



UNSAFE

A Review of
London
Road Safety Audit
Procedures
and the cyclist

Including The Martin Way (B286) File

Compiled for the Merton Cycling Campaign
by Hugh Morgan





A Review of London's Road Safety Audit Procedures and the cyclist

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1. Introduction

1.1 The main deterrent to people taking up cycling, which also reduces the mileage of those that already cycle, is a perceived lack of safety. This is confirmed by many surveys on the subject, the 2003 Cycling Survey in the London Borough of Merton carried out by BNR Consulting for the Merton Cycling Campaign found just that.

1.2 This conclusion led the Merton Cycling Campaign to question whether cyclists are in fact given proper safety consideration in Highway Design and in late 2007 an unsafe and extensive road modification scheme to the B286 Martin Way in the London Borough of Merton prompted a careful investigation.

1.3 The investigation showed that every stage of the Road Safety Auditing process had broken down. It was evident that neither TfL's Road Safety Auditors nor the London Borough of Merton had taken reasonable care to ensure that the road was not dangerous to traffic. This was mainly due to a lack of rigour in use of procedures that as written, in themselves, lack the rigour to prevent misuse. An unreliable unsafe Road Safety Audit system has implications for all road users, but particularly for cyclists, being the weakest participant on the carriageway. The Merton Cycling Campaign investigation shows that a cyclist's perceived lack of safety can have some justification in the lack of rigour in safety assessment during roadway design in London.

1.4 In July 2011 TfL produced Issue 4 of their Road Safety Audit Procedures SQA-0170. The typographical errors of the 3 previous issues were largely resolved but in certain areas the procedures remain inadequate and unclear; these are highlighted in this report. Issue 4 removes any reference to TfL's Safety Audit Unit but TfL will still carry out Road Safety Audits. In Issue 4 what were 'Senior Client Officers' have become 'Client Managers' and what were 'Client Officers' have become 'Design Managers'; the manager terminology will be used in this Report. Clause Reference numbers referred to in this Report will be those of Issue 4. In this latest issue of these Procedures a Road Safety Audit may now be applied to alternative designs for the same situation which avoids having to start again if one of the options is crazy. In the Martin Way case a crazy scheme was submitted for Road Safety Audit; but it came to be installed.

1.5 The Martin Way scheme was an extreme case of installing unsafe design and with its subsequent removal has wasted in excess of £0.5 million of public funds. But less extreme cases of procedurally slack safety auditing in London may account for a severely handicapped road system with particular implications for cyclists. This can only mean that a built-in risk of being maimed on London's roads is potentially higher than it should be.

1.7 With road usage such an important component of everyday life it might be expected that a nationally prescribed system of Road Safety Auditing would be in place; but the source document of mandatory requirements for trunk roads and motorways is simply commended to Highway Authorities and from West Lothian to Lancashire to London different interpretations of this base document are in place.

1.8 In Ireland, where after concerted efforts road death figures have halved in the last five years, the Road Safety Audit procedures are rather more considered than in the UK. Their guidance document NRA HA 42/04, recommends that Road Safety Auditors should always be asking:

"What is it about this scheme that will lead road users to fail to cope with the road environment?"

Once installed any failure to cope with the road environment is usually put down to the fault of the user. However there is increasing awareness in the legal profession of the possibility of contributory negligence awards against roads authorities. Through good Safety Auditing the possibility of a claim having to be made in the first place can be reduced.

1.9 There is no doubt that users of the Highway are expected to look after themselves but in Safety Audit terms there appears to be a bias against inclusion of the problems of the weakest member of the carriageway; the cyclist. Furthermore this is coupled with a lack of rigour in the Road Safety Auditing process itself, which impinges most on the weakest member of the carriageway; the cyclist.

2. Executive Summary

2.1 This report describes how Road Safety Audit procedures used in London

1. Underemphasize the safety problems associated with cycling on the carriageway and tend to invite discrimination against cyclists.
2. Are inadequately set up by TfL and can be applied with inadequate rigour leading to a diseased system. This is demonstrated at every stage of the Auditing process in the B286 Martin Way example.
3. Have a looseness that stems from the randomization of Road Safety Audit procedures that effects the whole of the United Kingdom.

2.2 This report recommends that

1. TfL engage in tightening up Road Safety Audit procedures throughout London with immediate effect.
2. TfL carefully re-write their Road Safety Audit procedures. (8 recommendations are listed in item 7.2 of this report)
3. London Boroughs should check that they follow Merton's subsequent improvements in procedure. (4 recommended disciplines are listed in item 7.3 of this report)
4. TfL compensate the London Borough of Merton for the costs of removal of the scheme that TfL had Road Safety Audited.
5. UK National urban Road Safety Auditing procedures should be agreed.

3. Bias against cyclists

Road Safety Audit procedures used in London underemphasize the safety problems associated with cycling on the carriageway and tend to invite discrimination against cyclists.

3.1 Check Lists

3.1.1 TfL's checklists for Safety Auditing which include a special section for Cycling Facilities, do not include one for Cyclist issues on the carriageway yet there is a special section for Motorcyclist issues on the carriageway. Under their Cycle Facilities checklist they are for instance prepared to ask whether gully grates are of an appropriate design/alignment when there are cycle lanes involved, but because they do not consider cyclist issues on the normal carriageway their train of thought does not include the problems with gully grates encountered when there is no cycle lane involved and the kerbside cyclist is in fact more exposed.

3.1.2 The IHT Road Safety Audit Guidance of 2008 recommends that Road Safety Auditors should also use the Lancashire on-line Road Safety Auditing checklists. Here it is suggested that roadside hazards and passive safety only applies to drivers; demonstrating a similar absence of thought about cyclists.

3.1.3 There are a few examples from outside London where things are slightly better. The Dundee Road Safety Audit procedures checklists ask for instance whether manhole covers are of concern for cyclist stability. They also ask whether the level of illumination is adequate for the road safety of non motor vehicle users. In New Zealand they ask whether the road shoulders and edge treatment are likely to be safe for slow moving vehicles or cyclists. They also ask the question that would have

benefited from being on checklists for many schemes in London, (including that of the Martin Way example described later in this report), where cycle facilities merge with the carriageway: 'Are bicycle facilities safely located in respect to vehicular movements'

Appendix A lists a small sample of questions that could be included on a Check List for Auditors for cycling on the normal carriageway.

3.2 Design Standards

3.2.1 Designers are expected to use Design Standards and Guidance but as is confirmed in the UK's 2008 Road Safety Audit Guidance document item 3.4.1 '*Design Standards tend to be aimed at satisfying vehicular movements and often do not take account of vulnerable user requirements*'. This confirms built-in discrimination and emphasizes why there has been a need for cycle specific design standards and cycle specific advice note guidance.

3.2.2 Later in this report under item 4.4.2 it will be seen how Road Safety Auditors are discouraged from making reference to such material in Road Safety Audit procedures.

3.3 Vulnerability

3.3.1 The common use of the term 'vulnerable' to describe cyclists in Road Safety Audit procedural documents can be taken by Road Safety Auditors as an accepted predisposition by cyclists. This can encourage a train of thought that says cyclists accept that they will always be vulnerable on the carriageway so accommodating their safety can be peripheral. A rigorous auditor might take 'vulnerable' as a reason for special treatment, but a lazy auditor can pass it by with the excuse that cyclists will always be vulnerable. Unfortunately, in Road Safety Auditing, cutting costs when bidding for work can encourage cutting rigour.

3.3.2 The New Zealand Road Safety Audit Procedures for Projects Guidelines 2004 have omitted the use of the word 'vulnerable' and instead use the term 'Special Road Users'. These can be pedestrians, cyclists, motorcyclists, equestrians and also adjacent land equipment e.g. tractors. This tends to raise the significance of these types of user while avoiding any sense that they don't need consideration, inferring rather, that Special Road Users require special consideration. It also moves away from the train of thought that cyclists are offered the occasional facility and the rest of the time designers can forget them.

3.4 Networks

3.4.1 London has been through 15 years of the promise of cycle networking and the expectation of continuous cycle friendly routes. The result is far from this vision because the difficult dangerous and expensive sections are dropped when they become political hot potatoes. Disconnected cycle facilities do not make a network. To overcome this problem and give some key routes the necessary continuity TfL are confined to the TRLN roads with the Cycle Superhighways.

3.4.2 It has been during the 15 years of Cycle 'Networking', when designers thought they were facilitating cycling away from the carriageway, that the Road Safety Audit procedures in use today have been written and introduced. This may explain why Road Safety Auditing in London does not properly consider cycling on the carriageway and tends to consider cycling only when it involves a specific cycle project.

4. A Diseased System

Road Safety Audit procedures used in London are inadequately set up by TfL and can be applied with inadequate rigour leading to a diseased system. This is demonstrated at every stage of the Auditing process in the B286 Martin Way example.

4.1 Martin Way Context

4.1.1 In the London Borough of Merton strident appeals from cyclists that 'Accident Remedial Measures' on Martin Way (B 286) implemented in late 2007 were blatantly bad, and potentially lethal for cyclists, was met with two symptomatic reactions:

-TfL who carried out the Road Safety Audit said that cycling parameters were not considered because the scheme was not designed primarily as a cycle scheme and it related to traffic calming rather than cycling.

-Merton as Highway Authority, said the road was not wide enough to accomodate the traffic calming if they also gave proper consideration to cyclists.

4.1.2 The fact that both these responses were considered by two London public bodies as likely to be found acceptable, reinforces the view that, when altering carriageways, attempts to reduce vulnerability for a cyclist is an avoidable luxury and to increase cyclist vulnerability is of no great consequence.

4.1.3 The responses (in 4.1.1 above) by TfL and Merton were conjured up on the assumption that they would be considered a satisfactory reply to formal complaint and therefore adequate to quash further enquiry. The reaction to continued enquiry was significant.

1. In TfL's case the actual Road Safety Audit personnel were quickly taken off the payroll before they could be questioned by the Local Government Ombudsman (LGO). Any Audit process depends on personnel of declared name and status being accountable for auditing, otherwise the process is worthless. The Road Safety Audit produced by TfL gives evidence of profoundly flawed working and those responsible were moved on without being held to account. TfL themselves were transparently unprepared for a Road Safety Audit to be questioned.
2. At Merton the person responsible for the design of the scheme was off the payroll shortly after installation and although Merton carry full responsibility for the scheme the process was left completely unaccountable because no officer had approved or signed-off any of the stages to bring it to fruition. LB Merton were also transparently unprepared for the process to be questioned. They reiterated inadequate justifications for the scheme and kept the reckless installation in place for two and a half years while promoting the idea that cyclists were exaggerating their outrage.

4.1.4 Merton's Highway Authority managers maintained the position throughout that as no one had been hurt to date they would not themselves advise the spending of scarce resources on remedy. While no one was indeed hurt, it became common for cyclists to ride on the pavement round the chicanes to by-pass the cycle by-pass. The Council themselves admit that the 'perceived danger' may contribute to the lack of incidents, also, Martin Way's new notoriety as being dangerous for cyclists was widely spread through local cyclists' social networks, the installation featured as 'Crap Cycle Lane' of the month on a national website and a u tube film of cycling the 'Martin Way B286' chicanes has drawn reaction from around the world.

4.1.5 After much pressure, Merton finally admitted that their lethal installation was in fact a mistake. That they have now promised to amend future methods in line with proper Road Safety Audit procedures confirms that similar mistakes could have happened previously with less obvious consequences. When no injury has occurred, the removal of unsafe installations, even when as obvious as the Martin Way example, is strongly resisted. Merton's promised reforms can perhaps prepare the way for safer installations in the first place, they do not however resolve a situation where London's Road Safety Audit procedures themselves are questionable.

4.1.6 The present situation on the ground in Martin Way is that of the 10 traffic calming installations in 5 pairs (see **Fig.1 Appendix B**), which dangerously diverted cyclists into an impact position with late braking HGV's and Buses, 3 pairs have been removed entirely and returned to the road as before. After a further lapse in time the remaining 2 pairs were significantly modified in August 2011 (see **Fig.2 Appendix B**) but continue to be a serious risk to cyclists. Given Merton's admission of liability it is perhaps strange that their Insurers have not insisted on the complete removal of the final 2 pairs; The August 2011 modification has been carried out without a Road Safety Audit despite it being different to anything that was there before. It will however have warning signs which will answer one of Merton Cycling Campaign's long standing demands. The Insurer of course may take the position, promulgated by the diseased safety system described - that it is OK to take a risk with cyclists because cycling carries a risk.

4.2. Background. The Road Safety Audit in London

4.2.1 The origin of TfL's Safety Audit Procedures SQA-0170 is 'HD 19/03 Road Safety Audit' which is Part 2 Section 2 Volume 5 of The Design Manual for Roads and Bridges; The source document has rigorous intent but through re-interpretation some of the rationale and rigour has inevitably become lost.

4.2.2 HD 19/03 sets out procedures for Safety Auditing Highway Improvement Schemes on trunk roads including motorways. It states '*This standard is commended to other highway authorities*'. TfL takes this commendation to create SQA-0170 dated November 2005 (Currently Version 4) which is for Safety Auditing improvement schemes on the Transport for London Road Network (TLRN) and those London Borough schemes audited by TfL. SQA-0170 also states '*This procedure is commended to other Highway Authorities in Greater London*'. So London Boroughs could be taking SQA-0170 and reinterpreting it further. The origins of SQA-0170 are clear; for example, it will state that Response Reports were 'formally known as Exception Reports'; the source of Exception Reports being HD 19/03. Exception Reports are not the same as the Response Report so this is an example of confusion through reinterpretation.

4.2.3 While the overview of the Response Report may have advantages over individual Exception Reports, a key difference between the documents is that in HD 19/03 the main components of the process are clearly marked 'mandatory' while TfL's SQA-0170 is simply a Quality Assurance document. SQA-0170 cross refers to HD 19/03 in its Reference section as it's Safety Auditing reference document, so it would seem that cross-referring would be open to those whose role is to use the process. However in day to day practice this can be assumed to be unlikely to happen. It is therefore surprising and worrying that a document, modified from one with items commended as mandatory, should not stand up well to close scrutiny in practice.

4.3 Road Safety Audit Terms of Reference

4.3.1 HD 19/03 contributes an Introduction (omitted from TfL's SQA-170) that explains why aspects of the procedures have been developed. To summarize, in the present context, it makes clear that while '*Design Standards and Advice Notes provide a basis for safe design, care has to be taken when*

combining them to avoid the creation of hazards' .. 'Road Safety Audits are intended to ensure that operational road safety experience is applied'

TfL simply offer a definition of Road Safety Audit as:

'The staged evaluation of the safety of changes to the highway during design, implementation and subsequent operation. It seeks to identify potential safety hazards and may affect any type of road user'

4.3.2 With regard to its 'any type of road user' the Appendix A of SQA-0170 has an Issues Guidance list and under General Issues, Item 4 of the check list asks '*Is there adequate provision for vulnerable groups (Specifically the very young, the elderly and people with a disability and generally, pedestrians, cyclists and riders of powered two wheelers)?*'. Under 'Scope' item 4.1.2 it also states '*Care should be taken to ensure that attention is paid to the effects on vulnerable groups...*'

4.4 The place of Design Standards and Advice Notes

4.4.1 It is in the difference in the terms of reference to the two Safety Auditing documents that problems arise. HD 19/03 accepts that Design Standards and Advice Notes are a basis for safe design and Road Safety Auditing is necessary to make sure they are not combined to create a hazard. It qualifies this in the body of the document in mandatory item 2.11 '*Road Safety Audit shall only consider road safety matters*' followed by explanatory item 2.12 '*Road Safety Audit is not a technical check that the design conforms to Standards*' this is reiterated later in item 2.73 where it states '*The Audit team leader shall not include in the Audit Report technical matters that have no implications on road safety or any other matter not covered by the Audit Brief, such as maintenance defects observed during site visits and health and safety issues.*' TfL's SQA-0170 however re-interprets this in their item 4.1.4 which states '*The Road Safety Audit will not consider non-road safety related issues and is not a technical check to confirm compliance to Standards*'.

4.4.2 This précis by TfL gives Road Safety Auditors the excuse not to check against any technical standards even those with implications on road safety when applying their road safety engineering expertise; which includes even TfL's own Standards. When specifically asked why their own London Cycling Design Standards had not been referred to in their Martin Way Road Safety Audit, where cycling particularly featured, TfL wrote to say that reference to a design standard is 'not a requirement'. The implication here is that if and when Road Safety Auditors do refer to Standards it is going beyond their terms of reference.

4.4.3 The TfL procedures SQA-0170 compound this interpretation by continuing in item 4.1.4 '*However to clearly explain a safety problem or the recommendation to resolve a problem the Audit Team may, on occasion, make reference to a design standard without touching on a technical audit*'. The implication here is that technical matters can have no implications on road safety so technical matters as a whole are avoided. This would appear to be contrary to the meaning of the source document which specifically says that only technical matters that have no implications on road safety are to be excluded. This self imposed easement by TfL can have serious implications for safety on London's roads.

4.4.4 In the list of items of what not to include in a Safety Audit Report the IHT Road Safety Audit Guidance 2008 includes; '*any details of departures from Standard or other design background details*' while elsewhere it says that a 'good' safety auditor needs '*a good memory of Standards, control data and Advice Notes*'. TfL may say that making reference to a design standard is not a requirement, but that is not to say that all design standards and advice notes should not be given the fullest consideration.

4.4.5 The obsession in UK Road Safety Audit procedures with what not to put in a Road Safety Audit Report is, in the Martin Way case, a cause for confusion detrimental to safety. The procedures used in New Zealand have no such obsession, they simply ask:

In any approved departures from standards or guidelines is safety maintained?

In any hitherto undetected departures from standards or guidelines is safety maintained?

4.4.6 The Martin Way case demonstrates the perverse occurrence, that when TfL's Road Safety Auditors did turn to technical standards, they were not properly conversant with them. They chose the wrong guidance and then very seriously misinterpreted it. Had they referred to TfL's own guidance this would not have occurred. As a result Merton as Highway Authority found it acceptable to circumvent the dire warnings of the Safety Audit Report and installed the hazardous scheme.

The significance and inclusion of Design Standards and Advice Notes to the Road Safety Audit process is in fact reinforced at the very start of the TfL process: The Audit Brief infers that technical matters with implications on Road Safety are expected to be considered by the Highway Authority applying for the Safety Audit, and any departure from those standards is to be listed and approved.

4.5 The Audit Brief

4.5.1 The Audit Brief is prepared by the Highway Authority who also select the procedures they will use. In London it appears common that TfL's SQA-0170 is chosen. In item 4.6.1 of SQA-0170 it states that *'The Audit Brief is central to the safety audit procedure'*.

4.5.2 Item 4.6.2 of TfL's procedures states what the Audit Brief *'shall include, if appropriate'* and relatively high up the list is: *g) any known departures from standard*

Similarly what is called Appendix F- Audit Brief Checklist is in fact a request form, to be signed and dated, for a Safety Audit. This requires details of the Design Manager and Client Manager and is to contain *'all the information necessary to give the Audit Team a full understanding of the scheme'*. To assist in this there is a tick-box checklist of documents provided for the audit; one of these is 'Departures from Standard'

4.5.3 To get more clarity on what is intended here, the source document HD 19/03 says in item 2.62 *'An Audit Brief should contain the following:'* Item a) is drawings etc, and Item b) states *'Details of approved Departures and Relaxations from Standards'*. SQA-0170 has 'standard' in the singular which is unclear and could be misinterpreted to mean departure from this standard i.e. SQA-170. The plural 'Standards' of HD 19/03 clarifies what is intended.

4.5.4 Once the Design Manager has prepared the Audit Brief, Clause 6.11 of SQA-0170 states that the Client Manager *'has responsibility to approve actions that the Design Manager wishes to take'*. This is emphasized in relation to the Audit Brief in HD 19/03 by a mandatory requirement in item 2.61 for the Audit Brief to be *'forwarded to the Project Sponsor for approval in advance of the Audit'*. The Project Sponsor of HD 19/03 is The Client Manager of SQA-0170.

So an Audit Brief that shows no evidence of a Client Manager should be returned.

4.5.5 If the Safety Auditors find the brief inadequately prepared Clause 4.5.4 of SQA-0170 says that the Audit Team Leader *'may direct any requests for clarification of the Brief to the Design Manager'* and 6.5.6 states that *'if the Audit Team Leader considers the Audit Brief inadequate, ultimately it may... be rejected'*. HD 19/03 goes into slightly more detail and in Item 2.63 says that any insufficiencies in Audit Brief, not resolved after the Auditor querying it, should be identified in the introduction to the Audit Report.

4.6.1 Failure at Audit Brief stage in the Martin Way example.

4.6.1 The fact that the London Borough of Merton's Martin Way Audit Brief was overtly inadequate and that in such a state it was accepted by TfL's Road Safety Auditors is significant. It implies that a relaxed attitude to procedure is the norm.

Firstly the Audit Brief was submitted in an unapproved state. A Client Manager had not signed it off and was not named in any way.

4.6.2 Secondly the Audit Brief did not include '*known departures from standard*' which raises the question of how well acquainted road traffic engineers should be with such guidance. There is no doubt that the public expects such knowledge to be necessary and '*known*' for the design of such road installations. In this case the Martin Way Accident Remedial Measures design proposal presented by Merton to TfL's Safety Audit Team departed from the following National Advice Notes:

- a) LTN 01/07 Clause 3.3.7. Spacing between chicanes to avoid excessive speed
- b) LTN 01/07 Clause 2.7.16 cross reference to IHT 1996 Cycle Friendly Infrastructure Guidelines for Planning and Design where Clause 7.6.4 states narrowings should avoid dimensions of 3.1-3.9 metres when there is no cycle by-pass. A gap of 4-4.5 metres is recommended in such cases!
- c) LTN 01/07 Clauses 3.4.5 & 2.1.11 requirements for signage
- d) LTN 01/07 Clause 2.7.22 point 4 advises against giving-way on a cycle by-pass
- e) LTN 01/07 Clause 2.7.22 point 1 dimensions for width of cycle by-pass

And the following from TfL's own London Cycling Design Standards:

- f) LCDS Item3.6.4 point 4 ensure that cycle by-passes do not have cyclists giving way.
- g) LCDS Item3.6.4 Fig 3.1 pinch-point lane width without a cycle by-pass where there are HGV's and Buses at 30mph is to be 4.5 metres.
- h) LCDS Item3.6.5 A cycle by-pass minimum width between obstructions 1.5 metres. The by-passes were installed at 0.98 metres width in Martin Way.
- i) LCDS Item3.4.4 point 1 Speed control measures should not direct vehicles in to the path of cyclists.
- j) LCDS Item3.4.4 point 3 Speed control measures should not destabilize cyclists by abrupt changes in level.
- k) LCDS Item3.4.4 point 4 Speed control measures should not force cyclists to stop.
- l) LCDS Item3.4.4 point 5 Speed control measures should not increase cyclists' anxiety or discomfort.

The above list is not exclusive it includes those Standards and Advice Notes obviously related to cycling. While these standards may be called 'technical' where numerical values are concerned, for cyclists, they are entirely to do with safety. Clearly the last item on the list causing cyclists anxiety would not be voluntarily included on a list going to a Road Safety Auditor but at the end of such a list anxiety might be predictable.

4.6.3 While it can be argued that, in general, Standards and Advice Notes can be seen as a compromise between safety and other factors such as traffic capacity, environmental impact and cost implications, in the case of cycling such Standards and Advice notes are primarily to do with Safety.

4.6.4 Had TfL's Road Safety Auditors received the list of Departures from Standards there can be little doubt that their recommendations would not have been warped by reference to, and misuse of, the wrong standard. If known departures from standard are already listed for them it is less necessary for auditors to refer themselves to Standards in order to seek out the departures. Had the Design Manager in the Martin Way case listed all the departures from standard for his Client Manager's approval the scheme would probably have gone no further.

4.6.5 The third element of the information suggesting a relaxed attitude to procedure was Merton's explanatory drawing. This was titled 'Draft' 'Preliminary Design' with no particular approval associated

with issue for Stage 2 Safety Auditing. It is to be hoped that sending an 'unapproved' Preliminary Draft drawing for auditing does not accord with Merton's Quality Assurance criteria. In order to properly monitor 'before and after' the auditing process, an approved pre-audit 'Proposed Scheme' could be the reasonable thing for TfL Road Safety Auditor's to expect.

4.6.6 TfL's Road Safety Auditors were prepared to accept an Audit Brief from a Design Manager acting without approval, on a scheme clearly riddled with departures from Standards that had not been listed and with a preliminary drawing that was still titled 'Draft'. With a diligent attitude to Road Safety Auditing the auditors could and undoubtedly should have rejected this Audit Brief. It could be asked how the auditor would recognize a scheme riddled with departures from standard if they are not listed? But, as quoted in item 4.4.4 above, a 'good' safety auditor needs '*a good memory of Standards, control data and Advice Notes*'.

4.6.7 It can only be concluded that this lack of rigour in preparing for audit and in receiving for audit is a common occurrence and accepted by both the Highway Authority and TfL's Road Safety Auditors; a state of affairs that leads to the inference that this lack of rigour is London wide.

4.6.8 Since pressure has been applied, regarding these points, Merton have agreed that all Road Safety Audit processes will be signed by a senior manager and Road Safety Auditors will be informed of a scheme's Departures from Standards as required.

4.7 Failure at Safety Audit Report stage in the Martin Way example

4.7.1 TfL's Road Safety Auditors were in fact ,condemnatory of Merton's proposals for Martin Way. They concluded that at the first narrowing of the proposed chicanes (10 chicanes were proposed) the excessive speed of HGV's and Buses approaching the severe narrowing would result in vehicular strikes on kerb stones. This was confirmed in reality by kerbstones on the chicanes being completely smashed or dislodged. They argued that cyclists would also be in the line of fire because the cyclist's by-pass was too narrow and therefore might not be used. This inadequate and brief cycle by-pass happened to include a road hump exclusively arranged for the cycle by-pass which coincided with a stop sign before steering cyclists into the path of traffic at the second severe narrowing which had no by-pass! None of these gyrations seemed to bother the Road Safety Auditors despite the fact that a cyclist entering this system in busy traffic would have to be suicidal: forced to be prepared to halt in a destabilized position with measures to direct vehicles into the cyclist's path. These happen to be items i), j), and k) of the departures from the standards, listed in item 4.6.2 above, which the auditor should have been familiar with whether included in a list of departures from standard or not. It is possible that Merton's Audit Brief drawing was ineffective at showing the road hump. The road hump when in place caused ponding that meant that a stopped cyclist would be standing in a puddle and when the puddle was frozen it added to the danger.

4.7.2 It was after receiving the TfL auditor's Road Safety Audit Report that Merton asked for comment on a drawing of the scheme from local cyclists, the Merton Cycling Campaign. The cyclists were not made aware of any Safety Audit Report. Their reaction recorded in the well distributed Minutes of the meeting was that the scheme would be 'inevitably dangerous'.

4.7.3 The TfL auditor's Safety Audit Report was condemnatory and it included a 'notwithstanding' clause. This said that, despite their detailed recommendations for improvements to the chicanes, the excessive speeds expected made chicanes themselves inappropriate. For Merton to then circumvent these dire warnings by taking advantage of a TfL auditor's error, raises questions about the diligence of both the organisations when Road Safety Audits are carried out.

4.7.4 The TfL auditor's error was to recommend that if Merton were to adjust a kerb by 50 millimetres (2 inches) then this would provide a narrowing of more suitable dimension to accommodate cyclists and motorists. This was wholly ridiculous advice. The dimension used by the TfL auditors came from

a technical document which had its source in a report TAL 15/99 which gives advice on lane widths for slow moving traffic at road works where HGV's and Buses are not included. In this context as in the dictionary definition the word 'motorists' is specifically associated with cars alone. Any visit to Martin Way shows that Buses and HGV's are dominating and energetic users.

4.7.5 'Notwithstanding' the 'inevitable' danger Merton accepted this lethal advice which relieved them from having to go to the expense of redesigning and went ahead with the scheme. It is very difficult for Merton to justify going along with this flawed recommendation because 50 millimetres in the face of a 2500 millimetres wide HGV or Bus travelling at 'excessive' speed clearly makes no difference whatsoever. It also raises the question of whether plus or minus 25 millimetres (one inch) is approaching the range of accuracy that can be expected when laying a heavy granite kerbstone.

4.8 Failure at Response Report stage in the Martin Way example

4.8.1 The Highway Authorities response to the Road Safety Audit comes in their Response Report. Merton's Martin Way Response Report had no attributions. No author was named and no one approved it. It is supposed to be submitted to the Road Safety Auditors 'for information' so they can bear witness to it but TfL never received it. This lack of receipt appeared to be of no consequence to TfL's Safety Audit Auditors, once issued it was seen as Merton's problem, with no incentive to see a Response Report, even for the benefit of feedback that might help TfL refine their processes.

4.8.2 To audit safety it makes sense that the experts in safety are made witness to how their safety recommendations have been interpreted. Can it be an 'audit' if this does not take place? The interpretation document is the signed copy of the Response Report that the Highway Authority is supposed to send to the Safety Auditors 'for information'. In this particular case if the TfL auditors had received it they would have been placed in a position of witness to how Merton had misused their erroneous findings to deliver an unsafe scheme. TfL clearly stated (after the Martin Way chicanes had been constructed), that '*substantial changes*' were recommended in their Road Safety Auditor's Report and that Merton '*did not take account of the issues raised*'. TfL further stated that '*it would appear that the borough did not respond to the issues raised in the audit before starting to implement the scheme*'.

TfL's SQA-0170 procedures state

Item 4.9.8 *The Design Manager forwards a copy of the Road Safety Audit Response Report to the Audit Team Leader for information.*

Item 4.9.9 *The Road Safety Audit Response Report must be completed before the next stage in the scheme's development is begun.*

In the context of a proper 'audit' Clause 4.9.9 can be interpreted as requiring the Safety Auditor to be in full knowledge of, and witness to, the way their Safety Audit Report has been interpreted before the scheme's development is begun.

4.8.3 In HD 19/03 (where Response Report is made up of individual Exception Reports) one of the mandatory requirements is:

Item 2.76 *'The Project Sponsor shall provide copies of each approved Exception Report to the Design Team and Audit Team Leader for action and information respectively.'*

The 'provide' in this clause is clearly an active verb putting some onus on the provider to succeed in providing. To complete the 'Audit' Merton needed to place the Auditors in the position of being witness to how Merton had interpreted their Safety Audit Report recommendations. This would have been achieved by TfL being 'provided' with the Safety Audit Response Report.

4.8.4 Had they born witness, as expected and required in the Safety Audit procedures, to how Merton had misinterpreted their condemnatory conclusions & recommendations, it cannot be discounted, and if Audit procedures are carried out to the spirit of their intent, it is highly likely, that the TfL Road Safety Auditors would have found themselves necessarily intervening before Merton started to implement the scheme. The TfL auditor's motivation would have been driven by the fact that Merton had managed to disregard unsafe conditions through the Road Safety Auditor's lack of expertise in technical standards leading to incompetent advice.

4.8.5 The procedural risk of letting a misunderstanding through at this stage is avoided in the Irish Road Safety Audit Procedures HA 42/04 where a slightly different line on Exception Reports is taken. Before resorting to an Exception Report, which will be a refusal to accept a particular Road Safety Report recommendation, in Ireland, the Client is required to issue a Feedback statement to the Auditor delivering their reaction to the Report. Discussion with the Auditor is then expected to take place which decides the Client on whether an Exception Report is necessary.

4.8.6 Remedial Measures. Since pressure has been applied on Merton regarding the lack of accountability associated with the Response Report they have in future agreed not to commence work on an installation until a Safety Auditor has at least confirmed receipt of the Response Report.

4.9 Failure to make the Safety Audit independent.

4.9.1 To fulfil its purpose a Road Safety Audit needs to be carried out by an organisation independent of the design team. To clarify this point the source document of TfL's procedures HD 19/03 in Item 1.6 says that '*...engineers included in the design team will not be permitted to be part of the Road Safety Audit Teams due to their lack of independence from the scheme design as their views may be influenced by familiarity and a natural "pride of authorship".*' This provides a satisfactory reason for why emphasis is put on the independence of a safety audit it makes clear that the designers of schemes and their organisation cannot be relied upon to have an objective view of safety.

4.9.2 The process of investigating the involvement of TfL's Road Safety Auditors in the mistakes in Martin Way required calling on the assistance of the (LGO) Local Government Ombudsman (Detailed in **Appendix C**). TfL's reluctance to respond to complaint dragged the process out for a year. At the end of this period the LGO deserves little credit for eventually concluding that they could not uphold a complaint against TfL or its Road Safety Auditors because even though warped and bad advice may have been given by the auditors the responsibility for this advice and how it was used lay entirely with the commissioning authority Merton.

4.9.4 This conclusion may have been the result of the LGO finally getting legal advice but it consequently raises further questions about the efficacy of TfL's SQA-0170 procedures when the independence of a Road Safety Audit is so distinctly blurred at the edges.

4.9.5 The procedures stipulate the independence of the auditors from their client, but in a loose system, the client can to some extent select the result by choosing an auditor lacking rigour who will also be cheaper. The auditor feels some license to do what the client wants because the end product of the audit is shown to be the client's responsibility anyway. This is not independent auditing unless the procedures are specifically rigorous and in London they appear not to be.

4.9.6 In a wider sense it is not independent either when a body like TfL funds the road works while hiring out Road Safety Auditor services under the audit procedures that they have written. London Boroughs have in fact been offered these TfL Road safety Audits free if TfL fund a project for them. Such a close set up could be a good formula for Road Safety Auditing making a strong contribution to a 'safety by design' culture amongst London Boroughs as designers anticipate safety issues. But on the other hand it could also be a formula for a general slackening off of 'safety by design' and proper

procedures, a slackening encouraged by the fact that rigorous Road Safety Auditors find it difficult to bid low enough to get the work.

4.10 Failure to keep adequate files

4.10.1 At the beginning of the investigation into the reasons behind the Martin Way installation the London Borough of Merton were asked for a copy of the relevant Safety Audit Report but Merton were unable to access it and it had to be requested from TfL. When Merton were asked for a copy of the Safety Audit Response Report this was on their computer file but without an author or approver named. When formally asked for a signed copy Merton admitted to not having one, saying that they were not legally obliged to hold one. This may or may not be a valid legal position but there is no doubt that Merton would be wise to hold one for legal reasons.

4.10.2 In fact the Clause covering this in TfL's SQA-0170 Procedures is probably best described as sloppy. Item 4.10.3 of SQA-0170 states *'It is the responsibility of the Design Manager to retain a copy of the signed final Safety Audit Report and original Safety Audit Response Reports.'*

Merton were perhaps arguing that they didn't have to have a copy of the 'signed' Response Report because under the SQA-0170 clause 4.10.3 it is not required. It could equally be argued that, as Response Reports is a plural in SQA-0170 clause 4.10.3, the 'signed' can apply to both types of Report. Either way, for a clause in a document taking responsibility for safety on London's roads the SQA-0170 clause 4.10.3 is unnecessarily flawed.

4.10.3 Remedial Measures. In the light of the fact that a Design Manager has been able to circumnavigate TfL's Safety Audit Procedures, unapproved and leaving practically no records, at a massive cost to the public, Merton have stated:

'It will be the responsibility of the Traffic and Highways Services Manager to sign all Safety Audits as the senior officer. All Traffic and Highways officers have been advised accordingly and instructed to comply with this process. Once signed, the Safety Audit will be scanned and electronically stored with the Health and Safety files relevant to the scheme.'

4.11 The Martin Way case Summary

4.11.1 While the London Borough of Merton have admitted that what was installed was a mistake. The fact remains that neither TfL nor Merton took reasonable care to ensure that the road was not dangerous to traffic. Their non-compliance with published advice on Road Safety Auditing arose from a lack of rigour in procedures. When TfL's published advice on Road Safety Audit procedures is in reality loose enough to allow all this to happen then urgent review is required of TfL's Road Safety Audit Procedures SQA- 0170.

4.11.2 As for the London Borough of Merton they have agreed to amend their procedures as a result of the Martin Way mistake:

-All Road Safety Audit processes will be signed by the Traffic and Highways Services Manager as Senior Officer.

-Road Safety Auditors will be informed of a scheme's departures from Standards by the schemes designers.

-Scheme implementation will not commence until the Road Safety Auditor has confirmed receipt of the Response Report.

-Once signed Road Safety Audit documents will be scanned and electronically stored.

4.11.3 These self-disciplines if carried out by London Boroughs can circumvent some of the flaws in TfL's procedures but the main responsibility would appear to lie with TfL.

4.11.4 With regard to costs Merton has thus far born the cost of removal of Martin Way chicanes. TfL as the Road Safety Auditors had originally demonstrated their intention of contributing to this remedial work, but, possibly by coincidence, once the LGO decided that Merton were responsible for TfL's mistakes this offer was withdrawn. This investigation has exposed how the TfL Road Safety Auditors share much of the responsibility for the mishandled Safety Auditing, mainly due to TfL's procedure document SQA-0170 and its misuse. Merton is therefore recommended to press TfL for partial compensation for the Council's money wasted on this disastrous and dangerous scheme.

5. In the UK context

Road Safety Audit procedures in London have a looseness that stems from a randomization of Road Safety Audit procedures that effects the whole of the United Kingdom.

5.1 It has been described earlier in this report how the mandatory requirements for the Road Safety Auditing of trunk roads and motorways HD 19/03 are simply commended to Highway authorities. The IHT Road Safety Audit Guidance document of 2008 proposes what might be possible under this commendation. This is achieved by throwing multiple options in the air and not bringing them satisfactorily down to earth leaving a list of potentially 12 variables to be included. This encourages diverse auditing procedures which can only jeopardize safety on the UK road network by not offering consistency, it also must tend to attract litigation towards individual Highway Authorities making it a potentially expensive strategy on both counts.

5.2 The Road Safety Audit coverage currently encouraged in the UK can be summarized as suffering from the following disadvantages:

- It is too loose for interconnected systems where consistency must mean safety
- It is potentially unreliable by TfL's example
- It is not satisfactorily independent in the public perception: particularly when, like TfL, a project funder also carries out the safety audits and writes the auditing rules.
- It is more likely to attract litigation towards the Highway Authority

5.3 When a mix of self-selected variations to audit procedures are spread over a large number of UK Highway Authorities then in order to retain credibility, and safety, the key activities in the process should be crystal clear and mandatory, which is exactly the case with HD 19/03 and is in fact what it 'commends'. The Highway Authority may take the decision of when to, or when not to audit, but if Road Safety Auditing is selected then there is a great advantage in terms of independent scrutiny and consistency for set procedures to be mandatory.

5.4 Trunk road agencies, for whom HD 19/03 is written, are not actually required to 'prevent accidents' on new roads; it may therefore be fully justified for them to be required by HD 19/03 to undertake Road Safety Audits with parts that are specified as mandatory. With local Highway Authorities, who do in fact have the statutory requirement to take measures to reduce the possibility of collisions, HD 19/03's mandatory components of the procedures can only be seen as highly desirable. It would seem, in the public's interest for the principle elements of the Road Safety Audit process therefore to be mandatory as one of the most 'commendable' elements of HD 19/03. This would be the basis for uniform Road Safety Audit procedures suitable for modern urban situations introduced throughout the UK.

6. Conclusion

6.1 This report started by giving examples of how Road Safety Audit procedures used in London underemphasize the safety problems associated with cycling on the carriageway and tend to invite discrimination against cyclists. This does little to promote the type of rigorous Road Safety Auditing that will give proper consideration to the weakest member of the carriageway. The fact that Road Safety Audit procedures used in London are inadequately set up by TfL and are applied with inadequate rigour may stem from the lack of emphasis on the detail needed for the weakest participants on the carriageway; the cyclists. This is demonstrated at every stage of the Auditing process in the B286 Martin Way example.

This catalogue of failures in Safety procedures raises serious questions about Safety on London's Roads for any user but particularly for the most vulnerable user of the carriageway: the cyclist.

6.2 TfL appear to have reinterpreted rigorous Safety Audit procedures in a way that allows a loose attitude to Design Standards and Advice Notes and a generally loose attitude to how information is presented to Road Safety Auditors. In the Merton Martin Way case TfL have overseen Road Safety Auditing where not one part of the process was completed or documented satisfactorily. This can only be assumed to be its approach with all 32 London Local Authorities. An approach likely to lead to those authorities also having loose standards in design and loose standards in presenting information for audit. In Merton's case there was also the complete lack of a sense of the need for accountability. Whether this stemmed from TfL's lack of demand for accountability can be considered a possibility.

6.3 What is clear is that a general lack of accountability can lead, as in this case, to an 'unsafe' recommendation not being recognized as such until installed or even acknowledged when installed. The fact that TfL themselves are setting these examples is quite likely to mean that design teams approaching other Road Safety Auditors for London are met with the same relaxed attitude.

6.4 Regrettably there are financial pressures on Highway Authorities not to have to revisit a design so a relaxed Safety Auditor is more likely to attract work than a rigorous one. A relaxed Safety Auditor is also likely to be cheaper than a rigorous one. TfL appear to control this Safety Auditing market by having offered Highway Authorities free TfL Road Safety Audits for schemes that TfL are funding. When tightening budgets can only result in less rigour there is perhaps something unsound about such an arrangement. The Martin Way Safety Audit story has exposed TfL as managing a relaxed service and this can only mean that the risk of being maimed on London's roads is higher than it should be.

6.5 This conclusion is reached because Road Safety Auditing carried out properly has been shown to work. Both the Irish and UK Road Safety Audit Guidance Notes quote examples from New Zealand to Denmark to Surrey. They compare accident costs with Safety Auditing costs and estimate a First Year Rate of Return of around 600%. This is primarily based on the Surrey figures where 20 Safety Audited minor improvement schemes were compared with 20 similar schemes that had not been audited. The findings showed the audited schemes had on average about one casualty per year less.

7. Recommendations

7.1 With immediate effect TfL should engage in a severe tightening up of Safety Audit procedures throughout London.

7.2 As TfL's Safety Audit Procedures SQA-0170 have gone from inadequate proof-reading to unsafe misuse they should be carefully re-written.

The recommended amendments are that TfL's Safety Audit Procedures should:

- a) Include strong emphasis on the listing of approved departures from guidance notes and standards in the Audit Brief.
- b) Include strong emphasis on drawings being approved for Audit issue in the Audit Brief.
- c) Reconsider the advice on what not to put in an Audit Report and include emphasis that auditors should ask the New Zealand questions: In any approved departures from standards or guidance notes is safety maintained? And: In any hitherto undetected departures from standards or guidance notes is safety maintained?
- d) Include a checklist page for 'Cycle Issues on the Carriageway' in the TfL Model Road Safety Audit Issues Guidance Lists (See Appendix A of this Report)
- e) Include strong emphasis that Road Safety Auditors should acknowledge receipt of the relevant Response Report before the Client proceeds with the scheme.
- f) Consider using the Irish Feedback/Exception Report process in place of TfL's Response Report process. It is potentially more safe, and less time consuming.
- g) Exclude from the text any presumption that users accept that they are inherently 'vulnerable': this should not be assumed before a Safety Audit. 'Special' should replace the word 'vulnerable' as in New Zealand's Road Safety Auditing.
- h) Consider making mandatory the procedures surrounding the principle elements of Road Safety Audits. Highway Authorities can still decide when a Safety Audit is appropriate but to be called a Road Safety Audit some procedures should be mandatory.

7.3 The London Borough of Merton has a declared intent to tighten up procedures. London Boroughs should check that they fulfil similar procedural disciplines:

- a) All Road Safety Audit processes to be signed by the Traffic and Highways Services Manager as Senior Officer.
- b) Road Safety Auditors to be informed of a scheme's departures from Standards by the schemes designers.
- c) Scheme implementation will not commence until the Road Safety Auditor has confirmed receipt of the Response Report.
- d) Once signed Road Safety Audit documents to be scanned and electronically stored

7.4 TfL should compensate the London Borough of Merton for the costs of removing the Martin Way mistake as their loose Safety Auditing was largely responsible.

7.5 National Road Safety Audit Procedures applicable to urban areas should be agreed.

Appendix A

Road Safety Auditor's Checklist for Cycle Issues on the Carriageway

A sample selection

Are measures to reduce vehicle speed sufficient to improve safety for cyclists ?

Do build-outs or kerb extremities force cyclists to swerve into the path of vehicles ?

Are proposals for a left turn slip road safe for cyclists?

On uphill gradients has enough space been left for cyclists?

Can the carriageway be redistributed to give more space to cyclists?

Are gully grates of an appropriate design/alignment for safe cycling?

Are levels of illumination adequate for the road safety of non motor vehicle users?

Has consideration been given to roadside hazards and passive safety in relation to cyclists?

Is pavement furniture on left turns a danger for cyclists being crushed in blind spots?

Will the location of road side planting become a danger for cyclists if unattended?

Are any bicycle facilities safely located in respect to vehicular movements?

Appendix B

The Martin Way (B 286) chicane arrangement.

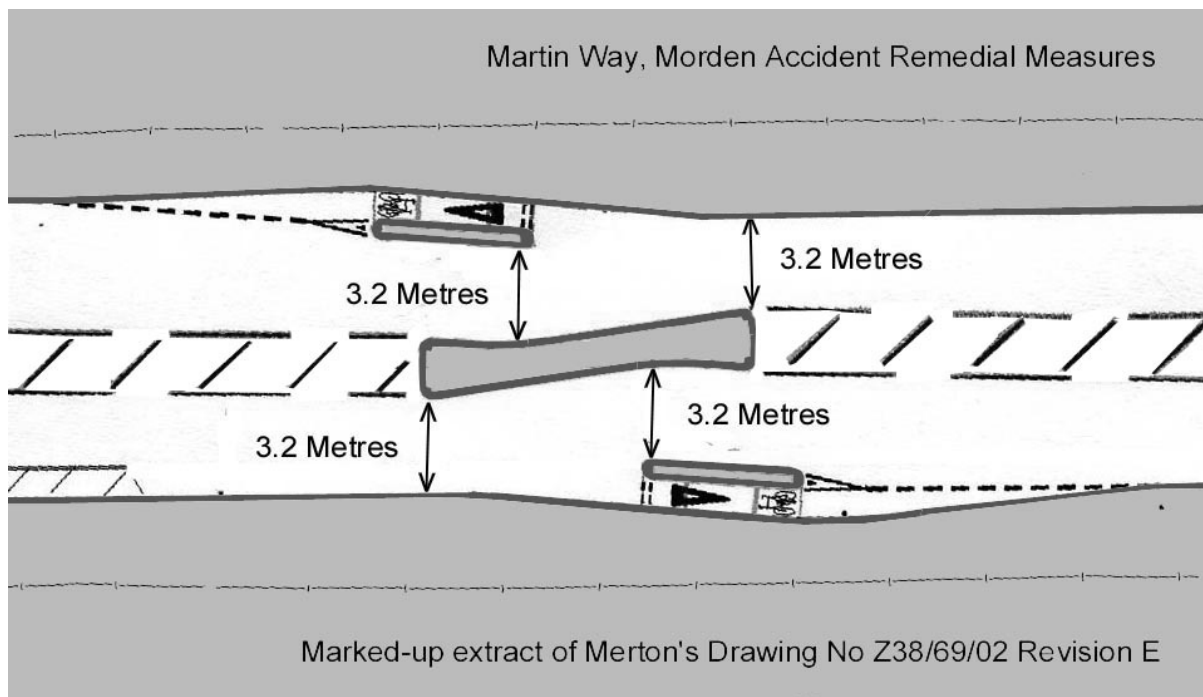
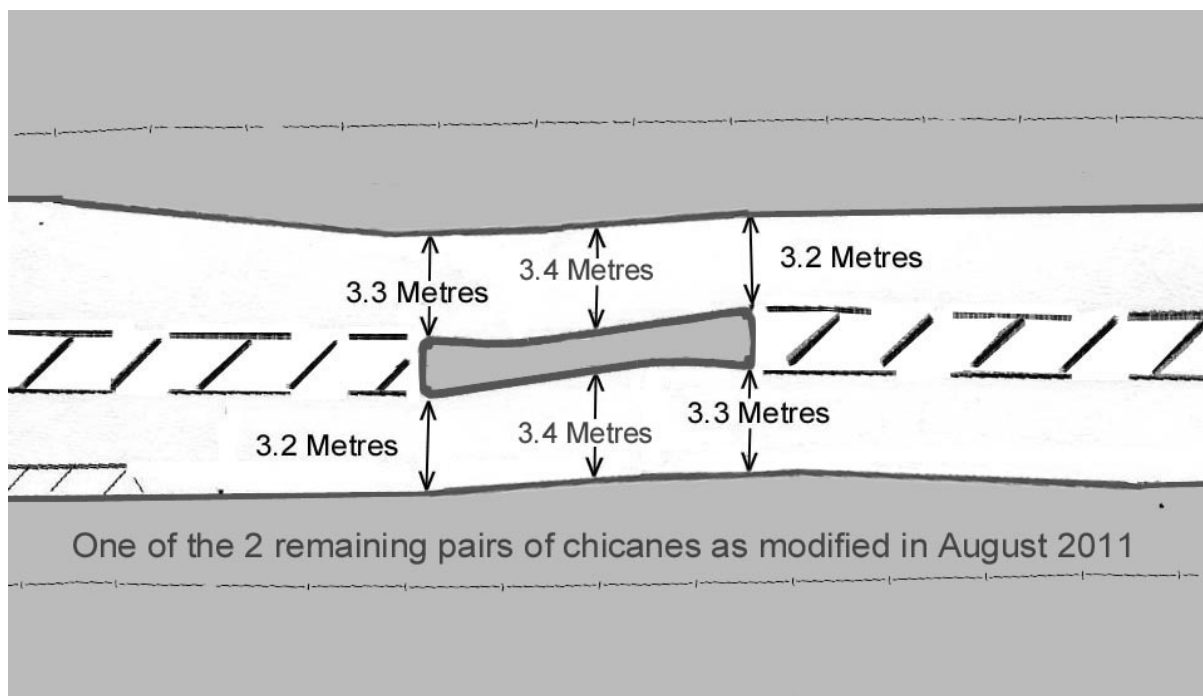


Fig. 1 As originally installed. Three of the pairs were removed completely in May 2010

Fig. 2 The two remaining pairs as remedied today



⚠ UNSAFE ⚠

Appendix C

The part played by the Local Government Ombudsman (LGO) in reviewing the failed Safety Audit process for the B286 Martin Way.

Investigating the background to the Martin Way mistake started with complaint against TfL for their flawed Road Safety Audit Report. The complainant was a member of the Merton Cycling Campaign. The formal complaint process with TfL gave no satisfaction, in part because TfL's Road Safety Audit personnel associated with the case were on leave and unable to contribute. The complainant approached the Local Government Ombudsman who after correspondence with the complainant and some deliberation decided there was validity enough for TfL to be taken to task over the matter. The result of LGO's approach to TfL was that the critical Road Safety Audit personnel went from being on leave to off the pay roll, making detailed enquiry impossible. It was just over 12 months into the process that the LGO decided that the complaint against TfL could not be upheld and the case was closed. The LGO took the view that the ultimate responsibility for the scheme and its subsequent problem lay with the London Borough of Merton rather than with TfL. There would appear to be every reason to suggest that this conclusion by the LGO could have been arrived at from day one of their investigation.

A completely new complaint process was then started with the London Borough of Merton. To add weight to complaint with Merton the letters were signed by the Chairman of the Merton Cycling Campaign. The response to complaint from LB Merton was unsatisfactory so once again the member of the Merton Cycling Campaign, who had been the complainant against TfL, took the issue to the LGO. The first hurdle was to convince the LGO that although the reason for complaint was over 12 months old it was still valid. The LGO do not accept complaints unless made within 12 months of the reason for complaint. This was achieved after time-consuming correspondence. The complainant's case was emphasized as, and clearly defined as, concerning the procedural inadequacies that had led to an unsafe installation. During the protracted dialogue with the LGO to persuade them there was a case to answer a senior Merton Councillor and cabinet Member took the initiative to proceed with removal of the Martin Way chicanes. When informed of this the LGO concluded that the reason for complaint was being removed and the LGO closed the case, this was despite it being argued that the removal was a direct admission of the procedural failure that the complaint was actually about.

When a case is opened and closed the LGO immediately inform both parties. This occurs whether or not the LGO has formally taken up the case with the party complained against. It is perhaps pure coincidence that when Merton was informed that the LGO's case was closed the removal of the chicanes halted and 4 chicanes were left in place.

The LGO officer involved had verbally agreed that if removal of chicanes was only partial the case could be re-opened. This was not in fact allowed and the LGO insisted on a completely new case being engaged based on the original complaint, requiring further lengthy correspondence. The LGO were finally persuaded to formally approach the London Borough of Merton to investigate the complaint. Merton promptly informed the LGO that the complaint correspondent to Merton, the Chairman of the Merton Cycling Campaign, was different to the member of Merton Cycling Campaign making the case to the LGO and thus the complaint was invalid. The LGO had to admit that Merton was right and without apology informed the complainant that the entire process would have to be started again from scratch.

This was the second time the LGO had unnecessarily wasted not only the complainant's time and resources but their own time and resources which can only be seen as reflecting a certain lack of competence. In a worst case scenario the extreme hazard associated with the subject of this particular complaint could at any time have claimed a victim. In the light of this and the LGO's lack of

Appendix C continued

diligence associated with this case it can only be recommended that the LGO review these apparent shortcomings.

The end product of any investigation by the LGO can only go so far as to stipulate that an authority change its practices. Rather than continue time-consuming LGO procedures, which had to date proved ineffective and time wasting, the complainants, the Merton Cycling Campaign, turned to local politicians to bring pressure to bear. This resulted in Merton's admission that what is installed is a mistake. With regards to amending practices at both Merton and TfL this Report is produced as a means to demonstrate that Road Safety Audit practices in London generally are in need of serious amendment. The LGO took themselves out of the equation, not because there was no case to answer, but because they never properly opened a case.

The compiler of this report Hugh Morgan Architect (retired) has been involved in promoting cycling for over 20 years and a member of the Merton Cycling Campaign for as long. He was one of the Reference Group for 'Guidelines for Cycle Audit and Cycle Review' 1998. Publications include: 'A Pattern for Progress' and 'London Cycle Network-The Way Forward' Promoting core cycle routes along the lines of cycle superhighways adopted by the London Cycling Campaign as 'The Star Routes' in 1994. Illustrator of IHT's 'Cycle Friendly Infrastructure' 1996. Creator of Cycletoons for the magazine London Cyclist 1995-2006.