

Moreland city council
Locked Bag 10
Moreland 3058
ATTN: Lee Dowler, Transport coordinator

RE: Trial of raised bicycle lane markings on Glenlyon road, Brunswick

I am writing to you because of your title as "Transport Coordinator". Please redirect this mail if you are not the appropriate person to handle it.

I am a cycle commuter with 25 years experience. I commute 100km per week between East Brunswick and Docklands, all year round and in all conditions. On the 30th of July 2009 I crashed on a tram line in Lygon street, Brunswick. I suffered a broken humerus and continue to experience neurological effects from that incident. It is important to understand that avoiding crashes is of paramount importance. People can suffer lifetime consequences from a single crash.

Poorly designed cycling surfaces pose the greatest risk to me. I have crashed on wet timber, and both wet and dry tram lines. For me, the safest surface, wet or dry is bare asphalt. Painted lines are dangerous. Seams in the surface are dangerous. It is dangerous to cross any line at a shallow angle.

Referring to the *Austroads guide to traffic engineering practice, part 14: Bicycles*

Section 4.3.4 Exclusive Bicycle Lanes discusses the delineation of bicycle lanes:

(Bicycle lanes) should preferably not be delineated with raised pavement markers or raised barriers as these are hazardous to cyclists;

My submission to you is as follows:

The raised pavement markers which have been installed on Glenlyon Road should not be used because such treatments are identified as a hazard to cyclists in the design guidelines.

Raised pavement markers are a hazard to cyclists because of the need to cross them at a shallow angle. A high pressure bicycle wheel, especially operating in wet conditions, can easily slide along such a marker when the rider is trying to cross to the other side. If the marker is crossed at a steeper angle the change in vertical position can cause the wheel to lift off the surface and lose all traction for a short time.

Plastic surfaces have a lower coefficient of friction than asphalt. If a bicycle wheel crosses a plastic surface when brakes are applied the wheel can lock up. When a wheel locks up gyroscopic stability is lost and a crash results. A crash while crossing a raised line marking will result in the bicycle and rider sliding either into parked vehicles to the left, or into the path of moving vehicles to the right.

Raised markers also block the drainage of water from the road surface. If a bicycle wheel tries to cross from the side where water has accumulated then aquaplaning can occur. Aquaplaning is also more likely to occur on non-porous materials such as plastic.

It is important to understand that a design which looks reasonable on paper can turn out to be deadly in wet and dark conditions.

I believe that markers like this should only be used if they have been extensively validated. Validation should include tests which:

- take place in wet and icing conditions
- take place in realistic lighting conditions
- are conducted by bicycle riders who are not trained or experienced in dealing with markers of these types
- place cognitive loads on bicycle riders which reflect real world conditions

It is important to ensure that markers should not place additional constraints on the movements of bicycles. For example if a rider needs to merge out of the bicycle lane to avoid a hazard, they should not have to take into account the position of a raised marker in planning their manoeuvre. To do so might place them in a bad location and cause a collision. It should be recognised that bicycle riders operate in a stressful environment and additional constraints only add to the stress.

Sincerely,

Michael Smith

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Victoria, 3057.

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My reference: http://glitch.tl/raised_line_markings.html