

---

# Developing NZ Public Transport Design Guidelines

Presentation by Lorelei Schmitt (NZ Transport Agency) and Colin Roche (Flow), 21 June 2019



# Strategic Objectives

Why develop national public transport design guidelines?

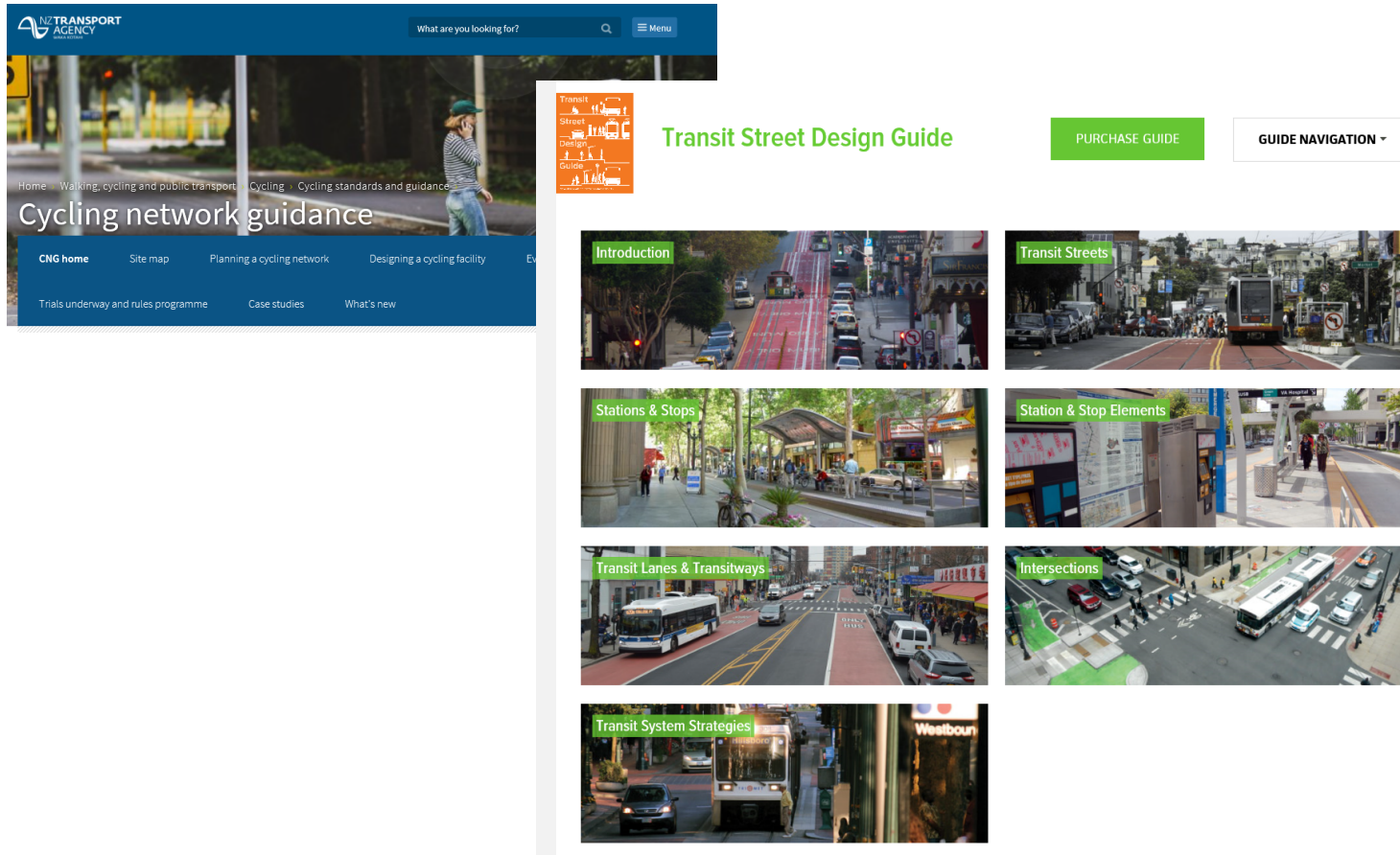
\$3.9bn NLTP	Support Councils	Consistency
Ensure <b>better quality outcomes for return on investment</b> (e.g. 2018-2021, \$3.9 billion through NLTP, \$2.3billion from NLTF)	Councils have shown high support for project: <ul style="list-style-type: none"><li>Limited resources</li><li>Help 'smooth tension'</li></ul>	<ul style="list-style-type: none"><li>National consistency over time: Improved customer experience &amp; accessibility</li><li>Reduced costs with bulk purchasing?</li></ul>

# Project objectives

**Guiding design principles:** accessible, safe, affordable, operationally efficient, support mode shift and positive urban design

1. **To be useful.** To assist in planning and delivery of high-quality, efficient, well-integrated, future-proofed public transport.
2. **To enable national consistency** for public transport which could lead to an:
  - a. Improved customer level of service
  - b. And reduced costs through bulk purchasing across regions (installation and maintenance)
3. **To be fit for purpose,** consistent with legislation and integrated with other relevant design guidance (e.g. NZ Transport Agency Cycling Network Guidance, Pedestrian Network Guidance, Bridging the Gap, Requirements for Urban Buses) into a user-friendly, but updatable format.
4. **To not re-invent the wheel.** Building on local best-practice design guidelines (e.g. Auckland Transport, Christchurch City Council) and be further informed by international best practice (Transport for London, NACTO etc.)

# What will the format be?



<https://nacto.org/publication/transit-street-design-guide/>

User friendly, photos, diagrams, flow charts. Less text


Ideally, flow charts to guidance relevant for different contexts (smaller urban areas, vs big cities, Greenfields vs brownfields etc.)

Online-based to allow for additions (e.g. case studies) and amendments

Where relevant, hyperlinked to existing relevant guides (e.g. RTP processes, CNG, PNG, Bridging the Gap etc.)


Attractive and navigable





What are you looking for?

Menu



Public transport design guidelines

Public transport research

A project to develop New Zealand Public Transport Design Guidelines is underway at the NZ Transport Agency.

The Guidelines are being developed by the Transport Agency collaboratively with an industry Reference Group which includes members from a representative body of public transport operators and a range of councils (regional, local, Auckland Transport). These members are from all over New Zealand, reflecting a range of contexts and perspectives.

The NZ Public Transport Design Guidelines are intended to support regional and local councils in delivering high-quality, user-centric public transport by providing a ‘one-stop-shop’ of best-practice guidance, specifically suited to New Zealand’s regulatory and operating environment. Wherever possible tiered guidance will be used to offer appropriate solutions.

The design principles of the Guidelines are to be: accessible, safe, affordable, operationally efficient, support mode shift and positive urban design. The Guidelines’ objectives are:

1. To be useful. To assist in planning and delivery of high-quality, efficient, well-integrated, future-proofed public transport.
2. To enable national consistency for public transport, which could lead to an improved customer level of service and reduced costs through bulk purchasing across regions (installation and maintenance).
3. To be fit for purpose, consistent with legislation and integrated with other relevant design guidance (e.g. NZ Transport Agency Cycling Network Guidance. Pedestrian Network Guidance. Bridging the Gap. Requirements

Topics and the elements that may be included

- ✓ Bus stops (note: including cycle lane/bus stop sub-topic as immediate priority)
- ✓ Corridor clearance
  - Camber
  - Important horizontally and vertically
  - Growing issue with double-deckers – need clearance standards
  - Existing Issues and how to address them
  - Affects ability of buses to pull into stops
  - Signage
  - Pedestrian movement space requirements
  - Ongoing maintenance requirements and corridor checks

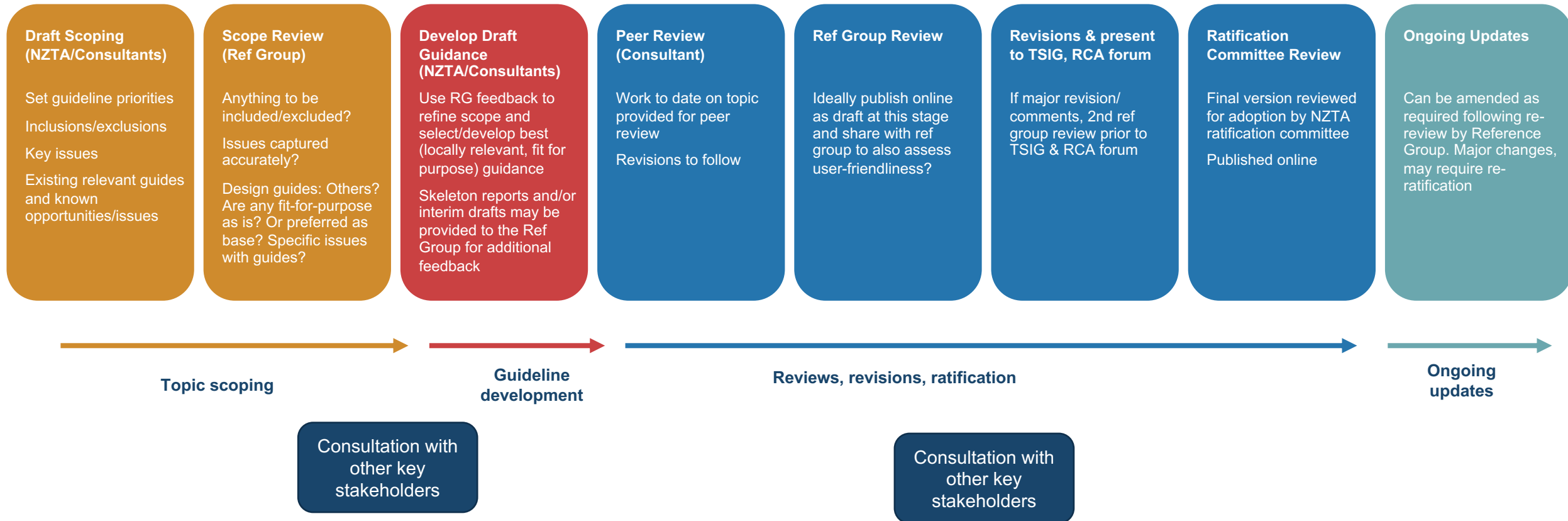
✕ Close

Back to top

- ✓ Public transport priority
- ✓ Bus layover and driver facilities
- ✓ Public transport interchanges
- ✓ Inclusive access: the first/last mile

# Proposed Process for Design, Review & Ratification

For each topic...

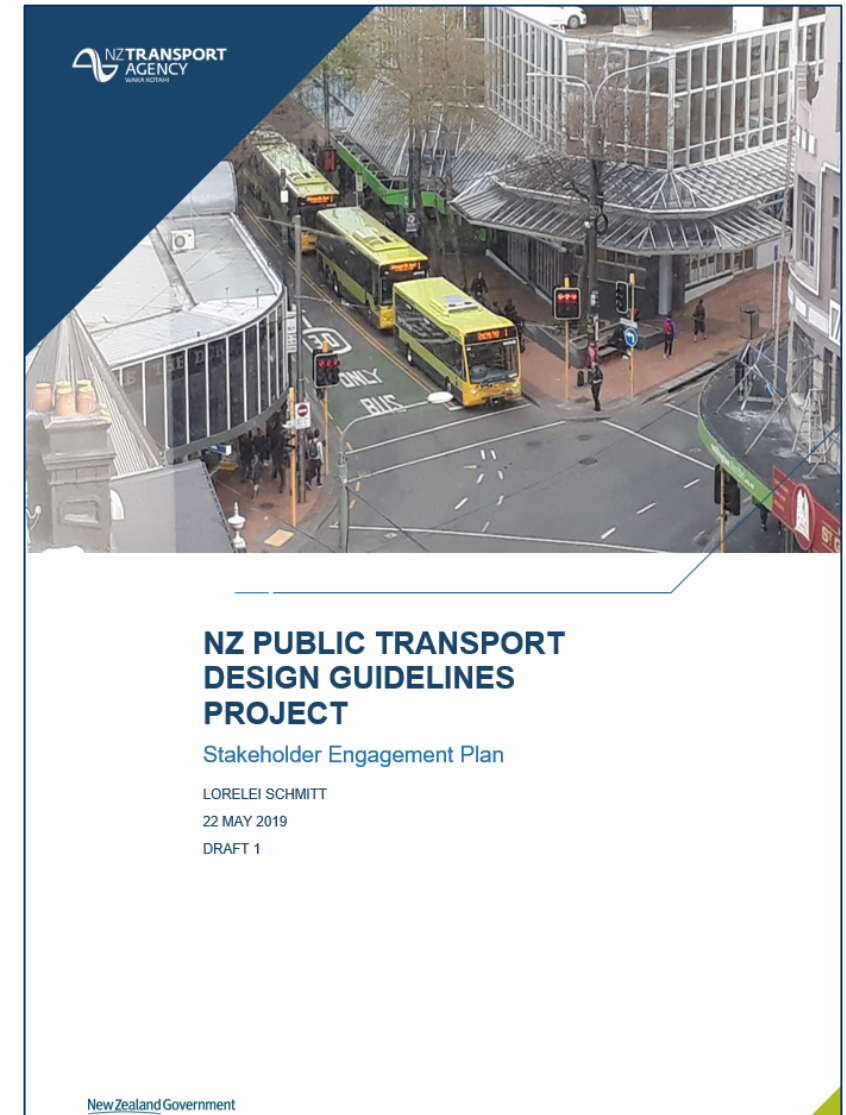


# Engagement

## Substantial engagement

- Collaborative reference group (Local Gov't and BCA)
- Present/engage with AMIG, TSIG, RCA regularly
- Substantial interest from:
  - Living Streets Aotearoa – NZ Walking Summit presentation June 2019
  - Disability Groups - standard consultation and lived experience disability panel
- Other stakeholders
- Other interested parties

Initial consultation to begin in June 2019, further consultation for interested parties as topics are further developed (draft scopes, draft guidelines)



# Priority Topics (Phase 1, 2019-2020)

Topics were prioritised by Reference Group, who added two additional topics

Priority topics (Phase 1, 2019-2020):

- Bus stops (including priority cycle lane/bus stop sub-topic)
- Corridor clearance
- Public transport priority
- Bus layover & driver facilities
- Public transport interchanges
- Inclusive access: the first/last mile

Note other topics might be developed in future project phases (e.g. network planning, operational requirements, etc.)

Adopting current best practice nationally and internationally





# Bus stops

(Note: including cycle lane at bus stop priority sub-topic)

Possible elements to include:

- Design – legal requirements, area, sign, layout, drainage. Requirements
- Kerbs (kassel kerb vs standard kerb)
- Different dimensions and loading requirements for standard buses, double-deckers, and/or articulated
- Shelters – principles and bus shelter hierarchy (costs vs usage, criteria to guide thresholds – complaints, patronage etc)
- Smart shelters (integration of CCTV, wifi, digital advertising)
- Safety & security (CPTED)
- Information provision (real time information)
- Access hierarchy
- Accessibility features / tactile pavers (front vs back of stop)
- Environmental impacts, commercial opportunities



*Red bands adjacent to bus stops in Wellington*  
Photo credit: Lorelei Schmitt



*Kassel kerb at Half Moon Bay*  
Photo credit: Colin Roche, Flow Transportation Specialists



# Bus stops

## Possible elements to include **continued**:

- Guidance on stop spacing and bus stop rationalisation
- Bus stop placement location considering: timing points, balancing walking catchments with network speed, competing land uses such as carparking, community concerns and actual effects, the cost of non-ideal stop locations (fixed obstacles, driveways, low demand)
- Maps, signage, seating
- Intermodal integration (including cycleways, footpaths, parked cars) including trade-offs (e.g. having a bus shelter elicit shared path vs segregated walking/cycling facilities)
- Pedestrian crossing facilities to bus stops – trade-offs with convenience, parking losses, optimal bus stop placement and even crossing facilities potentially impacting bus operating speeds
- Lead in/out facilities, including tapers and addressing parking conflicts
- Vegetation and sightlines
- Resource consenting
- Considerations on driveways



*AT minor shelter in Ponsonby, Auckland Christchurch.  
Photo credit: Andy Maule, Flow Transportation Specialists*



*Cycle lane at bus stops in Ilam, Christchurch.  
Photo credit: Glen Koorey, Viastrada*

# Bus stops

## Possible elements to include **continued**:

- Operational requirements
- Tiers & Level of Service requirements
- Offline vs inline bus stops and corridor delay impacts (for bus passengers, cars etc.)
- Indenting bus stops vs placement further in carriageway (delays from pulling in and out, narrow footpaths, lack of room for shelter etc. vs traffic impacts)

## Guidelines for public transport infrastructure and facilities

Interim consultation draft



# Corridor clearance

## Possible elements to include:

- Camber
- Horizontal and vertical clearance
- Growing issue with double-deckers – need clearance standards
- Existing issues and how to address them
- Affects ability of buses to pull into stops (tail swing)
- Street furniture (trees, signage, rubbish bins etc)
- Pedestrian movement space requirements
- Ongoing maintenance requirements and corridor checks



*Imagine a double decker bus pulling in and out of this stop.*

*Photo credit: Andy Maule, flow transportation specialists*



*An 'interim' treatment to address corridor clearance issues in Wellington*

*Photo credit: Lorelei Schmitt*



# Public transport priority

## Possible elements to include

- Guiding principles for public transport priority
- Bus-only lanes, bus lanes, and transit lanes – definitions, guidance on which to use where and pros & cons of each
- Hours of operation, clearways, and tidal flow options
- Lane configurations
- Implementation criteria (thresholds), trade-offs (may be informed by AT Roads & Streets framework) and productivity assessments of different priority options.
- HOV (T2/T3) lanes vs bus lanes
- Developing one-way traffic to allow a dedicated bus lane in the opposite direction
- Principles of transport mode hierarchy and movement and place and links to more comprehensive frameworks
- Integration of carriageway options with cycling facilities, and other modes
- Bus Rapid Transit (MRT) Corridors
- Light Rail Transit (LRT) Corridors
- Transitioning into priority
- Traffic calming and 30 km/h zones (speed humps, road narrowing, paving) versus convenience / speed of bus passengers
- Transit signal priority
- Road safety issues
- Enforcement

# Bus layover and driver facilities

## Possible elements to include (ERA amendments)

- Bus stop layover (placement) factors to consider:
  - Safety & security
  - Social, environmental and economic impacts
  - Network design impacts
  - Opportunistic electric charging
- Bus stop layover (design elements):
  - Key design elements and how they differ from a standard bus stop
  - Guidance – independent vs dependent bus stops based on space constraints
- Driver facilities:
  - In accordance with new legislation
  - Facilities at stops to cater for breaks and what facilities are required based on geometric constraints, land use and integration with public facilities (e.g. Botany town centre)



Photo credit: Andy Maule, flow transportation specialists



Photo credit: Colin Roche, flow transportation specialists



# Public transport interchanges

Full 'mobility hub' concepts – beyond Park & Ride and bus layover

Possible elements to include:

- Demand analysis
- Layout including stops, waiting facilities, shelters, benches, platform types
- Information & wayfinding
- Fare/payment facilities
- Passenger queue management
- Accessibility (tactiles etc.)
- Journey to the stop
- Cycling facilities
- Emerging modes



*Manukau Bus Interchange*

*Photo credit: Andy Maule, flow transportation specialists*

# Public transport interchanges

- Green infrastructure
- Consistent placement/continuity of facilities
- Safety and security aspects
- CPTED, security measures, consider vulnerable users
- Tier requirements for different scales
- Interchange guidance across different PT modes (rail-bus, bus-LRT, bus-bus, etc.)
- Driver facilities
- Principles of transit-oriented development and densification and integration with land use
- Specific route assignment for bus bays/train platforms/ferry docks to assist customers vs more space efficiency
- Asset management

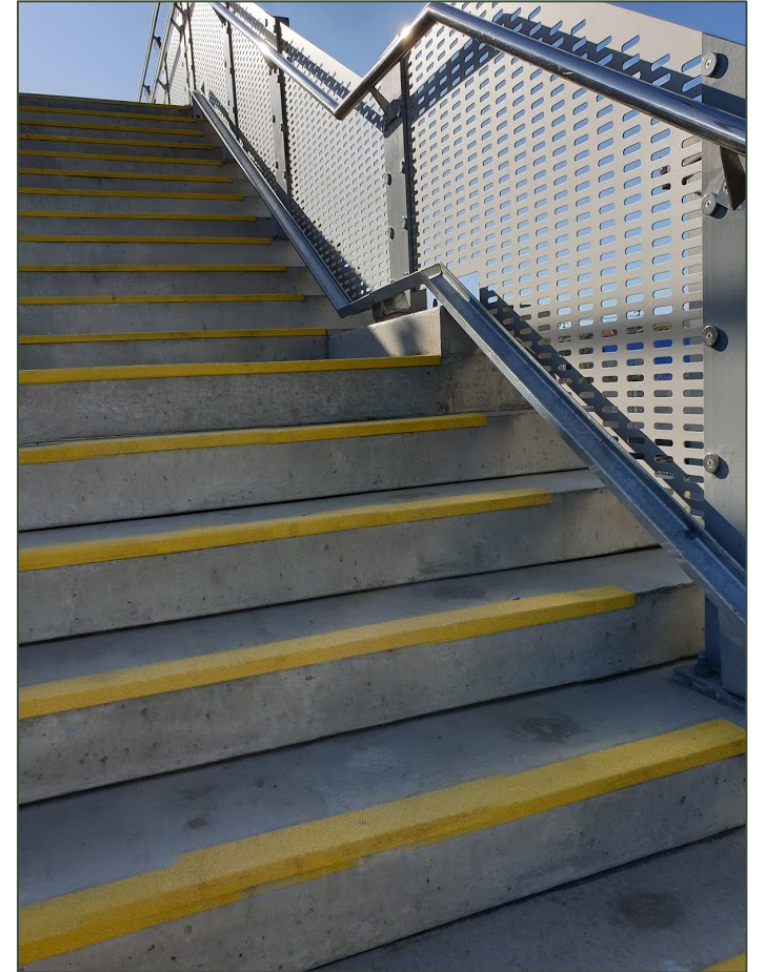


*Christchurch Bus Interchange*  
Photo credit: Callum Doherty, Aurecon

# Inclusive access: the first/last mile

## Possible elements to include

- Integrating walking/cycling facilities, bikeshare, scooters, other modes
- Minimum requirements (e.g. “a footpath is required”)
- Taxis/Transportation Network Companies (e.g. Uber)
- Issue of e-scooters/bike share being ‘parked’ in bus shelters/on footpaths impeding access
- Universal design
- Opportunity to integrate cycle/scooter parking at bus stops. Criteria to guide which stops to target (e.g. certain cycling/PT LOS trigger need for cycling facilities – hierarchy structure)
- Pedestrian crossing facilities to bus stops/interchanges – trade-offs with convenience, parking losses and bus stop placement
- Carpool, vanpools
- Signage and wayfinding



*Cycle wheel ramps at a railway station in Auckland*  
Photo credit: Lorelei Schmitt



# Questions?

For further information/communication on this project, please contact: [ptguidelines@nzta.govt.nz](mailto:ptguidelines@nzta.govt.nz).



*Photo credit: Lorelei Schmitt*



*Photo credit: Brenda O'Donoghue*