

Cycling and Public Transport: Designing for safety and convenience.



Pete Abel, Love Your Bike,

Designing for safe cycling and the Manchester
Metrolink network.

10th June 2015



The Love Your Bike campaign is based in Greater Manchester. We aim to promote cycling and to help make it an attractive, accessible and fun way to get around. Cycling is far more than a leisure activity: it is the low-carbon transport of the future. Co-ordinated by Manchester Friends of the Earth, we work closely with other like-minded organisations.

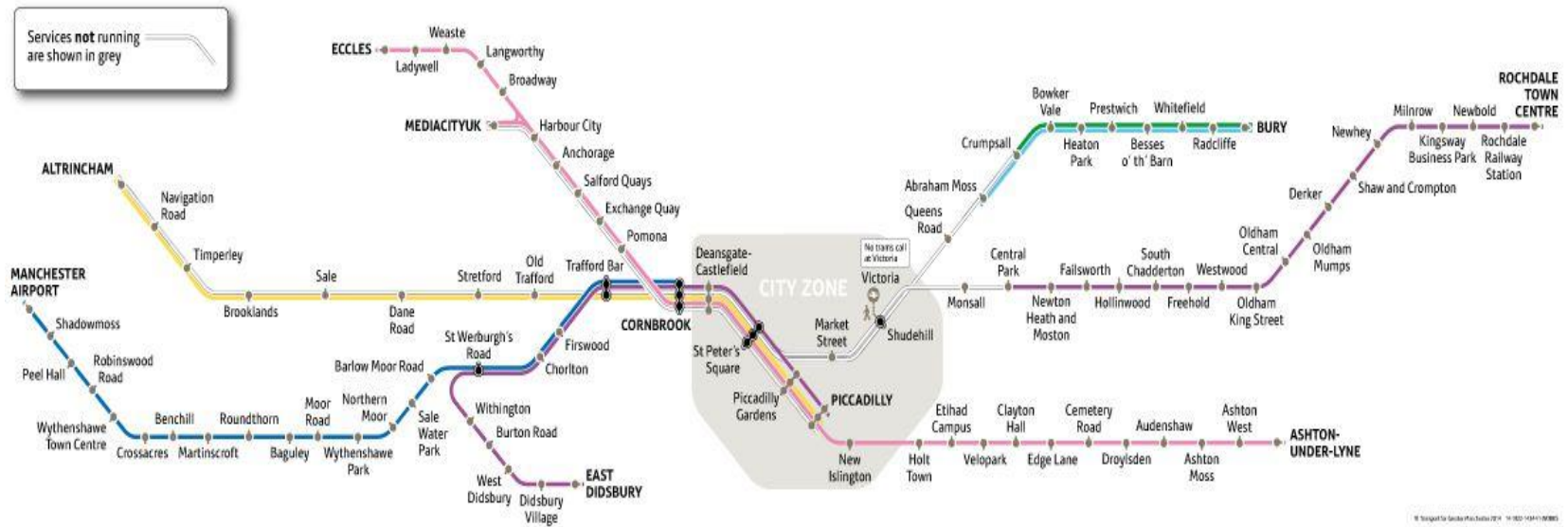


“We cannot continue to deceive ourselves into thinking that to paint a little line on a road is a bike way.

A bicycle way that is not safe for an 8-year [or 80-year] old is not a bicycle way.” **[our modification]**

(Enrique Peñalosa, previously Mayor of Bogota, Colombia)

GM Context (1) An expanding Metrolink network



An increase of “on-road running” on the new tram routes. Particularly on the Ashton and Manchester Airport lines and the Second City Crossing.

GM Context (2) – Increasing cycling levels.

Our Ambition: Cycling City Ambition Grant (CCAG) – Velocity 2025. We want to see the proportion of trips by bike increase to 10% of all journeys over the next 12 years.

We aim to double, and double again the proportion of trips made by bicycle, whether that's commuting, utility or recreational cycling, through an unprecedented, long range programme of investment in cycling infrastructure for the city.



GM Context (3) Introducing design criteria for safe cycling infrastructure.

The 5 main quality criteria for Dutch cycle routes. The facilities must be:

Coherent **Direct**

Attractive **Safe**

Comfortable

Since Sept 2014: These criteria have been adopted in the GM Cycling Design Guidance & Standards.

Which also states that: **“it is not acceptable to leave gaps in cycle route provision.”**

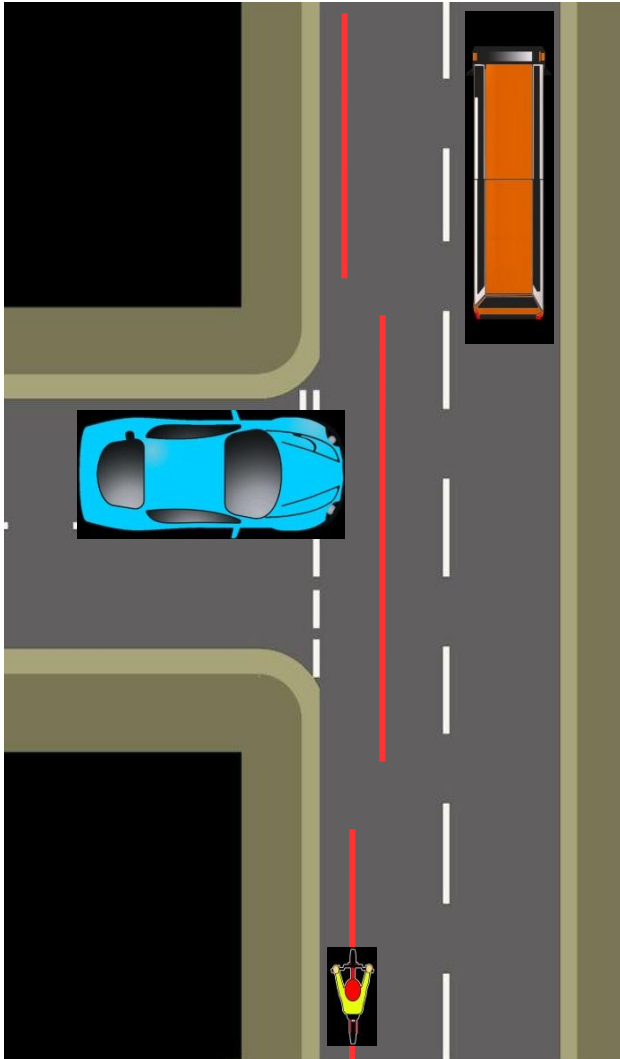
GM Context (4) Will these people be able to use the route?

People using non-standard types of bicycles should not be excluded from using cycle infrastructure through lack of consideration for their needs at the design stage.

- Bicycles with trailers for children or deliveries
- Tricycles, including those used by some disabled people
- Tandems with two or more seats
- Purpose built cycles for disabled people e.g. hand cycles
- Recumbent bicycles
- Cargo bikes (for carrying goods or children)
- Small-wheeled foldable bicycles



Concerns : Cycle positioning on road (1)



Concerns: Road positioning and passing distances



Tram passing on Ashton New Road.

How do you adopt a safe road position when passing the bus?

Concerns: Safe alternative routes? (1)



229 Ashton New Road –
Opposite Wheelchair Centre

Concerns: Safe alternative routes? (2)



Concerns: Safe alternative routes? (3)



Southmoor Road junction in
Wythenshawe. Airport
Metrolink route

Direct?
Coherent?
Attractive?

Convenient to use?

Transport for Greater Manchester (TfGM)

Metrolink Phase MM3B

Airport Line – AP3 Section

Interim Stage 3b Road Safety Audit

Document Ref: MPT3B-AP3-00-TRP-507

DRAFT

Collecting data: Research studies

Sheffield: Thirty one patients sustained fractures, most commonly involving the upper limb/shoulder girdle (63%), with cyclists suffering 83% of these serious upper limb injuries. Following assessment 38 patients were discharged, 29 patients were referred to fracture clinic, 12 were sent for physiotherapy and 11 admitted to hospital. Eight patients required a total of 13 operations during the study period.

We have demonstrated a significant number of injuries in this study related to the tram system in Sheffield. Cyclists appear to be the group at highest risk, followed by pedestrians and motor vehicle users.

Cameron,IC; Harris,NJ; Kehoe,NJS (2001) Tram-related injury in Sheffield, Injury, v32, pp275-277)

Tram tracks on public roads are potentially dangerous and can lead to serious injuries and even mortality amongst cyclist. Operative intervention is frequently needed.

Deunk,J; Harmsen,AMK; Schonhuth,CP; Bloemers,FW (2014) Injuries Due to Wedging of Bicycle Wheels in On-road Tram Tracks, Archives of Trauma Research, v3, Iss4.

Collecting data: Under-reporting (1)

Police-reporting probability varies with road user type, adjusted for the other factors; this is also a common bias factor (Hauer and Hakkert, 1988; James, 1991; Hvoslef, 1994; Elvik and Mysen, 1999).

In particular, cyclists suffer from a low reporting probability: extremely low when no third party is involved, but still lower than other road users when a third party is involved: bicycle crashes are not always considered as road traffic crashes by the people involved and/or by the police even when a third party is involved.

(Amoros,E; Martin,J-L; Laumon,B (2006) Under-reporting of road crash casualties in France, Accident Analysis & Prevention, v38, n4, pp627-635)

"There is massive under-reporting from cyclists who are falling off their bikes as a result of hitting tram tracks." "The injuries include broken jaws, cheek bones and collarbones as well as a broken foot from a bus driving over it."

Tram fall cyclists to sue Edinburgh council. BBC News 23/1/2015

Collecting data: Under-reporting (2)

Cyclist admitted to a hospital bed (in England) as a result of	All	0-14 age group	60+ age group
Collision with pedestrian or animal	117	21	21
Collision with other pedal cycle	396	143	29
Collision with 2-3 wheeled motor vehicle	76	16	5
Collision with car pick-up truck or van	2,450	409	263
Collision with heavy transport vehicle or bus	180	13	22
Collision with railway train or railway vehicle	2	0	0
Collision with other non-motor vehicle	24	7	2
Collision with fixed/stationary object	681	209	9
Non-collision transport accident	12,301	4,783	249
Other and Unspecified transport accident	1,426	458	29

An introduction to non-collision cycling incidents.

October 2012

Table 1: Numbers of cyclists admitted to a hospital bed in England during 2011-12

NHS Bristol study (2010 estimated that 2.4% of non-collision cycling incidents were due to “wheel stuck or slipped in rail / tram line”.



Collecting data: Love Your Bike Survey (1)



Manchester Evening News 

12 March · 

If you're one of the thousands of cyclists across Greater Manchester, here's your chance to highlight your experiences.



Cyclists – do you have a Metrolink horror story to share?

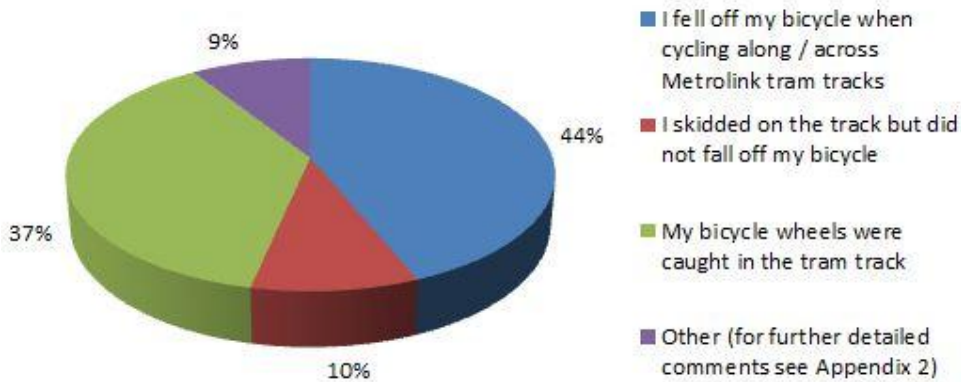
Love Your Bike launch survey asking for cyclists' experiences of travelling near tram lines in Greater Manchester

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.ORG**

Collecting data: Love Your Bike Survey (2)

Results so far: 260 respondents reported that they had experienced an incident. Details of 179 Incidents were provided. In addition, 150 respondents reported that they had “witnessed an incident involving someone else cycling alongside, close to or across Metrolink tracks” and details were provided of 40 incidents that had been witnessed.

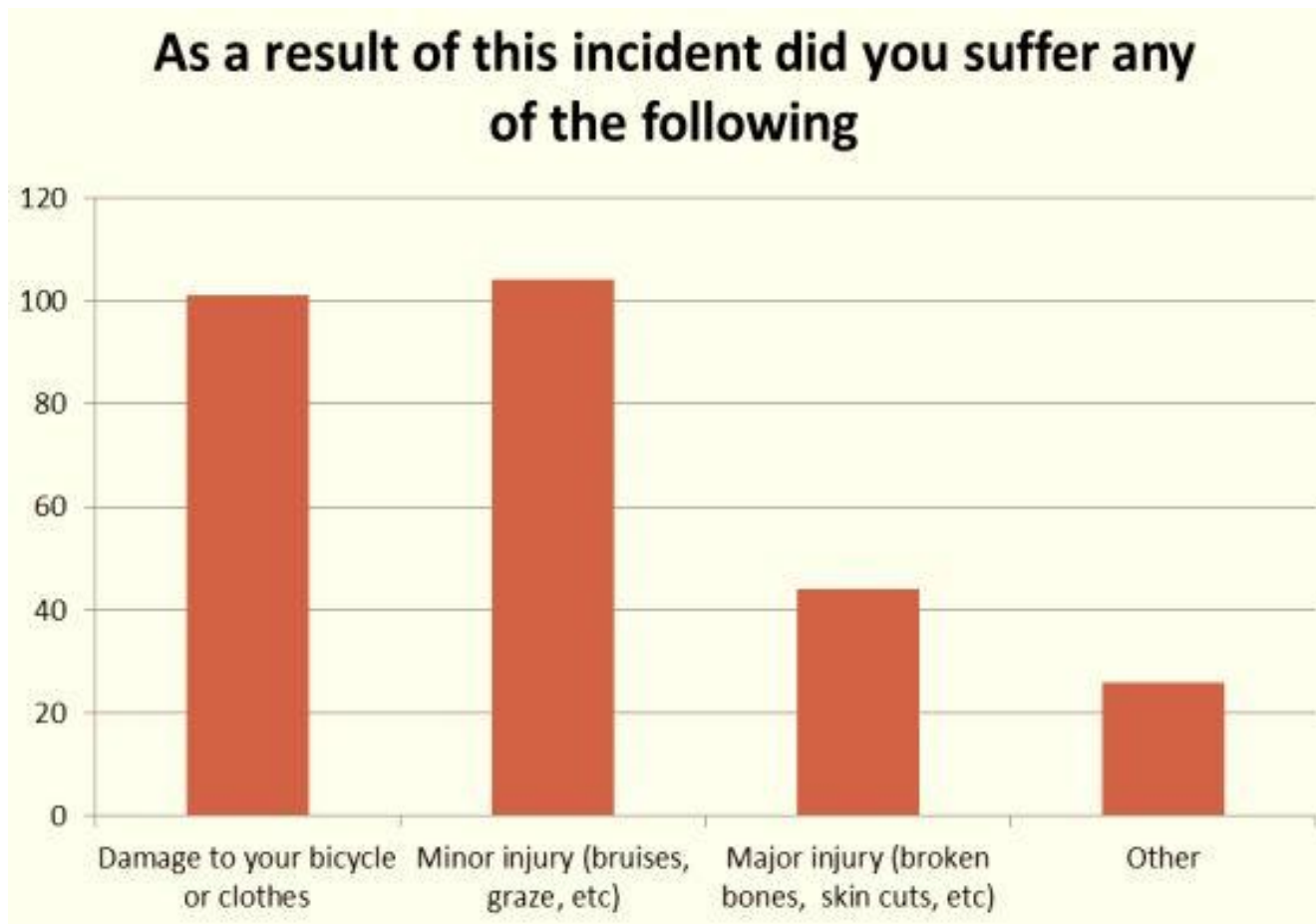
Which of the following best describe what happened (experienced incidents)



Number of incidents experienced or witnessed			
Year	Experienced	Witnessed	Total
2005	1	-	1
2009	1	-	1
2011	1		1
2012	14	2	16
2013	28	3	31
2014	76	18	94
2015	54	12	66
Undated	4	3	7
Total	179	38	217

Collecting data: Love Your Bike Survey (3)

Nearly 58% of respondents reported that they had suffered minor injuries (bruises, grazes etc). 44 respondents (24.5%) reported major injuries (broken bones, skin cuts etc).



Collecting data: Love Your Bike Survey (4)

Unsafe: Over 97% of respondents reported that they had felt unsafe when cycling alongside, close to or across tram tracks. This was “often” for 61% of respondents and “sometimes” for 36%. Only 2.8% of respondents reported that they “rarely” felt unsafe when cycling alongside, close to or across tram tracks.

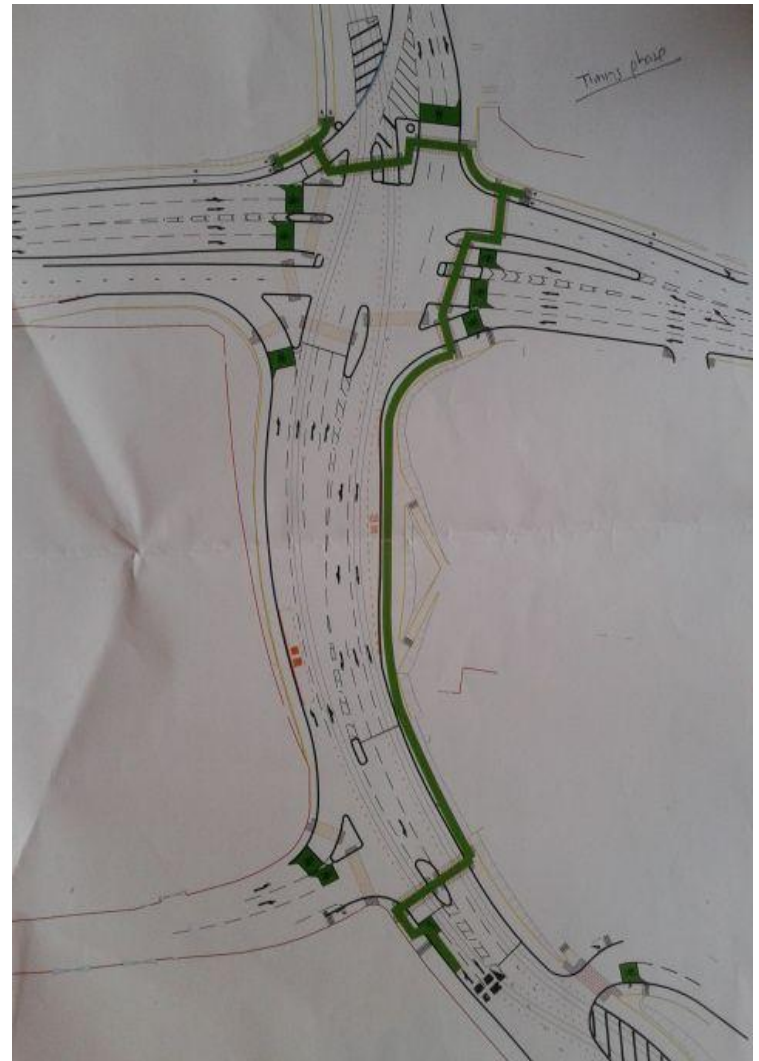
Changed behaviour: Over 40% of respondents reported that they now take a different route and nearly 50% report being more cautious when cycling near tram tracks. 12 reported cycling less often and 3.2% reported that they have stopped cycling because of Metrolink tram tracks

Under-reporting: Over 85% of incidents were not reported at all. The TfGM response to our Freedom of Information application suggested they had received 9 reports in 2013 and 29 in 2014. Our survey indicates that 23 incidents were not reported in 2013 and 67 incidents were not reported in 2014.

Consultation / engagement

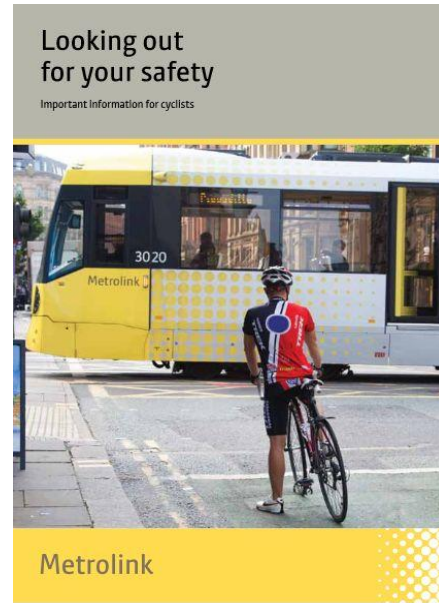
On 4th December 2014, Manchester cycle forum members were invited to a briefing to look at the proposed signage for the 'cycling provision' at the Southmoor Road / Altrincham Road junction in Wythenshawe which had already been built as part of the Metrolink route to the Airport.

This was the **first time** that any of the cycling organisations present had seen the actual designs - which had already been built.



Challenges and Opportunities

- Accept there are design issues: individuals often 'blame' themselves but institutional response appears to be 'it's your fault for not using the safe alternative'.
- How are we going to improve the existing tram routes for safer cycling provision?
- Clearer and more intuitive signage
- Education campaigns
- Better incident recording/reporting. What impact does under-reporting have on GM KSI data for cycling?
- Involvement of cycling community at early stage of future designs (eg Trafford Park)
- Design 'Safe alternative' routes that meet the TfGM cycle guidance design criteria
- TfGM Driver / Cyclist awareness training courses – also suitable for Highway designers and consultants



Thank you for
listening

Any questions?



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