

# **Stoke-on-Trent City Council Local Transport Plan 3: Health Impact Assessment**

---

## **Final report**

**February 2011**

**Dr Eleanor Hothersall, Public Health Consultant, Stoke-on-Trent PCT  
Dr Christopher Gidlow, Senior Researcher, Staffordshire University**

## Executive summary

This document presents findings from a Health Impact Assessment (HIA) of the third Stoke-on-Trent Local Transport Plan (LTP3) which has been reviewed and considered in terms of potential health impacts on the basis of available evidence.

The LTP3 describes the overarching transport strategy for Stoke-on-Trent for the next 15 to 20 years and was released in draft form for consultation. A more detailed implementation plan will follow.

The LTP3 focuses on the three areas of economy, environment and health. This is logical and covers the main priority areas for transport planning. It shows a laudable consideration of relevant health issues, while apparently prioritising economic growth. The full HIA report details specific recommendations/amendments to maximise the public health potential of the LTP3.

General recommendations are:

1. Given the stated aim of the LTP3 to increase active and public transport, the order that information is presented within the document should reflect these priorities. Specifically, sections within the draft LTP3 document should be re-ordered so that discussion of active and public transport precedes cars.
2. Given that resources are likely to be increasingly limited for the foreseeable future, maximum investment should be focussed where there will be most impact. This can best be achieved through changing social norms, which will then influence a wider group. Additionally, children have the most to gain from acquiring healthy travel habits. Successfully changing the perceptions and travel behaviour of children should also have a wider effect on their parents, who are otherwise unlikely to be easy to influence. Consequently, we would strongly recommend that priority is given to funding initiatives in this group.
3. Evidence-based practice: In addition to the routinely collected travel data in Stoke-on-Trent, there are opportunities to ensure that any implemented changes are adequately evaluated to judge success. For example, completing and continuing collection of core indicators that were initiated to monitor Cycle Demonstration Town outcomes; gathering baseline and periodic follow-up data in targeted interventions, such as in school and workplaces. In the short term this enables targeting of specific interventions, which can be rolled out to other sites if shown to be effective.

# Contents

|  |    |
|--|----|
| Executive summary .....  | 2  |
| Contents.....  | 3  |
| 1. Introduction .....  | 4  |
| 1.1 Health Impact Assessment.....                              | 4  |
| 1.2 Local Transport Plan for Stoke on Trent .....              | 4  |
| 1.3 Social Determinants of Health .....                        | 5  |
| 2. Policy context.....   | 6  |
| 2.1 National.....  | 6  |
| 2.2 Regional.....  | 8  |
| 2.3 Local .....  | 8  |
| 3. Profile of Stoke-on-Trent .....                             | 11 |
| 3.1 Health in Stoke on Trent .....                             | 11 |
| 3.2 Physical activity in Stoke-on-Trent.....                   | 14 |
| 4. Evidence .....  | 15 |
| 4.1 Transport and health .....                                 | 15 |
| 4.2 Cost-effectiveness of Active Transport interventions ..... | 20 |
| 5. Analysis of LTP3 and recommendations .....                  | 21 |
| 5.1 General comments on LTP3 .....                             | 21 |
| 5.2 Specific comments/recommendations .....                    | 22 |
| Acknowledgements.....  | 26 |
| References .....   | 27 |

# **1. Introduction**

## **1.1 Health Impact Assessment**

Health Impact Assessment (HIA) is a combination of procedures, methods and tools that can help identify the possible health impacts of a programme or policy. HIA identifies appropriate actions to manage those effects. It aims to inform and enhance decision-making processes in favour of health and health equality, maximising potential positive health impacts and minimizing potential negative health impacts of a proposal.

HIA can contribute to improved health by:

- Raising awareness among decision makers of the relationship between health and the physical, social and economic environments;
- Demonstrating how a proposal may affect the health of a population;
- Provide recommendations on how a proposal could be modified to maximise opportunities for health gain and minimise chances of health loss.

HIA can contribute to better decision-making by:

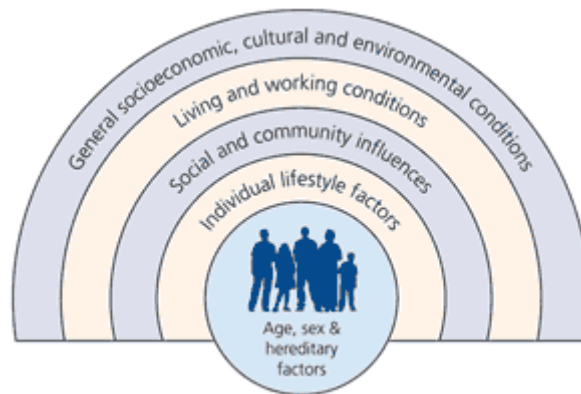
- Following a clear, transparent process;
- Ensuring recommendations are evidence based;

## **1.2 Local Transport Plan for Stoke on Trent**

The Local Transport Plan for Stoke on Trent (LTP3) describes the overarching transport strategy for Stoke-on-Trent for the next 15 to 20 years and was released in draft form for consultation in 2010. A more detailed implementation plan will follow, with the entire process completed by April 2011. As part of the consultation process, this Health Impact Assessment (HIA) examines the LTP3 from a public health perspective and makes recommendations based on the available evidence.

### 1.3 Social Determinants of Health

Health is determined not only by access to quality healthcare services and lifestyle choices but also by the social and economic conditions in which people live. The social ecological model of health recognises the various factors that can affect health, such as housing, employment, transport, access to fresh food and individual lifestyle behaviours and the different levels of influences (Figure 1) from the micro- (individuals), to the meso- (community, neighbourhood) and macro-levels (broader environment, policy) [1, 2]; the higher the level, the larger the reach and greater potential public health impact. Policies which make up the Local Development Framework (LDF) are critical in this regard. For example transport policies can promote ‘active’ travel through supporting walking and cycling; shifting away from a common dependence on car use thus building physical activity (and associated health benefits) into people’s daily lives.



**Figure 1:** From Dahlgren G. and Whitehead M. 1991. Policies and strategies to promote social equity in health. Stockholm, Institute for Futures Studies.

As noted by Marmot et al, *‘Inequalities in health arise because of inequalities in society – in the conditions in which people are born, grow, live, work, and age’* [3, p.16]. Such inequalities in health by socio-economic position, and by geography, gender and ethnicity in some cases, have been consistently observed in the UK for decades [3, 4]. Despite continued efforts to redress such imbalance, the health gap continues to widen [3]. Positively influencing the social determinants of health [5] through related policy is, therefore, central to efforts aimed at reducing health inequalities.

## 2. Policy context

### 2.1 National

Active transport is widely promoted for its potential to benefit health. Key publications include:

- Association of Directors of Public Health. Take Action on Active Travel (updated 2010), available at [www.adph.org.uk](http://www.adph.org.uk)
- National Institute for Health and Clinical Excellence (NICE). Promoting physical activity in the workplace PH13 (2008), and Physical activity and the environment PH8 (2008), both available at [www.nice.org.uk](http://www.nice.org.uk)
- National Institute for Health and Clinical Excellence (NICE). Promoting and creating built or natural environments that encourage and support physical activity (NICE public health guidance 8). London: NICE; 2008 [6]
- Department for Transport. Active Travel Strategy. London: DfT; 2010 [7]

### NHS Operating Framework

The national NHS priorities include keeping people well, improving overall health and reducing health inequalities. To meet these aims, the local requirements are:

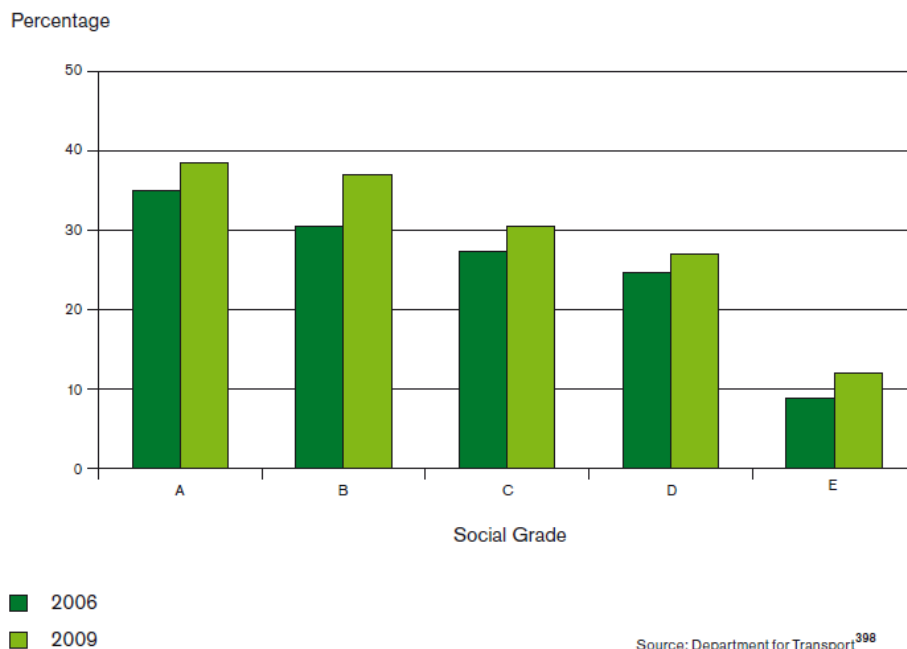
- PCTs expected to continue to deliver on national objectives to improve life expectancy
- Continued focus on the biggest killers, focussing on inequalities, including cancer, cardiovascular disease, suicide and smoking
- PCTs to continue working with local authorities and other partners to tackle lifestyle issues such as obesity and alcohol abuse, teenage pregnancy, sexual health problems
- Local Plans to include focus on ill-health prevention, health promotion, reducing health inequalities.

### The Marmot Review

*‘the relationships between transport and health are multiple, complex, and socioeconomically patterned.’ [3](p.81)*

In February 2010, the Marmot Review Team published findings from a review of health inequalities in England, *Fair Society, Healthy Lives* [3]. As a pervasive feature of society, transport featured throughout the review with respect to economy, environment, sustainability, and active travel. The

positive and negative influences of transport and competing agendas in today’s more environmentally aware society implicated motorised transport as both a source of injury, physical inactivity, air and noise pollution, whilst being an enabler of access to work, education, social networks and services. Similar to other reviews [8, 9], transport was presented as a complex issue that require integration with planning, housing, environmental and health systems to improve health. Indeed, the multiple modes (e.g., walking, cycling, public and private) and user groups (e.g., individual commuter groups, commercial freight, school children) each with a different set of priorities in terms of health, economy, environment and sustainability, makes it difficult to propose solutions that satisfy all. The remit of the present document, however, is to consider the health impacts of transport, whilst accepting the various levels of influences, direct and indirect in relation to the Stoke-on-Trent LTP3; active transport was central to how the document was considered.



**Figure 2:** Proportion reporting any cycling in a typical week in the previous year, by social grade, 2006 and 2009 (Taken from Marmot Review, 2010, p.127)

Active transport is socially patterned (Figure 2) and offers a health-promoting means of mitigating negative impacts of motorised transport. As the Marmot Review noted, active travel promoting changes are not easy to implement in a society so dominated by the car. The authors identified numerous approaches to improve active travel across the social gradient, including:

- Lowering speed limits; traffic calming measures to reduce speed and volume of traffic, and associated traffic accidents, targeting deprived residential areas
- Provision and maintenance of cycling infrastructure to increase cycling and reduce casualties

- Parental and peer support interventions
- Street lighting
- Improving the location and accessibility of pedestrian crossings (especially for older people)
- Improve public transport.

Finally, the review identified the importance of health impact assessment: *‘All policies seeking to improve active travel, such as Cycling Demonstration Towns, should be required to measure their impact on health inequalities.’* [3, p.130]

## **2.2 Regional**

The Strategic Health Authority for the West Midlands produced guidance for PCTs wishing to influence the LTP3 process. They highlighted the following areas as showing definite benefits to health:

- Local prioritisation of transport interventions that will impact on health
- Advocacy of extensive road calming interventions
- Advocacy of air pollution reduction
- Promoting Active Travel
- A pedestrian-centric approach to planning
- Promotion of sustainable travel plans for relevant sites (including NHS estates)

## **2.3 Local**

### **Children and Young People’s Plan**

The Stoke on Trent Children and Young People’s Plan 2010 to 2013 is created by the Stoke on Trent Children and Young People’s Board. The plan builds on the Every Child Matters structure [10], consisting of 5 domains: Be Healthy, Stay Safe, Enjoy and Achieve, Make a Positive Contribution and Achieve Economic Well-Being. Their priorities include:

- Within “Be Healthy”
  - Ensure children, young people and their families are able to access a range of services that meet their needs.
  - Enable children, young people and their families to make positive choices about healthy lifestyles.
  - Support children and young people to be emotionally healthy and resilient [10].



- Within “Stay Safe”
  - Ensure that our services can be safely accessed by children and young people.
- Within “Enjoy and Achieve”
  - Provide every child and young person with an education pathway and support to develop their practical, social, emotional and academic skills and their health and well-being.
- Within “Make a Positive Contribution”
  - Offer a range of positive activities which are safe, inclusive and accessible to children and young people and their families.

### **Stoke on Trent NHS Strategic Plan 2009 to 2014, and the Annual Operating Plan 2010 to 2011**

Although this document has been superseded by current events, leading to the dissolution of the PCT during the timeframe of the Strategic Plan, the intentions of the document will inform the direction in which NHS commissioning decisions will travel for the next few years.

The overarching aim of Stoke on Trent NHS is to reduce health inequalities. Within this, increasing life expectancy and decreasing deaths from cardio-vascular disease are outcomes of primary importance.

### **Stoke on Trent NHS Policy on Active Travel**

In January 2010, Stoke on Trent NHS produced its Policy on Active Travel. Within this policy, the Trust committed to:

- Raise awareness
- Reduce unnecessary travel
- Encourage the use of more sustainable methods of transport
- Reduce single occupancy car use to and from sites
- Reduce the proportion of staff and visitors parking at sites
- Improve facilities and access to facilities
- Improve fitness levels for staff

### **Director of Public Health Annual Report 2010**

The Annual Report of the Director of Public Health for Stoke on Trent in 2010 emphasised the importance of integration of health and local authority:

- The Local Authority needs to consider how it will maximise opportunities for improving health in the City as it takes on new Public Health responsibilities.
- Locally elected members, who in their leadership role are already promoting healthy lifestyles in their communities, should be supported to provide even further enhancements.

### **Local Area Agreement**

The Local Strategic Partnership key priorities include a number relevant to transport, including:

- Improve local cohesion and engagement
- Improve physical fitness
- Reduce child obesity
- Increase life expectancy
- Improve access to services and facilities by public transport, walking and cycling

### 3. Profile of Stoke-on-Trent

#### 3.1 Health in Stoke on Trent

The draft LTP3 provides a coherent summary of the profile of demographic and travel patterns for Stoke-on-Trent, highlighting many of the issues facing the population of Stoke on Trent. It is not our intention to do more than repeat the key points: deprivation, unemployment and high levels of benefit claims, low educational attainment all contribute to a poor health outcome.

The area profiles of Stoke on Trent produced by the Association of Public Health Observatories (APHO) illustrates the considerable challenge in current health-related behaviour: below average levels of physically active children and adults, above average levels of child and adult obesity, and early deaths from smoking, heart disease and stroke [11]. Poor social cohesion is also a feature in Stoke on Trent [12].

#### Circulatory disease

Circulatory disease is responsible for nearly 30% of all deaths in Stoke on Trent [13]. Figure 3 shows that all but one ward in Stoke on Trent have mortality rates higher than the average for England.

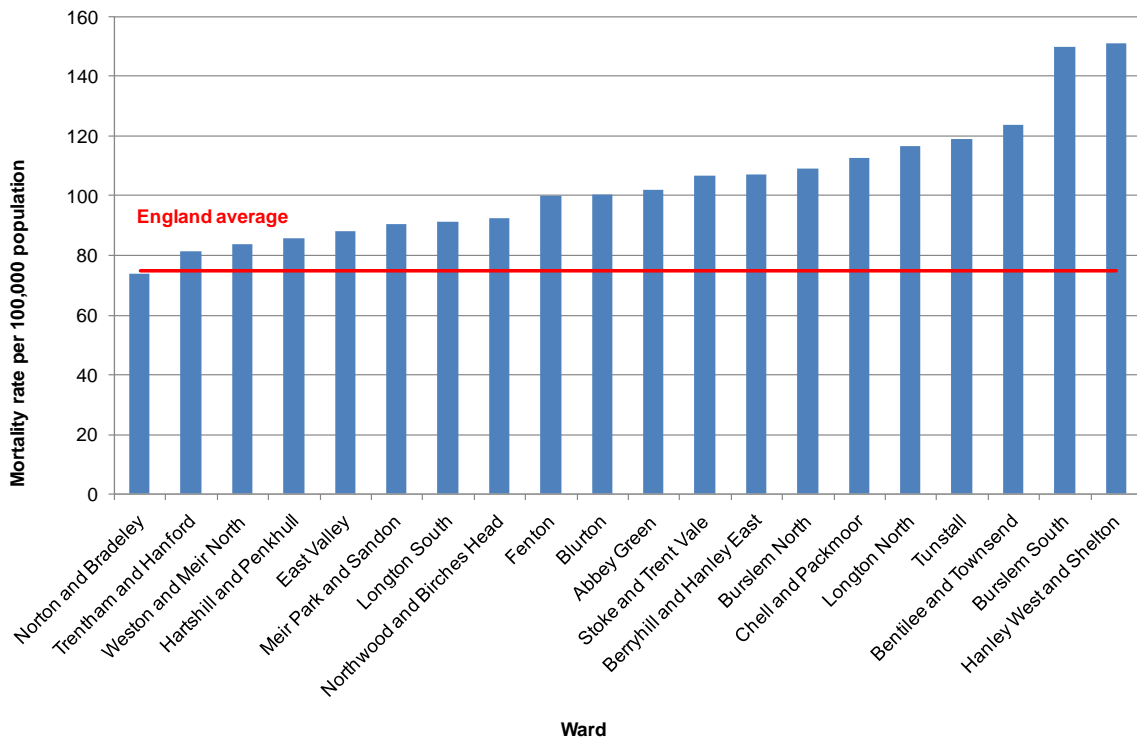


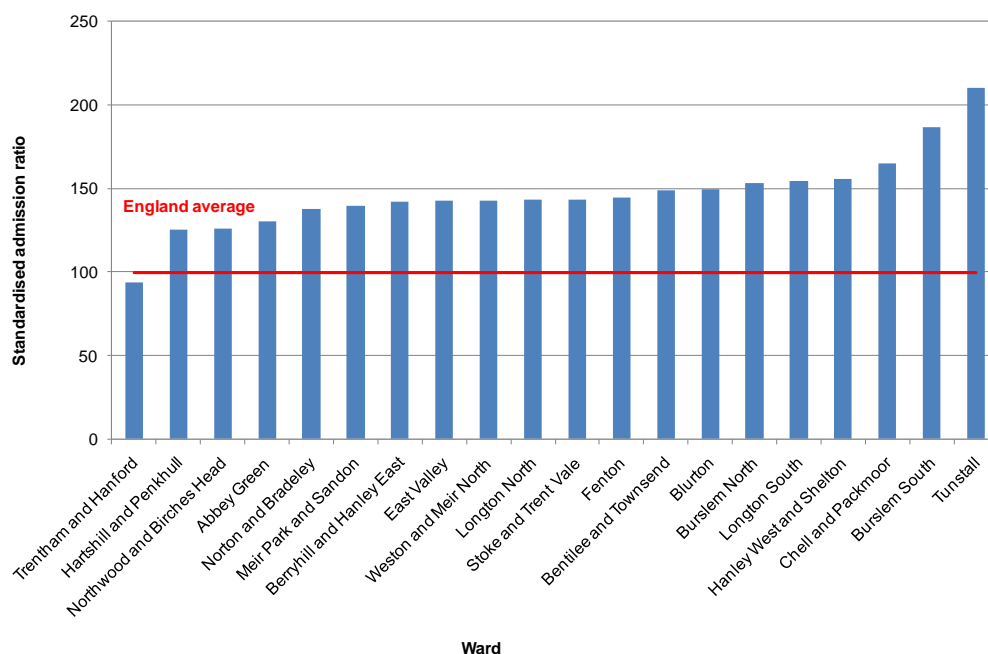
Figure 3: Mortality from circulatory disease in Stoke-on-Trent by wards in 2004-2008 (under 75) [12]

Over 30% of the adult population and over 21% of the child population of Stoke are considered to be obese. Obesity is associated with increased mortality and morbidity from circulatory disease, as well as several cancers. As obesity in childhood predisposes to obesity in adults [14], this represents a serious threat to the health of the population.

The local health problems are compounded by poor diet, with a low intake of fruit and vegetables. Furthermore, there are low levels of physical activity, and little desire to become more active, with over 58% of all adults saying they were not interested in increasing the amount of physical activity they do [12].

### Respiratory disease

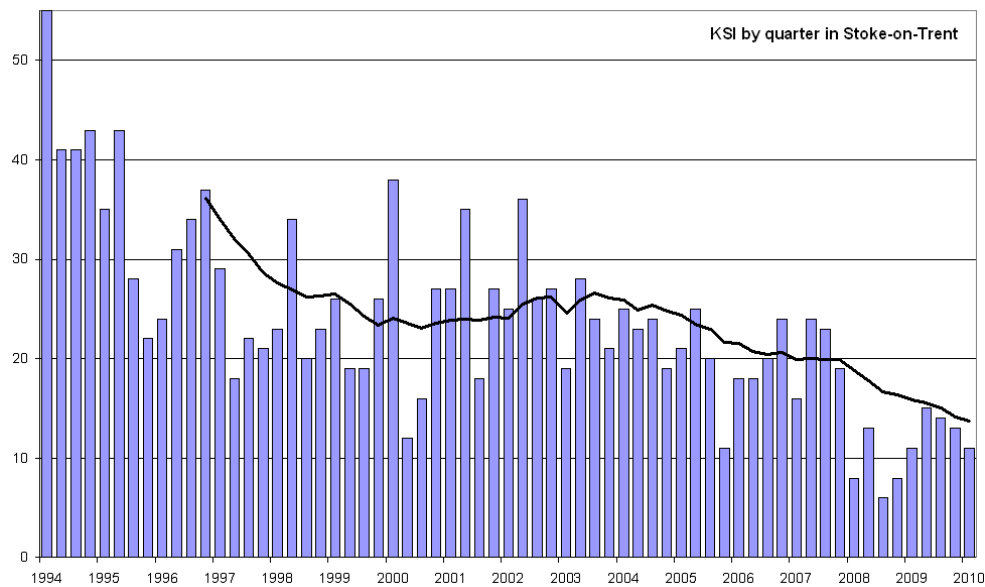
Nineteen per cent of all deaths in Stoke on Trent in 2009-10 were due to respiratory disease. This is significantly higher than the average for England. Admissions to hospital for respiratory disease were higher than expected in 19 of the 20 wards in Stoke-on-Trent compared with England (and were significantly higher than England in all of these 19 wards) (Figure 4). A very similar pattern is seen in mortality.



**Figure 4:** Hospital admissions for respiratory disease in Stoke-on-Trent by wards in 2005-2009 (all ages) [12]

## Injuries

As seen in Figure 5, below, injuries due to road traffic accidents are historically low in Stoke on Trent, but vary quite dramatically over time. Data from the Safeguarding Children Board indicates between April 2009 and March 2010 there were three deaths or serious injuries on the roads and two more in April 2010. There has also been a continued reduction in recent years of child cyclist casualties, with figures now at their lowest for over a decade [12].



**Figure 5:** Numbers Killed or Seriously Injured (KSI) on the roads, Time series data by quarter, in Stoke on Trent.  
Source: Staffordshire Police

## Mental Well-being

Mental health and wellbeing is a particularly important issue in Stoke-on-Trent – high levels of deprivation are associated with high levels of health inequalities and much lower life expectancy. These impact significantly on key factors that affect mental health and wellbeing – risks such as low income, poor education, poor housing, unemployment and family breakdown - and also on resilience, someone's ability to respond to all the negative factors that are risks to mental health and still retain good mental wellbeing. The longer and more severe the risk factors, the more impact it has on resilience, both for people themselves, their families and the communities they live in. Currently, over 30,000 people in Stoke on Trent have some form of common mental health problem [2007 Adults Psychiatric Morbidity Survey].

### 3.2 Physical activity in Stoke-on-Trent

Physical activity is one means through which transport can have a profound influence on health. Data from the Sport England Active People Survey indicate that, despite some increases in participation rates, Stoke-on-Trent remains well below the national average for sport and active recreation (17.9 vs. 21.5%). Local research in the city confirms, not only low levels of recreational activity, but also active transport:

*'Overall, physical activity participation was dominated by that associated with work (43.4%) and garden and domestic activity (32.2%) with active transport and leisure activity each accounting for ~ 12% of total activity.'* [15, p.662]

Critically, the same study found that despite not meeting recommended activity levels, the majority of residents had no intention of changing their behaviour [15]. Ensuring active travel is a viable alternative to private motorised transport may represent a more realistic way to promote physical activity.

## **4. Evidence**

### **4.1 Transport and health**

There is a growing body of evidence linking transport and health. Two recent reviews of note are the Health Scotland review [8, 9] and “Soft measures – hard facts”, produced by the Department of health and NHS South West [16]. Health Scotland specifically focuses on transport factors that relate to health. The main conclusions from the review are summarised in Table 1. The NHS South West review concentrates on interventions to change travel behaviour and their cost-effectiveness. Table 2 lists the main health issues and how these should be addressed within an LTP3.

**Table 1:** Evidence linking health with transport

|  |   |
|--|---|
| Transport, Access and Health   | Access to a car is linked to improved physical health<br>This link is not explained by social class, income or feelings of self-esteem linked to car ownership  |
| Transport and physical activity (i.e., active transport through walking and cycling) | The current recommendation for adults to achieve health benefits is to accumulate 30 minutes of moderate-intensity activity on at least 5 days per week<br>It is not known whether increased car use is linked to reduced physical activity overall at an individual level; although time spent in cars has been linked to obesity*[17]<br>Physically active transport may lead to increases in overall levels of physical activity   |
| Transport-related injury and death   | Road users at highest risk of being killed or seriously injured are cyclists and pedestrians<br>The most commonly cited cause of a road crash is speed<br>Rates of crashes involving cyclists are lower in countries where cycling is common; increased volume of cyclists is associated with lower injuries/fatalities*[18]  |
| Transport, air pollution and health  | Outdoor air pollution is associated with increased cardiorespiratory mortality and morbidity<br>Small particles (PM) are most closely associated with adverse health outcomes<br>Road transport is responsible for 30% of PM <sub>2.5</sub> and 50% of PM <sub>0.1</sub> emissions<br>It is estimated that there is a 6% change in mortality per 10 µg.m <sup>-3</sup> change in annual average PM <sub>2.5</sub><br>For many pollutants, concentrations in vehicles are higher than background and general roadside concentrations |
| Transport-related noise pollution and health   | Links between transport noise and health are inconclusive<br>Transport noise is unlikely to result in long-term hearing problems  |
| Transport, mental health and stress  | Access to a car is linked to improved mental health<br>Regular physical activity is associated with positive mental health outcomes*[19]<br>There is little available research on the subject of road rage or public transport-related stress   |
| Transport, personal safety and perceptions   | Personal safety fears and fear of crime <i>may</i> deter people from walking, cycling or using public transport   |
| Transport and community severance  | Substantial increases in traffic through a community may lead to community severance<br>The health impacts of community severance are not known   |
| Transport and climate change   | There is wide scientific consensus that the global climate is changing and that most of this change is attributable to human activity since the pre-industrial era<br>Motorised transport accounts for 22% of CO <sub>2</sub> emissions   |

Content adapted from: Health Scotland 2007, *Health Impact Assessment of Transport Initiatives: A Guide*. Edinburgh: Health Scotland; Content also published in Thomson et al [9]; \*Additions by report authors based on relevant literature.



**Table 2:** Ways in which LTP3 could address specific health issues. Adapted from: North Dorset District Council: Core Strategy and Development Management Policies. Development Plan Document: Draft Health Impact Assessment. North Dorset District Council; 2010 [20]

| Health issue  | Contributory factors related to planning | Options for addressing issues  | LTP3-specific interventions   | Potential effects   | Health objectives   |
|---|--|--|---|---|---|
| <b>Poor mental health, including anxiety and depression – worst in areas of greater deprivation</b> | Lack of green space                      | Improve access to good quality open space  | Improve access to good quality open space   | Improve mental and physical health<br>Potentially low cost  | Reduce prevalence of depression and anxiety   |
|   | Low physical activity                    | Provide opportunities for physical activity  | Increase opportunities for active travel  |   |   |
|   | Fear of crime                            | Seek to reduce crime through good urban design   |   |   |   |
|   | Flooding                                 | Minimise risk of flooding  |   | Potentially high cost   |   |
|   | High unemployment                        | Attract more business to area and improve transport links to centres of employment   |   | Potential for adverse health effects from increased traffic<br><br>Long commutes may also have adverse effect on social capital |   |
|   | Persistent noise                         | Set and enforce maximum noise levels   | Incorporate noise reduction into planning   | Potential for adverse economic effects due to restrictions on e.g. lorries; high cost (e.g., noise reducing road surfacing)     |   |
| <b>Obesity and type 2 Diabetes – rising in adults and children</b>                                  | Low levels of physical activity          | Improve access to good quality open space<br><br>Provide opportunities for physical activity<br><br>Create active travel routes to schools, amenities and employment | Improve access to good quality open space<br><br>Create active travel routes to schools, amenities and employment | Potentially low cost  | Increase levels of physical activity<br><br>Reduce prevalence of obesity<br><br>Reduce incidence of type 2 diabetes |

|   |   |  |   |  |   |
|---|---|--|---|--|---|
|   | Poor diet   | Improve access to fresh food amenities and growing opportunities   | Improve access to fresh food amenities and growing opportunities.   |  |   |
| <b>Cardiovascular Disease – higher incidence and mortality in deprived areas</b>  | Low levels of physical activity   | Improve access to good quality open space<br><br>Provide opportunities for physical activity<br><br>Create active travel routes to schools, amenities and employment | Improve access to good quality open space<br><br>Create active travel routes to schools, amenities and employment | Potentially low cost   | Reduce incidence of cardiovascular disease<br><br>Increase life expectancy  |
|   | Air and noise pollution   | Control traffic and air quality levels   | Incorporate air pollution and noise reduction into planning   | Potential for adverse economic effects due to restrictions on e.g. lorries |   |
|   | Poor diet   | Improve access to fresh food amenities and growing opportunities and reduce pollution.   | Improve access to fresh food amenities and growing opportunities and reduce pollution.                            | Potential for positive local economic impact                               |   |
| <b>Respiratory disease – particularly for people with respiratory conditions living adjacent to transport corridors</b> | Vehicle emissions   | Control traffic and air quality levels   | Control traffic and air quality levels, and incorporate these into master planning                                | Potential for adverse economic effects due to restrictions on e.g. lorries | Reduce air pollution<br>Reduce fuel poverty<br>Reduce emergency admissions to hospital for people with respiratory diseases |
| <b>Unintentional injuries – Older people and Road traffic injuries</b>  | Household design and low quality public realm contribute to risk of falling | Lifetime homes standards<br><br>Adaptation of existing housing stock   | Street design   | Likely to be high cost except in new build options                         | Increase rates of independent living<br><br>Reduce admissions to hospital due to falls                                      |
|   | High traffic speeds   | Street design and speed restrictions   | Speed restrictions<br>Traffic calming measures  |  | Reduce pedestrian   |

|   |   |   |   |  |  |
|---|---|---|---|--|--|
|   | Community severance   | Traffic calming measures<br>Home zones and high quality street design<br><br>Standards for walkability of neighbourhoods  | Standards for walkability of neighbourhoods |  | injuries amongst children<br><br>Reduce rates of killed and seriously injured                          |
| <b>Access to high quality health and social care services</b> | Lack of access misses opportunities to intervene early, prevent or reduce complications of disease, increases work absence and adds to health and social care costs | Ensure primary care provision continues to change in line with changing population size, location and composition<br><br>Improve transport to key health services | Improve transport to key health services    | Impact depends on extent to which access uses public or active transport | Improve access to primary health care<br><br>Reduce inappropriate use of hospital emergency department |

## 4.2 Cost-effectiveness of Active Transport interventions

In recent years, the difficulties in gathering evidence to support the *effectiveness* or the *cost-effectiveness* of transport interventions [16, 21] has resulted in ‘natural experiments’; i.e., the application of scientific rigour to evaluate the effectiveness of ‘real world’ interventions [22]. Such evidence for the cost effectiveness of Active Transport initiatives in the UK is now emerging [16, 23].

In the UK, interventions promoting active travel (cycling and walking) are reported to have an average Benefit Cost ratio of 19:1 (i.e., every £1 invested in promoting active travel yields a health benefit equivalent to £19) [23]. Increases in walking and cycling were commonly associated with improvements in connectivity.

Moreover, the three-year evaluation of the first six Cycling Demonstration Towns (CDTs) reported encouraging findings [24, 25]. Increases in cycling were observed between 2006 and 2009 at a population level in the CDTs (but not in the non-CDT comparator towns), including a 14% increase in the proportion of adults doing any cycling, a 27% increase in overall cycling levels, 126% increase in proportion of pupils who cycled to school at least once or twice a week (in schools with several interventions), and reduction in sedentary behaviour . The economic evaluation using the WHO HEAT tool [21] concluded that the value of reduced mortality associated with this increase in cycling to equate to a return of £2.59 for each £1 invested [26]. Appraisal by the Department for Transport indicated a benefit to cost ratio of at least 3:1, and may be as high as 5 or 6:1 if sustained over 30 years [27].

As one of the second phase CDTs, the evidence for Stoke-on-Trent is not yet available. Given the recent changes to funding through the abolition of Cycling England, it is ever more important that the evaluation for Stoke-on-Trent CDT is completed. Findings can inform future investment in cycling infrastructure and programmes.

## **5. Analysis of LTP3 and recommendations**

The LTP3 focuses on the three areas of economy, environment and health. This is logical and covers the main priority areas for transport planning and shows a laudable consideration of health-related issues, while prioritising economic growth. Two key themes form the basis of recommendations within this HIA. First, as a strategic document, LTP3 is necessarily aspirational and, therefore, does not provide specific details for implementation, which would enable more specific health-focused recommendations. We do, however, recognise that this document forms part of a wider consultation process to inform a specific implementation plan. Recommendations from this HIA should be incorporated within the implementation plan.

Second, from a public health perspective, there are potential tensions between the aims of the LTP3 in relation to economy and health (and environment), which should be recognised. The economic situation in the city has a major influence on the health of its population; without economic growth and associated increases in employment, significant health gains are unlikely. Yet, increased economic activity and associated traffic flow, unless balanced through a substantial shift towards greater use of public transport and active travel modes, could mean changes in travel/transport in the city that are detrimental to health.

### **5.1 General comments on LTP3**

1. Given the stated aim of the LTP3 to increase active and public transport, the order that information is presented within the document should reflect these priorities. Specifically, sections within the draft LTP3 document should be re-ordered so that discussion of active and public transport precedes cars.
2. Given that resources are likely to be increasingly limited for the foreseeable future, maximum investment should be focussed where there will be most impact. This can best be achieved through changing social norms, which will then influence a wider group. Additionally, children have the most to gain from acquiring healthy travel habits. Successfully changing the perceptions and travel behaviour of children should also have a wider effect on their parents, who are otherwise unlikely to be easy to influence. Consequently, we would strongly recommend that priority is given to funding initiatives in this group.
3. Evidence-based practice: In addition to the routinely collected travel data in Stoke-on-Trent, there are opportunities to ensure that any implemented changes are adequately evaluated to judge success. For example, completing and continuing collection of core indicators that were

initiated to monitor CDT outcomes; gathering baseline and periodic follow-up data in targeted interventions, such as in school and workplaces. In the short term this enables targeting of specific intervention, which can be rolled out to other sites if shown to be effective.

## **5.2 Specific comments/recommendations**

Whilst the overall aims of improving health through active travel and access to health care are commendable, Table 3 provides comments on each of the objectives of the LTP3 under the respective headings, and includes evidence-based recommendations for *specific* ways in which health improvements could be promoted through transport in the city.

**Table 3:** Analysis of the goals, objectives and measures proposed in the Stoke-on-Trent LTP3

| Goal        | Objective   | Comments on Measures  |
|-------------|---|---|
| Economy     | Supporting core strategy policy to rejuvenate the area including improvements to housing and development of land for employment | Public transport: improvements to stations and stops<br>Highway/Streets: attractive streetscapes including widening of pavements, improved street lighting<br>Safety: ensure that co location of housing and employment developments maximises on natural surveillance. Traffic calming measures such as home zones should be incorporated into such mixed use development areas.   |
|             | Supporting existing business in maintaining and improving productivity  | Public transport: improving the connectivity from public transport routes and stops to existing businesses is likely to increase the viability of the businesses.<br>Highway/Streets: encouraging a modal shift from road freight to rail freight is likely to reduce congestion on the highways and also ensure that goods to existing businesses are delivered on time.<br>Management/maintenance: in addition to drainage facilities, invest in continued maintenance of all transport infrastructure to ensure resilience and reduce the impacts of extreme weather events  |
|             | Supporting the development of the visitor economy   | Measures seem adequate  |
|             | Attracting Inward Investment through improving the appearance of the City Centre and gateways                                   | Influencing travel behaviour: raising awareness and providing detailed information on all travel options within the city especially quicker routes to key destinations.   |
|             | Increasing the labour pool and widening the job search area (improving accessibility of employment)                             | Walking/cycling: implement bike/motorcycles loans schemes. Also encourage businesses to locate closer to housing developments to reduce the need to travel far for employment opportunities.  |
|             | Encouraging educational attainment  | Highway/street: use noise minimising road surfaces and incorporate green buffers to reduce noise levels around educational establishments.  |
| Environment | Improve internal environment through 'place' schemes which manage traffic and enhance pedestrian environments.                  | Walking/cycling: greening of walking and cycle networks to create an attractive environment which is likely to encourage walking and cycling.<br>Planning integration: linking new walking and cycle network with existing networks and also to key destinations such as town centres, parks and public squares.<br>Prioritising the pedestrian: Whilst accepting a realistic level of vehicular access is necessary for economic development, a hierarchy of transport priorities is recommended: Walking; Cycling; Public Transport users; Freight and specialist use; and Cars. Taking a pedestrian centric approach (e.g. pavements, exclusive pedestrian signalling etc) has been shown to reduce accidents, in addition to the benefits of walking to health. |
|             | Reduce air pollution  | Geospatial Mapping: Mapping chronic/acute conditions that are likely to be influenced by transport can be used to   |

| Goal   | Objective   | Comments on Measures   |
|--------|---|--|
|        | Reduce carbon emissions   | <p>advocate local prioritisation of planned transport improvement/ interventions. The most suitable conditions for consideration will be cardiac and chronic lung conditions. In addition, child asthma emergency hotspots could give useful information about air pollution within the city. With the integration of Public Health into the Local Authority, combining information systems this should be easier.</p> <p>Carbon emission measures are closely linked to reducing air pollution therefore a suggestion to merge the measures of these two objectives would be appropriate.</p>   |
|        | Reduce reliance on oil based transport; increase transport efficiency   | Highways/streets: increase the number of EV charging points along key routes   |
|        | Reduce noise impacts of transport   | Influencing travel behaviours: greening of routes to create noise buffers is likely to create a peaceful atmosphere that will encourage sustainable modes of travel and spending time outdoors.  |
|        |   |  |
| Health | Continue to reduce the risk of deaths or serious injuries associated with transport                                   | <p>Highway/street: ensure appropriate speed limits, traffic calming measures, pedestrian crossings and traffic lights are maintained.</p> <p>Planning integration: introduce home zones especially in mixed use developments.</p>  |
|        | Tackle high numbers of people in ill health/incapacity claimants (now known as Employment and Support Allowance(ESA)) | Public transport: ensure increased connectivity to urban centres and other places of employment to reduce the need to travel or enable low income/unemployed people to travel further for work.  |
|        | Encourage use of sustainable modes  | <p>Safety: street furniture at public transport station and stops should be visible and of high quality.</p> <p>Investment: evidence for the cost-effectiveness of investing in active travel is now compelling (Section 4.2) and associated with higher returns for investment than any other intervention. Funding streams should be altered to reflect the greater impact this could have on the health of the population.</p> <p>Recommend that evaluation of Stoke-on-Trent Cycling Town using all available evidence is completed and compared with other Demonstration Towns in terms of intervention and outcomes. Perceived threats relate to: (i) the uncertain future of funding in the absence of Cycling England; (ii) the need for a long-term perspective to appreciate the value of such investment to yield health benefits in years to come; (iii) movement of public health into local authorities and away from the health service, where the benefits of health improvements from increased cycling would be realised.</p> <p>Active travel in main employers: Continued promotion of active transport within the NHS and Local Authority setting. As major employers and providers of care within the community, it is vital to lead by example and make use of large 'captive markets'.</p> |
|        | Reducing obesity in the local population  | Active travel in schools: Given the considerable increases in cycling by school children observed in the six CDTs , and consistent with the recent White Paper [23], promoting active travel by school children offers a good focus for activity, and one that is easier to monitor/evaluate. Near field communication (NFC) technology is one approach. Each student was provided with a swipe card which they touched on receivers placed on lampposts along a safe walking route to school. It is intended that this technology will be available as a social enterprise as part of the Olympic legacy  |



| Goal | Objective                                   | Comments on Measures  |
|------|---|---|
|      |   | <a href="http://www.intelligenthealth.co.uk/services/schools.html">http://www.intelligenthealth.co.uk/services/schools.html</a> .   |
|      | Promote development of community facilities | Walking/cycling: locate community facilities near housing developments and ensure that all users (including inequalities groups have fair access).  |
|      | Improve access to healthcare facilities     | <p>Encourage partnerships with community transport organisations to provide access to healthcare facilities for people without a car, the elderly and people with disabilities.</p> <p>NHS site plans: Ensure that in the development of plans for access to healthcare, the University Hospital of North Staffordshire is not the only site with detailed plans. Significant volumes of traffic are produced at other NHS sites, such as Bradwell Hospital, and GP practices. In particular, when a new GP practice or Primary Care Centre is developed, travel options need to be thoroughly mapped out in advance.</p> |

## **Acknowledgements**

Authors of North Dorset District Council draft HIA, from whom much of the structure is taken;  
authors of the Health Scotland guide to Health Impact Assessment of Transport Initiatives.

Special thanks to: Salim Vohra, Gifty Amo-Damso, and Ifeoma Dan-Ogosi, Institute for Occupational  
Medicine.

## References

1. Stokols D: **Establishing and maintaining health environments: toward a social ecology of health promotion.** *American Psychologist* 1992, **47**:6-22.
2. King AC, Stokols D, Talen E, Brassington GS, Killingsworth R: *Theoretical approaches to the promotion of physical activity: Forging a transdisciplinary paradigm.* New York, NY, ETATS-UNIS: Elsevier; 2002.
3. Marmot M: *Fair Society, Healthy Lives: The Marmot Review.* The Marmot Review; 2010.
4. Acheson D: *Independent inquiry into inequalities in health.* London: The Stationery Office; 1998.
5. Marmot M: **Social determinants of health inequalities.** *The Lancet* 2005, **365**:1099-1104.
6. National Institute for Health and Clinical Excellence: *Promoting and creating built or natural environments that encourage and support physical activity (NICE public health guidance 8).* London: NICE; 2008.
7. Department for Transport: *Active Travel Strategy.* London: DfT; 2010.
8. Health Scotland: *Health Impact Assessment of Transport Initiatives: A Guide.* Edinburgh: Health Scotland; 2007.
9. Thomson H, Jepson R, Hurley F, Douglas M: **Assessing the unintended health impacts of road transport policies and interventions: translating research evidence for use in policy and practice.** *BMC Public Health* 2008, **8**:339.
10. Department of Education and Skills: *Every Child Matters (Green Paper).* London: TSO; 2003.
11. Association of Public Health Observatories: *Stoke on Trent area profile 2010.* Available at: [www.healthprofiles.info](http://www.healthprofiles.info). 2010.
12. NHS Stoke on Trent: *Joint Strategic Needs Assessment : report to trust board (2010).* 2010.
13. NHS Stoke on Trent: *Health and Behaviour in Stoke-on-Trent Director of Public Health Annual Report 2010.* Stoke-on-Trent: NHS; 2010
14. Fox KR: **Childhood obesity and the role of physical activity.** *The Journal of the Royal Society for the Promotion of Health* 2004, **124**:34-39.
15. Cochrane T, Davey R, Gidlow C, Smith G, Fairburn J, Armitage CJ, Stephansen H, Speight S: **Small Area and Individual Level Predictors of Physical Activity in Urban Communities: A Multi-Level Study in Stoke on Trent, England.** *International Journal of Environmental Research and Public Health* 2009, **6**:654-677.
16. Department of Health: *'Soft measures – hard facts'. The value for money of transport measures which change travel behaviour: A Review of the Evidence.* Available at: [http://www.liftshare.com/business/pdfs/Soft%20measures%20-%20hard%20facts\\_2011\\_final.pdf](http://www.liftshare.com/business/pdfs/Soft%20measures%20-%20hard%20facts_2011_final.pdf). London: DH; 2011.
17. Frank LD, Andresen MA, Schmid TL: **Obesity relationships with community design, physical activity, and time spent in cars.** *American Journal of Preventive Medicine* 2004, **27**:87-96.
18. James W, Phil E, Cathryn T, Ben GA, Olu A, David B, Sean B, Zaid C, Zohir C, Aaron C, et al: **Public health benefits of strategies to reduce greenhouse-gas emissions: urban land transport.** *The Lancet* 2009, **374**:1930-1943.
19. Biddle SJH, Mutrie N: *The Psychology of Physical Activity: An Evidence Based Approach.* London: Routledge; 2008.

20. North Dorset District Council: *Core Strategy and Development Management Policies. Development Plan Document: Draft Health Impact Assessment*. North Dorset District Council; 2010.
21. Cavill N, Kahlmeier S, Rutter H, Racioppi F, Oja P: *Economic assessment of transport infrastructure and policies: Methodological guidance on the economic appraisal of health effects related to walking and cycling*. Copenhagen: WHO; 2007.
22. Petticrew M, Cummins S, Ferrell C, Findlay A, Higgins C, Hoy C, Kearns A, Sparks L: **Natural experiments: an underused tool for public health?** *Public Health* 2005, **119**:751-757.
23. Davis A: *Value for Money: An Economic Assessment of Investment in Walking and Cycling*. Department of Health & Government Office of the South West Available at: <http://www.apho.org.uk/resource/item.aspx?RID=91553>; 2010.
24. Cavill N, Muller L, Mulhall C, K H, Kennedy A, Hillsdon M, Bauman A: *Cycling Demonstration Towns: Surveys of cycling and physical activity 2006 to 2009*. London: Cycling England; 2009.
25. Sloman L, Cavill N, Cope A, Muller L, Kennedy A: **Analysis and synthesis of evidence on the effects of investment in six Cycling Demonstration Towns Report for Department for Transport and Cycling England**. 2009.
26. Cavill N, Cope A, Kennedy A: *Valuing increased cycling in the Cycling Demonstration Towns*. Cycling England: Available at: <http://www.dft.gov.uk/cyclingengland/site/wp-content/uploads/2009/12/valuing-increased-cycling-in-the-cycling-demonstration-towns.pdf>; 2009.
27. Department for Transport: *Cycling Demonstration Towns Development of Benefit-Cost Ratios*. London: DfT. Available at: <http://www.dft.gov.uk/cyclingengland/site/wp-content/uploads/2010/04/cdts-development-of-benefit-cost-ratios.pdf>; 2010.