ATKINS
Member of the SNC-Lavalin Group

The benefits of active travel evidence base

Document 1: The need for active travel investment

1. Introduction

Surrey County Council has commissioned Atkins to collate national and local policy documents to understand the ambitions for active travel, and to undertake a review of academic literature and best practice evidence to identify the reported benefits of active travel. Active travel is a term that covers modes of travel that involve activity, such as walking, cycling and wheeling, which includes trips made by wheelchairs and scooters (Department for Transport, 2022). Surrey County Council requested this piece of work to provide an independent, rapid review of the evidence to be presented in an easy to digest manner and completed in a short amount of time to coincide with wider active travel programmes.

It must be noted that this document was commissioned to be written for a technical audience, intended for use by officers of Surrey County Council. The points made in this paper are taken directly from the policy documents and papers reviewed and are independent from Atkins' views. The project brief was not intended to seek advice or guidance from Atkins, and as such, this document simply presents a collation of evidence from which the reader may choose to read and investigate in further detail.

This paper is the first of two documents that set out the need for active travel investment. The objective is to provide information in a succinct way to enable Surrey County Council with the development of schemes that seek to increase active travel across the county. It is recognised that Surrey and its towns and villages are unique and may not be directly relatable to the examples in the literature, however the intention is to provide a range of evidence to demonstrate active travel benefits in general. This paper explores the benefits of active travel by showing how it can overcome challenges and support policy outcomes. The second paper focuses on active travel schemes and the benefits they can bring to justify investment.

1.1. Purpose

This paper is a concise collation of the headlines of relevant evidence, with signposting to other documents and research where more detail can be found. It is not intended to be a full technical report. There is a large amount of evidence on the benefits of active travel; this paper cannot cover it all, but instead provides an insight into the variety of benefits to demonstrate the wide-ranging objectives that can be reached through active travel

investment. All sources that have been reviewed are provided in full in Section 5 of this paper, to allow further, more detailed investigation, if required.

1.2. Method

National and local policy documents were reviewed on topics relating to transport, decarbonisation, public health, air quality and climate change. Technical and academic papers on the benefits of active travel were also reviewed. These papers were selected from the Active Travel Online Portal (Active Travel Online Portal | Active Travel Information) and Google Scholar. Papers that were suggested by Surrey County Council and Atkins colleagues were also reviewed. Atkins has written a report called *Boosting the local economy through active travel* (Atkins, 2020), from which links to documents were also taken.

1.3. Structure

The paper is structured as follows:

Section 2 Ambitions and targets for active travel in local and national policy: This section contains Table 1 that presents an overview of the local and national policy documents that refer to ambitions for active travel and any targets that they contain. The contents of this table are summarised in Table 2 in Section 4.

Section 3 Evidence headlines of challenges and how active travel can help: This section presents the headlines from the evidence of key challenges and how active travel can help, along with links to references in Section 5.

Section 4 Summary of how active travel can overcome challenges and support policy outcomes: This section contains Table 2 that provides a summary of how active travel can overcome challenges and support policy outcomes.

Section 5 References for further detail: This section provides the full sources of the evidence used and links to the documents that have been reviewed for this paper to allow further, more detailed investigation, if required.

2. Ambitions and targets for active travel in local and national policy

This section provides an overview of the local and national policy documents that refer to ambitions for active travel and, where relevant, the targets that increasing active travel can help to achieve. The main headline contents of these policy documents are summarised in Table 2 in Section 4. Full details and links can be found in Section 5.

Table 1: Ambitions and targets for active travel in local and national policy

Policy document	Date published	Ambition	Related target
Local policy			
Community vision for Surrey	2019	Everyone lives healthy, active and fulfilling lives, and makes good **choices about their wellbeing**.	
Surrey Climate Change Strategy	2020	Invest in initiatives and infrastructure to **increase the uptake of walking, cycling** and public transport, alongside schemes to **reduce reliance on the car**.	**60% emission reduction** in the **Transport sector by 2035** against BAU as a minimum
Greener futures climate change delivery plan	2021	Create Local Cycling and Walking Infrastructure Plans (LCWIP) to **improve walking and cycling infrastructure** as set out in the draft Local Transport Plan (LTP4).	

Policy document	Date published	Ambition	Related target
Surrey Health and Wellbeing Strategy update 2022	2022	Everyone lives healthy, active and fulfilling lives, and **makes good choices about their wellbeing**.	
Surrey Local Transport Plan 4	2022	To encourage more people to choose **to walk rather than use a car for short journeys**, we will be improving walking routes. We plan to build on the **enthusiasm for cycling** by improving facilities to encourage more people to use their bikes instead of their cars. Shift travel to more sustainable modes: public transport, walking, and cycling, away from car use. Main objectives: - **enabling a greener future;** - **growing a sustainable economy, so that everyone can benefit;** - **empowering communities;** **tackling health inequality.**	To provide facilities to encourage **many more journeys to be made actively** (walking, wheeling, cycling, scootering) Seeking to reduce journeys, **shift journeys to public and active modes** and developing zero emission vehicle options to **reach net zero carbon emissions by 2050** (Surrey County Council, 2020).
Surrey County Council LCWIP		We want walking and cycling to be the **natural choice for short trips** to local shops and services such as schools, with walking and cycling available to everyone as low cost, enjoyable, safe, healthy and pollution-free ways to get about.	
Healthy Streets for Surrey	2023	An increase in active travel would help improve **health and wellbeing, better air quality** as well as bringing **economic benefits** to town centres and local business.	Surrey is committed to a goal of **achieving net zero carbon by 2050** with a target of **cutting transport emissions,** which make up 46% of the County's emissions, **60% by 2035**
National policy			

Policy document	Date published	Ambition	Related target
Everybody active, every day: An evidence-based approach to physical activity	2014	Creating transportation systems that promote walking and cycling will help to **create active, healthier, and more liveable communities.**	
Future of Mobility: Urban Strategy Moving Britain Ahead	2019	Walking, cycling and active travel must remain **the best options for short urban journeys**.	
Clean Air Strategy	2019	We are taking action to encourage the use of the **cleanest modes of transport** for freight and passengers, including active travel.	
Gear Change: A bold vision for cycling and walking	2020	A need to see a **step change in cycling and walking** in the coming years.	**Half of all journeys** in towns and cities will be **cycled or walked by 2030**.
Net Zero Strategy: Build back greener	2021	We will transform our cities and towns with greener, faster and more efficient transport. Our **streets will be cleaner** and people healthier from breathing cleaner air, walking and cycling more.	**Half of all journeys** in towns and cities will be **cycled or walked by 2030**.
Decarbonising Transport: A better, greener Britain	2021	Public transport and active travel will be the **natural first choice for our daily activities**. Support decarbonisation by investing in local transport systems, enabling local authorities to invest in local priorities, including reducing congestion and improving air quality.	**Half of all journeys** in towns and cities will be **cycled or walked by 2030**.
The second cycling and walking investment strategy (CWIS2)	2023	Streets to be cleaner and people healthier from breathing cleaner air, walking and cycling more. Commitments on cycling and walking forming significant part of decarbonisation plans and net	Increase the percentage of **short journeys** in towns and cities that are **walked or cycled** from 41% in 2018 to 2019 to **46% in 2025** (The

Policy document	Date published	Ambition	Related target
		zero plans, recognising **crucial role of walking and cycling in delivering net zero**.	second cycling and walking investment strategy Increase the **percentage of children** aged 5 to 10 who usually **walk to school** from 49% in 2014 **to 55% in 2025** (The second cycling and walking investment strategy Increase the percentage of **short journeys** in towns and cities that are **walked or cycled** to **50% in 2030 and to 55% in 2035** (The second cycling and walking investment strategy Deliver a **world-class cycling and walking network** in England by **2040**

3. Evidence headlines of challenges and how active travel can help

This section presents the headlines from the evidence of key challenges and how active travel can help, along with links to references in Section 5. Table 2 in Section 4 summarises these findings. Table 2

3.1. Physical inactivity

3.1.1. Challenges

There are high levels of physical inactivity:

- Over **4 in 10 women (42%)** and **1 in 3 men (34%)** in England **are not active enough for good health**, with human and economic costs for the individual, communities and the health and social care system (Public Health England, 2018a).
- Only **21% of boys** and **16% of girls** aged 5-15 in England take the **amount of physical activity they need for good development** (Public Health England, 2014).
- This problem is particularly acute for kids and adolescents: **more than 80% of boys and girls worldwide** aged 11-17 are **insufficiently active** (Partnership for Active Travel and Health, 2022).
- In the UK, levels of **physical activity have remained below standard guidelines** (Scholes and Mindell, 2012).

This results in increased levels of illness and pressure on the NHS:

- Physical inactivity responsible for **1 in 6 UK deaths** (Department for Transport, 2020).
- Costs the NHS up to **£1bn per annum**, with further **indirect costs of £8.2bn** (Department for Transport, 2020).
- The most recent estimates are that physical inactivity costs the NHS more than **£450 million a year at Clinical Commissioning Group level**, equating to £817,274 per 100,000 individuals or £8.17 per person (Public Health England, 2018a).
- UK wide NHS costs attributable to **overweight and obesity** are projected to reach **£9.7bn by 2050** (Public Heath England, 2017).

3.1.2. How active travel can help

- People who **walk or cycle** have improved metabolic health and a **reduced risk of premature mortality** (Anderson et al. 2000; Partnership for Active Travel and Health, 2022; Public Health England, 2018a).
- Studies have shown that people who **walk and cycle** report **positive health benefits** (Cavill and Davis, 2007; De Nazelle et al., 2011; Rabl and Nazelle, 2012)
- **Walking and cycling reduce the risk factors for a number of diseases**, including cardiovascular disease, respiratory disease, some cancers, and Type II diabetes

(Department of Environment, Transport and the Regions, 1999; Hou et al. 2004; Morris et al. 1990; Mueller et al., 2015; Oja et al. 1991; Public Health England, 2018a; Saunders et al., 2013; Steindorf et al. 2003; Vuori et al. 1994).

- Physical activity such as **walking and cycling** also have positive effects on **mental health and general wellbeing** (Byrne and Byrne 1993; Cramer et al. 1991; Killoran et al, 1994; Public Health England, 2018a; Urban Transport Group, 2016).
- **Active travel** is a 'nonathletic', **habitual part of everyday life** that does not require additional exercise time, **enabling more people** in society who would not take part in specific exercise to become active (van Kempen et al. 2010)'. (Garrard et al. 2012, p.214).

This could lead to savings for the NHS:

- Increased **walking and cycling** could reduce costs to NHS for diseases associated with inactivity (Baker et al., 2021; Jarrett et al., 2012; Partnership for Active Travel and Health, 2022).

3.2. Wellbeing

3.2.1. Challenges

Latest ONS data show that mental health and wellbeing are at crisis points in the UK (The Health Foundation, 2021), with some aspects directly attributable to transport and travel:

- A common cause of **stress** is the **commute to work**, with stress levels exacerbated in private motor cars (Guell et al. 2012).
- **Noise** has a significant **impact on quality of life and mental wellbeing**, with high levels of urban noise being generated from **transport** (European Environment Agency, 2021; Suter, 1991).
- It is estimated that annual social cost of **urban road noise** in England is £7-10bn. (Department for Transport, 2021).

3.2.2. How active travel can help

- There is growing evidence of **cycling and walking** having **positive impact** on **mental health and wellbeing** (Byrne and Byrne 1993; Cramer et al. 1991; Department for Transport, 2023; Martin et al., 2014; Public Health England, 2018a).
- **20 mins of exercise** a day **cuts risk of developing depression** by 31%. (Department for Transport, 2020)
- **Active travel** methods are associated with **reduced levels of stress** and **improved mental and physical health** (Hansen and Nielsen, 2014).
- Activity (like **walking and cycling**) gets us out the door and **connecting with others**, avoiding social isolation, increasing social capital and community spirit (Public Health England, 2014).
- **Walking and cycling** has been reported to enable people to **enjoy their travel time** (Aldred and Jungnickel 2012; Jain and Lyons, 2008).

3.3. Economy

3.3.1. Challenges

- **Vacancy rates of high street retail units is high**, with high levels of store closures (Centre for Retail Research, 2018; Living Streets, 2018), with the reported downturn

partly due to the growth in online shopping (DfT, 2016; Living Streets, 2018; Wrigley et al, 2014).

- When proposing schemes to **reallocate space from motor traffic, there is a misconception that more customers travel to local centres and high streets by car** than by alternative modes of transport (Living Streets, 2018).

3.3.2. How active travel can help

In fact, many studies show that increased levels of walking and cycling can boost the local economy:

- Traders often **overestimate** the number of customers that **arrive to their businesses by car** (Enjoy Waltham Forest, 2015; O'Connor et al, 2011; Smith et al, 2017; Sustrans, 2006).
- Better accessibility to **motorised vehicles** as opposed to active and sustainable modes may have negative effects on high streets and local centres in terms of **higher levels of shop vacancy rates** (Sustrans, 2003).
- Customers that travel by **sustainable modes spend more** per month than those who travel by car (Aldred, 2014; Bent and Singa, 2009; City of Copenhagen, 2012; Commission for Integrated Transport, 2006; Clifton et al, 2013; Living Streets, 2018, 2020; Raje and Saffrey, 2016; TfL, 2013; TfL, 2014; Tolley, 2011).
- 41% of **short car trips** in urban areas can realistically be **converted to active modes** of travel, demonstrating that there is great potential to encourage more walking and cycling to local centres and high streets (Neaves and Brand, 2018).

Therefore, active travel infrastructure improvements can increase the local economy:

- Improving accessibility and enhancing the experience by **active modes** can encourage people to visit and dwell (Living Streets, 2018), and even **spend more money** (Zandiatashbar et al, 2019) to those that quickly pull up by car for a functional purpose to visit one shop and leave the shortly afterwards.
- Improvements to **walking and cycling** can **increase retail spend** by 30% (Living Streets, 2014; Living Streets, 2020).
- In the UK, **83% of business improvement districts** agree that **walking and cycling** improvements **attracts more visitors** (Aldred and Sharkey, 2018)
- New York streets that have **cycle lanes** saw **more retail sales** compared with the surrounding area (NYC DoT, 2013).
- Up to 40% increase in shopping footfall by well-planned improvements in the walking environment (Department for Transport, 2020, Urban Transport Group, 2016).

Increased levels of active travel can also create a more productive workforce:

- Businesses with **active workforces** are more productive, **have lower sickness rates** and lower staff turnover (Public Health England, 2014).
- A study in the Netherlands found that, on average, **cyclists missed fewer work days** each year (7.4) when compared to non-cyclists (8.7) (Hendriksen et al., 2010).

3.4. Environment and air quality

3.4.1. Challenges

- Poor air quality if the **largest environmental risk** to public health in the UK (Public Health England, 2018b).

- The costs to health and social care from **air pollution** could reach **£5.3 bn by 2035** (Department for Transport, 2021).
- **8,300 premature deaths** each year are due to **poor air quality** (Department for Transport, 2020).
- Air pollution **affects everyone throughout their lives with diseases** such as asthma and slower development in children, coronary heart disease, stroke, lung cancer, diabetes in adults and dementia and heart attacks in the elderly (Public Health England, 2018b).
- **Road transport** remains a **major source of small particulate matters**, particularly in urban areas where significant numbers of people are exposed (Department for Transport, 2023).

3.4.2. How active travel can help

- More **walking and cycling** is a viable solution to lower emissions and **improve air quality** in rural and urban areas (Partnership for Active Travel and Health, 2022).
- By **reducing air pollution levels**, countries can **reduce the burden of disease** from stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases, including asthma (Partnership for Active Travel and Health, 2022, Public Health England, 2018b).
- Policies that **promote active travel** can result in population-wide benefits through **reductions in air and noise pollution** (De Nazelle et al, 2011).
- Increasing **active travel** and reducing car use can lead to **health benefits** due to the **reduction in pollution** (Public Health England, 2018a).

This is being recognised in policy:

- Clean air is essential for life, health, the environment and the economy. Government **must act to tackle air pollution** which shortens lives (Department for Environment, Food and Rural Affairs et al, 2019).
- Meeting targets to **double cycling and increasing walking** will give **savings of £567m** annually from air quality and **prevent 8,300 premature deaths** each year and provide opportunities for improved green spaces and biodiversity (Department for Transport, 2020).
- Deliver and promote an integrated, accessible, affordable and reliable public and **active (walking or cycling) transport system** across the County, thereby reducing journeys and **improving local air quality** for improved health and wellbeing of our residents (Surrey County Council, 2020).

3.5. Climate change

3.5.1. Challenges

- **Transport is the largest contributor** to UK domestic greenhouse gas (GHG) emissions, responsible for 27% in 2019 (BEIS, 2021).
- The latest IPCC report shows that **if we fail to limit global warming to 1.5°C** above pre-industrial levels, the floods and fires we have seen around the world this year will get more frequent and more fierce, crops will be more likely to fail, and sea levels will rise **driving mass migration as millions are forced from their homes**. (Department for Energy, Security and Net Zero and Department for Business, Energy and Industrial Strategy, 2021).

- **50 billion tonnes of CO2 will be emitted by urban transport** in the next 30 years if current motorisation trends are not reversed (Partnership for Active Travel and Health, 2022).
- Congestion of motorised traffic creates issues for **quality of life, lost productivity** and is responsible **7-15% of annual carbon emissions** in large cities from transportation, due to idling vehicles (Partnership for Active Travel and Health, 2022).
- Surrey County Council, declared a **climate emergency** in 2019 (Surrey County Council, 2022a).
- At current rates of consumption, **Surrey will use up its share of the global carbon budget** – the total carbon emissions that the world can "afford" if it is to avoid dangerous climate change – **within eight years** (Surrey County Council, 2020).
- Emissions associated with **Surrey's transport sector** currently amount to 46% of the County's total amount (2019), equivalent to **2.3 tonnes per person annually** (Surrey County Council, 2020).

3.5.2. How active travel can help

- Mode shift to **active travel** is one of the most cost effective ways of **reducing transport emissions** (Department for Transport, 2020, 2023; Partnership for Active Travel and Health, 2022).
- Studies carried out over time that analysed daily travel behaviour in seven European cities show that increases in **walking and cycling** consistently and independently **decreased mobility-related lifecycle CO2 emissions** (Brand et al., 2021).

3.6. Addressing inequalities

3.6.1. Challenges

- In England, 48% of households in the lowest income quintile **do not have access to a car** (Urban Transport Group, 2016).
- One third of households across the UK have **no car ownership**, however many people live in areas with streets predominantly designed for cars (National Travel Survey, 2015), making it **difficult to access everyday services and facilities** (Hine and Russell, 1996).

3.6.2. How active travel can help

- Increasing **walking and cycling** can help tackle most challenging issues, such as **addressing inequalities** (Marmot et al., 2020).
- Improving facilities for **walking and cycling** could have **greatest impact** on those without a car and the **poorest households** (Aldred, 2014).
- Increases in the number of people **walking and cycling** can **reduce crime levels and fear of crime** due to more presence on the street (Department of Health and Department for Transport, 2011).
- **Walking and cycling** are mobility choices **available to everyone** regardless of age, physical capabilities and economic conditions (Partnership for Active Travel and Health, 2022).

National policy recognises the benefits active travel brings to tackling inequality:

- Supporting ‘levelling up’, **tackling inequality** and supporting people and places that have particular barriers to overcome to **enable everyone to walk, wheel and cycle** (Department for Transport, 2023).

4. Summary of the how active travel can overcome challenges and support policy outcomes

Error! Reference source not found.2 shows key challenges and how active travel can overcome them and support policy outcomes. All details of the evidence for these statements is presented in Section 4 later in this paper and full details in Section 5.

Table 2: Summary of how active travel can overcome challenges and support policy outcomes

Challenges	How active travel can help	National or local policy outcomes that can be supported
Physical inactivity: this leads to a number of health issues, which leads to increased costs to the NHS.	Active travel is a 'nonathletic', habitual part of everyday life that does not require additional exercise time, enabling more people to be active. The physical activities of walking and cycling reduces the risk factors of a number of diseases, saving costs for the NHS.	Active, healthy communities. Health equality. Reduced NHS costs.
Wellbeing: latest ONS data shows that mental health and wellbeing are at a crisis points in the UK.	The physical activities of walking and cycling have positive impacts on mental health and wellbeing and can reduce social isolation. Walking and cycling also produce lower levels of noise, compared with motorised transport, which is reported to be a factor of poor quality of life.	Everyone able to make good choices about their wellbeing.
Economy: Vacancy rates of high street retail units is high and there is a common misconception that	Better access by walking and cycling can boost the local economy, with customers arriving by active travel spending more and visiting more frequently.	Step change in cycling and walking levels to realise active travel benefits

access by car is needed to ensure local economies thrive.	Increased levels of active travel can also create a more productive workforce.	that contribute towards thriving economies. A more sustainable economy, so that everyone can benefit.
Environment and air quality: air pollution from road transport increases risk of diseases and premature death.	Walking and cycling, as non-motorised modes, are viable solutions to lower emissions, improve air quality and reduce noise pollution and therefore reduce the risk of disease and premature death caused by air pollution.	Cleaner air and reduced pollution. Better public health, as a result.
Climate change: Transport is the largest contributor to UK domestic greenhouse gas emissions.	Mode shift to active travel is one of the most cost effective ways of reducing transport emissions.	A greener future, with decarbonised transport systems to deliver net zero.
Addressing inequalities: one third of households across the UK do not own a car and rely on other means to access daily needs.	Walking and cycling are mobility choices available to large sections of the population, regardless of age, physical capabilities and economic conditions.	Reduced reliance on cars. Active travel to be the first choice for short journeys. Empowered communities.

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