Transportation 2021 Conference:

CYCLING NETWORK GUIDANCE UPDATES

peer reviewed paper

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ABSTRACT

The Cycling network guidance (CNG) provides a national framework of guidance for planning and designing for cycling. First published by Waka Kotahi NZ Transport Agency in July 2016, the CNG has since been continually updated for new topics and existing content amended. This poster presentation will give an overview of these amendments and planned future improvements.

The poster presentation covers the conference's three sub-themes. It shapes choices by informing how to create attractive facilities that will attract growing demand. It leads change by giving planners and designers the tools and resources that they need to do their job professionally. And it provides solutions how change can be catered for.

INTRODUCTION

What is the CNG?

The Cycling network guidance (CNG) provides a national framework of guidance for planning and designing for cycling. First published by Waka Kotahi NZ Transport Agency in July 2016, the CNG has since been continually updated for new topics and existing content amended.

The CNG is an on-line framework that identifies and consolidates the appropriate guidance into a resource that is fit for purpose for the sector. Much of the guidance existed previously but the skill had always been to know which advice was most suited for New Zealand. Some of the guidance has been specifically developed or refined for the CNG, and this process is ongoing.

The CNG (easily accessed by the shortcut URL ***http://nzta.govt.nz/cng***) aims to promote a consistent, best-practice approach to cycling network and route planning throughout New Zealand. It is not an instruction manual, but a best-practice, principles-based guide to the process of cycling network planning and design, with tools that may help planners and engineers. Most of the guidance is not legally binding.

If we get planning and design right in this area, we achieve improved safety and accessibility, increased cycling (and walking) mode share, and consequent health and environment benefits. Essentially, it is how we decarbonise transport.

CNG DEVELOPMENT PROCESS

The development of the CNG was described in a previous conference paper (Fowler et al., 2016). The basic structure of the website is split into two main sections for planning a cycling network and designing a cycling facility, with additional smaller sections covering evaluation and monitoring, trials and rule changes in progress, and case studies.

In short, the Cycle Network and Route Planning Guide (LTSA, 2004) formed the backbone for the planning investigations. Much of the design guidance came from the Manual of Traffic Signs and Markings (MOTSAM) (NZTA, 2014), Austroads guidance, and the historic NZ Supplement to Austroads Part 14 (NZTA, 2008). This was supplemented with overseas best practice and the development of new material. The work was mostly undertaken by staff from Abley, ViaStrada, and Waka Kotahi (then NZ Transport Agency), with new material reviewed by one of the team uninvolved in the development.

Current usage of the CNG

During 2020, the CNG received some 48,000 page views by 18,500 individual visitors. Visitors to the site predominantly get there via Google (90%) and most of the users come from within New Zealand.

Most popular pages are, in order, “cycle lanes”, “transit lanes”, “roundabouts”, the “homepage”, “bus lanes”, “shared paths”, “designing a cycling facility”, “shared zones”, “cycle friendly roundabouts”, and “signalised intersections”. The inclusion of bus and transit lanes in this list might be surprising but likely reflects that guidance is currently in development for these topics.

ONGOING CONTENT UPDATING

When the project commenced, there were 68 initial knowledge gaps identified for which guidance had to be developed; 50 of those were termed “quick wins”. An online framework was developed (Fowler et al., 2016) and this was launched in July 2016. The intention had always been to continue with guidance development, refine existing guidance, reflect changes in legislation or best practice, and add to the growing pool of knowledge and experience.

Task generation

The project team maintains a list of tasks that should be developed or updated. The following sources inform this list:

- Ideas generated by Waka Kotahi staff,
- Suggestions made by consultant team members,
- Items identified by members of AMIG (the national active modes infrastructure group),
- Lessons learned from trials and case studies,
- Changes to legislation requiring updates, and
- Development of guidance that overlaps with cycling, e.g. the pedestrian network guidance

In theory, ideas could be submitted by practitioners via the "contact us" email given on the CNG homepage. To date, most correspondence via this channel concerns broken links and requests for clarifications, though.

Typical update process

Once a task has been identified, its relative priority to other tasks gets agreed on. Those tasks to be worked on in the current year get assigned to a team (e.g. ViaStrada, Abley, Waka Kotahi, or a consultant external to the team). The lead party prepares a draft for the task, which then undergoes an internal review, followed by scrutiny by the wider Waka Kotahi team. AMIG is then invited to provide feedback. Where tasks overlap with other New Zealand guidance, the relevant team gets involved; amongst others, this applies to the recent Pedestrian Network Guidance (PNG), the forthcoming Public Transport Design Guidelines (PTDG), and the TCD Manual. Some guidance requires ratification by the Traffic Control Devices (TCD) Steering Committee. Guidance can take the form of CNG content, or technical notes referred to from within the CNG.

Case studies follow a slightly different process, as they get discussed with the relevant road controlling authority (RCA) and do not involve AMIG stakeholders. Once drafted, the RCA reviews and approves the final content.

Once all the steps have been followed, new guidance can get published. The overall process is managed and tracked by a master spreadsheet that all core team members have access to.

Dissemination of updates

New or updated guidance gets disseminated in a variety of ways. In January 2019, a "What's new" box was added to the CNG homepage and new content is listed on a landing page. Most of the road controlling authorities that have cycling initiatives have a representative on AMIG and that group receives regular updates. New content is highlighted to the industry via reports in the publications *Roundabout* or *mini-Roundabout*, and other newsletters. Content, including new guidance, can be found via an internet search. When users use the search function on CNG pages on the Waka Kotahi website, the search is restricted to CNG content (also since January 2019) to make the results more relevant. Significant updates are sometimes covered by conference papers. This conference paper reports both on updates and gives an overview of how updates are created.

Training course are delivered to inform people of guidance updates. During 2019, eight courses were delivered (six fundamentals, two advanced). Collectively, there were 210 participants who received training. A range of free webinars on related topics has also been delivered.

UPDATES SINCE JANUARY 2020

Since the beginning of 2020, the following updates have been published:

Key

	New guidance
	Other
	Existing guidance amended
	Case studies

New content	Description and notes	published	hyperlinks
Choice of separator or protection	Guidance for separated cycleways	Aug 2020	1) Link
Rural road shoulder width	Guidance for road shoulder width and audio-tactile paving	Feb 2020	2) Link
Access Control Devices	Guidance for use of bollards and end treatments	Dec 2020	3) Shared paths 4) Cycle-only paths 5) Guidance note
Facility cost estimates	Spreadsheet tool published on the Evaluating cycle route options page	Sep 2020	6) Link
Two-way path crossing	Treatment solution for commercial and high-use access points	Feb 2020	7) Link
Buffered cycle lane design	Design of buffered cycle lanes	Aug 2020	8) Link
Dual crossings	Paired cycle priority / zebra crossings published as part of unsignalised crossings	Feb 2020	9) Link
Trials underway and rules changes	Update of trial outcomes and changes triggered by changes to rules	ongoing	10) Link
Advisory shoulders	Previously known as 2-minus-1 lanes; invitation for a further trial	Aug 2020	11) Link
Guidance notes and tools	Listing of all Tech Notes and external tools	Feb 2021	12) Link
Rules Refresh 2019/20	Added relevant issues to trials underway and rules changes page	Feb 2021	13) Link
Buffered advance stop box	Increased setback for truck driver visibility and reduced vehicle encroachment	Dec 2020	14) Rationale 15) Design
Case study: Papanui Parallel (Christchurch)	Case study for cycle route	Feb 2020	16) Link
Case study: Nelson Street (Auckland)	Case study for separated cycleway and signalised intersections	Feb 2020	17) Link
Case study: Carlton Gore Road (Auckland)	Case study for cycle route	Feb 2020	18) Link
Case study: Te Ara Ki Uta Ki Tai (Auckland)	Case study on gradient design of shared path	Jul 2020	19) Link
Case study: Future Streets (Auckland)	Multi-faceted project with a strong focus on research	Jul 2020	20) Link
Case study: Rapanui – Shag Rock Cycleway (Christchurch)	Case study on neighbourhood greenways	Feb 2020	21) Link

FUTURE PLANNED WORK

Current tasks underway

Many tasks are underway in the current financial year:

- Megan Gregory (née Fowler) undertook a study tour of separated cycle facilities at signalised intersections in North America. Previously published as a conference paper (Fowler, 2017), this will soon be published as CNG content.
- Barrier guidance for bridges can be expected soon.
- The TCD Manual Part 5 was published in December 2020 and the CNG needs to be amended, as it refers to the content. Some of the content that, in the interim, was hosted by the CNG will be removed.
- Treatment options for conflict zones on shared paths is nearing publication.
- Guidance for use of sharrows when separated cycleways merge with roadways is about to be published.
- Work is being done on the use of coloured surfacing of cycle lanes / paths, sharrows, and other cycle-related facilities.
- The text for the page “Signalised intersections: Legal considerations” is going to be revised.
- Work has commenced on researching rural road positioning by cyclists based on different road shoulder widths.
- Some traffic control device trials have finished or will be concluded soon, and the trials page will be updated accordingly.
- Guidance on rural safety treatments for cycling is being compiled.
- Cycleway delineator guidance for manufacturers is being prepared.
- A wayfinding signage guide, based on a Christchurch CC document, is in preparation.
- Signage guidance where side-roads approach contra-flow cycleways is in development.
- Research on speed surveys of powered devices is to be published.
- Neighbourhood greenway signage options are being worked on.
- An update to the Separated Cycleway Options Tool (SCOT) can be expected.
- Many further case studies are in preparation.

There are also longer-term tasks being worked on. This includes directional cycle signals as previously reported via a conference paper (Gregory et al., 2019). There is also a desire to undertake a trial to test filtering and flashing at signalised intersections through cycleways and across pedestrian crosswalks (Gregory and Wilke, 2018).

Interface changes

The soon to be released Pedestrian Network Guidance has a different user interface (based on preliminary user testing) and the intention is to apply a similar interface to the CNG. At the same time, the CNG structure will be aligned with the PNG format.

Other Waka Kotahi guidance

New guidance developed by Waka Kotahi is following the lead of the CNG by going into an online format:

- Innovating Streets – guidance published in 2020
- Pedestrian Network Guidance (PNG) – soft launch March 2021
- Public Transport Design Guidance (PTDG) – first four topics due to go live by the end of March 2021
- Traffic Control Devices Manual – Part 5 – initially published as PDF, but should be in online format soon

CONCLUSIONS AND RECOMMENDATIONS

Since it was first published in 2016, the Cycling network guidance (CNG) has been continually added to and refined. This paper documents the progress that has been made since January 2020 alone, with 18 pieces of new or amended guidance, or case studies, published. Another reason to update the CNG is to respond to changes in legislation. The CNG was the first online guidance document published by Waka Kotahi and this format is now being used for guidance in other

subject areas.

The wider project team works closely with other key stakeholders. Road controlling authorities are involved through AMIG representatives and one team member is the NZ Transportation Group's representative. There is a long list of future work yet to be completed. Readers are encouraged to interact with team members to identify further knowledge gaps. Some issues can only be advanced through road controlling authorities being prepared to participate in formal trials and the authors suggest that filtering and flashing at signalised intersections through cycleways and across pedestrian crosswalks could provide a step change in both safety and level of service.

AUTHOR CONTRIBUTION STATEMENT

This paper was initially drafted by Axel Downard-Wilke, who also worked on some of the tasks described in this paper. At the consultant end, the work is led by Glen Koorey, who has ultimate responsibility for CNG content prepared by ViaStrada. Glen represents the wider industry on behalf of the Transportation Group on AMIG and is thus involved in CNG content decisions. Many ViaStrada staff are involved in producing CNG content, as are other consultants. Gerry Dance is the CNG project manager for the client, and he co-ordinates a large team of Waka Kotahi staff involved in the CNG. The three authors are all well beyond qualifying for the young author award.

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