Public Works Foundations Program

Course Outline

Traffic & Transport Foundations

What is the Traffic & Transport Foundations course?

This course is one in a series of **Public Works Foundations Program** courses curated by IPWEA Victoria to develop the skills of public works professionals in key responsibility areas. Each course comprises four 4-hour sessions presented over consecutive weeks.

Course Overview

This course will the cover optimal transport network planning and traffic management considerations for developing or managing an integrated community transport network.

Modules

Session 1: **Integrated Transport Planning**
Session 2: **Traffic Management**
Session 3: **User Safety**
Session 4: **Active Travel**

Learning Objectives

By the end of this course participants should have an introductory level of understanding of:

- road space requirements for general traffic, freight, public transport, cyclists and pedestrians
- best-practice traffic management principles, objectives and approaches
- The safe systems approach to user safety and road safety engineering
- Accommodating active travel in road infrastructure using a safe systems approach

Integrated Transport Planning

- Introduction to transport planning
- Movement and place
- Emerging advancements

Traffic Management

- Local Government Roads
- Traffic Management Fundamentals
  - Traffic Data Collection
  - Local Road intersections and design considerations
- Treatments to reduce crash risk

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User safety

- Local Government and Road Safety, Road Safety Tools
- How do we make the road system safer for road users?
- Road safety tools and investigations

Active Travel

- Safe system approach for active travel
- Pedestrian Infrastructure and application
- Cycling Infrastructure and application

Delivery

The course is presented online to maximise accessibility for regional & interstate participants.

Facilitators

Melanie Venter

Melanie is part of the Safer Smarter Infrastructure team working as a traffic and transport principal engineer. Melanie has worked across the full range of transport network planning including all modes of transport, route choice determination, transport policy aspects and infrastructure requirements while considering sustainable and safe outcomes. Melanie has led multi-disciplinary teams and is well acquainted with all project management aspects.

Dr. Ronny Kutadinata

Dr Ronny Kutadinata specialises in mathematical modelling of physical systems for optimisation, control and automation. His research interests include vehicle and traffic modelling, traffic network control and transport optimisation. Ronny has worked on various projects in the ITS field, which included applications of advanced techniques for intersection control, intelligent mobility on demand, and CAV trials and roadmap. He has also taken a role as an NTRO Research & Development Program Leader focusing on infrastructure productivity through integrated mobility management and optimisation.

Madeleine Bekavac

Madeleine has nearly 20 years' experience in both State and Local Government in Victoria and SA working in engineering and leadership roles within the transport industry. In 2019 Madeleine joined the NTRO in the Transport Safety Team before moving into the South Australian State Business Leader role where she works with a range of State and Local government clients to help them achieve efficiencies in their work, build knowledge and skills and deliver mobility solutions for their communities.

Madeleine joined the Board of IPWEA SA in 2018 and is currently the Board secretary. She enjoys building relationships with public works practitioners and helping them add value and drive innovation across the management and delivery of public infrastructure.

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Paul Bennett *Senior Technology Leader, NTRO*
Paul Bennett has over 20 years of experience in traffic management, network operations, and Intelligent Transport Systems (ITS), supporting local governments to improve transport safety, efficiency, and planning through data-driven and practical solutions.

He has led national projects on Managed Motorways and Smart Freeways, providing guidance on the use of ITS tools such as Coordinated Ramp Signals and Lane Use Management Systems to improve traffic flow and reduce congestion. His work on the Augmented Level Crossing Warning System (ALCWS) is particularly relevant for local and regional areas, enhancing safety at passive rail crossings.

Paul has also worked with state and local agencies to develop traffic data fusion models and network performance indicators such as average delay and travel time reliability. His recent work focuses on updating Austroads guidance for motorway capacity analysis, creating methods that can be adapted by councils to support local network performance, strategic planning, and transport investment decisions.

Sarah Zhang
Sarah has over 10 years of transport planning experience encompassing active transport, traffic planning, pedestrian planning, transport strategy, across Australia and internationally. Having most recently worked on city-shaping transport infrastructure projects across Melbourne and Sydney, she understands how to navigate the complexity of active transport and future mobility trends with community impact and benefit.

Her focus in project outcomes is to promote active transport (being an avid walker and public transport enthusiast), as well as promoting for transport infrastructure to be connected to goods and services, to bring holistic value to the community. Her key projects include Melbourne Metro, Suburban Rail Loop, Sydney Metro, Western Sydney Airport, Sydney's TAP program, Cross River Rail, Special Activation Precincts, delivery of Future Transport 2056, Cycleway Design Toolbox, and Movement and Place BEI.

Malcolm Mak
Malcolm is an accomplished Transport Engineer with a diverse background in road design, safety, and sustainable transportation solutions. He joined NTRO in 2020, bringing with him five years of valuable experience from his tenure in local government. Malcolm is a passionate advocate for alternative modes of transport and is dedicated to developing innovative approaches to address transportation challenges.

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Stephanie Yue

Stephanie is a Transport Planner with 8 years' experience providing integrated multi-modal advice on various transport projects at all levels of government around Australia. Her key areas of specialisation include integrated transport strategy and policy, precinct master planning, land use planning, future mobility studies, movement and place assessments and investment prioritisation framework development.

Stephanie started her transport career in Transport for NSW (TfNSW) and Sydney Metro, during which she acquired a broad understanding of multi-modal challenges faced by the NSW Government and the strategic drivers of different interconnected agencies. Of significance, she supported the development of the TfNSW Movement and Place Built Environment Indicators and TfNSW Cycleway Design Toolbox.

Who should enrol?

This course has been developed for engineers, technical officers, coordinators & supervisors engaged with the design and construction of community infrastructure.

CPD and Badge

The course provides 16 hours of Technical CPD. A digital badge is provided on completion for social media use and Public Works Foundations Program graduates will be awarded a **Certificate of Public Works Engineering**.

Course Partner

NTRO NATIONAL TRANSPORT RESEARCH ORGANISATION