Safety requirements
- Planning for the safe working of the site
- Slings and lifting safely with machinery
- Hazard management
- Hazard ID
- Shoring and retaining unstable soils
- Dangers of exposing services

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- The attendees of this course will have the knowledge and understanding to be able to work safely in and around trenches on civil sites
- Understand the requirements as set by the environmental act pertaining to trenching
- Knowledge of the health and safety act relating to confined spaces
- Understand the dangers of working in trenches

### WHO SHOULD ATTEND?

- All those working within the civil industry and who are exposed to the dangers of trenching and drainage.
- Staff members of companies who want to be able to show training and professional development of their staff in these areas.
- Company staff members who need to show training under safety standards for all staff.

### COURSE COST

**\$520 per person + GST**

*(minimum numbers apply before a course is confirmed)*

# SLINGING, LIFTING, MOVING & PLACING

WITH AN EXCAVATOR OR LOADER

## 1 DAY

**PRESENTER** Kingsley Hannah

**When on the job, there will be times where you need to work around suspended loads. This risky task has regulations and safe work practices to follow. It is important that everyone involved knows how to implement these practically.**

**Knowing the machine capability through the use of load charts, understanding the weights of what you lift and the safest method of doing so is crucial to the safe success of the job.**

The information that is presented to you on course will give you the industry best practices. You will gain practical solutions to get efficiencies and work safely.

*Continued on next page...*



# INNOVATION IS AT THE HEART OF EVERYTHING WE DO!

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**0800 180 200**      **www.roadscience.co.nz**

**Road Science**  
Leading Transport Technology | A Downer Company

This course aims to equip individuals with knowledge of slinging, lifting, and placing with an excavator or loader.

#### TOPICS

- Work Safe requirements
- How to sling a load and secure it
- Communication with lifting loads – hand signals
- Hazards while slinging and lifting
- How to check lifting gear
- Safe operation of machinery been used to lift
- Reading and understanding load charts

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Describe the principles for using an excavator or loader for lifting and moving loads
- Describe types and inspection of lifting attachments on excavators and loaders
- Demonstrate knowledge of lifting and securing gear used with excavators and loaders
- Describe communication for slinging, lifting, moving and placing operations
- Demonstrate knowledge of hazards associated with slinging, lifting, moving and placing, and describe requirements for their control
- Demonstrate knowledge of slinging, lifting, moving and placing of components, materials, and objects at civil infrastructure worksites

#### WHO SHOULD ATTEND?

Operators and those on ground personnel who rig the gear or spot and aid in the control of suspended loads. Project Managers may also benefit from attendance at this course to understand the process and how it may affect planning processes. Material supplier yards people who undertake the lift. Local council staff.

#### NEW ZEALAND QUALIFICATIONS FRAMEWORK

As an option to the training we are able to offer assessment of the below unit standard. This is additional \$195 per person to the course fee. Participants must complete and pass an assessment workbook and complete a WITT enrolment form.

31245 Plan for and lift, move, and place loads using mobile plant, in infrastructure works environments.

#### COURSE COST

**\$520 per person + GST**

(minimum numbers apply before a course is confirmed)

## STABILISATION OF ROAD PAVEMENTS – FUNDAMENTALS

### 1 DAY

**PRESENTER** Ian Anderson

Stabilisation can provide major benefits for roading projects of all sizes, and significantly offer acceptable cost effective alternatives to the use of premium sources of aggregates. With the advent of NZTA performance specifications (B/3 and M/22), there is the opportunity to use alternative materials in conjunction with stabilisation techniques, to meet strength and durability requirements for pavements. This workshop provides an overview of the main issues involved with the design and construction of sealed and unsealed pavements using stabilisation.

#### TOPICS

- Why, and when to stabilise
- Investigation and testing
- Cement treated basecourse
- Alternative stabilising agents, lime or cement, bitumen: factors to consider
- Pavement design principles
- Planning and economic issues
- Pavement life considerations
- Subgrade, sub-base and basecourse treatment
- Construction basecourse, including compaction
- In-situ stabilisation
- Road rehabilitation, and how stabilisation can help
- Area treatment options
- Use of recycled material
- Seal coat application to stabilised surfaces

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

Apply the use of material stabilisation to the design and construction of pavements.

#### WHO SHOULD ATTEND?

Construction managers and supervisors will benefit from this course. It also may provide added understanding for road asset managers.

#### COURSE COST

**\$520 per person + GST**

(minimum numbers apply before a course is confirmed)

## SUCCESSFUL PROJECT MANAGEMENT

### 2 DAYS

**PRESENTER** Steven Briggs

**The pace of change means that more and more inexperienced people are being asked to lead projects.**

**The deadlines are often very short; the available resources are limited; and the stresses brought on by the pressure to succeed are intense.**

**The conflicting demands from the day job and the project may be impossible to reconcile. Is it any surprise that 70% of projects fail to deliver in full, on time and within budget?**

We've distilled the wisdom and experience of project managers into a simple six-step approach to leading a successful project. We'll help you learn it effortlessly in our highly interactive two day course. It's a practical approach that is easy to apply to any situation.

#### TOPICS

- Defining the project concept
- Building a business case
- Managing the team
- Planning
- Risk management
- Quality management
- Scheduling
- Resourcing
- Project execution and control
- Closing a project

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- A simple approach to managing projects successfully
- How to build the team
- Techniques to identify and deal with potential issues before they become problems
- How to get people on their side
- How to define a project's scope
- How to make a realistic plan
- How to measure progress and identify issues
- How to avoid scope creep
- How to manage project meetings
- How to finish a project and communicate the lessons learned

#### WHO SHOULD ATTEND?

This course will be of assistance to anyone new to the project world and who has to run or take part in projects as part of their job.

#### COURSE COST

**\$995 per person + GST**

(minimum numbers apply before a course is confirmed)



# SUPERCHARGED SUPERVISORS TOOLKIT

## 1 DAY

**PRESENTER** Megan Dawson

Leaders are people who know how to achieve goals and inspire people along the way. It's vital that you not only know what leadership behaviours require, but also how to do it.

Good leaders in return get more job satisfaction out of their role. Participants will firstly explore their own style of leadership and then learn how to adapt their style to bring out the best in others. You will leave with your own personal action plan to raise the bar for you and your team.

This highly interactive and highly acclaimed course will address four essentials to the supervisor.

- What you have to BE
- What you have to KNOW
- What you have to DO
- What you have to LEARN.

### TOPICS

- How to lead – what you actually do!
- Understanding your own and others behaviour
- What motivation is
- Team Building skills
- Delegation guidelines
- Briefing and Debriefing your team
- Problem solving
- Being a coach

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Know yourself and seek self-improvement
- Make sound and timely decisions
- Set the example
- Know your people and look out for their well-being
- Develop a sense of responsibility in your subordinates
- Ensure that the task is understood, supervised and accomplished
- Employ your team in accordance with its capabilities

### WHO SHOULD ATTEND?

This course will be of assistance to anyone in Supervision.

### PRE-COURSE WORK:

Attendees will complete an online assessment of their management style prior to the course.

### COURSE COST

**\$695 per person + GST**

Includes pre-course DiSC online profiling  
*(minimum numbers apply before a course is confirmed)*

# SURVEY AND SET OUT

## 1 DAY

**PRESENTER** John Herman

This is a practical course that excites and enables all field staff to read and interpret plans and assist with survey and setting out activities.

The course gives a strong emphasis on understanding construction plans, dimensions, datums, survey marks, accuracies, elevations and layouts to enable all participants to confidently appreciate the works scope and detail.

Basic measurements, offsetting and marking out for construction works are discussed and demonstrated. Understanding with field exercises using levelling equipment and level reductions to establish design heights gives field staff new skills.

The course reinforces field checking, recording, basic calculations and good survey techniques.

### TOPICS

- Understanding plans and symbols
- Land Information NZ website as a source of survey information
- Explaining survey and set out equipment
- Use of levels, digital grade level, tapes and laser levels
- Set out of pegs, profiles, grades and stakes
- Understand reference systems and coordinates.
- Reading, recording and reducing level observations
- Construction site survey considerations
- Area and volume calculations.
- Basic measurement methods and checks

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Set up, read, record and calculate using an automatic level
- Assist a surveyor with planning and preparation work for survey setout
- Assist a surveyor to take field measurements
- Understand construction drawings and their functions
- Setout basic structures
- Checking and calibration of survey levels

### WHO SHOULD ATTEND?

Forepersons, plant operators, technicians, field staff who are required to assist in the set out and maintenance of civil work sites including road works.

### COURSE COST

**\$695 per person + GST**

*(minimum numbers apply before a course is confirmed)*

# THE FUNDAMENTALS OF ASPHALT MIX

## 2 DAYS

**PRESENTER** David Jones

Asphalt paving mix design requires a clear understanding of design standards and specification requirements. Design also demands close attention to the details of testing procedures to ensure an economical blend and gradation of aggregates. Durable asphalt mixes must provide for stability, sufficient voids and workability to permit efficient construction.

This course provides an overview of asphalt mix design and includes the latest design methods from America and Australia. The methods will include Austroads Selection and Design of Asphalt Mixes and SHRP Superpave Mix Design.

It has also been updated to include the draft specification for dense graded, stone mastic and fine graded asphalt paving mixtures NZTA M/10.

This will assist engineers and supervisors in their understanding of the design process and specifications.

### TOPICS

- Objectives of design mix
- Desirable mix properties
- A review of non-structural mixes
- Reviewing mix types and practical considerations
- Reviewing mix design and procedures
- Performance based specifications
- Quality assurance
- Production testing and interpretation of test results
- Overview of asphalt manufacture and construction techniques

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Identify objectives of mix design and the properties required
- Understand methods for the design of non-structural mixes taking practical considerations into account
- Understand the importance of production testing and interpretation of results
- Understand the implications of performance based specifications and quality assurance
- Have an overview of asphalt plant operations and construction techniques

### WHO SHOULD ATTEND?

Engineers and supervisors from consulting firms, local authorities and technical staff from contracting firms who are involved in the decision making process for mix types vs. location and/or laboratory technicians.

### COURSE COST

**\$850 per person + GST**

*(minimum numbers apply before a course is confirmed)*

# TIME MANAGEMENT

## 1 DAY

**PRESENTER** Megan Dawson

**Stop working hard – work smarter and get more done. Learn how to do all this in one day.**

You have as much time in a day as everyone else does. So what happens to it? Are you using it the way you want? Have you the capacity to work on your business as well as in it?

This very powerful seminar has participants construct their own personalised Time Management Plan according to their style and work environment.

You will, using a unique workbook:

- Examine how you manage your time during the day
- Identify ways that you use time effectively and ineffectively
- Determine specific ways you can improve your time management

### TOPICS

- Improving Attitudes
- Setting Goals
- Establishing Priorities
- Analysing
- Planning
- Scheduling
- Curbing Interruptions
- Improving Meetings
- Handling Written Communications
- Delegation
- Conquering Procrastination
- Improving Team Time

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Help you increase your productivity on the job and at home
- Help you enhance the quality of your work with less stress
- Give you a sense of personal satisfaction and accomplishment

### WHO SHOULD ATTEND?

Everyone who wants to get more productive time out of each day, with less stress and more enjoyment.

### PRE-COURSE WORK:

Attendees will complete an online assessment of their personal approach to time management.

### COURSE COST

**\$695 per person + GST**

Includes pre-course assessment of your personal approach to time management.

*(minimum numbers apply before a course is confirmed)*

# UNDERSTANDING ASPHALT PAVEMENT CONSTRUCTION

## 1 DAY

**PRESENTER** Phil Bull

**Asphalt paving construction productivity depends on the smooth and safe running of laying operations and effective contractual relationships. It also depends on understanding the materials being dealt with.**

**Poor construction practices often lead to defects, incorrect layer thickness and shape problems.**

**The cost associated with rework and/or the repair of asphalt surfacing can wipe out the value of the work. Competent supervision can avoid many of these problems.**

### TOPICS

- On site safety importance of tailgates and risk analysis
- Special requirements of night work
- Materials used in paving
- Different mixes
- Tack coat practice
- Assessing a site – planning/supply chain
- Liaison with supply chain
- Correct estimation of amount of mix needed
- Quality by supervision and organisation
- Contract administration – QA, Records
- Site communication
- Programming sequences
- Paver operation, bob cat operation, rolling,
- Field sampling and testing – QA
- What does success look like – post examination of work

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Check that specified mix and parameters are valid for conditions on site at time of application: Work with plant.
- Supervise physical works involved in surface preparation and asphaltic paving construction
- Liaise with client, management, supply chain, site staff and public during the project
- Deploy personnel, plant and equipment in a productive manner and in compliance with contract requirements
- Make the company and industry look professional and responsible

### WHO SHOULD ATTEND?

- Asphalt Paving Crews seeking to gain a better understanding of asphalt paving construction.
- New supervisors and junior engineers wishing to gain supervision skills in asphalt paving construction

- Experienced supervisors wishing to update their skills to present day requirements should also attend
- Laboratory personnel seeking to understand on site requirements
- Managers who want to know what goes on
- Asphalt plant personnel seeking to improve their performance

### COURSE COST

**\$520 per person + GST**

# UNDERSTANDING NZS3910:2013 CONDITIONS OF CONTRACT

## 2 DAYS

**PRESENTER** Fiona Knight

**How well do you know the contents of NZS3910, which are the 'rules' for administering and managing civil engineering and building contracts?**

This popular course, from a practical and 'hands-on' point of view will benefit Principals, Consultants and Contractors regarding how to manage and administer contracts and to understand their obligations and liabilities under NZS3910.

### TOPICS

- A complete overview of NZS3910:2013
- Types of contracts
- Contractor and Client obligations
- Role of the Engineer / Engineer's representative
- Variations and how to value them
- Extensions of time
- Disputes
- Termination of contracts / sub-contracts
- Calculation of percentages for on-site, overhead and profit and rate per working day

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Use course notes as an up to date reference for managing contracts
- Understand NZS3910:2013 as a whole and the issues for all three parties: The Principal, the Contractor and the Engineer to The Contract.
- Be familiar with different types of contracts and how the tender documents fit into the contract
- Understand 'extension of time' and associated implications and costs

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#### WHO SHOULD ATTEND?

The course is suitable for people who have little or no experience with NZS3910, as well as those who already use it but need to understand it better. The course is designed for people involved with contracts in the building, construction, utilities, landscaping, civil engineering and roading sectors, as covered by the Construction Contracts Act 2002.

#### COURSE COST

**\$850 per person + GST**  
(minimum numbers apply before a course is confirmed)

## UNDERSTANDING NZS3915, NZS3916 AND NZS3917

**½ DAY**

**PRESENTER Fiona Knight**

**Do you know the requirements for intellectual property contained in NZS3916:2013 (Design and Construct)?**

**Do you understand the different requirements for remedying defects under NZS3917: 2013 (Fixed Term)?**

**Do you know what the responsibilities for the Principal are under NZS3915 where there is no 'Engineer' to the Contract?**

**These are just some examples of the differences from NZS3910:2013.**

This course, from a practical and 'hands-on' point of view, will benefit Clients, Consultants and Contractors wanting to know the differences between these two standards and NZS3910, the General Conditions of Contract. It is designed for people who are already familiar with NZS3910:2013.

#### TOPICS

- Overview of each standard NZS3915, NZS3916 and NZS3917
- Points of difference from NZS3910

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Use course notes as an up to date reference for managing contracts
- Understand the key content of NZS3915:2005, NZS3916:2013 and NZS3917:2013
- Be familiar with the similarities and differences with NZS3910:2013

#### WHO SHOULD ATTEND?

Contract and Project Managers, supervisors, engineers'/contractors' representatives, as well as experienced personnel wishing to improve their knowledge of these specialist contracts.

#### COURSE COST

**\$395 per person + GST**  
(minimum numbers apply before a course is confirmed)

## UNDERSTANDING THE CONSTRUCTION CONTRACTS ACT 2002

**½ DAY**

**PRESENTER Fiona Knight**

**The Construction Contracts Act 2002 applies to all construction contracts that relate to the carrying out of construction work in New Zealand, whether the contract is in writing, oral, or a mixture of both, and whether it is for commercial or residential construction.**

#### IT HAS FOUR KEY OBJECTIVES

- To protect retention money withheld under commercial construction contracts
- To help ensure a fair, balanced and appropriate payment regime
- To provide a fast and cost-effective adjudication process for people with disputes
- To provide enforcement mechanisms to recover any unmade payments

This course, from a practical and 'hands-on' point of view, will benefit Clients, Consultants and Contractors wanting to understand the key provisions of this Act, and how it applies to them.

#### TOPICS

- Key content of the Construction Contracts Act 2002 (CCA)
- What this means in real life
- How to submit payment claims under the Act
- The Adjudication process

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Use course notes as an up to date reference on the CCA
- Be familiar with the key provisions of the Act
- How to use the CCA to get paid

#### WHO SHOULD ATTEND?

Contract and Project Managers, supervisors, engineers'/contractors' representatives, as well as experienced personnel wishing to improve their skills.

#### COURSE COST

**\$395 per person + GST**  
(minimum numbers apply before a course is confirmed)

## UNDERSTANDING THE NATIONAL UTILITIES CODE

**2 DAYS**

**PRESENTER Fiona Knight**

**Are you complying with the National Utilities Code?**

**Its use is compulsory for all road and rail controlling authorities and utility network operators and their contractors for access to the road and rail corridors to install and maintain utility assets.**

This essential course gives an intensive look at the Code from principles to specifics, and includes discussion on the roles and needs of the different parties. It is very interactive, including case studies and group discussions.

It is designed for corridor managers, utility operators, consultants and contractors and covers interpreting the Code and how to work better to comply with the requirements of the Utilities Access Act 2010.

#### MAJOR POINTS COVERED

- The context in which the Code operates
- Roles & responsibilities of all the parties
- Understanding the terms used in the Code
- General requirements of the Code
- Planning for new assets in the transport corridors
- Obtaining access to the corridors
- Reasonable conditions
- Procedures for working in the corridors
- Cost sharing
- Key changes from the 2018 review

#### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the National Code of Practice for Utility Operators' Access to the Transport Corridors from cover to cover
- Understand the issues facing the different parties
- Use their course notes to assist them when seeking access to or working in a transport corridor
- Be familiar with their own specific responsibilities under the Code
- Comply with the Code as required by the Utilities Access Act 2010

#### WHO SHOULD ATTEND?

Any-one who has responsibilities for administering or complying with the Code: corridor managers, road and railway asset managers, administrators, utility network operators, consultants, managers of people working in the road corridor.

#### COURSE COST

**\$850 per person + GST**  
(Minimum numbers apply before a course is confirmed)

In-house courses are available - POA



# UNDERSTANDING THE TENDER PROCESS

## 1 DAY

**PRESENTER** Fiona Knight

The tendering process is an essential start to most contracts, but all too often people get the process wrong, both principals and contractors alike. To receive good tenders, principals must provide meaningful contract documents for tenderers. But they also want an assurance that contractors fully understand their business, its needs and the specific job requirements.

**Winning contracts is essential to the continuing viability of any contractor. It is no longer just about the price and accurate calculations. Winning contracts means understanding the issues and requirements at the procurement stage plus the knowledge to write the tender so it will be meaningful and well received.**

The course provides an overview of the issues for both sides: principal and contractor. It also includes the basic requirements for government agencies.

If you are new to tendering or wish to have a refresher, then this course is a must.

### TOPICS

- What tendering is all about
- Types of contracts
- Planning to tender
- The formal tendering process for both client and contractor
- Preparing the tender
- Quality (non-price) attributes
- Tender evaluation
- Issues in preparing tenders
- Knowing the competition
- Pitfalls and tender review
- Debrief
- Governance

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Understand the purposes, types and methods of tendering and tender evaluation
- Understand the challenges and pitfalls in preparing tender documents

### WHO SHOULD ATTEND?

Principals, consultants and contractors who are newly responsible for preparing, evaluating and awarding tenders for civil construction and maintenance; or those just wanting a refresher.

### COURSE COST

**\$520 per person + GST**

*(minimum numbers apply before a course is confirmed)*

# UNDERSTANDING QUALITY PAVEMENT CONSTRUCTION

## 2 DAYS

**PRESENTER** Ian Anderson

The current trend towards performance based specifications for roading and civil construction projects increases the need for contracting firms to understand the issues involved with pavement construction, especially material compaction.

This course provides an overview of theory and practice to assist team leaders and supervisors/forepersons to manage construction in the field.

### TOPICS

- On-site preparation
- Excavation
- Identification of problem areas in subgrade
- Treatment of poor subgrade areas to achieve strength requirements
- Interpretation of material specifications
- Soil properties influencing compaction
- The relationship between maximum dry density (MDD) and optimum water content (OWC)
- Compaction behaviour of cohesive (clay) soils and non-cohesive (granular) materials
- Compaction assessment (in the field)
- Compaction equipment – types and application
- Spreading and placement of aggregate materials
- Grading, trimming, shaping and compaction of final surface
- Surface preparation

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Prepare roads up to sealing standard
- Carry out on site preparation
- Excavate and prepare subgrade
- Grade, trim, shape and compact soil and aggregate layers
- Understand the significance of compaction measurement criteria in specifications
- Interpret compaction specifications and criteria
- Achieve consistent compaction when preparing basecourse surfaces

### WHO SHOULD ATTEND?

Supervisors, plant operators and field staff who are involved in earthwork and pavement construction projects.

### COURSE COST

**\$850 per person + GST**

*(minimum numbers apply before a course is confirmed)*

# VALUING VARIATIONS — DO WE NEED MORE?

## 1 DAY

**PRESENTER** Dave Hooker

Valuing variations is one of the biggest challenges contractors and the engineer to the contract face. Almost all construction and civil engineering contracts will vary from the original design and scope. But how do you ensure that the valuation of the variation is fair and equitable to both the principal and the contractor?

This is a practical course, based on the provisions in NZS3910.

### TOPICS

- Refresher of the provisions in Section 9 of NZS3910
- Understanding what constitutes a Variation
- Defining the role of the Engineer and the Contractor and their part in a Variation and its Valuation
- Refining the principles behind how to Value a Variation as seen by the Engineer and the Contractor
- Practical case studies across the range of construction and civil engineering sectors
- Understanding the reasons for a comprehensive tender process as a basis for Valuing Variations
- Consequences of Variations on the overall Contract Works

### ON COMPLETION, PARTICIPANTS WILL HAVE THE KNOWLEDGE TO

- Prepare a proposed value of a variation
- Analyse the issues that lead to a variation
- Understand the different perspectives of the various parties to the contract
- Apply the provisions of NZS3910 in valuing variations
- Recognise that the Negotiation and Valuing of a Variation in a positive atmosphere whilst considering the positions of all parties to the contract, is an essential part of Contract Management

### WHO SHOULD ATTEND?

Any-one who is involved in valuing variations under NZS3910, specifically contractors and the “engineer” to the contract. Participants are expected to know and already understand the provisions of NZS3910.

### COURSE COST

**\$520 per person + GST**

*(minimum numbers apply before a course is confirmed)*

# 20 ANNUAL CONFERENCE

NZ Transport Agency & NZIHT

25<sup>th</sup> – 27<sup>th</sup>  
May 2020

Napier  
Conference Centre



&



## Call for Papers

Closing date for papers 10<sup>th</sup> February 2020

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## Siblings' journey with WSP Success through the Cadetship Programme

Brylee Thomson followed her brother Brendon's footsteps through WSP's Cadetship Programme and currently works alongside him at our Napier office.

Brendon and Brylee, who were born and raised on a small farm on the outskirts of Whanganui, earned their NZDE (Civil) from NZIHT with the support of WSP.

Brendon started with WSP as a Cadet in our Napier office January 2013. He completed his diploma in 2015 and is now a Civil Engineering Technician. Brendon shared about the work he was doing with his sister, sparking her interest in joining WSP's Cadetship Programme.

Brylee started with WSP as a Cadet in Auckland January 2015, but decided the city was not for her. She then transferred to our Napier office one year later, continuing her studies. Brylee completed her diploma in 2017 and is now a Technician Civil Infrastructure.

Both said their knowledgeable teachers and small class sizes at NZIHT along with WSP's support through the Cadetship Programme helped them establish the skills and experience they needed to succeed.

"The Cadetship Programme took me from a school leaver with very little knowledge, to someone who is well qualified with a good knowledge and experience base, which will see me in good stead for the rest of my career," Brendon said. "I like that I've had the chance to spend time in different teams and have a broad knowledge base as a result."

During his time with WSP, Brendon has worked across network, asset and construction management. Most recently, he has been a Site Engineer for two large road safety improvement projects in Hawke's Bay.

Brylee has worked on projects in design draughting, three waters, geotechnical, contaminated land, surveying, and MSQA

site engineering. She said the Cadetship Programme gave her a solid introduction to Civil Engineering and growing capabilities across all disciplines.

"I feel that it has made me really valuable to the company," Brylee said. "I have a lot of capability to help where it is needed in the office."

Brylee and Brendon are also involved with the Napier Office social club, enjoying the group events and sporting activities. Brylee runs the club, organising events like quizzes, amazing races, indoor netball, summer football, and group hikes for the office.

"It adds a good balance being able to socialise with people outside of work hours in a more relaxed environment," Brylee said. "You learn things about people that you probably wouldn't have found out in the office which helps you understand how they work and how best to work with them."

Both also went on to complete the New Zealand Diploma in Engineering Practice and are currently continuing their part-time studies, which WSP is financially supporting. Brylee is studying toward a Bachelor of Engineering Technology, and Brendon is studying for a Bachelor of Engineering (Honours) in Civil Engineering.

**The WSP Cadetship Programme is three to five years. WSP provides full financial support to our Cadets in studying toward a diploma in Civil Engineering or Surveying. Our Cadet roles are permanent, full-time positions. If you are interested in learning more, please visit our website**

**[www.wsp.com/en-NZ/careers/early-career](http://www.wsp.com/en-NZ/careers/early-career)**



# NZIHT TRAINING PROGRAMME 2020

## GLOSSARY OF COURSES

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Agile Management (1 Day)	22		
Applying Bitumen Emulsions and Poly-modified Binders (1 Day)	22		
Asphalt Pavement Construction Essentials (1 Day)	23		
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Chipseal Design (2 Days)	27		
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Road Condition Rating – Sealed Roads (1 or 2 Days)	40		
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Understanding Asphalt Pavement Construction (1 Day)	45		
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Valuing Variations – Do we need more? (1 Day)	47		



## NOTES

## NOTES



## “IT’S ABOUT GRABBING OPPORTUNITIES WHEN THEY COME UP AND RUNNING WITH THEM, MOVING FORWARD, THEN FORWARD SOME MORE.”

Leroy O’Riley - Higgins Hawke’s Bay

Trying to stay awake during nightshift at a frozen food factory a young Leroy O’Riley never imagined that a decade later he’d be halfway through a Diploma in Civil Engineering but, currently studying at NZIHT while working for Higgins Hawke’s Bay, that’s exactly where he is.

Growing up in Hastings Leroy wasn’t sure what he wanted to do on leaving school. After trying a range of jobs including driving a forklift and delivering pizza, then enjoying an OE in Aussie, he returned to New Zealand with his partner to start a family.

Finding work in the water maintenance sector allowed him to gain his heavy machinery licences and in 2016 he took a position with Higgins as a Machine Operator. He says his enjoyment of Civil Trades became a driving force in his desire for further learning and career development.

Now the father of two girls and training to be an engineer he says having his family, NZIHT and Higgins behind him has been an important factor in his success.

*“It’s not always easy to juggle work, study and relationships but I’ve got great support around me.”*

Higgins Hawke’s Bay Manager Mike Job says over time Leroy’s work ethic and personality marked him out as someone the company wanted to invest in.

*“Leroy has a passion for the civil industry and is always a very positive guy. When it comes to putting resources into people’s career development, attitude is everything.”*

And it’s that attitude that keeps Leroy moving onward and upwards.

*“My goal is to get my Diploma then to start working toward becoming a Project Manager, and a good one too. Starting from the ground up has given me heaps of practical experience and other people you work with in the field respect that you’ve been there and done the hard yards. I always want to learn something new and my time with NZIHT and Higgins has really shown me the huge career opportunities available and how to set goals to get there.”*

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[www.fultonhogan.com](http://www.fultonhogan.com)

## Join our team - Sam did

Hailing from Huntly, Sam joined Fulton Hogan as a Cadet Engineer in 2015 fresh from completing a Diploma in Civil Engineering.

Our Cadets rotate through the business building their skill base and gaining a valuable understanding of all facets of our business.

Over the past four years Sam has had the opportunity to work on exciting projects including: SH63 Howard Narrows safety improvements as part of the Kaikoura earthquake response; Gallagher Drive signalised intersection upgrade; Bulk earthworks for the Ruakura Freight Hub and most recently the Huntly Bypass section of the Waikato Expressway.

*"Fulton Hogan is a great company to work for. The thing I enjoy most about my role is the satisfaction of completing a job. I also get a kick out of teaching new people and learning new things." – Sam Savage*

