

Designing For Cyclists

COUNTRY ROAD, TAKE ME HOME...

When looking at providing for cyclists, many people only think of issues around towns. But rural areas can provide a number of important opportunities for getting around by bike:

- They can allow cycle tourists to travel around the country from centre to centre
- They can allow recreational cyclists to make day-trips to popular places out of town
- They provide training runs for competitive sport cyclists
- In some areas they also provide utility links e.g. commuters between neighbouring towns

In the cycle tourism area in particular, the provision of adequate rural routes can help to expand what is already a relatively popular activity. It is also important to remember that for many rural roads there are no feasible alternative routes, so any pinch point has to be endured by all cyclists going that way.

Opportunities to use paths and corridors away from traffic certainly should be encouraged where possible. But out in the wop-wops, there are often fewer possibilities to do this. So it is vital that motorists and cyclists can safely co-exist on the same road.

For on-road routes, particularly with high traffic volumes, adequate lane and shoulder widths are very important to cyclists. Remember that wider shoulders also benefit motorists by providing emergency pull-over space, reducing run-off-the road crashes and minimising edge maintenance costs.

To accommodate cyclists, a minimum paved shoulder width of 1.0 m should be provided, and preferably 1.5m. For new roads, Transit New Zealand's latest State Highway design guidelines suggest that where there is an identified need to provide for cyclists on 100 km/h roads, 2.5m sealed shoulders are needed to accommodate them in a safe manner. Wider shoulders are also important on steep uphill grades (>6%) where cyclists may be more inclined to weave.

But long lengths of seal widening aren't cheap, particularly where the terrain is rough. A more cost-effective solution in many places may be to concentrate on the areas where sight distance is very limited. A narrow but straight section of road may not pose too many dangers if motorists have enough time to safely move over when passing cyclists. Instead, focus on providing localised seal widening around horizontal curves and over vertical crests. Below is an example of specific widening on a vertical curve where sight distance is restricted.



To keep motorists from cutting corners inside widened shoulders on curves, consider installing "vibraline" (profiled) edge lines. The bumpiness and noise from these discourages motorists from crossing them. Care must be taken to ensure that cyclists can safely stay inside them, and they shouldn't be installed where cyclists might cross over, such as near intersections.

Similarly, look to remove pinch points such as narrow bridges/culverts and protruding or overhanging vegetation. Any maintenance problems that may also cause cyclists to move out into the carriageway, like potholes and corrugations, should be attended to promptly.

If widening is not an option due to topography, then consider signs and markings, e.g.:

- Provide a yellow diamond cycle warning sign (PW-35) prior to the narrow section, alerting motorists to the possible presence of cyclists. Perhaps add a supplementary text plate if necessary (see example below). Interestingly, these PW-35 signs are not technically allowed for >50 km/h roads...



- Paint cycle logos at regular intervals on the inside of bends just prior to and throughout the curve, with the logo placed in the area where cyclists can be expected. The successive use of cycle logos acts as a reminder to motorists that a cyclist may be hidden just beyond the last visible one.
- One innovative system used in the US through sections of narrow highway is to provide big push-button devices that cyclists can activate when passing. These provide a more active warning (e.g. flashing lights with warning sign) for a period of time, so motorists know that cyclists are in the vicinity.

If you have gravel roads intersecting your main cycle routes, make sure that they are sealed some distance away from the intersection so that gravel doesn't migrate onto the main road. Recent NZ research found that gravel on road surfaces was a leading cause of cycle-only crashes, and motorists will also derive safety benefits from such a policy.

Also watch the transitions at the end of any seal widening; don't leave cyclists in the lurch. An adequate taper should be provided, away from obvious pinch points or sight distance restrictions.

Don't forget about the transition back into town either. Clear linkages are needed both into and through urban areas, with safe and well-signed routes to key locations (such as accommodation, tourist information, and transport terminals). Make sure also that cyclists don't get squeezed by narrow town "threshold" entrances - consider a bypass behind them for cyclists (see picture below).



Bridges often present a problem for rural and urban cyclists alike. Next time, we'll look at a few ideas for tackling these.

Some Relevant Reading

- Transit New Zealand, 2002. *State Highway Geometric Design Manual, Part 6 (Cross-Section)*
Web: http://www.transit.govt.nz/technical_information/index.html.
- Austroads, 1999. *Guide to Traffic Engineering Practice, Part 14: Bicycles, Section 4.4.4 (Sealed Shoulders)*
- Koorey, G., 2001. "Cycle Touring Routes: Some thoughts on where to go from here", *Proceedings NZ Cycling Conference, Christchurch, Sep 2001*.
Web: <http://www.ccc.govt.nz/Recreation/Cycling/Conference/2001/proceedings.asp>
- FHWA, 1998. *Implementing Bicycle Improvements at the Local Level, Chapter 11 (Rural Road Shoulders)*. US Federal Highway Agency, Publication No. FHWA-98-105.
Web: http://www.bikefed.org/bike_guide_online.htm.

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