## Why Wirral Council has Persistently Poor Road **Casualty Figures**

This document is a Wirral Council report on pedestrian safety that has been annotated (with text in grey panels like this) to highlight serious deficiencies within the report, and within the Council policies and culture, and to draw alternative conclusions.

It is being circulated (in December 2016) as a draft and will be updated after feedback.

For more background information, see Appendix A (p 19).

The author is Ian Campbell MD - for more information, see Appendix B (p 20).

## Agenda Item 4

#### WIRRAL COUNCIL

## **BUSINESS OVERVIEW AND SCRUTINY COMMITTEE 13 SEPTEMBER 2016**

SUBJECT:	Road Safety – Pedestrian Casualties
WARD/S AFFECTED:	All Wards
REPORT OF:	Mark Smith, Head of Environment and Regulation
RESPONSIBLE PORTFOLIO HOLDER:	Councillor Stuart Whittingham, Cabinet Member for Highways and Infrastructure
KEY DECISION?	No

#### 1.0 **EXECUTIVE SUMMARY**

- 1.1 This report sets out officer views on the pedestrian casualty analysis prepared by the Wirral Pedestrian Association and highlights the Council's recent performance in improving road safety for pedestrians.
- 12 It is recommended that the Committee:
  - note the information contained within the report and
  - endorse the current holistic approach to casualty reduction and promotion of schemes and initiatives which assist the reduction of all road casualties.

## Replacement conclusions

- b. the current approach should not be endorsed
- c. the responsible Cabinet Member (Cllr Stuart Whittingham) should be replaced
- d. the Council Leader (Cllr Phil Davies) should ensure that a culture of transparency is introduced into Wirral Council's decision making

The reasons for these conclusions are set out in Appendix C (p 21). for comments

Page 27 [Original numbering] - Top

#### 1.2 2.0 BACKGROUND AND KEY ISSUES

2.1 At its meeting on 12 July 2016, the Committee resolved that the Council should consider the subject of reducing pedestrian casualties including receiving a report from the Road Safety Manager.

#### 3.0 PEDESTRIAN CASUALTY ANALYSIS

Wirral has a long term record of improving road safety for pedestrians. In 1994 there were a total of 304 pedestrians of all age groups and all severities injured on Wirral, of these 84 were killed or seriously injured (KSI). By 2015 this has reduced to 109 pedestrian casualties injured with 28 KSIs – see charts 1 and 2. The ratio of KSI casualties to slight class injuries has also reduced.

## Summary of past performance: Misleading

Wirral Council's report claims that Wirral

"has a long term record of improving road safety for pedestrians"

but the basis of the claim is merely the long term fall in the number of reported pedestrian casualties.

This is misleading because it ignores other factors that have reduced the number of casualties including

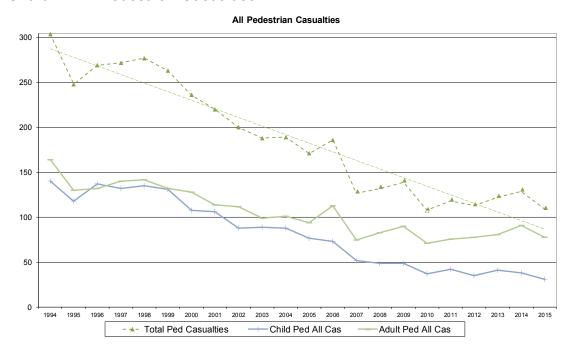
- The decline in walking The national decline in walking is given by the Department for Transport (DfT) as a possible reason for reduced pedestrian injuries in its Factors affecting reported road casualties [1], and Wirral Council is aware that walking has fallen in the borough as this is stated in the Wirral Transport Strategy [2].
- Improved car design so that pedestrian injuries are reduced in collisions

Because of these other factors, Wirral Council should carefully evaluate any fall in reported pedestrian casualties.

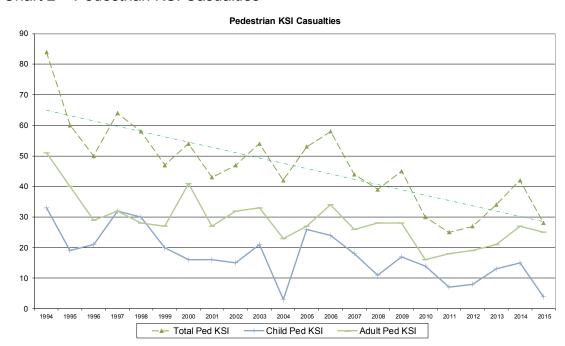
Wirral Council was criticised by the Ofsted Report of 2008 for "overvaluing the areas where progress has been made" [3], and it was similarly criticised in the Pedestrian Safety Audit of 2015 [4], and so it is disappointing that the Council's report ignores the criticisms and repeats an unjustifiable claim.



Chart 1 - All Pedestrian Casualties



#### Chart 2 - Pedestrian KSI Casualties





Whilst the performance in 2015 was improved compared to the figures for all pedestrian casualties in 2013 or 2014, overall for the most recent period of 5 years the reduction in all pedestrian casualties has slowed down (see chart 3).

However analysis indicates that all severities of child pedestrian casualties continue to improve.

## Summary of casualty figures: Seriously misleading

The Council's claim that

"the reduction in all pedestrian casualties has slowed down"

is seriously misleading as it implies that over the last 5 years, there has been a reduction.

In reality, the figures do not support this since the changes are all within year-to-year random variation. The claim is examined in detail in Appendix D (p 23) with other similar claims.

The qualifications and experience of the author (Ian Campbell) for commenting on Wirral Council's analysis of road casualties are set out in Appendix D (p 23).

## Summary of casualty figures: Seriously misleading

This claim that

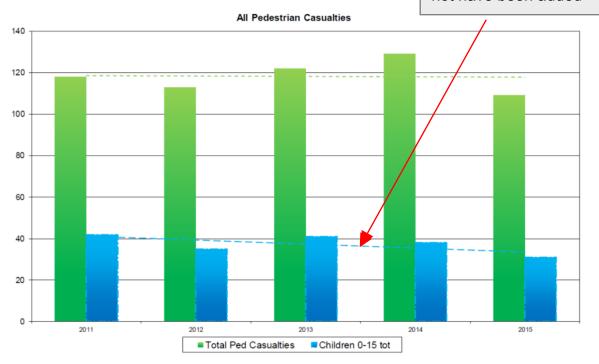
"all severities of child pedestrian casualties continue to improve" is again not justified by the actual figures - see Appendix D (p 23).



#### Chart 3 – All Pedestrian Casualties

#### Misleading

This trend line should not have been added



As the number of KSI casualties continues to reduce, disaggregation of adult and child pedestrian KSIs is increasingly susceptible to random fluctuations due to relatively small numbers. To attempt to reduce the impact of this, 5 year averages can be used to indicate progress. Comparing the most recent 5 years (2011-2015) to the previous 5 year period (2006-2011) the average number of adult pedestrians sustaining KSI injuries has improved from 26.4 to 22 (an average reduction of 16.67%). The average number of children killed or seriously injured during the same timeframe has also improved from 16.8 to 9.4 KSI casualties giving an average reduction of 44.02%.

## Summary of casualty figures: Seriously misleading

The implied claim

for comments

"the number of KSI casualties continues to reduce"

is again not supported by that actual numbers - see Appendix D (p23).

## Summary of casualty figures: Misleading

As before, the fall in child KSI numbers is not necessarily an improvement if it was achieved by a decline in walking and consequent large increase in child obesity and long-term ill-health.

Analysis of causations arising from police investigations into crashes involving all pedestrian KSI casualties from 2011 onward shows a concerning increase in (adults) under the influence of drink/drugs from 2 incidents in 2011 to 10 in 2014 which accounted for 23% of the total number of pedestrians sustaining significant injury in 2014. In 2015 6 pedestrian KSIs (21%) involved pedestrians under the influence of alcohol.

Page 29 [Original numbering] - Top

3.5

Analysis of data during the last 5 years shows an overall continuing decrease in the number of children killed or seriously injured, however it was noted somewhat unusually, that 6 children under 4 yrs old ('under supervision' by an adult) were seriously injured in 2014. Whilst 3 of these 6 were recorded as occurring in residential roads it is unlikely that measures other than ongoing education for parents will influence the kinds of causations in these collisions.

Inappropriate speed has not been recorded as a factor in any of these incidents.

## Summary of casualty figures: Seriously misleading

The claim of

"a continuing decrease in the number of children killed or seriously injured"

is not true. Instead there was a continuing increase from 2011 to 2014 followed by a fall in 2015, but the changes are within random variation - see Appendix D (p 23).

## Comment on causation: Lack of transparency

The report should state what the "causations" were, since in almost all types of road collision, lower speeds will reduce the likelihood and severity of casualties.

## Comment on causation: Misleading

This comment is misleading since "inappropriate speed" would not be recorded by police officers as a factor if the real problem is the speed limit is too high they are not given that option on the form they complete (the STATS19 form).

3.6

Table 1 below shows the main causes of the 28 pedestrian KSI collisions during 2015.

Research into the circumstances of these indicates that not all of the pedestrian KSIs are preventable through the range of measures available to the Council.

## Comment on causation: Lack of transparency

The report should say how the "main cause" was judged - the form used by the the police for recording of road casualty information (the STATS19 form) asks only for contributory factors and not for a main cause.

The Council's response to a Freedom of Information Fol request [5] indicates that the Council misrepresented "contributory factors" as "main causes".

## Comment on causation: Lack of transparency

This research should be shared. The wording "not all of the pedestrian KSIs are preventable" suggests that most of them are preventable - the report should say how many, what measures would have prevented them, what the costs would be, and what would be the total cost of similar measures throughout the Wirral. .



#### Table 1

Causation Type	No of Ped
	KSI's
Pedestrian walks or runs out into path of oncoming vehicle	6
Pedestrian under influence of alcohol	6
Vehicle turning into junction whilst pedestrian crossing road	4
Pedestrian standing in carriageway (not crossing)	2
Pedestrian crossing behind & struck by reversing vehicle	2
Pedestrian crosses against 'red man' at pedestrian crossing	1
Pedestrian crosses from behind a parked vehicle	1
Misunderstanding between pedestrian & driver	1
Vehicle loses control & collides with pedestrian on footway	1
Pedestrian slips & falls in carriageway	1
Stolen vehicle making off collides with pedestrian in carriageway	1
Pedestrian alighting/boarding a vehicle	1
Other	1

## Comment on causation: Misleading

Many of these "causes" indicate that the road engineering should be improved - see the Safe System approach in Appendix E (p 26).

3.7 Geographical analysis of Wirral's pedestrian casualties indicates a greater likelihood of occurring in the more urbanised areas where there is a greater interaction between pedestrians and traffic. The analytical work undertaken however shows that 86% of the pedestrian KSIs occurred on the main road network. Only 11% of pedestrian KSI collisions occurred on residential roads more suited to the introduction of lowered speed limits such as 20mph.

## Analysis of KSI casualty locations: Seriously misleading

It is untrue that

"86% of the pedestrian KSIs [24 cases] occurred on the main road network"

In fact only 16 cases occurred on A or B roads, with 5 cases on distributor roads (defined as yellow on a 1:25,000 OS map) and 7 on local roads (white on an OS map).

But classifying roads as either part of "the main road network" or as "residential roads" is simplistic - many of the KSI locations on the A and B roads were actually on residential streets or shopping streets or had community facilities associated with high levels of pedestrian movement. The DfT has recommended in its latest guidance [6] that these are considered for slower speed limits such as 20mph - and other councils have done this. Just 3 KSIs occurred on roads which had no function other than transport, and one of these was a major pedestrian route close to Bebington Station.

The actual locations are listed in Appendix F (p 27) - and they can also be viewed on the independent website: www.crashmap.co.uk.



3.8 Pedestrian KSIs are only one part of the total of those killed or seriously injured on Wirral's roads. Of the 139 KSI's that occurred in 2015, there were 4 child pedestrians and 24 adult pedestrians killed or seriously injured equating to 3% and 17% of the total respectively. Chart 4 below shows the relative proportions of pedestrian KSI's compared to other road user groups.

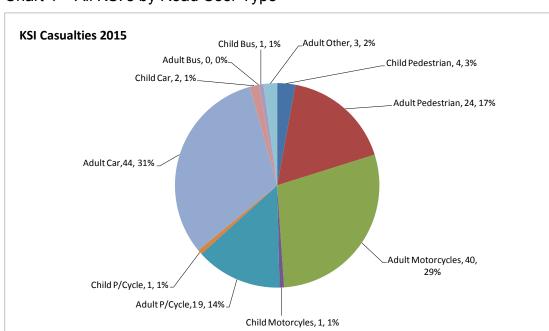


Chart 4 – All KSI's by Road User Type

## Priority of pedestrian casualties: Seriously misleading

The Council's report implies that the importance of pedestrian casualties should be judged by the relative numbers of DfT recorded casualties. But there are several other factors that should be considered (and that the Council should emphasize). These factors (below) make pedestrian safety a particularly high priority.

- Road danger deters a healthy lifestyle of walking and cycling
- There is a responsibility for the safety of children and vulnerable adults
- Children have to travel to and from school every school day
- Walking is much more dangerous per mile than car travel
- A proportion of walking casualties are not recorded in DfT figures
- Injured pedestrians are often the most vulnerable members of society
- Measures benefiting pedestrians also generally benefit other road users.

See Appendix G (p 30) for more details.

Furthermore, because of the small numbers per category, a single year should not be used to assess importance since a single year is never typical. It is better to study numbers from 5 years. This is done in the chart 5, so this 2015 chart is superfluous and misleading.



3.9 Chart 5 shows this comparison of KSI road user group casualty breakdown as the average over the last 5 years.

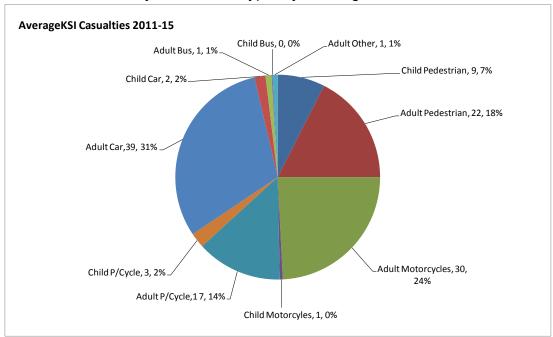


Chart 5 – All KSI's by Road User Type: 5yr Average

## Priority of pedestrian casualties: Seriously misleading

As in Para 3.8, Wirral Council's report implies that the importance of pedestrian casualties should be judged merely by the recorded numbers, which ignores several key factors - see Appendix G (p 30).

With respect to child KSI casualties, 60% of the cases in 2011-15 were child pedestrians and 20% were child cyclists.



#### 4.0 ALTERNATIVE APPROACHES & COMPARISON

- 4.1 Officers have examined a variety of Local Authority approaches to road casualty reduction such as those set out by Bristol, Birmingham and Cheshire West & Chester.
- 4.2 Alongside key partners such as the Police, Fire & Rescue Service, Merseytravel and neighbouring local authorities, Wirral Council has already undertaken similar or alternative initiatives that have been highlighted by these other authorities in their action plans. Wirral's approach to casualty reduction has been, and continues to be, informed and based on the road safety priorities arising from our ongoing analysis of local issues alongside information from partner agencies. **Appendix 3** shows a correlation between the main initiatives undertaken by Bristol City Council compared to work undertaken on Wirral.

## Discussion of alternative approaches: Seriously misleading It is not true that

"Wirral Council has already undertaken similar or alternative initiatives that have been highlighted by these other authorities".

There are several key actions that have been taken by other local authorities but not by Wirral. Examples follow.

Wide area 20mph speed limits These have been adopted by many councils including Bristol Council, Chester West and Cheshire Council, and Southwark Council, but not by Wirral. For example, Southwark Council's website states:

"Southwark is a 20mph borough. Every piece of road that Southwark controls now has a speed limit of 20mph.

"Southwark believes that a borough-wide 20mph speed limit is the most cost effective method to reduce collisions, encourage more sustainable forms of travel such as walking and cycling and help improve air quality." [7]

A Safe System approach This was recommended by the DfT in 2015, and is a crucial change in attitude. It has already been adopted by Bristol Council, for example - see Appendix E (p 26).

In considering these alternative approaches, the Council's report should present a discussion of the pros and cons of each, so that the Scrutiny Committee members could form a view about whether other councils are wrong to implement the new approaches, or Wirral Council is wrong to resist them.

4.3 Comparing these alternative local authority areas to Wirral for all pedestrian KSI's per 100,000 population for the average over 2010 to 2014 (152 English local authorities), Bristol City ranked 97th; Birmingham 143rd with Wirral ranking 99th during this period. Updating this information, using local data to include 2015 & comparing against the other authorities over the 2010-14 period, Wirral appears to have improved slightly ranking 98th. It is not possible to report on the actual performance for 2015 until publication of comparator local authority collision data by the Department of Transport later this year.

Page 31 [Original nur

for comments

Page 31 [Original numbering] - Bottom

4.4 Although it is possible to contrast Wirral's road safety performance against all other English local authorities and use population to act as a denominator, not all local authority areas are alike in economic make up, type of road, mileage driven etc. Rural county areas such as Cheshire West & Chester, whilst having some urban centres are generally much more rural in nature than Wirral. A more reliable comparison for Wirral is against 'Metropolitan' authorities. Based on the 2010 to 2014 data, Wirral ranked 17th of 36 Metropolitan authorities for all pedestrian KSI's and is therefore in the top 50%. For child pedestrian casualties Wirral ranked 25th of the 36 Metropolitan authorities. This includes the unusually high figures in 2014 (see para 3.5 above).

Against all KSI casualties (including other modes of transport) Wirral ranks 28<sup>th</sup> → of the 36 Metropolitan Authority areas and 86<sup>th</sup> of 152 English local authorities.

## Comparison with comparator areas: Lacking ambition

The rankings in the Council's report are that Wirral just reaches the top half of Metropolitan Authorities for pedestrian KSI casualties, and is in the bottom quarter for total (all modes) KSI casualties.

It is thus a long way short of the Council's 2020 Vision [8] of being as good as the best authorities.

An interim ambition could be for the figures to improve to reach the top quarter of authorities. If Wirral's figures over the last 5 years had been good enough to reach the top quarter, this would have meant

- 210\* fewer KSI casualties, including 8 fewer deaths
- 1270\* fewer slight casualties
- £74m\* less costs.

Moving Wirral's figures to the top quarter could mean over the next 5 years savings of these magnitudes, whereas staying in the bottom quarter would mean these additional events.

More information is given in Appendix H (p 31).

Most would consider these savings to be worth striving for, but the Council's report gives no indication of any urgency in seeking measures that might result in such an improvement.

\* These figures are underestimates since not all serious and slight casualties are reported to the police.

#### 5.0 WIRRAL PEDESTRIAN ASSOCIATION REPORT

5.1 The Wirral Pedestrian Association (WPA) report has been written by Mr Ian Campbell with support from a number of individuals from voluntary groups, this is included as **Appendix 1**. The report has its own unique 'rating system' developed by the author and sets out a number of its own conclusions. Upon closer inspection, the report provides a series of evidences and referrals from Draft Vereated by Mr Campbell. other internet site analyses. A number of these other websites have also been for comments

Page 32 [Original numbering] - Top

- The 'audit' uses subjective ratings created by the author of the audit to describe Wirral's performance over a specific series of aspects chosen by the author. There appears to be no broad-spread correlation between this analysis of Wirral's performance and other local authority areas, indeed Wirral is the only audit undertaken by the WPA.
- In addition to subjective gradings, the WPA report also asserts what it considers "best practice". Whilst it is appreciated that this is a view held by the WPA there are no independent national benchmarks indicating what actually constitutes best practice.

### Attitude to best practice: Lacking ambition

Wirral Council's report claims

"there are no independent national benchmarks indicating what actually constitutes best practice"

and refers to best practice suggestions as merely "a view" - but this ignores the large number of reports from authoritative organisations that have recommended a range of interventions as best practice, and the large number of councils that have evaluated and adopted them.

Reports include publications from the DfT, WHO, OECD, and the BMA.

The Council's comments indicates that the Council is not looking at official recommendations and what other councils have considered to be best practice to ensure that everything possible is being done.

5.4 The WPA report refers to a number of standards it has used including the protection of human rights, statutory requirements, equality legislation and Council commitments. The Council conforms to these, however only one of the items raised in the WPA report – the Statutory Duty under the Road Traffic Act 1988, has specific reference to road safety. This duty is summarised in **Appendix 2**. The Council takes such duties seriously and routinely undertakes and prepares programmes of measures designed to promote road safety (see **Appendix 3**); conducts analysis of "accidents" arising from the use of vehicles on its roads and takes appropriate measures to prevent such incidents.



5.5 Criticism of Wirral Councils performance by Ofsted in 2008 related to the comparative poor performance (number) of child KSI casualties (for all road user types) is in part correct. However this performance, which was rated by Ofsted at that time as 'adequate', related to the lack of improvement in previous years – particularly in 2005 when there were 37 child KSIs. Since then there has been an overall reduction to 9 child KSIs (all road user types) in 2015 and an average during the last 5 years of 15. There were 4 child pedestrian KSI casualties in Wirral in 2015.

## Reporting of Ofsted criticism: **Seriously misleading**

The Ofsted report [3] made not just one criticism - it made two. The other was "The council's analysis of its strengths and areas for development in this outcome area underestimate a number of important weaknesses and overvalue the areas where progress has been made."

Wirral Council has ignored this criticism, and has continued in overvaluing progress, as illustrated by many examples in this annotated report.

5.6 Contrary to the WPA report comment that the Council has no ambition and no comprehensive plan to prevent (pedestrian) casualties, the Council met the last national target set by Government in 2010 and despite government not setting another 10 year target for road safety, the Council has its own target within the Transport Plan For Growth of reducing road casualties leading to death or serious injury by 50% of that achieved in average during 5 years at the end of the last 10 year target so as to continue the same level of improvement.

## Existence of a target for road casualty reduction: A fabrication and subsequent evasion

The claim that

5.7

"the Council has its own target within the Transport Plan For Growth" has been found to be a fabrication by a Freedom of Information request [9]. Furthermore, the Council's response to the request was evasive in initially referring to an irrelevant document [9].

Again, contrary to the WPA report which also alleges that the Council has no comprehensive plan to reduce speed limits or improve compliance with speed limits, the Council has continued to target a range of measures to reduce the number of casualties arising from crashes involving inappropriate speed. These include lowered speed limits, traffic calming schemes, vehicle activated warning signs, speed cameras as well as other engineering schemes. Such measures are normally prioritised to locations where analysis indicates a good value rate of return can be expected compared to public cost of the measures introduced.

## Comprehensive planning: Misleading statements

Wirral council's report twice states

"contrary to the WPA report that the Council has no comprehensive plan..."

but the truth is that there is none. If there is a comprehensive plan to prevent pedestrian casualties, where is it published, and why is another one being produced? for comments

5.8 Analysis of the casualty data indicates that comparatively few of Wirrals pedestrian KSIs occur on residential roads. In 2015, 3 of the 28 pedestrian KSI collisions occurred on residential roads more suited to lower speed limits.

## Geographical summary of KSI casualties: Seriously misleading

The claims of Para 5.8 are a repeat of those of Para 3.7, and are shown to be seriously misleading by an analysis of the actual locations, which is presented in Appendix E/5.

5.9 Routine compliance with lower (20mph) speed limits is somewhat variable. Unless roads already have comparatively low existing average traffic speeds, tit is unlikely that drivers will routinely adopt a lower speed. Indeed there are a number of locations where following the introduction of 20mph speed limits, there are continuing problems with compliance and respect from drivers.

## Discussion of options: Showing lack of ambition

This paragraph focuses on problems with compliance when 20mph speed limits are introduced - but it would have been better if it had set out the options for improving compliance that have been used successfully by other councils, including education, community engagement, traffic calming engineering.

This indicates an absence of ambition to make progress, and a failure to comply with the latest DfT Speed Limit Circular of 2013 [6] which states:

"Traffic authorities are asked to keep their speed limits under review with changing circumstances, and to consider the introduction of more 20 mph limits and zones"

In addition to residential streets, the Circular states that traffic authorities can introduce 20mph speed limits or zones on

"Major streets where there are – or could be - significant numbers of journeys on foot..."

#### 5.10 Illegal Parking

- 5.10.1 Wirral Council undertakes a robust programme of parking enforcement, with over 6,000 civil penalty charge notices served for contraventions of existing parking restrictions on the highway annually.
- 5.10.2 WPA have campaigned over a number of years specifically against pavement parking. Members have also raised their significant concerns over the attitude of many of Wirral's drivers when it comes to parking on footways. The Council's response to pavement parking has been covered in previous reports to Scrutiny Committees. Some areas have had additional traffic orders introduced to restrict pavement parking – to comply with national legislation these however require significant additional signage and regular enforcement activity by the authority.

## Progress report: **Missing**

To say this subject has been covered in previous reports is unhelpful - this applies to almost all topics - it would have been better to give the Scrutiny Draft version for comments Committee a progress report on existing initiatives and a presentation of possible options - see discussion under next paragraph.

5.10.3 There are already existing legislations in place to enable the police to undertake enforcement action, however alongside that of the Council, police resources have become somewhat more limited over recent years. Analysis of the road safety information arising from pedestrian KSI collisions indicates that pavement parking is not a significant cause of pedestrian KSIs within Wirral.

## Policy-making (pavement parking): **Neglect of the needs of vulnerable people**

To state that

"pavement parking is not a significant cause of pedestrian KSIs"

indicates a misunderstanding of the needs of vulnerable people who want to feel safe when they travel around the streets - if they do not feel safe, they will avoid using pavements, with loss of independence and social isolation.

The Council's Report appears to confirm that Wirral Council has no plans for new initiatives to tackle pavement parking.

Pavement parking can have a big effect on the lives of people who are blind or partially sighted, or who use a wheelchair or walking aid, and many have asked for help. Their pleas for help are being ignored.



The Council's 2020 Vision [8] makes it a priority that "the vulnerable are safe and protected"

So the report should have presented measures that other councils have taken.

5.11 The Council has no records of pedestrian claims arising or road safety issues arising from the placement of 'A' boards on the footway during the last 10 years. Whilst the obstruction of footways can potentially be a nuisance this can be dealt with using current procedures. The placement of 'A' boards is not seen as a strategic threat to road safety.

## Policy-making ('A' boards): **Neglect of the needs of vulnerable people**

The reports description of 'A' boards as merely "potentially a nuisance" is not how they are seen by people who are blind or partially sighted - Guide Dogs, RNIB and National Federation of the Blind would not be campaigning for their regulation if this were so.

Furthermore, the Pedestrian Safety Audit [4] presented clear evidence that officers ignore Council policy when inspecting 'A' boards. This indicates a culture where officers feel no obligation to follow Council policies that have been constructed to protect vulnerable people.



#### 6.0 DEVELOPING A ROAD SAFETY STRATEGY FOR WIRRAL

- 6.1 Whilst the Wirral Council Plan sets out the development of a Wirral specific strategy for road safety issues, it is important that this strategy supports the emerging Liverpool City Region Road Safety Strategy which is currently also in development.
- The production of Wirral's emerging Road Safety Strategy will necessarily follow and complement that of the Liverpool City Region and will be reported to Cabinet in due course.

## Policy-making (Road Safety Strategy): Lack of urgency

The claim that

"The production of Wirral's emerging Road Safety Strategy will necessarily follow and complement that of the Liverpool City Region"

is inconsistent with the previous commitment [Ref F] to "Develop a new Road Safety Strategy" by the end of March 2016, and with the ability of other councils to launch new initiatives.

It is Wirral Council that has a Statutory Duty for road safety, not the Liverpool City Region.

Unnecessary delays will result in avoidable serious injuries and deaths.

#### 7.0 RELEVANT RISKS

7.1 None arising specifically from this report.

#### 8.0 OTHER OPTIONS CONSIDERED

8.1 None – this report provides an overview of performance only.

#### 9.0 CONSULTATION

9.1 None – this report provides an overview of performance only.

#### 10.0 OUTSTANDING PREVIOUSLY APPROVED ACTIONS

10.1 None.

#### 11.0 IMPLICATIONS FOR VOLUNTARY, COMMUNITY AND FAITH GROUPS

11.1 None

#### 12.0 RESOURCE IMPLICATIONS: FINANCIAL; IT; STAFFING; AND ASSETS

12.1 None arising specifically from this report.



#### 13.0 LEGAL IMPLICATIONS

13.1 Road Safety is a statutory duty for the Council as highway authority.

#### 14.0 EQUALITIES IMPLICATIONS

- 14.1 Has the potential impact of your proposal(s) been reviewed with regard to equality?
  - (b) No because there is no relevance to equality.

#### 15.0 CARBON REDUCTION AND ENVIRONMENTAL IMPLICATIONS

15.1 None specific to this report.

#### 16.0 PLANNING AND COMMUNITY SAFETY IMPLICATIONS

16.1 None specific to this report

#### 17.0 RECOMMENDATION/S

17.1 It is recommended that the Committee:

a. note the information contained within the report and

b. endorse the current holistic approach to casualty reduction and promotion of schemes and initiatives which assist the reduction of all road casualties.

#### 18.0 REASON/S FOR RECOMMENDATION/S

18.1 Consideration of the performance in delivering service outcomes, and improvements which can be made, is an important part of the role of the Committee.

See alternative conclusions and reasons in Appendix C (p 21).

**REPORT AUTHOR:** David Rees

Road Safety Manager (Highways and Transport)

telephone (0151) 606 2111

Email davidrees@wirral.gov.uk

#### **APPENDICES**

- 1. Wirral Pedestrian Association Report
- 2. Statutory Duty for road safety under Road Traffic Act 1988 section 39
- 3. Comparison of road safety activities undertaken by Bristol City and Wirral Councils



#### BACKGROUND PAPERS/REFERENCE MATERIAL

#### **BRIEFING NOTES HISTORY**

Briefing Note	Date
None	

## **SUBJECT HISTORY (last 3 years)**

Council Meeting	Date		
None			



## Appendix A. About this Annotated Report

#### This document

This annotated report is the result of the concerns of many people for several years that Wirral Council is performing poorly with regard to pedestrian safety.

It is a copy of the officers' report for the 13 September 2016 meeting of Wirral Council's Business Scrutiny Committee (main section), with red highlighting of passages that are cause for concern, and with comments added in grey panels as annotations and as appendices.

The document is being circulated initially as a draft document, and comments are invited regarding errors, omissions and judgements within it, after which it will be amended appropriately.

The aim is to produce an evidence-based consensus of all those interested in pedestrian safety on the Wirral.

#### Previous relevant documents

- Nov 2015: An Audit of Wirral Council's performance [4] was written by Ian Campbell (the author of this document) with assistance from members of Wirral Pedestrians Association and other voluntary campaigning groups. It was circulated first as a draft to relevant officers and councillors of Wirral Council, and to others, inviting comments. Written comments were received from 19 individuals, although none were from Wirral Council except for acknowledgements. The responses are published online [10].
- **Jan 2016:** A final version of the Audit [11], taking account of comments received, was circulated. No responses from Wirral Council were received.
- **Mar 2016:** A Notice of Motion mentioning the Audit was discussed in the 14 March Council meeting, and was referred for consideration by a Scrutiny Committee.
- **Jul 2016:** The Business Overview and Scrutiny Committee considered pedestrian safety and requested a report from officers at the next meeting.
- **Sep 2016:** The Business Overview and Scrutiny Committee considered the officers' report on pedestrian safety on 13 September. That report [12] is the subject of this annotated report.



## Appendix B. About the Author

This annotated report was written by Ian Campbell BA BSc MD FRCS FRCR, a resident of West Kirby, Wirral, Merseyside.

## Relevant qualifications and experience

- 15 years working as a hospital doctor, specialising in general surgery (qualified as FRCS) and oncology (qualified as FRCR)
- BSc degree in mathematics and statistics (Open University 1994)
- doctorate (MD) on Statistical Analysis of End-Points in Cancer Clinical Trials (1994)
- 15 years experience working as a statistical consultant, assisting about 60 clients with about 200 projects, many of which were published in peer-reviewed journals or reports - listed at www.iancampbell.co.uk
- member of several voluntary/community groups including Wirral Pedestrians Association, Merseyside Cycling Campaign, Transition Town West Kirby, and 20sPlentyForUs.
- an interest in road casualty statistics since 2009 (see below).

## Relevant road casualty projects

- Setting up the <a href="http://www.travelindependent.org.uk">http://www.travelindependent.org.uk</a> website to publish DfT road casualty data as charts and tables for each police area and each highway authority in order to make road casualty information more readily accessible to campaigners and planners
- Setting up the <a href="http://www.pedestriansafety.org.uk">http://www.pedestriansafety.org.uk</a> website, which includes comparisons of the different police areas and highway authority areas of Great Britain, and discusses best practice.
- Work to improve the statistical analysis of road casualty data including analysis by statistical testing and confidence intervals. This includes (1) an article giving a re-analysis of Portsmouth's 20mph data [13] to show the benefits of considering random variation when studying road casualty data, and (2) a online calculator that draws charts for road casualty data with confidence intervals, and calculates statistical significance [14].

#### Further details

See www.iancampbell.co.uk.



## Appendix C. Replacement Conclusions

It is clear from the evidence presented in this annotated document that Wirral Council's recommendations are not appropriate. Instead, the following conclusions are put forward:

- the current approach should not be endorsed
- the responsible Cabinet Member (Cllr Stuart Whittingham) should be replaced
- the Council Leader (Cllr Phil Davies) should ensure that a culture of transparency is introduced into Wirral Council's decision making

#### Reasons for conclusions

## 1. Replacement of Cabinet Member Cllr Stuart Whittingham

- Road safety is a topic of major importance in the Borough
- Measures to prevent road casualties should be carried out according to professional standards equivalent to those that are expected and normally delivered when road casualties are treated in the NHS
- Cabinet Members have a responsibility for supervising their portfolio, and for ensuring that genuine significant concerns are properly addressed
- Regarding road safety, the evidence in this annotated report shows extensive
  malpractice, with false or misleading statements, unjustifiable claims, flawed
  reasoning, major omissions and lack of attention to detail. This indicates that the
  responsible Cabinet Member has not performed his supervisory role adequately,
  and so has not met the legitimate expectations of his colleagues in the Council
  Administration and his party, and of the people of Wirral who he should be serving.

The unavoidable conclusion is that the responsible Cabinet Member, Cllr Stuart Whittingham, should be replaced.

This conclusion is drawn not with the intention of being confrontational or vindictive, but because there is clear evidence that standards have fallen to a level that in the health service would result in health professionals being struck off their professional registers.

It is likely that the malpractice has caused considerable harm to Wirral citizens, probably not all of the 210 excess serious road injuries and deaths that occurred over that last 5 years (see Appendix H), but a proportion of them. Consequently people have a civic duty to speak up and insist that changes are made, even if that task is not a pleasant one.



## 2. Change in Wirral Council culture by Cllr Phil Davies

The Council Leader, Cllr Phil Davies, has a responsibility to ensure that decision-making is carried out in a competent way in Wirral Council.

The numerous deficiencies in the Council report show that this is not happening.

A consistent theme is that evidence is not being presented in an open and honest way.

The Council's report should have enabled councillors sitting on the Scrutiny Committee to see what is being done, and check that no effective measures have been overlooked, but facts were obscured or misreported such that proper scrutiny could not occur. The Council culture in road safety is not one of honesty, openness, transparency and shared decision-making, but of decisions being made behind closed doors with the reasoning concealed, so that it cannot be challenged.

The Council's culture is reminiscent of the quotation from Shakespeare [15]:

"The fool doth think he is wise, but the wise man knows himself to be a fool."

meaning that wise men accept that they are fallible and endeavour to be open to correction.

A failure to act on pedestrian safety will result in further delay in making progress in reducing road casualties, more avoidable deaths and serious injuries, more obesity, diabetes and other chronic ill-health from inactivity, and more social isolation.

A failure to act may also lead to the possibilities of charges being brought of corporate manslaughter or of misconduct in public office, and to the possibilities of claims for compensation from road traffic casualties or from the relatives of those killed.



## Appendix D. Scrutiny of Pedestrian Casualty Claims

## Summary

Wirral Council's report contains four confident claims in paragraphs 3.2, 3.3 and 3.5 that Wirral pedestrian casualty figures are improving.

These claims are assessed in this appendix by reference to charts showing the actual figures. The conclusions are that none of the Council's claims can be justified by the actual numbers.

In each case, the year-to-year random variation means that the underlying risk may be increasing and it may be decreasing, but it is seriously misleading to make a firm statement that the figures are improving.

It is vital that an assessment of progress on road safety is as accurate as possible since a report that overvalues the Council's actions is likely to cause delays in the adoption of effective interventions.

#### Methods

The DfT road casualty database (STATS19 data) was downloaded from the DfT website [16], and road casualties occurring in the Wirral were identified. Charts were drawn by the author.

As the Council's report points out, road casualty numbers on a single year are susceptible to random fluctuations.

The random fluctuations are proportionately less if longer periods of time are studied, and Road Safety GB recommends taking 3-year averages [or totals] "as a more robust statistical approach; especially when drilling down to smaller numbers associated with individual road user groups" [17].

A second approach is to use 95% confidence intervals to show the likely size of year-to-year random variation - these have been in standard use in reporting medical research for many years, and are increasingly being used in road casualty data. PTRC (part of the Chartered Institute of Logistics and Transport) is now running courses on Statistical Techniques for Transport Planners [18] including the use of confidence intervals.

Both techniques of three-year totals and confidence intervals were used in this analysis. The claims are considered in turn.

## Comparison of this analysis with Wirral Council's

The charts in this analysis show the same numbers as the Council's charts 1, 2 and 3, and it is inexplicable why the text of the Council's report claims reductions in pedestrian casualty numbers over the last 5 years when the charts themselves do not show this.

Readers are invited to look at the charts and form their own opinion.

The qualifications and experience of the author that allow him to comment on Wirral Council's analysis are given in Appendix B (p 20)

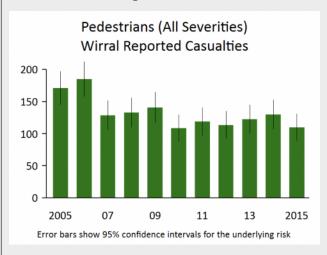


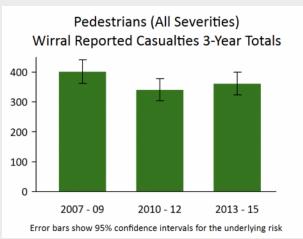
## Claim 1 - All ages, All severities

Wirral Council's claim (Para 3.2) was that

"the reduction in all pedestrian casualties has slowed down" implying that over the last 5 years, there has still been a reduction.

#### Charts showing the actual numbers are





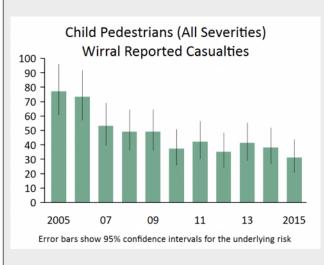
**The correct interpretation** is that over the last 5 years, there has been no clear increase or decrease with all changes being within random variation.

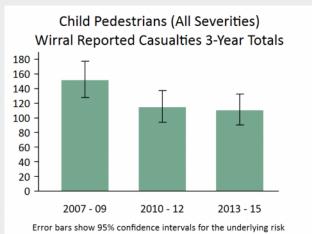
## Claim 2 - Children, All severities

Wirral Council's claim (Para 3.2) was that

"all severities of child pedestrian casualties continue to improve"

#### Charts showing the actual numbers are





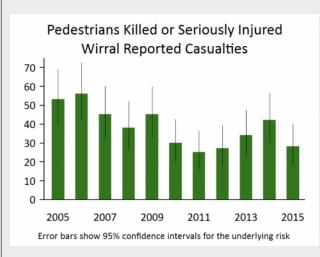
**The correct interpretation** is that over the last 5 years, there has been no clear increase or decrease with all changes being within random variation.

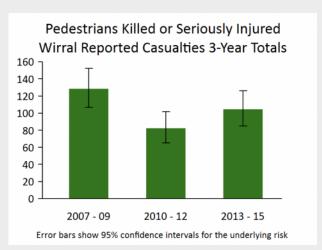


## Claim 3 - All ages, KSI casualties

**Wirral Council's claim** (Para 3.3) of reduction was implied by "As the number of KSI casualties continues to reduce".

#### Charts showing the actual numbers are





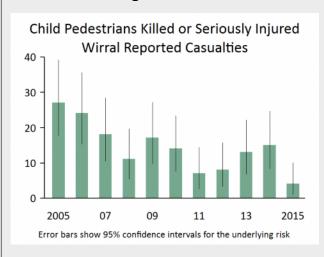
**The correct interpretation** is again that over the last 5 years, there has been no clear increase or decrease with all changes being within random variation.

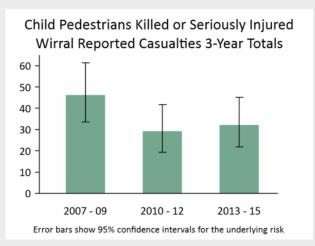
## Claim 4 - Children, KSI casualties

Wirral Council's claim (Para 3.5) was of

"an overall continuing decrease in the number of children killed or seriously injured"

#### Charts showing the actual numbers are





**The correct interpretation** is again that over the last 5 years, there has been no clear increase or decrease with all changes being within random variation.

#### Conclusion

None of the claims of Wirral Council can be justified from the actual numbers.

Furthermore, the total (all modes) KSI casualties is not decreasing - see Appendix H.

## Appendix E. A Safe System Approach to Road Safety

The **traditional approach** to road safety is to accept that roads are dangerous places, but to assume that they can be made acceptably safe by setting rules, training users, and expecting users to follow the rules; if casualties occur, the assumptions is that one or more of the road users was to blame for not following the set rules.

In the **Safe System approach** to road safety, it is accepted that people have lapses of concentration and make errors of judgement ("make mistakes"), and so inevitably will not always act as hoped. Roads are designed so that when users have not acted as expected, this does not result in deaths or serious injuries. If casualties occur, unless road users have been deliberately reckless, attention is given to what changes to the roads could have prevented the serious injury or death. This is internationally regarded as best practice: it is recommended by the World Health Organisation and the OECD, and it is the basis of the Swedish Vision Zero and Dutch Sustainable Safety road safety plans.

	Traditional System	Safe System		
Basics	Roads are inevitably dangerous places	Roads should be safe for all roa		
	To be safe, road users must learn the rules and keep to them	Lapses of concentration and errors of judgement are normal		
	Road users who fail to follow the rules are responsible for the deaths and injuries that result	human behaviour and road design must allow for them so that they do not result in death serious injury		
Recommended by		Department for Transport [19]		
~ ,		World Health Organisation OECD		
	<b>-</b>			
Adopted by	Traditional UK system until 2015	Sweden, the Netherlands UK (DfT) since 2015 [19]		
		Transport for London [20]		
		Bristol Council [21]		
Consequences	High road casualties	Lower road casualties		
	Intimidation of vulnerable road users	Streets accessible for all		
	Walking and cycling deterred	More walking and cycling Healthier populations		
	Inactivity, obesity, heart disease	Greater social mobility		
	Social isolation	Easier access to employment		
aft version comments	Higher total cost	Lower total cost		

# Appendix F. Residential Streets or Main Roads? Location of Wirral Pedestrian KSI Casualties in 2015

## Summary

Wirral Council's report claimed that most of the 28 pedestrian KSI casualties in 2015 occurred on the main road network, with only three occurring on residential roads.

Analysis of the actual locations showed this to be false. In fact, 8 of the locations were residential roads, 3 were shopping areas, 14 had a mixture of functions (residential, shops, community and offices), and just 3 locations had no function other than transport. One of these 3 was a major pedestrian route, close to a railway station.

The Council's statements are therefore seriously misleading.

#### Wirral Council's claims

Wirral Council's report contains two similar claims.

Para 3.7 states that

"The analytical work undertaken however shows that 86% of the pedestrian KSIs occurred on the main road network. Only 11% of pedestrian KSI collisions occurred on residential roads more suited to the introduction of lowered speed limits such as 20mph."

And Para 5.8 states that

"Analysis of the casualty data indicates that comparatively few of Wirral's pedestrian KSIs occur on residential roads. In 2015, 3 of the 28 pedestrian KSI collisions occurred on residential roads more suited to lower speed limits."

## Analysis by the author

The 2015 DfT database of road casualties was downloaded from the DfT website [16] and the 28 cases of Wirral pedestrian KSI casualties were identified.

The grid references were entered into the website <a href="http://www.gridreferencefinder.com">http://www.gridreferencefinder.com</a>, to give a location (to the nearest metre) on a satellite image. Locations were checked against those shown on the independent website <a href="http://crashmap.co.uk">http://crashmap.co.uk</a>.

According to the Government's Manual for Streets [22], streets can have a place function, a transport function or both function.

On this basis, the locations of the 28 pedestrian KSIs were judged separately for place function (according to the categories of residential, shopping, community, offices, or combinations of these) and for transport function.

The type of road was judged from the satellite image, supplemented in doubtful cases by Google Streetview photographs. Roads that were not A or B roads were categorised as "Distributor" or "Local" depending on the colour on an OS 1:25,000 map (yellow or white).

Readers can judge the type of location for themselves by following the link: <a href="http://bit.ly/2gWW8gu">http://bit.ly/2gWW8gu</a> to a map showing the 28 locations, or alternatively by submitting individual grid references at the website <a href="http://www.gridreferencefinder.com">http://www.gridreferencefinder.com</a>.

The submitting individual grid references at the website <a href="http://www.gridreferencefinder.com">http://www.gridreferencefinder.com</a>.

## Locations and types of street of 2015 pedestrian KSI casualties

	Ago		Place function				Transport function	
	Age	Grid reference	Residential	Shops	Community or offices	None	By foot	Motor vehicles
1	0 - 5 yrs	SJ 36401 80363	Y		Y		Y	Distributor
2	11 - 15 yrs	SJ 32512 87117	Y		Y		Y	B5149
3	11 - 15 yrs	SJ 30471 91387	Y				Y	A5027
4	11 - 15 yrs	SJ 30307 91613	Y				Y	Distributor
5	16 - 20 yrs	SJ 32573 88025		Y			Y	B5149
6	16 - 20 yrs	SJ 30983 93356	Y	Y			Y	A554
7	26 - 35 yrs	SJ 32002 88856		Y	Y		Y	A553
8	26 - 35 yrs	SJ 32259 88731		Y	Y		Y	A553
9	26 - 35 yrs	SJ 30358 87944	Y				Y	Local
10	26 - 35 yrs	SJ 30037 91050				Υ		A5139
11	26 - 35 yrs	SJ 31811 85454	Y	Y	Y		Y	Distributor
12	36 - 45 yrs	SJ 29740 89968	Y		Y		Y	A553
13	36 - 45 yrs	SJ 35095 80666	Y				Y	Local
14	36 - 45 yrs	SJ 32551 86966		Y			Y	B5149
15	46 - 55 yrs	SJ 28815 80532				Υ		A540
16	56 - 65 yrs	SJ 33266 83178		Y	Y		Y	B5137
17	66 - 75 yrs	SJ 30412 91869	Y		Y		Y	Local
18	66 - 75 yrs	SJ 31696 88682		Y	Y		Y	Distributor
19	66 - 75 yrs	SJ 21664 88889		Y			Y	Local
20	66 - 75 yrs	SJ 28529 89514	Y				Y	Local
21	Over 75 yrs	SJ 31959 84526	Y				Y	Distributor
22	Over 75 yrs	SJ 30792 91843		Y	Y		Y	A551
23	Over 75 yrs	SJ 27970 84739	Y				Y	A551
24	Over 75 yrs	SJ 32503 88779			Y		Y	A552
25	Over 75 yrs	SJ 33388 84953				Υ	Y	B5136
26	Over 75 yrs	SJ 34959 81982		Υ	Y		Y	Local
27	Over 75 yrs	SJ 34641 83289	Y				Y	A41
28	Over 75 yrs	SJ 32154 88766			Y		Y	Bus station entrance

### Conclusions

The summary table shows the Council's statement that "few of Wirral's pedestrian KSIs occur on residential roads" to be misleading - a majority occurred on streets that are purely residential, or that have combined residential, shopping, community or office functions.

The Council gave the locations as if roads can be classified only as either residential or as part of the main road network. This ignores the dual function that many roads have as places and for transport.

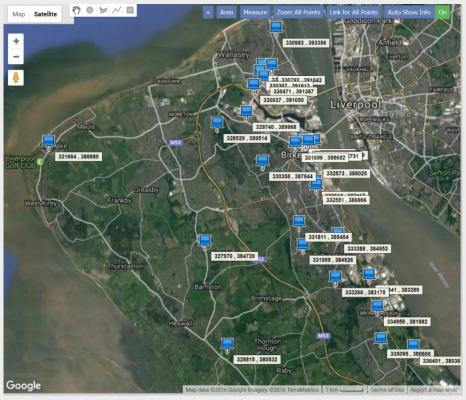
Wirral Council's role is to consider both functions of place and transport and endeavour to obtain the best balance between these. By withholding from its report an accurate summary of the locations of the KSI casualties, there was no possibility of the Committee scrutinising the decisions that the Council has made.

## Location of pedestrian KSI casualties in 2015

Location	Number		
Residential street	8		
Shops	3		
Mixed residential / retail / community / offices	14		
Transport function only	3		
Total	28		

Other conclusions that can be drawn are

- (1) that a majority of the pedestrian KSI casualties are either under 16 or over 65 (from the table)
- (2) (from the map, below) that most of the locations were in the more deprived areas of the Borough, in line with other analyses [23].





# Appendix G. Why Pedestrian Safety Should be a Priority

How should the importance of pedestrian safety be assessed? Wirral Council's report (Paras 3.8 and 3.9) gives the breakdown of the reported KSI casualties by user group as if the relative numbers of casualties is the only factor. But this ignores other factors that are crucial in determining priorities, including the following.

### Deterrence of a healthy lifestyle in children and adults

Roads are safe for children and adults to walk or cycle except where vehicles are permitted to be driven at speeds that might seriously injure or kill them. This currently applies to most of Wirral's roads. The result is that healthy active travel (walking and cycling) is deterred, contributing to the obesity epidemic and other ill-health, and to social isolation.

The adverse health effects from deterrence of walking and cycling in fact far outweigh the direct effects of road danger of deaths and injuries sustained in collisions.

#### Moral responsibility for the care of children and adults

Motor vehicles enhance the mobility of drivers and passengers, facilitating access to employment, shopping and leisure opportunities. This increased mobility of the motor vehicle occupants comes at the price of risk of injury or death to them if their vehicle is involved in a collision. But the increased mobility of motor vehicle occupants also comes at the price of deaths and serious injuries to pedestrians (and cyclists) - so pedestrians (and cyclists) are paying for car occupants' mobility. This means that society (and local councils in particular) have a moral responsibility to protect children and adults from motor vehicle danger.

Councils have a duty to protect children from motor vehicles just as much as they have a duty to protect them from parental abuse and from child sexual abuse.

## Obligatory travel for children to school

On schooldays, all children must by law travel from home to school and home again (unless home-schooled). For households without cars, this can be a major challenge.

## High casualty rates per mile

Walking is about 15 times more dangerous per mile than travelling by car [24].

## Some types of walking casualties are not recorded

The DfT road casualty statistics include casualties only where vehicles are involved, and only if reported to the police. So falls on uneven or ungritted footways do not appear in DfT figures, whereas car occupants injured on icy carriageways do.

## Injured pedestrians are often the most vulnerable members of society

They should be given priority according to Wirral Council's 2020 Vision [8].

## Measures benefiting pedestrians generally benefit other road users

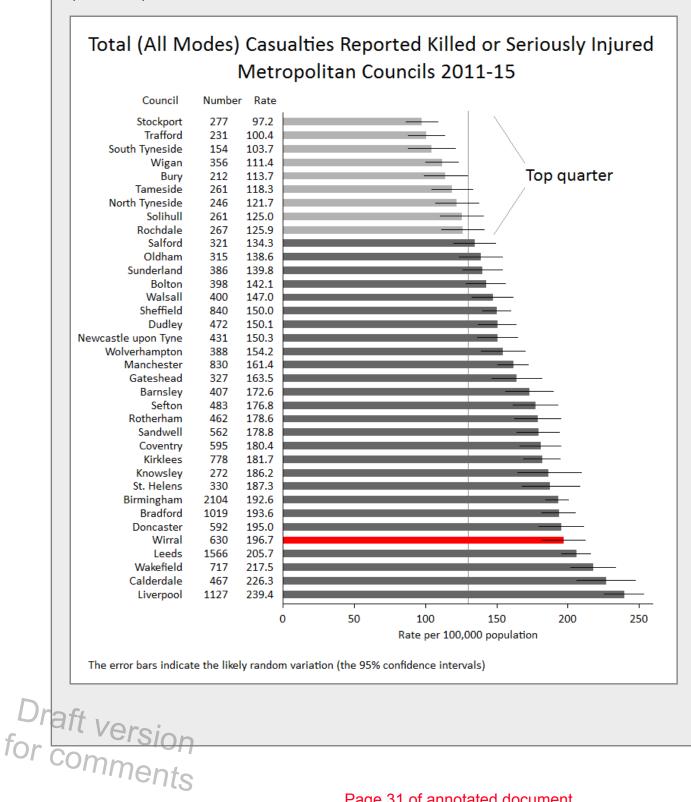
For example, lower vehicle speeds reduce danger for all road user groups.



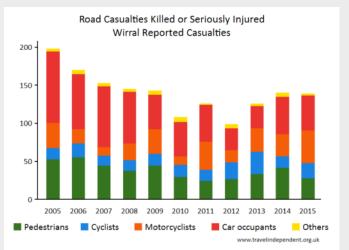
## Appendix H. Comparison of Wirral with other **Metropolitan Authorities**

Wirral Council's report states (Para 4.5) "including other modes of transport, Wirral ranks 28th of the 36 Metropolitan Authority areas" in the 5-year period of 2010 - 2014, and so was in the bottom quarter of these authorities.

Checking of these figures by the author and updating them via the DfT database has found that Wirral was 32<sup>nd</sup> of the 36 authorities in the latest 5-year period of 2011 - 2015 (see chart).







This position is not new - in 2008, the Wirral Globe reported that Wirral had the worst record of deaths and serious injury due to road traffic collisions of any metropolitan area in the country (see above left), but it is disappointing that there has been little improvement since 2008 (see chart above right).

## Consequences of high KSI figures

The Wirral rate of reported KSI casualties is 50% higher than any of those in the top quarter, and so is a long way short of the the Council's 2020 Vision [8] of being as good as the best local authority,

An interim ambition could be for the figures to improve to reach the top quarter of Metropolitan Authorities. If Wirral's KSI figures over the last 5 years had been good enough to reach the top quarter, this would meant 420 KSI casualties rather than 630, i.e. a saving of 210 KSIs. If deaths and slight injuries were similarly reduced by one third, the savings would comprise

- 210 fewer KSI casualties including 8 fewer deaths
- 1270 fewer slight injuries
- £74m lower costs (calculated from DfT estimates [25])

These are substantial savings. but in the absence of major initiatives to reduce road casualties, these excess casualties and costs will be repeated over the coming 5 years.

## Reasons for Wirral's high KSI figures

Wirral's KSI casualty figures have been persistently poor relative to other Metropolitan Authorities for years. But it would be wrong to assume that Wirral Council is entirely responsible for this as other factors may have a role.

**Regional factors:** All of Merseyside's five boroughs are in the bottom half of the ranking (previous page), so regional factors (e.g. the policies of Merseyside police) may be important.

Local factors: No two authorities are exactly alike, and Wirral is not a typical Metropolitan Authority.

But the malpractice identified in this annotated report suggests that a significant proportion of the excess Wirral road deaths and injuries are attributable to Wirral Council's policies and culture. for comments

## References

- [1] DfT (2016) Factors affecting reported road casualties https://www.gov.uk/government/uploads/system/uploads/attachment\_data/file/55 6406/rrcgb2015-02.pdf
- [2] The Wirral Partnership (2015) *Wirral Transport Strategy*https://www.wirral.gov.uk/sites/default/files/all/About%20the%20council/Wirral%2
  0Plan/Transport%20Strategy.pdf
- [3] Ofsted (2008) Annual performance assessment of services for children and young people in Wirral Metropolitan Borough Council 2008
  www.pedestriansafety.org.uk/files/569789road\_safety\_strategy\_web.pdf
- [4] Ian Campbell (November 2015) Audit of Wirral Council's Pedestrian Safety Performance Nov 2015 Draft http://www.pedestriansafety.org.uk/wirral council audit nov 2015 draft.html
- [5] Freedom of Information request (2016) https://www.whatdotheyknow.com/request/evidence\_that\_alcohol\_was\_the\_ma
- [6] Department for Transport *Circular 01/2013: Setting Local Speed Limits* https://www.gov.uk/government/uploads/system/uploads/attachment\_data/file/63 975/circular-01-2013.pdf
- [7] Southwark Council website (viewed 8.12.16)
  http://www.2.southwark.gov.uk/info/100011/transport\_and\_streets/3431/borough
  \_wide\_20mph\_speed\_limit
- [8] Wirral Council (2015) Wirral Council Plan: A 2020 Vision http://www.wirral.gov.uk/sites/default/files/all/About%20the%20council/Wirral%20 Council%20Plan%20-%20a%202020%20Vision.pdf
- [9] Freedom of Information request (2016) https://www.whatdotheyknow.com/request/documentation\_of\_road\_casualty\_t
- [10] Ian Campbell (2015/2016) Responses to Audit of Wirral Council http://www.pedestriansafety.org.uk/wirral\_council\_audit\_responses.html
- [11] Ian Campbell (2016) *Audit of Wirral Council's Pedestrian Safety Performance* www.pedestriansafety.org.uk/wirral\_council\_audit\_nov\_2015\_updated.html
- [12] Agenda, reports and draft minutes, Wirral Council Business Overview and Scrutiny Committee, 13 September 2016 <a href="http://democracy.wirral.gov.uk/ieListDocuments.aspx?MId=5747">http://democracy.wirral.gov.uk/ieListDocuments.aspx?MId=5747</a>
- [13] Ian Campbell (2011) Analysis of Portsmouth 20mph Road Casualty Data with Allowance for Random Variation www.iancampbell.co.uk/files/Portsmouth\_20mph\_statistical\_analysis.pdf
- [14] http://www.travelindependent.org.uk/calculator.html
- [15] William Shakespeare As You Like It
- [16] DfT Road Safety Data https://data.gov.uk/dataset/road-accidents-safety-data/
- [17] James Gibson (Director of Communications, Road Safety GB) (2015) http://www.roadsafetygb.org.uk/news/4596.html

- [18] http://www.ptrc-training.co.uk/Training/BookaCourse.aspx (viewed 7.12.16)
- [19] DfT (2015) *British Road Safety Statement*https://www.gov.uk/government/uploads/system/uploads/attachment\_data/file/48
  7949/british\_road\_safety\_statement\_web.pdf
- [20] Transport for London (2016) *Overview of TfL's Road Safety Programme* http://content.tfl.gov.uk/sshr-20161117-item11-overview-of-tfl-road-safety.pdf
- [21] Bristol City Council (2015) A Safe System Approach to Road Safety in Bristol: A Ten Year Plan 2015-2024 http://www.bristol.gov.uk/page/transport-andstreets/road-safety
- [22] DfT (2007) *Manual for Streets*https://www.gov.uk/government/uploads/system/uploads/attachment\_data/file/34
  1513/pdfmanforstreets.pdf
- [23] Adrian Davis (2016) Essential Evidence on a Page No 153: *Child pedestrian casualties and deprivation* https://travelwest.info/essentialevidence
- [24] DfT Passenger casualty rates for different modes of travel https://www.gov.uk/government/statistical-data-sets/ras53-modal-comparisons
- [25] DfT https://www.gov.uk/government/statistical-data-sets/ras60-average-value-of-preventing-road-accidents

