

Low Traffic Neighbourhoods

Research report

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Executive Summary

In July 2023, the Prime Minister asked the Department for Transport (DfT) to conduct a review of Low Traffic Neighbourhood (LTN) schemes. The review was to cover schemes in England introduced since March 2020 with a focus on those funded by DfT.

DfT commissioned Ipsos UK to conduct a programme of research to build an evidence base covering the impacts of LTN schemes, the local engagement and consultation processes followed by councils in the development and implementation of schemes, and the views of local communities and businesses impacted by LTN schemes. The research programme involved the following components:

1. A review of existing evidence, drawing on literature covering UK and international precedents.
2. Analysis of a survey of local authorities undertaken by DfT.
3. A survey of residents affected by LTNs living within four scheme areas.
4. Interviews with a small selection of stakeholders identified and recruited by DfT.

This summary provides an overview of key findings from each component. Further details about the methodology for each component have been appended along with more detail about LTN schemes.

1. Review of existing evidence

The review was designed to bring together the evidence that is available on impacts of LTNs in the UK, and similar schemes in the UK and internationally.

The methodology for the review of the impacts of LTNs was comprehensive and systematic, designed to encompass a wide variety of literature including both academic and grey literature¹. Search terms included various categories such as intervention terms, thematic terms, and disaggregation terms to capture the impacts of LTNs on specific demographic groups. The inclusion of grey literature, where the methodology was deemed rigorous enough, aimed to provide an understanding of LTNs from multiple perspectives.

The review of existing evidence assessed impacts thematically with key findings summarised below. As more research about LTNs is published, this will increase the confidence and nuance of findings:

- **Motor vehicle travel.** The available evidence from the UK indicates that LTNs are effective in achieving outcomes of reducing traffic volumes within internal roads². However, results for boundary roads³ are mixed, with some seeing increases in traffic volumes.
- **Economy.** To date, there is not rigorously researched and published evidence to understand the economic impacts associated with LTN schemes.

¹ Grey literature represents non-peer reviewed papers and reports that are not published in academic journals.

² Internal roads represent the residential roads within LTNs.

³ Boundary roads are the main roads that surround LTNs.

- **Access.** The evidence focussed on access for the London Fire Brigade and the experiences of disabled people; the review found that LTNs do not adversely affect response times for emergency vehicles. The literature showed mixed impacts for disabled people. Whilst some report a variety of positive impacts, many have struggled to access benefits of LTNs and adjust to the changes.
- **Environment.** LTNs have succeeded in improving air quality on internal roads but this benefit has not always been shared with boundary locations which show a mix of minimal reductions, no reductions and some increases in emissions of air pollutants.
- **Active travel.** Evidence from UK LTNs indicates that schemes' impact has been mixed with some positive evidence of increases in the time spent travelling actively - walking and cycling - and others showing little to no change. The evidence also does not indicate whether increases are a result of a higher number of people engaging in active travel or increased time among those already engaged.
- **Quality of life.** Directly, there is evidence that there has been less street crime and improved road safety within LTNs, but ongoing research is needed to draw more conclusive findings. Indirectly, improvements in air quality and increased active travel support findings of higher levels of quality of life within LTNs.

2. Survey of local authorities

In September 2023, DfT wrote to approximately 130 Local Highway and Transport authorities in England with an invitation to complete a survey about LTN schemes. The Department received 42 survey submissions among 130 invited to take part. Of these, 26 reported details of LTN schemes implemented in their area and 16 reported zero LTN schemes (four submissions were additionally received via email). A total of 99 schemes were identified by responding authorities. Ipsos used univariate and multivariate analysis, presented in this report.

The survey provided some insights about the usage and effectiveness of various schemes. 82% of LTN schemes remain in place with 18% subsequently removed. The most common type of Traffic Regulation Order (TRO) was found to be an experimental one, which has since been made permanent. Active travel uptake was the most common primary justification for implementation. Understandably, schemes reporting social distancing as a justification were the least likely to remain in place.

The survey asked Local Authorities about the reasons for removing schemes and the nature of exemptions applied. Objections from residents and lack of active travel uptake were the most reported reasons for scheme removal, with removal also the result of reduced need for social distancing. The survey found that the most frequently applied exemption⁴ was related to emergency services (69%), while the least common exemption was related to taxis (11%). Schemes with exemptions were most likely to remain in place.

The survey also asked Local Authorities about their LTN-related engagement activities. On average, implementation of each LTN scheme involved 4.5 engagement activities, indicating authorities'

⁴ Exemption means types of vehicles and drivers that are permitted to pass through low traffic neighbourhoods, for example blue badge holders, taxis or emergency services.

endeavour to reach out to communities in a variety of ways. The most popular reported engagement activities included web-based consultation and questionnaires.

A number of Penalty Charge Notices (PCNs) have been issued during the lifetime of the schemes. From the 36 schemes that reported numbers of PCNs, an average of 36,459 have been issued per scheme. An average of 5,707 were challenged and 2,745 overturned, though it is unknown whether the rate of issuing PCNs has changed as LTNs have been active for longer. Among schemes which reported issuing PCNs, a higher proportion remained active, and engagement with different stakeholders at the design stage was higher. It should be noted that not all these PCNs necessarily constitute fines levied. Some may have taken the form of warnings for first offences or offences committed in the early stages of a scheme's implementation.

3. Residents' experience and attitudes

The survey involved sampling addresses within four LTN scheme areas:

- Birmingham: Lozells Places for People
- London: Arlington Road Camden
- Wigan: Worsley Mesnes
- York: Navigation Road

A total of 1,852 residents aged 16+ completed a 'push-to-web' survey during October-December 2023 generating an unadjusted response rate of 15%⁵ although response varied considerably by area (detailed in this report). An invitation to take part in an online survey was mailed to addresses, followed by a reminder mailing which included a postal survey as well as repeating the invitation to take part online.

Data was weighted at aggregate level by key demographics and at scheme level to reflect their respective population sizes. Findings are based on all answering; blank responses via postal returns have been excluded. They are subject to confidence intervals (further information is available in the appendices).

The survey captured perceptions which may or may not reflect reality. It is also likely that variations in perceptions between the four areas chosen were influenced by differences in their demographic profile as well as the type of schemes and the way they have been implemented.

There was low awareness of schemes. On average, across the schemes, a higher proportion of residents admitted to being unaware that there was an existing LTN before completing the survey than said they were aware - 58% compared to 34%.

⁵ An unadjusted response rate makes no allowance for ineligible addresses sampled by chance.

Awareness was, however, much higher in London than elsewhere. There, 50% said they were aware of the local scheme, 40% were unaware, and the remainder were unsure. On average, awareness of the four schemes was higher among older age groups, men, and those opposed to the local LTN.

A quarter, 26%, of those who said they were aware of the local scheme recalled previously sharing their views on the scheme with their local council. Overall, 13% of residents said they did this, 17% agreed they had an opportunity to do it, and 18% felt that residents' views had influenced decisions made by the council about schemes.

There were mixed views about the impact of LTNs and many residents continue to live with traffic-related problems. Higher proportions of residents thought LTN schemes have made a positive difference to traffic volumes, traffic noise, air quality, the choice of transport modes and the safety of walking and cycling, than thought they have made a negative difference. However, most thought they have made no difference or answered don't know. For example, 24% of residents were positive about the impact of the local scheme on the number of vehicles travelling through their local area and 20% were negative, but 35% thought the scheme had made no difference and 20% answered don't know.

Across the four areas, an average of two-thirds, 66%, considered traffic congestion to be a very or fairly serious problem within one mile of where they live. Half, 54%, saw the number of vehicles travelling through their area as a very or fairly serious problem. The same proportion considered traffic fumes to be a problem.

Most residents feel schemes have had no impact or aren't sure. On average, 29% of residents agreed that the local scheme had made living where they do more pleasant but 36% thought it had increased journey times to frequently visited places and 41% that it had added traffic congestion and queues to nearby roads. Residents were more opinionated about these potential impacts than other ones included in the survey⁶ but, again, significant proportions perceive the local scheme to have made no difference or answered don't know.

Similarly, higher proportions thought their scheme had given them more encouragement to use different modes of transport, particularly travel on foot and using public transport than thought it had discouraged them (the exception was travelling by car). The same was true of visiting local shops and cafes/restaurants/bars. However, in all cases, the most common answer was that the scheme made no difference.

Levels of support for local LTN schemes are higher than levels of awareness and perceived personal impacts. Opinion was split on the difference schemes have made to people personally. On average, 21% thought their local scheme had made a positive difference to them personally while the same proportion considered its impact on them had been negative.

While average awareness was 34% and perceived positive personal impacts was 21%, support across the four areas for the existing local LTN was higher at 45%. Support was relatively high in London and York - 53% and 50% respectively - and lower in Birmingham and Wigan - 39% and 41%. In all areas, a higher proportion of residents were supportive than opposed.

⁶ These were: helping to create a sense of community; making it easier to access local facilities; increasing anti-social behaviour e.g. vandalism to planters.

4. Stakeholders' perspectives and experiences

Ipsos conducted six interviews during November and December 2023 with a selection of stakeholders chosen by DfT to provide balanced input from core groups affected by LTNs; ADEPT (the Association of Directors of Environment, Economy, Planning & Transport – i.e. officers in local government), the RAC Foundation (transport policy & research organisation), Living Streets (a charity for everyday walking), DPTAC (Disabled Persons Transport Advisory Committee - an independent expert committee established by the Transport Act 1985 that provides advice to the government on the transport needs of disabled people), and the Metropolitan Police. An additional stakeholder - a regional ambulance service - requested anonymity.

Stakeholders across the sample felt LTNs were introduced in a rush. They reported limited time for organisations to be consulted and for local authorities to engage properly with residents. Stakeholders felt this has led to friction between those delivering the schemes and the public, and some errors in delivery. Stakeholders stressed genuine community engagement was needed, such as door to door consultation or local meetings, all of which was not possible during the pandemic.

Stakeholders in transport related organisations thought there was a disconnect between the transport sector's views of LTNs and those of the public. They felt that LTNs had been introduced with good intentions and the schemes would ultimately benefit local areas. While stakeholders recognised public backlash towards some schemes, there was a recognition this could be driven by certain groups rather than the wider public. An officer in local government said that before 2020 they had rolled out schemes with nearly the same features as LTNs, but were called 'traffic management schemes', which had been less contested because of the administrative framing and the time allowed for consultation. Another view was that LTNs would benefit from a more human framing, such as "people-friendly streets".

Stakeholders across the sample stressed that they do not yet know the impact of LTNs, nor would they expect to for several years because benefits were perceived to be more long term than short term. They said there was little evidence, partly because time and funding weren't available to conduct thorough evaluations, and also recognising that it would be difficult to separate effects of the pandemic and other contextual factors from those of LTNs. Conversely, the stakeholder at the everyday walking charity cited peer-reviewed academic literature, as well as some work conducted with local authorities to understand people's experiences on the ground.

Conclusions

The components of this programme of research for DfT's review have provided different perspectives and insights considering the impacts of LTNs, the process for creating them, and the views of residents and stakeholders.

While the review of existing evidence showed that LTN schemes have had several positive impacts, albeit with more uncertainty in terms of economic ones, this remains largely unrecognised by stakeholders or residents (in the four scheme areas where survey research was conducted).

Low awareness of the schemes among residents and uncertainty about benefits, does not automatically translate into widespread opposition. Similarly, stakeholders struggled to point to tangible, positive impacts but expected benefits such as greater sustainable transport use and improved air quality to be realised with more time (although they identified some likely adverse effects too such as potentially greater CO2 emissions if people need to travel longer distances navigating LTNs).

In some cases, there are tensions between evidence and perceptions. For example, the evidence suggests that impacts (positive or negative) on boundary roads are minimal, but residents are more likely than not to think that schemes have added traffic congestion and queues to these nearby roads.

Stakeholders were worried about the controversial nature of the schemes. According to DfT's survey, objections from residents featured among commonly reported reasons for closing schemes (alongside reported failure to increase active travel to date). The survey of authorities showed multiple engagement activities had been undertaken but stakeholders identified inadequate engagement and communication with residents and affected groups as an important issue. Stakeholders felt this had contributed to LTNs having an image problem.

In summary, this research has found a mixed picture in terms of LTNs' *measurable* impacts at least in the short-term plus a degree of uncertainty in terms of *perceived* impact. These are related factors and underline the importance of collecting robust evidence over time as well as achieving better communications. Being able to demonstrate positive impacts ought to improve the reputation of LTNs. So too would improvements to community engagement, awareness and understanding.

2. Review of existing evidence

The purpose of the existing evidence review was to bring together the evidence that is available on impacts of LTNs in the UK, and similar schemes within the UK and internationally. Alone, it was not intended to provide a conclusive view on the merits of LTNs but to add to the shared understanding of current evidence and its availability, and what impacts are being realised.

The evidence review provided in this chapter discusses UK LTNs specifically. Additional, wider supporting evidence from similar schemes and international interventions that formed a part of this review has been appended. This literature explores the same themes but through interventions such as car free zones or pedestrianised areas. Whilst these interventions share some objectives and implementation methods with LTNs, there are also some distinctions that make direct comparison more complicated.

The methodology for the review of the impacts of LTNs was comprehensive and systematic, designed to encompass a wide variety of literature, both academic and grey. Search terms included various categories such as intervention terms, thematic terms, and disaggregation terms to capture the impacts of LTNs on specific demographic groups. The table below provides a high-level overview of search categories. The inclusion of grey literature where the methodology was deemed rigorous enough, aimed to provide an understanding of LTNs from multiple perspectives. This resulted in a long list of 72 papers.

Intervention terms	Thematic terms		Demographics of interest
Low-traffic neighbourhood	Travel impacts: local and boundary	Congestion levels, traffic, Journey times, Journey costs	Gender Age (older and youth) Disabled people Ethnic minorities Socio-economic group
Car-free zones Pedestrianisation/ pedestrianised areas/ pedestrian zone	Economic impacts: local and boundary	Property/land values (residential and commercial), gentrification, displacement. local business, transportation employment types (taxi, delivery etc.), visitors/tourism	
	Access	Emergency services, disabled people	
Superblocks	Environment: local and boundary	Emissions, noise and air pollution	
Traffic calming	Active travel	Time spent walking/cycling, Number of people walking/cycling, wheeling, modal shift, multimodal travel, active travel	
	Quality of life: local and boundary	Road safety, crime, health, community, anti-social behaviour, mobile services (e.g. health), equity	

The review applied a systematic method to identify and select a broad range of academic literature as well as grey literature where this was assessed to be sufficiently rigorous. Methodological rigour was assumed where papers were peer reviewed and published in academic journals. For grey literature we assessed the appropriateness of the method applied in relation to the objective of the paper including an assessment of sample sizes used, use of control groups and type of analysis approach.

To address the learning needs of the review, search categories were based on intervention types, impact themes and demographic characteristics. The aim of the final selection was to create a balanced view of

LTN impacts by minimizing bias and including multiple perspectives. Both numbers (quantitative data) and detailed experiences (qualitative data) were used to understand LTN impacts. Among the initial list of 72 papers, 26 were selected for the final review due to their range of impacts, methods, and authors.

However, there were limitations to the approach. Of the 26 papers selected, 18 were specifically related to LTNs. Of these, 16 were focussed on London LTNs with one paper on evidence from Oxford and another providing UK-wide evidence, meaning that the findings have geographical limitations. The quality of studies included also varied, with some relying on less rigorous methodologies. For example, some studies had small sample sizes, short timelines and/or did not include controls for results. More information is available in table A1 in the appendices. Significant gaps in UK-based research around key impacts of LTNs are evident, especially around economic impacts related to property prices and local businesses. While international research provided valuable insights, it may not be directly applicable to the UK due to differing contexts.

Research into LTNs is new and ongoing. The wealth of grey literature available varies in quality and, while valuable for understanding diverse experiences and opinions on LTNs, they are often not based on robust enough evidence to draw confident findings. As a result, there are gaps in what can be currently concluded about LTNs.

2.1 Scope of impacts included in the review

LTNs are designed to reduce traffic and create safer environments. These initiatives can have a variety of impacts on various aspects of urban life. The existing evidence review focussed on impacts related to changes in motor vehicle travel, local economy, accessibility, environment, active travel, and quality of life. A summary of this evidence is available in the executive summary and is discussed in more detail in the following section.

Schemes' impacts, whilst discussed separately in this report, are often intertwined, each influencing and being influenced by the others. As such, where impacts are reported against one theme, this may be supported by findings in another or help lead to conclusions where evidence isn't available. For example, if there are fewer vehicles on the road in LTNs, you might expect that to be accompanied by reductions in air pollution. Some additional hypotheses on these interrelations, as they relate to themes explored in this review, are described below.

Economic impacts are closely interrelated with travel impacts. For instance, LTNs, by reducing traffic, can potentially increase property values within the neighbourhood and increase footfall from pedestrians and cyclists for local businesses. However, this is contingent upon how the LTN is perceived and whether it has led to increased congestion in surrounding areas. On the other hand, the economic implications of LTNs may also include unintended consequences such as increased transport costs due to longer journey times or less footfall from car-dependent visitors potentially impacting local businesses.

The accessibility of certain areas can be significantly affected by LTNs, linked to both economic and travel impacts. LTNs have the potential to enhance safety and accessibility for pedestrians and cyclists by minimizing traffic. However, in some matters of execution, they could unintentionally pose difficulties for emergency services and impair mobility for disabled people who depend on vehicles, thereby affecting residents' quality of life. Moreover, displacement of traffic to outer roads can potentially affect access for residents living near but not within the LTNs.

Finally, the environmental, active travel, and quality of life impacts of LTNs are interrelated. By reducing traffic and emissions, LTNs can contribute to a cleaner, safer environment within schemes. This in turn can encourage active travel and improve quality of life. For instance, safer streets may lead to increased walking and cycling, offering health benefits and further reducing emissions. Economic impacts can also serve as proxy measures for quality of life. For example, we are unlikely to see that quality of life worsens but property prices increase, and vice versa⁷. However, it is important to consider potential challenges, such as accessibility issues for certain groups and how the benefits of LTNs are distributed.

2.2 Reported impacts based on available evidence

a) Motor vehicle travel

The available evidence from the UK indicates that LTNs are effective in achieving outcomes of reducing traffic volumes within their zones while impacts (positive or negative) on boundary roads appear to be minimal.

One paper titled *The Influence of Low Traffic Neighbourhood Scheme on Multimodal Traffic Flow in London* studied the effect of three LTNs on multimodal traffic flow in London, specifically during the COVID-19 pandemic. The researchers used a mobile phone application dataset to examine the changes in multimodal traffic flow caused by the public following the introduction of LTNs. The study covered three LTNs in London from 4th May to 30th August 2020. The analysis confirmed that the LTN scheme could limit through-traffic, reporting reductions in car travel in two LTNs, Dulwich and Hilltop. The third case, Soho West, found that car traffic was not as constrained by LTN intervention, in part due to the availability of other pass-through routes available within the intervention area. It is also worth noting that Soho West is not a predominantly residential neighbourhood, while Dulwich and Hilltop are, which may have an impact on the way motor traffic has changed because of the LTN.

The research paper *Evaluation of low traffic neighbourhood (LTN) impacts on NO₂ and traffic* assessed the effect of LTNs on traffic volume in the London Borough of Islington, UK. The study made use of a generalised difference-in-differences approach to evaluate the effects. This methodology is used to evaluate the impact of an intervention comparing the difference in outcomes in treatment sites (those receiving the intervention) and control sites (those not receiving the intervention) over the same time period whilst adjusting for other factors – for example Covid-19. The findings of the research revealed that LTNs led to a significant decrease in traffic within the designated areas. Specifically, the average traffic volume reduced by 58.2% at internal sites (inside the LTNs) which was statistically significant. In the boundary areas (roads surrounding the LTNs), there was an average decrease in traffic volume by 13.4%, but this change was not statistically significant. However, the impacts on specific boundary roads

⁷ Some examples exploring the connection between economic impacts and quality of life in the papers below. These papers have used metrics related to crime, noise, and safety, among others, in the analysis of property values.

Tan, M.J. and Guan, C. (2021). Are people happier in locations of high property value? Spatial temporal analytics of activity frequency, public sentiment and housing price using twitter data. *Applied Geography*, 132, p.102474. doi:<https://doi.org/10.1016/j.apgeog.2021.102474>.

Abelson, P.W. (1979). Property prices and the value of amenities. *Journal of Environmental Economics and Management*, 6(1), pp.11–28. doi:[https://doi.org/10.1016/0095-0696\(79\)90018-4](https://doi.org/10.1016/0095-0696(79)90018-4).

Braakmann, N. (2016). The link between crime risk and property prices in England and Wales: Evidence from street-level data. *Urban Studies*, 54(8), pp.1990–2007. doi:<https://doi.org/10.1177/0042098016634611>.

have been mixed, with some areas experiencing no impacts and others experiencing an increase in car traffic.

Another study - *Changes in motor traffic inside London's LTNs and on boundary roads* - examined traffic data from 46 LTNs in 11 London boroughs analysing both internal and boundary roads. The study compared the observed changes in motor traffic to the expected changes based on existing trends in three "zones" in London; Central, Inner, and Outer. Of the 412 internal road count sites, 303 (73.5%) saw a decline in motor traffic, compared to 109 (26.5%) which saw an increase. For the 175 boundary road count sites, 83 (47.4%) saw a decline in motor traffic, against 92 (52.6%) which saw an increase.

For internal roads within the LTNs, the findings were significant. The mean baseline of 1,780 vehicles per day reduced to 930, translating to a 47.8% reduction in daily car traffic volume. However, over the same period, changes were less pronounced on boundary roads. The median baseline of 11,034 vehicles per day slightly increased to 11,074. The mean baseline of 11,706 vehicles per day reduced slightly to 11,505, indicating a minor decrease of 201 vehicles per day. This indicates that in some locations, LTNs may be displacing traffic to boundary roads resulting in increases whilst in others LTNs may have supported a modal shift resulting in fewer journeys by motor vehicles overall.

A study published in 2024 - *Evaluating the impact of low traffic neighbourhoods in areas with low car ownership: A natural experimental evaluation* - employed a controlled natural experimental design to assess the effects of three LTNs in Brunswick Park, North Peckham, and East Faraday in Southwark, London. These were measured against matched control areas with no street changes. Traffic, walking, and cycling were monitored using automatic counters and video monitors before LTN implementation and one year afterwards. The study found that Brunswick Park and North Peckham experienced significant reductions in traffic volumes and speeds within the intervention areas, with decreases in traffic volumes of 56% and 61% respectively. There was no significant change in motor vehicle traffic in East Faraday. After a year, average traffic volumes on boundary roads increased slightly or remained unchanged compared to the baseline in all monitoring locations.

b) Access and equity

Our review focussed on access for the London Fire Brigade, the experiences of disabled people, and the equitable distribution of LTNs. We found that LTNs have not adversely affected response times for emergency vehicles. There has been a mixed response among disabled people, but many have struggled to access benefits of LTNs and adjust to the changes. With regards to equity, conclusions on access to LTNs shows equity in placement but the distribution of benefits remains unresearched.

The London Fire Brigade has target response times; the first engine should arrive at the location within 360 seconds, and the second engine within 480 seconds. The data showed that all areas at both 'pre' and 'post' time points of the LTN implementation were comfortably within these targets. There was no evidence to suggest that the introduction of LTNs was associated with a change in the response times for either the first or the second attending engine. Moreover, a separate document from the London Fire Brigade stated that there has not been any noticeable impact on their attendance times due to the LTN schemes established in 2020.

The available research suggests that LTNs have had variable impacts for disabled people although specific evidence is limited. Transport for All published a study, *Pave the Way*, which provided findings from a qualitative survey of 84 disabled people impacted by LTNs in London. The report coded the qualitative responses of those surveyed to present trends in impacts. This paper represents the only

study that looks specifically into the impacts of LTNs on disabled people. The sample may not be representative of disabled peoples' views, and findings should therefore be treated as indicative rather than conclusive. The report touches on many aspects of LTNs with just some of the findings discussed here.

The paper found that LTNs have had a significant impact on the lives of those surveyed. 83% of participants felt strongly impacted by LTNs, although opinions were polarised on whether those strong impacts were positive, or negative.

About 82% of participants in the 'Pave the Way' study expressed concerns about traffic, with 50% perceiving an increase in traffic levels and 54% a decrease⁸ since the implementation of a local LTN. 33% of participants felt that traffic had been diverted from one area to another, leading to a decrease in one area and an increase in another. Additionally, 41% of participants raised the issue of pollution, with 23% perceiving an increase and 22% a decrease in pollution levels.

Respondents highlighted some negative impacts of LTNs on disabled people. 42% identified specific issues related to navigating LTNs such as planters causing pavement obstructions when placed in front of dropped kerbs for wheelchair users and poor use of signs. Barriers to active travel or cycling were discussed by 45% of the participants, citing issues such as the high cost of adapted cycles, education, cultural attitudes, and impairment-based barriers. 77% of disabled residents reported an increase in journey times due to the introduction of LTN schemes and 46% reported that their journeys had become more difficult. Journeys became more exhausting for 26% of participants, and 26% also reported increased expenditure on petrol or taxis. 33% of participants reported an increase in traffic danger, and 17% reported a negative impact on mental health.

The report also highlights some positive impacts of LTNs on disabled people. For instance, 18% of participants reported a decrease in traffic danger, 17% reported a decrease in noise, and 14% reported that their journeys had become easier or more pleasant. Some participants also reported benefits to their physical health (4%) and mental health (5%) due to the LTNs. However, the report stresses the need for more inclusive and accessible solutions, with the perspectives of disabled people at the centre of the conversation. Many respondents indicated that some discomfort resulting from the introduction of LTNs could have been avoided through proper consultation and better communication of changes to give time to prepare.

In terms of equity in access to LTNs, the paper *Equity in new active travel infrastructure: A spatial analysis of London's new Low Traffic Neighbourhoods* evaluates the fairness in the distribution of LTNs across London, particularly those established during the COVID-19 pandemic. The authors conducted a spatial analysis correlating the introduction of LTNs with various demographic and socio-economic factors using data from the 2011 Census and the 2019 Index of Multiple Deprivation.

They discovered that 3.7% of London's population resides within an LTN and 8.9% live within a 500-meter radius of one. The study highlighted a 2.5-fold likelihood of LTN presence in the most deprived areas compared to the least deprived. The analysis indicated that Black Londoners were about 5% more likely to live within an LTN than White Londoners, who had a 3.6% likelihood, while Asian Londoners had a reduced likelihood compared to White residents, at 2.9%. The study found that those living in boundary

⁸ Respondents were asked to provide perceptions across multiple areas, as such some reported both increases and decreases.

areas were demographically similar, but caveated this finding because researchers were unable to fully isolate residents on the boundary roads and exclude neighbouring streets.

Despite the generally equitable distribution of LTNs at the city level, there was significant variation at the district level⁹, with some districts implementing LTNs more equitably than others. One limitation noted by the authors is the reliance on 2011 Census data due to the lack of more current demographic data, which may not reflect recent changes in demographics and car ownership patterns. Additionally, while the study outlines the broad patterns of equity in LTN distribution, it does not delve into the long-term impacts of these interventions on active travel behaviour and whether these changes are sustained over time. The authors advocate for continued use of equity metrics in the planning and assessment of active travel interventions to ensure benefits are shared across all societal groups.

c) Environment

LTNs have succeeded in improving air quality on internal roads but this benefit has not always been shared in boundary locations.

The study *Evaluation of low traffic neighbourhood (LTN) impacts on NO2 and traffic* examined the impact of LTNs on air quality, measuring Nitrogen Dioxide (NO₂) levels, in the London borough of Islington, UK. Using a generalised difference-in-differences approach for analysis, the study found that LTNs contributed to a significant reduction in air pollution levels. For internal roads, the study observed a statistically significant reduction in average NO₂ concentrations by 5.7%. In the boundary areas (roads surrounding the LTNs), there was also a statistically significant decrease in average NO₂ concentrations of 8.9%.

A further study, *Urban Planning for Better Air Quality: A case study of the Low-Traffic Neighbourhoods in London*, mirrored these results. The research utilised air pollution sensors to measure levels of Nitrogen Oxides (NO_x) and Particulate Matter (PM₁₀), two significant air pollutants, both within and outside the boundaries of three LTNs. The findings revealed a substantial reduction in these pollutants' levels after the LTNs were implemented. Similar reductions were also observed in areas not designated as LTNs, implying that other factors, potentially the COVID-19 lockdowns, might have contributed to these decreases. While there was variability in reduction levels across the different boroughs, the overall trend pointed towards a positive impact of LTNs on air quality. However, the study concluded that more research is needed to fully understand the long-term effects and efficacy of LTNs in improving air quality, particularly in a post-pandemic context.

Oxford City Council's Air Quality Annual Status Report for 2022 described the introduction of East Oxford LTNs. The report found that the LTNs contributed to a decrease in NO₂ levels on internal roads. LTN areas recorded a higher rate of reduction in levels of NO₂ (23.75% decrease from 2021-2022 on sites with available data) compared to other areas in Oxford (8% decrease from 2021-2022). However, the evidence demonstrates mixed effects on boundary roads with some locations seeing increases or no change in NO₂ levels. For example, in Oxford, boundary roads St Clement's Street and The Plain saw a 10% increase in 2022, suggesting that there may have been traffic displacement because of the LTNs.

⁹ Districts refer to Local Authority Districts which are London's 33 boroughs.

d) Active travel

Evidence from UK LTNs indicate that schemes' impacts have been mixed with some positive evidence of increased time spent travelling actively - walking and cycling - and others showing little to no change. The evidence does not indicate whether increases are a result of a higher number of people engaging in active travel or increased time among those already engaged.

The Impact of Low Traffic Neighbourhoods on Active Travel, Car Use, and Perceptions of Local Environment during the COVID-19 Pandemic looks at the impact of 'emergency' LTNs that were set up during the COVID-19 pandemic, compared to longer-standing mini-Holland LTNs, on active travel. The study used longitudinal survey data and found that both types of LTNs had similar increases in active travel (such as cycling and walking) and improvements in perceptions of the local environment for cycling.

The paper reports an increase of between 58 to 69 minutes of active travel activity per week in both emergency and mini-Holland LTNs. There was no supporting qualitative assessment on the context of this increase. However, the confidence intervals were wide due to small sample sizes, and the effects were only borderline statistically significant. The study also suggests that the active travel impacts of the long-standing LTNs grew larger over time.

The paper *The Influence of Low Traffic Neighbourhood Scheme on Multimodal Traffic Flow in London* discovered that the implementation of LTN schemes resulted in a minor increase in residential cycling flows in all three LTNs. However, the study also reported varying degrees of decline in walking flows across these neighbourhoods. Future investigations are recommended to further understand these variations and the factors influencing them.

These findings are supported by a Transport for London report. The report finds that LTNs implemented as part of Transport for London's Streetspace programme have significantly influenced active travel behaviours among residents. A pilot survey in Lambeth's Railton Road LTN revealed that 44% of respondents reported walking more, 19% running more, and 36% cycling more due to the LTN, indicating a positive shift towards active travel options.

The study *Evaluating the impact of low traffic neighbourhoods in areas with low car ownership: A natural experimental evaluation* discussed in the motor vehicle travel section above found that, while Brunswick Park and North Peckham experienced reductions in traffic volumes and speeds, there was no overall significant increase in walking and cycling in the intervention areas. In East Faraday, there was an increase of 430% in children walking despite no significant change in traffic volumes, possibly due to the modal filter placement and pavement widening near a school. The study suggests that while modal filters in LTNs can effectively reduce traffic and potentially improve safety for existing pedestrians and cyclists, they did not significantly encourage an increase in active travel such as walking and cycling in the short term.

e) Quality of life

Quality of life comprises a range of themes. Directly, there is evidence that there has been less street crime and improved road safety within LTNs, but ongoing research is needed to draw more conclusive findings.

The paper - *Short-Term Association between the Introduction of 2020 Low Traffic Neighbourhoods and Street Crime, in London, UK* - examines the impact of LTNs on street crime. The researchers conducted

a comparative analysis of crime rates between October 2020 to February 2021 with the same months in 2018/19 and 2019/20. Their analysis excluded Central London and certain high-crime regions, focusing on 1,166,243 crimes in 4,672 Lower Super Output Areas (LSOAs) in Inner and Outer London.

The study found that in Inner and Outer London, total street crime, excluding antisocial behaviour, fell by 12%, and direct attacks on the person fell by 4% in October-February 2020/21 relative to the same period in the previous two years. In Inner London, total street crime excluding antisocial behaviour fell by 17% in LTN areas, slightly more than in surrounding areas. In Outer London, total street crime fell by 17% in LTN areas, greater than the decrease in surrounding areas or the rest of Outer London. The authors concluded that crime trends in and around new 2020 LTNs were similar to, or more favourable than, the wider background trend, suggesting no evidence of crime displacement. However, they note that the pandemic's impact on street crime patterns warrants further analysis since COVID-19 restrictions have eased.

Road safety has also seen improvements with the introduction of LTNs. In London, there was a substantial decline in road traffic injuries within LTN areas during their initial months of implementation. The paper - *Impacts of 2020 Low Traffic Neighbourhoods in London on Road Traffic Injuries* - investigates the effects of LTNs implemented in 2020 on road traffic injuries in London. The study used police injury data from October-December 2018/2019 (pre) compared with the same period in 2020 (post) to make the assessment. The findings showed a substantial reduction in road traffic injuries within the LTN areas, with a 50% decrease in absolute numbers of road traffic accidents, with a ratio of 0.51 relative to the rest of London. Analysis in patterns of change between the years 2018 and 2019 also showed that there was no favourable pre-existing trend in LTN areas.

The study also found no evidence of changes in injury numbers or risk on LTN boundary roads. However, as with the crime study, the authors recommend that future follow-up assessments of injury impacts are required once the LTN schemes have had more time and the impacts of the COVID-19 pandemic on travel behaviours subside.

There is no direct evidence of health impacts in the context of UK LTNs, although increases in active travel and improved air quality point towards potential positive health outcomes and higher quality of life.

2.3 Unreported impacts

As mentioned at the start of this section, some LTN impacts were not evidenced in UK-based LTN literature. As a result, we could not currently provide findings on these themes as they relate specifically to the LTN context. Table 2.1 below provides an overview of the major gaps found.

Some of these themes are discussed in wider literature that deals with the impacts of pedestrianisation and other active travel infrastructure in both the UK and internationally. As part of this study, we reviewed 8 papers of this nature and drew some findings on these themes. This evidence is provided as an appendix.

Table 2.1: Evidence gaps

Broad theme	Specific area
Economic impacts	Impacts on local business turnover and footfall. Property values
Environment	Noise pollution
Quality of life	Other types of crime (beyond street crime), health
Equity	Distribution of impacts of LTNs (e.g. active travel)

3. Survey of local authorities

The survey sought to gather information about how many and what type of LTN schemes exist, as well as other information including rationales for implementation and removal and levels of consultation. The survey asked about DfT-funded schemes introduced since March 2020. It focused on Local Highway and Transport Authorities as the bodies with powers to introduce LTNs.

Approximately 130 authorities were invited to take part in September 2023, and the Department received 42 responses including four received via email, although three of the email responses are not included in the analysis below as the information provided was not aligned with the survey questions. Of these, 26 reported details of LTN schemes implemented in their area and 16 reported zero LTN schemes. Analysis was undertaken by Ipsos, and a breakdown of key findings is provided below.

Further details of the methodology are appended.

3.1 The number and nature of schemes

Table 3.1 shows that a total of 99 schemes were identified by responding authorities. Unless otherwise stated, the tables presented will include data from all LTNs reported on, regardless of whether they remain in place or have been removed. Table 3.2 shows the justification for LTNs, increasing the uptake of active travel and improving air quality and road safety were the most cited justifications for schemes.

Table 3.1: Number of responding authorities and schemes

	No.
Total number of authorities	23 ¹⁰
Total number of regions	8
Total number of schemes	99 ¹¹
Average number of schemes per authority	4
Average number of schemes per region	12

Table 3.2: Reported justification for schemes

	Yes
Active travel uptake?	74
Air quality?	70
Road safety?	70
COVID-19 social distancing	56
Other justification?	33

Other themes identified as reasons for implementing an LTN included: reducing travel times, improving quality of life, allowing residents to access homes while eliminating detouring traffic, mitigating flood risks, augmenting green infrastructure and biodiversity, supporting low-cost travel, boosting local

¹⁰ Three responses received via email provided information that did not correspond to survey questions and are not included for the majority of the analysis.

¹¹ Ealing submitted an email response asserting 9 LTNs with 7 removed, these responses are reflected in this table and tables showing schemes in place/removed but are not counted elsewhere except when calculated for number of authorities responding.

businesses, and facilitating outdoor dining. Some of these initiatives were part of broader strategies like the Central 6 Masterplan in Warrington, or Camden stating alignment with the policy objectives of TfL.

Table 3.3 shows that the vast majority remain in place (82%).

Table 3.3: Number of schemes in place or removed

	Yes	No
LTN is in place?	81	18

Reasons for variation in the implementation of LTNs are often multifaceted and explained by specific local needs. There will also be multiple reasons for the decisions to remove schemes. The points below provide an overview of the reasons provided by authorities for schemes being removed:

- Objections from residents and lack of active travel uptake were among the more commonly reported reasons for removal. Concerns for surrounding network was one concern cited by residents.
- Three schemes in one London borough had plans for a replacement of the LTN with a similar but upgraded version which has been delayed due to political reasons. One kept the scheme but in a reduced state due to lack of funding.
- One scheme reported objections from road users (as opposed to residents) as a reason for closure of the LTN.
- Two schemes in one authority cited “political decision” as the reason for closure.
- One authority stated that the scheme was no longer necessary following the lifting of Coronavirus restrictions.
- One scheme said that the LTN was insufficient in terms of achieving traffic reduction objectives as other residential routes were available to drivers who chose to divert this way.

Table 3.4 shows that the average cost of a scheme was £258,551 with construction costs exceeding development costs¹². The lowest cost of an LTN was cited as £3,200, the highest cost was £1,498,873.

Table 3.4: Scheme cost

	Average cost
Scheme total	£258,551
Scheme development	£77,781
Scheme construction	£171,981

Table 3.5 details the measures used by LTN schemes and Table 3.6 shows the traffic signing used.

Traffic signs – particularly Diagram 619 'no motor vehicles' – and/or physical features were cited as the most frequently employed LTN measures.

¹² Question did not specify if costs include or exclude VAT.

Table 3.5: Scheme measures

	Number of LTNs
Traffic signs	81
Physical features	81
Enforcement cameras	42
Other	9

Table 3.6: Traffic signage

	Yes	No	N/A
Diagram 619 'no motor vehicles'	60	9	0
Diagram 616 'no entry'	19	39	1
Diagram 953 'buses and cycles only'	4	55	3
Diagram 618.3C & variants 'pedestrians & cycle zone'	7	55	1
Other	19	28	4

According to Table 3.7, the most reported exemption was applied for emergency services (69%) and the lowest was for taxis (11%)¹³.

Table 3.7: Exemptions applied

	Exemption applied	Exemption not applied	NA
Permit holders	22	46	3
Blue badge holders	38	34	3
Emergency services	62	11	3
Taxis	10	57	2
Buses	25	37	6
Other	43	12	3

Other groups identified as exempt from adhering to LTN rules included: coaches for school swimming due to access requirements; certain retailers for loading access on pedestrianised streets; services vehicles; Special Educational Needs and Disabilities (SEND) transport and organisations that solely transport people with access or disability needs; professional carers whose ability to provide care is significantly impaired by an LTN; nursery and school staff; certain delivery and trade people; health workers, and carers; waste disposal; and special care services.

Some exemptions may be subject to specific conditions or require applications, and certain access may be maintained via alternative or special routes only.

Table 3.8 shows that the most common type of TRO (Traffic Regulation Order) was an experimental one since made permanent.

¹³ Some LTNs are designed to be enforced with immovable physical barriers making them incompatible with exemptions.

Table 3.8: Use of TROs

	Yes	No	N/A
Experimental	31	28	5
Temporary	6	43	5
Permanent	6	40	4
Experimental, since made permanent	44	14	1

3.2 Penalty Charge Notices (PCNs)

Table 3.9 shows the number of schemes issuing PCNs and the number of authorities involved. All authorities reporting issuing PCNs in the survey are located in Greater London. Table 3.10 shows the number of PCNs issued over the lifetime of the LTNs, representing multiple years of PCNs. As the survey asked about PCNs over the lifetime of the LTN, analysis is unable to identify trends in the number of PCNs being issued (i.e. whether this is increasing/decreasing).

Table 3.9: Use of PCNs

	No.
Number of schemes issuing PCNs	42
Number of authorities issuing PCNs	8
Average number of schemes issuing PCNs per authority	5

Of the 42 schemes issuing PCNs, 36 provided numbers of PCNs issued.

Table 3.10: PCNs issued

	No.
Total number of PCNs issued	1,312,526
Average number of PCNs per scheme	36,459
Minimum number of PCNs per scheme	83
Maximum number of PCNs per scheme	170,413

Note: not all of these PCNs necessarily constitute fines levied. Some may have taken the form of written warnings for first offences or offences committed in the early stages of a scheme's implementation.

Information on PCNs challenged was provided for 34 schemes.

Table 3.11: PCNs challenged

	No.
Total number of PCNs challenged	194,023
Average number of PCNs challenged per scheme	5,707
Minimum number of PCNs challenged within a scheme	18
Maximum number of PCNs issued within a scheme	32,330

Information on PCNs overturned was similarly provided for 34 schemes. Overall, 48% of PCN challenged were overturned.

Table 3.12: PCNs overturned

	No.
Total number of PCNs overturned	93,319
Average number of PCNs overturned per scheme	2,745
Minimum number of PCNs overturned per scheme	18
Maximum number of PCNs overturned per scheme	25,609

3.3 Engagement activities

Table 3.13 details the engagement activities undertaken by schemes and Table 3.14 shows which groups were engaged. 90¹⁴ schemes responded to the survey, meaning that they undertook an average of 4.5 activities.

Table 3.13: Engagement activities

Type of activity	Yes	No	Don't know or N/A
Web based consultation	79	6	5
Questionnaires	64	9	17
Focus groups and workshops	49	21	20
Community mapping	43	19	28
Public meetings	41	26	23
Local community meetings	39	25	26
Representative polling	24	40	26
Street stalls	20	41	29
Computer generated animations	15	47	28
Citizens' panel	9	49	32
Consensus building	4	54	32
Open space technology	1	57	32
Planning for real	0	58	32
Citizens' juries	0	58	32
Other	21	31	38

Table 3.14: Number of schemes carrying out multiple engagement activities

No. of engagement activities	No. of schemes
0	2
1	12
2	5
3	3
4	10
5	24
6	7
7	10
8	11
9	1

¹⁴ Not including the 9 Ealing LTNs previously mentioned

Table 3.15: Groups engaged

	Yes	No	Don't know or N/A
Residents	82	6	2
Local businesses	80	6	4
Disability groups	77	10	3
Emergency services	70	14	6

Table 3.16: Equality Impact Assessments (EqIAs)

	Yes	No	Don't know or N/A
LTNs carrying out EIA	68	11	11

3.4 Multivariate analysis

Ipsos used univariate and multivariate analysis. The commentary and tables provided above draw on univariate analysis i.e. analysis of a single variable. Tabular outputs from the multivariate analysis which considered multiple variables simultaneously, are appended. A brief selection of findings is provided below:

PCNs

- Local authorities were more likely to issue PCNs in LTNs where they had engaged with residents during design (out of all schemes that engaged with residents, 57.1% included PCNs, out of all schemes that did not engage with residents, 20% included PCNs).
- A higher percentage of schemes within which local authorities issued PCNs remain in place compared to others.

Physical and design features

- All schemes in the East of England and North East remain in place, all schemes in the South East except in Greater London also remain in place. The North West has the lowest proportion of schemes still in place.
- Schemes that did not carry out an EqIA were less likely to remain in place.
- Schemes reporting social distancing as a justification were least likely to remain in place amongst justifications provided.
- Of the 42 LTNs that include the use of enforcement cameras as a supporting measure for traffic signs, 41 were in London and 1 was in East of England. Schemes that did not employ enforcement cameras in support of traffic signs are least likely to remain in place relative to any other physical feature.
- Schemes that did not include exemptions for emergency services are least likely to remain in place, and those that include exemptions for permit holders, blue badge holders, taxis and buses are most likely to remain in place.

Engagement

- Schemes in the North West reported the lowest levels of engagement (besides the North West, only London-based schemes reported not engaging with one or more groups).

- Schemes which did not engage with emergency services and disability groups were least likely to remain in place. Similarly, those that engaged with various local groups were most likely to remain in place.

4. Survey of residents

Ipsos designed a survey to gather the insights of residents already living within existing LTN schemes. This involved sampling 12,723 addresses within four LTN scheme areas:

- Birmingham: Lozells Places for People
- London: Arlington Road Camden
- Wigan: Worsley Mesnes
- York: Navigation Road

A total of 1,852 residents aged 16+ completed a survey during October-December 2023 using a 'push-to-web' methodology. An invitation to take part in an online survey was mailed to addresses, followed by a reminder mailing which included a postal survey as well as repeating the invitation to take part online. This generated an unadjusted response rate of 15%¹⁵ although response varied considerably by area, shown in Table 4.1:

Table 4.1: Breakdown of response rate (RR) by area

LTN scheme area	Achieved	Sent	% RR
Birmingham	320	3,100	10.3%
London	391	3,100	12.6%
Wigan	465	3,060	15.2%
York	676	3,463	19.5%

Data are weighted at the aggregate level by key demographics and at scheme level to reflect their respective population sizes. This means that opinion in Birmingham will have a stronger influence on the aggregate picture than opinion in Wigan because there are more residents within the Birmingham scheme area than in Wigan.

Findings are based on all answering each question; blank responses via postal returns have been excluded. They are subject to confidence intervals (further information is appended). Caution should also be exercised when drawing conclusions from the analysis of certain sub-groups, such as business owners, due to the small sample size.

The survey captured perceptions and findings that are likely to reflect the nature of local demography and the variation in this between areas, as well as differences in the type of LTN schemes and their implementation.

¹⁵ An unadjusted response rate makes no allowance for ineligible addresses sampled by chance.

4.1 The local area and perceived problems

Survey respondents were shown several traffic-related aspects in their local area and asked to indicate if they thought each was a problem or not. The most significant problem was **traffic congestion**; two-thirds (66%) of residents considered this to be a very or fairly serious problem. Although **insufficient car parking spaces** was perceived as a problem by just under six in ten (57%) of residents, fewer (26%) thought that the number of **cycle parking spaces** was a problem.

More than half of residents considered **difficulty crossing the road as a pedestrian** (60%), **the number of lorries travelling through their local area** (57%) and **traffic noise** (51%) to *not* be a very serious problem or not a problem at all.

There were some differences between schemes:

- While more than half of residents in London (63%) and Birmingham (55%) reported that **traffic fumes** were a problem within their local area, fewer than half of residents in Wigan (47%) and York (44%) believed this to be the case.
- Residents in Wigan and York were significantly less likely than average (47%) to perceive **traffic noise** as a problem; 40% and 36% respectively compared to 51% in London and 50% in Birmingham.
- Residents in Birmingham were significantly more likely (53%) than those in York (22%), London (21%), and Wigan (20%) to believe that **insufficient car parking spaces** was a very serious problem.
- Residents in Birmingham were also significantly more likely than average to report **vehicles parking on pavements** as a problem; 67% compared to an average of 50%.
- **Perceptions of the speed vehicles travel** as a problem differed between scheme areas. Fewer than four in ten residents believed this was a problem in London (37%) and York (36%), compared to around six in ten in Birmingham (63%) and Wigan (59%).

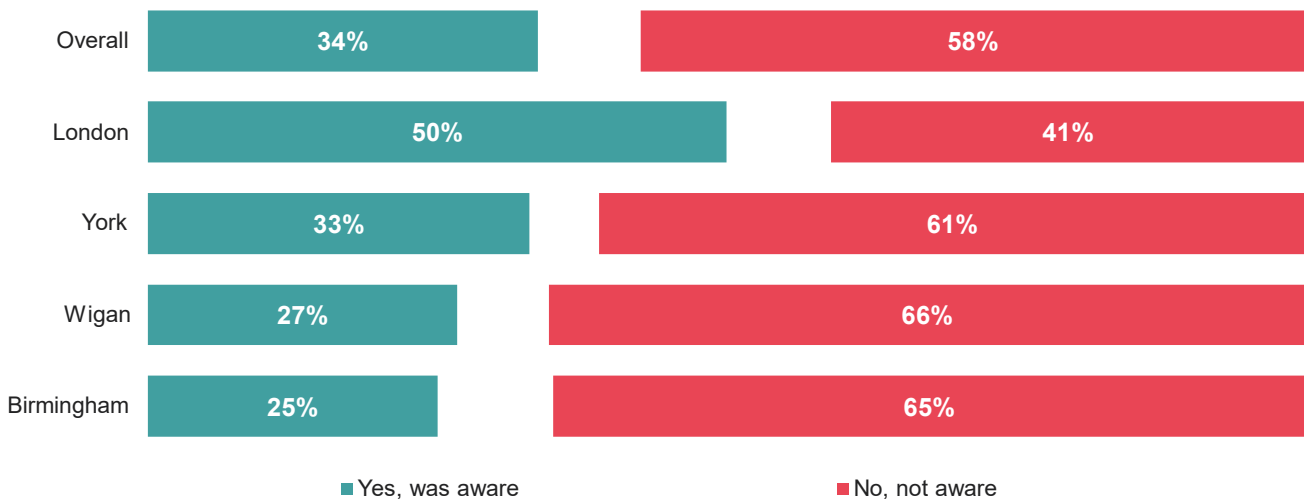
4.2 Awareness of and engagement with LTNs

Respondents were given this description of LTNs as an introduction to a question measuring awareness:

Low Traffic Neighbourhoods, sometimes known as LTNs, are a type of transport scheme which aims to remove or reduce motor vehicle traffic in a residential area. These include traffic restrictions shown by traffic signs or by means of physical features such as planters. Residents and visitors can still get in and out of the area, and access their homes and businesses by motor vehicle, but they may have to change their route.

As shown in Figure 4.1, across the four schemes, most residents (58%) said that they were unaware of an existing LTN scheme within their local area. A third (34%) were aware of a scheme. Awareness levels were highest in London (50%) but lower in York (33%), Wigan (27%) and Birmingham (25%).

Figure 4.1: Awareness of local LTN scheme



Q9: Before today, were you aware that there is an existing Low Traffic Neighbourhood scheme in your local area, or were you not aware of this?

Base: All answering (1,833): Fieldwork dates: October-December 2023

Across the four schemes, fewer than one in ten residents (7%) *strongly* agreed that they had the opportunity to share any views on their existing LTN with their council, one in ten (10%) *tended* to agree. A quarter (25%) *strongly* disagreed, twice the proportion who *tended* to disagree (13%). An identical proportion said that they didn't know (24%) and two in ten (20%) neither agreed nor disagreed.

Between a third and just under half either *strongly* or *tended* to disagree; 33% in London, 37% in Birmingham, 42% in York and 46% in Wigan.

Overall, across the four schemes, just under two in ten (18%) agreed that residents had influenced decisions made by the council while a quarter (24%) disagreed.

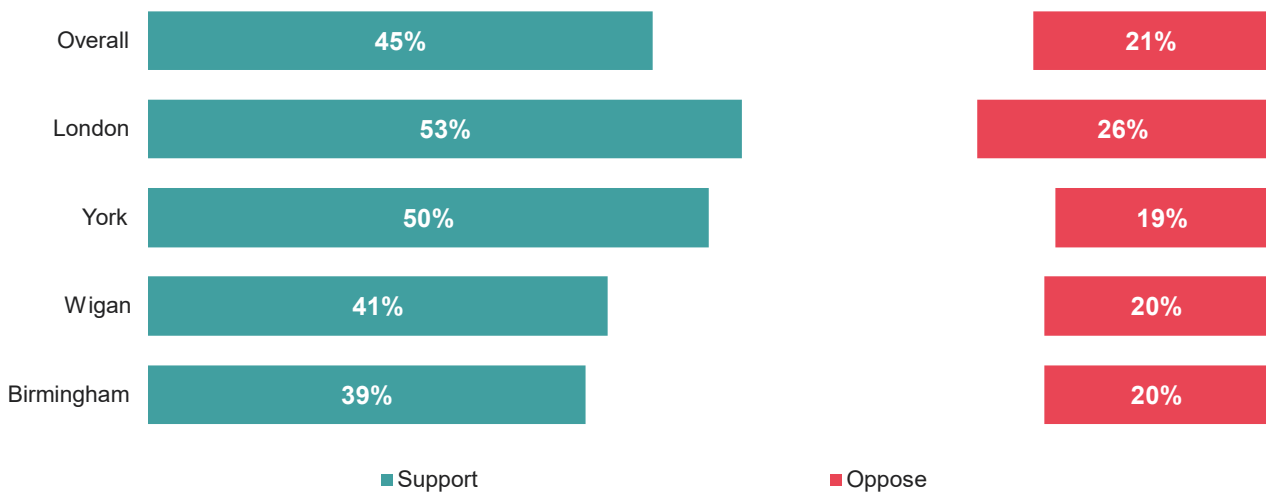
Residents in Wigan were more likely than elsewhere to disagree that residents had an influence on decisions made by the council; 31% compared to 24% in London, 23% in Birmingham, 20% in York. Nearly half (46%) in York said that they didn't know, compared to 35% in London, 33% in Wigan and 30% in Birmingham.

4.2 Support for local LTN schemes

Respondents were asked about their support for the existing LTN scheme in their local area. Response options included strongly oppose, tend to oppose, neither support nor oppose, tend to support, strongly support and don't know.

Twice as many residents supported the existing scheme in their local area (45%) as opposed it (21%). A quarter (23%) felt neutral about their local scheme, indicating that they neither supported nor opposed it (a further 11% gave a don't know answer).

As shown in Figure 4.2, support was the highest in London and York where half of residents supported the local scheme – 53% and 50% respectively. While smaller proportions of residents in Wigan (41%) and Birmingham (39%) supported their local scheme, these proportions were significantly larger than those opposed; 20% in both areas.

Figure 4.2: Support for local LTN scheme

Q10: To what extent do you support or oppose the existing Low Traffic Neighbourhood scheme in your local area?
 Base: All answering (1,835); Birmingham (316); London (388); Wigan (459); York (672):
 Fieldwork dates: October-December 2023

Support for the existing LTN scheme in their area exceeded opposition to a similar degree among all age groups, among men and women, and those with and without a disability or health condition. However, it exceeded opposition to a greater degree among non-car owners, bicycle owners and those who preferred to walk rather than drive for short trips, and by a lesser degree among residents who own a car as well as those who said they were aware of the scheme.

Supporters of the existing LTN scheme were relatively more likely than opponents to recognise many of traffic-related problems described in section 4.1 above. For example, while six in ten supporters (62%) considered traffic fumes to be a very or fairly serious problem, the proportion was lower among opponents (46%). There was a similar level of recognition among supporters and opponents in terms of traffic noise, the speed of vehicles and insufficient cycle parking spaces. Scheme opponents were relatively more concerned than supporters with vehicles parking on pavements and insufficient car parking spaces.

Respondents were asked about reallocating road space for pedestrians and cyclists (this question preceded the question measuring awareness of the local LTN scheme and support for it). Response options included strongly oppose, tend to oppose, neither support nor oppose, tend to support, strongly support and don't know.

Thinking about the local area where you live - that is the area within about 1 mile of your home (approximately a 3-minute drive, 20-minute walk), in principle, to what extent do you support or oppose reallocating space on roads so that it is available to pedestrians and cyclists rather than cars?

Support was marginally higher for reallocation (37%) than opposition (33%). However, a quarter of residents (25%) neither supported nor opposed this, and one in twenty said they didn't know (5%). Levels of strong support exceeded those of strong opposition in all four areas.

Residents in York (53%) and London (44%) were significantly more likely to be in support of reallocation while those in Wigan (29%) and Birmingham (28%) were significantly less likely.

4.3 Perceived impacts

Respondents were asked questions about the impact of the existing LTN. One question, shown in Figure 4.3, asked them to agree or disagree with a series of statements. Another question, shown in Figure 4.4, asked them whether the scheme had made a positive or negative difference in several respects. In each case, respondents were given the option to indicate they felt the scheme had made no difference or were neutral in their impacts, or to answer don't know.

Residents' opinion was divided about whether the LTN schemes had made a **difference to them personally**. While two in ten (21%) believed their local scheme had made a positive difference, an identical proportion believed that the schemes had a negative impact. Just under a third (31%) believed that the schemes have made no difference to them at all; 27% said that they don't know the difference they had made.

Residents in London - who exhibited higher levels of awareness of a local scheme - were the most polarised about this issue. They were most likely among residents in the four areas to believe that the local LTN had made a 'positive' difference to them personally (28%) and to judge its effects as 'negative' (28%).

As shown in Figure 4.3, residents were mostly undecided about the impact that the LTN schemes had made. A higher proportion of residents agreed (29%) than disagreed (23%) that their LTN scheme had made living in their neighbourhood **more pleasant**. However, almost half were either neutral and answered that they neither agreed nor disagreed (32%) or didn't know (16%).

In London, residents were more likely to agree; four in ten (41%) believed that the local scheme had made their neighbourhood more pleasant. Compared to elsewhere, a significantly larger percentage of residents in York (27%) said they did not know.

Residents were divided about whether their local LTN scheme had helped to create a **better sense of community** in the neighbourhood. More residents disagreed (27%) than agreed (22%), however, just under a third (31%) were neutral and two in ten (21%) said they did not know.

Opinion was also divided over whether **anti-social behaviour** had increased because of the local scheme (respondents were given a specific example – "e.g. vandalism of planters"). While 23% of residents agreed it had increased since the existing scheme's introduction, a similar 21% disagreed. One in four (26%) did not know, and three in ten (31%) neither agreed nor disagreed.

There were some differences between areas. Residents in Birmingham (29%) and Wigan (25%) were more likely to agree that anti-social behaviour had increased compared to those in London (19%) and York (12%). As with other types of impact, residents in York were more likely than average to have said they did not know; 41% compared to an average of 26%.

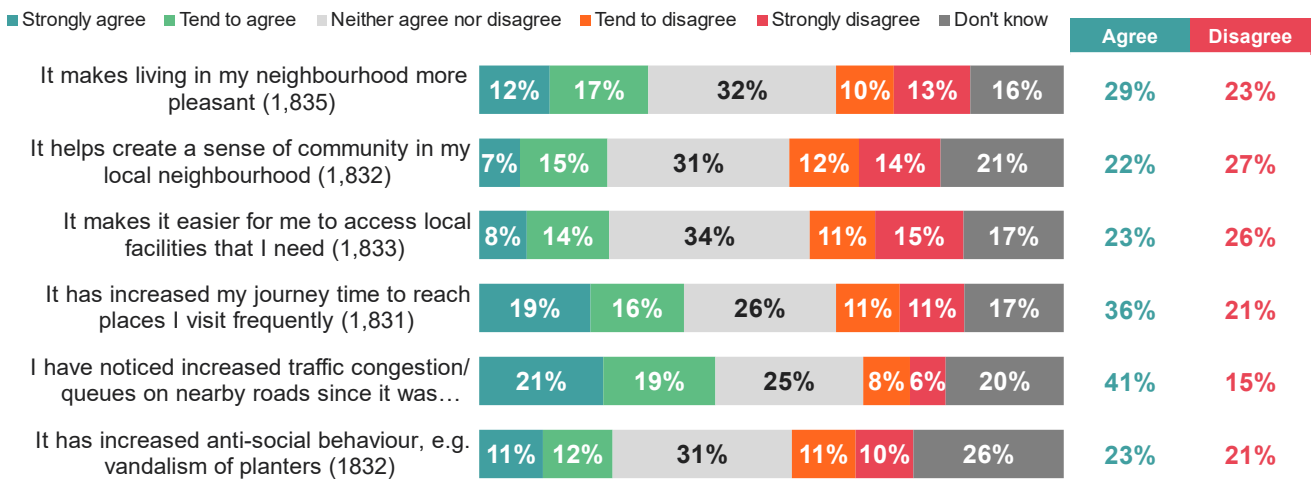
There was mixed opinion about whether the LTN schemes had made it easier to **access the local facilities they need**. Just over a quarter (26%) disagreed that it had made it easier, compared to 23% which agreed. As with other impacts, around a third (34%) of residents neither agreed nor disagreed, and 17% said they did not know (28% in York).

Residents were clearer about impacts in terms of **increased journey times to places they regularly visit**. Over a third of residents (36%) agreed that their journey times had increased since the introduction

of the LTN scheme, while two in ten (21%) disagreed that this had been the case. Around a quarter (26%) neither agreed nor disagreed, and 17% said they didn't know.

Four in ten residents (41%) believed that **traffic congestion on nearby roads had increased** since the introduction of the existing LTN schemes. This was almost three times higher than the proportion of those who disagreed (15%) and twice as high as the proportion who said they did not know (20%). A quarter (25%) of residents neither agreed nor disagreed.

Figure 4.3: Perceived impacts of existing LTN scheme (1)



Q14: Still thinking about your local area (that is, within about 1 mile, approximately a 5-minute drive, 20-minute walk), to what extent do you agree or disagree with the following statements about the existing Low Traffic Neighbourhood?
 Base: All answering – see () above. Fieldwork dates: October-December 2023

Residents were generally unclear about other types of impact, shown in Figure 4.4. Two in ten (22%) believed that the existing LTN scheme had made a positive difference to **air quality**, while 13% felt that it had made a negative difference. However, a combined six in ten thought that either the scheme had made no difference (39%) or said they did not know (26%) what difference it had made.

In terms of the impact on air quality, the net positive difference - the proportion of residents who thought the scheme had a positive impact minus the proportion who were negative - was higher in York (+20) and London (+18), than in Wigan (+3), and Birmingham (+1).

In both Wigan (48%) and Birmingham (44%) a higher proportion of residents believed the scheme had made no difference to air quality in their area compared to York (35%) and London (31%). Around a third of residents in York (34%) did not know what difference the scheme had made compared to an average of 26% across the four areas surveyed.

Opinion was divided about whether **traffic noise** had improved. While 21% of residents thought that the existing LTN scheme had made a positive difference to this, 18% believed it had made a negative difference. Around four in ten (42%) thought that it has made no difference, two in ten (20%) said they did not know.

On balance, residents in London and York believed that the local scheme had made a positive difference to traffic noise (+19 and +17 respectively). By contrast, residents in Birmingham and Wigan took a more negative position (-10 and -6). However, most residents felt that the schemes had made no difference to traffic noise levels or didn't know.

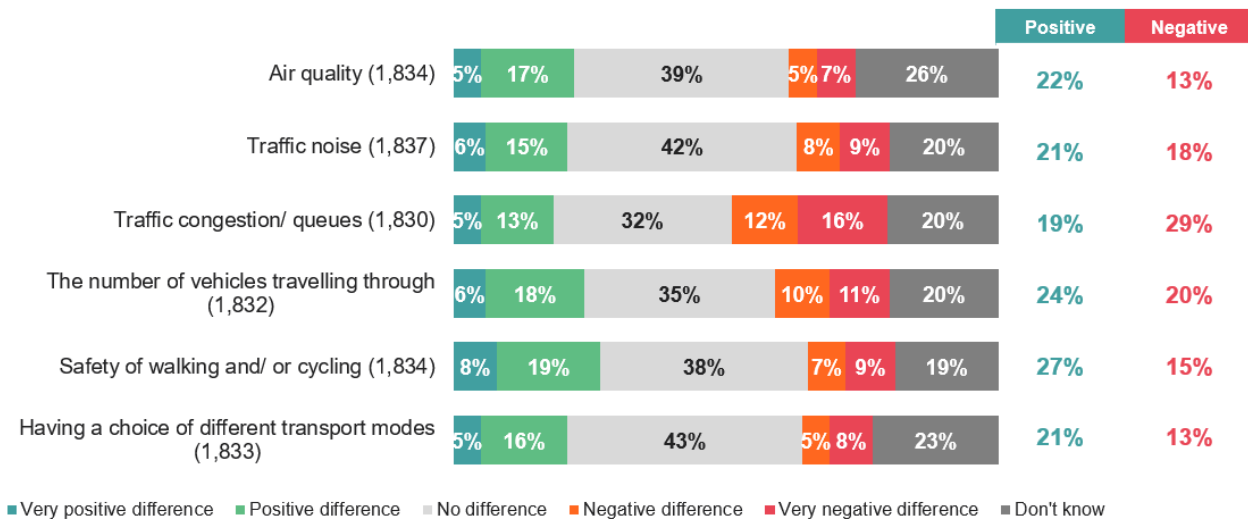
Residents were most negative about scheme impacts in terms of **traffic congestion** in their area. Three in ten residents (29%) perceived the existing LTN scheme to have had a negative impact, a higher proportion than the two in ten (19%) who thought it had a positive impact. However, a third of residents (32%) thought that the scheme had made no impact either way and two in ten (20%) said don't know.

Residents were marginally more positive about the **number of vehicles travelling through their local area**. Around a quarter (24%) thought there had been a positive difference to the number of vehicles travelling through their local area, compared to two in ten (20%) who thought the scheme had made a negative impact. Just over a third (35%) thought the schemes had made no difference and two in ten (20%) didn't know. Residents in York and London were more positive with a net +19 and +13 compared to -7 in Birmingham and -2 in Wigan.

Residents were most positive about the impact that the LTN schemes had made on **safety when walking or cycling** in their local area; 27% believed the impact had been positive, 15% that it had been negative. Around two in ten (19%) did not know what difference it made, four in ten (38%) that it made no difference at all. Residents in York and London residents were particularly positive, with a net +27 and +22 compared to +3 in Birmingham and 0 in Wigan.

Around two in ten residents (21%) believed that their scheme had made a positive difference to the **choices of transport on offer**, a higher proportion than thought the impact had been negative (13%). Just over four in ten (43%) thought that it had made no difference, and 23% did not know. Over half of residents in Wigan (51%) believed that the scheme had made no difference. People there were also much less likely to believe that it had made a positive difference (12%) than those in York (23%), London (22%) and Birmingham (22%).

Figure 4.4: Perceived impacts of existing LTN scheme (2)



Q13: Thinking about your local area, (that is, within about 1 mile, approximately a 3-minute drive, 20-minute walk) do you think the existing Low Traffic Neighbourhood has made a positive or negative difference to each of the following, or has it made no difference?

Base: All answering – see () above. Fieldwork dates: October-December 2023

4.4 Behaviour change

Around six in ten residents believed that having an LTN within their area had made no difference to how often they use various modes of transport and visit local shops, cafes/restaurants/bars. However, a quarter (24%) said that their local scheme had encouraged them to travel on foot more. Just under two in

ten (18%) said it had encouraged them to visit local shops more frequently and a similar proportion (17%) said they had been encouraged to make more use of public transport.

Among modes and facilities, the local LTN was most likely to have encouraged *less* use of car/van travel - 13% of residents - and use of taxis and private hire vehicles - 12%. However, the majority view was that the scheme had made no difference to the frequency of use; 61% thought this in respect of car/van use and the frequency of visiting local shops.

Parents with children aged 15 or under in their household were divided about the impacts of the scheme on travel behaviour. Around three in ten (31%) agreed the scheme had made it more likely that their children will walk/cycle/scoot to school and travel this way for other journeys. But similar proportions disagree (30% and 28%). Two in ten (20%) agreed that the scheme made it more likely their children would play outdoors in the local streets, half the proportion who disagree (42%).

4.5 Variation by key subgroups

Cyclists were more likely than car drivers to change their travel habits; 30% said they had been encouraged to cycle more and 19% to travel by car less. **Car drivers** were more likely than average (9%) to have been encouraged to travel by cars/vans *more* (13%) but no more likely than average to have travelled *less* this way (13%).

A quarter of cyclists (24%) said that the local scheme encouraged them to shop locally more often, compared to less than two in ten car drivers (16%). Frequent cyclists with children were far more likely to agree that the schemes would encourage their children to use active travel for (non-school) journeys than average; 40% compared to 31%. However, equal proportions of car drivers and cyclists agreed and disagreed that the scheme had encouraged their children to play outdoors more in local streets.

Cyclists were also significantly more likely than **car drivers** to agree that the implementation of their local LTN has had a positive impact on making their neighbourhood a more pleasant area (39% compared to 23%), creating a sense of community in their local neighbourhood (31% compared to 19%) and making it easier to access the local facilities they need (28% compared to 18%).

Car drivers were, however, significantly more likely than **cyclists** to agree that the LTN schemes had increased their journey times to places they visit frequently (46% compared to 32%), and traffic congestion levels on nearby roads (49% compared to 33%). Additionally, **cyclists** were significantly more positive than **car drivers** about the perceived impacts their local schemes have had on improving air quality (33% compared to 19%), traffic noise (31% compared to 18%), traffic congestion (26% compared to 16%), the number of vehicles travelling through the area (35% compared to 20%) and the levels of safety when walking and/or cycling through the area (42% compared to 23%).

Those with a **disability or health condition** were significantly less likely to report being encouraged to travel more by foot; 17% of this group compared to 27% without a disability or health condition. This was also the case for cycling; 5% compared to 14% for those without a disability or health condition. This group were, though, just as likely as others to have said that the scheme encouraged them to undertake more local shopping; 24% compared to 18%.

Those with a **disability or health condition** were also significantly more negative about the impact of the local scheme on traffic congestion; 49% thought it had made a negative difference compared to 38%

of those without a disability or health condition. This was also the case in terms of anti-social behaviour; 33% compared to 21%.

This group was also significantly less likely to agree that the scheme had positively affected the number of vehicles travelling through their area - 18% compared to 26% of those without a disability or health condition; the levels of traffic noise - 15% compared to 24%; and safety when walking and/or cycling - 19% compared to 31%.

Given the importance of understanding how LTN schemes have impacted local businesses, the survey identified responses from households of local business owners. A total of 93 residents in our sample were **business owners or lived with a business owner** meaning we can look at their views (although it is important to note that they were responding to the survey as residents, not in a business capacity).

Business owners were more positive about the impact the LTN schemes had made in terms of making their neighbourhood more pleasant; 40% compared to 29% among residents across the four areas. They were also more positive about the local scheme creating a better sense of community (28% compared to 22%) and making it easier to access local facilities (27% compared to 23%). This group were also more likely to believe that the scheme encouraged them to visit their local shops more often (31% compared to 18%) plus local cafes, restaurants, and bars (29% compared to 15%).

5. Interviews with stakeholders

Ipsos conducted six interviews during November and December 2023 and January 2024 with a selection of stakeholders chosen by DfT to provide balanced input from core groups affected by LTNs. Representatives from the following organisations agreed to take part. An additional one - a regional ambulance service - requested anonymity:

- ADEPT (the Association of Directors of Environment, Economy, Planning & Transport) – to cover local authority traffic management.
- The RAC Foundation (transport policy and research organisation that explores the economic, mobility, safety and environmental issues relating to roads and their users).
- Living Streets (a charity for everyday walking).
- DPTAC – the Disabled Persons Transport Advisory Committee.
- The Metropolitan Police.

The commentary which follows provides qualitative insights. Our analysis demonstrates the views and experiences of the participants recruited who were not a statistically representative sample of the wider population of stakeholders. The findings presented below are based on stakeholders' perceptions and experiences and do not necessarily reflect existing evidence (as reported previously in this report).

5.1 Perceptions about implementation

Conversations with stakeholders highlighted several things that did not go well during scheme implementation. Insufficient initial engagement with the public and specific groups such as groups with disabilities was seen as a significant failing. One stakeholder noted that there was *“absolutely no consultation in the initial stage during COVID. We just got a traffic order come through the post.”*

It was felt that implementation lacked sensitivity and thoughtfulness. This lack of care was particularly evident in how changes were abruptly introduced and communicated poorly, leading to feelings of frustration and misunderstanding. Engagement was inadequate; circulating or signposting a questionnaire was not enough. The public needed to feel like they were being listened to. This required authentic engagement and outreach by those involved with implementation, rather than a *“faceless consultant conducting a ‘checkbox exercise’*. One stakeholder said that examples of good community engagement would include door to door consultation in affected areas and town hall meetings, which stakeholders recognised was not possible during the pandemic. They did not know if this approach had been undertaken post-pandemic.

Stakeholders across the sample regretted the limited role they had and would have liked to have been consulted more in advance of implementation. There was an expectation that local authorities should have access to several stakeholder groups for consultation. One stakeholder representing disabled groups stressed this consultation process should be inclusive, accepting feedback in various formats, and conduct a diversity and impact assessment. It was felt that a more inclusive and comprehensive consultation process was needed, alongside sufficient recognition of the broad spectrum of potential impacts and needs of different groups.

When commenting on implementation, stakeholders across the sample suggested that various problems were caused by what they saw as a hasty roll-out of schemes particularly during the Coronavirus pandemic. There was a sense that the public were left feeling blindsided by the sudden change, with little or no warning or discussion. This was considered an important factor leading to a public backlash which itself had weakened the political leadership necessary for successful implementation.

It was felt that public unease and dissatisfaction was mainly due to the compression of a process that was usually spread over a longer period into a shorter period, something that was not conducive to thorough planning and preparation; *“We were usually compressing two years’ worth of work into eight weeks. So, I think that was one of the major failings.”* This motivated a suggestion that a more measured and thoughtful approach was necessary to putting future LTN schemes on a surer footing.

Some stakeholders reported being involved in planning for implementation but felt that the rushed nature made meaningful contributions difficult. One described a ‘scoping session’ with local authorities to provide feedback on proposed schemes but noted that the volume of work related to these sessions could be overwhelming, particularly in the case of phased implementation due to funding. One stakeholder stressed that other initiatives needed to be introduced alongside LTNs to help them achieve their objectives including improvements to public transport and behaviour change campaigns.

One stakeholder from the emergency services linked rushed implementation to mistakes such as ignoring traffic blind spots with funding constraints seen as a cause of this.

“What happened was because the way that the funding was released, there was no real criticism on anybody about that, because of the circumstances of the pandemic.”

It was felt that the scale of schemes was also neglected. This led to potential issues navigating scheme areas, causing inconvenience and confusion for the public.

“When designing a scheme, maybe the designers should think, from any home in the scheme we’re proposing, how many additional turns are we having to put in order for people to get in and out of this place?”

Another significant concern was perceived problems with compliance and enforcement such as fines and penalties, with a possibility that the public were unaware that they were in breach of rules. This could undermine the effectiveness of LTNs and lead to public dissatisfaction with schemes and with local councils responsible for enforcement.

The Metropolitan Police and a regional ambulance service reported that the implementation of LTNs has caused certain hindrances to emergency services, such as delays due to physical barriers and lack of access keys. They stressed this could potentially risk lives because; *“This adds precious seconds and minutes when seconds do really count.”* One emergency service highlighted the challenge created by physical barriers for emergency services. A significant issue was that they didn't carry keys for locks on the roads as these varied across the area with different authorities using different locks. The stakeholder said this made the locks *“nearly impossible”* to unlock, creating an obstacle for them to get to emergency calls within LTNs to carry out their work.

The stakeholder also pointed out a lack of clarity in regulations, particularly with regards to signage at the boundary of an LTN. Initially, there were often ‘no entry’ signs, and emergency services had no legal exception. This confusion about whether they were exempt from ‘no entry’ restrictions resulted in a change in the signage. The stakeholder said these were replaced by ‘no motor vehicles’ signs, which included emergency service exemptions as standard. This modification indeed improved the situation,

making it easier for emergency services to navigate these areas. Therefore, the emergency services preferred signed schemes with exemptions.

Stakeholders across the sample were keen to emphasise that running of schemes had improved since they started; criticism focused more on the initial stages of implementation. The Metropolitan Police and a regional ambulance service welcomed any type of collaboration and consultation from local authorities and policymakers. Stakeholders saw councils as generally supportive and accommodating of needs. Different stakeholders were involved by councils who responded to the feedback they received.

"The councils were quite supportive in what they did, or quite helpful in what they did..."

While it was felt that rushed implementation had created some difficulties, the introduction of LTNs under experimental orders was identified as a positive component of implementation because it allowed for adjustments based on feedback. This flexibility seemed to have had a positive impact, as it allowed for plans to be modified and improved in line with community preferences.

"Although there may have been an impact on people initially, the fact that it was all introduced experimental meant that any impact on people could be considered while they were in place and then changes made. And plenty of changes were made. There were lots of changes."

5.2 Perceptions about impacts

Stakeholders often stressed that they did not yet know the impact of LTNs and would not expect to for several years because benefits were more likely to be realised in the long term than the short term; *"The impact is not yet fully known and will take time to fully understand."* However, a representative from a walking charity cited peer-reviewed academic studies and local authority work as robust evidence of the benefits realized by LTNs. He acknowledged room for improvement in terms of local authority support and emphasized the importance of measuring environmental, traffic, and health impacts for future evaluation.

Stakeholders said they hoped that some local authorities had planned to evaluate the effects of the schemes and would continue to do so in the future. Concurrently, they thought that little good quality evidence was currently available, partly because lack of time and funding did not make pre- and post-evaluations feasible. For example, one emergency service said of the impact of LTNs on street crime; *"I couldn't tell you... I just don't think we've actually studied it."* It is important to note that this statement reflects the stakeholder's viewpoint and not the actual evidence base; as referenced in the evidence review, there is some existing research examining the relationship between LTNs and street crime.

This was considered regrettable because LTNs are a highly political policy. Stakeholders in transport related organisations worried that limited evidence of impact would push attention towards implementation and leave scheme costs and benefits open to interpretation. They felt that the complexity and multi-faceted nature of LTNs made their impacts hard to measure and that it was difficult to see past 'noise' in the media. When considering measuring the impact of LTNs, stakeholders recognised the difficulty inherent in separating the effects of the pandemic and other changes in the social and economic context from the influence of any scheme.

As a result, stakeholders tended to focus on more tangible early impacts, what they felt they knew and were comfortable talking about. These included accessibility issues (covered previously) and a negative public reaction.

One stakeholder described a *“public perception battle... [LTNs] is quite a tarnished brand.”* There was a sense that residents’ fear of change or misunderstanding of the purpose and benefits of LTNs risked negative perceptions taking hold, particularly if delivery came across badly; *“When you say you’re going to close that off, are you going to put one of those ***** wooden boxes that will turn into an impromptu litter bin?”* Similarly, an ambulance service described disagreements with the method of implementation and practical issues rather than the premise of the scheme and its aims.

Initial disruption to emergency services created service delays and increased workload. This was attributed to a lack of consultation, and, despite subsequent improvements, compliance issues and public discontent meant some difficulties had persisted. The advisory role service providers played in respect of implementation further complicated things; they did not have any decision-making power, but still had to navigate issues around safety and legality as well as access.

Case study 1 – ambulance service

The implementation of schemes initially posed significant challenges for the service. Hasty introduction and minimal engagement resulted in ambulance delays, crews getting stuck, negative press, and a considerable reported increase in workload.

Subsequent collaboration with local authorities led to improvements e.g. shifting many of the schemes to camera enforcement rather than physical barriers. However, this change created compliance problems because cameras were less effective. Moreover, there were still instances where ambulance crews had to divert over long distances to reach patients, resulting in serious investigations. The stakeholder reported instances where councils implemented LTNs under different names, which they thought unintentionally restricted the extent of consultation.

The stakeholder said delays were an issue for the emergency service at the start of the implementation of LTNs, something that has since improved. The stakeholder said the service recorded 264 delays in ambulance arrivals or conveyance to hospitals due to LTN-related traffic management schemes between July 2020 and September 2023. The stakeholder reported that the number of delays has gradually decreased over the years, with a few schemes continuing to pose challenges.

Case study 2 – the Metropolitan Police

The Met Police was a statutory consultee in the implementation of LTNs in Greater London, providing advisory input. The police can raise objections or concerns about certain aspects of LTN schemes, particularly those related to safety, legality, and access.

The police reported a significant increase in workload at the start of LTN implementation due to reviewing and consulting on a large volume of proposed schemes very quickly, within 12 weeks compared to the usual minimum 18 months for a road scheme. This was particularly challenging because of speed of implementation during the pandemic leading to some poorly executed designs. The force had to deal with situations where different schemes such as LTNs and cycle routes, were implemented simultaneously, prompting public discontent.

While mostly reticent about current impacts, stakeholders in transport related organisations and emergency services were much more comfortable talking about the future benefits they expected to see:

- **Local roads would become safer.** Schemes would reduce the threat of accidents especially for vulnerable road users like children and visually impaired people.

- **Encouragement of more sustainable transport behaviours.** Increasing the motivation to make shorter journeys by walking or cycling would contribute to efforts to reduce carbon emissions and the promotion of active travel as well as benefiting health.
- **Improved air quality.** Reductions in motor traffic have the potential to improve air quality, especially in larger urban areas.
- **Creation of more pleasant, 'liveable' areas.** By reducing air and noise pollution, schemes could help residential areas become more 'liveable'.
- **Boost local businesses.** Reduced motor traffic could make retail areas more attractive, potentially increasing custom.

Stakeholders in transport related organisations also predicted LTN schemes would have potential disadvantages. They did, however, tend to view these more as temporary, operational, challenges (including access for emergency services) rather than enduring issues. It is also important to note, these are stakeholders' perceptions. They stressed that these potential disadvantages were theoretical, and not supported by evidence.

- **Reduced mobility.** Schemes could pose a challenge for disabled individuals dependent on vehicles (with a recognition that blue badge holders would be exempt).
- **Adverse safety impacts.** Increased levels of walking and cycling may lead to new risks for pedestrians, particularly potential conflict with bikes or e-scooters. Reduced levels of motor traffic might reduce children's familiarity with road traffic.
- **Displacement.** Schemes might shift motor traffic from one area to another, increasing detriment there. The everyday walking charity cited studies that showed traffic displacement dissipated over time.
- **Negative impact on businesses and emissions.** Schemes might push consumers away from certain retail areas and increase the distances people travel.

There was also some scepticism about the efficacy of current approaches to promoting active travel and reducing carbon emissions, and a perceived mismatch between policy goals and social realities. One stakeholder noted that many people prefer the convenience of driving over walking and cycling, something that can hinder efforts to shift towards more sustainable modes of transportation. They felt this disconnect between policy goals and people's priorities made implementation difficult. The view that modal shift might be unrealistic was not shared by another stakeholder who said there was evidence to support modal shift and demonstrated that LTNs could work in practice.

Appendices

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Appendices

Appendix 1: LTNs

There is no single definition of an LTN, but for the purposes of this research they are considered as follows:

“A traffic management scheme aimed at reducing or removing through traffic from residential areas, put in place using traffic signed restrictions or physical measures such as planters or bollards.”

Local traffic authorities (LTAs)¹⁶ are responsible for managing roads and traffic in their areas. They have a high degree of autonomy in how they do this, with powers granted to them through enabling legislation. Legislation also places duties on them to manage roads safely and efficiently for the benefit of all road users including people walking and cycling.

The Road Traffic Regulation Act 1984 (RTRA), the Highways Act 1980, and the Traffic Management Act 2004 (TMA) are the principal pieces of legislation:

- RTRA defines local traffic authorities and makes them responsible for managing and regulating traffic on their roads. It grants them a range of powers to use in doing so.
- The Highways Act imposes the duty to maintain roads and grants powers to improve the highway.
- The TMA imposes the duty to manage all traffic (including people walking and cycling) as efficiently as possible, with a view to reducing congestion. It also sets out the enforcement regimes for parking restrictions, and moving traffic offences (except in London, where moving traffic enforcement is enabled through the London Local Authorities and Transport for London Act 2003).

Central Government’s role is to set this enabling legislative framework, set national policy objectives, provide good practice guidance, and funding. Central Government has no remit to intervene in the day-to-day running of local roads.

An LTN is a type of traffic restriction preventing through motor traffic. There are two types:

1. Closures to motor traffic by physical means

Local authorities also have powers to place street furniture such as bollards or planters under the Highways Act 1980. These can be used to close a road to some or all traffic. Physical measures require no active enforcement, as the barrier is self-enforcing, but they do not easily allow for exemptions to the restriction.

2. Traffic signed restrictions

These are commonly implemented using the ‘motor vehicles prohibited’ traffic sign and its variants:

¹⁶ County councils, metropolitan districts, unitary authorities, London boroughs, Corporation of the City of London and Transport for London.



Section 65 of RTRA gives LTAs powers to install traffic signs. As per section 64 of RTRA, any that they install must comply with the Traffic Signs Regulations and General Directions 2016 (TSRGD) or be specially authorised by the Secretary of State. This sign is prescribed by TSRGD as diagram 619. Other signs may be used, for example 'no entry' or 'buses only' depending on the local objectives and scheme design.

The signs must be placed to give effect to a Traffic Regulation Order (TRO) restricting the use of the road. TROs may include exemptions for certain types of vehicles; these commonly include the emergency services, resident permit holders, and vehicles used by Blue Badge holders.

Signed restrictions may be enforced by local authorities, where they have taken up the powers to do so, or the police, where they have not. Enforcement may be by camera systems or by officers on the ground.

Sections 1, 6 and 9 of RTRA grant LTAs powers to make permanent and experimental TROs. Orders must be made following the procedures set out in the Local Authorities Traffic Orders (Procedure) (England and Wales) Regulations 1996.

Section 14 enables them to make temporary TROs. These must be made following the procedures set out in The Road Traffic (Temporary Restrictions) Procedure Regulations 1992.

The consultation processes required for each type of TRO are summarised below:

- Permanent: this process includes prior consultation on the proposed scheme design, a 21-day notice period for statutory consultees and others who can log objections; there can be a public inquiry in some circumstances.
- Experimental: these are used to trial schemes that may then be made permanent. There is a 6-month objection period post-implementation. Authorities may put in place monitoring arrangements and carry out ongoing consultation once the measure is built. Although the initial implementation period can be quick, the need for extra monitoring and consultation afterwards makes them a more onerous process overall.
- Temporary: these can be in place for up to 18 months. There is a 7-day notice period prior to making the TRO and a 14-day notification requirement after it is made, plus publicity requirements. These are most suitable for putting in place temporary measures and road closures.

During the pandemic, time-limited changes to regulations were made to set aside some of the elements of the TRO process. These related to the requirements to place notices of proposed orders on street, and to advertise notices in the local press. The COVID-19 restrictions in place meant that it was not feasible for local authorities to comply with these requirements and the regulations temporarily set them aside. These changes did not alter the consultation periods for TROs. Local authorities were still required to give the same amount of notice, and to consult the same groups, as under the standard process.

Appendix 2: Research methodology

Evidence review

The purpose of the evidence review was to bring together the evidence that is available on impacts of LTNs in the UK, and similar schemes in the UK and internationally. Alone, it was not intended to provide a conclusive view on the merits of LTNs but to add to the shared understanding of current evidence and its availability, and what impacts are being realised.

The methodology for the review of the impacts of LTNs was comprehensive and systematic, designed to encompass a wide variety of literature, both academic and grey. Search terms included various categories such as intervention terms, thematic terms, and disaggregation terms to capture the impacts of LTNs on specific demographic groups. The inclusion of grey literature where the methodology was deemed rigorous enough, aimed to provide a complete understanding of LTNs from multiple perspectives.

The rationale for the approach was to offer a balanced and robust examination of LTN impacts. The method aimed to be systematic and transparent, reducing bias in selection of literature and fostering trust in the findings. Both academic and grey literature were included to capture diverse perspectives. Quantitative data was used for measurable outcomes, and qualitative data provided detailed insights to aid the understanding of the impacts of LTNs.

There were, however, limitations to the approach. The quality of studies included varied, with some relying on less rigorous methodologies. Significant gaps in UK-based research around key impacts of LTNs are evident, especially around economic impacts related to property prices and local businesses. While international research provided valuable insights, it may not be directly applicable to the UK due to differing contexts.

Research into LTNs is new and ongoing, the earliest academic publications date back to 2020. The wealth of grey literature available varies in quality and, while valuable for understanding diverse experiences and opinions on LTNs, they are often not based on robust enough evidence to draw confident findings. As a result, there are gaps in what can be confidently concluded about LTNs.

A full list of review sources is provided below.

Table A1: Evidence review bibliography

Title	Authors	Location	Theme	Year
(1) LTN literature				
The Impact of Introducing Low Traffic Neighbourhoods on Road Traffic injuries	Anthony A Laverty, Rachel Aldred, Anna Goodman	London	Quality of life: road safety	2021
Changes in motor traffic inside London's LTNs and on boundary roads	Rachel Aldred, Asa Thomas	London	Motor vehicle traffic	2023
The Impact of 2020 Low Traffic Neighbourhoods on Fire Service Emergency Response Times, in London, UK	Anna Goodman, Anthony A. Laverty, Asa Thomas, Rachel Aldred	London	Access: Emergency services	2020
Evaluation of low traffic neighbourhood (LTN) impacts on NO2 and traffic	Xiuleng Yang, Emma McCoy, Katherine Hough, Audrey de Nazelle	London	Environment: Air pollution	2022
Equity in new active travel infrastructure: A spatial analysis of London's new Low Traffic Neighbourhoods	Rachel Aldred, Ersilia Verlinghieri, Megan Sharkey, Irena Itova, Anna Goodman	London	Equity	2021
The Impact of Low Traffic Neighbourhoods on Active Travel, Car Use, and Perceptions of Local Environment during the COVID-19 Pandemic	Rachel Aldred, Anna Goodman	London	Active travel	2021
The Impact of 2020 Low Traffic Neighbourhoods on Levels of Car/Van Driving among Residents: Findings from Lambeth, London, UK	Anna Goodman, Anthony A. Laverty, Jamie Furlong, Rachel Aldred	London	Motor vehicle traffic	2020
Transport for London (2020). Travel in London Report 13	Transport for London	London	Motor vehicle traffic	2020

Title	Authors	Location	Theme	Year
Impacts of 2020 Low Traffic Neighbourhoods in London on Road Traffic Injuries.	Goodman, A., Furlong, J., Lavery, A.A., Thomas, A., & Aldred, R.	London	Quality of life: Road safety	2020
Short-Term Association between the Introduction of 2020 Low Traffic Neighbourhoods and Street Crime	Goodman, A., Lavery, A.A. & Aldred. R	London	Quality of life: Street crime	2020
Pave the way	Transport for all	UK	Access, Quality of life: Disabled people	2021
Incident response times - Fire Facts	London Fire Brigade	London	Access: Emergency services	2020
OP34 Evaluating the impact of Southwark's low traffic neighbourhoods (LTNs) after one year: a natural experimental evaluation	Christina Xiao, Nikita Sinclairs, Lucy Saunders, Jenna Panter	London	Active travel	2022
Traffic and air pollution impacts of Low Traffic Neighbourhoods (LTNs)	Xiuleng Yang, Katherine Hough, Emma McCoy, and Audrey de Nazelle	London	Environment: Air pollution	2022
Urban Planning for Better Air Quality: A case study of the Low-Traffic Neighbourhoods in London	Gustafsson, Greta	London	Environment: Air pollution	2022
The Influence of Low Traffic Neighbourhood Scheme on Multimodal Traffic Flow in London	Zhang, Xianghui; Cheng, Tao	London	Active travel	2023
Air Quality Annual Status Report 2022 – Oxford City council	Oxford City Council	Oxford	Environment: Air pollution	2022
Evaluating the impact of low traffic neighbourhoods in areas with low car ownership: A natural experimental evaluation	Christina S. Xiao, Nikita Sinclair, Lucy Saunders, Jenna Panter	London	Traffic volumes, active travel	2024

Title	Authors	Location	Theme	Year
(2) Wider UK and international literature				
The Built Environment as a Determinant of Physical Activity: A Systematic Review of Longitudinal Studies and Natural Experiments	Mikko Kärmeniemi, MSc, Tiina Lankila, PhD, Tiina Ikkäheimo, PhD, Heli Koivumaa-Honkanen, PhD, Raija Korpelainen, PhD	Multi-country, including UK	Active travel	2018
<u>Exploring traffic evaporation: Findings from tactical urbanism interventions in Barcelona</u>	Samuel Nello-Deakin	Barcelona	Motor vehicle traffic	2022
The effect of pedestrianisation and bicycles on local business	Pärtel-Peeter Pere, Future Place Leadership	Multi-country	Economic: Local business	2017
Economic impacts on local businesses of investments in bicycle and pedestrian infrastructure: a review of the evidence	Jamey M. B. Volker, Susan Handy	US and Canada	Economic: Local business	2021
Intra-urban location and clustering of road accidents using GIS: a Belgian example	T. Steenberghen, T. Dufays, I. Thomas & B. Flahaut	Belgium	Quality of life: Road safety	2022
Urban traffic externalities: Quasi-experimental evidence from housing prices	Iouliia V. Ossokina, Gerard Verweij	Netherlands	Economic: Property prices	2015
The relationship between the distance from car-free zones and the value of housing prices	Houwers, Joost	Netherlands	Economic: Property prices	2022
From pedestrianisation to commercial gentrification: The case of Kadıköy in Istanbul	Dilek Özdemir, İrem Selçuk	Turkey	Economic	2017

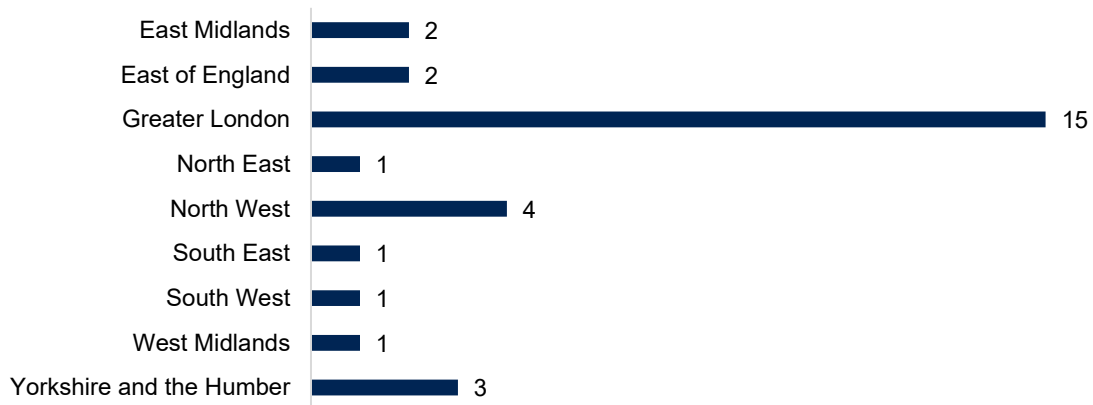
Analysis of local authority survey

In September 2023, DfT wrote to Local Highway and Transport Authorities in England with an invitation to complete a survey on LTN schemes. The survey sought to gather information on how many and what type of LTN schemes exist, focusing on DfT funded schemes introduced since May 2020.

Local highway authorities are responsible for managing roads in their areas, including installing traffic management measures such as LTNs. In England, these are Tier 1 authorities (county councils), metropolitan districts, unitary authorities, London Boroughs, the Corporation of the City of London, and Transport for London. The survey therefore focused on local highway authorities, as the bodies with the powers to introduce LTNs.

Approximately 130 authorities were invited to respond, the Department received 42 survey submissions. Of these, 26 authorities reported details of LTN schemes implemented in their area and 16 authorities reported zero LTN schemes. Four submissions were additionally received via email. The number of authorities reporting on LTN schemes by region is provided below:

Figure A1: Local authority returns by region



The questionnaire is provided as a separate annex.

Before carrying out the data analysis, we used the survey questions to develop and agree a data analysis plan outlining how we will analyse and cross tabulate information from the survey to ensure that the findings are representative of the departments learning needs. This included univariate and multivariate analysis across scheme design, costs, and implementation, among others. We used SPSS to analyse the data.

Interviews with stakeholders

Ipsos conducted a series of interviews with a handful of stakeholders during November and December 2023. These were identified as relevant by DfT and included local authorities, service providers, and representatives of interested stakeholder groups.

These are qualitative insights, intended to demonstrate the views and experiences of the participants recruited who were not a statistically representative sample of the wider population of stakeholders.

Survey of residents

An additional component of the research was a survey of local communities affected by LTNs funded by DfT and implemented since March 2020. The survey was designed to measure residents' understanding and attitudes towards local travel, awareness of LTN schemes, views, and experiences of the impact of schemes.

The survey was conducted within a group of four areas chosen by DfT to reflect the diversity of schemes. The areas selected were London, Birmingham, York, and Wigan.

The survey employed a 'push-to-web' approach, using online and paper-based data collection. Ipsos sampled residential addresses within the four scheme areas, using the Postal Address File and random selection methods. Invitation letters to sampled addresses were dispatched on 30th October and a reminder letter was sent during w/c 27th November with a cut-off date for returns of 8th December. 72% of surveys were completed online, 28% by postal return.

We can expect an overall sampling tolerance of +/- 2.3 percentage points for a 50% finding among the aggregate sample at the '95% confidence interval'.

This will vary for sub-groups and geographies according to their sample sizes – equivalent intervals for each area are as follows:

Table A2: Sample sizes and confidence intervals

LTN area	Achieved sample (n)	Confidence interval for 50% finding
Birmingham (Lozells Places for People)	314	+/- 5.5
London (Arlington Road Camden)	390	+/- 5.0
Wigan (Worsley Mesnes)	457	+/- 4.6
York (Navigation Road)	675	+/- 3.8

We would typically need to see differences of +/- 5 and +/- 8 percentage points between Birmingham and London (where sample sizes were smallest) for differences to be statistically significant, depending on the percentages involved.

Where percentages do not sum to 100 this may be due to multi-code responses or rounding. This is also the case in terms of combinations not summing to their constituent parts - e.g. the percentage who support reallocation of road space summing to the percentage who said they were strongly supported this and the percentage who said they tended to support it.

The survey captured perceptions and are likely to reflect the nature of local demography and transport use and the variation in this between areas (e.g. the sample in London and York were much less likely to own or have regular use of a car), as well as differences in the type of LTN schemes and their implementation.

Table A3: Unweighted and weighted base sizes (selected groups and geographies)

Group/geography	Unweighted base	Weighted base	Weighted %
Birmingham	314	780	43
London	390	515	28
Wigan	457	224	12
York	675	311	17
16-24	213	228	12
25-34	295	286	16
35-44	294	352	19
45-54	296	343	19
55-64	288	259	14
65+	435	341	19
Man	788	833	46
Woman	927	876	48
Ethnic minority background	304	948	52
White	1370	719	39
Working full-time/part-time	944	821	45
Not working	759	875	48

The online survey questionnaire is provided as a separate annex.

Appendix 3: Evidence from similar interventions in the UK and internationally

This section presents evidence of the impacts of schemes with similar arrangements and objectives of LTNs. This evidence is an important source for verifying the impacts of schemes in the UK, and to provide some evidence where there are currently gaps in LTN research that might be indicative of expected results. Where evidence for UK LTNs is rigorous, diverse, and conclusive, international cases have not been considered; this is mainly confined to air pollution impacts. In addition, access is not considered here as this had a restricted remit within the review and evidence internationally on accessibility of schemes – however they are called – is also extremely limited.

The schemes that are discussed are tabled below, they are ordered from most relevant to LTN schemes to schemes that share some characteristics and objectives but are implemented quite differently. Whilst different, these schemes are included for findings that are still relevant to LTNs and fill gaps in current evidence, particularly around local economic impacts.

Table A3.1: Similar interventions in the UK and internationally

Location	Name of scheme	Description
Spain	Superblocks	3 x 3 grids of 9 city blocks that restrict vehicle traffic to the streets on the perimeter. The interior streets become available for walking, cycling, and expanded green space.
Belgium, Netherlands	Car-free zone/ Car-restricted zone	Areas of a city where use of cars is prohibited or greatly restricted, usually through use of bollards and other barriers.
UK, Turkey, Sweden, Canada, UK, USA	Pedestrianisation	Making a part of a town into an area only accessible to people who are walking.
Canada, USA	Active travel infrastructure	Introduction of measures to promote walking and cycling in an area. For example, bike lanes, bike parking, removal of parking spaces to de-incentivise driving.

a) Motor vehicle travel impacts

International evidence supports findings of UK LTNs. Tactical urbanism interventions in Barcelona led to a significant decrease in traffic levels on intervention streets from 2019-2021, with an average relative reduction of about 14.8% and a total relative reduction of 13.6% across all intervention streets. Despite traffic displacement, adjacent streets only showed a small relative increase (+0.7%) in traffic compared to control streets, demonstrating that traffic evaporation¹⁷ can occur with such interventions. Furthermore, in Mechelen, Belgium, the implementation of new urban planning measures led to a 9% decrease in total car traffic.

b) Economic impacts

International evidence indicates that low-traffic, car-free and pedestrianisation initiatives are succeeding in creating destinations that are attractive for both residents and retail. This is reflected in increased

¹⁷ Traffic evaporation describes when use of motor vehicle transportation decreases in cases where road space is reallocated to more sustainable modes of transport like walking, cycling and public transport

sales and property prices. However, this may come at the expense of local businesses and character as some areas experience commercial gentrification.

In several cities around the world, successful pedestrianisation has been associated with increased economic activity. Different studies, including San Francisco, California, and Toronto, Ontario, have shown that cyclists and pedestrians generally spend more per month in commercial areas than visitors who arrive by car or public transport. For instance, in Copenhagen's Strøget, pedestrianisation led to a 30% increase in sales within a year and in New York City's Time Square, pedestrianisation resulted in a 22% increase in economic activity between 2007 and 2011. These instances indicate that pedestrianisation, when implemented effectively, can stimulate local economies and potentially enhance property values.

The introduction of pedestrianisation initiatives have had notable impacts on property prices in various locations. A study conducted in The Hague, Netherlands revealed that a reduction of 50% in traffic density was associated with a 1.4% increase in housing prices. Similarly, in Alkmaar, Netherlands, a significant negative linear relationship was found between the distance from a car-free zone and the value of housing prices. Specifically, housing prices decreased by 6.6% when moving 1 kilometre away from the car-free zone. This illustrates that, in the Netherlands, residents perceive the reduction in traffic positively as reflected in their willingness to pay a premium to locate within a car-free zone.

Evidence of economic impacts from traffic reduction measures are not solely positive. For instance, in Kadıköy, Turkey, the success of the pedestrianisation scheme led to increased shop rents, causing a replacement of many smaller older businesses with chain stores, known as commercial gentrification. This illustrates success in making the area more attractive for retail investment, but at a cost to local businesses and character.

c) Active travel

An international study titled "The Built Environment as a Determinant of Physical Activity" investigated evidence related to new and improved cycling and walking infrastructure. It revealed that a change in active travel infrastructure was associated with increased physical activity in nine out of 16 natural experiments, with only one showing a decrease. Several destinations had strong evidence that indicated an increase in active travel from 3.3 to 17.6 min/week.

In Malmö, Sweden, the pedestrianisation of streets has resulted in a shift in travel modes. Between 2003-2008, the share of trips made by cars dropped from 52% to 41%. Meanwhile, bicycle usage increased from 20% to 23%, walking from 14% to 20%, and train rides from 3% to 5%. Pedestrianised streets have been credited with contributing to these changes along with additional interventions including priority cycling infrastructure and improved public transport.

d) Quality of life

As mentioned in the impact section, increases in property prices suggest that schemes similar to LTNs have a net-positive impact on quality of life. There is a gap in UK evidence on this subject, but international research shows a correlation between proximity to car-free zones and increases in property prices. Health is also an important component of quality of life.

Appendix 4: Multivariate analysis of local authority survey

Table A4.1: Whether scheme engaged with residents if issued PCNs/didn't

	Count	%
...if issued PCNs	40	57.1
...if did not issue PCNs	30	42.9

Table A4.2: Whether scheme did not engage with residents if issued PCNs/didn't

	Count	%
...if issued PCNs	1	20
...if did not issue PCNs	4	80

Table A4.3: Whether scheme engaged with businesses if issued PCNs/didn't

	Count	%
...if issued PCNs	39	57.4
...if did not issue PCNs	29	42.6

Table A4.4: Whether scheme did not engage with businesses if issued PCNs/didn't

	Count	%
...if issued PCNs	1	20
...if did not issue PCNs	4	80

Table A4.5: Whether scheme engaged with disability groups if issued PCNs/didn't

	Count	%
...if issued PCNs	39	58.2
...if did not issue PCNs	28	41.8

Table A4.6: Whether scheme did not engage with disability groups if issued PCNs/didn't

	Count	%
...if issued PCNs	2	28.6
...if did not issue PCNs	5	71.4

Table A4.7: Scheme in place? – among those issued PCNs

	Count	%
Yes – in place	39	92.9
No – removed	3	7.1

Table A4.8: Scheme in place? – among those did not issue PCNs

	Count	%
Yes – in place	28	77.8
No – removed	8	22.2

Table A4.9: Mean scheme costs (£)¹⁸ – in place/removed schemes

	Scheme status	Scheme status	Scheme status
	In place	Removed	Total
Total scheme cost	292,358	77,589	259,996
Scheme development cost (including consultation)	83,859	38,348	77,167
Scheme construction cost	195,510	37,000	174,089

Table A4.10: Use of traffic signs – in place/removed schemes

	Scheme status	Scheme status	Scheme status
	In place	Removed	% use
Yes, use	70	11	86.4
No	0	0	0.0

Table A4.11: Use of physical features – in place/removed schemes

	Scheme status	Scheme status	Scheme status
	In place	Removed	% use
Yes, use	71	10	87.7
No	4	0	100.0

Table A4.12: Use of enforcement cameras – in place/removed schemes

	Scheme status	Scheme status	Scheme status
	In place	Removed	% use
Yes, use	41	1	97.6
No	20	9	69.0

Table A4.13: Use of other measures – in place/removed schemes

	Scheme status	Scheme status	Scheme status
	In place	Removed	% use
Yes, use	9	0	100.0
No	29	4	87.9

Table A4.14: Issuing PCNs – in place/removed schemes

	Scheme status	Scheme status	Scheme status
	In place	Removed	% use
Yes	39	3	92.9
No	28	8	77.8
Don't know	4	0	100.0

Table A4.15: Exemptions – in place/removed schemes

¹⁸ The inclusion or exclusion of VAT was not stipulated in the question

		Scheme status	Scheme status	Scheme status
		In place	Removed	%
Permit holders	Yes	22	0	100.0
	No	38	8	82.6
Blue badge holders	Yes	38	0	100.0
	No	26	8	76.5
Emergency services	Yes	57	5	91.9
	No	6	5	54.5
Taxis	Yes	10	0	100.0
	No	49	8	86.0
Buses	Yes	25	0	100.0
	No	29	8	78.4
Other	Yes	41	2	95.3
	No	10	2	83.3

Table A4.16: Engagement activity – in place/removed schemes

		Scheme status	Scheme status	Scheme status
		In place	Removed	%
Community mapping	Yes	41	2	95.3
	No	15	3	83.3
Public meetings	Yes	36	5	87.8
	No	24	2	92.3
Focus groups and workshops	Yes	47	2	95.9
	No	15	4	78.9
Web based consultation	Yes	73	6	92.4
	No	5	1	83.3
Open space technology	Yes	1	0	100.0
	No	43	6	87.8
Consensus building	Yes	4	0	100.0
	No	39	6	86.7
Citizens' panel	Yes	9	0	100.0
	No	43	6	87.8
Street stalls	Yes	19	1	95.0
	No	36	5	87.8
Questionnaires	Yes	61	3	95.3
	No	6	3	66.7
Local community meetings	Yes	36	3	92.3
	No	22	3	88.0
Representative polling	Yes	24	0	100.0
	No	27	6	81.8
Computer generated animations	Yes	15	0	100.0
	No	41	6	87.2
Other	Yes	18	3	85.7
	No	26	3	89.7

Table A4.17: Engagement groups – in place/removed schemes

		Scheme status	Scheme status	Scheme status
		In place	Removed	%
Residents	Yes	77	5	93.9
	No	0	5	0.0
Local businesses	Yes	75	5	93.8
	No	0	5	0.0
Disability groups	Yes	72	5	93.5
	No	2	5	28.6
Emergency services	Yes	63	7	90.0
	No	1	4	20.0

Table A4.18: EIA implementation – in place/removed schemes

	Scheme status	Scheme status	Scheme status
	In place	Removed	%
Yes	64	4	94.1
No	4	7	36.4

Table A4.19: Rationale – in place/removed schemes

		Scheme status	Scheme status	Scheme status
		In place	Removed	%
Active travel uptake	Yes	67	7	90.5
	No	1	0	100.0
Air quality	Yes	63	7	90.0
	No	2	0	100.0
Road safety	Yes	64	6	91.4
	No	4	1	80.0
COVID-19 social distancing	Yes	48	8	85.7
	No	11	3	78.6
Other	Yes	26	7	78.8
	No	15	1	93.8

Table A4.20: Number of LTNs by region

Region	Number of LTNs reported
East Midlands	3
East of England	11
Greater London	56
North East	1
North West	7
South East	1
West Midlands	5
Yorkshire and the Humber	6

Table A4.21: Mean costs of scheme by region

	East Midlands	East of England	Greater London	North East	North West	South East	West Midlands	Yorkshire and the Humber	Total
Total scheme cost	116,772	23,500	264,048	126,446	204,840	721,572	413,250	295,250	259,996
Scheme development cost	39,196	15,000	80,825	14,600	56,880	267,200	117,500	50,333	77,167
Scheme construction cost	73,243	16,743	185,016	111,846	147,960	454,352	295,750	293,333	174,089
Ratio of development/ construction	0.54	0.9	0.44	0.13	0.38	0.59	0.4	0.17	0.44

Table A4.22: Scheme features by region

		Traffic sign(s)	Traffic sign(s)	Physical features	Physical features	Enforcement camera(s)	Enforcement camera(s)	Other	Other	Penalty charge notices (PCNs)?	Penalty charge notices (PCNs)?	Penalty charge notices (PCNs)?
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Don't know
East Midlands	#	3	0	3	0	0	2	0	2	0	3	0
	%	100	0	100	0	0	100	0	100	0	100	0
East of England	#	2	0	10	0	1	0	1	0	0	2	4
	%	100	0	100	0	100	0	100	0	0	33	66
Greater London	#	56	0	48	4	41	8	5	25	42	14	0
	%	100	0	92	8	84	16	17	83	75	25	0
North East	#	1	0	1	0	0	1	0	0	0	1	0
	%	100%	0	100	0	0	100	0	0	0	100	0
North West	#	7	0	7	0	0	7	1	1	0	7	0
	%	100	0	100	0	0	100	50	50	0	100	0
South East	#	1	0	1	0	0	0	0	0	0	1	0
	%	100	0	100	0	0	0	0	0	0	100	0
West Midlands	#	5	0	5	0	0	5	0	4	0	5	0
	%	100	0%	100	0	0	100	0	100	0	100	0
Yorkshire and the Humber	#	6	0	6	0	0	6	2	1	0	3	0
	%	100	0%	100	0	0	100	67	33	0	100	0

Table A4.23: Traffic signage by region

		Diagram 619 'no motor vehicles'	Diagram 619 'no motor vehicles'	Diagram 616 'no entry'	Diagram 616 'no entry'	Diagram 953 'buses and cycles only'	Diagram 953 'buses and cycles only'	Diagram 618.3C and variants 'pedestrians and cycle zone'	Diagram 618.3C and variants 'pedestrians and cycle zone'	Other	Other
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
East Midlands	#	3	0	2	0	0	2	0	2	2	0
	%	100	0	100	0	0	100	0	100	100	0
Greater London	#	50	1	9	34	4	40	5	41	4	26
	%	98	2	21	79	9	91	11	89	13	87
North East	#	0	1	1	0	0	1	0	1	0	0
	%	0%	100	100	0	0	100	0	100	0	0
North West	#	2	0	1	0	0	1	1	1	6	0
	%	100	0	100	0	0	100	50	50	100	0
South East	#	1	0	0	0	0	0	0	0	0	0
	%	100	0	0	0	0	0	0	0	0	0
West Midlands	#	3	2	2	3	0	5	1	4	5	0
	%	60	40	40	60	0	100	20	80	100	0
Yorkshire and the Humber	#	1	5	4	2	0	6	0	6	2	2
	%	17	83	67	33	0	100	0	100	50	50

Table A4.24: Exemptions applied by region

		Permit holders		Blue badge holders		Emergency services		Taxis		Buses		Other	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
East Midlands	#	1	1	0	2	2	0	0	2	0	2	0	2
	%	50	50	0	100	100	0	0	100	0	100	0	100
Greater London	#	21	27	38	14	52	1	10	37	25	17	34	7
	%	44	56	73	27	98	2	21	79	60	40	83	17
North East	#	0	0	0	0	0	0	0	0	0	0	1	0
	%	0	0	0	0	0	0	0	0	0	0	100	0
North West	#	0	6	0	6	1	5	0	6	0	6	1	0
	%	0	100	0	100	17	83	0	100	0	100	100	0
South East	#	0	1	0	1	0	1	0	1	0	1	0	1
	%	0	100	0	100	0	100	0	100	0	100	0	100
West Midlands	#	0	5	0	5	5	0	0	5	0	5	5	0
	%	0	100	0	100	100	0	0	100	0	100	100	0
Yorkshire and the Humber	#	0	6	0	6	2	4	0	6	0	6	2	2
	%	0	100	0	100	33	67	0	100	0	100	50	50

Table A4.25: Groups engaged by region

		Residents		Local businesses		Disability groups	
		Yes	No	Yes	No	Yes	No
East Midlands	#	3	0	3	0	3	0
	%	100	0	100	0	100	0
East of England	#	11	0	11	0	9	0
	%	100	0	100	0	100	0
Greater London	#	52	1	50	1	49	3
	%	98	2	98	2	94	6
North East	#	1	0	1	0	1	0
	%	100	0	100	0	100	0
North West	#	3	4	3	4	3	4
	%	43	57	43	57	43	57
South East	#	1	0	1	0	1	0
	%	100	0	100	0	100	0
West Midlands	#	5	0	5	0	5	0
	%	100	0	100	0	100	0
Yorkshire and the Humber	#	6	0	6	0	6	0
	%	100	0	100	0	100	0

Table A4.26: Justification for scheme by region

		Active travel uptake		Air quality		Road safety		Covid-19 social distancing		Other	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
East Midlands	#	3	0	2	0	3	0	0	1	1	1
East of England	#	2	0	2	0	2	0	0	0	0	0
Greater London	#	55	1	55	1	56	0	47	6	17	15
North East	#	0	0	0	0	0	0	1	0	0	0
North West	#	2	0	1	0	2	0	5	1	7	0
South East	#	1	0	1	0	1	0	0	0	0	0
West Midlands	#	5	0	5	0	0	5	0	5	5	0
Yorkshire and the Humber	#	6	0	4	1	6	0	3	1	3	0

Table A4.27: Scheme status by region

	Scheme status		Scheme status
	In place	Removed	% in place
East Midlands	2	1	66.7
East of England	11	0	100.0
Greater London	53	3	94.6
North East	1	0	100.0
North West	2	5	28.6
South East	1	0	100.0
West Midlands	4	1	80.0
Yorkshire and the Humber	5	1	83.3

Appendix 5: DfT survey of authorities – questionnaire

Department for Transport LTN Review

1. Introduction

As announced by the Prime Minister, the Department for Transport is conducting a review of low traffic neighbourhood (LTN) schemes, to consider:

Whether they deliver the impacts they set out to.

Whether they have been delivered in a way that properly takes account of communities' views.

For the purposes of this review, we are defining a LTN scheme as:

"A type of transport scheme seeking to remove or substantially reduce through motor traffic from a residential area, through the use of traffic signed restrictions or physical features such as planters."

We are not considering school streets, town centre pedestrianisation schemes, Mini-hollands or similar schemes. **We are only considering LTN schemes meeting the above definition funded by the Department for Transport and installed since March 2020, with construction complete.**

In this survey, we are asking for some facts and figures to help give us a picture of how many and what type of LTN schemes exist. The survey includes questions covering:

Scheme details, including name, location and cost;

Measures implemented (including traffic sign restrictions and penalty charge notices, if relevant);

Engagement activities; and

Scheme removals (if relevant).

With the necessary information to hand, the survey should normally take no longer than 10-15 minutes to complete, but it depends on the number of schemes being reported. We would be grateful if you could please provide the information above for each LTN scheme where possible. We are not asking for new work to be done to fulfil this request. The survey platform allows you to report on up to 10 LTN schemes at a time. If you have more than 10 LTN schemes, you will need to submit additional survey responses.

Please note that we may contract with a third party supplier to help analyse responses to this survey.

There is an option at the bottom of each page to 'save and continue later' if needed.

2. Basic information

1. What is your authority name? *

Other:

2. In which region is your authority based?

3. Number of LTN schemes

3. How many DfT funded LTN schemes has your authority installed since March 2020, meeting the following definition?

"A type of transport scheme seeking to remove or substantially reduce through motor traffic from a residential area, through the use of traffic signed restrictions or physical features such as planters."

Provide your answer as a whole number without any additional text. *

LTN Scheme 1

You will now be asked to provide some information on each scheme installed since March 2020. Please complete the following questions for your first LTN scheme. You can input details of additional LTN schemes later on in this survey.

4. Scheme name

5. Scheme location

6. Scheme cost

Please provide the nearest estimate if you are unsure of the exact cost. Provide your answer as a whole number without any additional text (e.g. '150000', NOT '£150k' or '£150,000').

Total scheme cost

Scheme development cost (including consultation)

Scheme construction cost

7. Please confirm the measures implemented as part of the LTN scheme. Select all that apply.

	Yes	No	N/A
Traffic sign(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical features (e.g. bollards, planters)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enforcement camera(s) to support traffic sign(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

8. If you selected yes for traffic sign(s), please confirm the traffic sign(s) implemented. Please select all that apply.

	Yes	No	N/A
Diagram 619 'no motor vehicles'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diagram 616 'no entry'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diagram 953 'buses and cycles only'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diagram 618.3C and variants 'pedestrians and cycle zone'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

9. If you selected yes for traffic sign(s), please confirm the type of exemption(s) applied. Please select all that apply.

	Yes	No	N/A
Permit holders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blue badge holders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taxis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

10. If you selected yes for traffic sign(s), please confirm what type of Traffic Regulation Order (TRO) is in place. Please provide the date any TROs were made in the comments box.

	Yes	No	N/A
Experimental	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temporary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Permanent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Experimental, since made permanent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

11. For experimental and permanent orders were emergency services consulted as set out in The Local Authorities' Traffic Order (Procedure) (England and Wales) Regulations 1996?

- Yes
- No
- Don't know
- N/A

12. For temporary orders were the procedures in the Road Traffic (Temporary Restrictions) Procedure Regulations 1992 followed?

- Yes
- No
- Don't know
- N/A

13. Did the LTN scheme receive elected member sign-off?

- Yes
- No
- Don't know

N/A

14. Did the scheme issue penalty charge notices (PCNs)?

- Yes
- No
- Don't know
- N/A

15. If you selected yes for PCNs, please complete the following. Please leave the answers blank if the scheme did not issue PCNs.

How many PCNs have been issued for the scheme since May 2020?

How many PCNs have been challenged by representation to you as the issuing authority?

How many have you overturned?

16. Did you carry out any of the following engagement activities in relation to the LTN scheme? Please select all that apply.

	Yes	No	Don't know
Community mapping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Planning for real	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public meetings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Focus groups and workshops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Web based consultation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open space technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Citizens' juries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consensus building	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Citizens' panel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Street stalls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Questionnaires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local community meetings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Representative polling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	Don't know
Computer generated animations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

17. During engagement activities, did you specifically invite comment from the following? Please select all that apply.

	Yes	No	Don't know
Residents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local businesses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disability groups	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. Did you carry out an equality impact assessment (EIA)?

- Yes
- No

19. Were any of the following used as a justification for installing the LTN scheme? Please select all that apply.

	Yes	No
Active travel uptake	<input type="checkbox"/>	<input type="checkbox"/>
Air quality	<input type="checkbox"/>	<input type="checkbox"/>
Road safety	<input type="checkbox"/>	<input type="checkbox"/>
Covid-19 social distancing	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify in the comments box)	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

20. Is the scheme still in place? Yes No**21. If the scheme has been removed, please provide the removal date. If you are unsure of the exact removal date, please provide the nearest estimate.**

DD/MM/YYYY

22. If the scheme has been removed, please briefly explain the reasons for removal.**23. If readily available, please upload any evidence on impacts of the LTN scheme (including both positive and negative impacts, for example impacts on air quality or congestion on boundary roads)** File: {{filename}}[delete](#)

Choose File

5. Scheme reporting**24. Do you have another LTN scheme to report?** Yes No

Appendix 6: Survey of residents – questionnaire

INTRO SCREEN

The Department for Transport is carrying out a survey to find out about people's travel behaviours and their attitudes on current topics including local transport schemes. Taking part will help the Department gather vital data to inform policy decisions.

The survey will be carried out in accordance with the Market Research Society (MRS) Code of Conduct. Your participation in this study is entirely voluntary. You don't have to provide information if you don't want to. The data from this survey will be analysed along with other responses to the survey and will help to inform policy decisions on the design and implementation of local transport schemes.

To find out more about the survey and how your data will be used, you can access the Frequently Asked Questions [here](#). <INSERT HYPERLINK>

DfT's privacy policy has more information about your rights in relation to your personal data, how to complain and how to contact the Data Protection Officer. You can view it at <https://www.gov.uk/government/organisations/department-for-transport/about/personal-information-charter>

The survey will take no more than 15 minutes to complete.

As a thank you for taking part Ipsos will send you a **£5 Love2Shop voucher** which you receive on completion of the survey.

By clicking "Next", you agree to give your views. You can stop the survey at any time.

SECTION 1 – Travel Behaviour

ASK ALL SINGLE CODE ONLY

Q1. How many, if any, cars or vans does your household own or have the regular use of?

1. No cars/vans
2. 1
3. 2
4. 3 or more

ASK ALL WHO CODE 2-4 AT Q1 SINGLE CODE ONLY

Q2. Are you the main driver of any of these vehicles? By main driver we mean the person who does the most mileage in the vehicle over a year.

1. Yes, main driver
2. No, not main driver
3. Don't know

ASK ALL SINGLE CODE ONLY

Q3. Do you own, or have access to, a bicycle/e-bike that is in good enough condition for riding?

1. Yes
2. No
3. Don't know

ASK ALL**PROGRESSIVE GRID, SINGLE CODE PER ROW, RANDOMISE ROWS, FORWARD/REVERSE SCALE 1-5**

Q4a. To what extent do you agree or disagree with the following statements:

ROWS

1. For trips of less than 1 mile (approximately a 3-minute drive, 20-minute walk), I prefer walking than travelling by car
2. For trips of less than 1 mile (approximately a 3-minute drive, 20-minute walk), I prefer cycling than travelling by car

COLUMNS

1. Strongly agree
2. Tend to agree
3. Neither agree nor disagree
4. Tend to disagree
5. Strongly disagree
6. Don't know **FIX**

ASK ALL**PROGRESSIVE GRID, SINGLE CODE PER ROW, RANDOMISE ROWS, FORWARD/REVERSE SCALE 1-5**

Q4b. To what extent do you agree or disagree with the following statements:

ROWS

1. For trips of less than 5 miles (up to a 15-minute drive, 1 hour walk), I prefer travelling by public transport than by car
2. For trips of less than 5 miles (up to a 15-minute drive, 1 hour walk), I prefer cycling than travelling by car

COLUMNS

1. Strongly agree
2. Tend to agree
3. Neither agree nor disagree
4. Tend to disagree
5. Strongly disagree
6. Don't know **FIX**

ASK ALL**PROGRESSIVE GRID, SINGLE CODE PER ROW, RANDOMISE ROWS, FORWARD/REVERSE SCALE 1-4**

Q5. Thinking about the last 4 weeks, how often, if at all, did you personally travel by these modes of transport? It does not matter how long the journey was, or why you made it. Please select one option only.

ROWS

- a) Bus
- b) Train
- c) Car as a driver
- d) Car (incl. taxi) as a passenger
- e) Bicycle/e-bike
- f) Underground rail/metro
- g) Walking all the way to a destination

COLUMN

1. 5 days a week or more often
2. 3-4 days a week
3. 2 days a week
4. About once a week
5. About twice in the last 4 weeks
6. About once in the last 4 weeks
7. Not done in the last 4 weeks
8. Don't know **FIX**

SECTION 2 – Views on local transport

ASK ALL

PROGRESSIVE GRID, SINGLE CODE PER ROW, RANDOMISE ROWS, FORWARD/REVERSE SCALE 1-4

Q6. How would you rate the following within your local area where you live - that is, within about 1 mile (approximately a 3-minute drive, 20-minute walk)?

ROWS

- a) Bus services which operate near your home
- b) The condition of roads locally where you live
- c) The provision of cycle lanes/paths locally where you live
- d) The condition of pavements locally where you live

COLUMN

1. Very good
2. Fairly good
3. Neither good nor poor
4. Fairly poor
5. Very poor
6. Don't know **FIX**

SECTION 3 – Attitudes towards local transport and impacts

ASK ALL

PROGRESSIVE GRID, SINGLE CODE PER ROW, RANDOMISE ROWS, FORWARD/REVERSE SCALE 1-4

Q7. Please indicate how serious a problem, if at all, you think each of the following are in the local area where you live - that is, within about 1 mile (approximately a 3-minute drive, 20-minute walk)?

ROWS

1. The speed vehicles are travelling
2. Too many lorries travelling through
3. Not enough car parking spaces
4. Not enough cycle parking spaces
5. Traffic congestion/queues
6. The number of vehicles travelling through
7. Traffic fumes
8. Traffic noise
9. Difficulty crossing the road as a pedestrian
10. Vehicles parking on pavements
11. Poor maintenance of pavements

COLUMNS

1. Not a problem at all
2. Not a very serious problem
3. A fairly serious problem
4. A very serious problem
5. Don't know **FIX**

ASK ALL

SINGLE CODE ONLY

FORWARD/REVERSE SCALE 1-5

Q8. Thinking about the local area where you live - that is the area within about 1 mile of your home (approximately a 3-minute drive, 20-minute walk), in principle, to what extent do you support or oppose reallocating space on roads so that it is available to pedestrians and cyclists rather than cars?

1. Strongly oppose
2. Tend to oppose
3. Neither support nor oppose
4. Tend to support
5. Strongly support

6. Don't know **FIX**

SECTION 4 – LTNs

NEW SCREEN - SHOW ALL

Low Traffic Neighbourhoods, sometimes known as LTNs, are a type of transport scheme which aims to remove or reduce motor vehicle traffic in a residential area. These include traffic restrictions shown by traffic signs or by means of physical features such as planters. Residents and visitors can still get in and out of the area, and access their homes and businesses by motor vehicle, but they may have to change their route.

ASK ALL

SINGLE CODE ONLY

Q9. Before today, were you aware that there is an existing Low Traffic Neighbourhood scheme in your local area, or were you not aware of this?

1. Yes, was aware
2. No, was not aware
3. Don't know **FIX**

ASK ALL

SINGLE CODE ONLY

FORWARD/REVERSE SCALE 1-5

Q10. To what extent do you support or oppose the existing Low Traffic Neighbourhood scheme in your local area?

1. Strongly oppose
2. Tend to oppose
3. Neither support nor oppose
4. Tend to support
5. Strongly support
6. Don't know **FIX**

ASK ALL

SINGLE CODE ONLY

FORWARD/REVERSE SCALE 1-5

Q11. Do you think the existing Low Traffic Neighbourhood scheme in your local area has made a positive difference or a negative difference to you personally?

1. Very positive difference
2. Positive difference
3. No difference
4. Negative difference
5. Very negative difference
6. Don't know **FIX**

ASK ALL

PROGRESSIVE GRID, SINGLE CODE PER ROW, RANDOMISE ROWS, FORWARD/REVERSE SCALE 1-5

Q12. To what extent do you agree or disagree with the following statements:

ROWS

1. I have had the opportunity to share my views on the existing Low Traffic Neighbourhood in my local area with the council
2. I believe that residents' views on the existing Low Traffic Neighbourhood in my local area have influenced decisions made by the council
3. I have previously shared my views on the existing Low Traffic Neighbourhood in my local area with the council

COLUMNS

1. Strongly agree
2. Tend to agree

3. Neither agree nor disagree
4. Tend to disagree
5. Strongly disagree
6. Don't know **FIX**

ASK ALL
SINGLE CODE ONLY

PROGRESSIVE GRID, SINGLE CODE PER ROW, RANDOMISE ROWS, FORWARD/REVERSE SCALE 1-5

Q13. Thinking about your local area, (that is, within about 1 mile, approximately a 3-minute drive, 20-minute walk) do you think the existing Low Traffic Neighbourhood has made a positive or negative difference to each of the following, or has it made no difference?

ROWS

1. Air quality
2. Traffic noise
3. Traffic congestion/queues
4. The number of vehicles travelling through
5. Safety of walking and/or cycling
6. Having a choice of different transport modes

COLUMNS

1. Very positive difference
2. Positive difference
3. No difference
4. Negative difference
5. Very negative difference
6. Don't know **FIX**

ASK ALL

PROGRESSIVE GRID, SINGLE CODE PER ROW, RANDOMISE ROWS, FORWARD/REVERSE SCALE 1-5

Q14. Still thinking about your local area (that is, within about 1 mile, approximately a 3-minute drive, 20-minute walk), to what extent do you agree or disagree with the following statements about the existing Low Traffic Neighbourhood?

ROWS

1. It makes living in my neighbourhood more pleasant
2. It helps create a sense of community in my local neighbourhood
3. It makes it easier for me to access local facilities that I need
4. It has increased my journey time to reach places I visit frequently
5. I have noticed increased traffic congestion/queues on nearby roads since it was introduced
6. It has increased anti-social behaviour, e.g. vandalism of planters

COLUMNS

1. Strongly agree
2. Tend to agree
3. Neither agree nor disagree
4. Tend to disagree
5. Strongly disagree
6. Don't know **FIX**

ASK ALL

PROGRESSIVE GRID, SINGLE CODE PER ROW, RANDOMISE ROWS, FORWARD/REVERSE SCALE 1-3

Q15. Has the existing Low Traffic Neighbourhood encouraged you personally to do more or less of the following, or has it made no difference to you?

ROWS

1. Travel on foot (includes scooting, mobility aids and walking)
2. Cycle

3. Use public transport
4. Travel by car/van (as driver or passenger)
5. Travel by motorcycle/moped
6. Use taxis or private hire vehicles
7. Visit local shops
8. Visit local cafes/restaurants/bars

COLUMNS

1. Encouraged me to do more of this
2. Has made no difference to how often I do this
3. Encouraged me to do less of this
4. Don't know

ASK ALL SINGLE CODE ONLY

Q16. How many children aged 15 or under live in your household?

1. None
2. 1
3. 2
4. 3
5. 4
6. 5
7. 6
8. 7
9. 8 or more
10. Prefer not to say

ASK ALL WHO SELECTED CODES 2-9 AT QKIDS PROGRESSIVE GRID, SINGLE CODE PER ROW, 2 ALWAYS FOLLOWS 1, FORWARD/REVERSE SCALE 1-3

Q17. To what extent do you agree or disagree with the following statements about the existing Low Traffic Neighbourhood...

ROWS

1. It has made it more likely that my children will walk/cycle/scoot to get to school or college
2. It has made it more likely that my children will walk/cycle/scoot for other journeys
3. It has made it more likely that my children will play outdoors in the local streets

COLUMNS

1. Strongly agree
2. Tend to agree
3. Neither agree nor disagree
4. Tend to disagree
5. Strongly disagree
6. Don't know **FIX**

SECTION 5 – Final demographics

ASK ALL

Q18. Which of the following age groups are you in?

1. 16 to 19
2. 20 to 24
3. 25 to 29
4. 30 to 34
5. 35 to 39
6. 40 to 44
7. 45 to 49
8. 50 to 54
9. 55 to 59
10. 60 to 64
11. 65 to 69
12. 70 to 74
13. 75 to 79

14. 80 or over

ASK ALL
SA

Q19. Into which of the following bands does your annual **household** income fall, before tax and other deductions?

1. £541 or less per month / £6,499 or less per year
2. £542 to £791 per month / £6,500 to £9,499 per year
3. £792 to £1,342 per month / £9,500 to £16,105 per year
4. £1,343 to £2,083 per month / £16,106 to £24,999 per year
5. £2,084 to £3,333 per month / £25,000 to £39,999 per year
6. £3,334 to £4,999 per month / £40,000 to £59,999 per year
7. £5,000 to £6,249 per month / £60,000 to £74,999 per year
8. £6,250 and over per month / £75,000 and over per year
9. Don't know
10. Prefer not to say

ASK ALL
SINGLE CODE ONLY

Q20. Which of the following best describes your gender?

1. Man
2. Woman
3. Non-binary
4. My gender is not listed
5. Prefer not to say

ASK ALL
SINGLE CODE ONLY

Q21. Which of the following describes your current situation?

1. Married
2. In a registered same-sex civil partnership
3. Living together
4. Single
5. Widowed
6. Divorced
7. Separated
8. Don't know **FIX**
9. Prefer not to say **FIX**

ASK ALL
SINGLE CODE ONLY

Q22. **Including yourself**, how many individuals aged 16 or over live in your household?

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8 or more
9. Prefer not to say

ASK ALL
SINGLE CODE ONLY

Q23. Which of these best describes your current employment situation?

1. Self employed
2. In paid employment (full or part-time)
3. Unemployed
4. Retired
5. On maternity leave
6. Looking after family or home
7. Full-time student
8. Long-term sick or disabled
9. On a government training scheme
10. Unpaid worker in family business
11. Doing something else
12. Don't know **FIX**
13. Prefer not to say **FIX**

ASK ALL
SINGLE CODE ONLY

Q24. Do you (or your household) own or rent this accommodation?

1. It is being bought on a mortgage
2. It is owned outright
3. It is rented from the local authority
4. It is rented from a private landlord
5. It is rented from a Housing Association/Trust
6. Other
7. Prefer not to say

ASK ALL
SINGLE CODE ONLY

Q25. How long have you lived at your current address?

1. Less than 1 year
2. 1-2 years
3. 3-4 years
4. 5-15 years
5. More than 15 years
6. Prefer not to say

ASK ALL
MULTI

Q26. Do you, or anyone in your household, own a local business in the area?

1. Yes – I am a local business owner
2. Yes – someone else in my household is a local business owner
3. No **EXCLUSIVE**
4. Prefer not to say **EXCLUSIVE**

ASK ALL
SINGLE CODE ONLY

Q27. Do you have a health condition, illness or disability that affects your mobility, for example walking short distances or climbing stairs?

1. Yes
2. No
3. Prefer not to say **FIX**

ASK ALL
SINGLE CODE ONLY

Q28. Which one of the following best describes your ethnic group or background?

1. English/Welsh/Scottish/Northern Irish/British
2. Irish
3. Gypsy or Irish Traveller

4. Any other White background (specify) [OPEN COMMENT](#)
5. White and Black Caribbean
6. White and Black African
7. White and Asian
8. Any other mixed/multiple ethnic background (specify) [OPEN COMMENT](#)
9. Indian
10. Pakistani
11. Bangladeshi
12. Chinese
13. Any other Asian background (specify)
14. African
15. Caribbean
16. Any other Black/African/Caribbean background (specify) [OPEN COMMENT](#)
17. Arab
18. Any other ethnic group (specify) [OPEN COMMENT](#)
19. Prefer not to say [FIX](#)

Q29. Thank you for taking the time to complete this survey. In appreciation, we would like to email you a £5 Love2Shopvoucher.

Please enter your email address below

<<<ADD BOX FOR EMAIL ADDRESS>>

1. I do not have an email address – please post a paper voucher to my address
2. I do not wish to receive a gift voucher – THANK AND CLOSE

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