

Pre-Submission Draft of the County Durham Plan Consultation response by DBUG



This document is submitted on behalf of Durham University's DBUG (Durham Bicycle Users Group). This is the bicycle users group for University staff and students who work or study in Durham City. The group has 275 members, and the document has been shared online with those members. The document received active review, comment and endorsement by 12 members, including those listed below.

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Involvement in process

We do wish to participate in the Examination in Public

We do wish to be informed of:

- Submission of the Local Plan to the Secretary of State
- The publication of the recommendations of the Inspector appointed
- The adoption of the County Durham Plan.

Format of response

We wish to register objections to several policies of the County Durham Plan. These have been collated in one document to make it easier to consult the membership and because the reasoning behind the objections to different policies has a lot in common. The following table deals with questions 1 to 3 of the response form:

	Policy 8	Policy 9	Policy 10	Policy 48	Policy 50
	Durham Strategic Housing Sites	Western Relief Road	Northern Relief Road	Delivering Sustainable Transport	Allocating and Safeguarding Transport Routes and Facilities
Q1. Do you consider that this policy/proposal of the Pre-Submission Draft Local Plan is to be Legally and Procedurally Compliant and Sound?					
a) Legally and Procedurally Compliant	Yes	No	No	No	No
b) Sound	No	No	No	No	No
Q3. Why do you consider that this policy/proposal is not legally and procedurally compliant or sound? <i>Note that the options given in the form and shown as a–d below only relate to the tests for soundness.</i>					
a) positively prepared		No	No		
b) justified	No	No	No	No	No
c) effective					
d) consistent with national policy		No	No		

1. Reasons for objections and changes proposed

We here briefly answer Q4 and Q5 of the response form for each of the policies listed above. The main bulk of the reasoning and evidence, most of which applies across all the policies, is set out in the remaining sections of this response document.

Q4: Why we consider the policies not to be legally or procedurally compliant or sound

Policy 8: Durham Strategic Housing Sites

We represent that the policy is not sound on the grounds that it is not justified. That is, it is not the

most appropriate strategy when considered against the reasonable alternatives.

Policy 32, on Houses in Multiple Occupancy and Student Accommodation sets out restrictions on new-build HMO and conversion of existing properties to HMO in order to maintain the balance of housing use in an area, but that is all. There is no policy on provision of more dedicated student housing (e.g. colleges, halls of residence or private-sector student flats). The accompanying paragraphs talk about the problems of high concentration of student HMOs in certain parts of the city and their spread into outlying areas. But apart from 1000 places approved as part of the Mount Oswald development there is no indication where additional student accommodation would be provided. Paragraph 7.43 concludes the notes on this policy:

More detail of how this policy will be applied will be set out in a future Houses in Multiple Occupation and Student Accommodation SPD.

Given that student accommodation is the most pressing issue in the city centre, it is inexplicable that the question of accommodating students has not been given a proper place in the Plan. Figures from the *Durham University Residential Accommodation Strategy 2012–2020* show that in 2012 there were about 7800 students not living in university accommodation in Durham. Even at five students per house this could represent 1560 houses being occupied by students. The University is aiming to accommodate 50%–70% of students in University-owned accommodation in the form of colleges. Some of this would be achievable on University land, but no indications of the possibilities are included in the Plan. By 2020, with the projected increases in students at Durham, an additional 1950–5000 places will be required to meet the target proportions. If only 50% of students are accommodated in University-owned accommodation, this would still leave 7650 students living elsewhere in the city.

While the University target is primarily concerned with establishing and reinforcing the college communities which are a distinctive feature of Durham University, there is no reason why purpose-built student flats could not be provided by the private sector in order to further reduce student demand for ordinary housing. Indeed, a few such developments have recently received planning permission.

Policy 8 envisages relatively low-density green-field developments on the outskirts of the city, mostly in land which is currently green belt. A reasonable alternative would be to scale down the green belt developments and devote a higher proportion of the Mount Oswald site (close to the University) to student accommodation, along with brown-field sites near the city centre.

The advantage of this alternative is that the new build student accommodation would be much higher density, consuming less green belt land to accommodate the extra population, and would free up potentially large quantities of housing close to the city centre for families and working people. Whatever Policy 8 may promise in terms of the new developments being sustainable and well-connected to the city by non-car modes, releasing existing housing in the city centre from student use is certain to be very much more sustainable.

Other issues and comments on this policy are in Section [8. Are the proposed housing developments sustainable?](#) In summary, we are concerned about:

- the apparent need to provide for Sniperley Park residents driving to the Park and Ride
- the size and location of the retail land North of Arnison
- the lack of amenities for housing developments south of Neville's Cross.

Policy 9: Western Relief Road

Procedurally, while the land-use aspects of the plan have been subjected to sustainability assessment, the Council's justification for the relief road and mitigation measures depend on the policies in the subsidiary document, the *Durham City Integrated Transport Approach*. This was not available when the pre-submission version of the plan was assessed for sustainability. Quoting

from section 9.16 of the Pre-Submission Draft Local Plan: Final Sustainability Appraisal Report under 'Environmental effects':

Please note that as the Durham City Integrated Transport Approach is not available to inform the assessment it was not possible to comment upon whether sustainable modes of transport will be effectively integrated alongside the relief roads and to what extent they will encourage modal shift.

Thus we represent that the public consultation phase does not conform to procedural requirements because the public do not have a full sustainability assessment of the plan available for comment.

On the question of whether the policy is sound, we represent that it is neither positively prepared, nor justified.

We represent that it is not positively prepared because the development and infrastructure requirements have not been assessed objectively. The reasons for believing this are expanded on in detail in the rest of this document but they can be summarised by the following line of argument:

- The need for the road is supported by traffic modelling which suffers from several flaws in methodology.
- The national traffic growth assumptions used in the modelling are untested and widely disputed.
- The robustness of the conclusions drawn from the modelling should have been tested against a lower traffic growth scenario and a scenario assuming the achievement of a higher modal shift.
- The Durham City Integrated Transport Approach document was prepared too late for the ideas to properly inform the traffic modelling.

In our opinion the policy is not justified because this element of the County Durham Plan is not the most appropriate strategy when considered against the reasonable alternatives. These alternatives are also set out in the remainder of the document but can be summarised as follows:

- The Durham City Integrated Transport Approach document lacks ambition for significant modal shift to sustainable transport, which is in our opinion achievable.
- Such modal shift could do away with the need for the relief road.
- Given the uncertainty of longer term trends in traffic, the plan should prioritise the delivery of high-quality cycling infrastructure and other sustainable transport improvements as the first step, and postpone the building of any relief road until after the success of these policies and the economic and transport trends have become clearer.

Policy 10: Northern Relief Road

We have the same procedural objections to this policy as for Policy 9, Western Relief Road.

The same objections on the grounds of the policy not being sound also apply.

Policy 48: Delivering Sustainable Transport

We represent that this policy is not ambitious enough in its targets and so fails the test of being justified because a substantial strengthening of the policy would be a reasonable alternative.

Policy 50: Allocating and Safeguarding Transport Routes and Facilities

We represent that this policy is not ambitious enough in its targets and so fails the test of being justified because a substantial strengthening of the policy would be a reasonable alternative.

Q5: What changes we consider necessary to make the policies legally and procedurally compliant and sound

Policy 8: Durham Strategic Housing Sites

Aspects of the proposals should be revisited, namely:

- provision of more dedicated student accommodation in the city to free up city-centre housing, which would be a more sustainable alternative to extending the boundaries of the city;
- the density of the housing proposed;
- design speed for roads within the developments (we suggest 20mph);
- the amount of parking provided per dwelling and the distance from dwellings;
- the advisability of large car parking provision in the retail allocation north of Arnison;
- whether sufficient amenities will be available to make the communities self-sufficient and reduce the need for travel.

Increasing the density of the housing could obviate the need for so much land to be deleted from the green belt, and might require the traffic modelling and assessment of the relief roads to be re-evaluated.

The phasing of the work should ensure that local amenities are available at the outset so that people moving into the housing do not need to buy a vehicle or extra vehicles pending their provision. This sort of technique is common practice in the Netherlands, where ‘complete’ developments, rather than suburban developments, are normal.

Strong targets for sustainable travel (e.g. 50% of journeys) should be built into the policies, so that as the developments are built out a review of the success of the travel plans can feed back into modifying the policies and design of the rest of the site to address any failure to achieve the target share.

Some further observations on the housing sites and best practice policy in this area can be found in [Section 8. Are the proposed housing developments sustainable?](#)

Policy 9: Western Relief Road

We believe that more ambitious plans for cycling and other sustainable transport provision should be developed, and the need for the roads reassessed on the assumption that a much higher modal share can be achieved (e.g. 10% for cycling) and car journeys reduced.

The plan should truly follow the NPPF in prioritising and maximising sustainable transport. The road policy needs to be reconsidered and deferred until sustainable travel improvements have had time to take effect.

Policy 10: Northern Relief Road

Our requests for changes are as for Policy 9, Western Relief Road.

Policy 48: Delivering Sustainable Transport

The only target of this policy is 100% compliance with the council’s policy on car parking spaces. This policy needs strengthening with measurable targets for sustainable transport modes.

We would request prioritisation of cycling and other sustainable transport modes, bringing forward investment to deliver major infrastructure improvements in the first four years of the plan. This requires stronger targets, top quality design and real buy-in from all council departments.

The improvements should be planned to a budget of £10 per person per year investment in cycling.

This figure was recommended by the Get Britain Cycling report this summer, and has been backed with short-term funding for specific cities by the government.

Policy 50: Allocating and Safeguarding Transport Routes and Facilities

This policy could, and should, be strengthened considerably by setting staged targets for the completion of the cycle network. There would be considerable economic advantage in putting in the cycling routes in the earlier stages of the period covered by the plan, and truly prioritising them rather than paying lip-service to the idea. Cycling infrastructure investment has been shown to be highly cost-effective. Bringing it forward would maximise the modal shift achieved in the early part of the plan period, thus making it possible to reassess the need for both relief roads in the light of the behaviour changes achieved. But it depends on high-quality design drawing on best practice worldwide (particularly from the Netherlands) and a strong political commitment.

In particular:

- bus station relocation should be designed in conjunction with a plan to produce a fundamental improvement in cycle access to and across the city centre;
- the city centre cycling provision should be designed first, and any necessary road schemes should flow from that, not vice versa;
- uncertainty of funding for the cycle super routes and secondary routes should be resolved: sustainable transport modes should have first call on available funding in accordance with the IMechE Transport Hierarchy recommendations.

Further detail is provided in Section [6. Opportunities for improving cycling and pedestrian conditions](#).

Investment in cycling infrastructure is also highly likely to attract new employers to the area, much more so than road building. See Section [7. The economic and social case for cycling investment](#).

2. Introduction

The relief roads are said to be required to support the strategic housing sites identified around Durham City to be built on land which is currently designated as green belt. The Western Relief Road is to be built by 2021 with work starting as soon as the plan gains approval. The Northern Relief Road would be built by 2030 depending on further assessment of needs as traffic and economic growth becomes clear.

The plan also safeguards, but does not allocate, land for sustainable transport purposes, including rail, cycling and walking routes. Quoting from section 9.44 of the main plan document:

In order to promote sustainable travel, the Cycle Super Routes and Secondary Routes are a priority for investment. However, as there is still some uncertainty over the funding of the entire network, the Plan is safeguarding the routes rather than allocating them. The Cycling Super Routes are aligned along a combination of highways, existing public rights of way and nationally promoted cycling and walking routes. Not all Super and Secondary Cycling Routes have been identified on the Proposals Map as no specific route ways can be identified on a map at the time of writing.

It is noticeable that the relief roads are regarded as core policies with land being allocated despite the need for the Northern Relief Road being not yet fully established, whereas the cycling super routes and secondary routes are only safeguarded and their funding is uncertain despite their being 'a priority for investment' (perhaps they are the lowest priority?). The cycle route network identified does not cover the current needs of cyclists in the city of Durham, still less the future needs arising from the proposed developments.

We argue that the possibility for achieving modal shift to sustainable travel modes has been inadequately assessed and that bringing forward and expanding investment in cycle and other sustainable transport infrastructure could negate the need for the relief roads while contributing positively to the local economy and well-being of the county.

Policies 9 and 10: Western and Northern Relief Roads

Both relief roads entail loss of amenity along existing cycleways that would be crossed by the proposed roads, particularly the Lanchester valley cycle route and the cycle route from Crook Hall to Finchale Priory, and significant loss of amenity on public rights of way in each area, including Kepier Wood.

The Sustainability Assessment of these policies makes grim reading. Even the economic effects of the roads are doubtful, with significant positive effects only being realised by the Northern Relief Road, which is scheduled to be built towards the end of the plan period. In effect, the only reason for building the Western Relief Road first is to unlock the possibility of housing developments on land which is currently part of the city's green belt. This will yield construction jobs and may attract young professionals and higher-skilled workers to housing in Durham, but the Sustainability Assessment does not anticipate this will have a positive effect on the evaluation of the investment prospects of the city by employers, as the traffic conditions will be worsened in some areas and only slightly improved in others.

The *Durham City Integrated Transport Approach* document was unavailable at the time the Sustainability Assessment was carried out. This shows how little importance has been accorded to sustainable transport options in the process of producing the plan.

The assessment of the effect on sustainable travel is that the relief roads may provide increased opportunity for sustainable travel (because cycleways will be built along them) but that the increase in traffic levels at each end of the Western Relief Road would be likely to reduce cycling uptake because of worsening traffic conditions. If the relief road routes truly met a current need and were advantageous as cycle routes it would, of course, be possible to build them purely as cycle routes without providing a road in addition! In the case of the Northern Relief Road route there would be clear advantages to a cycle and pedestrian route from Newton Hall to Belmont and beyond, and creating such a route without providing a car route as well would be likely to have great possibilities for modal shift away from the private car. It could link in very nicely with the hopes for local services on the Leamside railway line with a station at Belmont Park & Ride.

The Council places great reliance on the transport modelling in its arguments for the need for the relief roads. The modelling accepts the DfT estimates of traffic growth, but historically these have always over-estimated by comparison with the observed growth. Between 1999 and 2009 the miles travelled by car per person reduced by 500 miles a year (Goodwin, 2013, p. 13), and this period precedes the start of the recession. There is great uncertainty on the direction of future trends, and more scope for public policy to influence those trends in the direction of sustainable travel. Goodwin observes (p. 14):

Uncertainty itself has a policy implication. When there is uncertainty about even the direction of future trends, policies which would be robust under any of the uncertain futures are to be preferred. That suggests a strong preference for policy implications which are flexible and which do not commit very large amounts of 'frozen' infrastructure investment which would only be worthwhile under one of the disputed outcomes.

This argues against large-scale investment in relief roads which at best would only increase non-sustainable travel and at worst might prove to be completely unnecessary, and in favour of many smaller-scale improvements, such as cycling infrastructure, which would have a long-lasting legacy and for which there is already considerable need.

Outline of argument

In the following sections we demonstrate that the modelling and other assessments underpinning the case for the relief roads is flawed, and that the possibilities for sustainable transport investment have not adequately been considered and may yield significant benefits which would be unrealised by the County Plan as it currently stands.

We ask that the relief road policies be rejected, and that the transport aspects of the plan be redesigned to truly prioritise sustainable travel options and put in place a sustained large-scale investment over the initial periods of the plan.

3. Transport Modelling Final Report

The Transport Modelling Final Report, issued in two parts, is the main document provided in the County Plan evidence base to support the need for the new relief roads round Durham City. It is therefore important to examine the basis for the modelling to see if the assumptions are sound. If they are not, it calls into question the need for the roads.

Previous modelling exercises

The previous study to look at Durham City, the *Durham City Travel Study 2008* concentrated on bus travel and alleviating road congestion through new roads, looking at the alternatives such as introducing a wider congestion zone, or a congestion charging point on Milburngate Bridge. Where modal shift was considered, it was between the private car and public transport, and the potential was concluded to be negligible. The effect of improving cycle and pedestrian infrastructure was hardly mentioned in the report and no analysis of the barriers to cycle use was undertaken. The study relied heavily on transport models which do not take into account cycle and pedestrian modal shift. This study will have set the background in planning thinking as work began on preparing the County Durham Plan, so the fact that various sustainable travel options were not properly examined is a serious omission.

County Durham Local Transport Plan (LTP3)

The latest local transport plan was published for the period 2011–2023. During the consultation round a *Health impact assessment on the County Durham Local Transport Plan 3*, published in December 2010 noted various issues (underlining added):

- | | | |
|-------|--|---|
| p. 11 | Need to maintain existing infrastructure on key economic corridors | There is a question about economic competitiveness and whether it requires expansion of the road network or a greater emphasis on a more efficient use of the road network (for carrying people more space efficiently, creating less danger, less emissions) which serves the need for access.
In addition, if it costs around £150,000 to build one mile of traffic free path compared to £10.6 million for a mile of single carriageway road (Sustrans 2010), the impacts in terms of cost benefit need to be carefully considered, particularly against a backdrop of spending efficiencies. |
| p. 11 | Entrenched attitudes to the use of the car for short journeys. | A step change is required with evidence demonstrating that many short trips of up to five miles, can be undertaken by walking, cycling or using public transport. Smarter Choices and similar behavioural change programmes have demonstrated their impact (up to 15% decrease in car use) particularly with people in periods of transition such as |

moving within the educational system or moving jobs or house.

Any behaviour change programme needs to run in tandem with traffic restraint, evidence demonstrating the two can impact positively on active travel modes. The impact of the C.S.R. are starting to impact on services, even more reason why these type of programmes offer higher cost benefit returns and better value for money than large infrastructure developments.

p. 12	Effects of climate change degrading the availability of transport networks.	There is no mention within the plan of the impacts of ‘peak oil’ and how these will be alleviated. This is an opportunity to develop programmes to reduce oil dependency in the transport sector.
p. 12	Single vehicle accidents.	Tackling road safety should emphasise: (selected points) * Reducing speed limits to 20 mph in residential streets. * Maximum of 30 mph on roads through villages and 20 mph in high streets, residential streets and around schools.
p. 14	Lack of consistent standard of cycling infrastructure.	Critical infrastructure improvements required if attitudinal shift to have maximum impact. The importance of creating safe, attractive walking and cycling conditions so <u>networks link everyday destinations</u> to make walking and cycling more convenient than motor travel is critical. However, it needs combining with individualised travel marketing, school and workplace travel plans, practical walking promotion programmes and high quality cycle training.
p. 14	Excessive noise and vibration from increasing traffic.	Improvement in physical environment can lead to a reduction in noise pollution helping with mental health and well being. <u>There is nothing to explain how the traffic will be reduced.</u>

Points to note from this assessment:

- The economic case for expansion of the road network is not necessarily sound, particularly when compared to the cost-benefit of schemes to improve pedestrian and cycling infrastructure.
- There is a great potential for modal shift if the right policies are put in place, including promotional activity, travel advice and *traffic restraint* calling into question the need for road network expansion.
- We cannot assume traffic growth will continue at previous rates. Increased costs of fuel and other indicators (e.g. fewer young people driving) suggest that we might have reached the point of ‘peak car’. Other transport modes that will be more resilient to changing and uncertain conditions should be prioritised.
- The importance of reducing speed limits to increasing safety, thereby reducing the advantage of the car, increasing perceived safety and encouraging modal shift.
- There is a lack of consistent cycle *networks* linking everyday destinations.
- The Local Transport Plan does not explain how traffic will be reduced.

These deficiencies in planning and aspiration identified in the local transport plan have not yet been acknowledged in the planning process. The final version of LPT3 makes reference to the *Health*

Impact Assessment in section 12.2.2:

In general, the addressing of key issues in LTP3, which was the basis of the assessment, were found to be either neutral or positive, with none being negative. As a result, it was unnecessary to make changes to any of the proposals in the Plan.

In other words, although the assessment uncovered a number of doubts and deficiencies in the plan, no changes were made because as far as health impact was concerned none of the effects of the plan were adverse. The possibility suggested by the HIA that a better plan might have more pronounced health benefits was not considered in preparing the final LTP3, and it appears that the cost benefit comparisons of different interventions have not been re-evaluated.

The modelling methods and assumptions of the report

Having looked at the studies and plans produced in the years during which the proposed County Durham Plan was being prepared, we now turn to the transport modelling report, *Durham Local Plan Option Appraisal, Final Report*, by Jacobs. This claims to be a multi-modal study, but it is our contention that the model does not take sufficient account of the potential for cycling. Page 20, section 3.3, reveals that the travel modes have been arranged in three segments for the purposes of modelling, namely Car, Public Transport, and Slow. Given that the average speed of cycle journeys in congested urban areas can often equal or exceed that of cars¹, the modelling is clearly inadequate to predict the effects on travel in the city of the introduction of high-quality Dutch-style cycle infrastructure, infrastructure which has been shown to have an extremely good return on investment by comparison with almost any other option for transport expenditure.

Page 22 of the report explains that the road network has been simplified for modelling purposes, cutting out minor roads ‘where zone centroid connectors would suffice’. Given this simplification it is inconceivable that footpaths and other connections between minor roads currently used by cyclists will have been taken into account. In addition, the interventions considered in the report have focussed on the addition of the western and northern relief roads and modelling has concentrated on exploring these options. There has been no modelling of the effect of creating traffic-free routes for pedestrians and cyclists, and of joining up the gaps in the cycle network. Thus the potential for modal shift in the city, acknowledged to have a low cycling share for a university town, has probably been severely underestimated, and the importance of investment to achieve this has largely been unrecognised in the planning process.

Inconsistencies in treatment

Some comments in the report seem to contradict the Council’s own justification for the need for road measures. On page 23 (section 3.8, Model Limitations) we have these paragraphs:

The model does not provide fine detail on the variations in travel demand throughout the peak hours (in the way that a traffic simulation model can) nor on the interaction between junctions. These interactions occur as either

“Blocking back” where the queue at a junction tails back to block exits of an upstream junction and so affecting its operational capacity; or “Flow metering”, where traffic is held back at a prior junction so that the volume of traffic proceeding beyond that point is constrained.

As many junctions in the city network are signalised, there are few issues of blocking back but the model may under-represent capacity problems as a result of flow metering. The lack of flow metering in the model means that modelled capacities may overestimate actual flows, although they do reflect desired travel patterns across the study area. For the purposes of a strategic assessment of future demands, this is a valid approach to assessing

¹ See Crist (2013) slide 8. Average car speed in European urban centres at peak periods: 10–15 km/h. Bicycle speeds: 12–15 km/h.

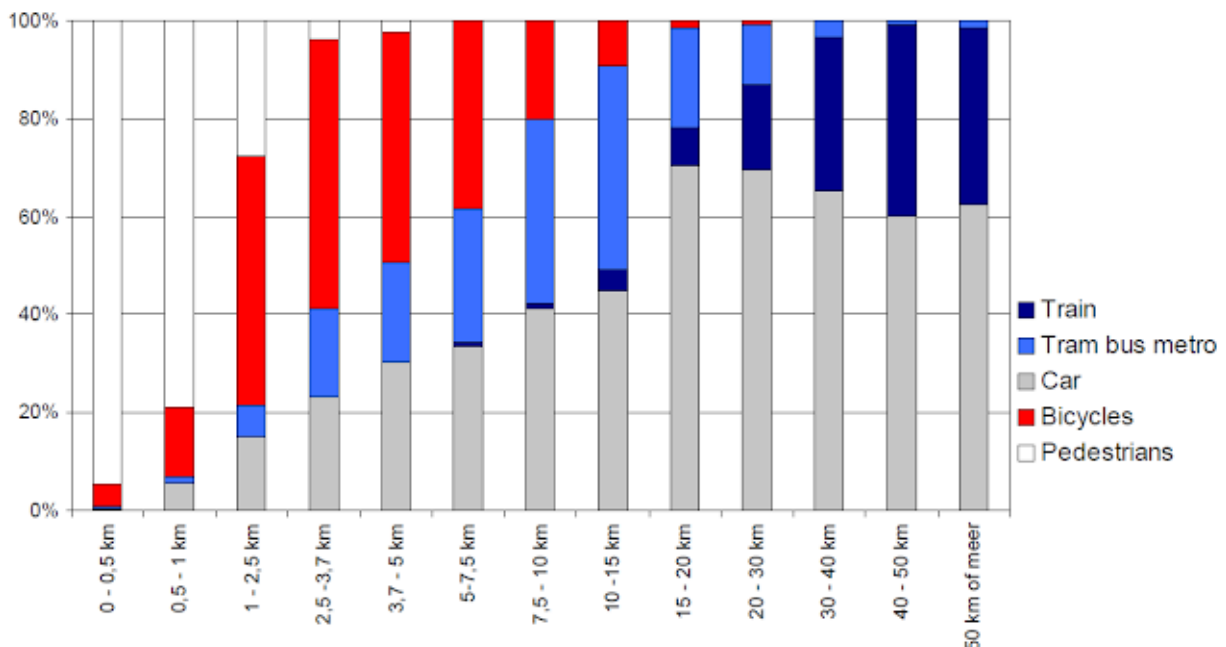
future flows.

The *Durham City Integrated Transport Approach*, however, suggests the need to signalise more junctions to provide better traffic management and bus prioritisation. It also refers to congestion at Neville's Cross and Crossgate Peth backing up as far as Brandon, which seems to contradict the optimistic assertions in the quoted matter above that there are few issues of junction capacity problems in Durham City. This indicates that the transport modelling exercise for the city should be treated with caution: it can only be used in a limited fashion for comparing one development option with another, and cannot indicate in absolute terms or predict with much degree of accuracy the actual journey times and congestion effects which would obtain in these scenarios.

Demand management: potential for modal shift by length of trip

On page 30, (section 4.3 Demand Management Scenarios) the methodology for estimating the effect of containing car use is explained. The model assumes that for trips of under 1km users would switch to 'slow modes', i.e. walking and cycling and to public transport if a trip of over 1km was being made. Trips over 1km where there was no public transport alternative would not switch modes but would remain as car journeys.

By contrast here is a chart showing the modal split by different distances of journey in Amsterdam:



From Traffic planning in Amsterdam: shared spaces, shared mobility, René Meijer, June 2012

As you can see, even for journeys of 10 to 15km, almost 10% of journeys are by bicycle. and 50% of journeys in the 1 km to 3.7 km ranges are by bicycle. While the maximum achievable modal share in Durham might well be less because of the hills, it is clear that bicycles can make up a much greater proportion of journeys even over longer distances than they currently do. Remember also that 39% of all trips in the UK are under 2 miles in distance and 67% are under 5 miles (Crist, slides 9 and 10). Nor should the Amsterdam figures be regarded as the maximum attainable share, as the saturation point for bicycle usage in Amsterdam may not yet have been reached. The city continues to invest in improving cycling infrastructure and the overall modal share for bicycles is up from 33% in 1990 to 47 in 2010 (Govers, slide 15).

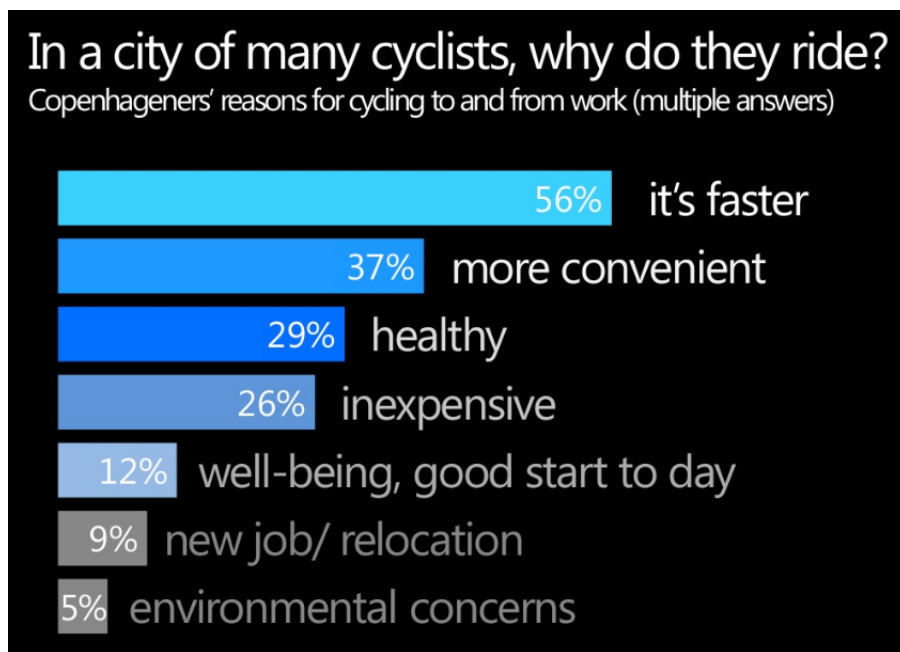
So on the possibilities for a shift in modal share from demand management the methodology used in this modelling study is fundamentally flawed. To assume that no current car journeys over 1km would switch to cycling is clearly unrealistic. As a consequence real sustainable travel alternatives to the construction of the relief roads have not been adequately explored by the Council.

Whether people are likely to be amenable to changing travel patterns

The modelling of the potential for travellers to change their habits is also doubtful:

The survey uses a “Green Aware” classification to classify respondents into 10 Environmental Awareness Classes For each class, we illustrate the proportion of each socio-economic group in the population that exhibits the typical perspectives on Environmental Awareness as summarised for each Green Aware class.

The table that follows divides the population according to environmental awareness and attitudes. The reason this aspect of the study is flawed is the experience of countries with a high modal share for cycling and walking. Surveys in Copenhagen have shown that the reason people choose cycling over the car is because it is faster, more convenient, reliable, and more pleasurable. Very few Danish people are doing it for reasons of climate change and ecology. Nor is cycling confined by socio-economic class.



Crist (2013), slide 6.

It is not as though the Council is unaware of the barriers and drivers to modal switch. The *County Durham Cycling Strategy and Action Plan, 2012–2015*, p. 10 demonstrates an awareness of the benefits of cycling in a similar way to Crist's presentation. The cycling strategy is very well argued and sets high standards to be achieved, but lacks ambition in terms of the timescales for implementing the aims and policy objectives, calling into question whether the Council are truly prioritising the strategy.

Congestion modelling

If you view the journey time statistics and volume-capacity ratio reports in this report, it is clear that there are only a few roads which are congested according to the models. The most congested, aside from the city centre, is the A167 from Neville's Cross junction to Tollhouse Lane. The peak congestion is chiefly caused by travel to Durham Johnston School. It is this road which is of greatest concern when considering the proposed housing developments at Sniperley and Merryoaks.

Figures 3-e to 3-g on pages 25–26 give the average weekly traffic profile at three key points, namely Neville's Cross, Sniperley and the A690 at Belmont. The counts were averaged from data for periods avoiding school holidays and the tourist season. It would have been instructive to compare the counts with school holiday periods. If this was done it has not been presented. The effect of school traffic is clear, however, from the different profiles of the sites. Compare Belmont

and Neville's Cross:

Figure 3-f Average weekday traffic profile for A690 – Belmont

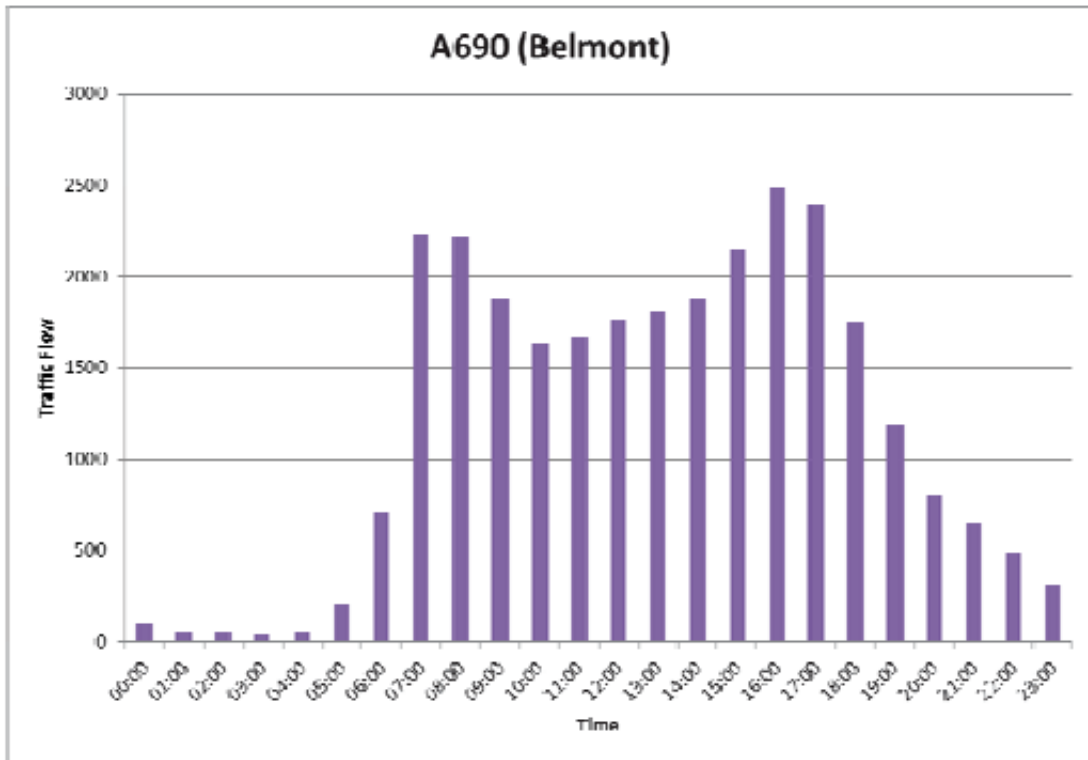
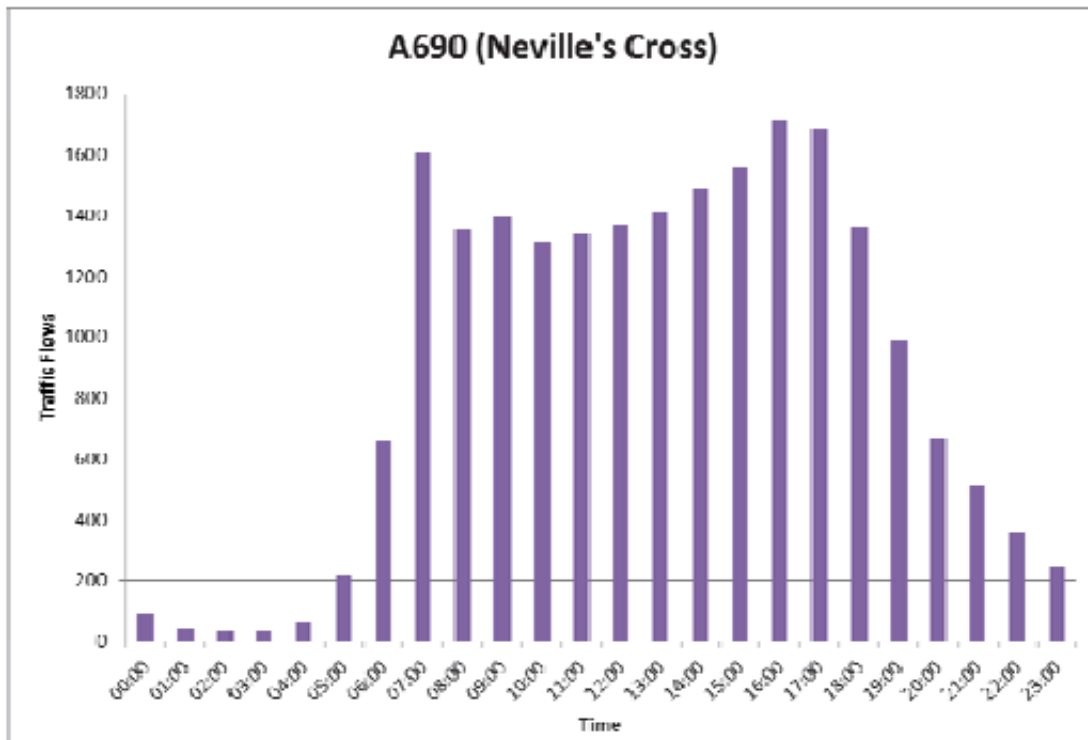


Figure 3-g Average weekday traffic profile for A690 – Neville's Cross



The difference in traffic levels between 07:00–08:00 and 08:00–09:00 is stark, proving that a significant proportion of the traffic results from parents dropping children off ready for Durham Johnston’s comparatively early start to the school day. In fact the school day was pushed earlier a few years ago in order to ease the 08:00–09:00 congestion.

We all know what a difference the school holidays can make to journey times. In the two decades up to 2003 the proportion of children travelling to school by car almost doubled from 16% (DfT, 2003, p. 3) and according to the National Travel Survey 2011, 22% of secondary school children and 43% of primary school children travelled to school by car. Among secondary school children who lived between 1 and 2 miles from school, 26% travelled by car. There is clearly scope for large modal shift here. There has been a lot of talk and good intentions in this area coming from national and local government, and from schools, but it is clear that trying to persuade parents and children to change their habits is not going to happen without investment.

The benefits could be enormous. Reducing traffic slightly can substantially reduce congestion. Engineers at MIT and Berkeley recently published a report which demonstrates that at peak periods small reductions in traffic deliver disproportionate reductions in congestion (Wang, 2012). As little as a 1% reduction in traffic can reduce travel time for all by up to 18%.

The percentage of primary school children travelling to school by bike is less than 1%. In the Netherlands it is 49%. This is entirely due to the transport and land use planning policies adopted from the 1970s, which is when our travel patterns started to diverge significantly.

It is our contention that there is sufficient evidence to justify a proper investigation of sustainable transport alternatives to the relief roads as significant congestion reduction is by no means unattainable.

Demand management appraisal

Noticeably, very little attention is given to demand management as an option for dealing with the increased travel demands of new housing. In fact the section evaluating the impacts of demand management occupy little more than two pages in the 153 page file.

The section opens with the explanation that it ‘establishes the effectiveness of a series of measures designed to encourage reduced private car use and increase use of sustainable modes of transport’ (10.1) without actually stating what measures might be under consideration. For a hint as to the demand management measures being contemplated, we have to turn to the LTP3 Transport Strategy document (2011) which has a brief mention in paragraph 7.4.7 on page 91. Here parking policy, reallocating road space to sustainable modes, and road charging are listed. Demand management is the subject of Policy 10 in LTP3 (see Appendix A, p. 15). It seems to have been something of an afterthought. There is a vague statement on the desirability of influencing attitudes to car use and promoting sustainable modes, and a statement that the County Durham Plan will ensure development is only permitted where demand can be catered for. If this is all which is being considered in this aspect of the modelling it is not surprising that the effects are only modest.

The most peculiar paragraph in this section is the final one, on page 147:

However, the immediate impact on network performance around Durham City is modest in terms of the reduction in traffic, as the latent demand for travel by car takes up any residual capacity in the peak periods. Therefore, for a range of strategic objectives, demand management measures should be considered a key part of the future strategy for Durham. However, alone they are inadequate to meet the demands arising from future development and background growth to 2030.

This seems to be saying that demand management might result in a reduction of traffic, but the road space will then be taken up by existing drivers driving more, or by other people who would want to drive at the busy periods but currently do not because there is too much traffic. It concludes that the demands of travel from future housing developments cannot be accommodated, because it will all have been used up by the ‘latent demand’. But the people with latent demand for travel will surely go back to travelling less if the roads are filled up with inhabitants of the new housing schemes? So the conclusion that measures to reduce private car use cannot possibly accommodate the travel needs of the additional population seems to be tenuous and very far from established by this report.

The same paragraph also threatens ‘background growth’ to undo all the good work of demand reduction. Where is the traffic growth coming from if not from developments covered by the County Plan? Why would it not be affected by demand reduction too? Any extra population will have to be accommodated in the very housing developments laid out in the plan. The only other growth would be from increased demand for travel by the existing population or by long-distance travel to the area (likely to be accommodated mainly by the motorway network). Notwithstanding these potential sources of growth, the rate of growth in car use has declined severely, and was declining even before the recession took hold.

The following table shows UK traffic growth by decade (Goodwin, 2012, p.8):

Decade	Traffic: annual average growth
1950s	8.4%
1960s	6.3%
1970s	2.9%
1980s	4.7%
1990s	1.4%
2000–2007	1.2%

Goodwin’s article also points out that the Department for Transport has consistently over-estimated traffic growth, and predictions have had to be re-based frequently. Figures recently obtained from the Department for Transport (Geffen, 2013) reveal that the DfT’s transport modelling assumptions predict a fall in the number of cycle trips per year from 1.4 billion in 2015 to 1.3 billion throughout the 2020s. The average length of cycle trips is also predicted to fall. These estimates, which are used in the type of modelling being employed by DCC’s consultants, seem inexplicable given that the average length of cycling journeys rose by 50% in the past decade. It is anomalies like this which show that the national modelling figures must be unreliable, particularly if the DfT is predicting a decline in cycle journeys at the same time as promising action to cycle-proof the major road network and encouraging councils to invest in higher quality infrastructure.

Conclusions regarding the transport modelling

There is a limit to the extent that the general public can challenge the evidence base of the County Durham Plan without access to the modelling tools and data employed by the council and its contracted consultants. Therefore it is not possible to dispute the conclusions of the transport modelling as regards how different proposals for housing development would affect the transport network (the dispersed development versus the Council’s preferred solution of accretions to Durham City), nor can we dispute the effect that the new relief roads would have on the existing road network, which is almost certain to be beneficial in the short term in terms of journey times and capacity.

Where the study, and consequently the County Durham Plan, can be challenged is in the stark omission of evidence to back up the need for these roads at all. Without appraisal of a similar scale of investment in measures designed to produce modal shift there can be no sound justification of the proposed course of action. There is also the possibility that, because the new housing developments at Sniperley and north of Arnison will be well connected to new roads, the population, far from living sustainably with minimal reliance on the car, will actually be attracted to use the private car for transport and that thereby the proportion of cycling and walking journeys in Durham City may fall.

This is contrary to National Planning Policy Framework, para 17, which states the core land-use planning principle that planning should “actively manage patterns of growth to make the fullest

possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable”.

This is not to say that traffic modelling is a futile exercise. But where the growth figures are so uncertain the model must test the sensitivity of the outcomes against the possibilities of lower traffic growth. There is considerable doubt about the DfT’s estimates. Alternative growth scenarios should have been modelled in order to see what effect they would have on the viability of the proposed schemes.

4. Durham City Integrated Transport Approach (DITA)

While the Transport Modelling Final Report attempts to provide the evidence base for the road network needs, this document puts flesh on the proposals and gives the policy direction for the development of Durham City’s transport provision over the life of the County Plan.

Traffic growth forecasts

On page 2, in the executive summary is the following statement:

National traffic forecasting predicts that congestion and car use is set to rise. In addition to natural traffic growth, the County Durham Plan facilitates housing and employment growth in the City and provides for approximately 5000 new houses and a new strategic employment site in Durham City.

As we have seen in the Transport Modelling Final Report, the Council is taking DfT predictions, which have been shown to be historically unreliable (Goodwin, 2012), and predicting further ‘natural traffic growth’. But traffic growth doesn’t just happen naturally: there are circumstances which have led to increased traffic over the past few decades. These include:

1. road building programmes which have put in extra capacity, removing the constraints on traffic growth
2. the total cost of motoring declining in real terms while the cost of public transport has risen²
3. hard-hitting road safety and stranger-danger campaigns which have persuaded parents that it would be irresponsible to let their children travel independently to school
4. increased prosperity and higher rates of car ownership
5. lack of public transport co-ordination following bus deregulation, leading to a concentration on profitable routes and a less comprehensive network both in terms of routes and times of services
6. concentration of essential services, such as larger supermarkets, with the result that they are no longer within walking distance of homes
7. poor planning decisions, such as allowing out-of-town shopping developments
8. piecemeal and sprawling suburban housing developments with no shops, schools or employment nearby.

Many of these drivers are no longer certain to apply in the future, particularly the relative costs of private and public transport. Some will be taken account of in the TEMPRO growth estimates underlying the model, but others are within the powers of government and local land-use planning

² According to the RAC (2008) the period from 1988–2008 saw an 18% real terms fall in the cost of buying and running a car whereas costs of rail, bus and coach travel saw a real terms rise of over 50% in the same period.

to influence. The baseline ‘do nothing’ comparators for 2021 and 2030 therefore include traffic growth that is not guaranteed to materialise. Basing all the options appraisal on such forecasts without exploring their sensitivity to alternative growth rate possibilities is irresponsible.

To put in perspective the wording about ‘natural traffic growth’ it is just as reasonable to argue that ‘natural cycling decline’ will mean that cycling can play little or no part in the future travel mix, and that there has also been a ‘natural decline’ in walking?

Sustainable travel alternatives

Section 1.2, p. 4 includes an interesting admission on the relative state of maturity of the plans:

Some of the schemes in this document are well established projects while others such as the walking and cycling projects are only initial ideas that need more detailed consideration with partners who would help deliver them.

In other words, a serious sustainable travel alternative to building the relief roads has not really been investigated. Therefore the potential for modal shift has not been properly assessed and it cannot be said to be certain that the relief roads are the most cost-effective option for alleviating the effects of increased demand for travel in and around the city.

This makes it clear that the Council have developed the road plans first, and tacked on sustainable travel improvements as an afterthought. A less critical reader might form the false impression that the plan has sustainable practice at its heart. Other internal evidence in the plan and associated documents that confirms this includes:

- the fact that the *Durham City Integrated Transport Approach* document was produced so late that it was not available during the last phase of sustainability assessment;
- the Durham City Cycling Forum consultation meeting on the strategic cycle network being only held in August 2013, too late for any meaningful contributions to affect the rest of the plan;
- paragraphs 3.27 to 3.29 discuss options to tackle pedestrian and cycling capacity issues on Milburngate Bridge, but no preferred solution is identified and one of the options contemplated involves deferring improvements until the Northern Relief Road is in operation (scheduled for 2030).

This approach to planning is completely the opposite of what is needed to tackle the climate change objectives which are built into national policy. A very helpful position paper from IMechE (Institution of Mechanical Engineers, May 2013) gives the following ‘transport hierarchy’ for tackling transport capacity issues:

MORE SUSTAINABLE		
Priority 1	Minimise demand	Manage the reasons why transport is needed and the context in which transport demand is derived, to deliver the same access to services and activities with less powered/motorised transport.
Priority 2	Enable modal shift	Enable the choice of transport modes with the lowest environmental impacts, and enable easier changes between modes.
Priority 3	Optimise system efficiency	Increase all efficiency measures of transport modes and their use, particularly in terms of gCO ₂ /km for passengers and gCO ₂ /tkm for freight.
Priority 4	Increase capacity	After optimisation of the first three steps, any capacity increases that are required should be prioritised to the most efficient and sustainable modes.
LESS SUSTAINABLE		

The top priority is to reduce demand, then to enable modal shift. The very last priority would be increasing capacity, and even then extra capacity should be prioritised to the most sustainable transport modes.

By contrast, the County Durham Plan sets out for construction of the Western Relief Road as soon as the plan is adopted, and interventions to improve the cycling network have not yet even been identified in many cases, let alone designed or funded.

Scope for increasing bus travel

Paragraph 1.10 comments on the high number of people walking in the city, with non-motorised modes taking a greater share than public transport (i.e. bus). The concluding sentence of this paragraph is rather strange:

The low number of people of who use public transport is important as it demonstrates that even with significant investment, new subsidies and funding for bus transport, it is unlikely to create a step change away from residents being dependent on the car.

The inference being drawn here seems highly questionable. The argument seems to be that because a lot of people prefer walking to the bus, investing in buses will not attract people out of their cars. Perhaps a lot of people walk because the buses are too slow or too expensive, which might also force other people to use the car instead of the bus, depending on the lengths of journey involved? Evidence from the University’s Green Travel Survey 2013 corroborates this, demonstrating that there is scope for increasing the amount of bus travel. It is true that there is a risk that investing more in bus travel might cause more modal shift from walking to the bus than from car to bus.

From page 6 of the staff survey (Durham University, 2013a) we see the proportion of staff travelling by different modes. Note that the data includes staff travelling to Queen’s Campus, Stockton or working at both campuses, but these make up only 10% of the respondents. This table shows the main mode of transport declared by the respondents. Respondents were able to declare other modes of transport used for part of the journey or used occasionally elsewhere in the survey.

Mode of travel	Percentage	Number
Car	71.2%	986
Bus	8.2%	114
Train	3.6%	50
Bicycle	4.9%	68
Park & Ride	0.1%	2
Walk	11.5%	159

Respondents were surveyed as to what would persuade them to switch modes of travel:

Of those who do not use public transport the best encouragement to start would be a reduction in fares (392), more frequent services (371), route improvements (330), better links from stations to the university (284), improvements in the reliability of public transport (278), a direct bus link to university sites (275), and a free shuttle bus between sites (206). *(page 13)*

On the Park & Ride, potential users commented that it was inconvenient, with some elaborating that from Belmont two buses would be required to complete the journey to the university. In the general comments there were many criticisms of the current bus services:

Bus services were a common theme, with new routes requested from Gilesgate/Belmont Park and Ride to Lower Mountjoy, a shuttle bus from the hill colleges to Elvet Riverside and Hild & Bede College. One person suggested a circular route for the park and ride buses would be better than the current 3 separate routes. ... There were also complaints about the X1 refusing to stop because it was too full. Bus services to local villages were also criticised for starting too late, or being too infrequent. (*page 19*)

Some of these comments are clearly from current users of the bus services, showing there is a risk of more people switching away from bus travel if it is not improved. The student survey report also brings out the need for better cross-city bus services and direct bus routes to the Mountjoy site.

Walking and cycling infrastructure

Paragraph 3.14 acknowledges the high demand for walking in the city but notes the severance issues of the A690 and the A167. Sadly it appears that the Council views the building of the relief roads as a prerequisite to improving conditions elsewhere in Durham:

With regard to severance on the A167 around Nevilles Cross, the Western Relief Road proposed as part of the County Durham Plan should reduce traffic levels between Nevilles Cross and Sniperley Roundabout on the A167 creating opportunities for safer crossing points or safer riding conditions for cyclists.

We would agree with the assessment of the barrier created by the A167 and the dangers that cyclists face crossing this road and travelling along it. However, we would strongly argue that the safety issues should be dealt with now. Cyclists have just as much a right to be able to travel safely to their destinations as any other road users. National policy frameworks place a specific duty to prioritise the needs of vulnerable road users such as cyclists and pedestrians. This means that improvements should be made even if it means inconveniencing car drivers a little. Setting higher store by the speed and convenience of car users than the personal safety of cyclists is wrong. Improving safety and perceived safety should also encourage modal shift to cycling and has the potential to reduce congestion, thus benefitting the car drivers anyway.

Of course, we would welcome future road-space reallocation and tackling the severance and safety issues presented by the A167 and A690 if the relief roads are built, but there is much that can be done now and arguably should already have been done. We will suggest some of the options in [Section 6. Opportunities for improving cycling and pedestrian conditions](#).

Paragraph 3.15 acknowledges that Durham has unusually low levels of cycling for a university city. The travel surveys at the university (Durham University, 2013a,b) put the proportion of users cycling for their normal journey at 5% for both staff and students (whereas 6.2% of students use a car for the main part of their journey), but the proportion cycling in the general population of Durham is likely to be lower.

Paragraph 3.18 lists some of the infrastructure improvements made for walkers and cyclists.

There have also been a number of specific cycle lanes developed in the City but this has not led to a significant increase in the number of people cycling into work because of inherent issues relating to the perception of cycling safety in the City.

The question should be raised as to whether the specific cycle lanes recently developed are convenient, properly publicised, well-designed, and contributing to a continuous network. These might also be reasons for a failure to increase cycling share. Is the Council downplaying the potential contribution of cycling in order to justify its failure to evaluate a sustainable transport alternative to the relief roads?

We very much welcome the inclusion, for the first time, of proposals for strategic cycling routes in the local plan, both county-wide and within Durham city, but there are a number of confusing aspects to the route map.

Map 3, on page 20, shows the existing infrastructure (green) and proposed super routes (red) and secondary routes (orange) for the city. Given that some of the proposed routes follow existing infrastructure but are not marked in green it is unclear whether the idea is that they will be upgraded. It is also not spelled out what the difference between a super route and a secondary route is. Is it a matter of the standards aimed for (e.g. type of facilities, width of path etc.) or of the likelihood that the route will be busy? If it is the type of facilities being planned, is this done on the basis of need or importance of the route or are secondary routes identified where there are too many constraints to providing a higher level of facilities?

For example, the primary route coming in from West Rainton becomes a secondary route as soon as Belmont is reached, which would suggest that a secondary route is characterised by a limited scope for providing good facilities rather than by the strategic importance of the route itself. On the other hand, the road through Pity Me and Framwellgate Moor is marked up for a secondary route despite the road being easily wide enough to accommodate a high quality segregated path.

Members of the Durham Bicycle User Group have already participated in a Durham City Cycling Forum (DCCF) meeting in August 2013 at which we were shown the proposed routes. We were told that the comments we gave might not be worked into the plan in time for publication, and it appears that the plans are indeed unchanged. This shows how late in the day cyclists' needs were being considered, whereas the relief roads have clearly been on the cards for several years. A number of people responded to the previous consultation phase of the County Plan to point out that strategic cycle routes were not detailed, so it is good that the Council have taken heed. It does demonstrate again, however, that the sustainable travel alternatives have not been properly considered, and it might be that their cursory treatment in the Transport Modelling Final Report is an attempt to cover over the fact that the roads were adopted as a solution long before any sustainable transport options were developed.

To reiterate some of the comments made at the DCCF meeting, it is astonishing that no route west of the river from the railway station to the university has been included. This would also serve the popular student housing area known as The Viaduct. The route via the A690, Margery Lane and Quarryheads Lane is one of the busiest in the city for pedestrian and cycle traffic, yet each mode is badly provided for on this route with narrow pavements and lack of cycle facilities. The Mountjoy campus is only served by secondary routes, despite being the main cycling destination in the city. No routes are planned from the hill colleges towards Mountjoy or on to the Leazes Road campus and Gilesgate. Routes from the hill colleges are a concern raised in the student travel survey (Durham University, 2013b, p. 11). There is no connection to the proposed Great North Cycleway heading in the direction of Spennymoor. Elsewhere in the city a couple of routes are shown ending abruptly at major roads such as the A690.

In the maps which follow of the strategic housing and employment sites, mention is made several times of shared use paths. The typical British mode of providing off-road cycle infrastructure has been to divide existing pavements by a white line down the middle, or just designate the pavement as 'shared use' with no segregation of pedestrians and cyclists. This form of provision is unpopular with cyclists and pedestrians alike. Pedestrians can be alarmed by almost silent cyclists whizzing past. Cyclists do not appreciate pedestrians, their dogs and children wandering obliviously into the half designated for cyclists. Such paths rarely have priority over side-roads meaning that a normal cyclist capable of 16mph on the flat is usually better off on the road if a quick journey is desired. The width of the path is usually inadequate to allow for cyclists passing in opposite directions at the same time as pedestrians.

In the Netherlands, shared use paths in the British sense are very uncommon. Bicycles share the road space with cars in residential streets, where speed limits are generally lower than the UK. Residential roads are designed with through access to bikes and pedestrians, but indirect routes for cars, known as 'filtered permeability'. In town centres, bicycles share the road space with pedestrians (often with a cycle path delimited) and cars are excluded. But on routes which parallel roads, cyclists generally have their own segregated bidirectional lanes which are not shared either

with motor vehicles or pedestrians. Current Dutch standards mandate a width of 3m to 4m for bidirectional paths and 2.5m for single-directional. There is often a segregated path on each side of the road in addition to a separate pavement. The pavement and cycle path are clearly distinguished by the colour and type of the surface and may be separated by grass where there is room. The cycle path has priority over any side roads which it crosses, marked clearly, and usually with the road surface raised to meet the level of the cycle path so it is obvious which type of traffic has the uninterrupted route. This type of provision means that all cyclists, from the child to the confident fast adult, choose to use the cycle paths because there is no incentive not to. The width, generous by British standards, is required to allow parents to ride alongside children while leaving room for bikes coming the other way or overtaking. Thus cycling can become a true mass mode of transport. The County Durham Cycling Strategy and Action Plan, 2012–2015 promises in section 5.4 ‘an ideal Durham beyond 2015’ where ‘cycling is becoming part of life for families and adults are teaching children safety skills’.

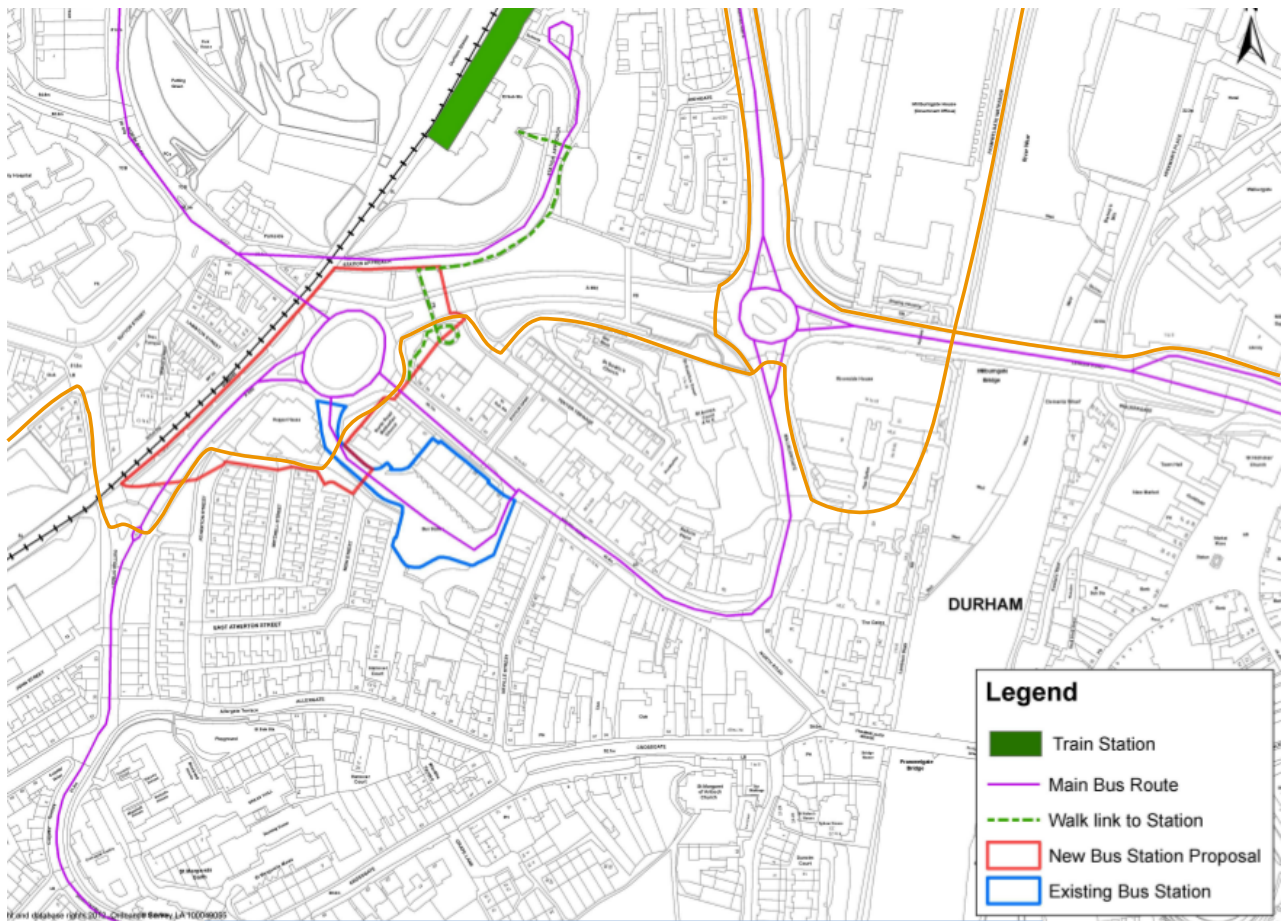
It is this standard of infrastructure that can make the bicycle the natural default means of travel and overcome the entrenched use of the private car, and we would seek assurance that all the new developments will incorporate cycling provision of this sort of quality at the outset. There are signs that the Council is aiming in this direction. The County Durham Cycling Strategy and Action Plan, 2012–2015 promises, on page 21:

We will use and exceed, where possible, the existing good practice guidelines (Local Transport Note (LTN) 2/08 and the Dutch Design Manual for Bicycle Traffic (CROW)) to design cycling infrastructure.

In the case of housing and employment area developments this will require strong design and planning principles being laid down which developers have to adhere to, as the proportion of public space in the site will need to be rather higher than the normal proportion which is designed to maximise profits. The Council must demonstrate that this promise can be delivered in a legally binding manner.

Bus station relocation

Paragraphs 3.49 to 3.54 deal with a plan to relocate Durham Bus Station (see the following map) with work commencing in 2014/15 at a cost of £5 million.



The bus station is to be relocated in the red area, with the roundabout being abolished, and measures taken to provide better pedestrian links between the bus station, retail areas and railway station. The new bus station will have increased capacity, allowing bus stops to be removed from North Road itself and improving the street environment. A retail site would replace the current bus station.

These changes could have a dramatic effect on North Road, which has long been criticised by English Heritage as being an environment unworthy of being the approach to the World Heritage Site. At present most of North Road is one-way for buses, taxis and bicycles only, with loading permitted at certain times, but this restriction is widely flouted by cars and vans. The recently relocated and lengthened taxi rank is no doubt very useful to the night-time economy, but parking for a dozen taxis is surely not the best use of prime public space for most of the day.

One of the contributing factors to the capacity issues at the current bus station is that it is designed as a terminus. Buses take a while reversing out of the bays to continue their journeys, and the dwell time for buses terminating before they start return trips is longer than at an intermediate stop. It is hoped the new bus station would be designed for through bus movements. Additionally, the fact that most bus routes terminate or start at the bus station is also a problem for bus travel across the city. You can get through buses from the east to the north of the city, but that is about all. There used to be a bus that passed through Neville’s Cross to the city centre and continued north to the Arnison Centre, but that ceased within the last three years. The Council must look at the balance of through and terminating services to see what could be achieved. On the one hand, if services are frequent (e.g. every ten minutes) then changing buses at a central location to complete your journey can be an acceptable option. Through services are inherently more reliable for the passenger who is on the bus, though they can be more susceptible to traffic problems along part of the route, and the choices of route offered will not work for everyone. Lack of through routes to the University was a common theme in the recent university green travel surveys.

We have added to the map orange lines indicating the current cycle infrastructure, such as it is,

including National Cycle Network route 14. Note that most of the designated cycle routes in this area are shared use pavements, of inadequate width and badly signed. There is also a stretch of cobbled street and a steep slope alongside steps which is not cycleable. Although the provision is currently poor, routes on roughly these alignments are necessary for cyclist to be able to get about the city.

It is clear that bus station relocation offers the opportunity for a step change in the cycling provision approaching the railway station, a key destination and source of cycle traffic in the city. If buses could be eliminated from North Road, or their numbers substantially reduced, it would be possible to have a pleasant shopping environment in a continental style where pedestrians and cyclists are the dominant users of the space. To maximise the benefit, the changes should be coupled with improvements to the cycle network which we will suggest later in this report, such as opening up Framwellgate Bridge, South Street and Crossgate to two-way cycle flow. The connection with the north of the city via Framwellgate Peth needs to be improved.

A more radical rerouting of bus traffic should allow the Milburngate roundabout to be remodelled with truly cycle-friendly infrastructure being provided here too. There could be an argument for eliminating private through traffic from the part of North Road beyond the railway viaduct, transforming Sutton Street by cycle prioritisation and reconnecting Wharton Park with the city centre. The area round Flass Vale is seeing a lot of housing development and with the removal of heavy traffic from the bus depot it would be possible to see the Flass Vale / Western Hill / Viaduct quarter restored to a vibrant urban residential area, with low car use, well-connected by foot and bike to local amenities. If the area were less dominated by the student rented sector, it would be ideal for first-time buyers and young professionals.

It is interesting to see the budget of £5 million being allocated to invest in buses, given the doubts as to modal shift to the bus being voiced in paragraph 1.10. This sort of money being spent on the cycle network would be transformatory, and could also have similar side benefits in terms of improving the local economy.

As the plans are developed it is essential that the options for cycle paths in the vicinity are explored rigorously, and provision made in the early stages of the design work for the new junction. Strangely, there is no hint of the opportunities for cycling in the document.

Other proposals

Paragraphs 4.5 to 4.11 outline proposals for a more sophisticated traffic light system controlling the key junctions in Durham City. Leazes Bowl roundabout and Gilesgate roundabout would have lights added as part of the scheme. The document does not say what would cost, apart from that it would be 'significant investment'.

Paragraphs 4.12 to 4.19 cover parking policy. Extensions to two of the three Park and Ride car parks are planned. The city-centre parking zones are described, but there is no policy for reducing the availability of on-street parking in the 46 streets covered by the controlled parking zone. This is disappointing because there are numerous examples where removal of small amounts of car parking would make room for cycle lanes and other facilities for cyclists. There should be a policy of reduction of on-street pay-and-display parking for streets which lie close to the Park and Ride bus routes to go with the expansion to the Park and Ride provision.

Paragraphs 4.20 introduces the section on highway improvements with the following tendentious statement:

Durham City is dominated by private car journeys so modal shift through smarter choice travel, better travel information, active travel and other improvements can only partially alleviate the congestion problems and it is clear that additional highway infrastructure is required.

One might equally validly argue that the dominance of the private car caused by severance of

pedestrian routes, lack of provision for cyclists and a degradation in the travel environment means that cycling and walking could easily be grown with the right infrastructure policies and investments. Far from being an *integrated* transport approach, sustainable options have been set up to fail.

Major investment has previously been focussed on improving bus travel. Some projects in the Transit 15 programme remain to be implemented and are listed in paragraphs 4.21 to 4.23. Some of these may need review to identify cycle infrastructure improvements which could be done at the same time. For example, a bus lane is proposed for part of South Road approaching the New Inn. There have been many requests from students living in the hill colleges for a cycle lane or cycle path to take cyclists safely up and down South Road. This should be examined in conjunction with the bus lane plans and the inadequate pavement widths in this area.

Has the Council got the priorities right on transport investment? Plans for advanced traffic control, relief roads and bus improvements are well advanced. Cycling enhancements are as yet little more than lines on a map. The County Durham Cycling Strategy and Action Plan, 2012–2015 aims to audit and assess the cycle network of the twelve main towns of the county at the rate of four per year. If this can be achieved at the level of detail necessary for planning a comprehensive network for the city of Durham, that would be very welcome. Delays to cycling projects over the past few years leave us with doubts that this is deliverable in the time proposed.

5. Evaluation of existing infrastructure

We are arguing that major elements of the transport provisions of the County Plan are not **justified**, meaning that the plan is not the most appropriate strategy when considered against the reasonable alternatives, based on proportionate evidence (definition from the consultation guidance notes).

Therefore we must try to show that the sustainable transport options which the Council seem not to have adequately explored are indeed reasonable alternatives and that there is evidence that they could be effective.

In this section we will look at some of the existing infrastructure and the barriers that walkers and cyclists currently face. Many barriers have been highlighted already in the *Durham City Integrated Transport Approach* but that document and the current *Local Transport Plan* do not seem optimistic that tackling these will result in modal shift. It is our contention that the problems have (a) not been adequately recognised, and (b) previous investments have fallen far short of the standards required to make a difference. In the next section we will seek to demonstrate that there are possible interventions which could make a difference and which therefore should have been considered in the process of producing the plan.

Hills

There are references to ‘challenging topography’ in the plan, and the fact that Durham is hilly is often given as a reason why it will never have a good cycling share. This assumption needs challenging at the outset. Here is an excerpt from a recent news item:

Councillor Jon Rogers, Cabinet Member with responsibility for Cycling City, said: “We have a lot to learn from each other. [The city] has created a lot of interest around the world. How to boost cycling in a city of steep hills, heavy traffic and limited room for infrastructure changes? Norwegian cities face these problems too.”³

The city in question is Bristol, chosen as one of the Cycling England demonstration cities. Despite the challenges of a historic hilly city, cycling in the city at the 2011 census accounted for 8% of

³ ‘Norway and Bristol share their cycling success’
<http://www.betterbybike.info/norway-and-bristol-share-their-cycling-successes>

travel to work, having doubled since 2001.⁴ It is the infrastructure, not the topography which is the problem. Hilly cities may have to work a little harder to give cyclists space to get up steep hills at their own pace, unthreatened by impatient overtaking, but a high modal share is achievable.

Low aspirations, but suppressed demand

Paragraph 3.18 of the *Durham City Integrated Transport Approach* includes this comment:

There have also been a number of specific cycle lanes developed in the City but this has not led to a significant increase in the number of people cycling into work because of inherent issues relating to the perception of cycling safety in the City.

It is certainly true that there is a perception that cycling is not a safe activity in the city. The surveys of staff and students at the university (Durham University, 2013a,b) both support this point of view, but also, more usefully, highlight interventions which could encourage modal shift:

Most of those who do not cycle predominantly say nothing could encourage them to cycle to work (746). However 306 respondents could be encouraged with cycleway improvements, 273 with road safety improvements, and 298 with more traffic-free routes. (2013a, p. 12)

The student survey had the same top three desirables, with road safety again in third place behind infrastructure. This suggests that such investment there has been in cycle infrastructure has hitherto not met the needs of the potential users. There are no ‘inherent issues relating to the perception of cycling safety’: there are issues stemming from inadequate infrastructure. We will present evidence below that provision has frequently been of too poor a quality to make a difference to perceived safety or to convenience of the cyclist.

The LTP3 Appendix A.15.2 states, in relation to policies to encourage walking:

There are reasons for the decline in walking including possibly safety/security perceptions and the ambiance of the walking environment. These are issues that will only affect a proportion of potential walking journeys. The biggest reason for not walking short journeys seems to be that it is very easy to jump into a car and not consider an alternative.

This is not supported by the University travel surveys. From the staff survey (2013a, p. 13):

Most staff (684) couldn't be encouraged to walk – predominantly due to distance. However 194 could be encouraged if footpaths were improved, and 135 if lighting improvements were made. 100 would be encouraged to walk if there was provision of pedestrian routes to work, and 96 require road safety improvements. 57 would like other staff to walk with, and 48 a reduction in traffic.

There seem to be a significant number of potential walkers who are put off by the current conditions. The vast majority (almost 80%) of students walk to the university, but those who do not, like the staff, also ask for footpath and lighting improvements. An interesting comment was quoted (p. 12) from a female undergraduate train user:

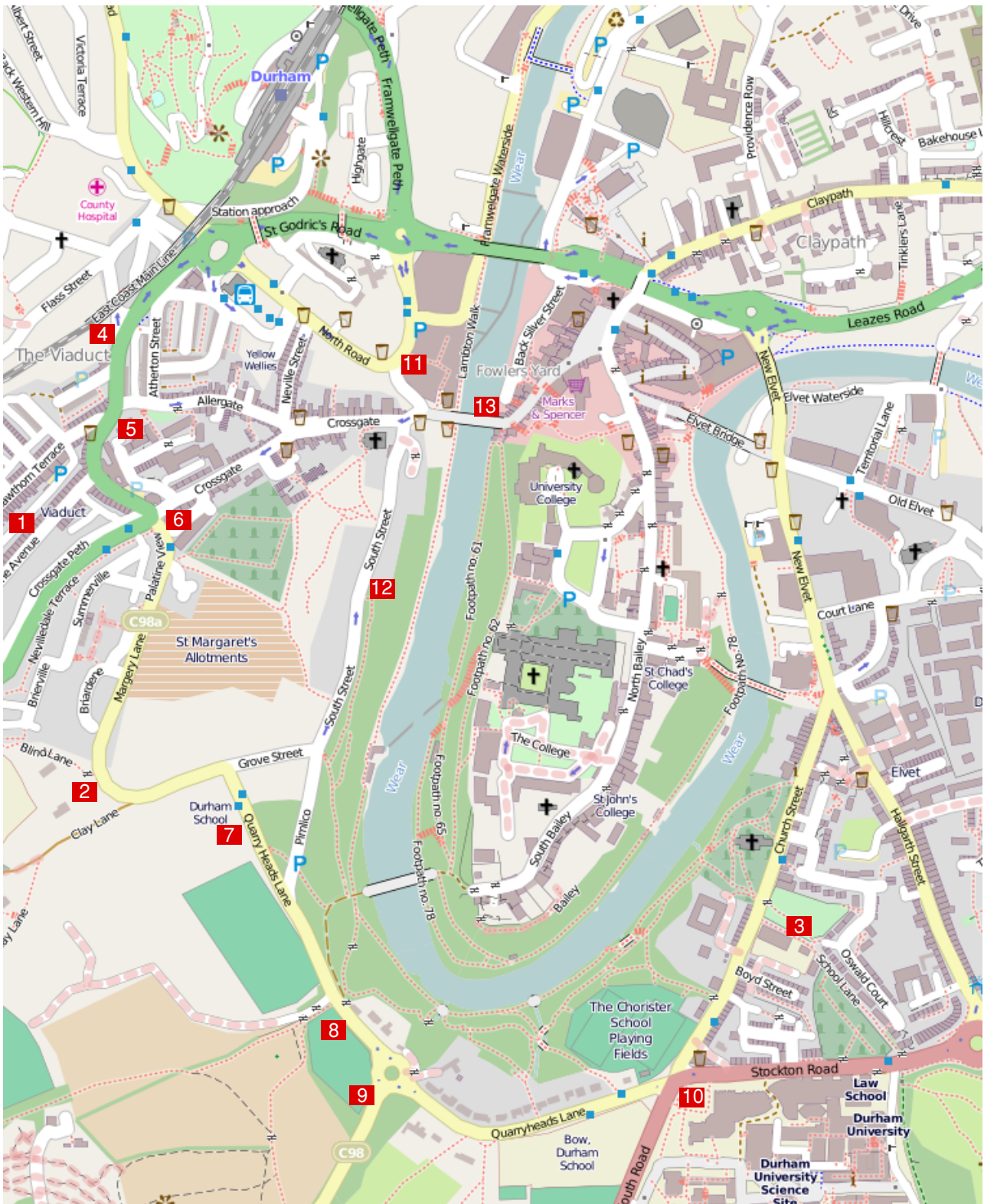
The footpaths on both the road-routes to the science site are scary when lectures have just finished. I am often afraid that students coming the other direction will force me into the road without realising it.

Routes from the railway station to the university

As the first example, we will examine the main route used by cyclists and pedestrians from the railway station to the Mountjoy campus of the university. See the accompanying map to follow the notes: numbers in round brackets in the text refer to the red numbers on the map.

⁴ <http://samsaundersbristol.wordpress.com/2013/06/21/considerate-cycling-39-how-much-cycling-is-there-in-bristol/>

The route is also used in part by students living in the Viaduct area (1) and by people living in the Neville's Cross area, emerging via Clay Lane (2). Neighbouring Blind Lane is a popular pedestrian route to St Margaret's Primary School. Other pedestrians and some cyclists use parts of the route to access St Oswald's Infant School on Church Street (3).



The route begins at the railway station. At the bottom of Station Approach you can either turn under the railway viaduct on to the main roundabout and then south-west on the A690, or cross North Road, with poor visibility of oncoming traffic, and continue via a residential road, Sutton Street. At (4) the NCN14 cycle route (on the pavement) crosses the A690 via a badly signed pedestrian refuge. It is not clear to cyclists coming from Sutton Street whether they are really

allowed to do this, as cars are obliged to turn left. The A690 then continues uphill, pretty steeply. It is not a wide road so overtaking by motor vehicles is a hazard. At (5) an on-road advisory cycle lane commences, on the east side of the road only. This should continue to the advanced stop box at the junction (6) but for the majority of the distance the markings are either worn off or not repainted after resurfacing. This was reported to the Council in September 2011, acknowledged, but not actioned (see <http://www.fixmystreet.com/report/204581> for evidence). The lane is useful because it allows cyclists to continue their slow progress up the hill when the traffic is queuing at the lights.

After the junction, we continue along Margery Lane. Note that the junction (6) was the location of the last piece of dedicated cycle infrastructure on this journey. Margery Lane and Quarryheads Lane are used by a fair number of cars, especially taxis travelling from the station to the university. There are a number of issues facing cyclists and pedestrians along the stretch from (6) to (9).

The road is extremely busy with students walking to the university, but the conditions are not good. The pavement is rarely wider than 130cm along the whole distance. At its narrowest point (7) it is only 80cm including the kerb (this is not the narrowest point of the carriageway either), and from there to (8) is mostly about 100cm wide. The Department for Transport (2012b) recommends a minimum clear width of 2m for footways, or 1.5m for short stretches. The 2m figure should be increased alongside busier roads (e.g. non-residential) and also increased if there is high pedestrian flow. The route in question has extremely high pedestrian flow and is fairly busy with vehicles. An absolute minimum of 1m is suggested as less than this will not accommodate wheelchairs. To make matters worse, for most of the route there is only pavement on one side of the road. This photograph shows that parents do not even have room to walk alongside their children:



*Narrow pavement on Margery Lane, on only one side of the road.
Observe the 'slow' markings for motorists: most of them do not.*

Between (7) and (8) there are no drains in the gutter, so during heavy rain a stream up to three feet wide forms in the road. Pedestrians run the risk of being showered by passing cars, and as a cyclist you either have to ride very much further out than usual or accept that you will get home with your shoes soaked. During the autumn there is a lot of leaf fall as the surroundings have a lot of trees. The leaves are blown up off the road by passing cars and accumulate on the pavement where they turn to mush. Quite often there is snow fall before anything is done about clearing them away.

At (8) the minor road from Prebends Bridge merges in. At last there is pavement again on the other side, and some pedestrians will cross here, particularly parents and children going to St Oswald's school. Crossing the road here is tricky as there is poor visibility in each direction, and there is no pedestrian refuge. The road curves and cars are obscured by a low wall. From the roundabout (which is excessively big and therefore easy to drive round at speed) cars will approach without warning.



The road to Prebends Bridge merges in from the left. Ahead is the high-speed roundabout.

In general, the absence of pavement on the east side of the road encourages drivers to exceed the 30mph speed limit, and a similar effect happens on the steep downhill approach to the roundabout from the road marked C98 (Potters Bank). At the crossing of that road (9) there is an absurdly small pedestrian refuge. The following photograph shows this refuge in the snow. See how little of the road surface is really used by motor vehicles:



Plenty of scope for enlarging the pedestrian refuge at the foot of Potters Bank.

The whole roundabout was resurfaced within the last two years but no changes were made at all (not even improvements to drainage). This suggests the Council does not have the proper practical strategy in place to improve conditions for vulnerable road users despite the fine words of the policy documents.

For remainder of the route along Quarryheads Lane (9) to (10) the pavements are adequate and attractive, being separated from the road by a grass verge. The road is somewhat wider, which makes it more pleasant for the cyclist. In the reverse direction, however, cyclists often have to negotiate cars parked along the south side of the road. None of this is residential parking as the houses, mainly on the north side, have ample drives. The road is wide enough to consider dedicated segregated cycle paths.

At the New Inn junction (10) there is no obvious provision for the cyclist to gain access to the shared-use paths within the university campus. Cyclists obeying the traffic regulations spend a long time in the right-filter lane while traffic thunders past on each side. Other cyclists take to the pedestrian crossings to complete their journey.

While many people do walk this route, many do so from necessity. It is not a route likely to attract anyone from further afield, and the anecdotal evidence is that people find it uncomfortable to use. A reasonable number of cyclists use the route, but there are very frequent cases of irresponsible overtaking by motorists, including at junctions and in the short stretch from the Durham School corner to Clay Lane where the road is not quite long enough to overtake a bike without risking hitting oncoming traffic coming round the blind bends. Less experienced cyclists find this environment very intimidating.

Pedestrians, of course, have several other options for this journey, but none are very much better. Walking via North Road and South Street (12) leads you onto the same route via a short road named Pimlico which has no pavement and an awkward crossing to reach the Quarryheads Lane pavement on the other side of the road, unless you avoid it by a very steep footpath to join the road from Prebends Bridge. The river-bank paths are a pleasant option, but not after dark as they are quite rightly unlit.

Cyclists have few other options. While it is possible to cycle down North Road, it is not in theory permitted to continue right at the Milburngate junction (11), and South Street (12) is one way the wrong way. Framwellgate Bridge is closed to cyclists, being pedestrian only (plus delivery vehicles until 10am).

Other routes to the university

It is worth pointing out that most other routes to the university are less than ideal for cycling. South Road has similar issues of narrow pavements, combined with a steady climb as you travel south away from the university. In the early evenings the foot traffic can be considerable and the cyclist has to make allowance for pedestrians spilling onto the road without warning, while maintaining a safe distance from overtaking cars.

Potters Bank, a steep hill up from the Quarryheads Lane roundabout, is marred by a line of parking spaces on the uphill side. There does not seem any particular destination served by these spaces and it would be very helpful to cyclists if they were removed. In the downhill direction many cyclists prefer unofficially to take to the pavement for safety as cars tend to take the blind corners too fast.

The deficiencies of the routes to Shincliffe and towards the city via Church Street and New Elvet are covered elsewhere in this response.

Quality of existing cycle lanes and paths

The previous subsections cover routes with very little cycling provision. Where cycle lanes or paths have been provided in Durham, the consistency and quality is very variable. More recent infrastructure has tended to be better, but there are still lapses. It is evident that there can be lack of co-ordination between highways and sustainable transport officers as improvements for cycling are often not built in when other work is being undertaken.

There are very few on-road cycle lanes in Durham City. These are controversial because they are rarely mandatory, sometimes blocked by parking, and often give car drivers a false idea of the safe gap for overtaking. But in some circumstances they have their place. Fifteen years ago more enlightened cities were putting down different coloured surfaces to make these lanes more obvious, but most of the examples we know of in Durham are just marked by white paint lines.

There are some very good cycle/pedestrian paths completely away from the main road network, such as the railway paths to the west of Durham. These are good for the destinations they serve but are badly connected to routes into the city. They are also not useable after dark, making them

unsuitable for a typical work journey in the winter. There are a few useful routes within the city area, such as Aykley Heads to Newton Hall (though it does include a vicious hill by comparison with the car route), and Durham Business School to Merryoaks, plus the attractive section of NCN14 along by the river towards Old Durham (currently closed after a landslide, with few signs yet of reopening).

The majority of the cycle network is in the form of shared-use paths by roads: in other words pavements (sometimes widened slightly) which have signs or paint indicating that cyclists may use them as well as pedestrians. Most of this network is poor quality, and is not really designed with the cyclist in mind, meaning that cyclists can usually travel faster if they take to the road. In effect it mainly serves to get some of the existing cyclists off the road out of the way of the cars, rather than encouraging car drivers out of their cars and onto their bikes. In countries with high cycling modal share, one of the prime reasons for using the bike is speed (Crist, 2013, slide 6), so anything which lengthens cycling journeys needs to be addressed.

On the route to Shincliffe from the University, the signage is very confusing, and it is unclear which side of the road you are meant to be and when the cycle path ends. Here we see an indication on the road to guide cyclists onto the shared-use pavement, but for cyclists going the other way it is unclear what to do:



Travelling towards Shincliffe.

If you carry on the path becomes too narrow to share (80cm). On the other side of the road there is a sign marking the end of a cycle route (where it started is not clear) but no dropped kerb to allow you to continue:



En route to Shincliffe, north side of road.

The cycle path along the pavement by the A167 from Neville's Cross up to Pity Me will form part of the Great North Cycle Route. It goes past the entrance of Durham Johnston School and could therefore be key to reducing car travel to the school. Parts of it are of a reasonable width, and some sections are segregated between cyclists and pedestrians, sometimes with comical results:



Bus stop by Durham Johnston School, A167

As with all shared-use pavements in Durham there is no indication of priority when it comes to side roads, and in fact there are no warnings to drivers that bicycles might be crossing. This means that you cannot really approach very much faster than a pedestrian would. You might well be safer travelling along the road itself, as vehicles coming out of the side roads would have to give way to you, and drivers of vehicles turning off the main road would also understand their responsibilities better. It is this sort of infrastructure which tends to be spurned by more confident cyclists. Well designed cycle infrastructure, as seen in the Netherlands, gives cyclists clear priority in these

situations and is used safely and preferred by cyclists of all levels of ability.

Where the width of the path is more generous there is also a problem with parking on it. We need stronger parking enforcement outside the pay-and-display streets, but also we need infrastructure whose purpose is obvious, to help people understand that it should not be blocked.



Parked van on A167 cycle path, Crossgate Moor.

The most dangerous aspect of this path is the provision at roundabouts, of which there are several on this route. The cyclists are directed to the traffic island in the middle of the side road, often requiring two lanes of traffic to be crossed. The crossing point is very close to the roundabout, meaning that cyclists have to keep a careful eye on traffic on the roundabout to determine whether the queue of cars they are crossing is likely to stay still long enough. It is equally hard to know when it safe to leave the island and cross the exit lanes from the roundabout as few cars signal reliably and the speeds are quite high. There are no road markings or signs to warn motorists of the likelihood of cyclists crossing their path. It is very far removed from the sort of infrastructure provided in the Netherlands.



Roundabout on the A167 cycle path.

Further north the path deteriorates to 80cm wide with grass on one side and brambles on the other. Wear protective clothing or you might end up with a badly scratched arm.

While there might be some excuse for this level of quality, as the cycle route was marked up some

years ago, older standards cannot be blamed for deficiencies in the provision on Dragon Lane. This is part of NCN14 and is a short section alongside the road that links two substantial off-road sections of Renny's Lane and Bent House Lane. The road was widened in early 2013 and the pavements rebuilt. The pavement on the west side is shared-use for cyclists and pedestrians. While the pavement is commendably wide, cycle provision does not conform to the best practice of CROW, the Dutch design manual, as promised in the *County Durham Cycling Strategy and Action Plan, 2012–2015*. There are three side turnings to car parks for retail units. Some of these have two lanes of traffic coming out, making them awkward to cross. There are no road markings to warn motorists of cyclists. The way this should have been remodelled would have involved a raised table at the side turnings, so that the pavement continued on a level with priority to cyclists and pedestrians. Again, there is parking on the pavements:



Dragon Lane: parking enforcement needed.

Further up there is a signalised crossing for the Tesco supermarket junction. Cyclists are expected to dismount to cross this entry in two stages. If you were on Dragon Lane you would just wait for the lights once. The cyclist has to wait for two stages of lights. Cycling should be given an advantage in these situations or no-one will want to switch.



Dragon Lane: Tesco junction.

Shortly afterwards the road narrows and the cyclists are decanted onto the main road again. In the opposite direction, when southbound cyclists leave the road to join the shared-use pavement they must cross the road. There is a very narrow, worn-out strip in the middle of the road to indicate what to do, which is pretty pointless because the car parking on that road tends to require cars to drive straight over the cycle lane:



Dragon Lane: crossing the road to join the shared-use cycle path.

Much cycling provision in Durham can be characterised like this: badly designed, and badly maintained, and opportunities for improvement as part of other works are not fully taken advantage of.

The Council has acknowledged that the route of the national cycle network through the centre of the city leaves a lot to be desired, and work is in hand to reroute it to pass close to the cathedral. While this will be a great improvement for the leisure market, those living on the current route will still need some sort of cycle route on roughly this axis. To give a couple of examples of the problems with the current route, here is a photograph taken from a position on Milburngate just after cycling

up from Pennyferry Bridge. The cyclist needs to aim for the point marked by the arrow, but there are no signs.



We think you are supposed to take to the pavement on the right and cross at the pedestrian lights at the end, rather than weave your way across three lanes of traffic and a set of bus stops. What a shame you are not allowed to turn left and ride the wrong way up North Road as that would avoid the next problem:



NCN14 route leaving Milburngate: impossible to cycle up to Castle Chare.

It is often said by non-cyclists that Durham is too hilly to be a true cycling city. Small wonder when you are presented with challenges like that. By contrast the parallel road has a much gentler gradient:

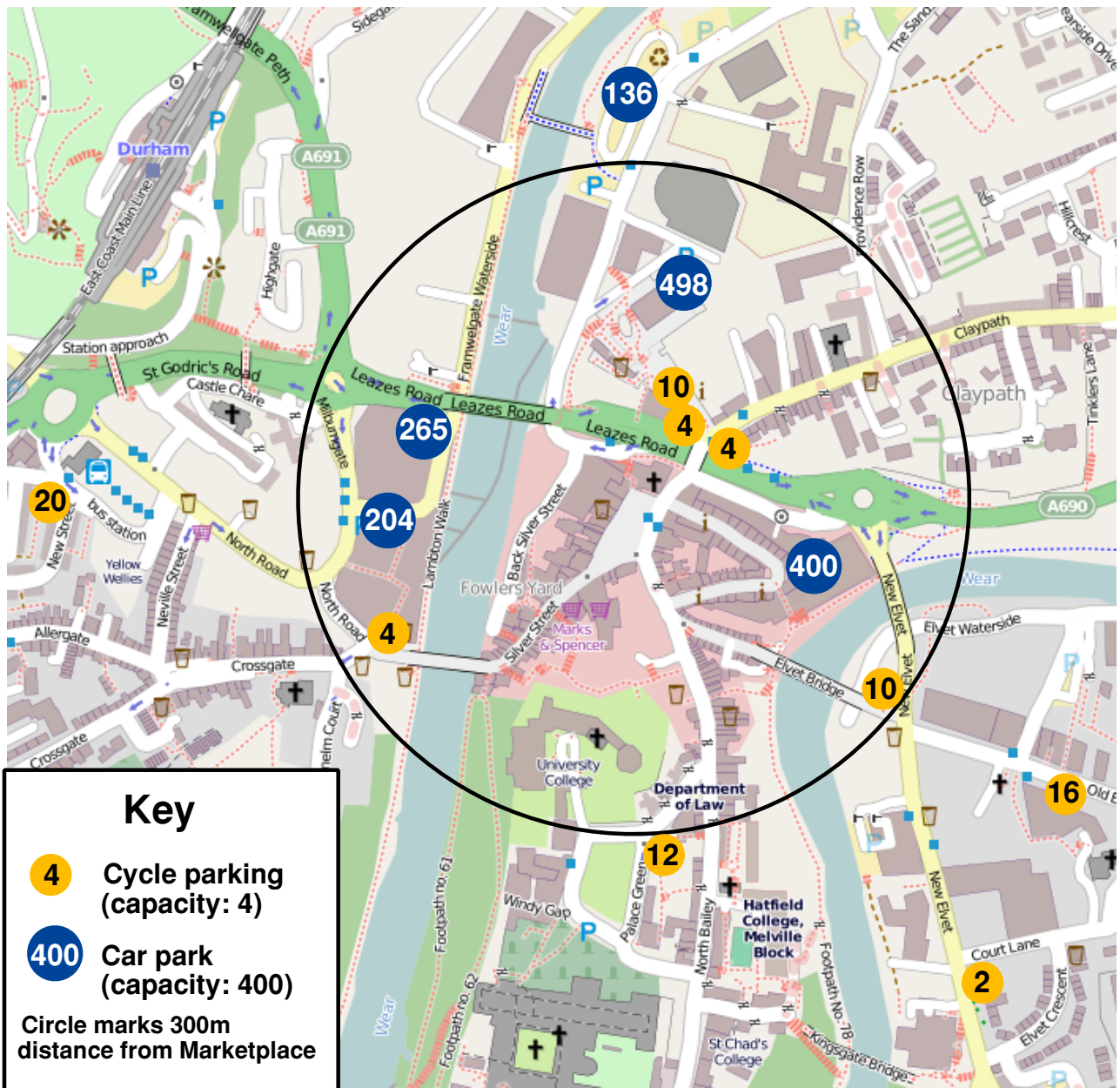


Gentler gradient on the A690.

Any requests for a shared-use pavement?

Cycle parking

There is currently very little cycle parking in Durham except that provided at the railway station and at the University's Mountjoy campus. For cycling to be a convenient mode of transport in Durham, parking must be provided for all manner of everyday activities, just as it is for cars. Compare the cycle and car parking provision for the retail area, centred on the market place:



Within the 300m radius we have a total of 1389 spaces of which car spaces make up 98.4% and cycle spaces 1.6%. As we increase the radius further cycle stands will be included, but so too will be numerous on-street parking spaces and various open-air car parks. The redesign of the market place removed what little cycle parking there was, and it is quite common to find bicycles locked up to lamp posts in the main retail streets because there is no other provision. Durham does not appear to welcome cyclists. Many of the cycle stands are hard to spot being low capacity or tucked into odd corners. Where car parking has been converted to cycle racks, in Old Elvet outside Old Shire Hall, the racks are so far from the shops that they are hardly used.

In contrast, at Sainsbury's in the Arnison centre there is a vast array of cycle stands, usually unused as there is no obvious route for cyclists to gain access to the site. Access could be provided via Abbey Road or direct from Rotary Way but neither has been identified in the strategic cycle network safeguarded in the Durham City Integrated Transport Approach. With a clear safe route provided, the cycle racks might see good use by people from Newton Hall, Pity Me and Framwellgate Moor, reducing pressure on the car park.

To grow cycling share you cannot attract people from the private car with provision which is less obvious and less convenient than what is provided for cars. Cycling has to be given a sufficient advantage on a number of fronts in order to realise the gains.

6. Opportunities for improving cycling and pedestrian conditions

This section seeks to demonstrate that there are possible interventions which could improve conditions for pedestrians and cyclists and thereby increase their modal share. This is key to building a sustainable transport alternative for the city of Durham. We seek to demonstrate that there are sufficient options open to the council that a comprehensive sustainable transport plan should have been considered as an alternative in the transport modelling, and that the need for the relief roads has not been adequately tested.

Speed limits

Many local councils have adopted a policy of 20mph speed limits for all residential streets. Regulations have been relaxed and it is no longer required to make such limits self-policing by means of traffic calming measures, though traffic-calmed zones are more effective at reducing speeds. All roads in the new housing developments should be engineered for 20mph limits.

There have been no 20mph limits applied to streets in the city of Durham as far as we are aware, not even temporary limits near schools. The Local Transport Plan 3 (2011) covers speed management and traffic calming in policies 12 and 13 but the wording of these policies is very generic and quite weak. The deficiency was noted on page 12 of the Health Impact Assessment of the plan but the policies were not revised in the light of this.

Margery Lane and Quarryheads Lane would be obvious candidates for 20mph limits, because while they are not residential for much of the length, there is high cycle and pedestrian flow (with potential for much higher cycle usage) and wholly inadequate pavements.

Other stretches of road would benefit from a speed reduction from 40mph to 30mph. Cyclists supposedly are provided with a shared-use path on the Milburngate Bridge, but it is hardly signed, only accessible from one side of the road and is congested with pedestrians. Most of the A690 from Neville's Cross has a 30mph limit (which motorists tend to exceed when going downhill), but on the Milburngate Bridge the limit is raised to 40mph through to beyond Leazes Bowl roundabout. Cutting the limit to 30mph on this stretch, a key crossing of the River Wear, would add at most 7.5 seconds to each car journey and contribute to an environment safer for cycling. It could even reduce congestion and emissions by smoothing traffic flow.

Similarly at Shincliffe Peth, an awkward road in a cutting leading steeply downhill from the university, the limit could be dropped to 30mph at a cost of 5 seconds on car journeys. This section is a pinch point which is unavoidable by cyclists coming from Shincliffe and beyond. Recently an advisory cycle lane has been added in the upward direction, which is very welcome. The downward direction is to receive an illuminated cycle-activated warning sign as there is a risk of car drivers hitting cyclists from behind round the blind bend. Speed limit reduction would be a sensible measure here too, and would also improve the safety of pedestrians seeking to cross to the popular woodland footpaths at the bottom of the peth.

With the increased housing planned for Merryoaks, consideration should be given to lowering the limit on that stretch of the A167 which is currently 40mph south of the Duke of Wellington. The pavement on the east side is 2.4m throughout, just 40 cm wider than the recommended minimum pavement width for *quiet* roads. Despite that, it is designated as a shared-use pedestrian/cycle path. It carries a fair traffic of primary school children to the schools in the Neville's Cross area and to the recreation ground on Parkhouse Lane. Because of the speed of vehicles on the road it does not feel safe to use. Options such as widening the pavement by taking more of the grass verge and narrowing the roadway should also be looked at. As this route would form part of the Great North Cycleway improvements could be considered as part of that scheme.

Two-way streets

There are quite a few streets in Durham which have been made one-way to all vehicles because they are relatively narrow. Most of them are wide enough for bidirectional traffic apart from the presence of parked cars. A lot of these roads could be made two-way for cyclists to create alternative routes and a network which gives cycles an advantage. Shortening routes for cyclists and allowing them where cars are not permitted is a key technique behind the Dutch success in cycle share. Examples of streets where this could be applied include South Street, Crossgate, North Road, Allergate, Neville Street and Elvet Crescent. Most of these roads are fairly quiet already. North Road could be considered if a reduction in buses can be achieved following relocation of the bus station.



North Road: large planters, wheelie bins, long taxi rank, illegal car access.

Even part of the current NCN14 route, between Pennyferry Bridge and Claypath, is one-way to cyclists, with no alternative given other than dismounting! Here the only reason seems to be the use of part of the road for coach party drop-off.

City centre access

It is only a generation ago that buses and other traffic were allowed up and down Silver Street and Elvet Bridge, alternating in direction with a policeman controlling the lights from a hut in the market place. When the roads were pedestrianised, bicycles were excluded too, leaving the now congested Milburngate Bridge the only option for crossing the centre by bike. While Pennyferry Bridge has recently been provided it requires a considerable detour and extra descent/ascent.

Delivery vans and even large lorries are allowed on these roads until 10am or 11am in the morning. The roads should be reopened to bicycles as it would provide a cheap, safe route across the centre of Durham. There may be concern about the volume of pedestrians during shopping periods. In the early morning, before 10am, there is no such problem on Silver Street, and Elvet Bridge is clear enough the whole of the day as it has fewer shops. A trial of this could easily be arranged. If successful there would need to be further work at the signalised junction at the end of Old Elvet to allow bicycles to continue straight on and turn right.



*Looking down towards Elvet Bridge:
if cars are acceptable on Saddler Street, why not bikes on Elvet Bridge?*

Junction improvements

The speed of some junctions could usefully be lowered by tightening corners. This makes the environment safer for pedestrians and cyclists.

There are also a number of junctions with traffic lights where there are fairly pointless extra lanes to take left or right-turning traffic. The examples include cases where the left-turn lane is often obstructed and is only long enough for two or three cars. At the north end of Margery Lane (6 on map), for example, there is a hardly-used left turn with its own phase. Between the car lanes a very narrow cycle lane leads to an advanced stop line box. This would be far better reconfigured as a wider cycle lane allowing more cyclists to get to the front of the queue of traffic where they will be safer manoeuvring.

On South Road, by the New Inn junction, the traffic is separated into left-turn, straight-on and right-turn lanes, and the same applies to Church Street opposite. In each case the traffic lights have a phase just for that road, so the separation of straight-on and right-turn traffic gives very little advantage as the lanes are only long enough for two or three cars. It does, however, make it much more awkward for less confident cyclists wanting to perform a right turn. All the approaches to this junction should at least have advanced stop lines for cyclists. This junction was partially remodelled in the summer of 2010 to ease turning for buses, but cyclists' needs were simply disregarded in this work despite it being at the edge of the campus and highly used by cyclists.



New Inn junction from Church Street.

One of the worst examples in the city is the junction of New Elvet, Church Street and Hallgarth Street. New Elvet slopes steeply up to this junction and cyclists generally go at a crawl. The diagonal parking bays outside the shops are a particular hazard. You find you are approaching lights with separate lanes and phases for bearing left to Hallgarth Street and right to Church Street. The left hand lane is often partially blocked by the adjacent diagonal parking.



Protruding vehicles combined with a steep hill on New Elvet.

The bearing left (less popular route) is green for longer, with cars following that route trying to overtake cyclists who are bearing right. The traffic light phase also causes issues for pedestrians crossing the end of Hallgarth Street where there is no pedestrian light, as it is impossible to see

which lights are green or red for road traffic. Wobbling at slow speed over to the right-hand lane while cars continue to overtake is not for the faint-hearted cyclist. Abolishing the left-hand lane would make a big improvement here, but there are more radical options which should be looked at such as making Church Street one way to motor vehicles, removing the parking outside the New Elvet shops, and having a segregated cycle route on the uphill direction with its own traffic light phase at the top. Reallocating road space on Church Street to provide a bi-directional segregated cycle route would also support safe cycling to St Oswald's School, which is converting from infant to primary. Alternatively, cars could be given access to this road only from the New Inn end, with only buses and bicycles being allowed to travel through, to or from New Elvet. This could have far more advantages for bus users than the proposed bus lane on South Road.

Limiting car parking

To the casual observer it appears that car parking spaces are allocated in all possible locations on the city streets. In some places there are parking spaces marked within 10 metres of a junction (for example, Old Elvet by Territorial Lane). The Highway Code (rule 217) advises against parking so close to junctions unless authorised, but making such authorisations is unhelpful and increases risk of accidents.

The cycling environment would be much improved on a number of through-routes by removing selected parking spaces. In particular, anywhere cyclists have a steep hill to climb, there should preferably be no parking on the cyclist's left during the ascent. Examples include New Elvet and Potters Bank.

Reducing car parking is a useful technique for encouraging modal shift. Of course, some employers provide substantial amounts of parking and stronger travel plans need to be encouraged. The University has been contemplating restrictions on issuing permits to its staff on the basis of need and distance, but these ideas have not yet been implemented.

Off-road routes

The Council has made some progress in the last few years in getting approval from landowners to allow cycling on footpaths where appropriate. Alternative routes and short-cuts for cyclists and pedestrians are a key method of giving active travel modes an advantage over the car. Durham already has a dense footpath network within the city. These paths need to be audited and more of them opened up to cycling as well.

In the Netherlands housing developments are designed with *filtered permeability* where relatively direct routes are available for active travel but car routes have more winding routes and access to the estate from one direction only. Parts of Newton Hall have footpaths through to adjoining streets, and it may be possible, with additional dropped kerbs, to make some of these available to cyclists.

As land becomes available for development it is important to plan for new strategic walking and cycling routes. One of the large developments approved recently is on Mount Oswald golf course. Ahead of that approval planning permission was given to build houses on fields off Potters Bank. If you examine the aerial view of the land, you will see what an opportunity has been missed to create a new strategic active travel route through the land.

The red lines show the major roads in the area, with the A167 running north-south. The yellow lines are less important through-roads. The green lines show the various footpaths and cyclepaths in the area. Some of these are access roads for part of their length, but they are not through-routes for motor vehicles and so there are few safety issues for cycling. Some of the footpaths are not suitable for cycling but are useful pedestrian routes.

The brown area marks the land currently being developed as housing, to the south of Potters Bank. The dashed green lines show how a route could have been safeguarded between Durham University

Business School and St Aidan's College to cross the popular Mill Hill Lane cycle path and give access to the Mount Oswald development. It would have required negotiation with the University or the purchase of a strip of land, but the benefits for the network would have been considerable.



To achieve filtered permeability it is essential that opportunities like this are seized upon. New developments should leave gaps at strategic places to allow cycle and pedestrian access to future adjoining developments. Regarding the Mount Oswald site itself, the developers say they have the intention of providing good cycle and pedestrian access, but the land is to be developed in several phases. A portion of the site is to be devoted to self-design executive housing. It is essential that this does not create a closed community. The Council should ensure that a network of active travel routes passes through the whole site, north to south, and not just connecting to the existing main roads. The Mount Oswald site also needs active travel links across the A167 to the Merryoaks site (outlined in brown) should this development go ahead. This will encourage the inhabitants to be

less car dependent.

Major infrastructure

The strategic cycle network identified in DITA is a good place to start in terms of delivering better continuous routes for cyclists, but needs a lot more work in developing the proposals. We are often told there is not enough space to provide cycling infrastructure. When you look, there are a number of roads in Durham which are actually wide enough to accommodate segregated cycle paths in the Dutch style. Examples include Front Street in Framwellgate Moor.

If cyclists are just moved onto shared-use pavements with little provision at junctions it just marginalises the mode further and also degrades the pedestrian environment. Ideally we need reallocation of the public space and segregation between cyclists and pedestrians.

To tackle the more constrained environment of the city centre, however, will require a willingness to consider more radical options. It is essential to deliver high-quality cycling spaces across the city centre as the geography of the city means that a high proportion of journeys need to pass through the middle. There should be a concerted effort to come up with a plan for a high-quality city-centre network in which the bicycle is not marginalised to steeper roads and shared pavements. The traditional highway planning hierarchy should be reversed, with cycling and pedestrian needs put first, to see what the ideal network would be. Then it should be considered how to accommodate car traffic.

Car-friendly cities tend to tackle congestion, and ease the flow of cars. This is how you end up with the severance issues mentioned many times in the plan. In recent years measures to tackle congestion by 'road improvements' have been justified by the argument that congestion is worse for greenhouse gas emissions than free-flowing traffic. This is only because of the energy wasted in accelerating and stopping frequently. Policy should instead focus on reducing car use and enabling smoother but slower journeys, giving an advantage to sustainable modes while reducing carbon emissions. It is not possible to build our way out of congestion without car use becoming more attractive in the process.

7. The economic and social case for cycling investment

We see large sums being allocated to deal with congestion and bus improvements, but what about cycling? At the recent 'Love cycling, go Dutch' conference in Newcastle, Philippe Crist of the International Transport Forum of the Organisation for Economic Co-operation and Development gave a presentation on the economic case for cycling. For politicians and decision makers putting large-scale investment into cycling feels like a risky proposition: how can you be sure that the interventions will result in the increases in cycling that are hoped for?

Fortunately it has been shown (Crist, 2013, slide 45) that investment in high quality cycle infrastructure has on average a benefit to cost ratio of 13:1 (both UK and non-UK). This sounds startlingly good, but it is an indication of the amount of suppressed demand for cycling and the poor state of provision in most countries at present.

There needs to be a considerable increase in the investment in cycling. The All-Party Parliamentary Cycling Group's recent report, *Get Britain Cycling*, recommended a spend over a sustained period of £10 per head of population, rising to £20 as cycling increases.

The *County Durham Cycling Strategy and Action Plan, 2012–2015* states that about £860,000 was spent on infrastructure delivery over the life of the previous three-year plan. Using the 2011 census figures for County Durham this works out at 56 pence per year annual investment per head of population. In 2010 only 0.3% of the UK transport budget was spent on cycling. The Durham County Plan and associated documents say good things about encouraging sustainable travel, but

we must invest if we are to grow the cycling modal share.

Cities where cycling is seen as a normal travel option also tend to rate highly in other measures of quality of life. Crist quotes several US tech company CEOs who had chosen the location for their offices on the basis of cycle infrastructure, and a US politician comments:

The number one thing tech companies want is bike lanes. Ten years ago we would never have thought that walkability or bike lanes would be economic development tools.

From images of Los Angeles we are used to America being the land of the car but many cities are waking up to the potential for cycling and are moving fast. In the UK we can cite Cambridge as a haven for technology companies with a lot of cycling. Through its university, Durham tries to compete internationally. The World Heritage Site and the setting of the city is a great asset, but we fail to make the most of the environment when road traffic is allowed to dominate our public spaces to the extent seen in central Durham.

The County Plan aims to create a County Durham with better employment prospects which will attract investment to the area. The Sustainability Assessment points out that with the Western Relief Road having little effect on the city-centre congestion, there will not be much effect on whether companies choose to locate their business in Durham. The Aykley Heads development might therefore struggle to attract the inward investment anticipated in the plan. Prioritising sustainable travel, including cycling, might be far more cost-effective in achieving these goals.

Another obvious benefit of cycling is that less of the region's income is being spent on petrol, so more money will be retained in the local economy.

As well as pure economic benefits, cycling has much wider benefits to society. Increasing cycling and walking tackles a number of problems such as obesity and improves the social and psychological well-being of participants. There are also more subtle effects, such as engagement in society. In a car you can shut yourself in your own environment and drive away from the town without being concerned about its future. If you walk or cycle through your urban environment you are more engaged, less isolated.

Cycling greatly extends the active travel reach, yet gives people the freedom of movement they currently seek from the car. If good infrastructure can be provided, it is the ideal transport mode for the urban environment.

8. Are the proposed housing developments sustainable?

The Plan claims that the housing developments proposed for the outskirts of Durham are the most sustainable locations available. This is by comparison with housing dispersed around the surrounding villages. The arguments advanced include the employment potential within the city, the access to existing bus routes and the proximity of the railway station to help to reduce the additional carbon emissions. The policy documents also promise best-practice sustainable housing design, but these aspects should not be allowed to sway the argument as new-build housing in any location could be built to higher standards.

It is therefore the type of housing, the mix of development, and the transport links which need to be put under particular scrutiny.

Transport links

The policies mandate good sustainable transport links to the city, and internal green routes to encourage active travel within the development. The Sniperley, North of Arnison and Sherburn Road master plans include requirements for cycle parking at the local amenities, and for cycle storage provision associated with each dwelling.

Despite these generally positive proposals there are some strange elements which are not compatible with the vision for these communities. In Policy 8, item 'o' we find:

Sniperley Park will require the future expansion of the Sniperley Park and Ride facility. Attractive and safe links between the housing and the existing Park and Ride facility will be created to maximise its use by residents;

If Sniperley Park is designed with good internal walking and cycling infrastructure, what need exactly would the residents have for the Park and Ride site? The plan requires bus stops within the site which would be easily accessible by walking, so it appears this policy envisages residents driving to the Park and Ride in their cars. If it is envisaged they will cycle to the Park and Ride, then provision of ample cycle parking at the extended Park and Ride site needs to be made explicit.

The big risk with each of these new developments is the fact that they will be extremely well connected to the road network. If the Northern Relief Road is built, the North of Arnison site will be very attractive for people wishing to drive to regional employment centres such as Sunderland. The Sherburn Road site is very close to the A1(M), and the Sniperley Park site would have easy access to each of the relief roads as well as the A167. It will be hard to persuade residents to adopt active and sustainable travel habits in these circumstances without further measures to discourage car dependence.

Shopping provision

The North of Arnison site includes provision for a substantial 'full service food superstore, offering an extensive convenience offer at a scale that is commensurate and capable of competing with other main foodstore destinations' (paragraph 4.64). A large car park is also suggested. This is more than would be required for local shopping needs of the additional population, and follows an analysis of the food retail provision in the city of Durham which concluded that there was currently an under-provision.

We challenge whether this is the most sustainable option. The current supermarket at the Arnison Centre attracts shoppers from a large swathe of Durham including as far as the Neville's Cross and Merryoaks housing areas, whose only local food shop is a newsagent on Neville's Cross Bank. To reduce transport emissions it would make far more sense to provide more local shopping facilities in other parts of Durham which can easily be accessed by foot or bike. It is also important to strengthen the city-centre offer.

Student housing

We set out the main arguments in favour of providing more dedicated student flats in the formal response sections at the start of this document, but a few more points are worth making. Freeing up housing in central Durham currently occupied by students would boost the city-centre economy. With a larger permanent population in the centre, the shops in the middle of town would have more custom the whole year round, not just during the university term time.

Amenities in Mount Oswald, Merryoaks and Neville's Cross

The Mount Oswald development site was given outline planning permission before the adoption of the plan. Elements of the proposals, such as 1000 student places, are referred to in the plan, but there is little detail. The existing housing round Potters Bank and Neville's Cross is already poorly provided with facilities. As mentioned above, there is only one small food shop at the edge of the area. Both the primary schools are over-subscribed and are also on the northern edge of the area. There is no doctor's practice on the western side of the city. The university's hill colleges also adjoin Mount Oswald and students have a long journey in to the centre to access shops.

If the residents of the new developments are not to be dependent on the car, there must be more local facilities, possibly including another primary school. Residents of the small housing estate at the Cock o' the North roundabout already have difficulties getting primary school places reasonably

locally because of the distance they are from any school.

9. Council documents referenced

County Durham Plan and supporting documents

Durham City Integrated Transport Approach (October 2013): <http://durhamcc-consult.limehouse.co.uk/file/2679025>

Pre-Submission Draft Local Plan: Final Sustainability Appraisal Report.
<http://durhamcc-consult.limehouse.co.uk/portal/planning/ps/sa?tab=files>

Transport modelling for the County Durham Plan, Final report (August 2013):

(1) <http://content.durham.gov.uk/PDFRepository/TransportModellingFinalReportPart1Aug2013.pdf>

(2) <http://content.durham.gov.uk/PDFRepository/TransportModellingFinalReportPart2Aug2013.pdf>

Local Transport Plan 3

Local Transport Plan 3: Transport Strategy (2011)

Local Transport Plan 3: Appendices (2011)

LTP3 Health Impact Assessment (2010) http://content.durham.gov.uk/PDFRepository/LTP3_HIA-Final.pdf

Other

2011 Census First Data Release: http://content.durham.gov.uk/PDFRepository/2011_Census_First_Release_website_brief.pdf

County Durham Cycling Strategy and Action Plan, 2012–2015: http://content.durham.gov.uk/PDFRepository/CountyDurham_CyclingStrategy2012-2015.pdf

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