

Thurrock



Active Travel Needs Assessment



This document was produced by Thurrock Council

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Note to the reader:

Active travel is the choice of travel modes requiring physical activity, usually walking or cycling, for all or part of the journey in preference to motor transport either for a complete journey or as part of a longer journey. These must be for the purpose of transport (getting from place to place) such as journeys walking to the shops, cycling to work, cycling to the station to catch a commuter train or walking to school and not for sport or fitness purposes.

This document focuses exclusively on walking and cycling as a means of travel.

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Executive Summary

This document has been developed by the Council's Public Health team in consultation with other internal stakeholders from planning, transport, education and road safety. It examines the potential for active travel, how the situation currently looks, identifies needs, and describes factors that should be addressed. In doing so this will ensure Thurrock is providing a co-ordinated and effective approach to delivering the physical infrastructure, information and support that will generate the necessary changes required to increase levels of active travel.

Key Objectives of the document:

- To provide a summary of local data analyses and evidence to describe the current status of active travel within Thurrock.
- Provide information on evidence of effectiveness of interventions that promote and enhance active travel which will help to shape future plans.
- Review local approaches and barriers identified within Thurrock's Active Travel Strategy 2020 and include any new evidence that supports active modes of travel or prevents people walking/cycling to their destinations.
- To provide an understanding of current policies relating to active travel (including any updates since the production of the Active Travel Strategy).
- Inform and guide the development assessment of future policies and strategies within Thurrock ensuring active travel requirements are fully supported.
- Review the local economic impact of active travel, highlighting benefits that will inform the strategic narrative to help secure future investment.
- Provide an understanding of the potential of active travel for improving air quality in Thurrock.
- Contribute to the borough's aims for improving health and the local environment by encouraging more active lifestyles.
- Provide evidence on the potential of new developments and regeneration schemes to include walking and cycling infrastructure as standard.
- Provide relevant and reliable data to cabinet members and decision makers to help them make intelligence and evidence based decisions in favour of active travel.

Background

Thurrock's Transport Strategy states '*Thurrock is a well-connected borough although there is not always efficient movement of goods and people*'. As our population grows so has a prevailing driving culture, and some road networks are now struggling to cope. Continued investment in more roads from many perspectives is no longer accepted as positive, with consequences such as poor air quality, obesogenic environments and increasing congestion now prevalent in many areas.

The benefits of Active Travel are outlined within this document. There is evidence that walking and cycling can have significant mental and physical health benefits, creating a fitter population as well as saving the NHS and local authority money in health and social care costs. For society it has the potential to make our high streets and public places more prosperous and vibrant, it can create a better quality of life and more cohesive communities. For the environment it can reduce congestion, thus lowering emissions of Nitrogen Dioxide

(NO₂), particulate matter (PM) and CO₂ helping to tackle climate change and improve air quality.

Studies have consistently shown that investment in active travel delivers value for money in achieving these health, community, environmental and transport benefits. Cost benefit analysis studies of walking and cycling investment suggests substantial economic benefits of walking and cycling interventions. On average cycling and walking schemes within the UK have a very high benefit to cost ratio of around 5.62:1, for every £1 spent an investment return equivalent to £5.62 is achieved once you consider health savings, reductions in congestion and pollution, and other associated co-benefits such as lower school transport costs.

Despite our understanding of the long-term benefits of active travel, the National Travel Survey published in 2018 by the Department for Transport (DfT) confirm that cycling and walking have remained almost at the same level for the last two decades. Figures from the latest survey show that whilst Thurrock residents maintain similar rates of walking to residents in neighbouring areas, they have lower rates of cycling, and have shown little improvement in either domain in recent years.

Key walking and cycling findings from statistical analysis

1. Cycling:

Individual factors: levels of regular cyclingⁱ in Thurrock are worse than national averages (1.2% compared to 4.4% nationally). The benefits of cycling are not equally spread - age and gender are the most significant demographic variables, men are almost 3 times more likely to cycle than women and cycle almost four times further. Adult males in their 40s made the most cycling trips, females aged 17-20 made the least.

Environmental factors: No single factor correlates consistently with higher levels of cycling although journey distance, safety and cycling facilities/infrastructure appear to be significant influences. Areas with dedicated cycle lanes (and cycle parking), separation of cyclists from other traffic and proximity of cycle paths have consistently shown to have higher cycling levels. The design and location of routes are also important.

The main incentives motivating cycle use are convenience and exercise. The main disincentives are safety concerns around traffic danger, long trip distances and steep inclines. Weather does not seem to be correlated with interest in cycling except as a seasonal and daily variable in the decision to cycle.

2. Walking:

Individual factors: Levels of walking in Thurrock are similar to national averages, with almost 77% of the population walking for 10 minutes or more at least once a week (80% nationally), although this declines to 48% for regular walking (51% nationally). The number of trips and reasons for walking varies with gender. Females walk around 10% more than males and women in their 30's – 40's walk the most.

Environmental factors: As with cycling no single factor correlates with increased walking levels although attractive, safe, well designed neighbourhoods with local accessibility to services

ⁱ defined as the main mode of travel, more than 3 times per week

have consistently demonstrated higher levels of walking. Evidence indicates that walking among urban residents living in high density areas is far more prevalent than among less dense and suburban areas and understandably there is a much higher prevalence when destinations are less than a mile.

The main walking motivators for women are the social element and enjoyment of interacting with other people whereas men and children are likely to find competition more motivating. The majority of men responding to surveys did not consider walking a form of exercise. Similar to cycling the main disincentives are safety concerns, lack of time and a limited range of how far they are prepared to walk. Secondary reasons include the inconvenience of carrying things, poor weather and not being fit enough.

3. Travel patterns and lengths

Workplaces: Data provided by the England and Wales National Census 2011 found that Thurrock residents are travelling longer and further to their workplaces, spending an average of 40 minutes of travel time (one way) compared to the national average of 29 minutes. Only 41% of residents live less than 10km from their workplace compared to 52% nationally and 59% of Thurrock residents drive a car or van to work. This is higher than the national average of 54%. Over a third of working adults commute to London or surrounding area and one in seven commuters are spending two hours or more each day travelling to and from work.

Schools: According to the most recent School Travel Strategy for Thurrock the average education trip distance has increased by nearly 25% to 3 miles since 1997. With increased distance school children made relatively fewer active trips. The proportion of children aged 5-10 who walk to school drops by 52% when the travel distance increases from under 1 mile to between 1 and 2 miles, likewise for those aged 11-16 the drop off rate is almost 30%.

Some journey lengths are too impractical for walking or cycling alone, but could be used instead as a stage in the journey such as cycling to the train station in the morning.

As indicated earlier, travel distance is a significant factor in choice of travel mode, predictably rates of walking and cycling decrease with distance. Most trips are relatively short, figures from the Department for Transport (DfT) show that 25% of trips were under 1 mile, and 68% under 5 miles. Walking was the most frequent mode used for short trips, 80% of trips under one mile were walked but there is a notable decrease in distances of between 1 and 2 miles where only 28% of trips were walked.

The potential for travel behaviour change

This statistical data suggests cycling and walking are not as widely used for transport as they could be and Thurrock clearly has substantial untapped potential. These DfT figures (showing that 25% of trips were under a mile and 68% under 5 miles) are considered by the government as '*a realistic distance for cycling for the majority of people, with many shorter journeys suitable for walking*', yet within our borough on average walking made up 21% and cycling only 1% of all trips. The car is the most common mode of transport accounting for 62% of all journeys.

Cars account for half of the journeys to Thurrock's primary schools and almost a third of journeys to secondary schools. Travel for education contributes significantly to peak time traffic, accounting for almost a third of all car journeys between 8 and 9 a.m. On average, an

estimated 38% of Thurrock children walk to school and 4% cycle (figures based on limited survey data).

These low uptakes conflict somewhat with both local and national ambitions. Surveys conducted by the DfT and locally through school travel plans suggest a significant population wide impetus to walk or cycle more. For example school travel plan data showed that 29% of primary school children in Thurrock say they would like to cycle to school (but only 4% did) and 40% of adults express a willingness to switch from our car to walking or cycling for shorter journeys.

Consultation undertaken as part of the local plan 'Your place, your voice' events organised in 2019 demonstrated notable public support for active travel, with 71% of participating Thurrock wards identifying '*improved walking and cycling routes*' as a specific community requirement.

The challenges

There are a number of complex and interrelated factors why we are still choosing cars for journeys that could ideally be walked or cycled, but there are some key themes that consistently prevent people from making the choice to walk or cycle:

1. Safety and perceptions of safety

There is much evidence showing that a fear of traffic is the most significant barrier to both cycling and walking. Many people often do not feel confident on a bike or walking distances outside of their immediate area, many are put off cycling in particular because of fears for their safety on busy roads. These findings are reaffirmed in attitudinal surveys conducted by the Department for Transport where 62% of adults agreed that '*it is too dangerous for me to cycle on the roads*'. Parental concerns around safety are a significant barrier affecting travel modes to school. Removing perceptions of danger and the lack of safe routes are fundamental to tapping the existing potential of walking and cycling.

Studies conclude there is no single intervention that will transform road safety for cycling or pedestrians, however, infrastructure measures that appear effective include thoughtful urban design that includes segregated cycle lanes along main roads and speed restriction measures where segregation is not possible. The design and quality of segregated routes are also an important factor. For walking, the removal of barriers and parked vehicles on pavements appeared effective in some studies. Attractive well designed environments that are regularly maintained had positive correlations with perceptions of safety for both walking and cycling.

2. Lack of Infrastructure/Infrastructure in the wrong place

There is much evidence suggesting a causal relationship between the quality of the built environment and health behaviours – we are as healthy as our environment allows us to be. For example studies consistently demonstrate in areas that prioritise and promote walking and cycling as a normal part of life and where there has been significant investment in accessible, safe walking and cycling routes, levels of active travel has increased.

This can partially be achieved locally through good spatial planning which gives priority to cycling and walking into all aspects of urban design. Streets should be designed in favour of people not cars, with local highways incorporating safe and attractive walking and cycling

routes as standard. These principles can be supported further by the use of strategic planning policies embedded in key documents such as the new Local Plan and Design Guidance.

The Netherlands and Denmark have a strong culture of active travel, particularly cycling, and there is much to learn from these places. Since the 1980s both countries have developed extensive cycle networks including cycle superhighways. Studies have concluded their success is partially attributed to these extensive infrastructure routes that offers fast, safe routes that connect residential areas with places people need to get to for their daily lives.

3. Convenience

There is a clear connection between travel distances and modal choice; the proportion of people who use active travel decreases as distance increases. Providing the right physical environment for people to walk or cycle, especially focussing on reducing the distances to key services compared to other modes of travel is important. If walking or cycling provides the easiest and most convenient travel mode, which can easily be fitted into daily routines, then people are much more likely to leave the car at home. The concept of the 20 minute neighbourhood, sometimes called by other names such as '15 minute cities' has become a popular model for creating places where services and destinations that support daily living can be met within a short walk or cycle. The implementation of the 20 minute neighbourhood principle within other places have shown hugely positive outcomes, particularly through enhancing the benefits identified earlier that can be achieved through increased levels of walking and cycling. The benefits of this concept has become even more apparent since the COVID-19 pandemic lockdowns, which has enhanced the importance of the liveability of our local neighbourhoods.

4. Culture and Behaviour change

Thurrock, like many other places in the UK has a strong culture of car use. While improvements are being made in some areas there is some way to go before cycling and walking become the natural choices for shorter journeys. Evidence has consistently shown that with the right interventions it is possible to change cultures and ingrained behaviour. Tackling the different barriers that prevent people from being active, taking into account social and economic inequalities, age and gender and understanding local barriers that may exist at a household level can bring about significant change.

When assessing barriers to active travel, consideration should be given to different socio-demographic groups. For example, men undertake almost three times as many cycling trips and cycle four times further than women and males in their 40's cycle the most. There must be investment in specific behaviour change programmes that understand local barriers in order to normalise walking and cycling; the most successful programmes are ones that are tailored to local circumstances and needs.

Reviews studying effective interventions consistently support a combination of balanced and coordinated measures. Combining more traditional measures (such as supportive infrastructure and place making improvements) with softer measures (such as behaviour change programmes providing targeted information, marketing and incentives) is likely to be the most efficient way to encourage walking and cycling.

The Government approach

In 2017 the Government published its first Cycling and Walking Investment Strategy to promote walking and cycling in England, including guidance for local authorities on preparing Local Cycling and Walking Infrastructure Plans (LCWIPs). These plans are intended to help local transport authorities take a long-term approach to identifying and delivering interventions fit for their own local areas. Local authorities are not required to adopt an LCWIP, but the Government has said that it is “keen that as many areas as possible do so”. These infrastructure plans enable local authorities to bid into various government funding streams to deliver their own improvements. At present Thurrock has not implemented this specific plan and is considering its future strategic approach.

In support of the strategy the government committed £316m per annum to active travel, although there is no dedicated funding stream for each local authority (each local authority must enter a bid process to access much of the funding). A parliamentary review in February 2020 estimated that £1.2 billion has already been invested with a further £1.2 billion projected spend from 2019 to 2021 for infrastructure and other active travel projects.

LGA's have been told that a further review setting out Government spending limits will be agreed in 2020/21 but this has since been delayed due to Brexit, political circumstances and, more recently, the COVID-19 pandemic. Nevertheless, Thurrock must manoeuvre itself into a position to access these funds by developing a model for investment to ensure any benefit from future government funding is maximised. At present we do not have an infrastructure plan that aligns with the Government's preferred approach or a sound model for investment.

In terms of local transport budgets, funding is often reliant on whether local authorities choose to prioritise active travel and the proportions spent on active travel vary hugely. In councils where there is dedicated funding this can be below 5%, whereas in areas that have received funding from local government grants up to 40% of transport capital budgets are spent on active travel. The Government would like to see at least 15% of local authority transport budget spent on active travel.

Within Thurrock capital funding for infrastructure improvements will be sought from developer contributions, local highway budgets and external sources such as the Government.

COVID-19 update

In May 2020 the government announced a £250 million emergency active travel fund for local authorities to access for temporary measures to help combat the pandemic. The Government's 2020 review of the Cycling and Walking Infrastructure Strategy reported that the overall sum allocated was set to increase to a further 2.4 billion of ring-fenced funding for walking and cycling. These new tranches of funding will be overseen and administered by a new inspectorate – Active Travel England and released over the coming year.

Thurrock's strategic approach

The strategy and policy framework across all relevant directorates does appear to be supportive of active travel, although these are not always aligned to an overarching vision that is likely to drive any system improvement.

Any significant improvements will require local policy specific to sustainable transport that is bold enough to break the status quo and ambitious enough to generate changes that will support, enable and nurture a shift towards more active travel choices.

Better coordination (and a collective will to make things happen) between the relevant policy areas would be beneficial to realise the potential of active travel. The shared outcomes (in public health, transport, environment, education, and planning) should be identified, highlighted and used to gather support for cross portfolio delivery and funding.

Partnership working with local bodies and the wider public and private sector to build a local commitment is also key. Changes in travel behaviour will require the backing and commitment of communities and businesses, engagement and support from both sectors are important in developing, building and delivering successful active travel projects.

Locally, specific documents are identified as having the potential to drive forward and support better delivery of an active travel vision. The preparation/production/development of the new Thurrock Transport Strategy (TTS) will be fundamental to driving a long term vision, a key component of the strategy should include the delivery of a **Local Cycling and Walking Infrastructure Plan (LCWIP)** that revises the current network and identifies a prioritised programme of infrastructure improvements for future investment.

Amongst the challenges documented earlier, safety, poor infrastructure and convenience can be largely overcome through good 'cycling and walking infrastructure'. The formation of a **LCWIP** will ensure these factors are adequately considered.

Changing the way we travel

There is no reason why walking and cycling should not be a normal part of everyday life in Thurrock, and the natural choices for shorter journeys - such as going to school, college or work, travelling to the station, and visiting local shops. There are many ways to improve local levels of active travel and research conducted as part of this assessment identifies a common thread of measures that will determine any sustained improvement. These include supportive policy and strategies that align to a central vision, the long term investment of quality walking and cycling routes combined with local initiatives that incentivise people to use them and, most importantly, the leadership and support to make things happen.

Recommendations

- 1. The policy and strategy approach to active travel would benefit from update and review**
Active travel is referenced within some of the current related strategies and plans but there is a multiplicity of measures that are not always aligned and therefore difficult to monitor impacts or refine into priority goals that are likely to drive any system improvements.
- 2. The creation of a refreshed Transport Strategy** and the associated Local Plan technical work should provide the principle vision for active travel supported by an Infrastructure Plan for walking and cycling (LCWIP) that will assess the current network and identify locations for priority routes. Both documents will assist in overcoming some of the barriers that prevent people for choosing active travel and provide a model for future investment. Any new strategy should be ambitious in its proposals, reflecting Thurrock's substantial growth agenda.
- 3. Integrate active travel into planning.** The production of planning policy documents such as the new Local Plan must incorporate a strong advocacy for sustainable transport. The development of the new Design Guide (supplementary to the Local Plan) should incorporate

clear design and quality standards for the delivery of new and upgraded walking and cycling routes which planners and developers will be expected to prioritise and follow.

4. Supporting the delivery of high-density, mixed used developments through implementation of the 20 minute neighbourhood concept - with provision of more localised neighbourhood schools, shops, health centres and other local facilities to reduce travel distances will help ensure Thurrock's growth achieves much higher levels of walking and cycling.

5. Working with Thurrock's communities and local businesses to gain insights into local behavioural and motivational aspects is an important factor. Policies and behavioural initiatives will need to address both the objections to active travel and the advantages associated with driving a car. The most effective mix of intervention being dependent on local characteristics and local needs.

6. Safety and perceptions of safety is one of the biggest considerations when choosing travel mode. Allocating more highway space to dedicated cycle lanes and provision of cycling superhighways should be considered where there is potential to encourage a growth in cycling. Working with local businesses and the community to create at least one successful superhighway within the next few years could provide a useful momentum for future schemes.

7. More ambitious plans for active travel; for cycling and walking to play a far bigger part in our transport system from now on requires a unified, forward-thinking vision for transformation. This aspiring vision will need to be supported by the knowledge and investment necessary to deliver the changes that are needed before walking and cycling will become a natural part of life within our neighbourhoods.

1. Introduction

Those that live, work and visit Thurrock will be fully aware of the significant change and growth that has occurred locally in recent years and the ambitions for the future. On average the local population has increased by 10% every decadeⁱⁱ with predictions estimating an even bigger increase during the most recent ten years from 143,000 in 2011 to around 178,000 at the time of the next census in 2021. Future population estimates from the Office for National Statistics predict that Thurrock's population will have risen to over 209,000 by 2038ⁱⁱⁱ.

This population increase is placing housing and infrastructure under significant pressure as demand for new homes and supportive infrastructure outstrips supply. These increases are echoing what is happening in many other parts of the country, resulting in government plans to embark on the biggest house building programme since the 1970's. In addition to the creation of around 30,000 new homes in Thurrock alone, future economic development in the borough is set to create over 24,000 new jobs. Thurrock's Transport Strategy 2013–2026, which is currently being refreshed, identifies the main changes in our local transport network are likely to be from this planned growth in new homes and jobs.

Road traffic calculations conducted by the DfT predict growth increases in motorised traffic of between 29% and 59% by 2050, mainly from the forecast increases in the number of car trips and trip distances, as well as increasing Light Goods Vehicle traffic. Locally this level of traffic increase will be unsustainable from a number of perspectives, most notably the corresponding increases in congestion has the potential to negatively impact environmental and health outcomes as well as economic prosperity.

Future growth and planning within Thurrock requires an equilibrium with a sustainable transport system that supports our future objectives and most importantly, creates an efficient and attractive place where populations will want to live and work. This will mean thinking differently about our mobility needs and the way we travel. Reducing the current number of local trips made by car journeys and replacing them with walking or cycling is one of the best ways to achieve this.

Not everyone can increase their levels of walking and cycling. The structure and topography of Thurrock is not always conducive to easy local travel, not all trips are suitable and not all people live in places where they can walk or cycle – but many people could.

This needs assessment looks at why it's so necessary to increase rates of active travel, how we can improve uptake by drawing on the evidence of successful places, and how we can facilitate positive change through understanding and responding to our own local needs.

ⁱⁱ Since NOMIS official population data sets first available (1981)

ⁱⁱⁱ ONS (2019) Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland [online] Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>

2. Strategy and Policy Context

The aim of this section is to identify and understand the context of national and local policy on promoting active travel while providing updates since inclusion in the Active Travel Strategy (2020).

2.1 National Strategy

Government Walking and Cycling Strategy

Following aspirations to increase the levels of walking and cycling, in 2017 the Government published its first Cycling and Walking Investment Strategy (CWIS). The Strategy sets out the Government's ambition, targets and financial resources to make walking and cycling the natural choices for shorter journeys or as part of a longer journey.

The strategy (published in 2017) outlines targets to:

- Double the amount of cycling stages^{iv} by 2025 to 1.6 billion trips per year
- Increase walking activity to 300 stages per year by 2025.
- Reduce the rate of cyclists killed or seriously injured on England's roads, measured as the number of fatalities and serious injuries per billion miles cycled by 2020.
- Increase the percentage of children aged 5 to 10 that usually walk to school from 49% in 2014 to 55% in 2025.

The strategy also provides a range of tools and support to local authorities when developing their own long term plans and strategic approach. The strategy identifies Local Cycling and Walking Infrastructure Plans (LCWIPs) as the preferred approach to developing cycling and walking networks.

LCWIPs are a strategic approach to identifying cycling and walking improvements required at the local level. The key outputs of these plans are:

- A network plan for walking and cycling which identifies preferred routes and core zones for further development; and
- A prioritised programme of infrastructure improvements for future investment.
- Details of the underlying analysis carried out and a narrative which supports the improvements and networks identified to increase the number of walking and cycling trips.

Setting out this long-term plan enables local authorities to bid for various government funding streams to deliver these improvements. Currently Thurrock does not have a LCWIP that aligns with the governments approach and thus a revised infrastructure plan is a key priority going forward. Further information on LCWIPs and funding is included as appendix C of this document.

Gear Change: A bold vision for cycling and walking 2020-2025

The 'gear change' policy document released by the Department for Transport (DfT) in August 2020 sets out the Government action required to improve walking and cycling infrastructure

^{iv} Stage: **Trips** consist of one or more stages. A new stage is **defined** when there is a change in the mode of **transport**.

across the country including the creation of a new body – Active Travel England. The document is described by Boris Johnson as “*the most ambitious plan yet to boost cycling and walking*” and includes an ambitious revision to its existing targets and objectives.

Some of the key policies outlined within the document to deliver active travel improvements include:

- £2bn of ring-fenced funding for walking and cycling overseen and administered by Active Travel England a new inspectorate, which will ensure projects meet new design standards, and be delivered on time.
- The creation of a ‘national e-Bike programme’ – this will enable the elderly, or those who travel far to take to bikes as part of journeys.
- A new approach on health will be piloted in selected places with poor health rates to encourage GPs to prescribe cycling, with patients able to access bikes through their local surgery.
- Improvements to the National Cycle Network.
- Making streets safer by consulting to strengthen the Highway Code to better protect pedestrians and cyclists; improving legal protections for vulnerable road users; raising safety standards.

Further details of these new plans will be included in the forthcoming update of the Government’s Walking and Cycling Investment Strategy expected later in 2021.

The National Planning Policy Framework (NPPF)

This NPPF, updated in 2019, sets out the Government’s planning policies and how these should be applied. It has several policy links to active travel:

- Para 81 states planning policies and decisions should aim to achieve healthy, inclusive and safe places which (amongst other things) encourage walking and cycling.
- Para 102 states “transport issues should be considered from the earliest stages of plan-making and development proposals, so that opportunities to promote walking, cycling and public transport use are identified and pursued.”
- Para 104 encourages local authorities to draw on Local Cycling and Walking Infrastructure Plans to “provide for high quality walking and cycling networks and supporting facilities such as cycle parking.”

National Childhood Obesity Plan Chapter 1 & 2,

The plan includes a range of policies which aim to halve childhood obesity by 2030, with walking and cycling to school key actions to keep children physically active (1).

Clean Air Strategy 2019

The strategy sets out a range of interventions to halve the harm to human health from air pollution in the UK by 2030 by looking at a range of actions to reduce emissions and pollution. Investment in active travel compliments clean air zones and other traffic restraint measures identified within the plans.

2.2 Local Strategy and Plans

Thurrock Council Cycle Infrastructure Delivery Plan (CIDP 2019)

The CIDP sets out priority cycling routes for Thurrock, consisting of 46 individual cycling schemes. Each scheme sets out the improvement required, the reason for inclusion and the likely deliverability of the scheme. Deliverability and progress of the plan would benefit from review prior to the development of any new strategic approach. This will ensure that the schemes identified continue to align with both future objectives and the government's preferred approach to infrastructure plans. Technical guidance for developing a new plan is outlined within the Government's document - *Local Cycling and Walking Infrastructure Plans, Technical Guidance and Tools for Local Authorities* (2).

Thurrock Council Rights of Way Improvement Plan (RoWIP 2007)

This plan focuses upon the network of 170km of Public Rights of Way including footpaths, byways and bridleways across Thurrock. The plan details how improvements can be delivered as well as opportunities to enhance provision. The RoWIP is undergoing review at the time of producing this needs assessment and will include ambitions to improve existing routes and identify new routes that will enhance connectivity throughout Thurrock. The age of the existing document has the potential to impede the successful deliverability of any future schemes.

Thurrock Council Active Travel Strategy 2020

During 2017 Thurrock Council's strategic planning team commissioned consultants *Knight, Kavanagh & Page (KKP)* to develop an Active Travel Strategy, a refresh of the strategy was undertaken by KKP during 2019 and published in 2020. The strategy focused on the supply and use of an active travel network, with specific relation to walking and cycling and aims to identify the following outcomes:

- The strategy reviewed existing walking and cycling routes alongside those identified as part of the current Cycle Infrastructure Delivery Plan and Public Rights of Way review. This network was compared using 'mesh density' as an attribute tool providing a route analysis with any gaps (based on this mesh density approach) identified.
- Outlines some of the benefits and potential barriers to active travel.
- Key journeys and routes for commuter cycle flows were mapped with 'desire lines' plotted between start and end point of a trip, establishing routes most likely to be used to make the journey between point A & B.
- The DfT's National Propensity Tool (PCT) was used to analyse this flow and comparisons made against future scenarios to assess commuting cycling potential only at an area and route level by comparing current levels from the 2011 Census data against three possible scenarios 'Government Target', 'Gender Equality', and 'Go Dutch'.
- Established a delivery plan for new cycling routes based on existing cycle priority schemes and results from the PCT for commuter cycling.

It is acknowledged that a number of nationally recognised methods and tools are used within the strategy to identify priority routes and consultants took into account the information which was available to them at the time. However the cycling routes identified and subsequently recommended as 'priority routes' are based on limited data, for example the desire lines and PCT tool used to inform the analysis have only considered existing commuter flows (based on a very small cohort of cyclists from 2011 census data). Any future strategy update and

development of the LCWIP should seek to consider an alternative approach to route priorities (based on the findings from this assessment) which includes demand/need for routes and include a wider range of destinations such as healthcare settings, local High Streets and primary schools.

A light refresh of this strategy was recently undertaken to include new data has been completed by KKP as part of the Active Place Strategy for Thurrock. An initial review of the draft of this strategy was conducted as part of this assessment. A summary of the review has been included as part of the overall recommendations section at the end of this document.

The refresh of the Transport Strategy, the associated Local Plan technical work and the development of the LCWIP should accommodate the findings of this report.

Thurrock Sustainable Modes of Travel to School Strategy (SMOTS 2015-2018)

Each academic year local authorities must prepare a document which sets out their strategy to promote the use of sustainable modes of travel to meet the school travel needs of their area^v, this is a statutory requirement under the Education Act 1996.

There are five main elements to the duty which local authorities must undertake:

- an assessment of the school travel needs of children, and young people within the authority's area;
- an audit of the sustainable travel and transport infrastructure within the authority's area that may be used when travelling to and from, or between schools/institutions;
- a strategy to develop the sustainable travel and transport infrastructure within the authority so that the travel and transport needs of children and young people are best catered for;
- the promotion of sustainable travel and transport modes on the journey to, from, and between schools and other institutions; and the publication of Sustainable Modes of Travel Strategy.

Thurrock's Sustainable Modes of Travel to School (SMoTS) Strategy applies to transport for all children travelling to school in the Borough. It sets out to increase the number of children and young people who travel by sustainable modes for educational journeys, and to ensure educational sites are accessible in order to promote modal choice.

The current SMoTS for Thurrock ended in 2018, the strategy was supported by a delivery plan of actions and key performance indicators pertaining to 2016/17 and would therefore benefit from review and refresh. As well as being an annual statutory requirement it is recognised as a key document by local schools for achieving improved uptake of active travel. The refresh of this strategy should be identified as a priority and form part of a suite of education, travel and transport policies and strategies being developed or already adapted by the Council to help meet its corporate objectives.

Thurrock Traffic Management Plan (2012-2026)

The traffic plan aims to improve the flow of traffic and reduce congestion by identifying the following objectives:

^v Section 508A (1) (a) of the Education Act 1996.

- Delivery of a targeted programme of measures to encourage a modal shift to more sustainable modes of transport such as walking and cycling, particularly in the urban area;
- Managing the existing network so as to improve its efficiency;
- Develop and deliver further connections along the National Cycle Network 13 route (from the west of the borough to the north east of the borough) including connections to local cycle links.

Progress against objectives and current relevance of the plan would benefit from review prior to informing any future transport related policy or strategy.

Thurrock Transport Strategy (2013-2026)

The strategy identifies substantial scope within Thurrock for encouraging a modal shift in travel to more sustainable modes of transport, highlighting improvements to conditions for cyclists and pedestrians with focus on accessibility and safety. It identifies a number of aims to improve accessibility by walking or cycling by implementing safe and convenient walking and cycle networks, with core pedestrian and cycle routes supported by traffic management such as 20 miles per hour speed limits.

The strategy identifies and emphasises improvements in accessibility by walking, cycling and public transport to services, but especially education, employment and healthcare. The priority will be *'to deliver these accessibility improvements where deprivation is most apparent, in order to help tackle deprivation and promote equality of opportunity, and where significant levels of growth need to be delivered and accommodated sustainably'*.

This strategy is currently being refreshed as part of the Local Plan process and the update to the Thurrock Transport Strategy in 2021 should be informed by the findings of this assessment.

Thurrock Air Quality and Health Strategy (2017)

The Council has already laid out commitments to reducing the high levels of transport emissions in the Thurrock Air Quality and Health Strategy (excerpt below). A number of these environmental pledges involve increasing active travel as a means of achieving motor vehicle use reduction:

The council will deliver transport interventions aimed at reducing emissions from transport generally across the borough, but in particular within Air Quality Management Areas as part of Air Quality Action Plans. This will be achieved through:

- *Implementing infrastructure to make walking, cycling and public transport more accessible to reduce the number of vehicle trips*
- *Enabling people to reduce car use and vehicle trips, such as by car sharing and encouraging walking and cycling*
- *Using travel planning and other means to promote low emission cars, car sharing, and modal shift to walking, cycling and public transport*

Air Quality and health is discussed further in section 3.7.

All of these individual and interrelated strategies and frameworks come together in support of the Council's overall vision for Thurrock which is set out in its Corporate Plan.

2.3 Summary of local strategies and plans

Active travel is widely referenced within local strategies and plans (summarised in section 2.2 above), with each identifying broad ambitions and measures. The multiplicity of ambitions are not always aligned and are therefore difficult to distil into an achievable and realistic number of priority goals. Moreover this presents a risk in terms of policy misalignment and uncoordinated interventions or initiatives.

The production of a refreshed Active Travel Strategy should provide the principle lead strategic vision for walking and cycling in the borough that is operationally clear on how this will be delivered. Working alongside the strategy the Council needs to establish a borough wide walking and cycling infrastructure plan (LCWIP) developed in line with the government's process. This infrastructure plan will identify core zones and preferred routes and provide a programme of improvements which will be a crucial element for securing future investment. The strategy and outputs from the plan, together with the principle strategy can then be aligned and integrated into planning and transport policies, strategies and delivery plans.

2.4 Other related documents

Thurrock Health and Wellbeing Strategy (2016-2021)

This Strategy is in its final year of delivery and currently undergoing a refresh for 2021 onwards. Goals within the existing strategy focus on healthier environments and this will remain a priority, with active travel forming an important contribution to achieving this.

Locally the document will seek to supplement delivery of the following linked objectives:

Priorities 2 and 4:

- | | |
|---------------------------------------|--|
| Healthier environments | <ul style="list-style-type: none">• Create outdoor places that make it easy to exercise and be active• Building strong well connected communities• Improve air quality in Thurrock |
| Healthier for longer | <ul style="list-style-type: none">• Reduce obesity |
| Better Emotional Health and Wellbeing | <ul style="list-style-type: none">• Reduce social isolation and loneliness |

Thurrock's Local Plan (in progress)

Local Planning Authorities are required to prepare a Local Plan that outlines plans for future development, in accordance with the NPPF. Policies outlined within the NPPF reflect the growing evidence of the importance of planning decisions for the health and wellbeing of local residents, recognising the environments where we live influence our decisions and behaviours.

Research conducted by the Town and Country Planning Association (TCPA) found 74% of Local Plans have a policy on sustainable transport that refers to the health and wellbeing benefits which will be considered when determining planning applications. A new Local Plan for Thurrock is currently in development, the plan has ambitions to include a policy framework

to support planning decisions with an expectation of better, healthier places for Thurrock's communities.

The new Local Plan should include a strong policy focus requiring the prioritisation of walking and cycling through high density, mixed use developments that enable jobs, education and services to be easily accessed by foot and bicycle, reducing the need to travel by car.

[Thurrock's Design Guide \(in progress\)](#)

The Design Guide Supplementary Planning Document (SPD) was adopted by Cabinet in March 2017, and is a material consideration in the determination of planning applications. In June 2020 the government revised national guidance for local authorities and designers on cycle infrastructure design. The core message behind the new guidance is that '*cycling must be placed at the heart of the transport network and no longer treated as a marginal afterthought*'. Infrastructure design is covered further in chapter 7.

Thurrock's Design guide is currently being updated and aims to align with this national approach. The guide will inform design and safety principles for the delivery of new and upgraded walking and cycling routes that the Council will follow, and developers will be expected to follow, when implementing infrastructure schemes and new developments.

3. The Case for Active Travel

The benefits of cycling and walking investment are significant and well proven. This chapter provides some compelling evidence demonstrating that investment in active travel has created better and more successful places.

NB: Some of the benefits of active travel included in this section underpins much of what has been identified within the 2020 Active Travel Strategy for Thurrock. This chapter seeks to emphasise new evidence and more detailed information pertaining to specific benefits for Thurrock, not otherwise identified in earlier documents.

Key messages

Investment in Active travel has the potential to deliver economic, environmental and social benefits as well as many ongoing benefits.

Economic benefits

- The benefit cost ratio of investments in walking and cycling are estimated at 5.62:1 (or 'very high' value for money).
- Evidence suggests that if the majority of the population in Thurrock switched to an active travel mode for 20 minutes a day, 5 days a week, it could save £34.3 million in NHS costs over a 10 year period.
- A more active workforce can lead to reductions in absenteeism and increased productivity; employees that are physically active take 27% fewer sick days.
- Walking and cycling can contribute significantly towards economic performance by reducing congestion and supporting local businesses.
- High Streets benefit from increased trade as people who walk or cycle to their local shops visit more frequently and spend more than those visiting by other means.

Environmental benefits

- Traffic related pollution along busy roads are one the main sources of air pollution in Thurrock.
- Getting people to travel by bike and foot, rather than by car can result in reduced emissions of Nitrogen Dioxide (NO₂), particulate matter (PM) and CO₂ helping to improve air quality and tackle climate change.
- Transport emissions and the particulate matter (PM) from vehicles have been linked with a range of health conditions. Mortality rates attributable to air pollution are higher in Thurrock when compared with the average for England.
- A third of all greenhouse gases come from transport. The short journeys we make every day by car contributes to 20% of all car related CO₂ emissions.
- Places that prioritise active travel over motorised transport are generally greener, quieter and cleaner.

Health benefits

- Incorporating walking or cycling into daily travel routines is the easiest way to stay active and help manage weight – nearly 76% of adults and nearly 40% of children in year 6 are overweight or obese in Thurrock.
- A growing body of direct evidence supports specific physical and mental health benefits for both walking and cycling - regular walking and cycling is beneficial to over 20 chronic conditions and diseases.
- Improvements in local air quality can help those with pre-existing cardiovascular and respiratory diseases.

Social Benefits

- Neighbourhood communities with less motorised traffic have more positive contact with each other.
- Streets with active travel connectivity increases independence for vulnerable groups such as the elderly and young and those with mobility afflictions.
- Urban areas that prioritise active travel reduce the dominance of the highway network and other public places by cars. This creates a higher quality public realm, and more attractive and pleasant places to live, work and invest in.

3.1 Economic Benefits

Findings from Public Health England's report *Working Together to Promote Active Travel* (3) found the overall costs to society from road transport are considerable. The report included statistics from the Environment Agency that estimated half of the UK's £10bn cost per annum of air pollution comes from road transport. The cabinet office has estimated that excess delays, accidents, poor air quality, physical inactivity, greenhouse gas emissions and some of the impacts of noise resulting from road transport costs English urban areas £38-49 billion a year (4). Physical inactivity is the fourth leading risk factor for death worldwide and contributes to one in six deaths in the UK (5). A lack of physical activity is harmful, contributing to an increased risk of diabetes, cardiovascular disease and cancer.

To address this problem, the NHS recommends that adults carry out 150 minutes of moderate aerobic activity per week, such as cycling and brisk walking, or 75 minutes of vigorous activities such as running or sport^{vi}. This level of activity can almost be achieved by incorporating just two 10-minute periods of brisk walking or cycling into our everyday lives.

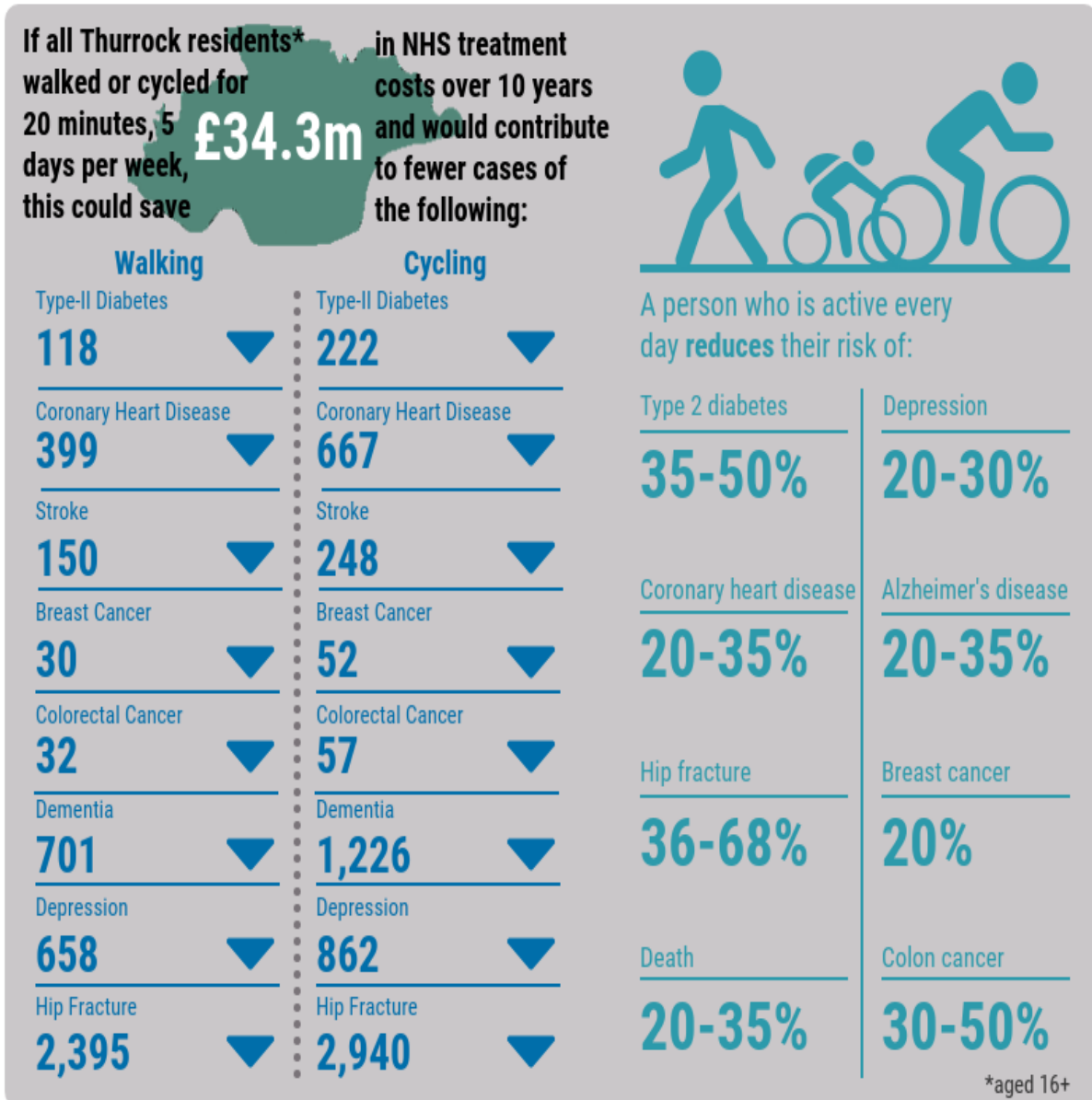
Thurrock's Whole Systems Obesity JSNA identifies that only 60.9% of adults (+18) in Thurrock are reporting this level of activity. This is significantly lower than the England average of 66.3% identified by Public Health England. Children (from age 5 upwards) and young people should engage in moderate to vigorous intensity physical activity for at least 60 minutes a day. Only 45.7% of those aged 5 to 16 in Thurrock meet these recommended levels of activity compared to the England average of 46.8%. Research consistently demonstrates that walking and cycling can contribute to improved physical, mental, and social health. The National Institute for Health and Care Excellence (NICE) has recently recommended that local authorities prioritise active travel to help people of all ages become more physically active (6).

The figure below estimates the potential cost savings for Thurrock using Sport England's MOVES tool (7) (developed by Sports England and the University of East Anglia's Medical School Health Economics Consulting Group). The tool was designed to help measure the impact sport and physical activities can have on the population's health and the economy by providing an economic assessment of the quantifiable health benefits of interventions such as walking and cycling. The tool calculates this by estimating the risk reduction due to reduced cases across seven different diseases due to an increase from specific amounts of physical activity.

For our local calculation we have applied these recommendations as two practical scenarios: if everyone aged 16 and over in Thurrock walked briskly for 20 minutes 5-days-per-week or if that same population cycled at a moderate level for 20 minutes 5-days-per-week. It is most likely that there would be a combination of these activities across the population with some preferring one method to another, however we were unable to calculate a mixed outcome. Therefore, the savings to the NHS is the most conservative estimate from the outputs and the reduction in cases would likely fall somewhere between the all walking and all cycling estimates.

^{vi} NHS, 2020

Figure 1: Moves-tool – Thurrock outcomes



This local calculation suggests that physical inactivity may contribute to at least 20% of deaths in Thurrock. This figure broadly correlates with findings from Public Health England (identified earlier) that suggest 1 in 6 UK deaths are attributable to physical inactivity. Levels of morbidity could be greatly reduced with only modest increases in walking and cycling. The scenario will save over £34 million pounds in local NHS treatment costs within 10 years and this figure does not account for savings in social care costs or the wider economy.

Further evaluations of NHS financial savings was included in a 2014 report by Cambridge University for British Cycling which estimated that the NHS would save £250 million a year if people replaced five of the 36 minutes they spend each day in a car and instead went by bike (8).

Boosting the high street and local town centres:

Walking and cycling improvements can increase retail spend by up to 30%

3.2 Increase Trade in Town Centres Economic benefits are also realised in studies about town centres, sustainable streets that work well for people generate increased footfall and more trade for local businesses because people who tend to walk or cycle to their local shops stay longer, visit more frequently and spend more money there than people who get there by other means (9). The scale of the impact varies between studies, on average Lawler (2014) estimates **retail vitality is boosted by 30% in cities where active travel is prioritised**. Raje and Saffrey (2016) estimates that provision for cycle parking delivers **5x** the retail spend per square metre than the

same area of car parking. Carmona et al (2018) found retail vacancy was **17%** lower after walking and cycling improvements to High Streets and Town Centres and retail rental values rose by **7.5%**.

Attracting employees and businesses:

Businesses see walking and cycling as key to attracting and retaining the staff they need to thrive

3.3 Business Benefits Findings from the British Council for Offices (2017) reported that 85% of businesses agree that active travel is important for their business performance. Wider research found businesses are prioritising and more keen to invest in areas where there are safe and attractive places to walk and cycle. In terms of employee benefits, research from the *National Institute for Health and Care Excellence* (NICE) found employees who are physically active take **27% fewer sick days** than their colleagues. Three quarters of employees who cycle felt it made them more productive at work (10) and enjoy their job more.

Healthier communities:

Travelling by active modes is one of the easiest ways to build more physical activity into daily routines

3.4 More Active Populations Physical inactivity and sedentary lifestyles are now one of the biggest threats to our health, the convenience and comfort of car travel is a key factor in the decline of physical activity levels. Both nationally and locally, levels of walking and cycling have not been increasing, while the use of cars motor transport has increased (11). According to Public Health England (PHE) half of all women and a third of men in England are damaging their health due to a lack of physical activity (11). Encouraging active travel to get to and from work, school and local facilities is identified as one of the

best ways of incorporating activity into daily routines, and therefore has greater likelihood of being habitually sustained (12). These types of journey are also recognised as being the main way in which groups at risk of poor health can gain their exercise.

There is vast potential within Thurrock for increasing exercise through active modes of travel, for example within Thurrock 41% of commutes to work are under 10km. A cycling distance

under 8km is cited by the British Medical Association as a distance the average person can easily cover.

Studies have consistently shown that in areas with convenient local access to shops, public transport, pavements, bicycle facilities and recreational facilities, communities are 20-50% more likely to meet physical activity guidelines than if they lacked these amenities (12).

Levels of activity decline amongst those from economically disadvantaged backgrounds, groups of people from the most deprived communities have almost twice the levels of inactivity than those from the least deprived.

A report published in 2018 by Public Health England *cycling and walking for individual and population health benefits*, included an evidence review by Kelly et al. The review found that both walking and cycling as modes of travel are associated with numerous positive health outcomes and beneficial to over 20 chronic conditions and diseases. A full summary of this review is included as Appendix A. In support of this review, in the general literature on cycling and walking, studies have reported that residents of more multi-modal communities exercise more and are less likely to be overweight than residents of car-orientated communities (13).

Better mental health: Active travel can boost individual wellbeing as well as reduce social isolation by facilitating more neighbourhood contact

3.5 Improved Mental Health and wellbeing

Recent studies suggest that even short periods of walking and cycling associated with active travel have been shown as beneficial to mental health. The scoping evidence review published by Kelly et al. (Appendix A) looks at the mental and neurological health outcomes of walking and cycling.

The walking review found a positive association for both psychological and subjective wellbeing, with consistent beneficial effects for depression, anxiety, self-esteem and psychological stress.

The cycling review found insufficient literature that met the criteria for inclusion of the mental or neurological health benefits. The limited studies that were conducted provided indications that cycling could benefit mental wellbeing and sickness absence from work, psychological stress, subjective well-being and social isolation and loneliness.

Findings from our own local analysis found that walking and cycling for 20 minutes a day could prevent over 600 cases of depressive illness in Thurrock. Other findings from wider studies found increased motorised traffic reduced positive contacts between neighbourhood communities. It is widely documented that the lower the traffic on a street, the more community interaction and healthy physical activity we see. A recent study in Bristol concluded that residents living in streets with heavy traffic had significantly fewer friends and less social support than those living in a quiet one (14).

The impact of social isolation can particularly affect the elderly. Research based on the English Longitudinal Study for Aging found that elderly populations experiencing high levels of social isolation had significantly higher mortality rates than those with low or average levels of isolation (15). Carmona et al (2018) found walking and cycling improvements to High Streets led to a **216%** increase in people stopping, sitting and socialising.

Peaceful living:

Reducing noise from motor traffic can lead to better sleep, concentration, and general quality of life as well as reducing health risks

3.6 Reduced Noise Consequences of noise from motor traffic has also been shown to impact on mental health and wellbeing. Traffic noise can have a significant effect on our quality of life typically of sleep disturbance and annoyance. In children it can affect memory and concentration, impacting on school performance. It is also agreed by many experts that environmental noise can lead to chronic health effects. For example, associations have been found between long term exposure to some types of transport noise, particularly from aircraft and road traffic, and an increase in the risk of cardiovascular effects (heart disease and hypertension) (16).

3.7 Improved local air quality Thurrock's Transport Strategy^{vii} highlights congestion problems on some local road networks and these are forecast to worsen with the planned levels of growth and regeneration. Busy roads and slow moving traffic have considerable environmental and health impacts as well as affecting the quality of life for residents and visitors by contributing to the degradation of public spaces. Exhaust emissions from motorised vehicles contain a range of air pollutants notably particulates and nitrous oxide, these can affect the air quality of the surrounding environment and the air we breathe.

Healthier environment:

Reducing transport emissions will improve air quality in Thurrock and contribute to a reduction in lung cancer, COPD and overall mortality

As well as nationally, air pollution is a particular issue for Thurrock. Air Quality Management Areas (AQMAs) are specific locations designated as having exceeded DEFRA air pollutant objectives and therefore require monitoring and an Air Quality Action Plan to bring the air quality within acceptable limits. There are 28 AQMA's in South Essex (17), the majority (18 in total) are within Thurrock. Source apportionment exercises

determined that the primary cause of exceedance in all of the 18 AQMAs was road transport.

The Public Health Outcomes Framework includes an air pollution indicator, which is expressed as the fraction of mortality attributable to PM2.5 for a local authority such as Thurrock. With a score of 6.2 in 2018, Thurrock scores higher than anywhere else in the East of England region (avg. 5.5), and higher than the average for England (5.2) although the significance of these differences are not calculated. Estimates based on Public Health England methodologies suggest that Thurrock had the equivalent of the following due to particulate air pollution in 2018:

- 80 deaths in those aged over 25 years of age
- 960 years of life lost from the population

Although the proportion of attributable mortality declined by almost 6% between 2010 and 2015 (from 6.5% to 5.9%), it has risen again since to the current level of 6.2%. Though this

^{vii} https://www.thurrock.gov.uk/sites/default/files/assets/documents/ex118_nppf_transport_strategy_2008.pdf

pattern mirrors the decline and rise nationally, the average England levels have consistently been below Thurrock levels since 2010 (earliest available data).

Air pollution can cause and worsen health effects in all individuals, particularly the most vulnerable populations. Long-term exposure to air pollution can cause chronic conditions such as cardiovascular and respiratory diseases as well as lung cancer, leading to reduced life expectancy. Short-term increases in levels of air pollution can also cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in respiratory and cardiovascular hospital admissions and mortality (18). This will cause strain on our primary care services and hospitals through long term health conditions and make the borough a less attractive destination.

Areas of high deprivation are known to suffer a greater burden from air-pollution-related morbidity and mortality. Epidemiological studies show that traffic related air pollution has contributed to widening health inequalities in urban areas, as emissions are more concentrated in the heavily trafficked roads where socially disadvantaged people are more likely to live, work and shop (19). For example, sensitive receptors to traffic related pollution include residential properties, schools or residential care homes. More vulnerable population groups include populations living in the most deprived income quintiles, children and the elderly. The effect of further increases in road traffic and subsequent air quality changes on these receptors has the potential to further increase health inequalities.

Reducing emissions: Air quality will continue to be detrimental to the health of residents, workers and visitors to Thurrock unless action is taken to reduce the emissions at source. Replacing the journeys that are taken by car, that could easily be walked or cycled, will reduce the number of polluting vehicles on the road and reduce congestion on local road networks (An idling engine can produce up to twice as many exhaust emissions as an engine in motion).

Further information and data pertaining to transport emissions are included within Appendix E.

Vibrant

communities: Active towns are desirable places to live and visit - they are friendlier, safer, and cleaner than those that prioritise cars

3.8 Higher Quality of Life Active travel has the potential to transform neighbourhoods, making town centres and residential areas walking and cycling friendly can enhance their attractiveness. Areas become healthier, cleaner, have less traffic noise and are generally more desirable places to live. Case studies of towns and cities where priority is given to active travel over car use found communities interact more with each other, experience less crime and attract more visitors. Everyone benefits, even those who are not walking or cycling.

3.9 Other significant studies

DfT Cost Benefit Analysis of walking and cycling investment

Further evidence to support the case for investment in walking and cycling for active travel in terms of cost benefit analysis has been undertaken by the DfT. To gain an understanding of the wider benefits the Department commissioned an independent report in 2014: *Claiming the Health Dividend – A summary and discussion of value for money estimates from studies of*

investment in walking and cycling. The report appraises the latest cost benefit evidence for investing in support for people to take up walking and cycling, examining the economic, environmental, social and distributional benefits.

The appraisal examines both former studies together with more recent peer reviewed evidence and grey literature. The findings reported substantial economic benefits of walking and cycling interventions stating in terms of value for money, the DfT values 'very highly' any scheme which returns more than £4 for every £1 invested. Benefit cost ratios were reported as of 'impressive magnitude', the mean benefit to cost ratio of all the schemes identified for the UK revealed ratios of 5.6:1.

The report concludes that investment in infrastructure or behaviour change programmes which enable increased activity levels through walking and cycling is ***'likely to provide low cost, high-value options providing benefits for our individual health. This improvement also has major benefits for the NHS and social care system in terms of cost savings, for the transport system as a whole, and for the economy through more efficient use of our transport networks'***.

A link to the full report including the outcomes of Benefit Cost Ratio analysis of specific schemes is included at the end of this document (20).

3.10 Potential dis-benefits

Road Casualties

Any relative increase in pedestrians and the number of cyclists may inevitably impact the number of road traffic injuries and who is affected, as the risk is higher for pedestrians and cyclist than car drivers (20).

Statistics provided by the DfT (RAS53001) reveal that per billion passenger kilometres (approximately 621 million passenger miles), 3,860 cyclists and 1,281 pedestrians are killed or injured, compared with 172 people travelling in cars and 121 on bus or coach. However, road safety user studies demonstrate that most of the danger arising from walking and cycling (90%) arise from conflicts with motorised traffic (21).

Over the last decade a large number of global studies have been undertaken on this topic that accept there is an inverse relationship between active travel rates and accidents; as active travel increases, the safety risks of active travel decreases - there is safety in numbers. In scenarios taken from the Netherlands where there is a strong encouragement of cycling and changes to infrastructure that offers good provision for pedestrians and cyclists, models actually show a reduction in road traffic injuries due to changes in infrastructure, road speed and a reduced number of cars on the road (22).

Both actual road traffic injury and perceived danger are identified as major barriers to active travel uptake. Infrastructure and safety is considered further in part 6 of this document.

4. National and local statistics and analysis

Key messages

Nationally:

- There is significant scope for changes in travel behaviour, 68% of journeys are less than 5 miles, and 42% of journeys less than 2 miles – a realistic distance for cycling or walking for the majority of people.
- Bicycle ownership falls dramatically between the teenage years and young adults; between the ages of 11-16 ownership peaks at 69%, declining to 41% (17-20 years) and further still to 31% (21-29 years).
- Men cycle more often and further than women, and adults in their forties cycle the most.
- Conversely women walk more than men and women in their thirties walk the most.
- There is a direct correlation between income and distance travelled, those with the highest income travel the furthest.
- People in households without a car are twice as likely to travel by active means.
- Just 38% of people over the age of 16 have access to a bike.

Locally:

- Levels of regular walking in Thurrock are similar to other areas (48% compared to 50% nationally).
- Levels of regular cycling is significantly worse than other areas (1.2% compared to 4.4% nationally).
- Over three quarters of adults in Thurrock walk at least once a week, but only half are regular walkers. Walking made up 21% of all trips.
- Almost a fifth of adults in Thurrock find some time to cycle at least once every month although cycling by active travel means made up only 1% of trips.
- Walking and cycling activity drops significantly between primary and secondary school transition.
- Cars are still the most common mode of transport, accounting for 62% of journeys.
- The majority of children within Thurrock live within 30 minutes walking or cycling time to a primary or secondary school, although many are travelling greater distances to schools outside their local catchment and therefore unable to utilise travelling by active means.
- Only about 4% of Thurrock children cycle to school; contrast this with a figure as high as 59% in the Netherlands.
- Thurrock commuters spend longer travelling for their daily commute than national averages (40 minutes compared to 30 minutes nationally).

4.1 About the data

The DfT present annual statistical releases on walking and cycling in England using two main sources - The National Travel Survey (NTS) and the Active Lives Survey (ALS). Statistics from both these sources were assessed by the UK Statistics Authority and confirmed as National Statistics since 2011^{viii}.

^{viii} An assessment report was published in October 2010. Statistics from the Active Lives Survey are Official Statistics.

The figures presented in the charts below are prepared using either specific DfT data gathered from the latest statistical releases or data sourced from the 2011 national census.

In areas where local data is limited or non-existent, we have reverted to national data for the purposes of this report until any results from more local studies become available.

Walking in these tables refers to any continuous walk of over 10 minutes, adults are defined as those over the age of 16. Cambridgeshire was the local authority where statistics for cycling in particular were consistently better than most other parts of the UK and has been included as an aspirational comparison. Further information on statistical sources included within this assessment are included in the methodology notes at the end of the document (Appendix D).

4.2 Walking for any purpose

In Thurrock, three quarters of respondents (78%) walked at least once a week, but this falls to less than half of the population for regular walking (at least 5 times per week). Levels of walking in Thurrock are statistically similar to the rest of Essex and regional averages.

Figure 2: Adults walking at least once a week

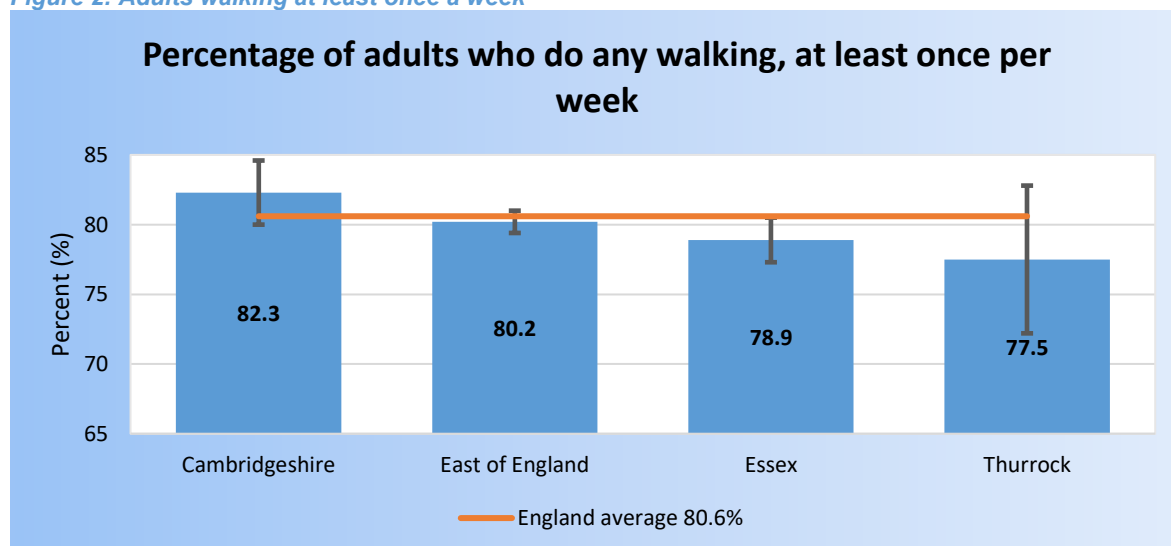
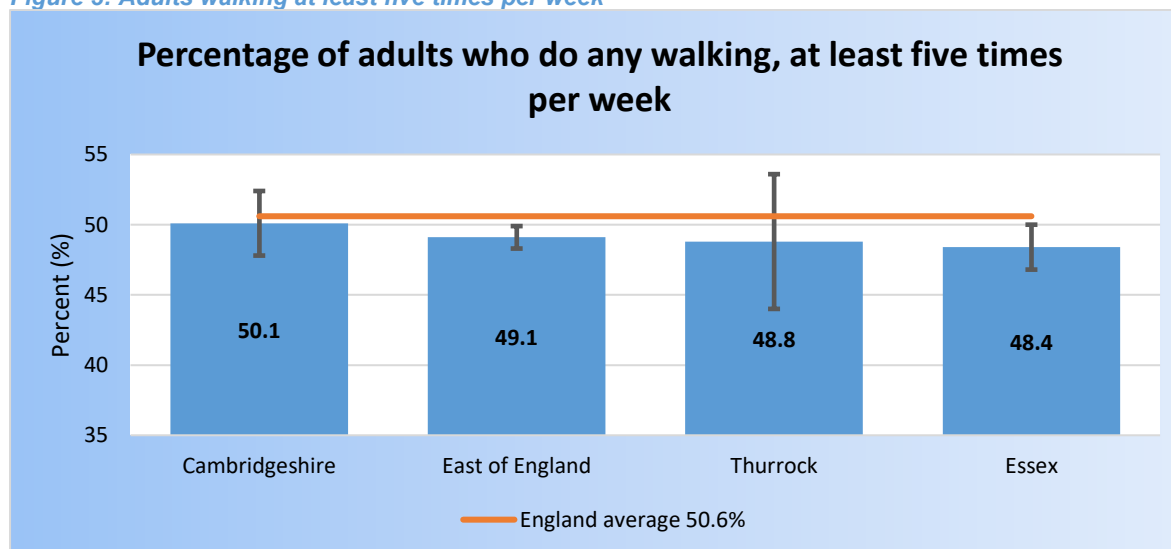


Figure 3: Adults walking at least five times per week

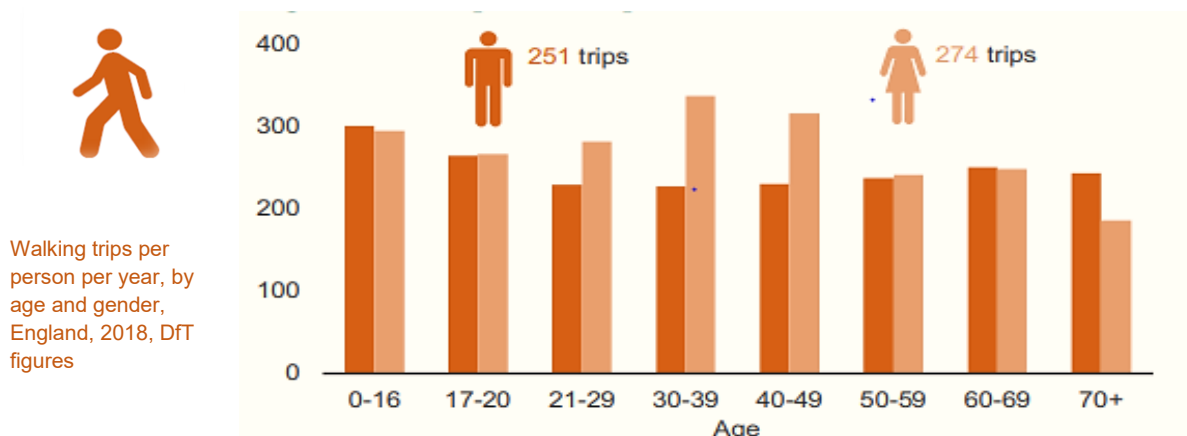


Source: DfT 2018

4.3 Age and gender

The number of walking trips^{ix} and the reasons for walking varies by age and gender. In 2018, females on average made 23 more walking trips than men (10% more). On average people in all age groups tend to walk a similar amount, slightly increasing for women in their thirties and forties, and women aged 50 and older walking slightly less. One possible reason for the increase in middle aged women is that women in their thirties make four times as many education trips than men of the same age, and walking is the most common mode used to make these trips (23).

Figure 4: walking trips by age and gender



4.4 Cycling for any purpose

The prevalence of cycling varies by frequency of trips taken, the proportion of adults who cycle in Thurrock either regularly or infrequently is lower than East of England and the rest of Essex. Only around 6% of adult's do any cycling once per week in Thurrock (figure 5). By comparison, almost three quarters (71%) of the Dutch population cycle at least once a week.

Regular cycling levels decreased for all regions with an increase in frequency (at least 3 times per week), with only around 1.2% of residents in Thurrock cycling on a regular basis (figure 6).

^{ix} A "cycling or walking trip" is one where the greatest part was cycled or walked. Stage: **Trips** consist of one or more stages. A new stage is defined when there is a change in the mode of transport.

Figure 5: adults cycling once a week

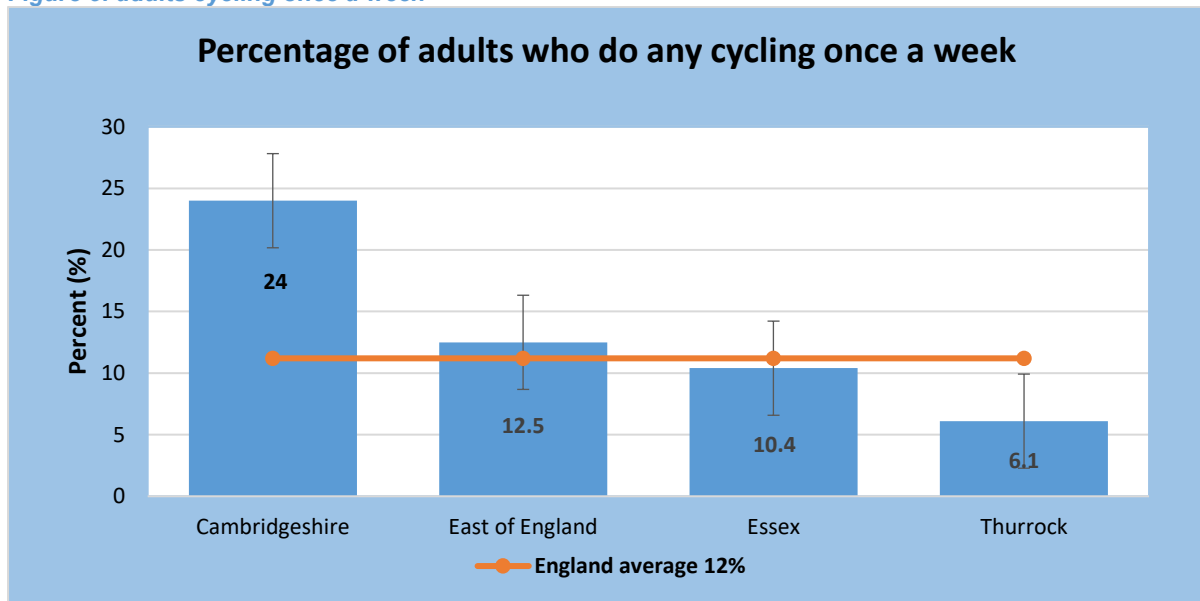
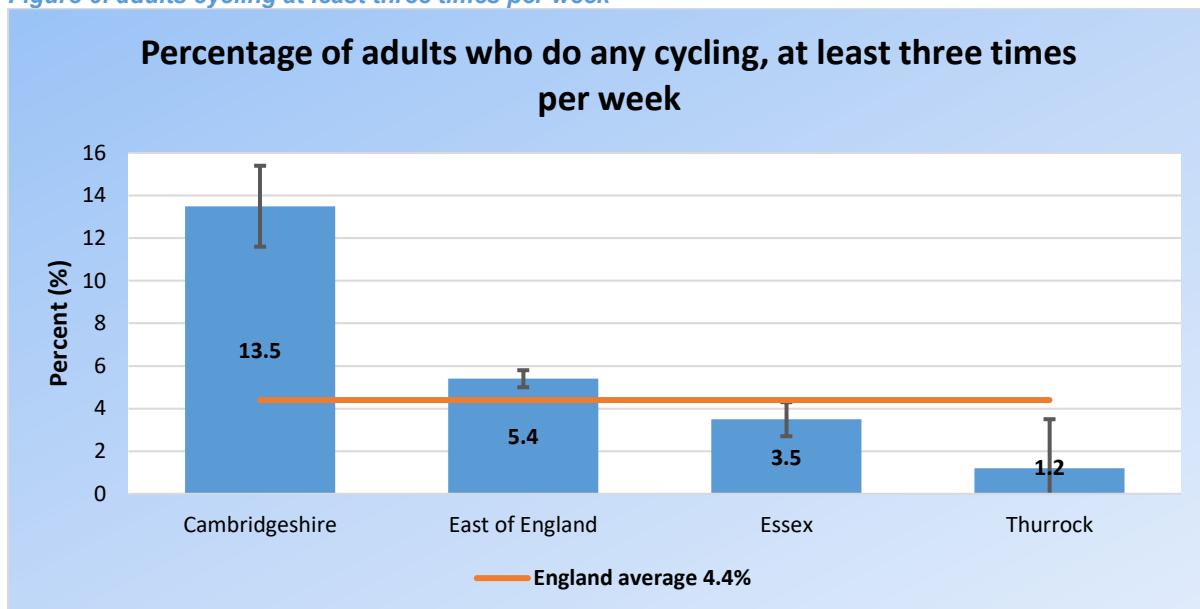


Figure 6: adults cycling at least three times per week

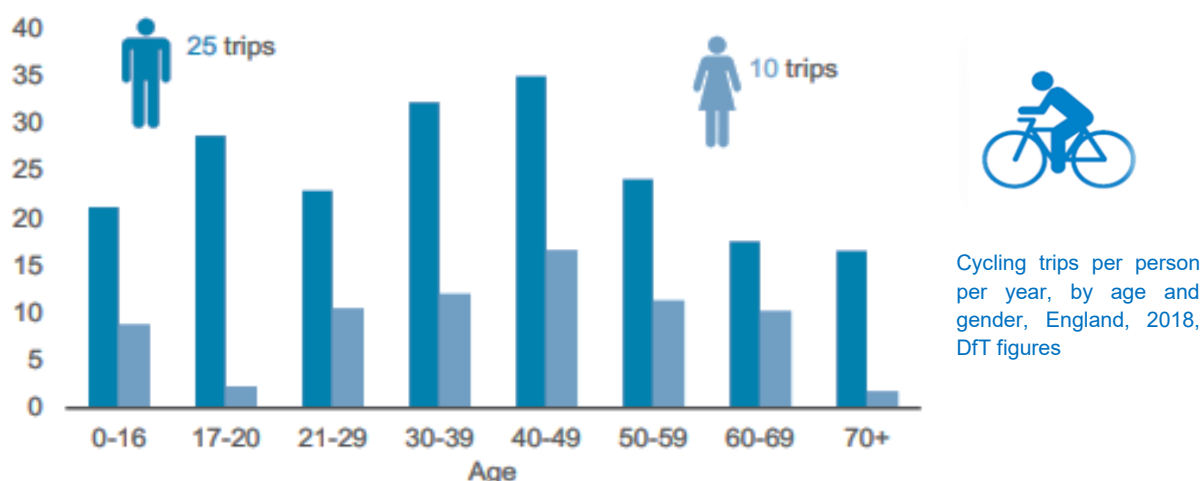


Source: DfT 2018

4.5 Age and gender

Data provided by the Department for Transport (Figure 7) shows men cycle more often and further than women, adults aged 40–49 made the most cycling trips for both men and women with levels falling over the age of 50 (23). Yearly data from the National Travel Survey showed men made 15 more cycle trips than females (25 trips compared to 10 trips), and cycled almost four times further than women (92 miles compared to 25 miles). There are no age groups where females make a comparable number of trips to males. The lowest cycling rates across all ages and genders were particularly pronounced in girls aged 17-20.

Figure 7: cycling trips by age and gender



Findings from The International Journey of Behavioural Nutrition and Physical Activity conducted in 2013 looked at the physical activity profile of active children in England and found that girls in most deprived areas cycled significantly less than girls in less deprived areas. There was no significant difference in socioeconomic status for boys, or for levels of walking in boys or girls (24).

Research undertaken as part of the 2019 Sustrans^x guide for inclusive cycling in towns and cities (25) found that lower cycling rates in women were most likely to be attributed to concerns with personal safety and experiences with anti-social behaviour while travelling. Women are also more likely to use different modes that involve multiple stops partially due to family commitment such as balancing childcare, work and other household responsibilities.

The same study found that 36% of women who currently do not cycle, would like to.

Research specific to age:

Walking remains a popular choice for local journeys as we grow older but rates of cycling decline in the over 60's. During 2019, Sustrans conducted specific research comprising a number of focus groups for those over the age of 60. The study found that older people felt transport had become harder in towns and cities as car use and populations have grown, with many older people reluctant to travel during the busy rush hour because of safety and physical ability concerns. Planning for the needs of older mobility is required if cycling is to be embedded in the lives of Thurrock's increasingly older population. National survey figures show that cycling remains a desirable form of transport as we grow older and 18% of older people who do not cycle would like to start cycling.

Places such as the Netherlands, Denmark and Japan have shown that uptake can be much higher with the right environment, highlighting the use of electric cycles and routes segregated for busy traffic is helpful in encouraging cycling participation amongst older groups.

4.6 Walking and cycling for travel

The prevalence of active walking in Thurrock (excluding walking for leisure) is statistically similar to other areas with just over 21% walking for travel on a regular basis. However, regular cycling activity in Thurrock is lower than national and regional averages with only 1% of the

^x [sustrans.org.uk/](https://www.sustrans.org.uk/) is a registered charity in the UK making it easier for people to walk and cycle.

population cycling for travel on a regular basis compared to Cambridgeshire where 11% of the population regularly commute by bike.

Figure 8: Adults walking at least three days per week

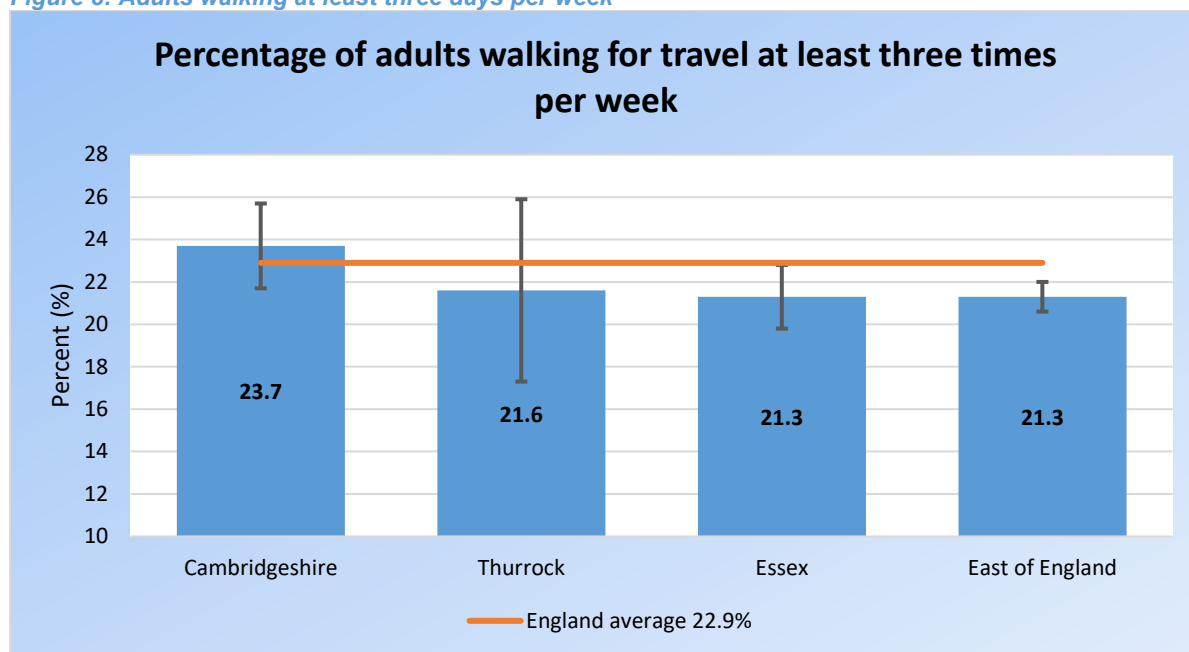
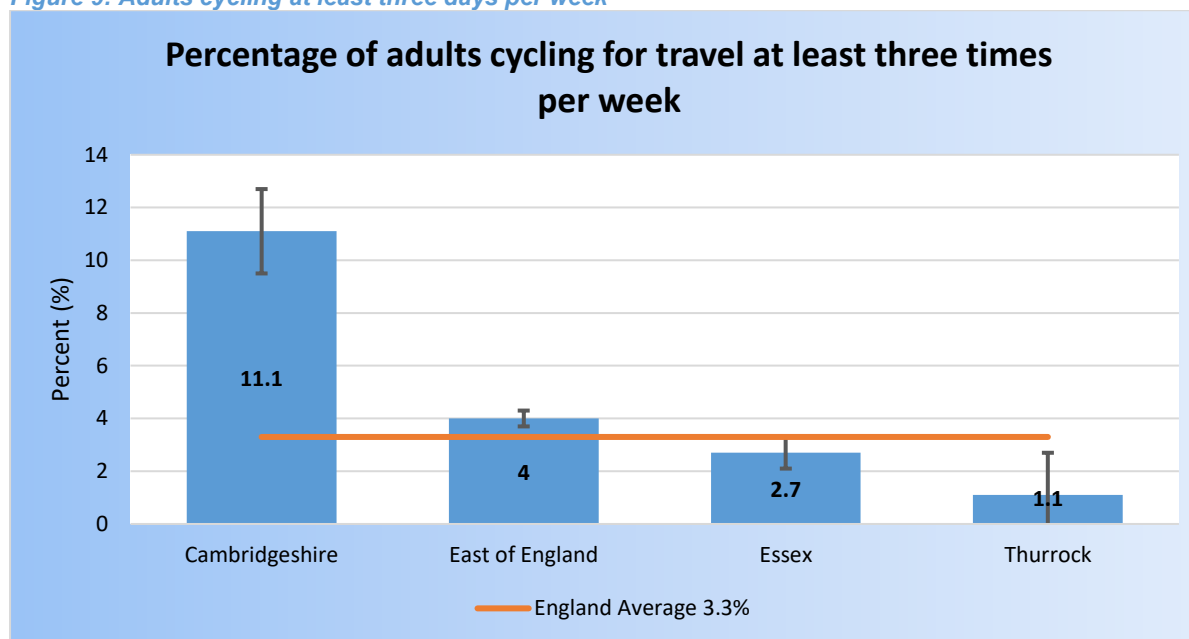


Figure 9: Adults cycling at least three days per week



Source: DfT 2018

The figures illustrated suggest levels in Thurrock are not reaching full potential; there are a substantial amount of people that could walk or cycle more but feel unable to. Research conducted for this report found there were no specific local studies that explore possible barriers that prevent people from walking or cycling, section 6 of this documents looks at the probable generic reasons.

Community consultation was undertaken during stage 2 of the Local Plan agenda which included some elements relevant to active travel. A total of 17 events entitled 'Your Place, Your Voice' ran from December 2018 to March 2019 that engaged with residents in 7 wards.

Results from the consultation revealed concerns with air quality and traffic congestion in some areas, and demonstrated considerable public support for walking and cycling infrastructure. **Improved walking and cycling links were identified as a specific community requirement by residents in 71% of participating wards.**

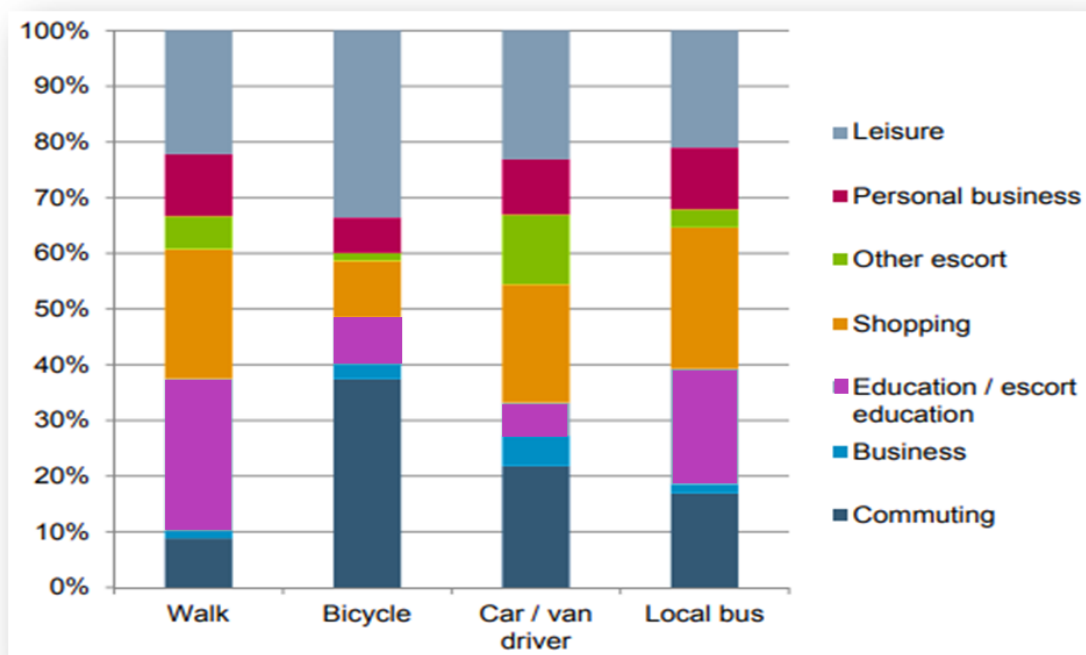
4.7 Global comparisons

Walking rates nationally and locally as a whole are statistically similar to other European countries but the UK is far behind when it comes to cycling. In the Netherlands 26% of commuting journeys are made by bike, followed by Denmark at 18% and 10% in Germany. Austria, Belgium, Finland, Norway and Sweden all have rates of between 4% and 9% (26).

4.8 Trip purpose by mode

The table below compares journey purpose split of walking and cycling with those of car/van drivers and bus users nationally.

Figure 10: Journey purpose and mode of travel



Source: National Travel Survey NTS0401 2017

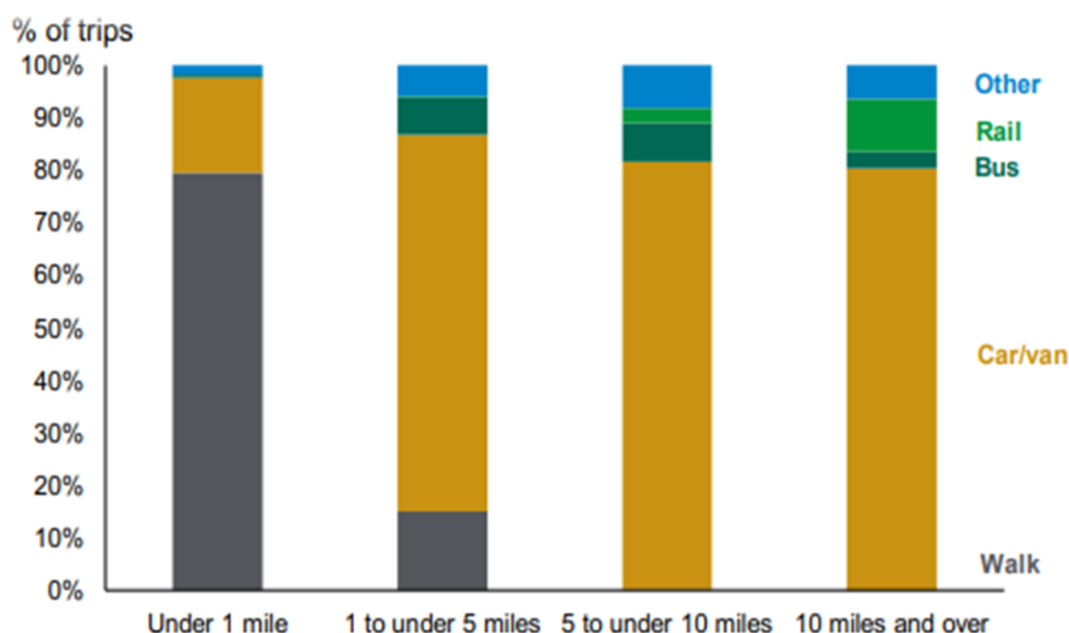
Education, shopping and leisure make the top 3 purposes for walking which together account for over 70% of trips while commuting and leisure are the main reason for cycling trips. Specific category information is included within the NTS summary at the end of the document.

4.9 Trip distance and mode

Most trips are relatively short. In England in 2018, 25% of trips were under 1 mile, and 68% under 5 miles. Walking was the most frequent mode used for short trips: 80% of trips under one mile were walked but this decreases significantly between 1 and 2 miles where only just under a third of trips were walked. The government considers this “an achievable distance to cycle for most people, with many shorter journeys also suitable for walking” (27). Having such a large number of trips that could easily be made by alternative modes such as walking or cycling, together with a relatively low uptake rate, suggests there is considerable scope to increase this cohort.

The following data outlines share of trips by mode and distance travelled within England, and although not available at local authority level, provides useful generic information on travel patterns.

Figure 11: Mode share of trips by main mode for different trip lengths: England 2017



Source: National Travel Survey data 2017

Replacing these shorter car journeys i.e. popping to the local shops, dropping the kids to school or driving to the station has some of the greatest potential in improving uptake and therefore achieving the greatest benefits. Studies suggest walking and cycling is particularly important in dense urban areas, where a high volume of people undertake a large number of shorter trips.

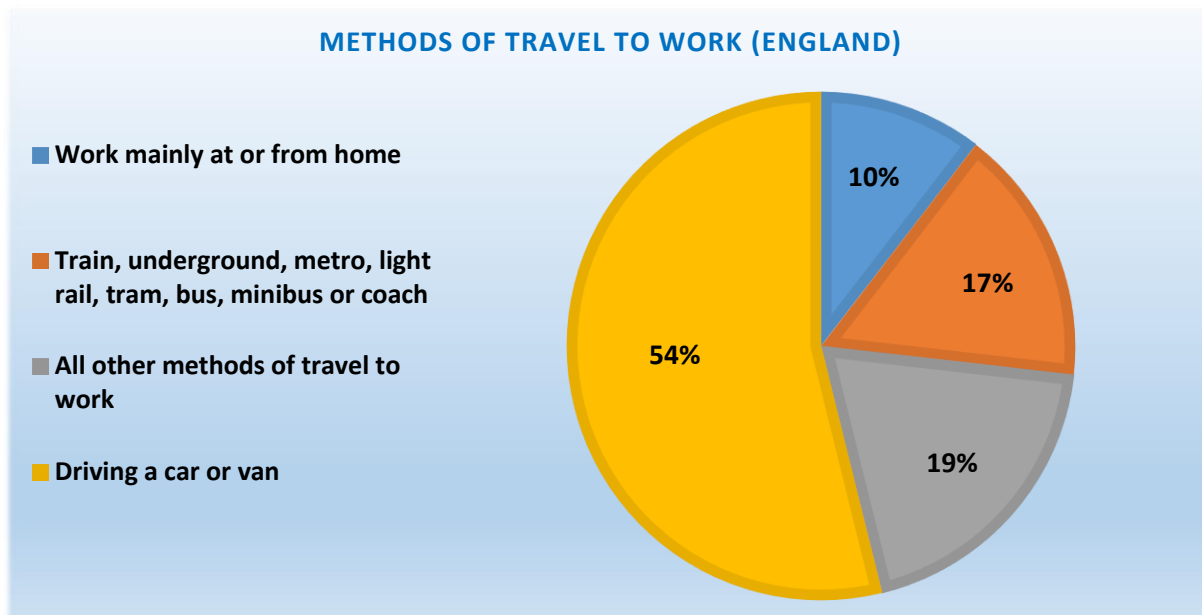
4.10 Travelling to work

4.10.1. Method of travel to work in Thurrock

The travel mode share (figures 12 and 13) describes the proportion of trips made by a given mode of transport for Thurrock. The statistics combine walking and cycling into ‘other’ category and while not especially helpful in identifying specific walking and cycling behaviour, the charts provide some useful generic information on travel activity.

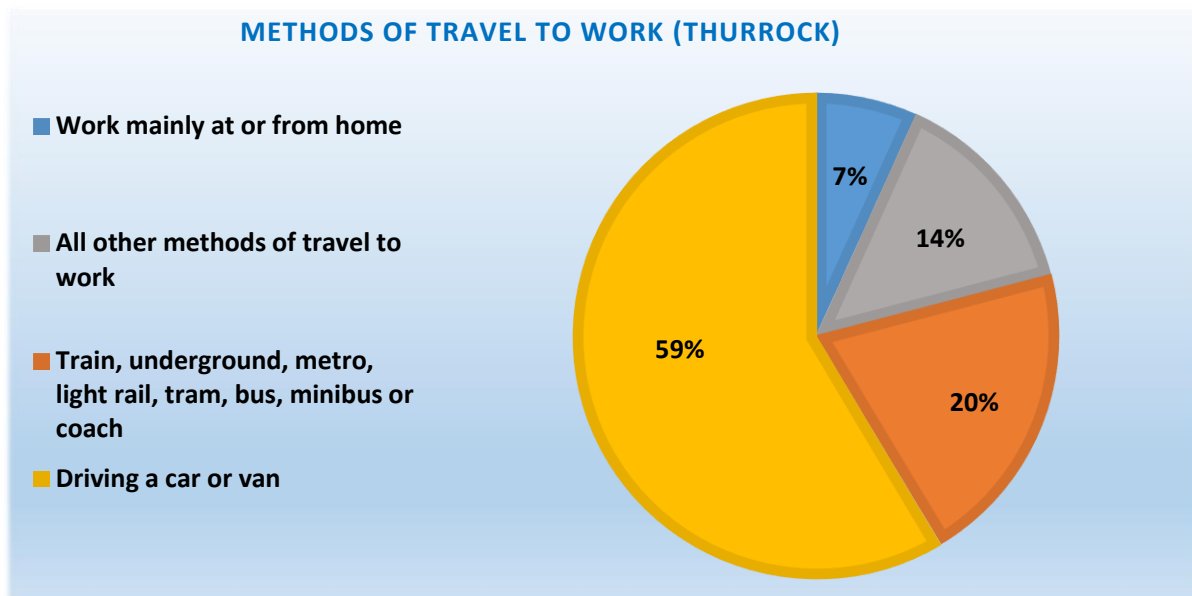
More than half of the population are reliant on a car when travelling to their place of work while cycling and walking trips (included in 'other methods of travel') accounts for only a small proportion of the travel mode share both nationally and locally.

Figure 12: Methods of Travel to Work (England)



Source: 2011 Census QS701EW, Office for National Statistics (ONS) © Crown copyright

Figure 13: Methods of Travel to Work (Thurrock)



Source: 2011 Census QS701EW, Office for National Statistics (ONS) © Crown copyright

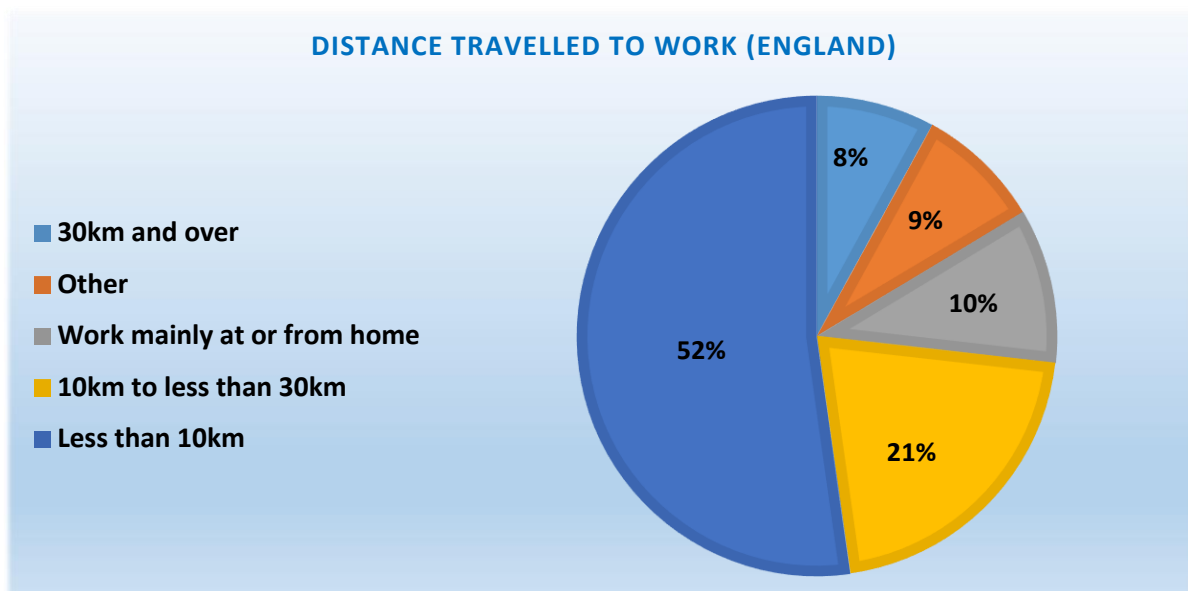
'All other methods of travel to work' includes 'Motorcycle; scooter or moped', 'Taxi', 'Passenger in a car or van', 'Bicycle', 'On foot'.

The following charts illustrate the distances travelled from the workplace to home. The data suggests that in 2011 residents in Thurrock were travelling further distances than national averages to access their workplaces. The number of adults working from home is less than the national average, this could be partly attributed to the dominance of transport, logistics

and retail sectors within the local area, or perhaps local employers are not realising the full potential for employees to work from home.

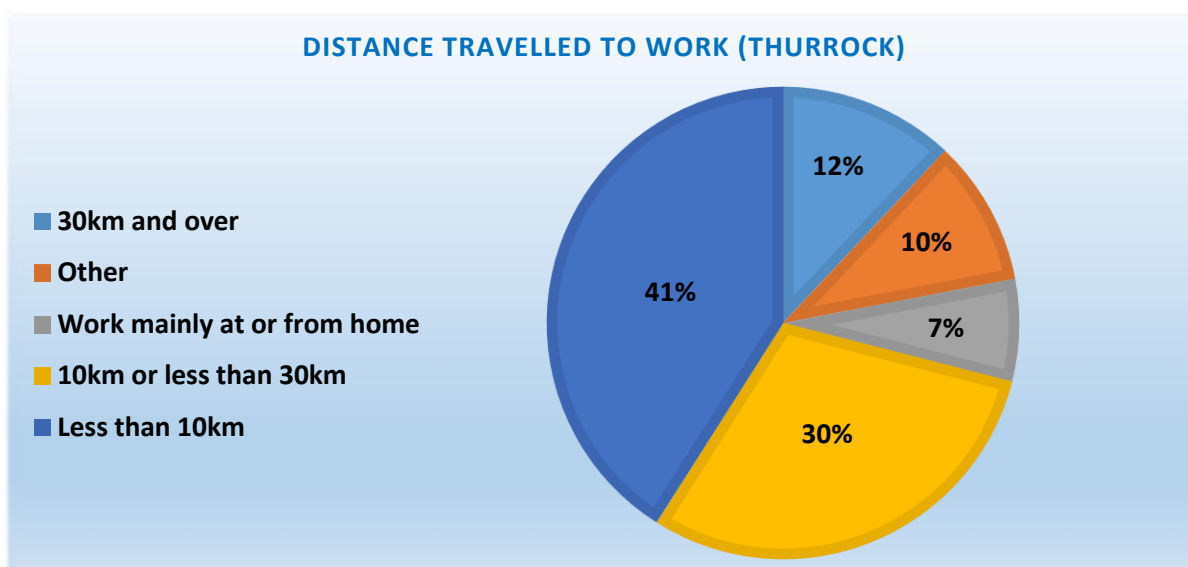
Data from the census estimates that with the present infrastructure 31% of commuting trips could be transferred from the car to walking or cycling.

Figure 14: Distance travelled to work (England)



Source: 2011 Census QS701EW, Office for National Statistics (ONS) © Crown copyright

Figure 15: Distance travelled to work (Thurrock)



Source: 2011 Census QS701EW, Office for National Statistics (ONS) © Crown copyright.

'Other' includes no fixed place of work, working on an offshore installation and working outside of the UK.

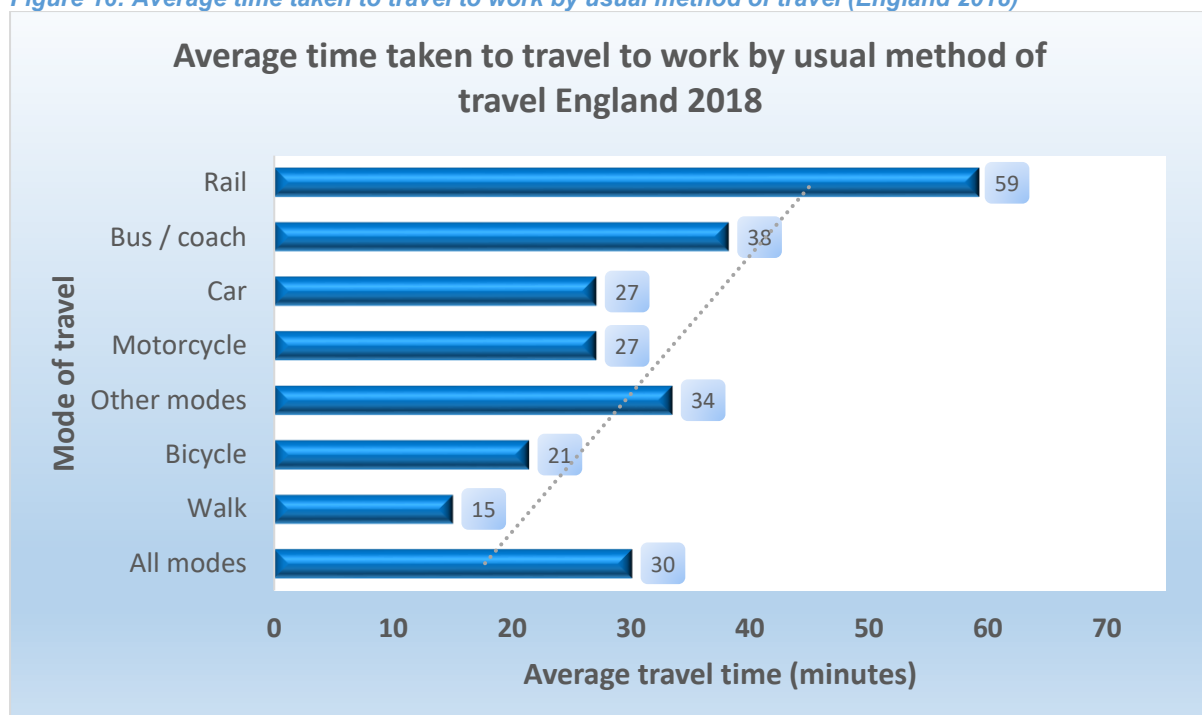
4.11 National travel time to work Journey times

Data provided by ONS labour force survey estimated usual home to work travel time for all modes of travel in the UK in 2018. Average journey times for Thurrock was 40 minutes compared to 31 minutes in the East of England and 29.9 minutes in England as a whole. Travel time does not necessarily indicate a longer journey distance when considered

alongside variables such as traffic congestion or less direct routes. However when travel times in Thurrock are considered alongside distances travelled (identified earlier) the figures broadly correlate, suggesting the journeys to work for Thurrock residents are both longer and further than average. Thurrock’s Economic Growth Strategy (28) identifies ‘a significant proportion of residents out-commuting for work with London a particular draw’ with journey times into the capital longer than the average commute. According to the 2011 census over a third of working adults in Thurrock commute to the capital or immediate area for work.

Travel distance is a significant factor in choice of travel mode, some journey lengths to work by active travel means exceed what is considered practical by active modes alone. In England for example one in seven commuters are now spending two hours or more each day travelling to and from work. This data is not available at LA level.

Figure 16: Average time taken to travel to work by usual method of travel (England 2018)



Source: DfT 2018

Understandably the data illustrates shorter journey times for walking and cycling, average travel times can be useful when considering the potential of walking and cycling to given destinations.

4.12 Integration with public transport for longer journeys

Travelling by active modes need not be restricted to shorter journeys, cycling is perfect for the first or last few miles of a long-distance commute. Bike-rail is one option, or in some parts of Europe Bus-rail is frequently used to combine journey modes with cycling.

A recent report from Cycling UK that explored integrating active travel with public transport found a whole package of improvements is necessary for better integration between cycling and public transport. The report stated ‘It is no good simply focusing on only one aspect of provision; for example, there is little use in providing cycle parking at a station if access to the

station feels unsafe and deters people from cycling there in the first place and there is no provision or cycling carriages on trains'. Cycling UK^{xi} believes that all new and refurbished rolling stock on trains must be equipped with dedicated space for cyclists. Bikes are allowed



free of charge on most British trains at most times of day. Some companies ban bikes on particular services at certain times, such as commuter trains into London. A common workaround for this is to invest in a folding bike (29).

Bikes on buses however are different; generally buses aren't able to accept bikes unless it folds up and fits into the luggage rack, although some bus companies allow it to be

brought on board at the driver's discretion. The UK has some way to go compared to other countries where active travel is embedded in the culture of towns and cities.

Evidence from the Cycling UK study found integrating cycling and public transport requires a combination of:

- access to, from, within and through stations and interchanges
- cycle parking and (where appropriate) storage and hire facilities
- reasonable provision for cycle carriage on public transport
- good information, both prior to and during the journey
- stakeholder engagement and accountability

4.13 The Local Picture

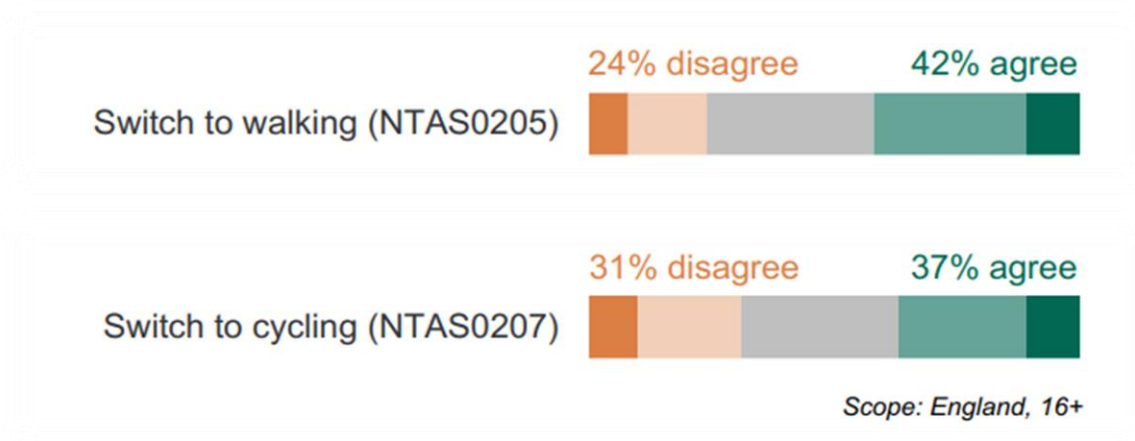
In the past the transport team within the council has worked collaboratively with the local train operating company (C2C), developing station travel plans to deliver the improvements required to encourage more sustainable journeys by rail and to encourage active modes of travel to and from the station. The council developed travel plans for all eight stations in Thurrock, the plans reflected some of the recommended evidence identified earlier such as secure cycle storage and better pedestrian and cycle access to stations. The train franchiser C2C independently refreshed station travel plans in 2018. These travel plans were reviewed with limited engagement from the Council and there is currently no coordinated monitoring process in place.

4.14 Willingness to switch to other travel modes

Annually the DfT collates information on public attitudes towards transport and their options. These include statistics on people's willingness to switch to other travel modes to reduce the amount of car journeys. When asked about the potential of taking other travel modes instead of travelling by car for journeys of less than two miles, a higher proportion of people were willing to walk or cycle to make this journey (30). The results suggest an encouraging population wide impetus to switch to walking and cycling as more active modes of travel.

^{xi} One of the leading charitable organisations for cycling

Figure 17: Willingness to switch to other travel modes for journeys under 2 miles

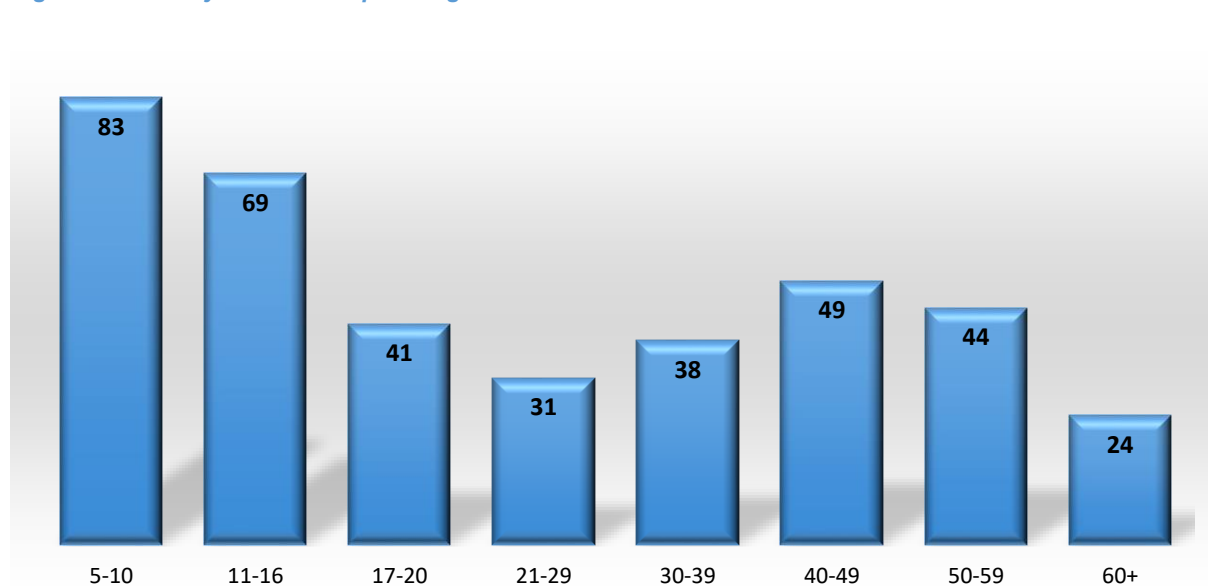


Source: National Travel Attitudes Survey 2018 (further information on NTAS is included in Appendix D - data methodology)

4.15 Bicycle ownership

In England about 47% of people aged over 5 years owned or had access to a bicycle in 2018, this proportion has remained at a similar level as previous years. Bicycle ownership is most prevalent amongst people under the age of 17 years old with ownership declining rapidly thereafter, only 31% of people in their 20's own or have access to a bike. This figure starts to rise again in 30's, peaking in 40's and 50's and then declines again as we grow older.

Figure 18: % of cycle ownership and age



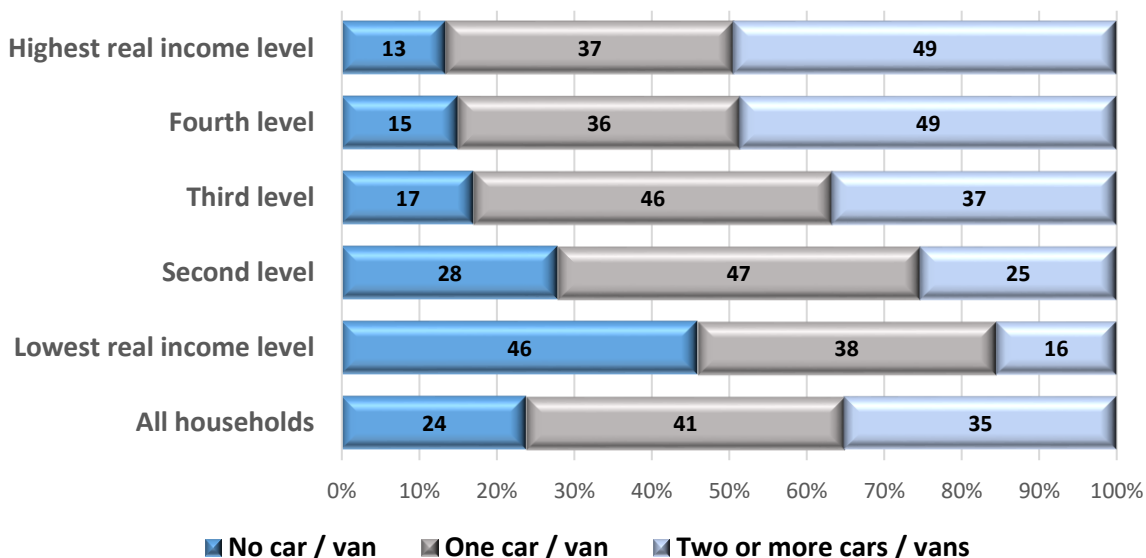
Source: DfT 2018

4.16 Household car access by income

There is a direct correlation between household income and car ownership, those with the highest income have the greatest levels of car availability with a corresponding decrease relative to income levels. Lower income households consist of females, children, young and older people, ethnic minorities and disabled people are all concentrated in this group.

Car ownership understandably affects travel behaviour, people without access to a car are far more reliant on walking and cycling as a mode of transport. People in households without access to a car made 53% of all their trips and 11% of their distance travelled by foot. This compares to 23% of trips and 3% of distance for those in households with access to a car. There is also a correlation between income and distance travelled, those with the highest income travel the furthest (31).

Figure 18: Household car availability by household income quintile (England 2018)



Source: DfT Household car access [NTS0703] Household car availability, by household income: 2018

Affordability issues with car ownership can lead to a risk of transport poverty. Active travel can help people who do not have a car to access essential services and amenities including places of work and improving access to health services.

Active travel planning and investment should be designed around the local needs of people (in response to local resident views) as well as areas with the greatest demand. Planning routes in areas with the lowest household income can potentially offer some of the greatest benefits (36).

5. Active Commuting to Schools and Workplaces

Key messages

- Data from school travel plans suggest that many more children would like to travel to school by active means than already do so. Schools with travel plans in Thurrock have cycling rates of around 5% but surveys indicate that over 21% of primary school children would like to cycle to school every day.
- Data from the schools that participated in the Brighter Futures Survey found over 50% of primary school children and 30% of secondary school children are driven to school in Thurrock.
- It is estimated that trips for education are responsible for over a third of traffic on roads between 8 and 9 am.
- Virtually all children in Thurrock live within a 30 minute walk or cycle to a primary or secondary school.
- Nationally distance and safety are identified as the most significant barriers to active travel to school.
- Boys that cycle regularly to school are 30% more likely, and girls 70% more likely to meet recommended physical activity levels

5.1 Active Travel in schools

Cycling and walking to school or college is widely recognised as a way of increasing children's daily physical activity and helps them maintain a healthy weight. The chief medical officer recommends that 5-18 year-olds take at least 60 minutes of physical activity every day, citing activities such as walking and cycling as a contributor to these activity levels. Recent data provided by Public Health England found that In Thurrock, almost a quarter of children in reception class, and over a third of children in year 6 are overweight or obese, these figures are higher than national averages.

A meta-analysis of the contribution of walking to and from school to individual and population level physical activity estimates that it contributes 23% of moderate to vigorous physical activity (MVPA) on school days in primary school age children, and 36% of MVPA on school days in secondary school pupils (32).

Cycling and walking has also shown positive impacts in children for developing their confidence, independence, self-esteem, and road safety skills. It also contributes to reducing traffic volume, pollution and road danger created by increased congestion during the school run period. Travel for education contributes significantly to peak time traffic, accounting for 29% of trips between 8 and 9 am in the UK.

Parental viewpoints (and sometimes frustration) of local cycling experiences are frequently expressed on cycling websites, the following parent account was extracted from the National Cycle Plan website blog: (57)

To give some clarity: My son was quite a small 10 year old.

We cycled for 6 months, through hail, rain and -4 degrees. The journey was 2.5 miles to school (which I then cycled back from) so he cycled 5 mile per day, (I did 10) I cycled behind him, coaching him in the beginning on crossing roads, bike handling and awareness of other people, always give way, and assume people haven't seen you or aren't aware you are there. Give plenty of notice to change line, and indicate your intentions. After a while, I used to cycle behind him, just to keep an eye on how he was handling himself and the bike ready for when he was old enough to cycle to school himself, but the traffic, roads, and conditions are treacherous.

The positive side was immense:

He arrived at school wide awake, ready to learn.

Regardless of how cold it was outside, he arrived in the classroom warm and healthy even in the depths of winter.

He suffered from no viruses or colds in that time, and the heating in the house had to be turned much lower or off.

He no longer complained about PE outside in the winter, (it's amazing how children today think they shouldn't do Games/PE outside if it's cold!)

It gave him an added confidence.

5.1.1 Proportion walking or cycling to school

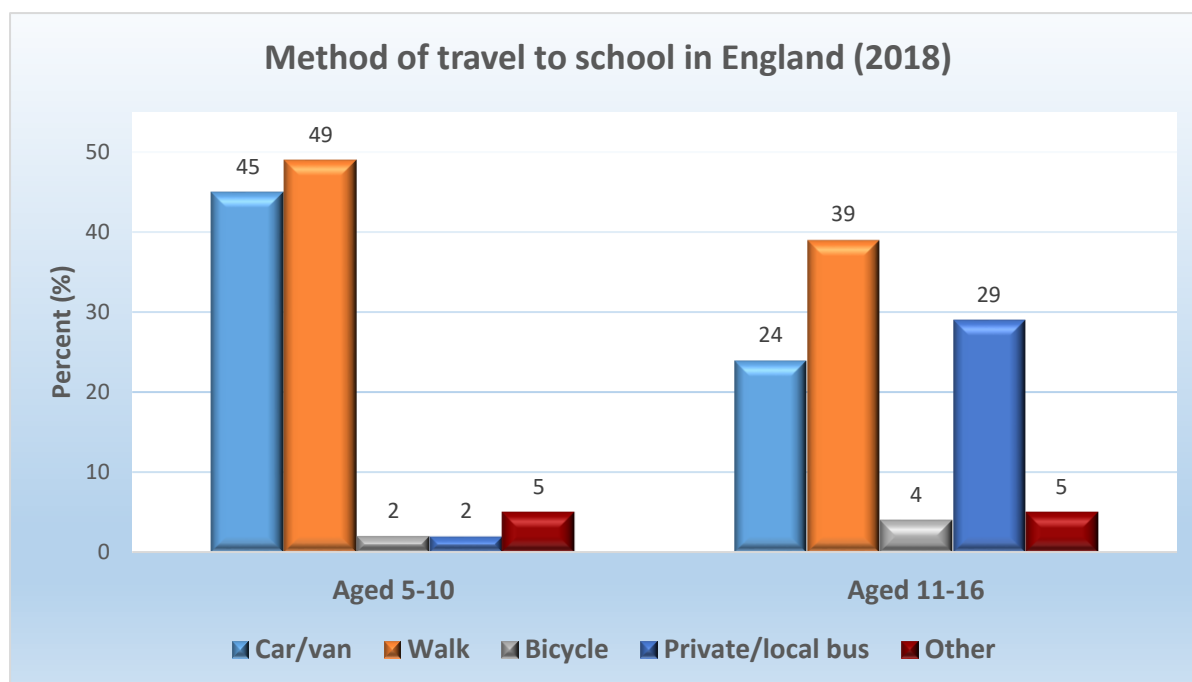
National picture

The proportion of children using active methods of travelling to school has seen only a small variance since 2002 with a higher proportion of journeys now being undertaken by car.

In 2018, 44% of all children (aged 5-16) usually walked to school, with 49% of primary school children and 39% of secondary school children did so. This is a decrease of around 8% since 2002 and an even bigger decrease since 1976 when an estimated 64% of all trips to school were made by walking (within the UK). The lower rate in part reflects the longer distances secondary school children in particular now travel to school (3.5 miles compared to 1.5 miles) and increasing car availability.

Cycling to school accounts for only a small proportion of all travel modes at only 3% of all children. This proportion has remained between 2% and 3% since 2002, (23) by contrast at least 49% of children in the Netherlands regularly cycle to school.

Figure 19: Usual mode of travel to school by age group (England 2018)



Source: DfT 2018

Local picture

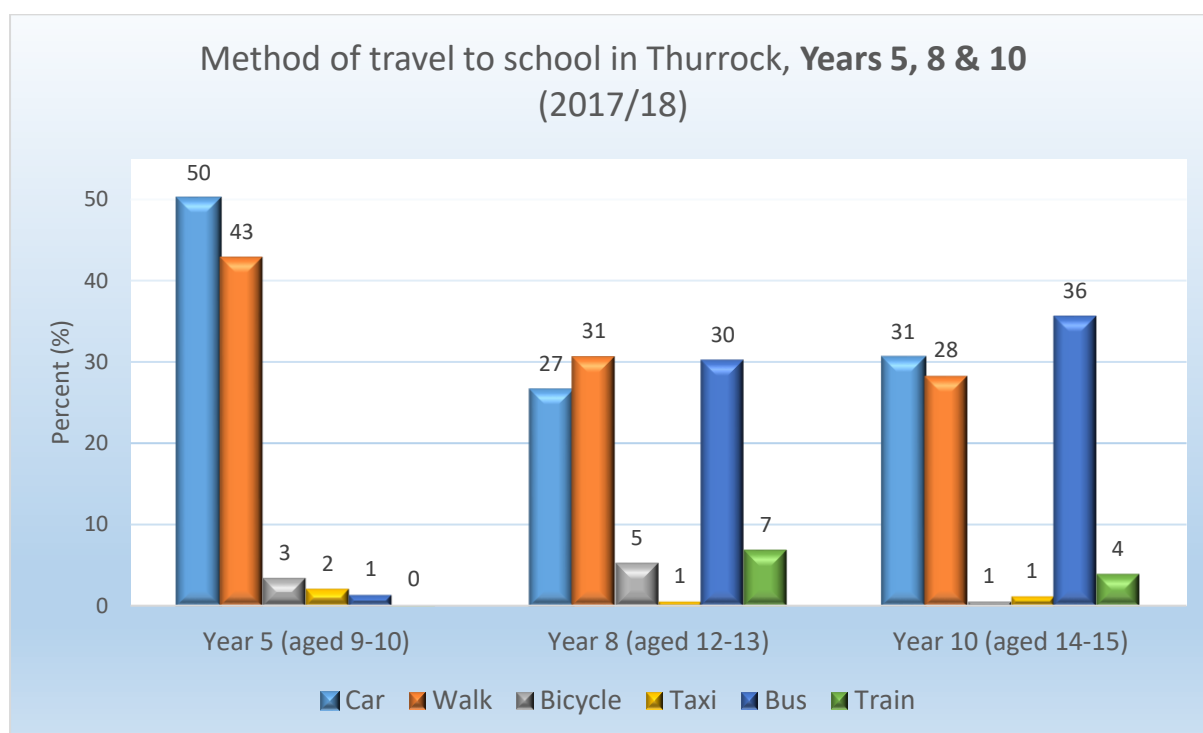
Data collated by the DfT on mode of travel to school is collated nationally and not available at local authority level. School travel data for Thurrock is collated by the council via the Brighter Futures survey commissioned by public health and via the online Modeshift Stars programme^{xii} – a collaborative tool between the council and school institutions.

Brighter Futures data

Brighter Futures is a two-year survey conducted during the 2016/17 and 2017/18 academic years in both primary and secondary schools. It provides quantitative data and insight into child and adolescent experiences, attitudes and development, including method of travel to school. During the 2017/18 academic year 1,158 children and young people from 2 secondary schools and 15 primary schools completed the Brighter Futures survey. All secondary schools that participated in the survey completed both the year 8 and 10 survey during the 2017/18 academic year, primary schools completed the year 5 survey.

^{xii} Modeshift STARS (Sustainable Travel Accreditation and Recognition for Schools) is a national school awards scheme.

Figure 20: Methods of travel by mode and age



Source: Brighter Future Survey, Thurrock council 2018

Data from the participating 17 schools (representing 38% of primary schools and 20% of secondary schools) suggest that within year 5 primary 3.4% of pupil's cycle, 43% walk to school and 50% are driven by car every day.

Within secondary school year 8 data suggest that 5.2% of pupil's cycle to school but this figure drops to only 0.6% in year 10. Bus or walking are the most common modes of travel while almost 30% are driven to school every day.

While the data provides a useful snapshot of travel behaviour in some schools, results are not directly comparable to national data given that not all schools take part and the variances with baseline data between the two surveys.

Modeshift STARS data

Data on school travel is also captured by the transport team via the Modeshift STARS website, although schools need to be registered to the programme and have a travel plan in place to participate. Currently data is captured from 10 schools in Thurrock via this method.

There are 52 schools in Thurrock; 39 primary, 11 secondary and two special schools, 48 of these have a travel plan in place and 10 schools have been awarded bronze, silver or gold status as part of the scheme. Although the majority of Thurrock schools have signed up, there is considerable scope to expand the accreditation status for many of the schools. Enhancing the status provides a useful mechanism to improve walking and cycling rates by encouraging schools to increase initiatives, share best practice and develop working groups.

Figure 21: Methods of travel to school Thurrock Primary with travel plans

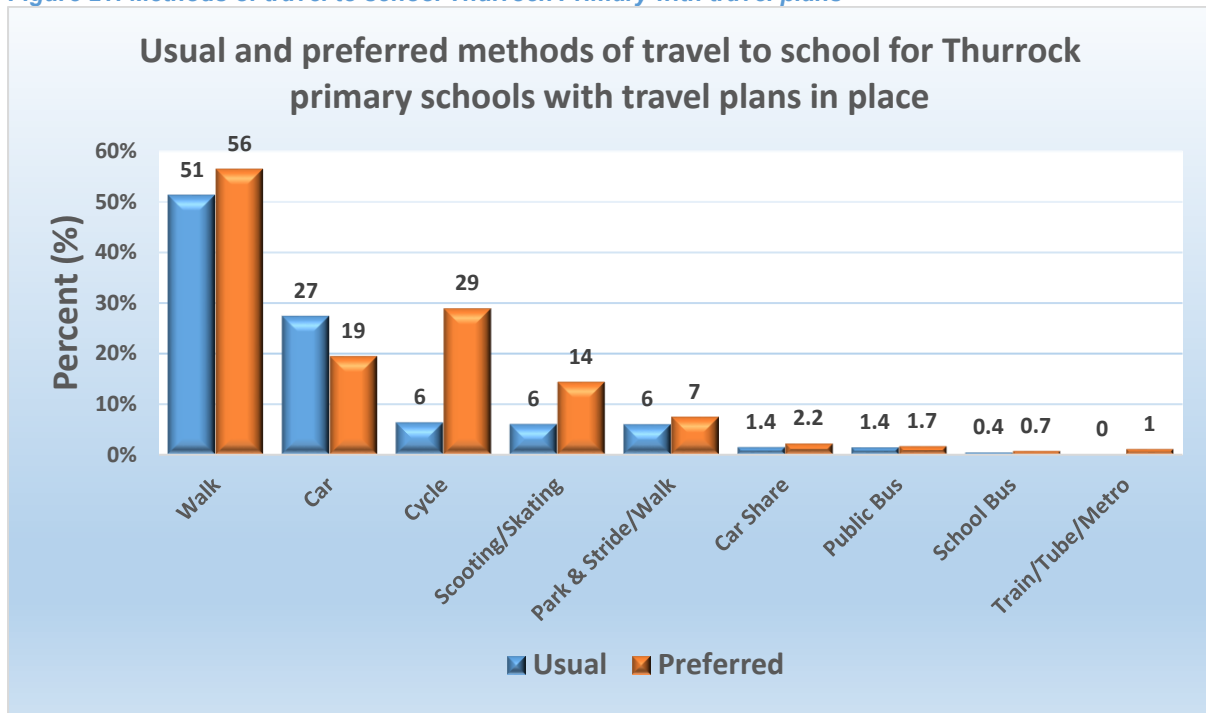
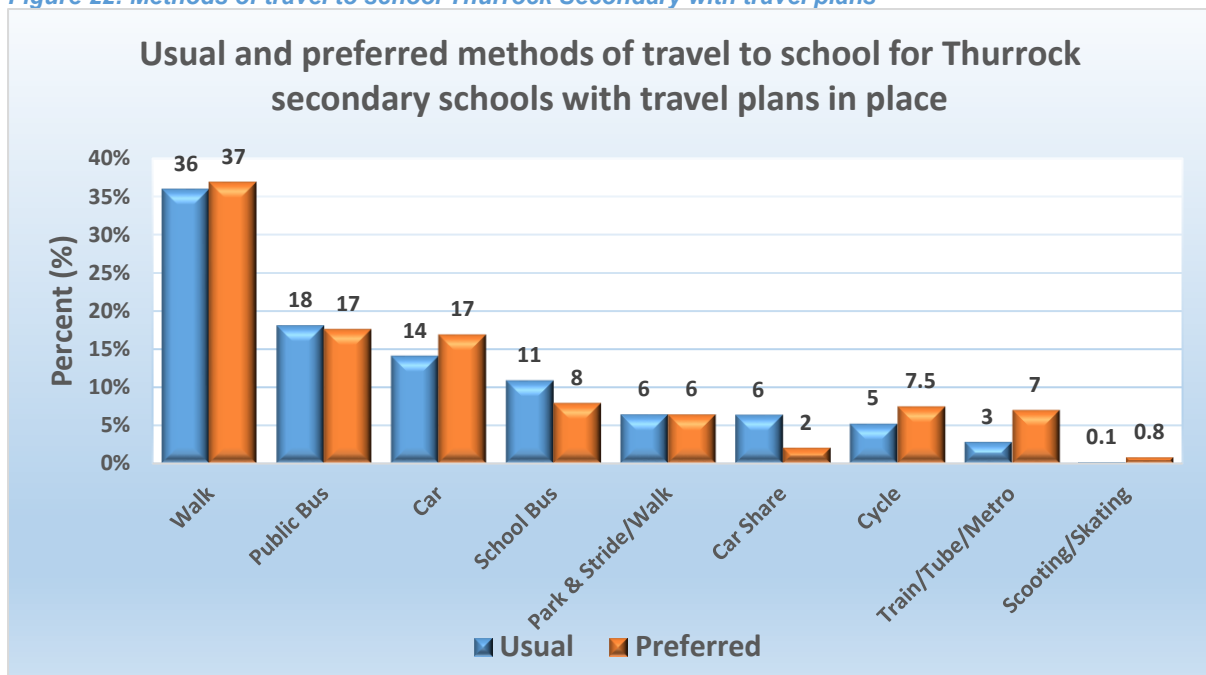


Figure 22: Methods of travel to school Thurrock Secondary with travel plans



Source: Mode shift Stars travel plan data Thurrock 2018/19

Results from the above local survey are not comparable to other results due to variances with methods of data collection and differences in participatory schools. However the data collated from schools with a dedicated travel plans in place suggest a 10% increase of walking and a 1.5% increase in cycling with a corresponding decrease in car use of 12% when compared to the Brighter Future Survey. Further analysis would be required at individual school level to verify this assumption i.e. some of the schools that participated in the Brighter Futures Survey may also have travel plans in place.

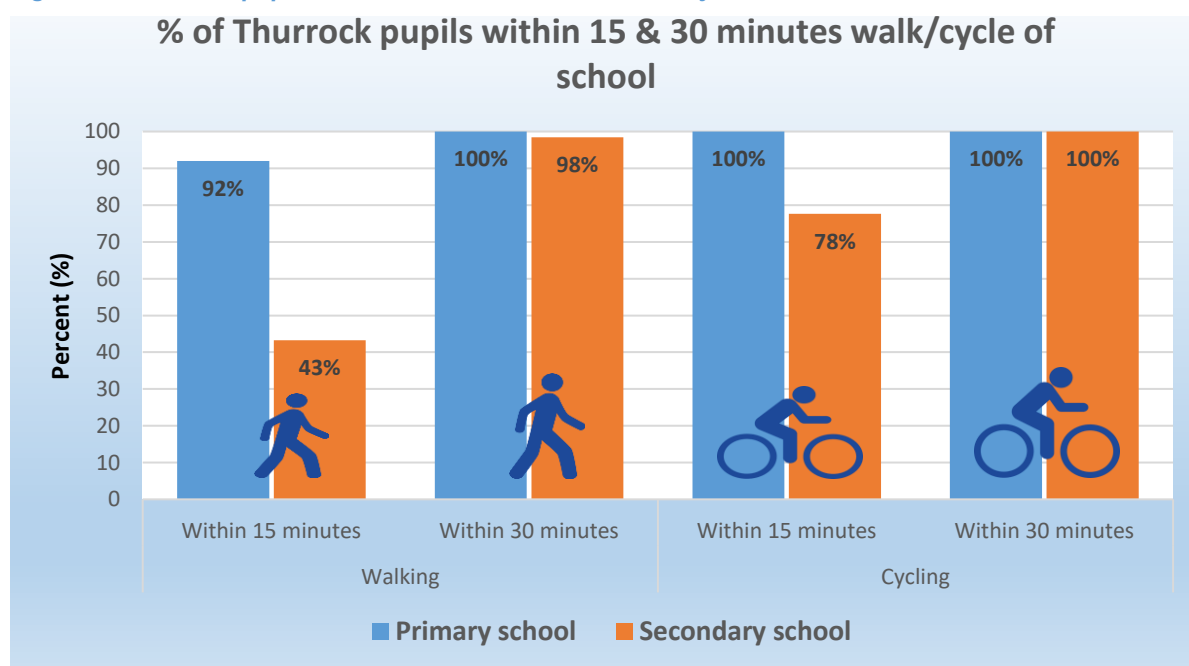
School Travel data from the charts above demonstrates significant ambition from children in the borough to walk, cycle or scooter to school. For example almost a third of primary school children would like to cycle to school but only 6% do so, suggesting there is much untapped potential.

Analysis from both sets of local data demonstrate walking to school reduces significantly between primary and secondary school transition with a marginal increase in cycling rates. Evidence suggest the reduction in walking is likely to be attributed to the greater distances generally associated with secondary school travel. This transitional point from childhood to young adult can be identified as a crucial 'shift point' in travel behaviour with an opportunity to promote active travel, particularly for improving cycling uptake to secondary school.

5.1.2 Distances from schools

There is an obvious connection between travel distances and modal choice, with the proportion of pupils who walk or cycle decreasing with distance. The DfT provides annual data by local authority area on travel times and distances from homes to the nearest school. It is important to note that data is calculated against the nearest school and not necessarily the school that the pupil attends.

Figure 23: Thurrock pupils within 15 and 30 minute walk or cycle distance of school



Source: DfT 2018

There are many complex reasons why children do not attend their local school; but most commonly is due to parental choice or a school place may not be available locally. Academies can set their own admissions criteria i.e. are able to accept children from other areas in preference to their catchment, all of these reasons can result in further travel distances. Due to the investment in business and new homes, Thurrock has attracted many new families which has impacted school capacity and led to pressures in some areas, with children travelling further distances to alternative schools. The law states that where the nearest suitable school with a place is over the walking distance set for a child's age (2 miles for under 8 years and 3 miles for ages 8 and above) the local authority has a statutory duty to provide transport to that school. Thurrock spends a far greater portion of funds on school travel per

pupil compared to other local authority areas which has led to a recent review of school transport, currently being led by the Contract and Performance Manager for Education.

5.1.3 Factors affecting Travel Modes in children

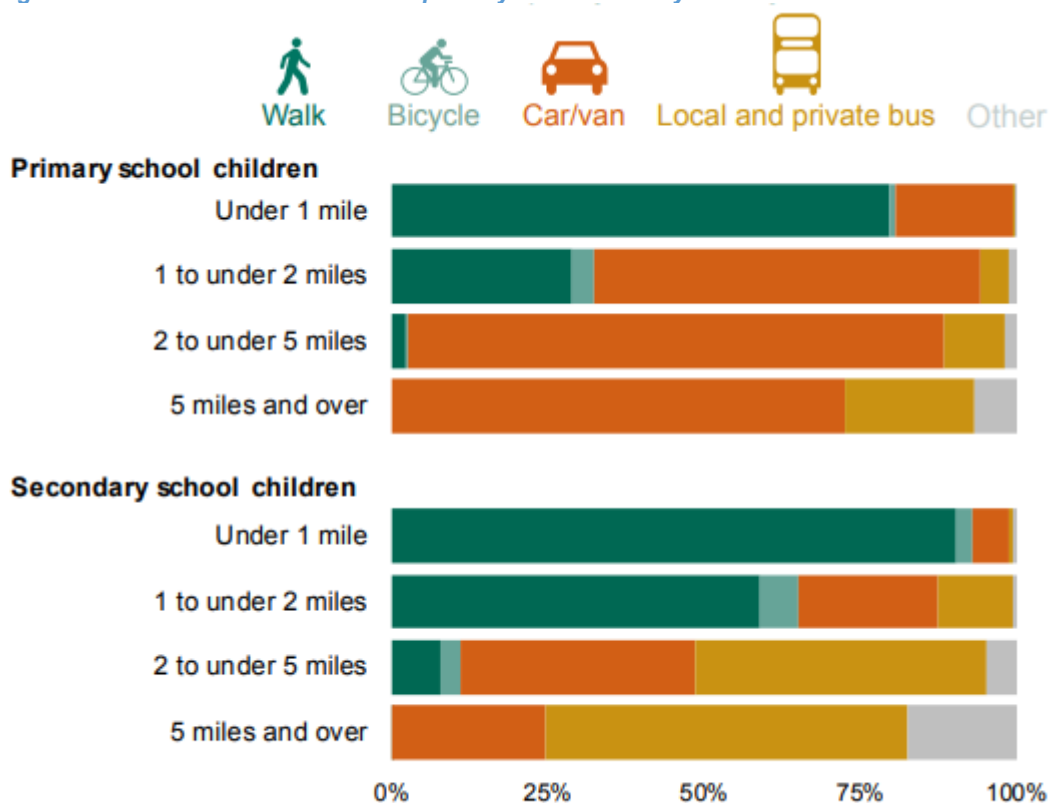
To reverse the declining trend of active travel to school studies have attempted to identify the barriers that prevent children from walking or cycling. Reviews have consistently found that greater distance, increasing household income and increasing car ownership are all associated with lower rates of active travel among children.

With increased distance children made relatively fewer active trips:

- The proportion of children aged 5 – 10 who walk to school drops from 78% for distance under 1 mile to 26% for distance between 1 mile and under 2 miles.
- The proportion of children aged 11-16 who walk to school drops from 87% for distance under 1 mile to 57% for distance between 1 mile and under 2 miles.

Few children aged 5 to 10 years old walk or cycle to school if travel distance is over 2 miles and only about 8% and 2% of school age 11-16 walk and cycle to school respectively if the distance is between 2 and 5 miles.

Figure 24: Method of travel to school primary and secondary school



Source: Department for Transport 2018

5.2 Barriers to active travel in schools

A systematic review (38) explored perceived barriers to children's active travel. The results agree with the findings above, suggesting that the distance travelled and parental concerns around safety are the most significant barriers affecting travel modes to school.

Studies around school travel behaviour and distance were limited within the UK but four significant international studies (two Australian studies, a Canadian study and one US study) identified proximity to school as the prime variable for both walking and cycling. The Australian study showed that a one unit increase in trip distance was associated with a **10-fold decrease** in use of active transport modes (39).

Other studies highlight a difference in viewpoints between parents and children; with parents citing factors such as age, fitness level, the provision of safe walking paths and adult supervision all influenced their decisions regarding their child's transport modes. Some studies found parental influences are often more starkly pronounced towards girls from a safety/security perspective which can suppress interest and engagement, whereas many parents thought it was more socially acceptable for boys to walk or cycle. Children mainly cited commuting distance as a barrier.

The complexity and contingency associated with everyday travel for many households is also identified as a major barrier to the use of more sustainable travel modes. The car is often the quickest and most convenient choice, especially when parents continue their journeys into workplaces.

An earlier review (33) considered the attitudes of children and parents on walking and cycling in the UK and found some common themes which stood out clearly:

- Parents' and children's lack of time (e.g. due to existing commitments)
- Travel distance
- Lack of cycle lanes and lack of facilities to store bikes
- A strong culture of car use
- Fear and dislike of local environments
- Children as responsible transport users
- Parental responsibility for children (parents wanting to accompany their children or drive them to school to ensure they arrive safely).
- Perceived image of cycling and a dislike of wearing cycling helmets (studies showed differences in individual perceptions between genders – girls were more concerned with image and physical appearance)
- Parents' fears for children's safety, including dangers from traffic and danger of intimidation or attack by other people (this was more pronounced amongst parents with girls, it was considered more socially acceptable for boys to cycle or walk).
- Conflicting messages from schools
- Poor Weather
- Need to carry heavy bags (e.g. to school);

5.3 Evidence of effective interventions in schools

To summarise, evidence and reviews largely support the NICE guidance analysis which replicates community wide approaches - system wide initiatives that involve the school, parents and the local community, often supported by an external coordinator, and that engage the children are most likely to demonstrate improvement in active travel behaviour. In terms of infrastructure, recreational facilities and good walk/bike routes present are associated with higher rates of active travel in children.

It is well documented that the patterns established in childhood are perceived as a key determinant of adult behavior and initiatives aimed at this cohort are particularly important as they have the potential to influence life-long physical activity habits in children, and children who walk and cycle are more likely to be adults that walk or cycle.

5.3.1 Initiatives to promote active travel in schools

School travel plans have the most research surrounding them although there is inconsistent evidence to demonstrate an effect of the plans. School Travel Plans (STPs) look at the journeys that schools generate and how to make them more sustainable. Plans are developed with consultation with the whole school community and present clear targets, specific interventions and agreed monitoring criteria to shift journeys that are normally made by car to walking, cycling or scootering.

At present there is no legal duty for schools to produce a travel plan, although section 508A of the Education Act 1996 outlines a duty to promote sustainable modes of travel. STPs are an ideal way of fulfilling this duty.

Thurrock Council currently has a Road Safety Team that provides encouragement and support to schools with the development of their plans. The majority of schools (48 of the 52) in Thurrock are registered and working on updating their travel plans. Once schools enter bronze, silver or gold status they can participate in the Mode shift Stars national accreditation scheme. The scheme helps create uniform School Travel Plans for all Thurrock schools and enables other agencies within the Council to access the plans in the case of work needed or for requests from the school such as planning or traffic management.

STP's usually include a survey of pupils asking them not only how they currently travel to school, but also how they'd like to travel to school including:

- a description of the school and its environment
- a summary of established good road safety practice and initiatives – specifically pedestrian training, cycling skills, road safety in the curriculum
- a summary of any road safety or schools transport problems
- proposed initiatives with objectives and targets, e.g. a walking bus or car sharing scheme
- a baseline survey
- a clear achievable plan of action
- plans for monitoring and review

Every school in Thurrock can participate in travel plans and the Modeshift STARS programme for free.

Walking school buses are a popular initiative in local communities as they address the main safety concerns of parents. When a walking school bus is implemented effectively, walking to

school increased significantly. However, to succeed a walking school bus must be paired with positive attitudes towards active travel, willing volunteers, a clear coordinator and enforce that children arrive on time at the bus stops.

Walking promotion initiatives are most effective when a multifaceted approach is used. The biggest increase in active travel was shown where there was a strong involvement of schools and teachers paired with specific materials directed at parents. Research in ‘gamification’ initiatives shows that children who engage with the initiative are likely to change their behaviour. Initiatives such as ‘beat the street’ have demonstrated success in the short term but there is limited evidence on long term behaviour change. Pilot work should be considered which incorporates both infrastructure and behaviour change initiatives in a smaller geographical area to understand impact on long term behaviour change.

Bikeability Training – Nationally, schools who have piloted the Bikeability Plus programme, which aims to tackle specific barriers to cycling, saw an increase in children who normally cycle to school from 4% to 10% with some areas achieving even higher gains, from 5% to 25%. Studies from school based surveys suggest 93% of parents whose children had been ‘Bikeability’ trained said that it had a positive impact on their child’s on-road cycling safety. A Cambridge survey found that 13% more trained than untrained pupils reported ‘normal frequent cycling’ to school; and that 37% of untrained pupils cycled on pavements, but only 10% of trained pupils did the same (34). Thurrock obtains government funding annually to deliver Bikeability training in all Thurrock Schools.

5.5 What’s currently happening in schools – Thurrock Initiatives

For schools there are many key initiatives offered by the council, outlined below, these schemes could compliment any new initiatives to promote active travel.

Initiative:	Target:	Effect:	Notes:
Bikeability	Balance Bike Training - reception age pupils offered Level 1, off road cycle training- Year 4 pupils Level 2 on road cycle training - Year 6 pupils Learn to ride lessons- offered to all residents of Thurrock and every primary school	Encouraging more cycle use for the whole family- parents feel reassured after children have received Level 2 on road training.	A cycle training programme designed to educate young people about cycling by developing the skills, mind-set and confidence needed to cycle independently.
School Travel Plans/ Mode shift Stars	Borough wide	Development of School travel plans – Accreditation levels are dependent on the amount of input schools and the community contribute at given times. Thurrock has 48/52 schools registered to participate with 3 Gold, 2 Silver, 5 Bronze school travel plans in place. These awards reflect the schools efforts in the promotion and	Travel to school accreditation scheme. Look at promoting walking and cycling as a method of travelling to school by ensuring schools provide suitable cycle training to pupils, safe routes to walk to school are mapped, recruit volunteers to run initiatives like the walking bus, develop parents and carers awareness of the wider benefits of walking and cycling to school (e.g. social

		development of their Travel Plan.	wellbeing, confidence and independence).
Sustainable Travel & Road Safety Initiatives.	All children in Thurrock Schools.	Various initiatives are promoted throughout all schools in Thurrock enabling pupils to journey plan and feel safe and confident when walking or cycling out on local roads and pavements.	<p>Road Safety Initiatives:</p> <ul style="list-style-type: none"> • Pedestrian on road training for Reception age pupils and parents, Year 3 and Year 5 pupils. • Scooter training for Year 3 pupils. • Junior Road Safety Officers. • Other: <p>Jofli Bear – a bear given to schools to encourage pupils to take sustainable journeys (35)</p>
Safer Routes to school	Borough wide	Five-year programme of funding for safer routes to schools and road safety engineering schemes each annum is allocated circ. £250k out of the local authorities ITB funding.	At least 10 safer routes to schools initiatives have been identified to be delivered during 2019/20, of which four are already in place, with plans for schemes in a further six schools to be delivered during 2021.

Gaps in Initiatives

Statistical analysis demonstrates a significant shift in travel behaviour between primary and secondary school transition, this ‘shift point’ can present opportunities for influencing behaviour to encourage greater uptake of active travel. Further research would be beneficial to understand underlying barriers, motivations and influences at this crucial point to help ensure young people’s travel needs are being met. Understanding what children want from transport and travel will help identify gaps between this and what they get, the findings can be used to inform appropriate targeted interventions. Examples of Interventions (not identified above) could include individual pupil support to assist with journey planning before leaving primary school, (which could also identify barriers that may exist). Interventions should be dependent on individual needs and administered before the transition from primary to secondary school takes place.

On the same principle, there is also further potential to offer travel planning advice to those parents whose children are starting primary school. This would help increase awareness of any school travel initiatives such as walking buses, before other travel habits are formed.

5.6 Statutory Duties for local authorities

Sustainable Modes of Travel Strategy for schools (SMOTS)

Each academic year, as part of its duty under the education act, local authorities are required to produce and publish their strategy to promote the use of sustainable modes of travel to meet the school travel needs of their area^{xiii}. Most local authorities have adopted the name

^{xiii} Section 508A (1) (a) of the Education Act 1996.

SMoTS. The five main elements of the strategy along with further narrative are set out in section 3 - 'Local Strategy and Plans'.

This document has been identified by local schools as a key strategic component to develop sustainable travel within their schools. The latest School Sustainable Modes of Travel Strategy for Thurrock (SMoTS 2015-2018) is not currently being updated due to reallocation of transport funding to other areas and consequently there is no strategic guidance in place. The Education team are currently reviewing school transport policy and is considering a refresh of the SMOTS as part of the approach.

5.7 Commuting to Work in Thurrock

Walking or cycling during the journey to and from work provides an opportunity for working adults to accumulate recommended physical activity levels (at least 150 min of moderate intensity physical activity in bouts of at least 10 min throughout the week). The Government recognises that increasing physical activity requires '*weaving incidental activity into our daily lives*' including using bikes for transport (36).

Adults who cycle to work are more fit, less likely to develop cardiovascular diseases and cancers, live longer lives (37) and have been shown to have significantly lower body mass index (BMI) and percentage body fat than those who use cars (38). Cycling to work has also been associated with other health benefits such as higher mental wellbeing, compared to individuals who do not use active modes (39).

In Thurrock 41% of our journeys to work are less than 10km (a cycling distance of less than 8km is identified as a distance most people could achieve). A switch to cycling for only a small proportion of these shorter journeys brings enormous potential to make substantial improvements to local population health as well as the co-benefits such as reductions in noise, traffic congestion and air pollution.

Despite clear evidence of these benefits the use of the car for the daily commute is by far the most common mode of travel to work in Thurrock, accounting for almost 60% of journeys.

5.7.1 What Interventions increase commuter cycling?

Many evaluations of workplace interventions to increase commuter active travel are available but systematic reviews of these interventions suggest most are poor quality and often rely on self-reported anecdotal evidence, did not always use control groups and lacked statistical analyses. This does not necessarily mean that interventions were not effective but there was a lack of robust evidence to demonstrate their effectiveness.

The few more robust studies worthy of note that have examined cycling to work have found mixed results, with some finding an association between workplace support such as bicycle racks, showers, and policies that support cycling commuting (40) while others have found no association (41). Those that have shown greater success in commuter shift tended to have cycling 'champions' or facilitators within the workplace themselves suggesting that a supportive culture and peer support is an important factor.

Findings from the same studies indicate that there is not necessarily one particular workplace intervention that is the most important for cycle commuting although studies did find a positive correlation between:

- the more bicycle commuting 'champions' present, the more likely it will be that an employee cycles to work
- workplaces with policies in place that support active travel
- those with supportive physical infrastructure

Although there is limited evidence for the effectiveness of these initiatives the cost of implementing some of the support identified above in the studies would be relatively minor, particularly the development and implementation of supportive policy and the installation of bicycle racks in workplaces. Therefore, any businesses within Thurrock that are looking to increase levels of active travel among their employees should consider how their infrastructure and workplace culture can be changed to support this behavior.

6. Motivations and barriers to cycling and walking in adults

Both motivations and barriers are not experienced equally throughout the population and are impacted by factors such as social exclusion, living in rural areas, access to a car and the skills and confidence to use active travel modes.

A literature search found there were no local studies on this topic and generic national reviews on motivations and barriers for both walking and cycling is not especially widespread in the reviewed literature, but, where available, is considered of good quality. Research on this topic was found especially limited to the motivations for cycling.

The most relevant points from the available literature suggested differences in motivations according to socio-demographics (particularly age and gender) of the study groups. The main findings have been summarised below.

6.1 Motivation

6.1.1 Cycling motivators

The two key motivators for cycling were identified as **the convenience of cycling** and the **opportunity to improve fitness**.

- Those who cycled for their daily commute cited health reasons, environmental benefits, efficiency, speed, sense of autonomy and freedom as motivations (42).
- Regular cyclists cited the most common reasons for cycling was enjoyment, fitness, low cost, flexibility and relative speed, cyclists that participated specifically for the daily commute were more motivated by the relative flexibility of cycle travel (43).

6.1.2 Walking Motivators by socio-demographic

With respect to walking, the social element of **interacting with other people** appears to be a key motivator for some groups (particularly for women, school children and the elderly) whereas men and young people are more likely to find competition more motivating.

Unlike cycling, fitness was not mentioned in the literature as a motivator for walking – one possible reason suggested that walking is not perceived as an exercise by some.

The main motivators for active travel to school is the social aspect of walking and spending time with friends or parents alongside the health benefits. Peer pressure was also identified as an important factor in children's travel choices (its influence could go either way) (42).

6.2 Barriers

6.2.1 Cycling Barriers

Barriers to walking or cycling are documented more widely and recognised in Thurrock's Active Travel Strategy. Part four of the strategy identifies both mental and physical barriers that limit or prevent usage and access to walking and cycling.

The barriers identified broadly align with more recent studies for which the vast majority of evidence assessment identified the main cycling barriers as:

- Safety concerns due to lack of appropriate infrastructure
- Travel distance
- Various practical and contextual issues such as the weather, topography, travel distances and the need to carry heavy bags.

Similar to motivators, barriers vary between different population groups, other factors cited by different groups were inconsiderate drivers, heavy traffic, pollution, bad weather and not being fit enough (42).

6.2.2 Walking Barriers

As with cycling, barriers vary between different population groups:

Older people cited barriers to walking as limited mobility, fears of safety, fear of falling and fast traffic. In areas of deprivation key barriers to walking have been identified as:

- Safety fears
- And lack of motivation

Also in deprived areas, for women in particular, safety fears, family commitments, lack of motivation and lack of walking companions were barriers (43).

Men from all socio-economic groups did not consider walking sufficiently vigorous to be considered as 'exercise' (44).

6.3 Other influencing factors

Some factors cannot be controlled for, greater distance, increased household income and increasing car ownership are consistently associated with lower rates of active travel. Of the barriers identified that could be influenced, safety was continually raised as an issue with traffic safety and road crossings being the main concern. An unpleasant environment was noted in some areas as a strong factor that reduced levels of active travel.

There is also evidence about attitudes towards interventions intended to boost walking and cycling. This evidence (which is more prevalent for walking interventions) tends to highlight the importance of social interaction of e.g. walking groups; the importance of convenience (i.e. accommodating the intervention into already busy lives); and the power of group support in helping to make and sustain change.

The evidence also strongly suggests that it is mainly women that respond to behavioural interventions such as walking groups, training etc. Women are also more likely than men to respond positively to cycling routes separated from traffic.

In general, however, there appears to be a lack of evidence about how different groups in society – age, ethnicity, health-needs and so on – respond to different interventions (45).

8. Safety

Key messages:

- Safety concerns may be deterring children and adults from walking and cycling, some 62% of adults aged 18+ in England agreed that “*it is too dangerous for me to cycle on the roads*”.
- The number of pedestrians and cycling casualties killed or seriously injured has generally been decreasing, cycling casualties have fallen by 70% since 1984.
- Road traffic crashes and collisions disproportionately affect vulnerable road users such as pedestrians and cyclists.
- Cyclists were less likely to believe that cycling was too dangerous for them than non-cyclists (50% to 65%) and those over 60 were more likely to consider roads unsafe.
- Speed reduction measures such as 20mph zones are an effective measure for improving safety for cyclists and their perceptions of safety.
- Most casualties and injuries could be prevented, particularly using separation from motorised traffic.

8.1 The government approach

Global road safety statistics show that roads in the UK are among the safest in the world, but cyclists and pedestrians remain particularly vulnerable road users. Aside from the effect that casualties have on individuals and their families, safety concerns are often cited as one of the main reasons why people do not cycle or parents do not allow children to walk or cycle to school.

The Government has a holistic view of road danger reduction, in line with the ‘safe system’ approach. This recognises that there may be no single intervention which will transform road safety, but that many smaller measures can make a difference. The approach also emphasises the importance of addressing perceptions of risk, acknowledging safety fears are often cited as a barrier to cycling and walking. It is important to note that walking and cycling are not generally considered intrinsically dangerous activities, it is the road environment that is dangerous.

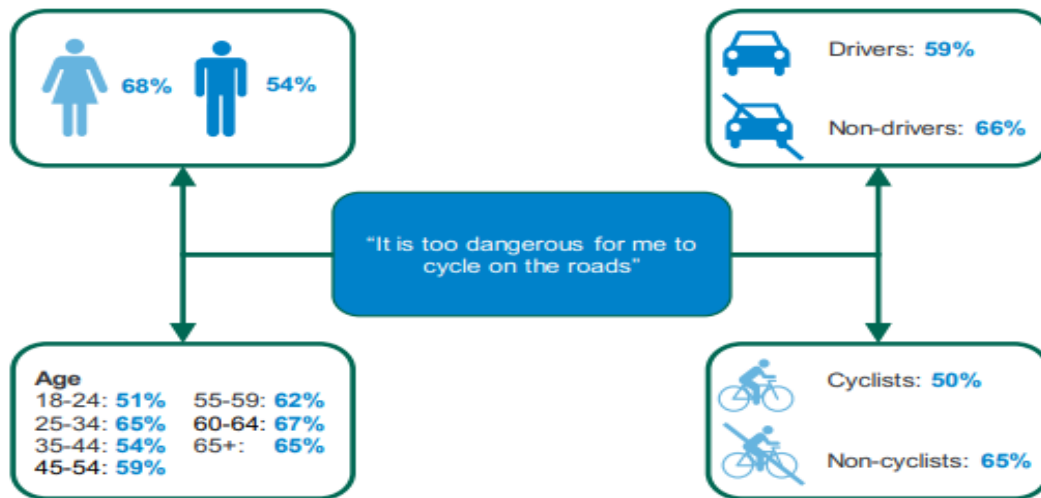
8.2 Perceptions of cycling safety

Bike Life, the largest assessment of cycling in twelve major cities and urban regions in England found only 28% of residents thought cycling safety was good. Less than one in five (17%) felt that the safety of children’s cycling was good (46).

These findings were similar to data from the National Travel Attitudes Study (NTAS) (47) which found 61% of adults aged 18+ in England agreed that “it is too dangerous for me to cycle on the roads”. Women were more likely than men to agree (68% to 54%) and people over 60 were marginally more likely to agree than if they were aged 25-59.

Cyclists were less likely to believe that cycling was too dangerous for them than non-cyclists (50% to 65%) and those over 60 were more likely to consider roads unsafe.

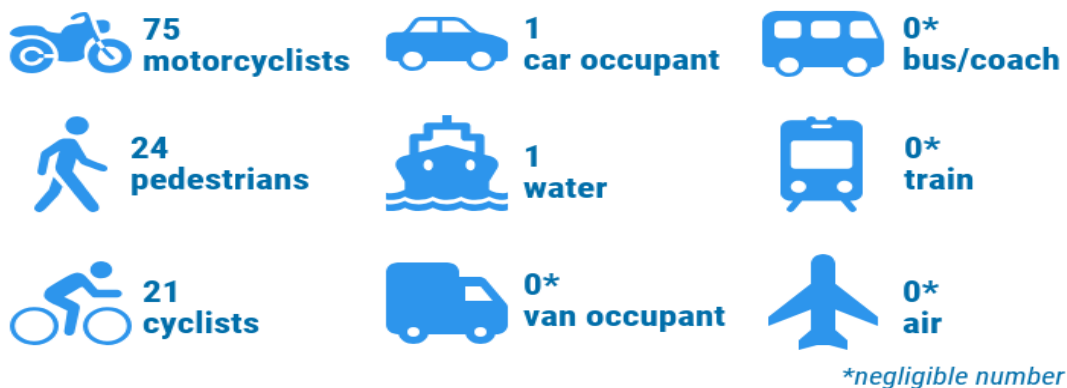
Figure 25: Proportion of adults aged 18+ who agree with the statement “It is too dangerous for me to cycle on the roads”, by gender, age band, cycling and driving status, England 2018



DfT statistics for England (2017) showed that cyclists accounted for an average of 2 fatalities and 62 serious injuries per week between 2011 and 2016. The number of casualties has fallen by 70% since 1984 (48).

A significant study conducted by academic Dr Rachel Aldred – the ‘near miss research project’ – questioned whether the number of casualties and injuries reported captured all of the fears expressed by cyclists. The study found near misses an everyday experience for cyclists in the UK, over half the cyclists surveyed as part of the report suggested that most could be prevented, particularly using separation from motorised traffic (49).

Figure 26: Fatalities per billion passenger kilometres by mode: 2008-2017 average



Source: figures 25 and 26 DfT 2017

8.3 Interventions aimed at improving safety for active modes of travel

Some interventions aim to eliminate some forms of risk such as with cycle tracks that separate cyclists from the carriageway. Some aim to mitigate risk through training and education. The effectiveness of the different interventions have been the subject of a number of systematic reviews although the quality is variable, with some unable to address potential confounding factors. However, there is consistent evidence supporting several types of interventions that can reduce the risks for cyclists and pedestrians.

The strongest evidence is for the benefits resulting from reductions in the speed of traffic and the wider use of 20 mph speed limits.

The evidence is mixed on cycle tracks that physically separate cyclists from traffic, although there is clear evidence that cycle lanes reduce risk, the design of the cycle track itself is an important factor in determining effectiveness, especially at intersections. Advance stop lines appear to have no significant impact on cyclist safety (possibly due to the low level of accidents making improvement difficult to measure) although studies suggest they do appear to increase cyclists' perception of safety. N.B: Although there is a lack of definitive evidence that demonstrates separating cyclists from traffic improves safety, there is good evidence that separated cycle infrastructure can encourage people to cycle (56).

For walking, the removal of barriers and parked vehicles on pavements and good neighbourhood maintenance are all perceived as positive factors.

Urban design that prioritises walking and cycling over car use, street lighting and safe routes to school have also found to be effective in some studies. Behavioural interventions to improve safety practices include cycle training, cycle helmets and visible clothing and equipment (56).

8.4 The Local Approach

Much is already being done to improve road safety, Thurrock's approach to reducing the overall number of Road Traffic Accidents on the transport network is identified within the Thurrock Transport Strategy:

The Strategy aims to ensure accidents involving vulnerable road users do not increase and will need to ensure that road safety interventions help to deliver a modal shift through removing safety concerns that pedestrians and cyclists have.

Policy TTS26: Safer walking and cycling: The Council will improve the road safety of pedestrians and cyclists and will aim to mitigate safety concerns that currently act as barriers to the use of these modes. An overall safer urban environment will be created such as by reducing traffic speeds, so that not only will accidents be less likely, but when accidents do happen they will be less serious. Widespread 20mph zones will therefore be implemented on residential streets.

The Council will ensure that routine maintenance procedures and interventions, such as dealing with pot-holes or raised drainage grating, take account of the need to promote the safety of pedestrians and cyclists. For example, pot-holes on Walking and Cycling Core routes will be given additional priority.

Structural maintenance programmes will give a priority to promoting the safety of the core walking and cycling routes, such as by improving the quality of street lighting on these routes. This will work to reduce the fear of crime on these parts of the transport network, with a view to encouraging a modal shift towards these modes, especially after dark.

Furthermore it will target such road safety interventions in those areas of Thurrock where efforts are also being made to improve accessibility by walking and cycling and deliver modal shift. This will include integrating road safety schemes into Workplace Travel Plans and, especially, School Travel Plans. Most of the measures are likely to be relatively low cost. However, major road improvements or network management measures can contribute to road safety by transferring traffic to higher quality roads where accident rates should be much lower than those of typical local urban roads. In this case the Council will be careful not to allow the effect to be eroded by increased traffic speeds. This measure could be particularly useful to remove traffic from roads being developed as cyclist and pedestrian routes, and could make widespread speed limit reductions more acceptable.

Recent evidence demonstrates some successes in areas such as Thurrock's Safety Plus initiative that ensures defects such as trips, potholes and raised ironwork are identified and fixed. As part of this initiative 98 percent of potholes were repaired within target. The Council is also developing an asset management strategy that will ensure roads, pavements and cycle ways are safe for use and repaired at the most economically advantageous time.

Progress against safer walking and cycling policy would benefit from review prior to any new strategy, alongside the review of current safety initiatives to ensure they are still relevant. Measures at reducing traffic speeds has already been identified, these measures should continue to be implemented together with enhancement of cycle tracks that separate cyclists from the carriageway.

7. What works?

There is strong consensus across the literature that the most effective mechanisms for increasing walking and cycling comprise of a complementary package of measures. A coherent, convenient and safe network of routes is necessary but not sufficient to bring about change, while campaigns and behaviour change interventions are unlikely to be successful without the infrastructure to support them.

Prior to the publication of the governments walking and cycling strategy the DfT commissioned an evidence assessment to better understand the impacts of walking and cycling investment. The assessment recognised that although some singular interventions have shown positive outcomes the most sustainable and effective investment strategy must consist of a variety of approaches.

The review examined a range of interventions that have been used to impact on walking and cycling acknowledging the difficulties of assessing the variety of interventions (considering the underlying determinants of behaviour and the challenges of measuring changes), urging that any findings should be interpreted as 'indicative rather than definitive'.

7.1 Findings from the review

Given there is no ideal singular intervention, the assessment identifies a mix of infrastructural improvements/provision, community-wide communications/campaigns, targeted (usually community-level) support and some individually-specific support.

A range of soft measures were also shown to be important, particularly in terms of encouraging and incentivising trips. Studies suggested that local level population changes are required in attitudes and behaviour related to active travel. These should be viewed as long term projects, the most effective mix of intervention being dependent on local characteristics and local needs.

The most effective individual interventions that emerged from the literature reviewed (effective in general terms) are outlined below, although there are very few studies where single interventions have been studied in isolation:

- Provision of dedicated cycling lanes (and bicycle parking)
- Personal travel planning
- Walk/Cycle to work days
- Cycle-hire/bike-share schemes
- Some school based interventions

The report identified that directly attributing any benefits or savings to specific local interventions is complex and dependent on factors such as the size of the scheme, the context of the setting and the characteristics of the population.

The full DfT report discusses each intervention in more detail, a link has been included at the end of this document (50).

7.1.2. Physical Infrastructure improvements

A wide range of factors influence whether or not people walk or cycle, of particular note were environmental factors such as the design, quality, accessibility and availability of walking and cycling networks were all likely to be important. In neighbourhoods where there are accessible, safe walking and cycling routes, studies consistently show communities are walking and cycling more (46).

Areas that have successfully increased levels of walking and cycling have all aimed to prioritise people and place first, with cars being a 'guest' in the area.

Other successful attributes of infrastructure improvements:

- Routes should be designed with the continuity of the route in mind.
- Routes should be legible and not dependent on signage to be followed.
- Cyclists should be segregated from traffic on busy roads or junctions
- Ensure participatory design at a local level, address the needs and concerns from residents to maintain support (46).

7.1.3 Design of routes

The initial focus of any planning and design of new routes should consider how people live and move around; who will be using the route and for what purpose. If this can be done at the earliest stage of new developments or regeneration projects, even better. New cycling routes or improvements to existing routes are often included after new housing schemes are completed; behavioural studies demonstrated people then got into bad habits and therefore were less likely to use them. Providing specific support for people at a 'transition point' in their lives, for instance, when they are changing job, house or school has been shown to be highly effective in promoting a change in travel behaviours (51).

Design guidance standards for active travel infrastructure should be explicitly outlined within Thurrock's new Design Guide, ensuring information is readily available to planners at the beginning of any new scheme. Any guidance should incorporate as a minimum, the current standards outlined within the DfT's Cycle Infrastructure Design (52) and Highways England Design Manual for Streets 2 (53). This guidance includes pavement and cycle route design and maintenance, both of which has been developed from internationally leading research on excellence in standards development. The manual includes a guide for developing a quality audit process. Other useful resources when considering route design principles that should be embedded within Thurrock's approach:

- TfL's Healthy Streets Check for Designers, the guide incorporates the latest design approaches and tools to improve walking and cycling performance.
- TfL's London Cycling Designs Standards
- Handbook for Cycle Friendly Design – Sustrans
- DMRB CD 195 – Designing for cycle traffic – Highways England.

Some local authorities have successfully implemented quality audits as part of the design process, measured against the mantra of these documents on all development proposals which involve new streets. These assessments are carried out in partnership with Highways Teams and the Development Management Team.

7.1.4 Quality of routes

There were many evidence contributions that found the likelihood of people using infrastructure to walk or cycle on is highly dependent upon its perceived quality. Not only fit for purpose but they must also be well maintained and safe to use. Poor lighting, litter, cracks and potholes were all identified as issues (53).

Maintenance costs should be factored into funds for upkeep of active travel infrastructure, this is a significant issue for Thurrock as there is no specific funds allocated to maintenance of routes.

7.1.5 Location of routes

Creating a network of well-designed, good quality routes is only relevant if the routes are in the right places. Understanding how people live and move around is an essential component when identifying routes.

Studies have shown areas which have invested in quality infrastructure that take people where they want to go have shown significant increases in active travel uptake. Since 2017, Transport for London has doubled the provision of protected cycling routes, this transformation is modelled around other successful places (New York, The Netherlands and Copenhagen) that have used major data analysis to show where routes could be built to get the greatest number of people walking and on their bikes.

TfL has published exemplary examples of strategic data analysis for both walking (54) and cycling (55). The use of this analysis approach will help to identify a Thurrock wide priority network that comprises of new routes based on areas of greatest need and current and/or potential demand and then routeing walking and cyclable trips. Actions from the analysis should build towards the long term network, encompassing existing routes and creating or enhancing networks to local places such as key workplaces, schools, shops and healthcare facilities. Routes should also take into account future housing and regeneration areas and neighbourhoods with a high proliferation of households within lower income bands.

This analysis should be used as the framework to inform a Local Cycling and Walking Infrastructure Plan (LCWIP) and any future investment should be targeted to this. These infrastructure plans are currently the government's preferred approach (which enables access to funding bids).

7.1.6. High-density mixed used developments

Studies have consistently demonstrated that people walk or cycle more in places with higher population densities and mixed land uses, such as mixing housing with shops, schools, local amenities and green spaces. These places are associated with between 25% and 100% greater likelihood of walking (58).

The concept of '20 minute neighbourhoods' – sometimes called by other names such as '15 minute cities' has become a popular model for creating places whereby services and destinations that support daily living can be met within a short walk or cycle. Most importantly for active travel, they reduce trip generation at source by removing the need to get into a car.

Research undertaken by the Town and Country Planning Association (TCPA) (56) demonstrated multiple benefits of mixed used neighbourhoods in countries that have already implemented the concept. Benefits ranged from reduced traffic, improved air quality, thriving

local shops and businesses, more cohesive communities and improvements in physical and mental health.

The impact of the COVID-19 pandemic lockdowns has highlighted the importance of the liveability of our own neighbourhood areas as people have spent more time than ever within their own localities.

7.2 Lessons from successful schemes

7.2.1 Cycle Superhighways

A number of towns and cities across the country have constructed Cycle Superhighways as a means to make roads more cycle friendly. Cycling highways have been shown to provide a safe, fast, and efficient way of getting around by bicycle along recognised commuter routes. The first 'city to city' cycle superhighway opened between Leeds and Bradford in 2016 and the first segregated superhighway opened in London in 2015 with further routes constructed each successive year thereafter.



London's Superhighways: Studies conducted as part of the Santander Superhighway routes in London demonstrated significant success with its segregated blue routes. Analysis of cycle counts recorded before and after the launch showed an increase of 46% on one route, with most routes experiencing more than a 100% growth in the number of cyclists. These Dutch-style segregated lanes and junctions are at least 1.5m in width, the road surface was improved and a skid resistant blue surface applied, evaluation studies demonstrated a greater feeling of safety and contentment in two thirds of the sample identified (57). These findings are consistent with other studies that frequently demonstrate increased uptake of cycling in

areas with segregated routes, in some areas this uptake was rapid. According to the Walking and Cycling commissioner for London, financial investment in the capital equates to £17 per head (2019) - a comparable spend to cities such as Copenhagen. Some parts of London are now recording a year on year growth of 50% in levels of active travel. The superhighway routes were chosen to provide good coverage in areas where there are many existing cyclists and where there is the greatest potential for people to cycle to work if provided with the right facilities. The routes have been established taking a number of factors into consideration such as current and potential cycling demand, availability of highway space and wider connectivity with local routes.

Supporting measures – alongside the introduction of the superhighway infrastructure further investment was made to compliment the routes and maximise the number of trips. The measures were identified as an essential part of success as they helped to reduce the barriers to cycling, these included:

- A package of measures for businesses on or near to the Cycle Superhighways (with face to face engagement with local businesses).
- Borough funding for cycle parking, training and travel awareness activities
- Targeted interventions, covering safety, security and future commuters
- A monitoring and evaluation programme

Research conducted as part of the evaluation suggested that up to 27 per cent of the increase in cycling could be attributed to these cumulative measures (57).

Thurrock is home to many established businesses and industry, providing opportunities for partnership working and local sponsorship to create new cycling superhighways around the borough that could connect homes with key services such as workplaces and schools. The creation of these sponsored cycle superhighways will offer a genuine alternative to car journeys and provide potential for large scale modal shift in the way we travel.

7.3 What is 'best practice' in other countries?

Countries such as The Netherlands and cities such as Copenhagen rank as some of the most cycle-friendly places in the world, with participation rates much higher than the UK. Reasons for success are frequently given as 'because it's part of the culture' or 'because the land is very flat' but the evidence consistently show it is because the streets have been designed to prioritise people, not cars.

This has not always been the case, during the 1970's the Dutch had the same problems as the UK – the use of cars was growing rapidly and dominating the transport network, the difference was they developed a real rejection of urban planning that favoured cars. Since the 1980's Danish planners have had policies in place for consistently putting in walking and cycling facilities and have provided the funding to support them.

In line with the consensus across studies there is no singular intervention for success, instead they have developed a multiplicity of approaches, comprising of all the right factors. They have built environments that gives cyclist separate space to cycle, that treats people who ride bikes normally under a concept that 'the bike is right'. Extensive networks of cycle paths are clearly marked, have smooth surfaces, separate signs and lights.

They also take road safety for cyclists very seriously, design manuals classify roads depending on the speed of the cars traveling in them. If there's any major difference in speed, then full separation is required with particular attention given to infrastructure concerns at junctions, combined with pro-bicycle traffic laws, education and positive promotion.



Education plays a key role, the concept of cycling is introduced to children in nursery school where they run around on push bikes. But the biggest education is when pupils around the age of 10 and 11, start taking cycling skills courses. Cycling proficiency lessons are a compulsory part of the Dutch school curriculum. Between the ages of 11 and 12 they have to take a written exam to show that they

understand the rules of the road. They also undertake a practical exam where every year hundreds of Dutch students go out onto the street and travel on their routes to get to school, on a designated pathway. The Fietsersbond (which is their national cycling advocacy group), supports the children in real life situations. All schools have places to park bikes and at some schools 90% of pupil's cycle to class.

Cycle parking facilities are everywhere - outside schools, office buildings and shops, the railway station in the main city has spaces for 10,000 bikes.

In summary, many people cycle in the Netherlands primarily because of a supportive environment, including but not limited to high quality cycling infrastructure. The status as a nation of walkers and cyclists didn't happen because of the culture or flat land, according to the countries ministers it took three strategic steps, *'finding the capital to build the infrastructure, finding the right places and spaces for infrastructure and finding the will to change. This took a lot of hard work, a certain degree of stubbornness, and forward-thinking leaders and politicians to get where we are'* (58).

With the right conditions in place there is no reason why Thurrock cannot aim for a "Copenhagen" cycling network.

9. Funding for Active Travel

The Government's 2017 Walking and Cycling Strategy outlines targets to double the level of cycling and reverse the decline in walking by 2025 although there was no new government funding attached to the strategy.

Findings from the recent House of Commons Transport Committee report described the current funding arrangements for active travel as 'piecemeal and complex' with the government failing to provide local authorities with the certainty they need to prioritise active travel and make long-term funding commitments (59). The Government has committed £400 million per annum on active travel during the current parliament (2016-21), although there is no dedicated funding stream for each local authority and is equivalent to around 1.5% of transport spending in England (60). Independent research conducted by the Walking and Cycling Alliance estimated that to meet the Government's targets outlined in the CWIS "transport spending on active travel must immediately increase to 10% of total transport spending over the next five years".

Recent updates on funding released this year as part of a House of Commons Report (61) found that the Government's own analysis recognised need for "substantial further investment" over the next five-year period and undertook a spending review in 2020.

The Ministry of Housing, Communities and Local Government (MHCLG) provides local authorities with the bulk of their funding for local active travel, while the DfT provides discrete pots of capital funding.

In addition to government funding, capital funding for infrastructure improvements can be sought from developer contributions (section 106 in Thurrock) and other grant funded streams from the Department of Transport.

Within Thurrock (and with most areas of local authority spending), investment in active travel is not ring-fenced and money for improvements for pedestrians and cyclists comes from the overall local authority funding settlement. This means that funding competes against other local services and as a council we must therefore decide how to prioritise investment in active travel.

Covid-19 impact and Government funding review for 2020 onwards

In May 2020, the government allocated a £250 million emergency active travel fund which forms part of the first stage of a £2 billion investment in new funding announced earlier in 2020. The funding purpose is to help combat the pandemic and in the words of the prime minister *'to kick off the most radical change to our towns and cities since the arrival of mass motoring'*.

This additional funding will be allocated in 2 tranches to support local authority transport departments to increase local cycling and walking facilities.

- Tranche 1 will support the installation of temporary projects such as pop up cycle lanes and Low Traffic Neighbourhood Schemes (LTNs).
- Tranche 2 will support the creation of longer-term projects

Thurrock's local response to its individual funding allocation is currently being considered, funding from tranche 1 has already been allocated for improvements to station frontages, cycle paths and waymarking.

Furthermore, to support these additional funding measures the government is set to publish an updated Cycling and Walking Investment Strategy in 2021 to support a more transformative ambition that includes some new developments that include:

- The creation of a national cycling and walking commissioner and inspectorate
- Higher standards for permanent infrastructure
- Getting GPs to prescribe cycling and exercise
- Creating a long-term budget for cycling and walking similar to what happens for roads

Further guidance surrounding these new ambitions is set to be released in 2021. The government is keen to sustain the increased momentum towards walking and cycling generated since the beginning of the COVID-19 restrictions. The Department for Transport reported in 2020 that there was a 100% increase in weekday cycling and an increase of 200% at the weekends when compared to pre-Covid levels.

The opportunities are being created to think differently about the way we travel, how we use them to generate change within Thurrock is largely up to us.

10. Recommendations

Strategic Development

- The policy and strategy environment for active travel is uncoordinated and in some instances needing to be updated. Future action should not be left to the department with specific responsibility for transport alone, a joined up approach between transport, highways, planning, public health, environment and education is needed, with each department understanding it's opportunities to prioritise active travel.

The leadership teams should agree objectives, interventions and targets and each departmental strategy should reflect how this vision will be delivered. This will ensure active travel is embedded across a full range of policy and strategy documents to ensure it is delivered effectively.

- Planning documents for Thurrock such as the new Local Plan should include a strong advocacy for active travel while the new Design Guide (supplementary to the new Local Plan and currently in preparation) needs to set out quality criteria that includes minimum design and quality standards for walking and cycling infrastructure that must be adhered to. These standards will need to conform to the new Cycle Infrastructure Design code LTN 1/20 (the government has made this a condition in its new 2020 funding arrangements).

- Sentiments within the current written evidence of related strategies and plans does not match the delivery capacity available resulting in disparities between ambitions and/or commitments, and the work that is actually being completed. In order to achieve any improvements, active travel must be given higher priority, with longer term dedicated funding streams identified to support the delivery of such plans.

- Development of future policy should create **targets for active travel** that reflect ambitious aspirations. Consideration towards targets should be based on level of local and government funding, ensuring a match between resources and targets. However the needs of cyclists and pedestrians should be addressed before allocating targets, as targets are unlikely to be achieved if cars continue to be given priority.

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- The collective impact of active travel strategies/plans and related policies should be **measured and monitored** against any new targets and key performance indicators. The type of evidence (data) that needs to be monitored relates to the cross-portfolio outcomes that are associated with the delivery of active travel projects, e.g. air quality improvements, road safety, health benefits and local economics. Consistent monitoring will ensure we assess any progress against our objectives.

 - Priorities initially identified within the Active Travel Strategy for Thurrock 2020 would benefit from further review and refresh as part of the wider Transport Visioning and Strategy Development:
 - While the mesh density tool and route identification within the strategy provide some useful information, identification of future route priorities for cycling should take a much wider approach. We need to look at trips that aren't currently cycled, but could be, and in addition to employment and retail, the route priorities for cycling should consider a greater focus on other key destinations such as education, healthcare and local High Streets.

 - The route analysis and zones identified within the strategy require further detailed analysis i.e. are there specific barriers that prevent usage, the quality of the routes and do they take people where they want to go? Assessment could then be made for routes with the greatest potential for growing walking or cycling trips or routes which need improving. In addition to route demand, consideration should be given to the planning and delivery of walking and cycling routes to help reduce the health, economic and societal inequalities that some populations encounter. Focusing both on these inequalities and the areas with the greatest need would deliver the most benefit. **It is understood that this analysis was out of scope for the existing Active Travel Strategy and it is recommended that this is brought into scope of the future Transport Vision and Strategy.**

 - The strategy could be strengthened further with the inclusion of specific actions. It is unclear who is responsible for any of the priorities or approaches outlined within the document.

- Thurrock Councils Rights of Way Improvement Plan 2007 would benefit from complete review including an analysis of routes to identify any improvements to pedestrian access. This could be achieved through the creation of new or more direct footpath links, widening or improvements to existing footpaths and by employing measures that provide improved pedestrian security through natural surveillance, lighting and signage.
Improving the walking environment should include setting standards through design guides and applied to all new streets where there is high density activity and key walking routes.

- The Transport Strategy would benefit from refresh and core strategic review incorporating a much bolder vision for active travel in the future. Any new strategy should include measures for cycle reviews of the road systems and cycle audits of proposed traffic schemes. These should involve an objective assessment of local problems and opportunities, consistent with the overall transport strategy in the area. **A policy of reducing urban traffic and transferring carriageway space to cycling superhighways should be considered here.**

- Policy TTS11 of Thurrock's Transport Strategy identifies the extensive use of travel plans for workplaces, schools and new developments. Travel plans are only effective when recommendations are implemented effectively. In accordance with this policy *"Where travel plans have been adopted, the Council will require an annual review to analyse effectiveness of delivery and overall contribution towards travel conditions."* Monitoring of active travel is important, this element would benefit from further resource to facilitate this policy.

- The current walking and cycling infrastructure plans for Thurrock would benefit from a comprehensive review. First and foremost we must conduct a strategic walking and cycling analysis of our network (using the examples identified within section 10.1.5). Actions from the analysis should build towards the long term network, encompassing existing routes and creating or enhancing networks to local places such as key workplaces, schools, shops and healthcare facilities. This will establish a new model and any future investment should be targeted to this local Cycling and Walking Infrastructure Plan (LCWIP). These plans are currently the government's preferred approach (which enables access to funding bids). In addition it is worthy of note the government is set to announce future plans (and budgets) for active travel this year.

- Criteria for increasing levels of walking and cycling must include the delivery of safe and accessible infrastructure (identified above) combined and co-ordinated with appropriate behaviour change programmes, using planning policy, evidence based approaches and best practice. There is strong consensus across the literature that the most effective approach to increasing cycling and walking is to implement a complimentary package of measures – both hard and soft interventions. Delivery of these local approaches should be included within the updated Active Travel Strategy.

Statistical Analysis

- Further local research would be beneficial to understand and address the behavioural and motivational aspects that support people to use active travel modes. A useful starting point would be qualitative approaches working with a range of local communities to explore how people travelled to services, whether they faced challenges in reaching them and possible solutions. Insights into these aspects is an important factor to inform future strategies and facilitate increases, including the targeting of initiatives. Efforts to encourage active travel are more effective when they are tailored to local circumstances. Understanding local barriers and opportunities specific to the community will help develop initiatives that directly works around those barriers. Without fully understanding the influences of travel behaviour and their likely impacts across the Thurrock population any future policy or initiative could lead to limited success. Events such as the summer cycle marathon held at Blackshots would provide a captive audience for local surveys, these could be organised concurrently with wider community discussions.

Schools and workplaces

Schools:

- Partnership working with local schools on travel planning should continue to be developed with particular focus on performance targets (accreditations) which are audited annually and form part of delivery plans. Travel plans have been successfully introduced into most schools in Thurrock (48/52) and 10 of these accredited with Gold (3), Silver (2) and Bronze (5) status. Setting ambitious targets to increase the number of Gold-accredited schools will improve the number of children using active modes of travel.
- At present there is a significant amount of children in Thurrock not attending their local catchment school, the reasons for this are complex and would benefit from review. Travel distance is understandably a significant barrier when choosing active modes of transport.
- This report highlights culture of car use is sometimes influenced by a fear and dislike of local environments and parental responses that emphasise children's safety at the expense of developing their independence. Any interventions need to address pedestrian and cyclist safety so that children and parents feel confident to travel by these means. Interventions should include perceived risk and parental norms regarding children's independence and continued support for the provision of suitable cycle and road safety training for all pupils. Monitoring and targets to increase the number of adults and children receiving Bikeability training would help to increase uptake and improve confidence and skills.
- The refresh of the current School Transport Strategy (SMOTS) will form an essential part of a suite of strategies that will help identify strategic priorities and support a unified vision. Any actions to increase uptake should encourage united and consistent support from pupils, parents, teachers and governors ensuring a school culture where walking and cycling are the assumed modes of travel.
- The Government wants to support schools in encouraging their pupils, parents and staff to walk and cycle more often. The governments Cycling and Walking Investment Strategy sets a target to increase the percentage of children aged 5 to 10 that usually walk to school from 49% in 2014 to 55% in 2025. At present the data collated within Thurrock includes only a portion of schools and would need to be

extended to enable comparisons (and progress) with national levels. Locally, the raw data collated on school travel via the Brighter Future Survey should be aligned with data collated from School Travel Plans to allow for both convergences and comparisons.

Workplaces:

- Partnership working with local businesses will be key to encouraging a commuter modal shift. Potential new routes around existing business and growth areas should be co-developed with the businesses themselves, encouraging local 'buy in' and creating opportunities for sponsorship.

Road Safety

- Safety and perception of safety is one of the biggest considerations when choosing travel mode. The national evidence base identifies that restrictions to speed limits have consistently been cited as effective alongside the separation of cyclists from traffic. The role of dedicated cycle lanes, junction improvements, traffic calming and 20mph speed limits in residential areas should be considered where there is potential to encourage a growth in cycling or walking. Some of these elements are already a priority in Thurrock's Transport Strategy and progress should be reviewed to establish effectiveness in areas where restrictions have been implemented. Consideration towards the infrastructure model used in other areas for 'Cycling Superhighways' allows full separation of cyclists from traffic in areas where there are high speeds of traffic and should be a key consideration for Thurrock.

Funding for active travel

- The delivery of a revised Active Travel Strategy supported by a Local Cycling and Walking Infrastructure Plan (LCWIP) will establish a model for investment. Any future strategy, LCWIP or proponent documents should follow the guidance and principles set out within relevant central government guidance. Access to government funding is often dependant on specific criteria and local compliance will enable access to future funding bids.
- Securing Investment - further strategic work is needed to establish the level of funding required to achieve the recommendations within any new LCWIP or strategy, followed by an assessment of the financial options available to the Council to deliver this funding level. Whether from the revision of government funding sources/bids, a revised basis for securing Section 106 investment, local funding measures including the identification of capital costs related to the provision of additional facilities, together with analyses of committed expenditure (or all). **Funding for active travel often competes against wider transport objectives or other local services and is often not given the priority status it deserves.**

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Appendix A

Table 1 Review level evidence for effect of walking on disease incidence, disease incidence and mortality, and all-cause mortality from PHE Cycling and Walking for individual and population health benefits, a rapid evidence review for health and care system decision-makers 2018

Potential benefits of walking	Findings	Type of evidence for benefits	Quality assessment ²
All-cause mortality	A systematic review and meta-analysis (search date 2013) of cohort studies (14 studies; 280,000 people) reported an 11% (95% confidence intervals (CI) 4 to 17%) reduced risk of all-cause mortality in those who meet physical activity guidelines through walking (11.25 MET.hours/week) compared to those with no walking [14]. These findings are supported by another systematic review and meta-analysis (search date 2009) of cohort studies (five studies; 217,042 people) which also reported an 11% (95% CI 4 to 18%) reduced risk of all-cause mortality in those who meet physical activity guidelines through walking (11.25 MET.hours/week) compared to those with no walking [15].	Systematic review level (cohort)	From 14 studies, 10 scored 8 or 9/9 (none less than 7) [14]; mean 6/9 [15]
Cardiovascular disease	One systematic review and meta-analysis (search date 2007) of 18 cohort studies (459,833 people) found that high levels of walking reduced cardiovascular disease risk by 31% (95% CI 23 to 39%) compared with low levels of walking [16].	Systematic review level (cohort)	Mean score of 5.3/7
Coronary heart disease	One systematic review (search date 2007) of 11 cohort studies and one RCT (295,177 people) found a dose response relationship for walking and coronary heart disease risk. Walking for 30 minutes/day five days per week was associated with a 19% (95% CI 14 to 23%) reduced risk of coronary heart disease compared with no walking [17].	Systematic review level (cohort and RCT)	No quality assessment reported
Cancer	One systematic review and meta-analysis (search date 2012) of cohort studies (five studies; 304,123 people) reported a 3% (95% CI 2 to 5%) reduction in breast cancer risk for every 10 MET.hours/week of walking [18]. Another systematic review and meta-analysis (search date 2014) of ten studies (four cohort, one case-cohort and three case control studies; 251,693 people) reported an 18% (95% CI 3 to 31%) reduction in risk of endometrial cancer in high versus low levels of walking [19].	Systematic review level (cohort and case-control)	No quality assessment [18]; 20/33 studies scored >6/9 [19]
Type II diabetes	One systematic review (search date 2006) of cohort studies (five studies; 240,605 people) found that walking for 2.5 hours/week at a brisk pace is associated with a 17% (95% CI 9 to 25%) lower risk of developing type II diabetes compared with no walking [20]. Experimental design evidence also reports that walking is protective against progressing to diabetes [21] and improving glucose tolerance [22, 23].	Systematic review level (cohort, crossover and RCTs)	No quality assessment reported

² As reported by the review authors in included reviews. Higher scores mean better quality rating e.g. 0/9 lowest quality; 9/9/ highest quality.

Table 2 Review level evidence for the physical health benefits of walking on intermediate risk factors

Table 2 continued

	<p>Another review (search date 2007) of RCTs and observational studies (seven studies; 192 people) also found no significant effects (-0.09 95% CI -0.32 to 0.15) of walking interventions on blood lipids (average increase of 2491 steps/day in the RCTs; observation data not reported) [26].</p> <p>A third review found that physical activity can reduce postprandial lipemia [29]. Whilst the latter review was not specific to walking, Gill and Hardman [30] suggest that energy expenditure during the activity rather than either the intensity or mode of activity is the most important determinant of lowering lipids.</p>		
Haemostatic, inflammatory and immune function markers	<p>One review (search date 2015, number of participants not reported) included three cross-sectional studies and one crossover trial and found preliminary evidence for improved haemostatic, inflammatory and immune function markers with regular walking [31]. Intervention descriptions/physical activity duration and intensity were not reported.</p>	Narrative review level (cross-sectional & crossover trial)	No quality assessment
Body composition	<p>Three systematic reviews found evidence to suggest that walking can lead to improvements in body composition.</p> <p>One systematic review and meta-analysis (search date 2012) of RCTs (25 studies; 1275 people) found that walking interventions were associated with an average weight loss of -1.37kg (95% CI -1.75 to -1.00) [24]. The same review also found that walking interventions (23 RCTs; 1201 people) led to reductions in BMI of -0.5 kg.m-2 (95% CI -0.72 to -0.35), and -1.51cm (95% CI -2.34 to -0.68) reductions in waist circumference (11 RCTs; 574 participants) [24]. Intensity and duration of interventions for each outcome were not separately reported (as the review reported other outcomes) but the average walking intervention duration for the review as a whole was 18.7 weeks long (for 20-60 minutes, 2-7 days per week).</p> <p>Another systematic review (search date 2007) of RCTs and non-randomised interventions (18 studies; 562 people; number of RCTs and non-randomised interventions in each analysis not reported) found that walking (average increase of 2491 and 2183 steps/day in the RCTs and non-randomised interventions respectively) led to a -0.38 kg.m-2 (95% CI -0.05 to -0.72) reduction in BMI [26].</p> <p>Finally, a systematic review (search date 2015) of RCTs (22 studies; 1524 people) found that walking (average 46 minutes, moderate intensity for four sessions/week for 12 to 16 weeks) was associated with a -2.13kg (95% CI -3.20 to -1.06) average weight loss, a -0.96 kg.m-2 (95% CI -1.44 to -0.48) reduction in BMI and -2.83 (95% CI -4.13 to -1.53) reduction in waist circumference [32].</p>	Systematic review level (RCTs, interventions & observational)	<p>Only 2/18 studies rated as low risk of bias [24]</p> <p>No quality assessment [26]</p> <p>Predominantly moderate quality [32]</p>
Musculoskeletal health	<p>One non-systematic review (search date 2015) noted there is inconclusive evidence for walking to improve musculoskeletal health in healthy individuals, however the review did not report details of this evidence [31]. The same review identified two further systematic reviews that found evidence that walking interventions can benefit musculoskeletal health in postmenopausal women [33] and adults with chronic back pain [34], suggesting that walking may benefit individuals with impaired musculoskeletal health.</p> <p>A systematic review and meta-analysis (search date 2006) found that walking interventions had significant positive effects at the femoral neck of 0.014g/cm² (95% CI 0.000 to 0.028) (four RCTs, one non-randomised trial; 302 people) but not the lumbar spine 0.007g/cm² (95% CI -0.001 to 0.016) (four</p>	Systematic review level (for individuals with impaired musculoskeletal health) (RCTs and non-randomised)	<p>Average quality score 2/5 [33]</p> <p>3 low risk, 1 unclear, 3 high risk [34]</p>

Table 2 continued

	<p>RCTs, one non-randomised trial; 427 people) in postmenopausal women [33]. Interventions were predominantly three sessions/week, ranging from 20-50 minutes per session and 7-24 months duration. Intensity of walking was not reported.</p> <p>The second systematic review (search date 2015) of RCTs (seven studies; 869 people) found that walking is as effective as usual care in people with chronic back pain [34]. Interventions ranged from 4 weeks to 12 months and the volume ranged from 40 minutes twice/week to walking programs that were individually tailored and increased in volume each week. Intensity of walking was not reported.</p>	trials)	
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Table 3 Mental and neurological health outcomes of walking* adapted from Kelly et al., 2018 [8]*

Mental health benefits of walking	Evidence	Strength of evidence for benefits
Depression	Five systematic reviews found evidence to suggest that walking may be beneficial in both the prevention and treatment of depression. For example, one included systematic review and meta-analysis of RCTs (eight studies; 341 people) found that walking can treat clinical depression (effect size -0.86, large effect size) [35].	Systematic review level (interventions & observational)
Anxiety	Based on 14 studies (five cross-sectional, one prospective, five interventions, four acute studies), the authors found evidence that walking is beneficial for preventing and treating anxiety.	Consistent study level (interventions & observational)
Self-esteem	Evidence from 11 studies (two cross-sectional, seven interventions, four acute studies) suggests that walking interventions can have a positive effect on self-esteem but observational findings were limited.	Inconsistent study level (interventions & observational)
Psychological stress	The authors found emerging but limited evidence from six studies (two cross-sectional, three acute studies, one intervention) that walking is associated with lower psychological stress in observational studies, and that walking could be used as a potentially promising intervention to decrease psychological stress.	Study level (interventions & observational)
Psychological well-being	The evidence base is limited but promising, with three cross-sectional studies and one prospective study identifying positive relationships between walking and psychological well-being. The findings from the intervention studies are mixed with only two of seven studies demonstrating positive effects on psychological well-being compared with control groups.	Inconsistent study level (interventions & observational)
Subjective well-being	11 studies (four cross-sectional, two prospective cohort, five acute studies) indicated an association between walking and subjective well-being. The only long-term intervention study was inconclusive and further studies are clearly needed.	Inconsistent study level (interventions & observational)
Resilience	No published journal articles were identified addressing the association between walking and resilience. However, there is emerging evidence suggesting a relationship between physical activity and resilience.	-
Social isolation and loneliness	The evidence base for walking on social isolation and loneliness is limited. One cross-sectional study found a significant positive association between frequency of contact with neighbours, neighbours social support and neighbourhood involvement and participation in walking behaviour, whilst four intervention studies showed mixed evidence.	Fragmented (interventions & observational)
Neurological conditions [1]	Reduced risk of dementia, improved cognitive function, reduced feelings of anxiety and depression in healthy people and in people with medical conditions, reduced incidence of depression, and improved cognition in people with dementia.	Systematic review level (observational)

*Total number of people included for each outcome and study quality not reported in review.

*As a scoping review, there was no quality assessment of the included studies.

Table 4 Effect of Cycling on disease incidence, disease mortality, and all-cause mortality

Potential benefits of cycling	Findings	Strength of evidence for benefits	Quality assessment (systematic reviews only)
All-cause mortality	Two cohort studies found that cycling was associated with a 21% reduced risk of all-cause mortality in 67,143 women [36] and a 28% reduce risk of all-cause mortality in 30,640 adults [37]. A meta-analysis (search date 2013) of seven cohort studies (187,000 people) found that a cycling level corresponding to WHO guidelines of 150 minutes of moderate physical activity per week was associated with a 10% (95% CI 4 to 17%) reduced risk of all-cause mortality, compared with no cycling. A dose-response relationship of cycling was also estimated, which suggested that physical activity benefits per unit of cycling are about twice as high for the first 1-2 hours of cycling per week, compared with significantly more time spent cycling [14].	Systematic review level (cohort)	From 7 studies, mean score was 7.7/9 [14]
Cardiovascular disease	A review (search date 2018) identified cohort studies (12 studies; 722,407 people) and found that seven out of 12 studies reported a statistically significant reduced risk of cardiovascular disease incidence and/or mortality with cycling compared to low or no cycling, and five studies found no significant associations [38].	Review level (cohort)	No quality assessment
Cancer	A review (search date 2018) identified cohort studies (nine studies; 1,074,480 people) and found that six out of nine studies found no statistically significant association between cycling and cancer incidence, while three out of nine studies found that cycling was significantly associated with cancer incidence and mortality compared with no cycling [38].	Review level (cohort)	No quality assessment
Type II diabetes	A review (search date 2018) identified cohort studies (four studies; 193,273 people) and found that two out of four studies found a statistically significant association between cycling and reduced risk of type II diabetes compared with no cycling [38].	Review level (cohort)	No quality assessment

Table 5 Physical health benefits of cycling

Potential benefits of cycling	Findings	Strength of evidence for benefits	Quality assessment (systematic reviews only)
Cardiorespiratory fitness	<p>Three reviews were identified that reported associations between cycling and cardiorespiratory fitness. The first review (published 2011) identified two RCTs and one controlled clinical trial and found evidence to suggest that cycling benefits cardiorespiratory fitness in adults. The same review found inconclusive evidence for benefits in adolescents (two cross-sectional studies, one prospective study) [39].</p> <p>Another review (search date 2018) found four RCTs (281 people) of cycling to school/work interventions and reported that three out of the four studies found that the intervention groups significantly increased cardiorespiratory fitness [38].</p> <p>The final review (search date 2012) identified four cross-sectional and one prospective study (10,918 children) and found that cycling benefits cardiorespiratory fitness in young people [25].</p>	Systematic review level for adults; inconclusive for children (RCTs, controlled clinical trial, cross-sectional and prospective)	<p>Adults – predominantly strong; children – moderate [39]</p> <p>Predominantly moderate quality [25]</p> <p>No quality assessment [38]</p>
Blood pressure	A cohort study (23,732 people) found that cycling to work at baseline was associated with lower odds of hypertension compared with passive travel after adjusting for confounding factors [40]. A review (search date 2018) also identified one RCT (48 adults) which found no change in blood pressure following a cycling intervention [38].	Inconclusive (cohort and RCT)	No quality assessment
Blood lipids	A cohort study (23,732 people) found that cycling to work at baseline was associated with lower odds of hypertriglyceridemia (OR=0.85, 95% CI 0.76 to 0.94) compared with passive travel after adjusting for confounding factors [40].	Fragmented (cohort)	-
Body composition	<p>A systematic review (search date 2010) identified three studies (15,062 people) reporting an association between cycling and lower body weight in adults [41].</p> <p>A further review (search date 2018) identified cohort studies (four studies; 61,272) and one RCT (48 people) and found that three out of the four cohort studies showed that cycling is significantly associated with reduced risk of developing obesity and the RCT significantly decreased body fat compared with no cycling [38].</p> <p>In children, a prospective study of 890 children found that cycling to school was associated with lower body weight [42]. A randomised cycling intervention targeting young people with Down Syndrome (46 young people) found that the intervention led to reductions in BMI and percentage body fat amongst those who successfully learned how to ride a bicycle, however 44% of the intervention group did not learn how to ride a bicycle during the training period [43].</p>	Review level (interventions & observational)	<p>Mean score 3.7/10 [41]</p> <p>No quality assessment [38]</p>
Musculoskeletal health	A systematic review (search date 2012) of observational and intervention studies (31 studies; 2922 people) examined the evidence on cycling and bone health. The authors concluded that "from our	Systematic review level	Mean score 4/7
	comprehensive survey of the current available literature...road cycling does not appear to confer any significant osteogenic benefit." [44]	(interventions & observational)	

Appendix B

Further notes on government funding for active travel

There is widespread concern about the extent to which funding has been distributed across the country. The Local Government Association has stated that the Government's focus has been on funding for 'cycling demonstration towns', 'cycling towns' and then 'cycling ambition cities', but this has not been replicated nationally, stating that funding for active travel needs to be made available to all local authorities.

LGA's have been told that, as a further spending review setting Government spending limits will be agreed shortly.

Other points worthy of note:

Earlier this year the Walking and Cycling Allianceⁿ together with the former Minister for Transport said further investment would be needed if the Government was going to meet its targets set out in the strategy. In response, the DfT confirmed *"it will shortly be informing local authorities and others what future funding will be available in 2020/21 for various Government-funded walking and cycling schemes. And goes onto state that longer-term funding decisions will be a matter for the next Budget and the 2020 Spending Review.* Further note – the impacts of the pandemic are likely to affect this statement.

Appendix C

Local Walking and Cycling Infrastructure Plans

The Government has stated that *"LCWIPs are used by Local Authorities to identify and prioritise investment for cycling and walking schemes from local funds and relevant national funding streams, such as the Highways Maintenance Fund, Integrated Transport Block, Transforming Cities Fund, Future High Streets Fund, Housing Infrastructure Fund and the Clean Air Fund. Decisions on future funding for cycling and walking will be made in the context of the forthcoming Spending Review"*.

The Government has produced guidance for local authorities on preparing Local Cycling and Walking Infrastructure Plans (LCWIPs). These plans are intended to help local transport authorities take a long-term approach to identifying and delivering interventions fit for their own local areas. Local authorities are not required to adopt an LCWIP, but the Government has said that it is "keen that as many areas as possible do so". Phil Jones, an independent transport planner who is helping a number of local authorities develop these plans, said that LCWIPs are "seen by DfT as the main vehicle for delivering the aims and objectives of [its] Cycling and Walking Investment Strategy".

To help local authorities develop these plans, the Government has provided funding for technical support—which includes study visits and training for highway engineers. This was made available on a competitive basis; 78 local authorities in England expressed an interest in the support, and 46 received it. Guy Boulby, Head of Cycling and Walking at the DfT, told

ⁿ The Walking and Cycling Alliance, made up of the Bicycle Association, British Cycling, Cycling UK, Living Streets, Ramblers and Sustrans.

LGA that the local authorities receiving this support covered about 40% of the population of England.

Local Government Association (LGA) comment:

While the guidance on and support for developing LCWIPs has been largely welcomed some local transport authorities complained that support had been insufficient. Kent County Council stated that they had not been one of the first local authorities to receive support to develop an LCWIP, which disadvantaged districts in their area who had matched funding available to invest in active travel and needed help earlier. Brighton and Hove City Council, said that they had bid for but not been successful in securing support for developing an LCWIP, and that more support in this area would be helpful. The then Minister told LGA that the Government had a role in assessing how LCWIPs were being implemented, with a view to rewarding good behaviour, best practice and consistent investment.

The Head of Cycling and Walking at the DfT, told LGA that LCWIPs were a pilot programme at present, and that the 46 authorities currently being supported were the first tranche although it is not clear what plans the Department has to further role out this support. Phil Jones, an independent transport planner said that the Government should require local authorities to produce local plans for active travel, so that there was a duty to plan for walking and cycling.

LGA comment - If LCWIPs are to be the main mechanism by which the Government's Cycling and Walking Investment Strategy will be delivered, it is important that the Government has a clear plan for encouraging local authorities to develop LCWIPs.

Appendix D

Methodology Notes

The National Travel Survey (NTS) is administered by the DfT and is a household survey designed to provide a rich source of data on personal travel. In 2017, the sample size was around 6,000 households and 14,000 individuals.

The Active Lives Survey (ALS) is a push-to-web survey administered by Sport England and is used to derive official estimates of participation in sport and physical activity. The ALS had a sample size of around 180,000 adults in England in mid-November 2017 to mid-November 2018, the survey enables analysis at local authority level.

The National Travel Attitudes Study (NTAS) is a survey of public attitudes about travel and transport. It is asked of people who have previously responded to the National Travel Survey (NTS) and who have consented to being contacted for further studies. This has the advantage of allowing a comparison between attitudes to travel and actual travel behaviour. The sample size in this first wave of the NTAS is only based upon NTS respondents between January 2018 and June 2018. This first wave has approximately half the sample size expected in future years, and as the years progress the survey size is expected to continue growing. Consequently for the first wave, the NTAS sample size is lower than BSA sample size, apart from a selected module of questions (for example, NTAS0301/ATT0324)

Categories for Escort or other escort – definition escorting another person for example walking or cycling with a child to school.

British Social Attitudes (BSA) Survey is conducted by National Centre for Social Research (NatCen), and has been running since 1983. Questions are asked of a probability sample based upon postcode across England, Scotland and Wales. Between 2002 and 2018 questions on transport were procured by the DfT. Between 2002 and 2017 all BSAs were conducted in a face-to-face interview, including the use of computer-assisted personal interviewing (CAPI). For the final year of DfT transport questions being included on BSA, some questions were asked instead via self-completion. All individual responses are weighted to allow inferences about the general public. For the 2018 BSA (which is currently unpublished), - DfT questions were on Version A, C and D of BSA - Total achieved BSA sample size for the versions the DfT questions were on is 2,873 - Fieldwork was carried out between July and November 2018.

Census Data

Distance travelled to work:

This applies to the distance in kilometers between a person's residential postcode and their workplace postcode, measured in a straight line. Derived distances that result in a distance travelled that exceeds 1200km are treated as invalid and a value is imputed. A distance travelled of 0.1km indicates that the workplace postcode is the same as the residential postcode.

'Work mainly at or from home' is comprised of those that ticked either the 'Mainly work at or from home' box for the address of workplace question or the 'Work mainly at or from home' box for the method of travel to work question.

'Other' includes no fixed place of work, working on an offshore installation and working outside of the UK.

Distance is calculated as the straight line distance between the enumeration postcode and the workplace postcode.

Method of travel to work:

The method of travel used for the longest part, by distance, of the usual journey to work. This topic is only applicable to people who were in employment in the week before the census.

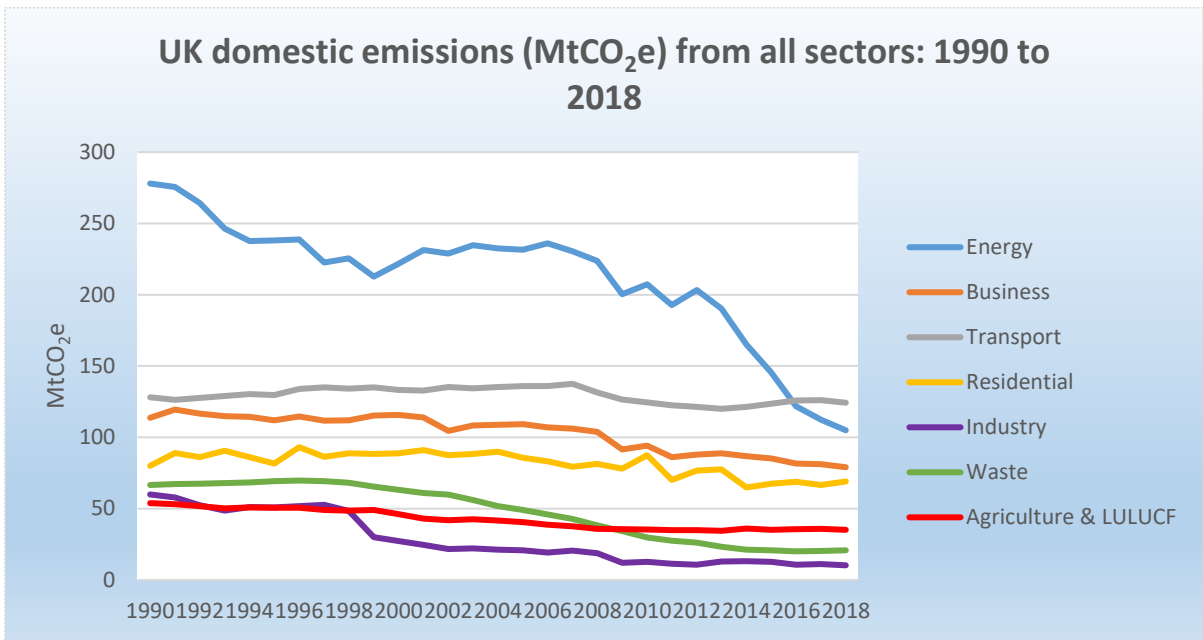
'All other methods of travel to work' includes 'Motorcycle; scooter or moped', 'Taxi', 'Passenger in a car or van', 'Bicycle', 'On foot' and 'Other method of travel to work'.

Appendix E

Transport and climate change

It is estimated that about a third of the UK's greenhouse gas emissions come from transport (62), and is now the single biggest contributor to poor air quality. (63) Short journeys of less than 8 kms (a distance that could be cycled by many) contributes to 20% of all car related carbon dioxide emissions (those related to climate change) (WYLES, 2016).

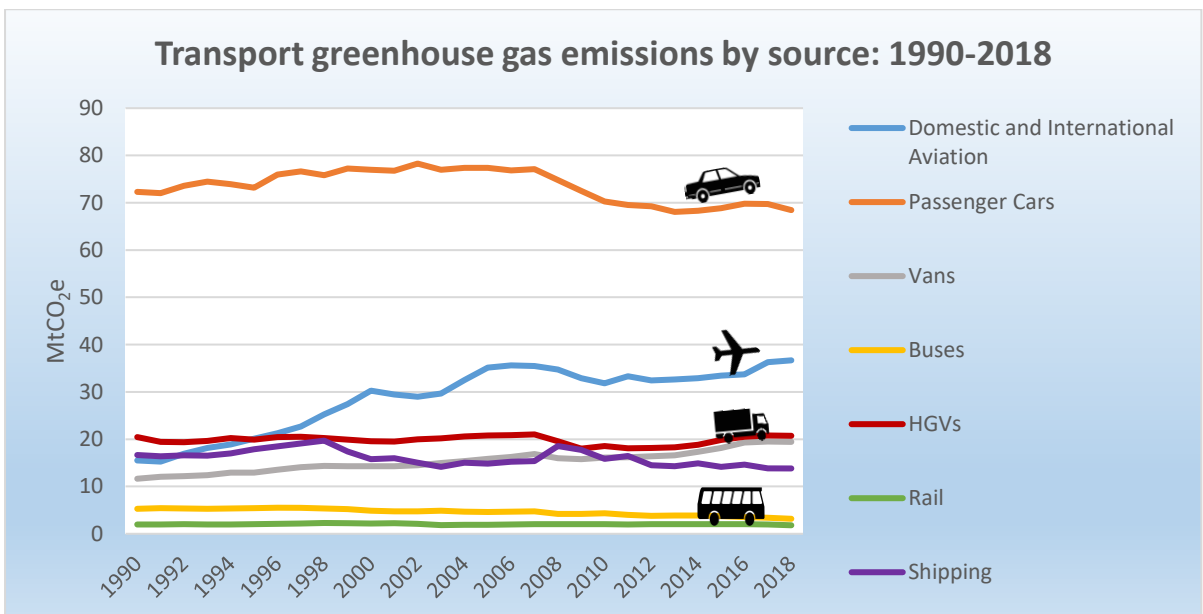
Domestic and international carbon dioxide emissions: 1990 to 2016



*LULUCF: Land Use, Land Use Change and Forestry
Source: DfT 2020

Regional composition shows 79% of traffic flows are comprised from cars and 20% are goods vehicles. There has been a 3% decrease in car emissions since 1990, even though car traffic rose by 22% over the same period. This can be partially attributed to cars becoming more fuel efficient and are set to fall even further if government ambitions for electric vehicles and active travel are met.

During the same period, van traffic almost doubled, from 24.8 to 49.2 billion vehicle miles, mainly due to the growth in home delivery services.



Source: DfT 2020

New cars powered by petrol or diesel are to be banned from 2030, although second hand cars will stay on the road, the Climate Change Committee (CCC) estimates that by the end of this decade electricity will power 43 per cent of all cars, and by 2035 this will have doubled.

Populations from lower income groups tend to live in areas of the highest pollution but contribute least to transport pollution with the most polluted streets home to some of the poorest communities (64).

Active Travel Needs Assessment

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