Transport and Urban Housing Growth

Unfinished Business for Labour

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Transport and Urban Housing Growth – Unfinished Business for Labour[1]

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1. Introduction

This discussion paper has been written following an open invitation from Prof. Phil Goodwin for contributions to the Shadow Transport Minister's work towards Labour's manifesto. It draws on research by the author and others into the relationship between housing and travel behaviour and on the author's brief experience of advising the last Labour government on the Eco-towns programme.

Britain's population is forecast to continue to grow, despite Brexit, and there remains a serious housing shortage (Wilson *et al.,* 2017). This paper aims to answer the question:

> ***How can we house more people in urban areas without increasing traffic and worsening the urban environment?***

In higher-density urban areas people drive less; they walk, cycle and use public transport more. That is one reason why some governments, including the last Labour governments, encouraged higher-density urban developments. There are other reasons, particularly economic regeneration of cities and protection of the countryside. Most new housing can and should be built within existing urban areas, but some development outside those areas is unavoidable. In Britain such development has always been low in density and high in traffic generation. Many well-meaning attempts to change that situation have all failed. How to address that problem is another aim of this paper.

Averting climate change is the biggest challenge for transport policy. The proposals in this paper will help to constrain increases in emissions from housing growth but to reduce emissions fast enough will require rapid action in many other ways. Section 8 will briefly discuss how planning for housing can assist with one of these actions: electrification.

This paper mainly focuses on the relationship between housing and transport outcomes; clearly, there are many other aspects of housing and urban policy, which it will not seek to address. It is a discussion paper, not a comprehensive analysis. Its main aim is to solve problems rather than win votes, but the concluding section will briefly summarise the positive themes which could be stressed, if the general approach is accepted.

2. Summary of Policy Recommendations

Urban Densities and Regeneration

- Re-instate the 'brownfield first' principle in the NPPF[3] with targets for the re-use of previously-developed land.
- Increase the number of 'locations well-served by public transport' and concentrate new housing development at higher densities around them.

Traffic Removal

- Make a statement of principle in the NPPF that in areas where housing densities are high or increasing, pedestrianisation, filtered permeability[4] and/or reallocation of road space to pedestrians, cyclists and public transport should be encouraged.
- Re-allocate part of the DfT's road building budget to fund urban traffic removal.
- Revise guidance and remove regulatory obstacles to pedestrianisation, filtered permeability or minor changes to road networks.

Parking Management and Supporting Electrification

- Amend the NPPF to recommend against minimum parking standards.
- Issue guidance to local authorities recommending the extension of RPSs[5] in areas where housing densities are increasing.
- Establish a fund for local authorities seeking to introduce or extend residents' parking schemes, enabling them to avoid charging for permits at the start.
- Amend the NPPF to ensure that all vehicles accessing new developments can be charged, off-street or on-street.

Car-free and Traffic-free Housing

- Insert a clause in the NPPF recommending car-free and traffic-free housing in areas where population densities are high or increasing.
- Amend the regulations governing Section 106 agreements to enable authorities outside London to enforce 'car-free' conditions.

Greenfield and Ex-Urban Developments

- Scrap the Garden Cities programme and the road building associated with it.
- Replace many small new settlements with a few new cities.
- Plan for urban extensions on the edge of larger cities, served by rail, tram or metro.
- Revise green belt policy to enable this to occur.
- Plan for genuinely urban centres in these extensions, with low parking standards and controlled parking from the outset.

[3] National Planning Policy Framework
[4] Separation of modes in order to restrain general traffic and give an advantage to sustainable modes
[5] Residents' Parking Schemes

3. The Influence of Population Density and Urbanisation on Transport Outcomes

There is a strong relationship between population (or housing) density and travel patterns. People in low-density suburbs or dispersed settlements travel more by car, walk and cycle less and generate more traffic per person. Litman and Steele (2018) provide a good up-to-date summary of the international evidence, much of which comes from North America. UK studies have generally come to similar conclusions (Melia *et al.,* 2011, 2018, Headicar, 2013, Halcrow *et al.,* 2009, Barton *et al.,* 2012). Figure 1 illustrates the relationship using Census data. 42% of people in the densest quartile of wards commute by car, compared to 64% in the least dense quartile.

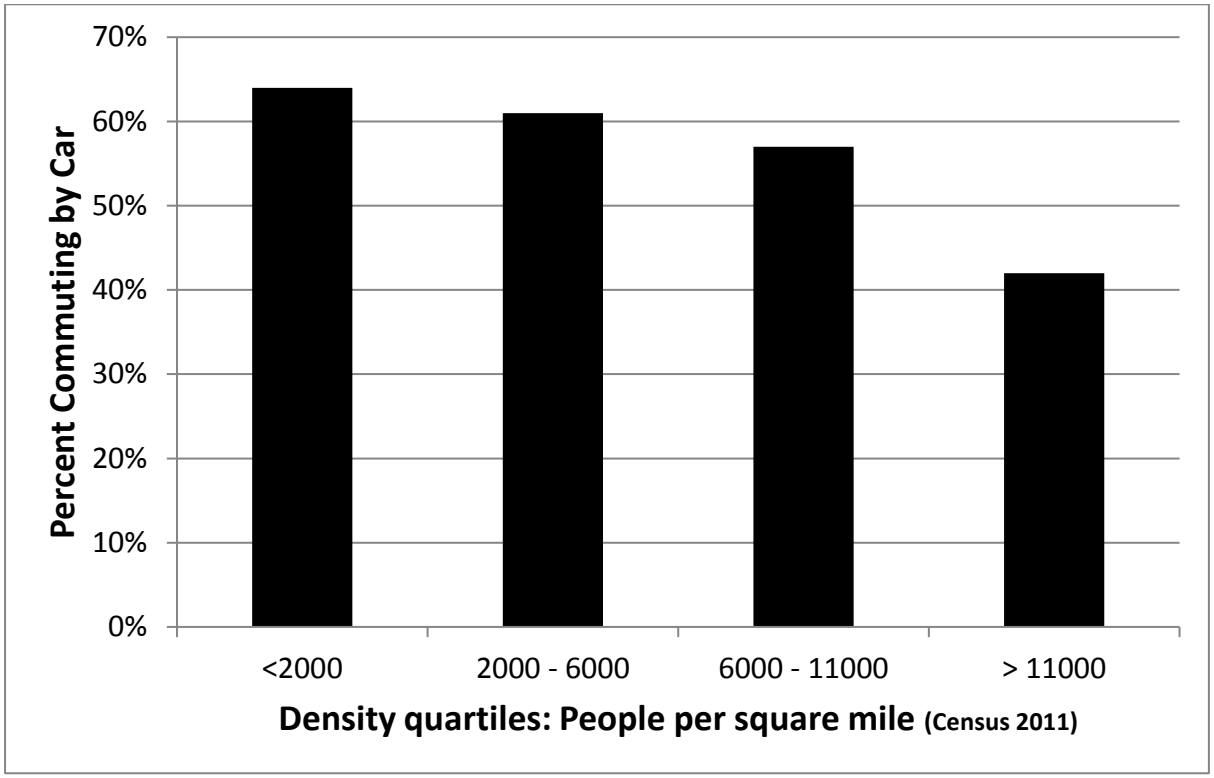

Figure 1 – The relationship between population density and commuting by car

Higher population densities are associated with less travel by car (fewer trips and shorter distances) and with several other factors, which reinforce the differentials: a greater mixture of land use, better public transport, more constraints on parking and shorter distances to town or city centres (Litman and Steele, 2018, Barton *et al.,* 2012).

A similar relationship exists between settlement size and travel behaviour. Figure 2 shows how people in rural areas generate nearly three times as many trips as people living in

London; between those extremes larger cities generate less traffic per person than smaller towns or villages.

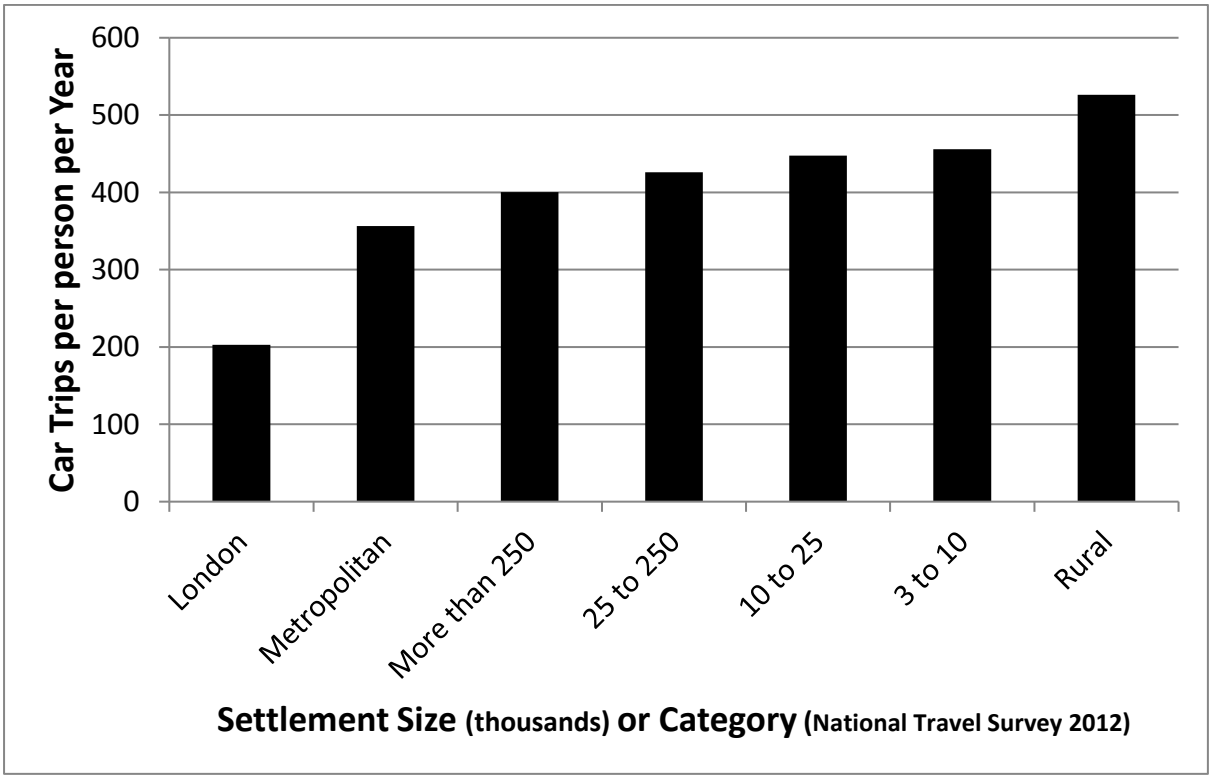

Figure 2 – Relationship Between Settlement Size and Traffic Generation - England

4. The Influence of Car Ownership and Parking Policy on Transport Outcomes

Car ownership exerts a strong intermediary role between the built environment factors (density, settlement size etc.) and traffic generation (Van Acker and Witlox, 2010). Figure 2 and Figure 3 show similar relationships; Figure 2 shows settlement size and traffic generation and Figure 3 shows settlement size and car ownership. Put simply: in bigger urban areas, people drive less because they own fewer cars. This occurs partly through choice: there is less need to own a car in larger urban areas, and partly through constraint: it is more difficult to own cars in the inner areas of larger towns and cities, which have less space available for parking. As Melia (2015b Chapter 6) explains, measures that seek to reduce traffic generation will also reduce car ownership and vice versa (contrary to some popular urban myths).

The availability of parking is another important intermediary factor in the relationship between urban density, car ownership and traffic generation. In denser areas, less land is available for parking. Transport for London (TfL, 2012) showed how more parking in new developments encourages more traffic generation. Following that evidence, the Mayor of London has now explicitly recognised the role of parking constraint in moderating car

ownership and traffic generation (TfL, 2017), but admitting such a truth might be politically difficult elsewhere (discussed further in: Melia, 2015b: Chapter 6).

TfL (2012) mainly focussed on residential parking standards; destination parking can also influence travel behaviour. A panel study of employment sites found greater parking availability encouraged modal switches towards single occupancy car use, and undermined travel plans which promoted modal shift (Chatterjee *et al.,* 2016). A recent study at the University of the West of England found that a campus parking ban for students who live in Bristol reduced driving to campus, and also reduced car ownership and licence-holding amongst students (Melia and Clark, 2018).

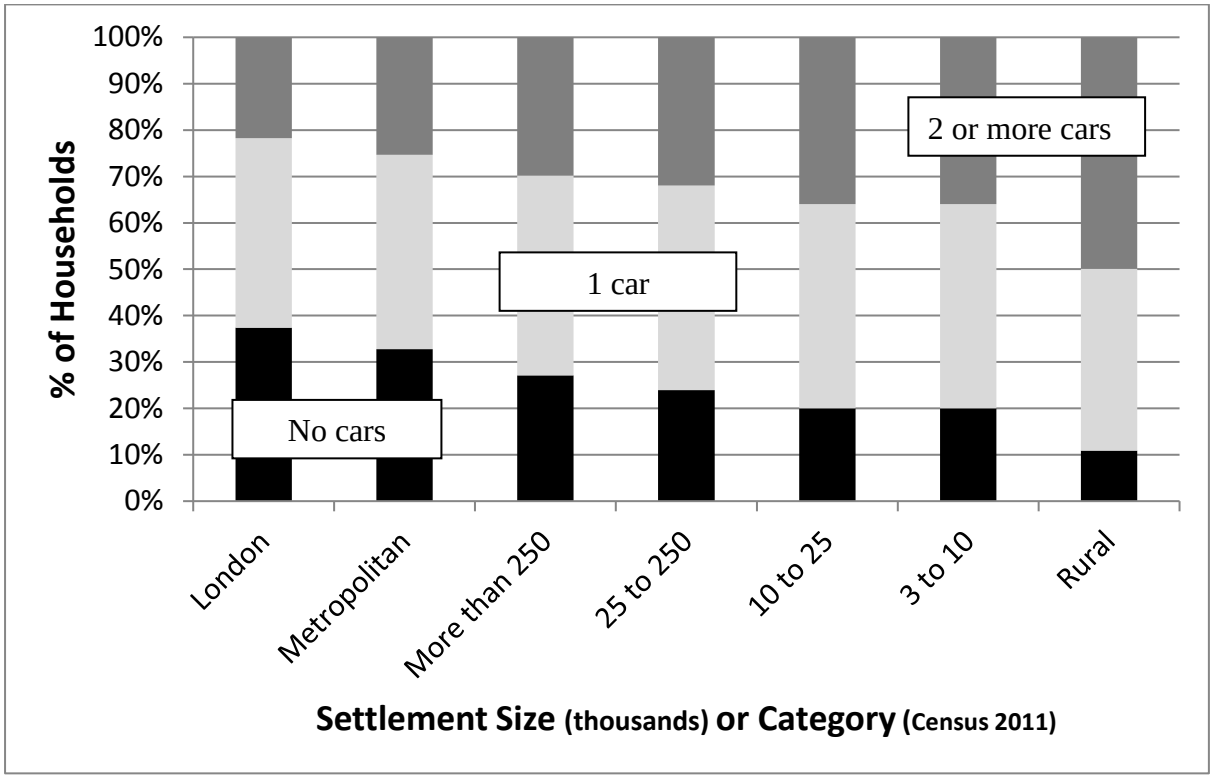

Figure 3 – Relationship Between Settlement Size and Car Ownership – England & Wales

Government Policy on Housing Densities and Urban Regeneration

During the 1997 Labour government, the DETR under John Prescott published planning policy guidance which encouraged higher density development on brownfield sites and less land allocated to parking (DETR, 2000, 2001). Those policies had several positive long-term changes, which were not recognised at the time. They helped to kick-start the regeneration of British cities and to halt the seemingly inexorable rise in traffic volumes. Figure 4 illustrates how the density of new housing development rapidly increased following the publication of PPG3 (DETR, 2000). It also shows how traffic volumes levelled off and began

to decline shortly afterwards. Melia *et al.* (2018) explains the links between those two observations.

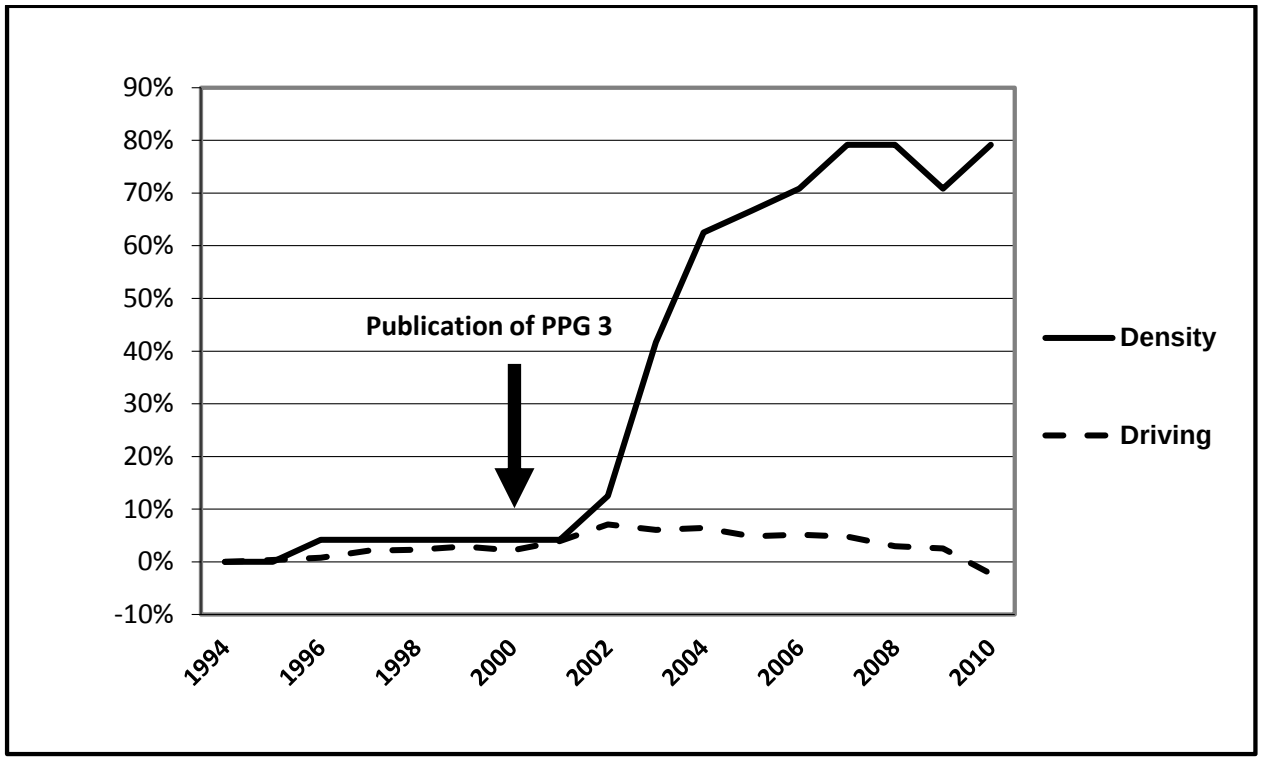

Figure 4 - Percentage change in density of new housing and in annual miles driven per person in England since 1994 (Melia, 2015a from CLG and DfT data)

These policy changes did cause some problems, particularly related to parking, discussed in Section 7 below. Partly because of those problems, but mainly for political reasons, the Coalition government scrapped the guidance on densities and parking (Melia, 2010, CLG, 2012) although their Conservative successors have now partially reinstated some of the original principles (Melia, 2018). The National Planning Policy Framework (NPPF) now seeks significant increases in residential densities in town and city centres and areas "well-served by public transport"; (CLG, 2018: para. 123). It also says that building on previously-developed sites "should be encouraged where suitable opportunities exist" (CLG, 2018: para. 84), which is not as strong as DETR (2000, 2001).

Urban regeneration and intensification raise many other issues beyond the scope of this paper. However, two principles are important for any government seeking to regenerate cities, minimise environmental damage and constrain traffic growth:

Policy Recommendations – Urban Densities and Regeneration

- Re-instate the 'brownfield first' principle in the NPPF with targets for the re-use of previously-developed land.
- Increase the number of 'locations well-served by public transport' and concentrate new housing development at higher densities around those

5. The Big Problem with Higher Densities

Although high density urban development has many advantages over the alternative of lower-density development, it also poses some problems. Higher densities generate less traffic, but the relationship is not proportional. Doubling the population density of an area will *reduce* traffic generation per person but it will not *halve* it, so under business as usual, congestion, noise and pollution in the immediate area will all get worse. A policy that benefits the city and the nation may harm the neighbourhoods where it applies (Melia *et al.,* 2011). This 'paradox of intensification' is one reason why local communities often resist proposals for high-density development.

The traditional solution to this problem is to improve public transport in densifying areas. This is a necessary but not a sufficient solution for two reasons:

1. unless it is accompanied by other measures to reduce driving, better public transport generates more travel, less walking and only replaces a small proportion of journeys by cars, and:
2. anything that removes vehicles from congested roads makes space for more vehicles to take their place (Melia, 2015b: Chapter 5).

To prevent traffic conditions from worsening in densifying areas more direct restraint is needed. Four possible options include:

- Congestion charging
- Traffic Removal
- Parking management
- Car-free or traffic-free housing

Congestion charging has many advantages but is politically difficult to implement; it has been well covered elsewhere (London Assembly, 2016, Eliasson, 2008, Lyons *et al.,* 2004) and will not be discussed here. The following sections will consider the other three possibilities.

6. Traffic Removal and 'Disappearing Traffic'

There are many ways to remove traffic from urban areas: pedestrianisation, reducing road capacity (by widening pavements or installing bus lanes, for example) or **filtered permeability**, where through-routes are closed to general traffic but kept open for pedestrians, cyclists and where appropriate emergency vehicles, buses and sometimes taxis.

Examples of Filtered Permeability in Cambridge and Walthamstow ('Mini Holland')

Traffic removal often generates much opposition but there is strong evidence that it reduces motor traffic, increases active travel, improves air quality and the general urban environment (Hass-Klau, 2015, Melia, 2016). On streets with no through-traffic people have more contact with their neighbours and more local friends (Hart and Parkhurst, 2011)

Pedestrianisation has been widely applied to shopping areas in Britain, and there is strong evidence that it increases spending in shops (Tasker *et al.,* 2018), despite the views of many shopkeepers, who overestimate the importance of passing car-based custom (Sustrans, 2006). The 1960s model of a 'pedestrian precinct' with purely retail use has led to a widespread misunderstanding in Britain, that "the absence of vehicular traffic can lead" pedestrianised areas "to become lifeless places at night" (CIHT and DfT, 2010). The absence of night-time uses not vehicles causes that problem. A growing number of pedestrianised shopping areas are now introducing night-time uses such as restaurants, and also housing. Across Europe, many of the areas where people live are pedestrianised; the potential for and advantages of traffic-free residential environments are discussed in Section 9 below.

	
Pedestrian Square in Venice	**Flats in Pedestrianised Centre, Exeter**

The usual assumption (still built into many traffic models) that closing a road just pushes all the traffic onto the surrounding streets was effectively disproved by Cairns *et al.* (2002), who drew on over 70 case studies from Britain and overseas. In the vast majority of cases, the total volume of traffic in the affected area falls, a phenomenon which the authors called 'disappearing traffic'. We are continuing to research this area with a project which aims to explore the different reasons why 'disappearing traffic' occurs.

Following growing interest from local authorities and transport consultancies, a traffic removal network was established, which has been running a series of conferences for transport professionals. The website www.trafficremoval.uk includes the conference presentations, short films and links to other evidence about the impacts and challenges of traffic removal. One of the films relates to Leicester, a city which has made considerable progress in removing traffic from its central areas. The Mayor of Leicester, Peter Soulsby, could provide some useful insights into these issues.

Two themes which have recurred in our previous research and conferences are the practical and political difficulties faced by local authorities seeking to pedestrianise or close roads. Melia and Shergold (2018) is a case study of an attempt to pedestrianise three short streets in Brighton's Old Town, which led to a lengthy, adversarial public inquiry, and the watering-down of the original scheme. Unlike planning applications, where with the Secretary of State can decide whether to intervene or not, the regulations for traffic regulation orders can mandate a public inquiry if a single person objects (UK Parliament, 1996: section 3).

Although there have been many advisory reports published on these issues over the years, there is no official guidance supporting or encouraging local authorities to remove traffic from urban areas. Manual for Streets (DfT, 2007) was widely acclaimed as a move away from traditional traffic engineering and towards more pedestrian-friendly urban streets. However, it recommends that street networks should be "connected or permeable" and

that pedestrians, cyclist and motor vehicles should all travel together on streets open to all traffic, all of which discourages filtered permeability and pedestrianisation.

Policy Recommendations – Traffic Removal

- Make a statement of principle in the NPPF that in areas where housing densities are high or increasing, pedestrianisation, filtered permeability and/or reallocation of road space to pedestrians, cyclists and public transport should be encouraged.
- Re-allocate part of the DfT's road building budget to fund urban traffic removal.
- Remove regulatory obstacles to pedestrianisation or minor changes to road networks.
- Revise transport guidance to encourage, and not discourage, pedestrianisation and filtered permeability.

7. Parking Management

A range of parking controls have been used to constrain urban traffic growth for many years. There is evidence that both residential and destination parking controls influence travel behaviour. DETR (2000, 2001) introduced a maximum parking standard of 1.5 spaces per dwelling; minimum parking standards, which were commonly used before that, were removed. This policy contained a flaw; it made no reference to parking controls. If off-street parking is reduced in areas where there are no parking controls, this forces more cars onto surrounding streets and causes conflict between drivers and residents. These entirely predictable consequences led to much criticism of that policy, which was watered down by later Labour governments and then scrapped by the incoming Coalition government (Melia, 2015a).

The most recent update to the NPPF reintroduced the possibility of maximum parking standards for areas well-served by public transport, where higher densities are also recommended (CLG, 2018: para. 110). However, the abolition of the earlier guidance has led many local authorities to re-institute minimum parking standards, compelling developers to allocate more land to parking than they would otherwise choose. This constrains the housing capacity of cities and helps to generate more traffic.

Residents' Parking Schemes (RPSs) are an important tool for local authorities to manage parking. Where they cover residential areas they usually include permit-parking for residents. Proposals to extend RPSs are always controversial. Experience from cities such as Bristol shows that opposition is typically greatest beforehand; opinion tends to turn more

positive after the benefits become apparent (Barnes *et al.,* 2015). Many schemes do not make it that far, however; opposition persuades many authorities to abandon or reduce the size of RPSs.

Parking controls are an essential element in any attempt to limit traffic growth in cities; they are an essential pre-condition for car-free or traffic-free housing, discussed in Section 9 below. One reason for the strength of opposition to residents' parking schemes is that residents are required to pay for the permits. This suggests one way in which central government could help local government to better manage parking in their areas.

Policy Recommendations – Parking Management

- Amend the NPPF to recommend that minimum parking standards should not be used; maximum parking standards should be applied in areas where parking can be controlled.
- Issue guidance to local authorities recommending the extension of RPSs in areas where housing densities are increasing.
- Establish a fund for local authorities seeking to introduce or extend residents' parking schemes, enabling them to avoid charging for residents' parking permits for a defined period following their introduction.

8. Supporting Electrification

As the latest report from the Committee on Climate Change explains (2018), growing emissions from transport are now jeopardising the ability of the UK to meet its domestic legal and international commitments. The scale of the challenge will require action on many fronts, most of which lie outside the scope of this paper. The Committee's main recommendations for decarbonising surface transport rely on rapid electrification of cars and other small vehicles (Committee on Climate Change, 2010: Chapter 4). Ensuring sufficient charging facilities for these vehicles is an urgent priority, on which progress has been too slow so far (Committee on Climate Change, 2017). The NPPF says that development proposals should be "designed to enable charging" of electric vehicles (CLG, 2018: para. 110). This needs to be considerably strengthened.

Policy Recommendations – Supporting Electrification

- Amend the NPPF to ensure that all new developments can demonstrate how all vehicles owned by residents or accessing the site can be charged in a future scenario where all vehicles are electric. This may include off-street and/or on-street facilities.

9. Low-car, car-free or traffic-free housing

Another way to prevent housing growth causing traffic growth is to preclude the new residents from owning or parking cars. Several London boroughs and some other cities, such as Brighton and Oxford, have been building 'car-free housing' for some years. This term is used in Britain (only) to mean: 'housing where the residents are not allowed to park cars in their area'. Typically, a 'Section 106' condition is attached to the planning permission which precludes the residents from applying for a resident's parking permit. These conditions can only be applied in areas with RPSs. A recent decision by the Court of Appeal has made such conditions unenforceable outside London (Simmons and Simmons, 2017). The same outcome can be obtained through a traffic regulation order, but the process is more onerous.

'Car-free' housing is a useful tool in areas which are suffering from parking stress, and where parking is controlled. However, it removes a right from new residents but gives them nothing in return. A broader concept of 'carfree development' began in Germany and surrounding countries during the 1990s, often promoted by citizens' groups. Different models exist, but the common feature is that they remove traffic and restrict vehicular access to the residential area, providing residents with a better living environment (Melia *et al.,* 2010). Carfree developments bring particular benefits for families with children; a German study found that children in a carfree development were given more independence at an earlier age compared to conventional housing nearby (Nützel, 1993).

German Carfree Developments, in Freiburg and Cologne

The term 'carfree' (from the German *autofrei* in the international literature) is slightly misleading. In most cases limited parking is available on the periphery of the development; 'traffic-free' would be a more accurate description. Traffic-free residential areas in Britain are generally small; the regeneration of cities has led to a growing number of high-density apartment developments without parking, or with limited underground parking, and some traffic-free space between the buildings. As British cities continue to densify, this model should be extended, to expand the public realm in areas with growing population densities.

Policy Recommendations – Car-free and Traffic-free Housing

- Insert a clause in the NPPF recommending car-free and traffic-free housing in areas where population densities are high or increasing, and where parking in the surrounding area can be controlled.
- Amend the regulations governing Section 106 agreements to enable authorities outside London to enforce 'car-free' conditions in the same way as authorities within London.

10. Greenfield and Ex-urban Developments

Although Britain has made progress since the 1990s in urban regeneration, with positive consequences for travel behaviour, new housing development outside, or on the fringes of, towns and cities remains uniformly car-dominated, as attested by the recent report from Transport for New Homes (Raggett, 2018). Although net housing densities are higher than they were in the 1990s, the large areas of land allocated to roads and parking mean that gross densities remain low. Typical transport planning practice seeks to provide convenient connections from new housing developments to the strategic road network – a factor which

is strongly associated with high levels of traffic generation and low levels of travel by other modes (Headicar and Curtis, 1994, Hickman and Banister, 2008).

The New Urbanist movement, which became influential in the early 2000s sought to promote less car-dominated suburban and ex-urban developments. Raggett (2018) found that Poundbury, the first New Urbanist development in Britain, was the best of the case studies they reviewed. The land-use in Poundbury is more mixed than in most suburban housing developments, and this does appear to have encouraged more walking, but levels of car driving are still higher than the national average (Watson *et al.,* 2004, ONS, 2014: table QS701EW). Nowhere in Britain remotely compares to the continental examples of good practice such as Vauban or Rieselfeld in Freiburg, Houten in the Netherlands or Louvain-la-Neuve in Belgium (Melia, 2006, Foletta, 2014, Melia, 2015b: Chapter 13). As house building has recovered from the recession, the quantity and proportion of housing built on greenfield sites outside of urban areas has increased, outweighing (in transport terms) the beneficial impacts of inner urban regeneration.

The Eco-towns programme, initiated by a Labour Government in 2007-8, was an attempt to build in more sustainable ways outside the existing urban areas. The transport guidance produced by the Town and Country Planning Association for CLG, which incorporated some recommendations from the author, was a radical document; it remains relevant today (TCPA and CLG, 2008).

The eco-towns programme provoked much opposition and made little progress before the Coalition government abolished it. The Garden Cities programme is effectively the same idea, stripped of its environmental objectives. Small new settlements built in recent years provide a good overview of how Garden towns or villages are likely to turn out. Despite master plans full of good intentions, settlements such as Cambourne in Cambridgeshire and Cranbrook in Devon are bland, low in density and car-dominated. As discussed in Melia (2015b: Chapter 9) , once started, small new towns tend to grow larger than originally planned. Their small centres are surrounded by housing at an early stage, preventing them from expanding, so as the towns grow they become less like towns and more like over-extended housing estates.

Figure 2 (in Section 3, above) illustrates a fundamental flaw with small new settlements, however they are designed. Transport outcomes are directly linked to settlement size. Even without any radical measures, we know the conditions that reduce traffic generation; they exist in the centres of cities and large towns at the moment:

- High densities of housing and population
- A mix of land-uses, including employment, within walking distance

- Frequent public transport, serving multiple directions by bus (for short distances) and rail (for longer distances)
- Limited road space, making it difficult to access the strategic road network
- Limited and controlled parking
- Low car ownership

To achieve sustainable patterns of movement in ex-urban housing developments would require a fundamental change in the British way of doing things. A full discussion of those changes would fill several more reports. The recommendations below are a brief summary of some of the more important ones, illustrating the scale of change which is needed.

Policy Recommendations – Greenfield and Ex-Urban Developments

- Scrap the Garden Cities programme and the road building associated with it.
- Replace many small new settlements with a few new cities, using an updated New Towns Act.
- Plan for urban extensions on the edge of larger cities, served by rail, tram or metro.
- Revise green belt policy to enable this to occur, and to constrain the expansion of smaller towns, villages and housing estates.
- Plan for genuinely urban centres at densities similar to existing city centres around the transport hubs of these urban extensions.
- Plan for low parking standards and controlled parking from the outset.

11. Stressing the Positive Themes

This paper set out to answer how we might plan for housing growth without making our transport problems worse. Any answer to that question will involve restraint of some kind; doing nothing will also involve restraint, caused by rising congestion. Those are not messages which many voters will want to hear. The recommendations in this paper are more detailed than anyone would expect to read in a manifesto. If the general approach is accepted, then the positive themes to stress would be:

- Housing more people on brownfield sites rather than sprawling into the countryside
- Housing more people close to better public transport, and:
- Creating more space for people and greenery in growing urban neighbourhoods

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