LOCAL TRANSPORT PLAN

Supporting Evidence Base

DRAFT FIFTH PLAN: *STRIKING THE BALANCE*

Highways and Transport
kent.gov.uk

1. Introduction

1.1. This is the evidence base of our new Local Transport Plan called *Striking the Balance*. Our new Local Transport Plan will replace the fourth plan the Council adopted in 2017 called *Delivering Growth without Gridlock*. The evidence base is written and published to provide transparency and understanding of the challenges and opportunities that our new Local Transport Plan has considered in its formulation.

1.2. Our evidence base looks in detail at the current and future circumstances that affect travel trends in the county. It explores the nature of Kent's urban and rural communities by comparing and contrasting with two example locations, to consider how transport could be in the future. The evidence base also considers in detail, but proportionate to proposals' development and design maturity, how they can contribute to the intended policy outcomes of the plan.

1.3. We have also considered the potential impact of our proposals on carbon emissions, to help understand how the use of transport and the delivery of new transport infrastructure can have either an increasing effect or decreasing effect on emissions. Lastly, we have set out a draft prioritisation framework we will consider applying to ensure that the plan's proposals remain effective in delivering the plans outcomes and to help us determine those options that would deliver furthest on those

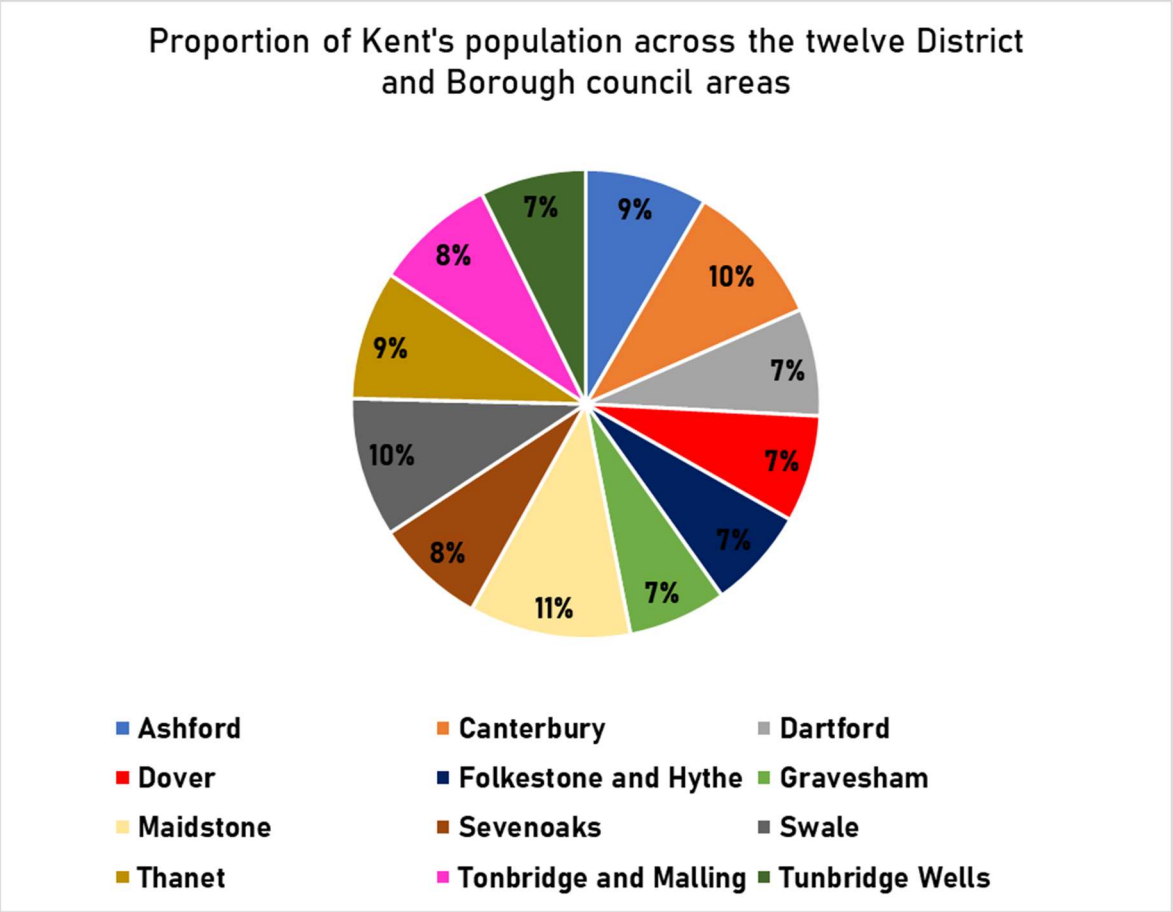
2. The current situation

2.1. In this section is the evidence we have considered about Kent's population and communities and travel in the county. The section ends with the current situation concerning funding transport network improvements. Environmental considerations are covered in less detail as they will be covered fully in the supporting Strategic Environmental Assessment we publish with the full Local Transport Plan.

2.2. Kent's population and communities

2.3. Kent has an estimated resident population of 1,576,100 people based on latest data available from the Office of National Statistics (specifically Mid-year population estimate for 2021 available at the time of writing). This was an increase of 7.7% over the 2011 estimate and just under the average for the south east region and the nation as a whole, which both saw an average rise of 7.9% between 2011 and 2021. The spread of Kent's population across the county is shown in Figure 1.

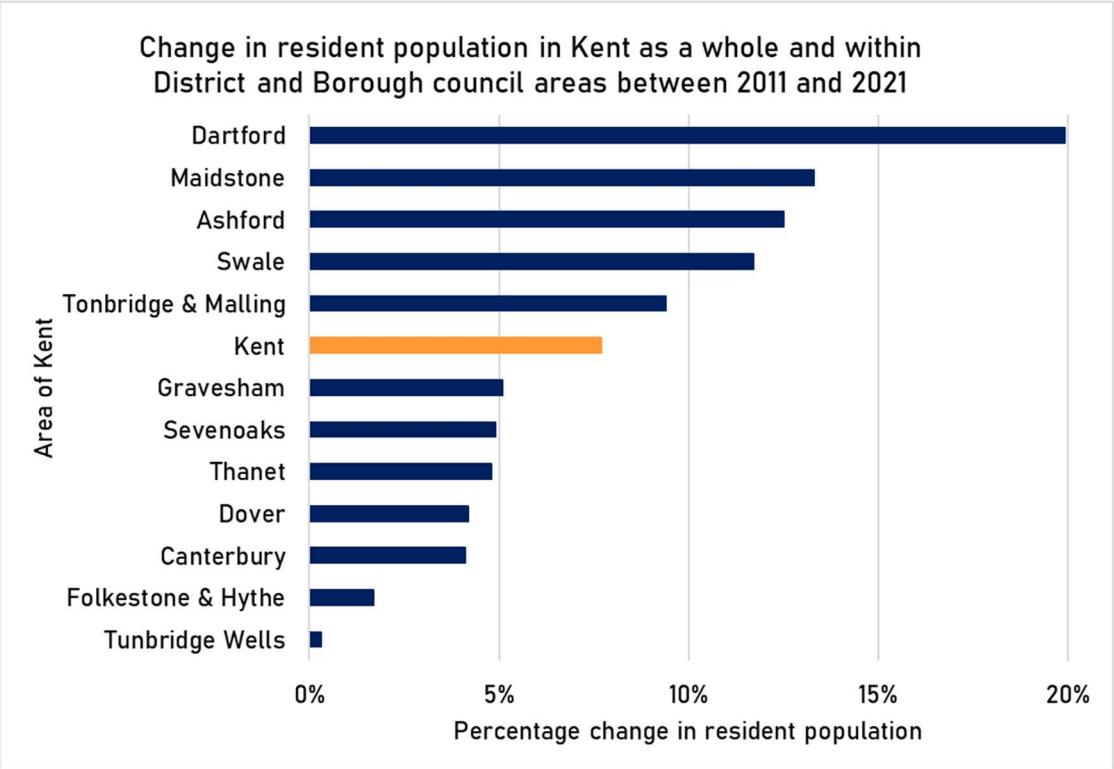
Figure 1 - The proportion of Kent's total resident population across the twelve District and Borough councils (Source: Kent Analytics and ONS)



2.4. Although the spread of population across Kent is relatively even between many District and Borough council areas, there is some significant difference between the highest and lowest, for example Maidstone has 64% more residents than Gravesham which is primarily a reflection of the spatial size of the council areas relative to one another.

2.5. There has been substantial difference in the recent growth in resident population up to the current time. As Figure 2 demonstrates, Dartford which delivered a substantial volume of new housing based on its Local Plan over the period, saw a 20% increase between 2011 and 2021. Conversely, at the other end of the scale, less substantial growth was recorded in locations such as Tunbridge Wells and Folkestone and Hythe. As described in the next section though, many of the Council and Borough authorities have large-scale developments planned to deliver new housing and commercial land uses, which means some of the past trends are less informative to the location of future challenges from population growth.

Figure 2 - Change in resident population in Kent as whole and across each District and Borough council area between 2011 and 2021 (Source: Kent Analytics and ONS)

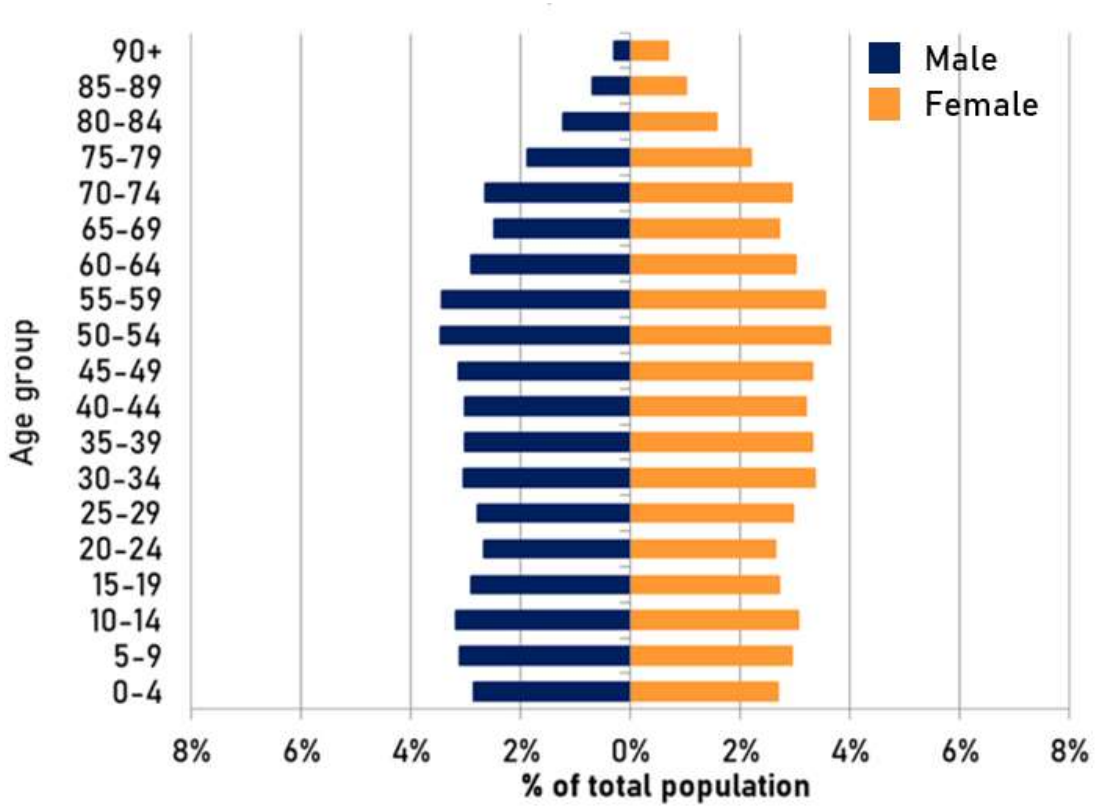


2.6. Kent's resident population pyramid is important to consider as it informs us of the proportion of Kent's population that fall within different age groups, and this can affect people's requirements and reliance on different parts of the transport network.

2.7. The population pyramid in Figure 3 illustrates that there is a relatively consistent proportion of the population across all age groups, with the proportions declining from age 65 years onwards; however, as is well-known given the long term trend of rising life expectancy, almost 1 in 10 people in Kent are 75 years or older. The largest age group as a proportion of the population lies in the 50 to 59 years old age group. Over the horizon that our Local Transport Plan primarily considers, into the late 2030s, this group will move into the late 60s to mid-70s age group.

2.8. Given the population pyramid, Kent's transport network will need to cater for a wide range of users, from the infancy and childhood through to later life. The varied needs and preferences of the population of Kent will likely be reflected in a need for a wide choice of forms of transport that are easy to access and that different age groups feel confident and safe using.

Figure 3 - Population pyramid by age group for Kent, 2021 population estimate (Source: Kent Analytics and ONS)



2.9. Population density is an important metric relevant to transport. The fundamental principle is that as density increases, so transport network density and choice similarly increases. Furthermore, as density increases, the transport network (and so investment and operational cost) scales upwards at a rate sub-linear to

density – so for every doubling in scale you need less than a doubling of the transport network.[1]

2.10. The basis for this is due to the viability of operations – the more people there are in a set area, the bigger the market for travel and therefore the greater the viability for operators of transport to succeed in attracting custom from that market.

2.11. A further compounding factor is that the more people there are in a set area, the higher road congestion from general motor traffic, and therefore the high cost of motor travel in terms of time, reliability of arriving at your destination at the time planned, comfort etc. attracts custom to alternative forms of travel that perform better on one of or many of those aspects. Those alternatives tend towards mass transit solutions such as bus, light rail and rail networks that are more efficient at moving more people around a dense built-up area than a road network.

2.12. There therefore tends to be, in higher density locations both push and pull factors attracting users to a wide range of transport options. These push and pull factors are also often heightened through the actions the local transport authority takes to make it more attractive for travel to take place using the choices that can move the most people in the ways which have the least negative and the most positive impacts that contribute towards achieving wider objectives such as economic prosperity, public health, and quality of place.

2.13. Within Kent, density at a countywide level is low, and this is broadly repeated at a District and Borough level, as shown in Figure 4. The area with the highest density is Dartford which due to its proximity to London and constraint from the Green Belt, has a compact urban area which has increasingly seen delivery of new apartment style housing similar in nature to inner and outer London.

2.14. Within wider Kent, the low level of density represents the extent of land protected from new land uses arising predominantly from the Green Belt around London (and the lack of brownfield land uses that have been available for new housing and densification in settings such as historic Tunbridge Wells), or the North Downs Area of Outstanding Natural Beauty in mid to east Kent. These parts of the county are assets that provide vital environmental resources for biodiversity, climate change resilience and the leisure and enjoyment of both residents and visitors to the county.

2.15. More helpful is the evidence focused on the main built-up urban areas within the county and compared to select locations from the wider south east region. The evidence in Figure 5 shows that the densest location in the region is Brighton and Hove, which reflects the close street block layout and that it has a

[1] See 'Growth, innovation, scaling and the pace of life in cities' by Bettencourt *et al*, published in Proceedings of the National Academy of Sciences, Volume 104, No. 17, 2007

significant proportion of residential buildings that are often three to six storey Georgian and Regency era town houses that are often converted to flats and apartments, meaning around 250,000 residents live within a relatively small urban area, equivalent in scale to the town of Maidstone.

2.16. In contrast, many of Kent's main built up areas tend to be around 30% to 40% less dense, reflecting the predominance of detached and semi-detached housing built in the post-war period. Kent's towns bring benefits to its residents in terms of the availability of green space and car parking. The area with highest density in Kent is the Gravesend to Dartford built-up area. This is a notable finding as it is here that Kent's only large-scale mass transit network exists in the form of the successful Kent Thameside Fastrack bus network. It is further notable that Brighton and Hove, the most densely populated location, also has one of the most well-used bus networks in the country, with residents making more bus journeys per person than anywhere else aside from London. Although a range of factors affect the quality and popularity of bus networks, the density of the area is likely to play a role.

2.17. Another important difference aside from density (although to an extent related to it), lies in the total population of the built-up areas. The densest built-up areas of Brighton and Hove and Portsmouth, each have populations of about 250,000. By contrast, the most populous built-up area in Kent is Maidstone with around 120,000 people – so approximately half the size of these other locations and ranking around 25th largest built up area in England (where London is the highest ranked with a population of over 9 million). The rest of Kent's built-up areas are smaller, and even a town like Ashford that has been growing substantially over the last 20 years (and will grow further), currently has around 80,000 residents – making it a third of the size of those largest in the region.

2.18. The evidence shows that the potential size of the demand market within many of Kent's built-up areas is relatively low compared to other locations in the country when considering the size of the total population of Kent. Given this, the challenge for Kent is being able to establish and sustain a wide range of well used forms of transport that cater to everyone's needs given that operators and providers may not have a large user market to tap into.

Figure 4 - Population density per hectare within Kent and compared to the wider south east region (based on Census 2021)

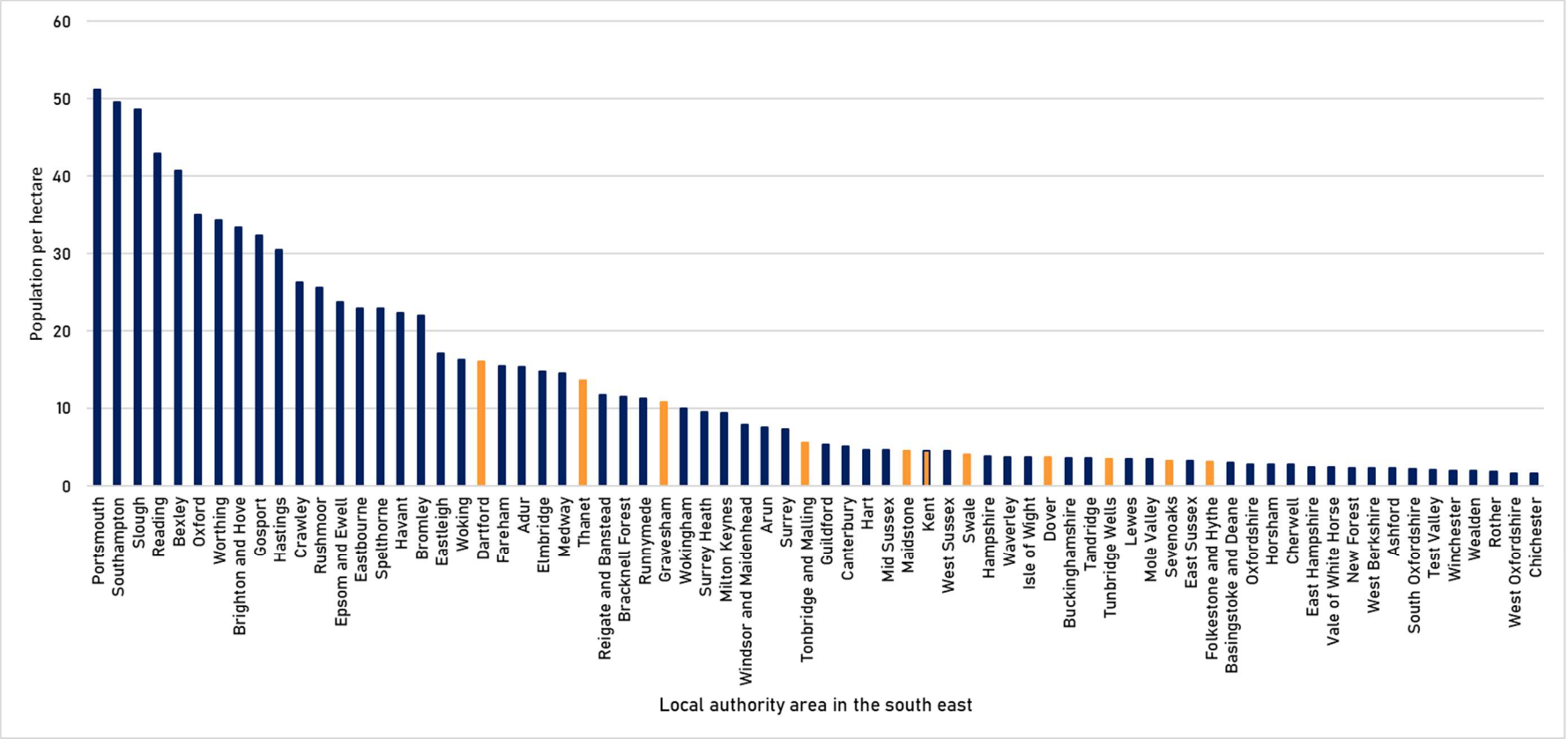
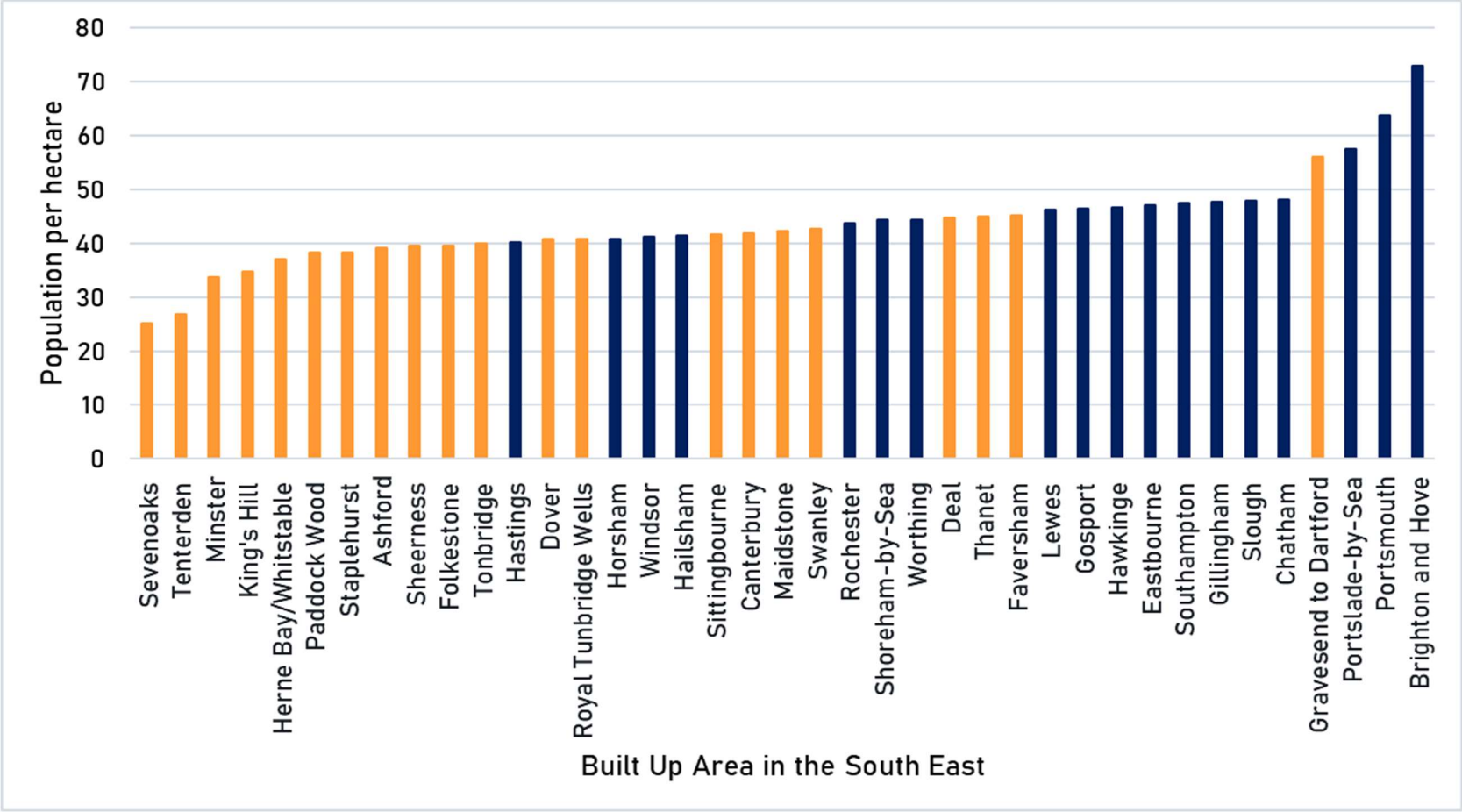
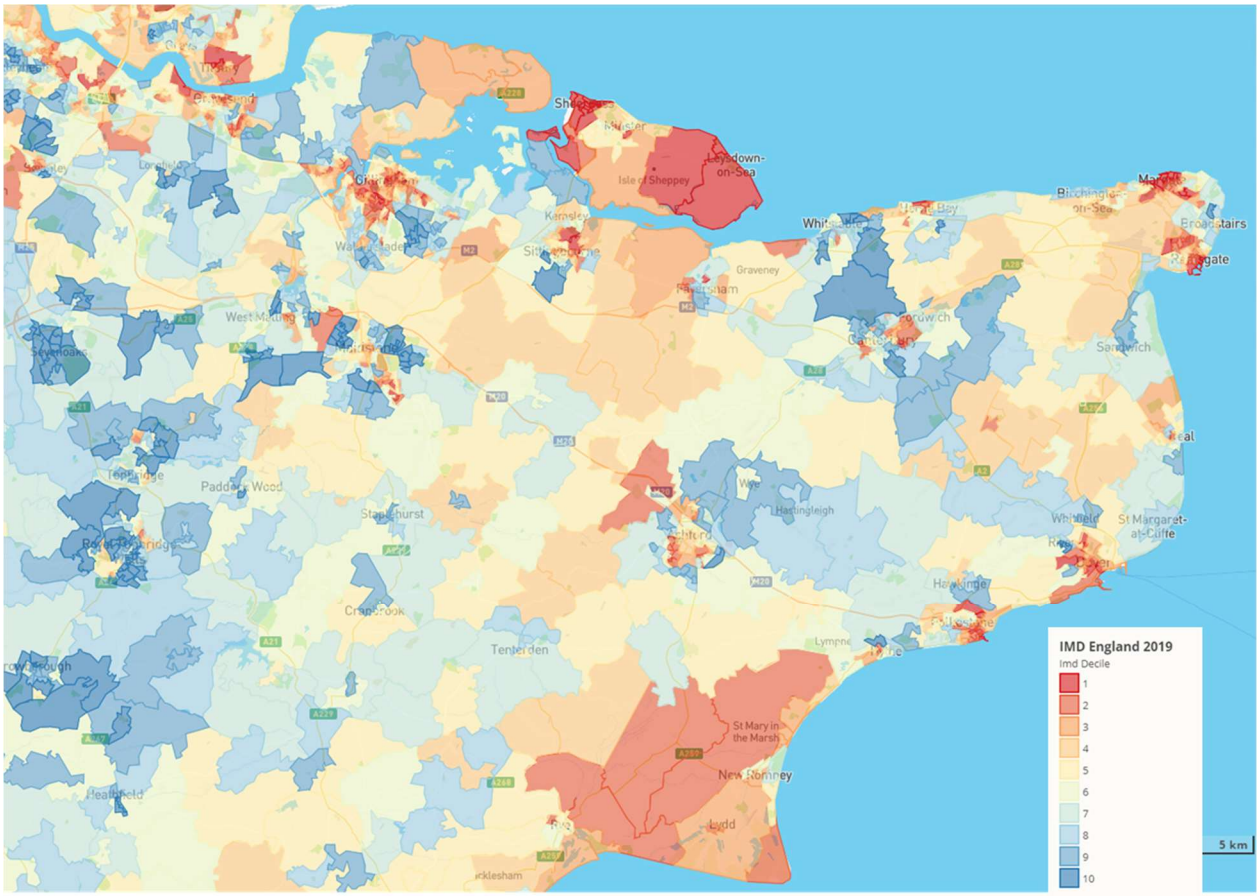


Figure 5 - Population density per hectare within selected built-up urban areas in Kent and the wider south east region (based on Census 2011 data)



2.19. A key measure of the challenges communities face is the Index of Multiple Deprivation, a composite measure of 39 variables that includes access to services (and by implication the quality of transport). The distribution of deprivation based on the Index is shown in Figure 6. The distribution shows that there are broadly more locations in west Kent with the highest index scores which means they are least deprived, whilst in east, north and south Kent, there are clusters of very high deprivation – notably on the Isle of Sheppey and into Sittingbourne, in Thanet, Dover and Folkestone, in the western area of Canterbury city, the Hythe-Dungeness-Romney Marsh area, around Ashford, pockets in Maidstone, and in the Gravesend-Northfleet-Dartford area.

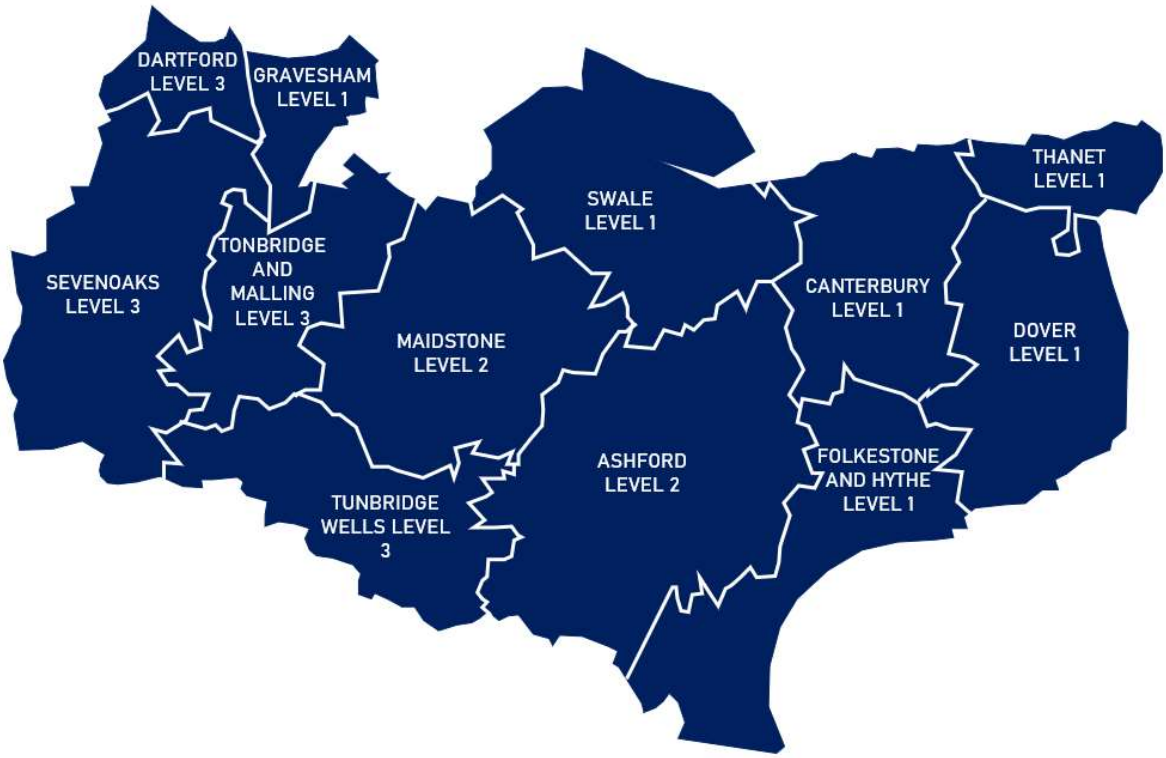
Figure 6 - Distribution of deprivation within Kent based on the Index of Multiple Deprivation



In recognition of these areas of deprivation, the government has established priority areas to deliver its 'Levelling Up' policy by targeting funding to transformational schemes, including transport, in those areas that are the highest priorities. The level of priority of each District and Borough authority in Kent is shown in

2.20. Figure 7.

Figure 7 - Levelling Up Priority Areas in Kent



2.21. We have also consulted the National Travel Survey to understand broad trends in terms of income levels (and implied deprivation) relative to travel habits.

- Nearly a quarter of all households have no car or van available, rising to 38% for those in the lowest real income quintile.[2]
- People in households without access to a car make over four times as many local bus trips as those with car access[3].
- Outside London, people in the lowest income quintile over four times more trips on the bus each year than those in the highest quintile[4].
- 77% of jobseekers in British cities outside London do not have regular access to a car, van or motorbike[5]. This proportion rises to 87% for jobseekers aged 18-24.
- People employed in routine and manual occupations make more bus trips, and travel further on the bus, than those in managerial / professional or intermediate occupations[6].

[2] DfT National Travel Survey Table NTS0703 2021
[3] DfT Annual bus statistics: England 2019/20
[4] DfT National Travel Survey Table NTS0705 2021
[5] Institute for Transport Studies (2013) Buses and the Economy II: Survey of bus use amongst the unemployed
[6] DfT National Travel Survey Table NTS0708 2021

2.22. Further related to Levelling Up areas and deprivation levels, we have considered the work undertaken by the Local Trust and Oxford Consultants on Social Inclusion for the All Party Parliamentary Group for 'left behind' neighbourhoods. The work ranked areas across the country to identify those deprived areas where challenges were compounded by an absence of places to meet, the lack of an engaged community and poor connectivity and as a result these areas may fare worse than other deprived areas (based solely on the Index of Multiple Deprivation). The work reported that the locations in Table 1 in Kent, and mapped in Figure 8, are particularly high up in the 'left behind' index.

Table 1 - 'Left-behind' areas in Kent as estimated by the Local Trust and OCSI

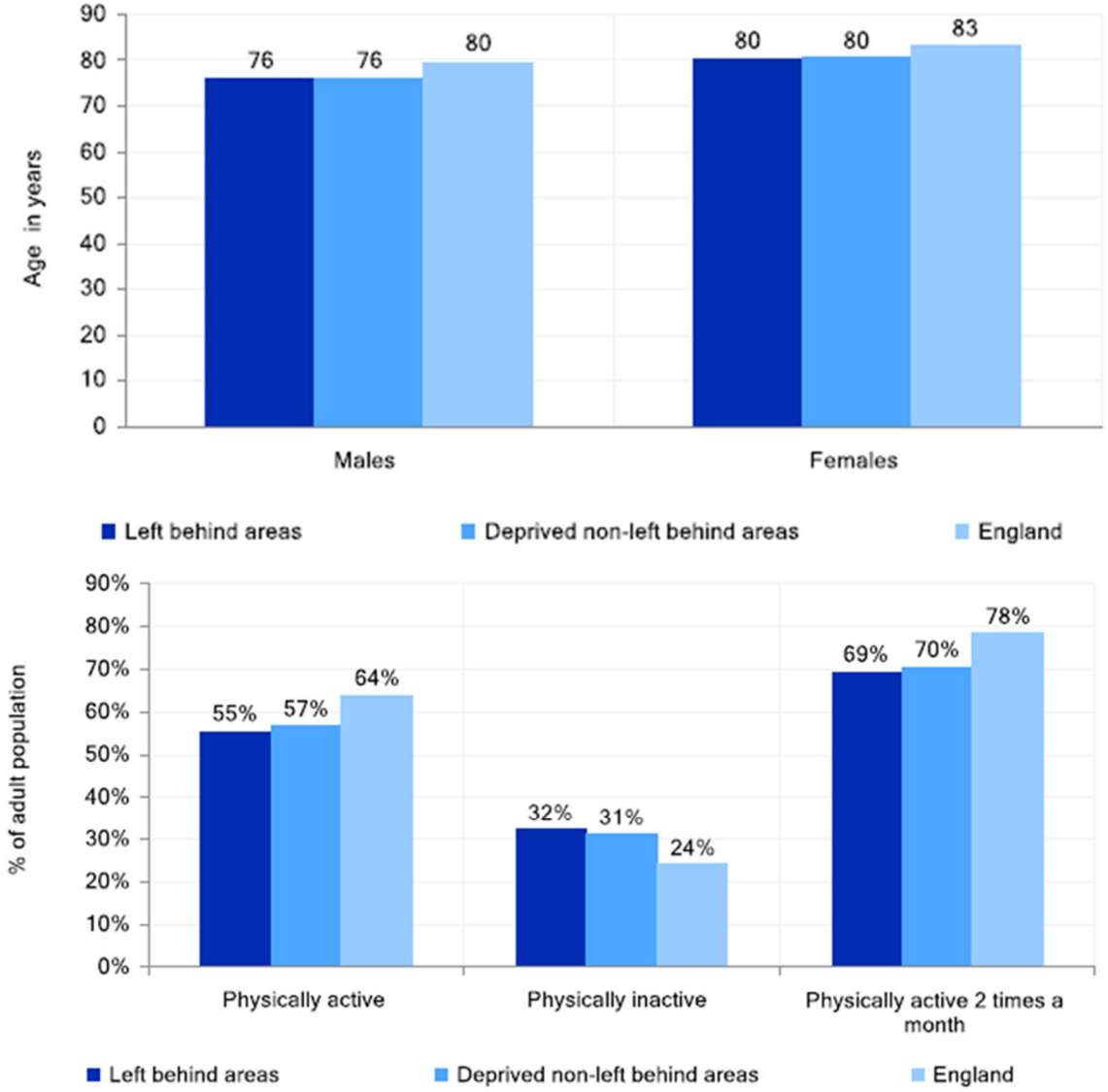
'Left behind' neighbourhood	Local Authority	LBN Index Score (Higher = greater need)	Rank across all wards in England (out of total 7,433)
Newington	Thanet	109.24	82
Town and Pier	Dover	107.07	98
Dane Valley	Thanet	99.20	194
Cliftonville West	Thanet	94.92	261
Eastcliff	Thanet	93.12	288
Folkestone Central	F&H	91.94	311
Sheppey East	Swale	89.58	379
Northwood	Thanet	85.76	472
Sheerness	Swale	72.58	971
Shepway South	Maidstone	55.32	2,070

Figure 8 - Location of "Left Behind" locations in Kent

Evidence on ‘left behind’ areas shows that average life expectancy for both males and females is around 3 to 4 years shorter than the average for areas not classed as ‘left behind’. Related to this, physical activity levels are also lower, as shown in

2.23. Figure 9.

Figure 9 - Life expectancy and activity levels in 'left behind' areas compared to non 'left behind' areas



2.24. Given the evidence concerning physical activity levels and given that part of the definition of the 'left behind' metric includes poor connectivity (both physical and digital) to the wider economy, tackling 'left behind' communities would be supported by considering how the transport policies and proposals we develop may particularly advantage these areas.

2.25. We have already succeeded in attracting some targeted funding on transport improvements to help address levelling up and deprivation, but the evidence shows more needs to be done. Given deprivation is often focused in built up areas, there is clearly a role for local transport to assist in improving quality of life and opportunities.

2.26. As the County Council, we are responsible for helping to improve the general health of everyone living in Kent, especially those who may find it difficult to stay healthy. We understand the important role of transport and travel in

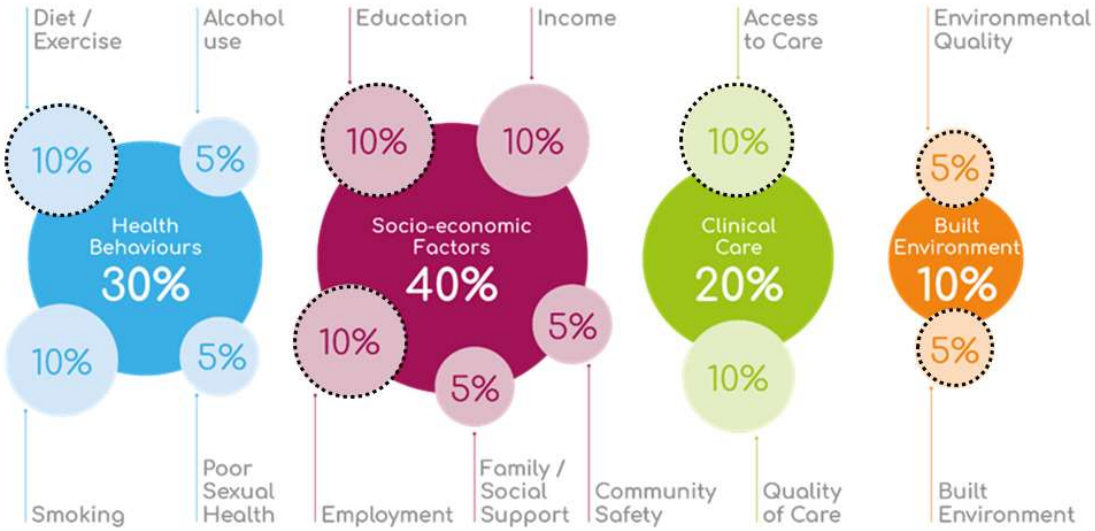
impacting the health of Kent's population. How people travel and the amount of physical activity they get as part of their journey is a factor as well as the effects of transport within a community's setting, such as the impacts of road traffic on air quality and noise. These impacts of transport are also some of the wider determinants of public health, shown in Figure 10.

2.27. Transport and movement are related to those determinants circled in the dashed black line in Figure 10 - specifically Diet / Exercise, Education, Employment, Access to Care, and Environmental Quality and the Built Environment. Transport therefore has a role to play in an estimated 50% of the determinants of our health.

2.28. This becomes particularly important where in Kent there could be inequalities of access to transport services and infrastructure. The work by Transport for the South East on its Transport Strategy has highlighted that different aspects of social exclusion often act in concert meaning different aspects of social exclusion can reinforce and exacerbate challenges in accessing transport services. This can then have negative feedback on access to health care and embed the disadvantages and challenges that hold communities back from their potential in parts of the county. Transport for the South East highlight that deprivation is particularly common occurrence in many coastal communities in the south east region including in Kent along its north and east coastline.

2.29. For more information about the work we do across these wider determinants, consult our published information on our Public Health Strategy.

Figure 10 - Transport's role in the wider determinants of public health



SOURCE: Robert Wood Johnson Foundation and University of Wisconsin Population Health Institute in US to rank countries by health status

2.30. Public health of Kent's communities is monitored by Kent County Council and reported on the Public Health Observatory online platform. We have considered the most relevant reported public health data to transport and travel below.

2.31. Child obesity levels are reported through the Public Health Observatory, across infants and older children. The percentage of children aged 4 to 5 and aged 11 classed as obese within wards across Kent are shown in Figure 11 and Figure 12.

Figure 11 - Obesity levels across Kent for children aged 4 to 5

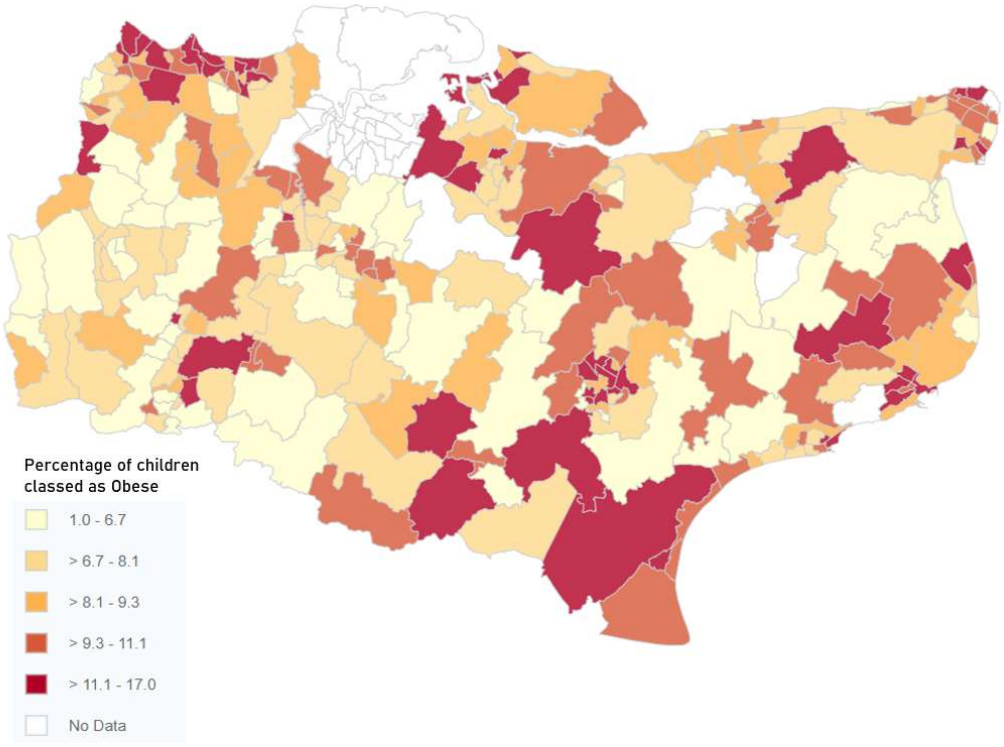
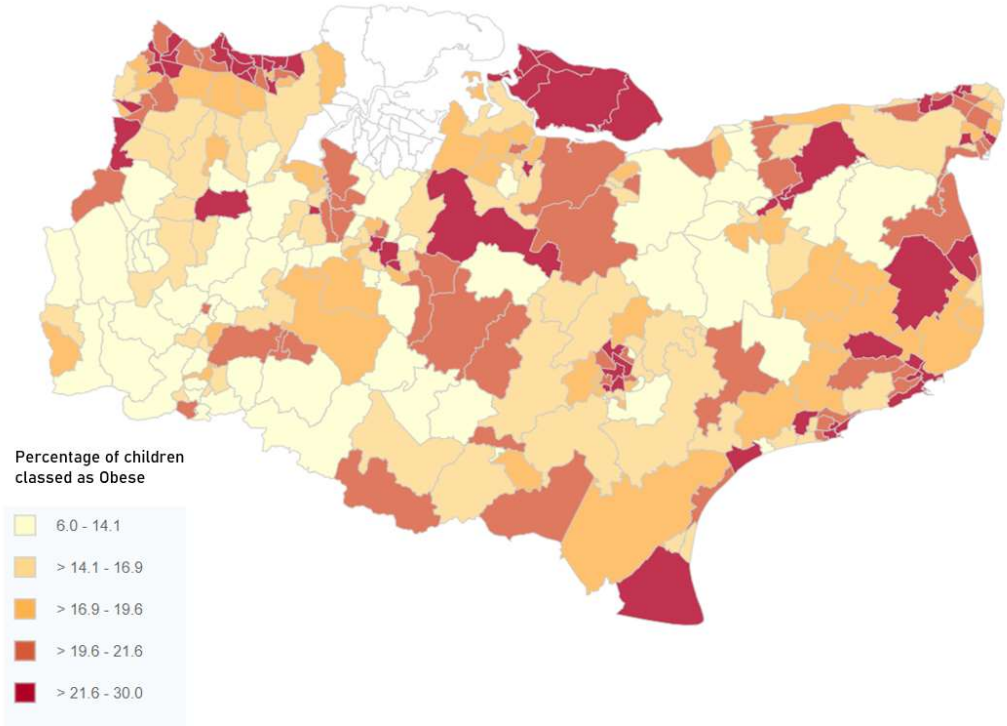


Figure 12 - Obesity levels across Kent for children aged 10 to 11

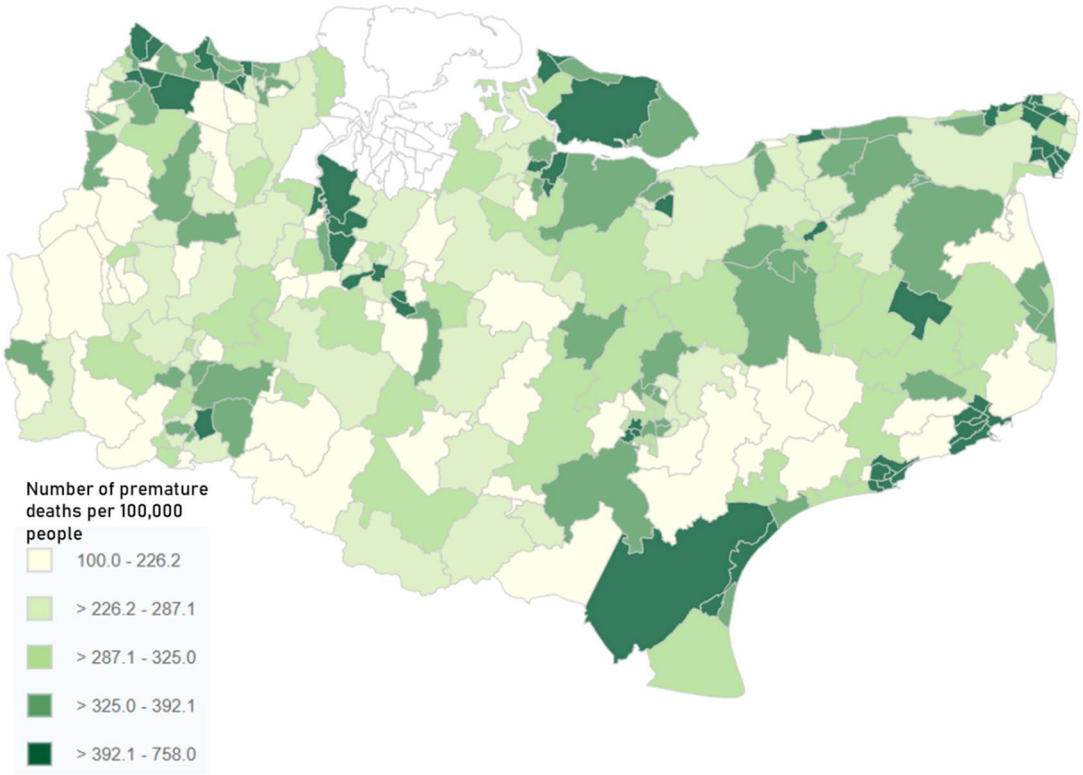


2.32. In parts of Kent there are areas where childhood obesity occurs for almost one in three children of the ages reported. Higher levels are typically found in the

more populous built-up areas, like Gravesend, Ashford, Folkestone and Dover, amongst others. It is notable that the highest levels tend to be in built-up areas where there tends to be a denser street network, lower speed limits than in rural areas, and a concentration of homes, services, retail and schools which should make for places where active forms of travel such as walking and cycling are easier to do. Therefore, overcoming remaining barriers to enabling children to benefit from physical activity as they travel around their town may help to address the levels of obesity seen.

2.33. The distribution of premature deaths (considering all causes), measured as an age standardised rate per 100,000 people aged under 75 years, is shown in Figure 13. The spatial distribution of premature deaths in Kent has similar distribution to childhood obesity as it is also likely to have some correlation with those areas that have higher levels of deprivation as detailed previously in Figure 6. Given obesity is linked to life expectancy, the same actions to address obesity, whether at children or all ages, can have a positive impact on this public health indicator too.

Figure 13 - Distribution of premature death rates across Kent



2.34. Transport activity also directly impacts air quality, with road-based vehicles generating pollutants that can enter the respiratory system and cause more widespread health impacts within the body. Public Health England publishes

data on the correlation of mortality with air pollution across local authorities in England, shown in Figure 14.

Figure 14 coupled with

2.35. Figure 15, shows that Kent follows the overall trend (i.e. that there is a likely correlation between air pollution and mortality in Kent) and furthermore has a correlation slightly above the average for England. (suggesting the population in Kent is slightly more affected by air pollution than the average of locations in England, which could be for a wide variety of reasons). This evidence lends weight to continuing to address road-based pollution to contribute to improving public health outcomes in Kent.

Figure 14 - Correlation of mortality to air pollution from fine particulate matter

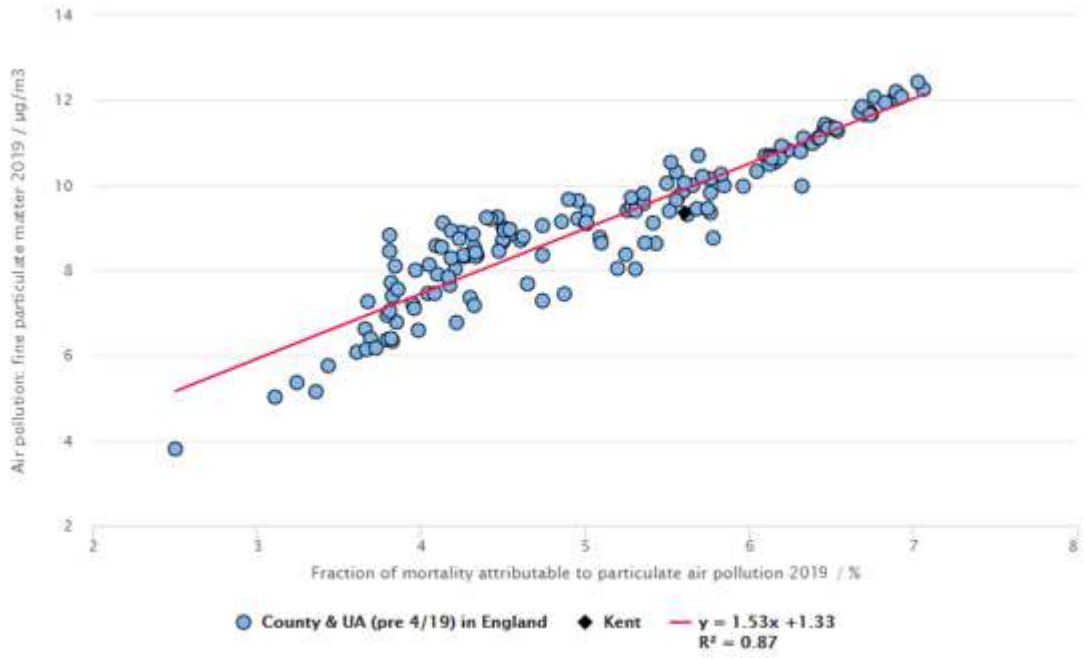
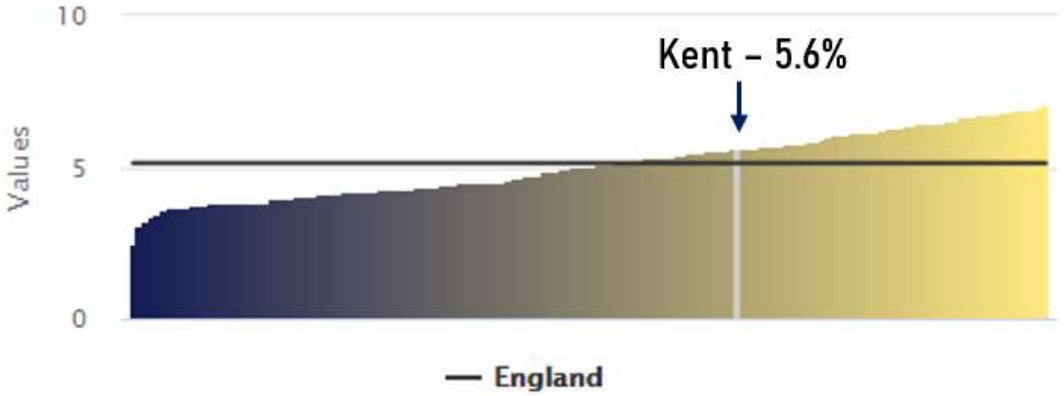


Figure 15 - Kent correlation between air pollution and mortality relative to the national average

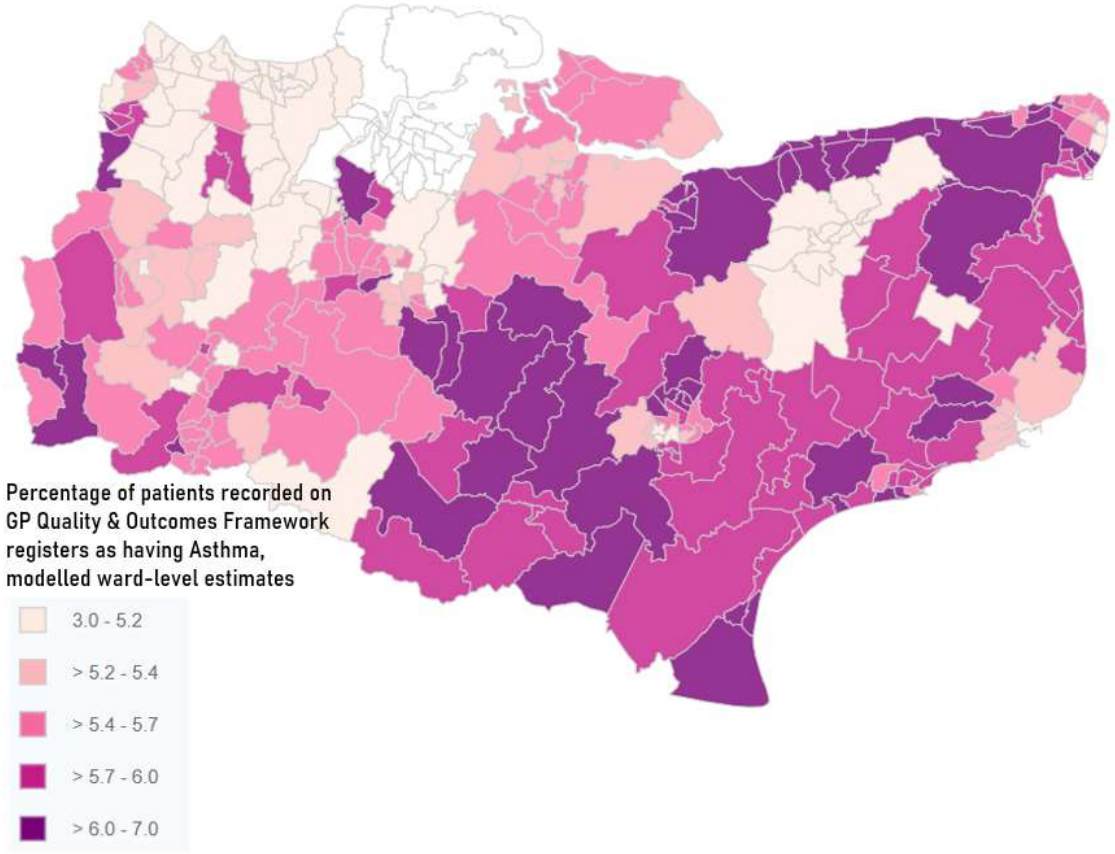


2.36. As part of Kent's monitoring of public health, prevalence of asthma is reported which is proven to be exacerbated by pollutants from roads. The prevalence of asthma in Kent is shown in Figure 16. The figure shows a more widespread prevalence especially in the eastern half of the county, though in the western half there are still locations with some of the highest rates.

2.37. The more widespread prevalence likely reflects that there are a wide range of environmental factors aside from road pollution that also affect. Consideration of the effects of road-generated air pollution are nonetheless important to make and relevant especially in locations where Air Quality Management Areas have been defined due to this cause.

2.38. More information on Air Quality Management Areas, as part of Kent's environment, is in section 2.53.

Figure 16 - Recorded asthma prevalence in Kent



2.39. Mental health is also reported as part of the public health observatory, and whilst the factors that can affect it are varied, physical fitness and the quality of place in which people live and work can both affect mental health. In Figure 17 we can see that the spatial distribution of admissions sees higher levels in built-up areas.

2.40. Common to premature deaths and obesity, there is clear evidence to indicate improving choice and quality of transport in towns across Kent to create better places and more active lifestyles to improve public health outcomes. Where to focus efforts on increasing the opportunity for more active lifestyles as part of how people make journeys is informed by activity levels across the county. In Figure 18 the differing levels of activity within each District and Borough authority in Kent are presented. The UK Chief Medical Officer's guidelines recommend that each week adults do at least 150 minutes of moderate intensity activity. In some locations, as many as two in five residents are not able to achieve the recommended level of 150 minutes or more and are significantly behind the Kent and England average.

2.41. Whilst the evidence indicates that the lowest activity levels occur in locations such as Thanet and Gravesham, the is clearly a case for undertaking efforts in every part of the county as even Tunbridge Wells, which is the best performing

location, still has over one in three residents not achieving the recommended activity levels.

Figure 17 - Mental health hospital admissions across Kent

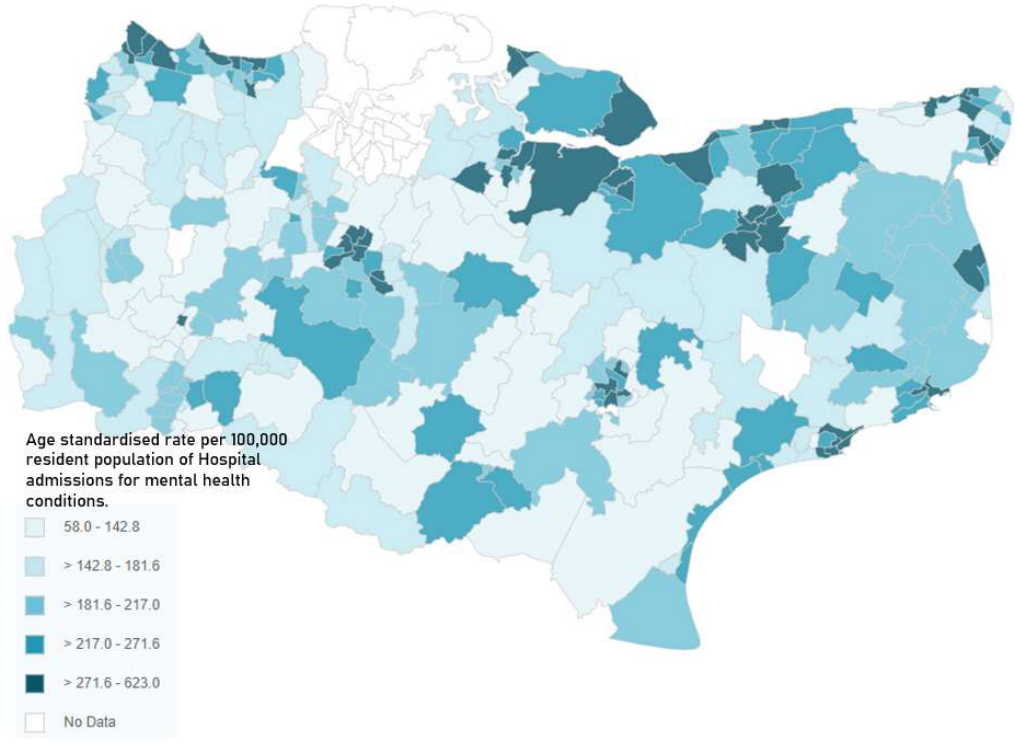
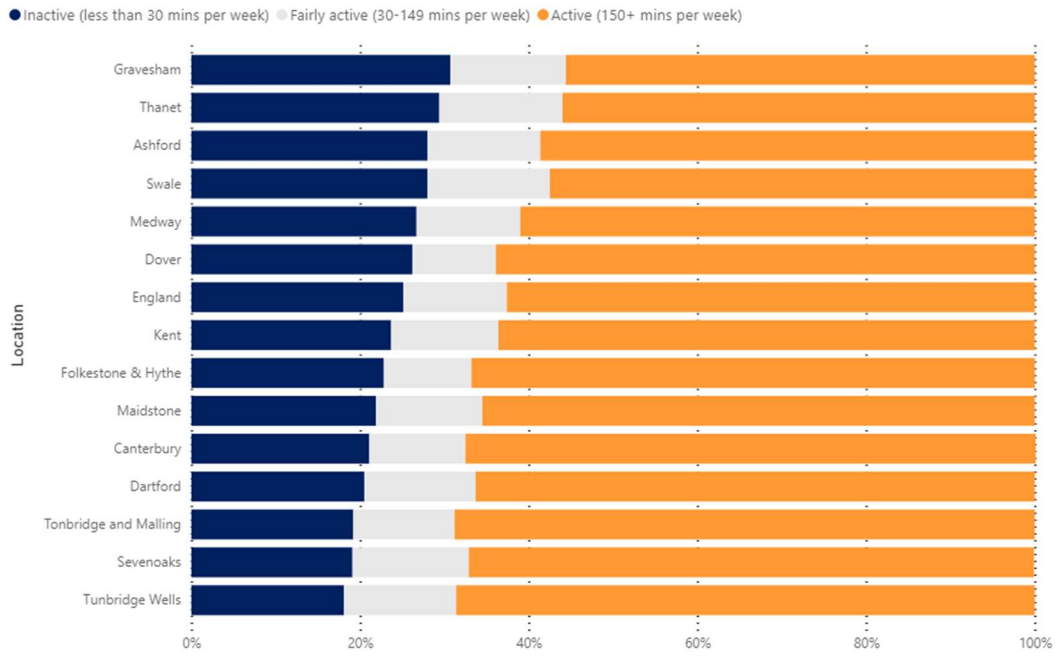


Figure 18 - Physical activity levels within Kent



2.42. **Kent's Environment**

2.43. In this evidence base, we are focused on the challenges and opportunities that exist in terms of Kent's environment that are relevant to the development of the policies and proposals that the Local Transport Plan could develop. The Strategic Environmental Assessment will, in contrast, assess the effect of proposals within the Local Transport Plan on Kent's environment to assist us in understanding what changes or mitigations may need to be incorporated into their development to reduce those effects.

2.44. Kent has a wide range of natural assets which are reflected through classifications and designations within planning policy. Notwithstanding this, around 85% of the county is classed as rural though a third of the county's population lives in rural areas.

2.45. Access to the natural environment enables Kent's residents and visitors to enjoy the sights, scenes and sounds of the county's rich and diverse wildlife and landscapes. We know from past research reported in our Environment Strategy that 70% of residents rate the countryside as very important to them with four people in every five making use of it at least once a fortnight. Kent's natural environment is also a vital resource for supporting Kent's visitor economy, with 47% visiting for this purpose.

2.46. Our Kent Environment Strategy has a priority of ensuring sustainable access and connectivity for businesses and communities. The Strategy seeks to develop an integrated approach to sustainable access to our countryside, heritage and coast so that Kent's economy and health outcomes are improved through outdoor sport and leisure. This priority and aim can be supported by the Local Transport Plan.

2.47. We run nine country parks, providing car parking and information on public transport and walking and cycle links to each site to make it as easy as possible for visitors to plan their trip. Furthermore, the local planning authorities manage local parks, often within built up areas, which provide essential locations for recreation and sports in local community settings. Some of these parks host sections of our Public Rights of Way network which provide both access within and links across spaces to make getting around town easier.

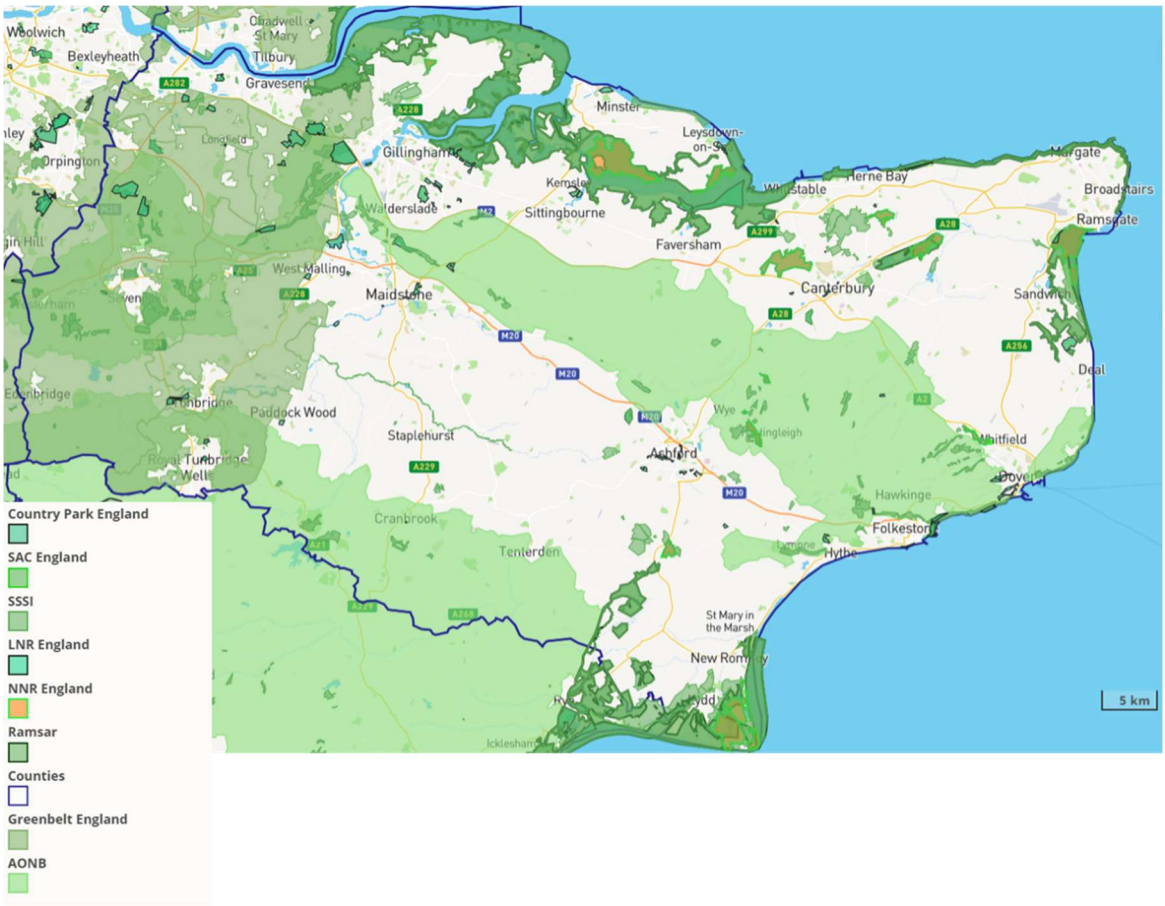
2.48. The extent of Kent's designated natural environmental assets is shown in Figure 19. There are over 100 sites of national and international importance, as well as over 400 local sites too. Their abundance is a strength for the county and the quality-of-life residents can lead.

2.49. The most notable sites in terms of their size are the North Kent Downs National Lands and the High Weald National Landscape which cover 32% of the whole county. The abundance of designated natural environment sites also creates

some constraints and challenges on those the areas and options that can be considered for large new infrastructure – especially any notion of new road or rail links that are cross county. For example, there are very few main roads north-south through the North Downs or High Weald, reflecting the importance and protection they have from new infrastructure.

2.50. The green belt, designed to manage the sprawl of London and ensure it has a green boundary and natural environment that residents can enjoy, covers much of western Kent. The road network is denser and more varied in this part of the county though, reflecting the range of routes between London and the wider region with the county and the connections between the commuter towns such as Dartford, Sevenoaks, Tunbridge Wells and so on.

Figure 19 - Designated nature and parkland sites in Kent



2.51. Part of our efforts to support and protect the natural environment includes our Plan Tree which is focused on a number of priorities including better management and protection of the existing stock of trees in the county. Alongside protecting existing tree cover, the plan aims for a further 1.5 million trees to be planted, to help achieve an aim of 19% of the county having tree cover by 2050 – a date tied to the net zero climate change target for 2050. Transport in the county plays two important roles – both the land that we possess as part of our roads estate that can host wildlife including trees, and

also the prospect that new road schemes risk reducing tree cover as vegetation at verges may need to be removed to enable road widening, or new roads

2.52. The health impacts of poor air quality are made clear by Public Health England and include low birth weight, asthma, atherosclerosis, coronary heart disease, stroke, lung cancer, dementia, and diabetes.[7]

2.53. In Kent the recognised and monitored areas of highest pollution are designated Air Quality Management Areas (AQMAs). There are currently 29 areas in total. Kent has not had any requirement to introduce Clean Air Zones[8] based on the monitored level and spatial extent of pollutants – reflecting in part that Kent's main urban areas are typically relatively small scale compared to those locations elsewhere in England where Clean Air Zones have been declared. The AQMAs identified to date concern monitored levels of Nitrogen Dioxide.

2.54. The AQMAs in Kent include road corridors, both on the National Highways trunk road network and on the KCC managed local road network. The name and location of the Air Quality Management Areas covering road corridors are listed in Table 2.

Table 2 - Air Quality Management Areas in Kent

Name of AQMA	Designating local authority	Coverage of AQMA
No.3 Canterbury	Canterbury City Council	Ring road round Canterbury City centre and its adjoining main roads.
No.1 Herne	Canterbury City Council	Junction of School Lane with the A291.
No. 1 Dartford	Dartford Borough Council	A corridor approximately 250m wide along the A282 Dartford Tunnel Approach Road from junction 1a to 300m south of junction 1b.
No. 2 Dartford	Dartford Borough Council	An area encompassing London Road, Dartford.
No. 3 Dartford	Dartford Borough Council	An area encompassing Dartford Town and a number of approach roads.
A20	Dover District Council	An area following the A20 from just west of the Limekiln Roundabout at

[7] Air pollution: applying All Our Health - GOV.UK (www.gov.uk)

[8] Clean Air Zones are required where areas are breaching legal limits of Nitrogen Dioxide (NO_2) Clean air zone framework - GOV.UK (www.gov.uk)

		the western end to a point circa 140m from the Eastern Docks in Dover.
High Street / Ladywell	Dover District Council	An area encompassing roads and properties between the junction of Effingham Crescent/High Street, and Priory Hill/High Street.
A2 trunk road	Gravesham Borough Council	An area extending either side of the length of the A2 within the borough.
Northfleet Industrial Area	Gravesham Borough Council	An area encompassing the Northfleet Industrial Area in Gravesham.
Gravesham A227 Wrotham Road / B261 Old Road West	Gravesham Borough Council	An area encompassing the junction of the A227 Wrotham Road and B261 Old Road West extending south to a point just beyond the Woodlands Restaurant.
Gravesham A226 One-way system AQMA	Gravesham Borough Council	An area incorporating the entirety of the A226 One-way system in Gravesend.
Maidstone Borough	Maidstone Borough Council	The area follows the carriageways of the main roads passing through the Borough, including the M20, A229, A20, A26, A249, and A274.
No.8 Swanley Town Centre	Sevenoaks District Council	An area encompassing Swanley Town Centre, High Street and London Road.
No.10 Sevenoaks High Street	Sevenoaks District Council	An area encompassing Sevenoaks High Street.
No.13 A25	Sevenoaks District Council	The entire length of the A25 from the border with Tonbridge and Malling in the East to the border with Tandridge on the West.
No.14 Junction of Birchwood and London Roads, Swanley	Sevenoaks District Council	Junction of Birchwood Road and London Road, Swanley.
Newington	Swale Borough Council	An area encompassing those parts of London Road and High Street, Newington where the speed limit is 30mph.

No.2 / 6 Ospringe extended	Swale Borough Council	Area incorporating all Ospringe Street, Ospringe which is a section of the A2 London Road, trunk road near Faversham and extended to take account of the additional tube monitoring results up the hill as far as the Mount.
No.3 East Street	Swale Borough Council	The designated area incorporates the area of East Street, Sittingbourne.
No.4 St Pauls Street	Swale Borough Council	The designated area incorporates the area of St Pauls Street, Sittingbourne.
Teynham	Swale Borough Council	The AQMA has been declared for a strip of the A2 London Road Teynham which is between Faversham and Sittingbourne.
Keycol Hill	Swale Borough Council	The designated area incorporates the area of Keycol Hill, Sittingbourne.
Thanet Urban	Thanet District Council	An area encompassing several urban areas within Thanet.
M20	Tonbridge and Malling Borough Council	An area extending 39m from the centreline along the M20 motorway between the points where it passes below New Hythe Lane, Larkfield to the west and where it crosses Hall Road, Aylesford to the east.
Tonbridge High Street	Tonbridge and Malling Borough Council	An area incorporating the High Street between Botany and the High Street/Vale Road roundabout, Tonbridge.
Wateringbury	Tonbridge and Malling Borough Council	An area incorporating the Red Hill/Tonbridge Road A26 crossroads in the Parish of Wateringbury.
Aylesford	Tonbridge and Malling Borough Council	Area covering the A20 London Road Junction with Hall Road & Mills Road in Aylesford

Larkfield	Tonbridge and Malling Borough Council	Area covering the A20 London Road Junction with New Hythe Lane and row of houses on approach to this junction from the west on A20 London Road in Larkfield
No.7 Borough Green	Tonbridge and Malling Borough Council	Area covering the A25 Sevenoaks Road and roundabout with Western Road in Borough Green.

2.55. The Environment Act (2021) sets an obligation on Government to set a long-term target on reducing pollution from fine particulate matter, known as PM2.5. At the time of writing, this target had not been set by Government. These particles, released in vehicle exhaust and from vehicle breaks and tyres, are small enough to avoid the filtering abilities of our noses, allowing them to enter the respiratory system. Some are so fine; they can pass across the tissue of the lungs into the circulatory system. This pollution can cause illnesses[9] like asthma, chronic obstructive pulmonary disease, coronary heart disease, stroke, and lung cancer. There is also evidence that links PM2.5 to low birth weight, diabetes and diseases such as Alzheimer's and Parkinson's.

2.56. Once the target is set, the number and location of Air Quality Management Areas may change within Kent which will have a bearing on the actions to be taken in addressing pollution of this type.

2.57. Aside from air quality effects from transport, transport also generates noise which can affect the quality of life for those people that live or work near highways. The Department for the Environment, Food and Rural Affairs (DEFRA) publishes estimated noise maps associated with road traffic. The Kent area noise map is shown in Figure 20.

2.58. The noise map illustrates that noise impacts are highest and most dispersed around Kent's busiest roads, such as the M20, M2 / A2 and M25. As vehicles shift towards battery electric power, the noise generated by their engines will decrease. This will likely have most benefit in built-up urban areas, where stop-start traffic conditions cause noise from revving of motors. On the trunk road network, where noise impacts are greatest and most dispersed, the speed of vehicles and the noise generated by the rubber tyres on the road surface will remain and therefore electric vehicles may yield less improvement in noise impacts along these corridors.

[9] See Royal College of Physicians and Royal College of Paediatrics and Child Health authored publication 'Every breath we take: the lifelong impact of air pollution'.

Figure 20 - Defra published noise map (2017 data, 16-hour period) for Kent

2.59. Kent's transport and travel

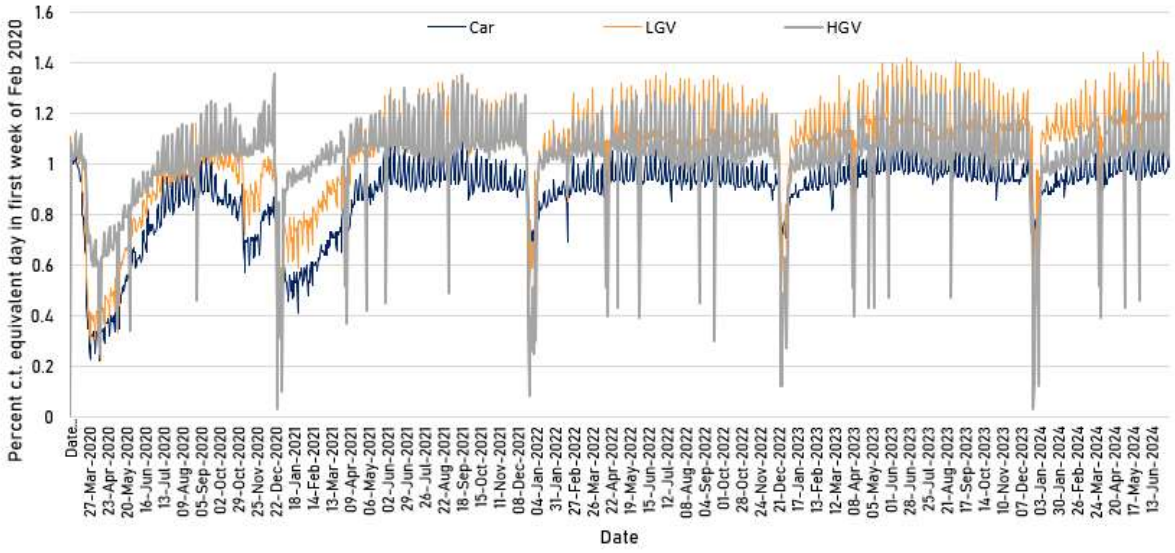
2.60. We manage the local road network in Kent and have a countywide transport model (known as the Kent Transport Model, or KTM) to simulate and forecast the volume of traffic that uses different routes across it during different times of the day. Our transport model includes the trunk road network in the county as road traffic uses both the local and trunk road network to make door-to-door journeys. Our model also considers the road network and areas that generate demand beyond our county border as trips that use roads in Kent may start or end elsewhere in the country.

2.61. We established a baseline of 2019 in our transport model and use that to understand typical traffic volumes on the road network. We also consider how traffic volumes have changed since the Covid-19 pandemic. What we can conclude, given the trends detailed in Figure 21, is that traffic volumes at a national level are similar, if not higher than they were prior to 2019 for LGV and HGV traffic. For car traffic, levels of traffic in the week are slightly lower, with highest volumes on weekends. This likely reflects the increase in work from home leading to a reduction in car commuting trips. Given most car trips are non-commuting, the current level remains only a few percent lower than the pre-pandemic benchmark.

2.62. Given our understanding of current traffic levels relative to that pre-pandemic in 2019, we consider our transport model baseline of 2019 a sound basis to inform our considerations for our Local Transport Plan. In coming years, we will aim to update the baseline to a more contemporary year, which will include collecting a detailed new set of traffic counts data from across the Kent network

to re-calibrate the updated model. This will further support our development of the proposals that we propose in our full Local Transport Plan.

Figure 21 - Car, LGV and HGV traffic levels nationally since the beginning of March 2020, compared to traffic levels in the first week of February 2020



2.63. When and why travel happens on our road network informs our planning of it. Over the course of the busiest parts of the day, our baseline estimate of volumes is that the PM peak period (which runs from 4 pm to 7 pm) is the busiest time of day. This likely reflects that in this period there is initially schools traffic followed by commuting home traffic, mixed also with business and non-work and non-education traffic such as trips to the shops and for leisure and recreation. Hence this time of day sees the confluence of all different trips purposes and drives the highest total over that period on the network.

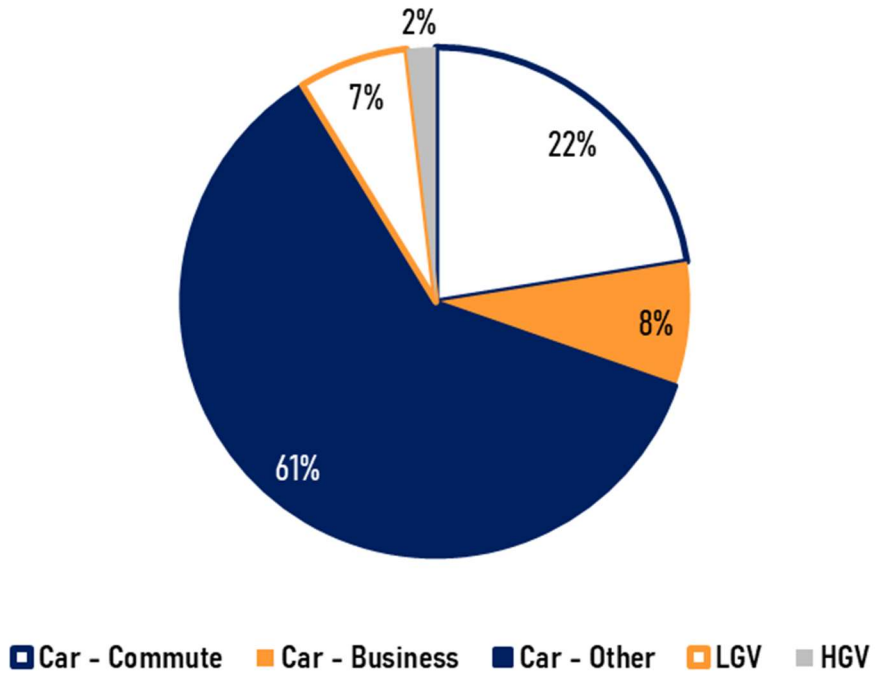
2.64. This is followed by the AM peak, which has the concentration of commute trips for work and non-work trips for school but has a much lower volume of trips associated with leisure and recreation and other purposes (as most services such as retail tend not to open until further into the morning period).

2.65. During the late morning and early afternoon (what is called the Inter peak), traffic levels in any one hour stay below the highs seen in the AM and PM periods, reflecting the lack of many commute trips and the spread of non-work trips.

2.66. The make-up of traffic on Kent roads (local and trunk roads) over a typical weekday is estimated to be in the proportions shown in Figure 22, with 'Car – Other' type trips by far the highest, encompassing trips such leisure, recreation, shopping, going to medical appointments, taking children to school. The smallest proportions are with Light Goods Vehicles (LGV) and Heavy Goods Vehicles (HGV). Whilst their proportion of the total volume of trips is relatively

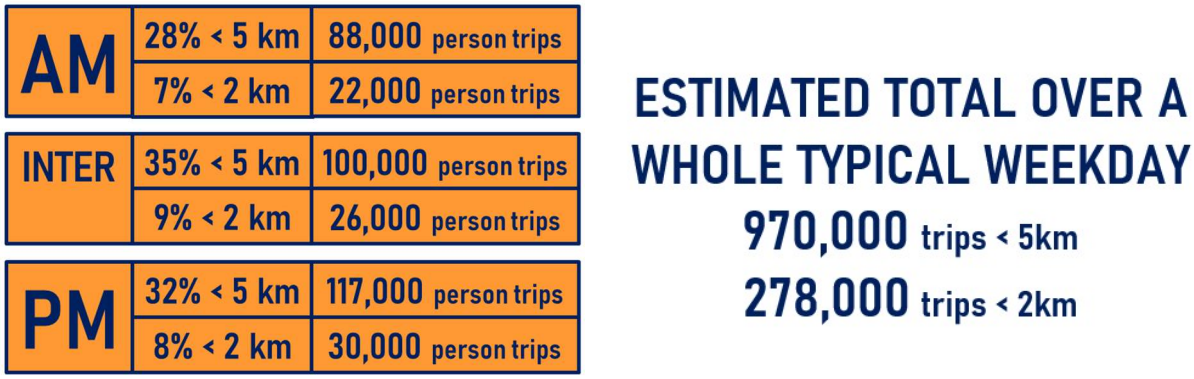
low, HGVs tend to spend most of their journey on the main local roads and the trunk road network meaning some road corridors in the county, such as those for the Channel crossings to Europe, have a higher proportion of haulage traffic.

Figure 22 - Proportion, by type, of traffic on road in Kent in 2019



2.67. Most of the road network we manage serves a local function within built-up areas or connecting smaller communities within more rural parts of Kent. Given two thirds of Kent's population lives in built-up areas, we can also have most effect on improving journeys for most people by instigating changes and improvements to these roads. Local trips on local roads can consist of very high proportions of short journeys by vehicles in Kent. Across the day, almost a third of the total trips tend to be around 5 km or less in length, whilst around 1 in 12 tend to be even shorter at lengths of less than 2 km.

Figure 23 - Proportion of private motor vehicle trips across the AM, Inter and PM peak periods by journey length of 2 km and 5 km



2.68. We have estimated totals scaled to a whole typical weekday, based on the volumes for the AM, Inter and PM periods. As shown in Figure 23, the volume equates to almost a million trips per typical weekday in Kent that are shorter than 5 km (or 3 miles) in length. These results help to explain why wider research[10] shows that on average a car in the UK spends 23 hours parked and not in use, given such a large proportion of cars are making short (and therefore relatively short-lived) journeys.

2.69. The results also demonstrate that the scale of trips in the county that are short distance means there is a large market for providers of public transport and active travel infrastructure to attract users, subject to the services meeting people's needs. When considering journey lengths up to 10 km (or 6 miles), we consider distances that the Bus network is well placed to cater for – as demonstrated by our modelling, which shows that this distance is estimated to be the most common length of journey on buses in Kent. The distance is also achievable for more experienced cyclists, including those using electric or hybrid bikes.

2.70. Given the total volume of car trips is 53% over distances up to 10 km, as shown in Figure 24, there is a very large market that could be attracted to travelling differently with a wide range of benefits that could bring. Focusing on the busiest period of the day, the PM peak, we see in Figure 24 that most car trips undertake shorter distances than road freight traffic. Road freight traffic has higher proportions travelling very long distances, including over 100 kms, which reflects the volume of road freight traffic travelling through Kent between the Channel crossing points at Dover and Folkestone and on to west England, the midlands and north.

2.71. There is still a significant proportion of freight traffic occurring at short distances. An estimated 17% of journeys are under 5 kms. This likely reflects predominantly LGV use in trades serving local communities with short distance trips to clients and suppliers.

Figure 24 – Estimated Trip distance of Freight and Car trips in Kent in 2019

[10] See RAC Foundation web article: Cars parked 23 hours a day (racfoundation.org)

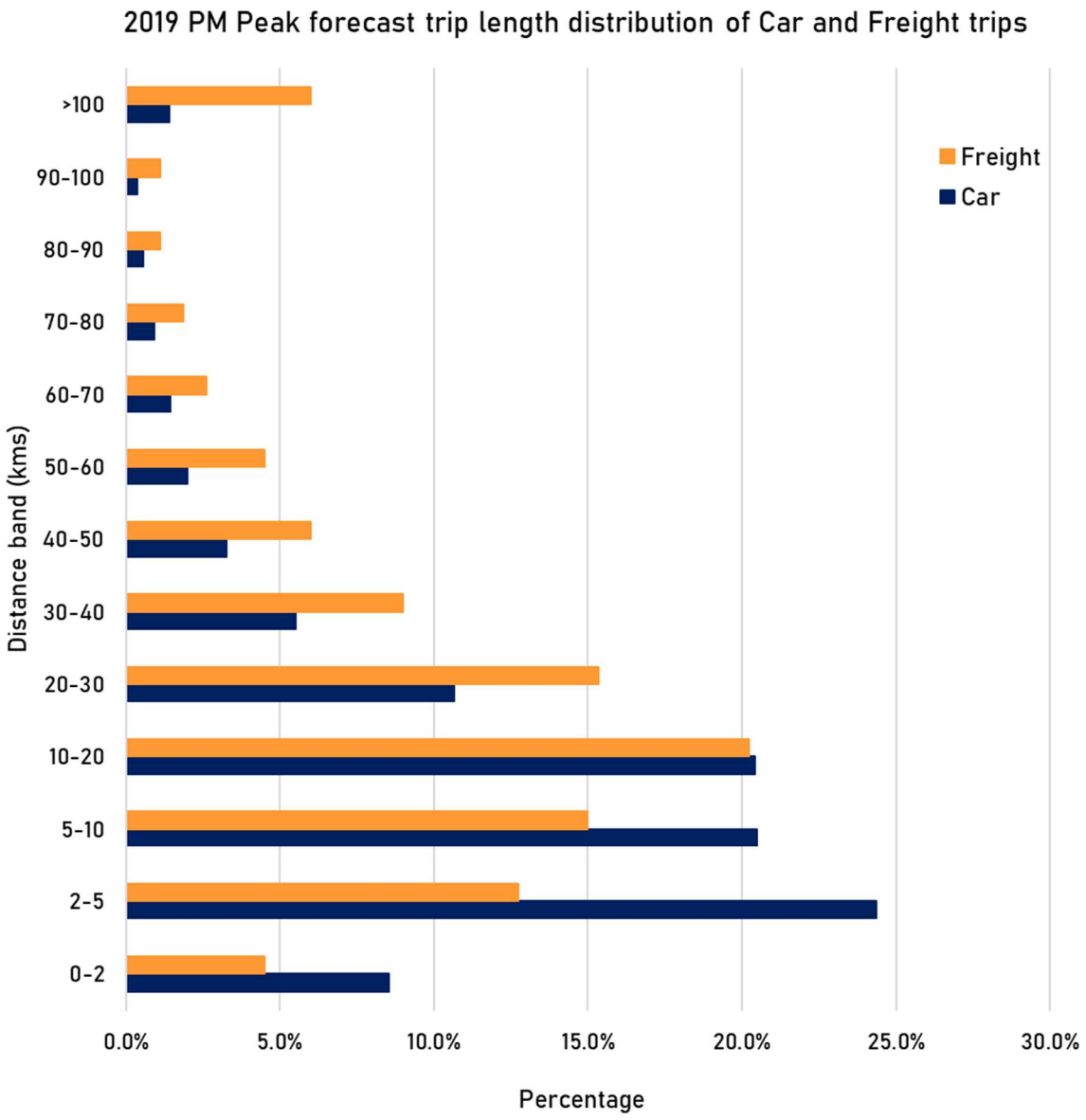
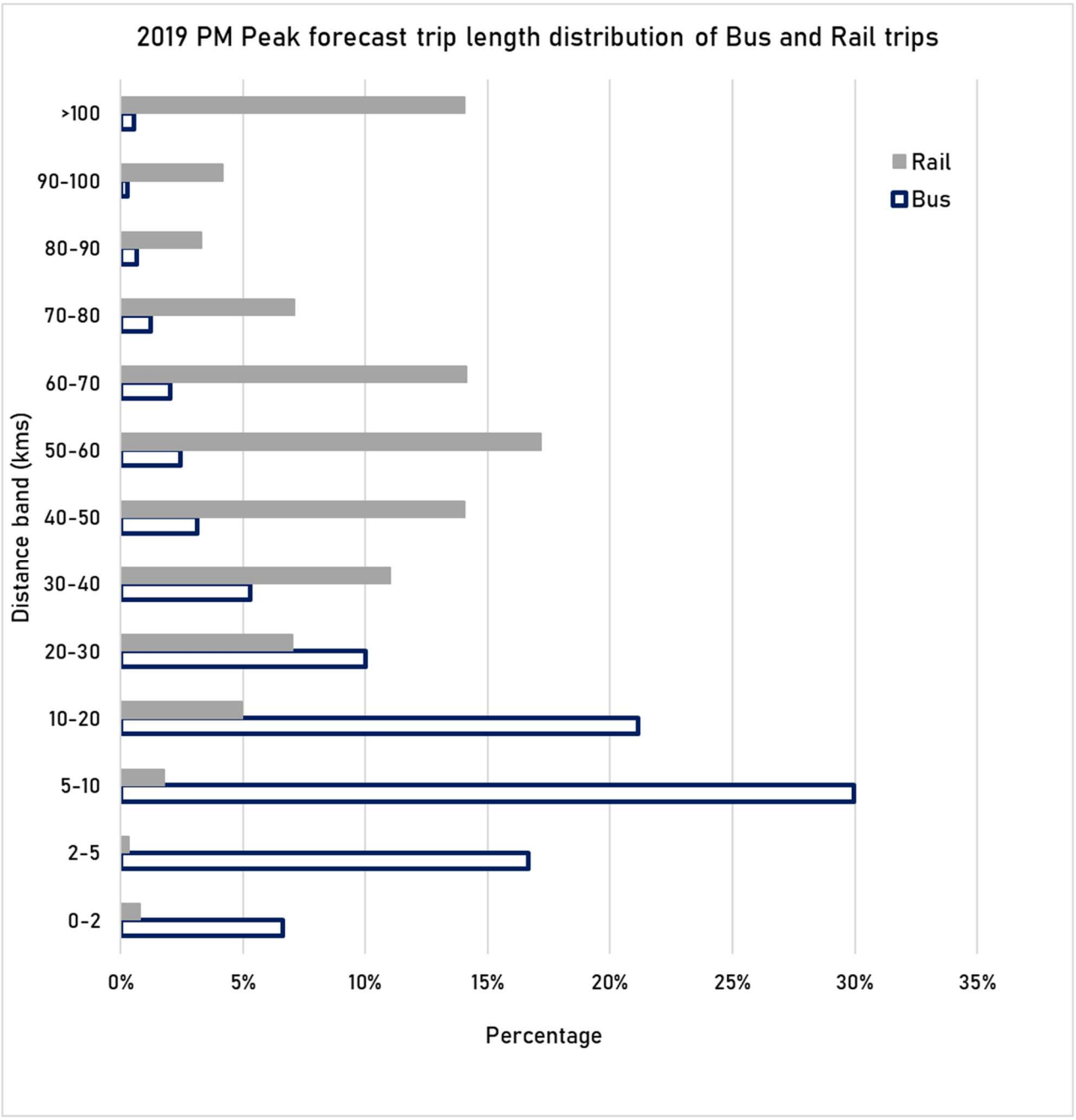


Figure 25 – Estimated Trip lengths of Bus and Rail trips in Kent in 2019


2019 PM Peak forecast trip length distribution of Bus and Rail trips
Distance band (kms)
>100
90-100
80-90
70-80
60-70
50-60
40-50
30-40
20-30
10-20
5-10
2-5
0-2
Rail
Bus
0%
5%
10%
15%
20%
25%
30%
35%
Percentage

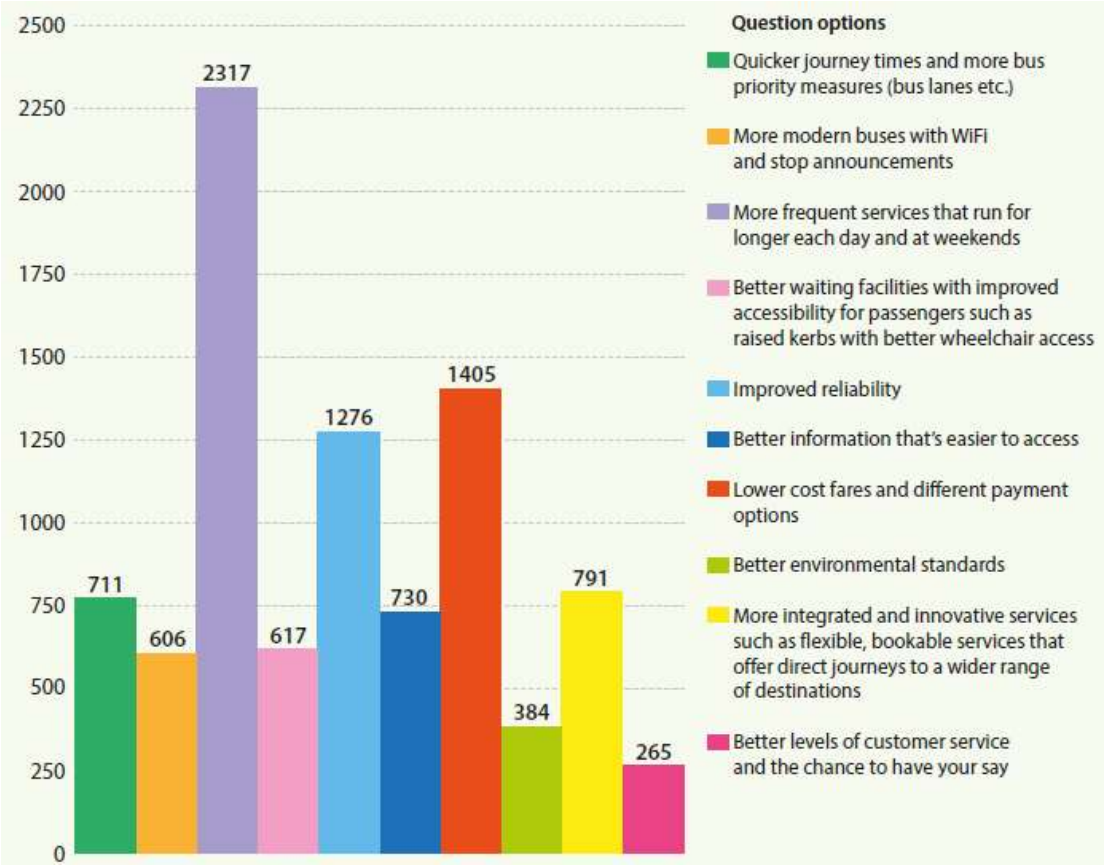
2.72. Rail trips tend to be mid to long distances based on the estimates in Figure 25. Given that most car kilometres take place over mid to long distance, rail perhaps provides the best alternative. However, the nature of the network in Kent, being predominantly east-west for connections from the county to the capital London, can mean that it is not capable of addressing a significant number of journeys.

2.73. Furthermore, there is the challenge of door-to-door transport, with often the time taken to reach rail stations to start a journey and then to travel from the station to the journey's end adds time and can make rail uncompetitive where there are not fast and frequent links for continuing the journey. Car parking at stations can also be limited and expensive. The Kent rail network is popular for travel to London, where fast and frequent connections by public transport and on foot and bike exist on arrival to enable passengers to easily reach their destination in London or to change for a journey onwards on the rail network. This has been compounded by the High Speed rail network in east Kent, providing the same quick journey by rail to London as is available in west Kent and explains in part the high proportion of rail trips over 100 km (60 miles) in length.

2.74. Rail journey volumes on the Southeastern network in Kent are not published and therefore we only have sight of rail usage on a national level. For the bus network, we work with operators through Enhanced Bus Partnerships. This approach gives us a better understanding of the usage of the bus network, and we know from the information shared with us, and as reported in our Bus Service Improvement Plan in 2021, that journeys prior to the Covid-19 pandemic were 53.5 million bus passenger journeys for 2019/20. This volume occurred off of a long-term trend of declining usage, with volumes around 2012 and 2013 having been over 60 million bus passenger journeys. The fall is despite Kent's population rising 8.5% over the period of 2011 to 2020. The evidence therefore demonstrates that bus passengers have been reducing in number and that buses must also be obtaining a reducing share of the travel market in Kent over recent time.

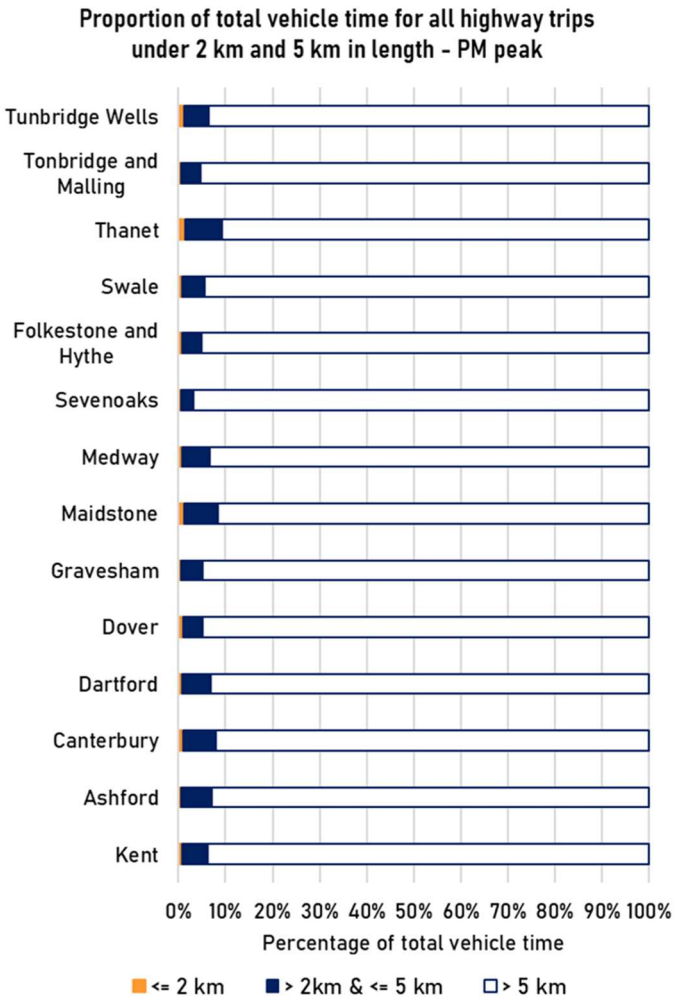
2.75. As our Bus Service Improvement Plan highlights, there are a range of bus service improvements that surveyed residents in Kent want to see, as shown in Figure 26. Given these sought improvements, it suggests conversely that aspects such as the rising cost of bus usage, and bus services in some locations being too infrequent or too unreliable have contributed to a reduction in their usage. As we have seen, accelerated by the effects of the pandemic, these aspects have created a spiral of decline between bus use and bus services. Breaking the spiral by investing in the bus network and infrastructure to reverse declining services and drive-up service quality is likely to be necessary to reverse the trend of falling patronage.

Figure 26 - Public opinion of required bus service improvements (Source: KCC BSIP)



2.76. The convenience of the private vehicles for journeys both local and longer distance is reflected in Figure 27 which shows the proportion of time spent travelling across trips of both local and long-distance lengths. Despite the large volume of trips being made at short distances locally, they occupy a very small proportion of the total time car trips spend on the highway network in Kent. This reflects the speed with which journeys are made. These short distances trips add traffic to the network which can slow journeys for longer distance trips which are more difficult to undertake by other forms of transport.

Figure 27 – Proportion of total vehicle time for highways trips under 2 km, 5 km and over 5 km in Kent in 2019



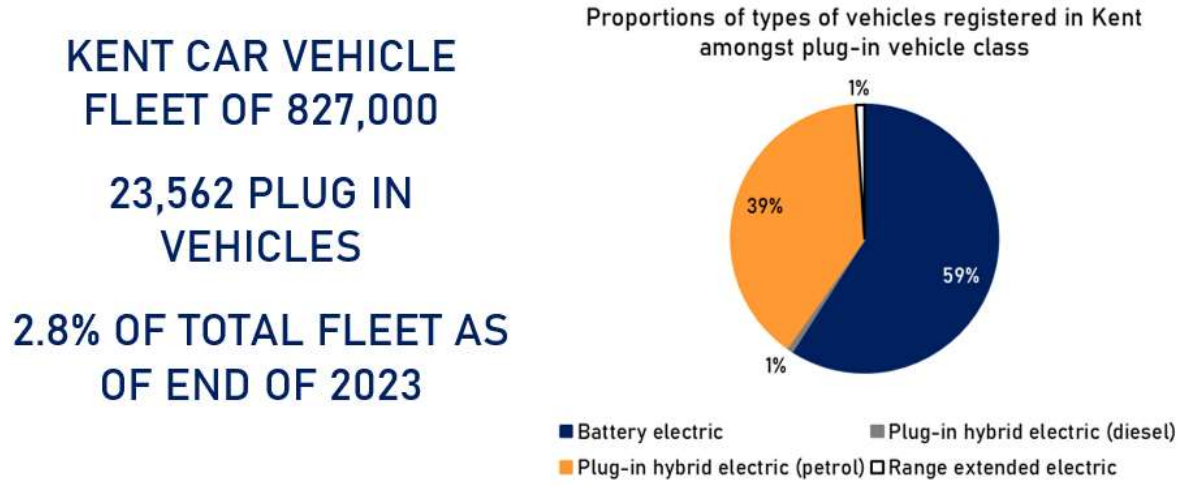
2.77. An estimated total of 1.3 million hours a day are spent on the Kent road network, (equivalent to 148 years of a single person's time!). Time spent on the network itself is largely unproductive (most trips serve the purpose of getting to an activity which is productive, rather than the journey itself being the aim) and our aim is to enable people to spend as little time on the network as possible using forms of transport that do not allow them to be productive. Public transport provides benefits of being able to undertake some activities en route as the passenger does not control the vehicle, whilst walking and cycling provides physical and mental health benefits. Automation of private motor vehicles is planned by manufacturers; however, there is no time horizon for their introduction and the technology faces many hurdles.

2.78. Congestion and delays add to time spent by trips on the network. They also make journeys less pleasant due to the unreliability caused to arriving at a destination on time, and the stress that can cause. As a measure of the level of congestion, we have considered the number of junction locations across the Kent road network where we determine that journeys are delayed to a significant degree. We estimate circa 260 junction locations could be considered delay hotspots. Whether these locations are best addressed by undertaking works to change each junction or instead able to be addressed by

other means will be considered as we develop our Local Transport Plan proposals.

2.79. Motoring is changing, with the take-up of Battery Electric Vehicles (BEVs) or commonly known as EVs. We do not currently measure the proportion of EVs on Kent's roads, however the Driver and Vehicle Licensing Agency does monitor the registered cars in the country and their engine and fuel type. This enables tracking of the proportion of registered EVs within the total fleet of vehicles registered for use on roads in the country. The proportion of the Kent registered vehicle fleet (so this is cars, LGVs, HGVs, public transport vehicles etc) and the make-up of the plug-in electric vehicle fleet itself (such as across hybrids and fully electric engine vehicles) is shown in Figure 28.

Figure 28 - Proportion of Kent vehicle fleet that is electric plug-in and proportion of electric plug-in engine types within the electric fleet



Data source: DfT VEH0142 and VEH0105 Data Tables

2.80. Within the UK there are circa 34.7 million vehicles registered and circa 1.42 million plug-in vehicles registered, meaning the national proportion of the total vehicle fleet which is plug-in electric is 4.0%. That Kent is behind the national average likely reflects that some parts of the country are significantly above the level in Kent, such as London. It may also reflect that some parts of Kent have barriers to switching to plug-in electric vehicles which could range from resident and business incomes and budgets to the suitability of plug-in vehicles for their needs given the range and charger access constraints for fully electric vehicles, for example.

2.81. Within Kent, we monitor the provision of public charging sockets (those available for any EV user subject to their having the right cabling, adapters and user accounts given the company providing the socket, and not including at-home wall charging sockets or peer-to-peer socket rental) as we have been

facilitating the roll out of sockets across the county using funding via the government.

2.82. At the time of writing, 916 public access electric vehicle charging sockets are available in Kent (excluding Medway). In the next section we have look ahead at how Kent's communities and transport network are set to change, including how EV charging socket provision will need to grow and change to meet the needs of an electric motoring future and reduce vehicle tailpipe emissions.

2.83. Kent's funding for transport capital infrastructure

2.84. We have been able to deliver many of the proposals in our last Local Transport Plan (Local Transport Plan 4 – Delivering Growth without Gridlock). The funding has come from a range of sources as listed below:

- Government departmental spending such as:
  - 2.84..1. The Regional Growth Fund by the Department of Business and Trade,
  - 2.84..2. The New Stations Fund by the Department for Transport
  - 2.84..3. The Active Travel Fund by the Department for Transport
  - 2.84..4. The Bus Service Improvement Plans funding by the Department for Transport
  - 2.84..5. The Getting Building Fund by the Department for Levelling Up Housing and Communities
  - 2.84..6. The Office for Zero Emission Vehicles

- Government's statutory bodies such as:
  - 2.84..1. Homes England Housing Infrastructure Fund
  - 2.84..2. National Highways e.g. Road Investment Strategy
  - 2.84..3. Network Rail e.g. Access for All stations programme

- South East Local Enterprise Partnership (SELEP) Local Growth Fund

- Our own capital budgets funded by council tax and borrowing.

- Local authorities by:
  - 2.84..1. Section 106 and Section 278 funding
  - 2.84..2. Community Infrastructure Levy funding
  - 2.84..3. Local planning authority capital budgets from their council tax revenue share
  - 2.84..4. Town and Parish councils via their precept income

- Business partnerships / local community groups etc

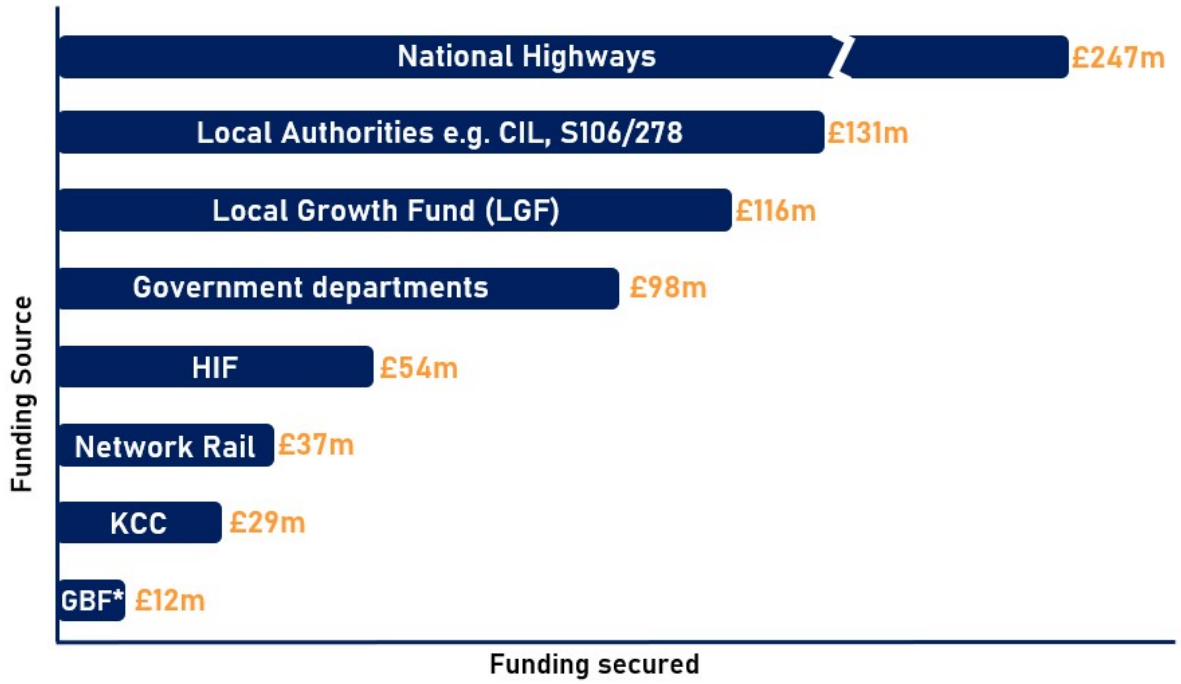
2.85. All the sources of funding that support our delivery of transport improvements are important. The SELEP has been perhaps the most important funder of transport in Kent in recent years because the funding it provided has created the basis for obtaining further match funding.

2.86. SELEP, like other partnerships across the country, received funding of £579m from Government over the period of 2015 to 2021. Through a federated board which included Kent County Council on it, SELEP had discretion over what projects to fund. This resulted in over £100m from SELEP to improve transport in Kent, and more importantly it enabled other sources of funding to be found or won through bidding processes. The SELEP funding helped secure a wider total of over £400m[11] to spend on transport capital infrastructure projects that were promoted in our last Local Transport Plan. These SELEP supported schemes made up most of the transport capital funded schemes over this period.

2.87. Including funding on trunk road and rail network enhancements spent by National Highways and Network Rail respectively, then the total level of funding for transport capital infrastructure in Kent between 2015 to 2021 totals circa £720m, as shown in Figure 30, and equates to around £120m per year.

[11] This includes Network Rail schemes at Rochester and Strood which benefit rail users on services across Kent routing through these locations.

Figure 29 - Main sources of transport capital funding to deliver Local Transport Plan 4 schemes



*GBF stands for Getting Building Fund (a capital fund launched by Government to support recovery from the Covid pandemic). We used this fund to support delivery of the new Thanet Parkway station which already had some funding from the Local Growth Fund and other sources.

2.88. Currently, the new funding we have obtained for transport capital infrastructure since 2020/21 to 2023/24 has so far totalled approximately £65m. This has been spent on a variety of walking, cycling, bus and highways schemes. The figure may potentially rise to £110m if the intended award of £45m from the Levelling Up Fund to improve journeys to and through Dover Port is made available – see Table 3. Including the Levelling Up Fund award with the other sources we have recently obtained, this equates to circa £27.5m per annum – and so a circa £92.5m fall in new transport capital infrastructure spending.

2.89. The fall in funding is partly because of the pandemic which has resulted in increased levels of expenditure by government on rail and bus operations. We also expect to see capital funding of electric vehicle charging points, further to the government funding support which has funded on-street, workplace and domestic at home charge points to date.

Table 3 – Approximate sources of capital funding since 2020/21

Funding Source / Purpose	Funding amount (£m)
Active Travel Funding	9.3

Bus Service Improvement Plan	35
Developer contributions	12.6
Local authority / development corporation funds	8
Levelling Up Fund	45 (to be received)

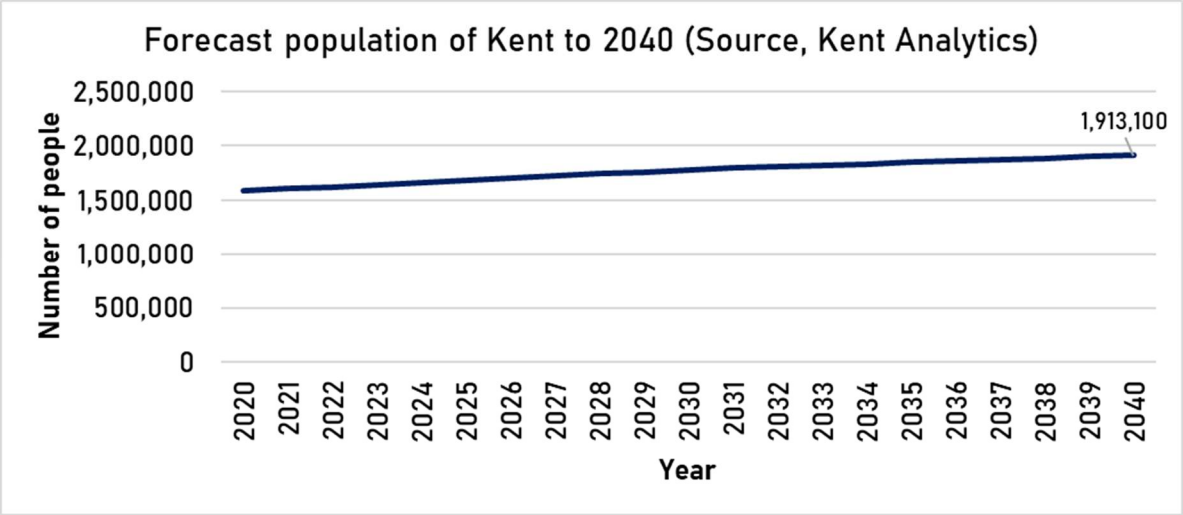
3. Looking ahead

3.1. In this section we have looked ahead to the years around 2040, dependent on data available. We have selected this horizon because the local planning authorities in Kent have most recently set out proposals for the change in land use and housing and commercial development up to those dates. This means we can consider the effect of the changes in the volumes of residents and businesses in the county, and the impact that change could have on the performance of our transport networks.

3.2. Kent's future population and communities

3.3. Kent's population is forecast to grow, continuing a long term trend that has seen more births than deaths and more people moving into Kent than leaving. The result has been steady population growth in the county, forecast to continue until it hits a total of around 1.91 million residents in 2040, as shown in Figure 30. If this rise occurs, it would be an increase of 20% compared to the 2020 population level. It is also possible that population could increase by a greater or lesser amount than this by 2040. Nonetheless, it is likely that a rise will occur based on the long-term trend for Kent.

Figure 30 - Forecast of Kent's resident population to 2040 (Source: Kent Analytics)



3.4. We have considered how a larger total population in Kent may also affect the proportions of people across different age groups. The population pyramid in Figure 31 shows the forecast proportions across age groups and shows the change compared to the 2019 proportions. The pyramid shows that the proportions of the population that predominantly increases is in age groups 65 years and above. In other age groups there is typically a forecast reduction in the proportion compared to 2019. This is not to say that there is an absolute reduction in the population in lower age groups – the total number is still likely

to increase in many of those age groups below 65 years of age – rather it is a forecast reduction in the proportion of the total population.

3.5. The proportion of Kent's population will become increasingly composed of older age residents in the future, following the same trend that has been seen for some years. Older age residents qualify for a free bus pass from pension age in England and therefore there will be a notably higher proportion of residents in Kent that have this benefit (assuming it remains) and may have a greater propensity to use the bus.

3.6. Older age residents may be likely to have other needs to encourage their use of public transport, such as reduced steps and greater assistance boarding and alighting bus and rail vehicles. Ensuring that Kent's infrastructure is fit for purpose can help attract Kent's future older age population to using public transport, particularly for those in the highest age groups (such as 80 years plus) that find it increasingly difficult to drive themselves.

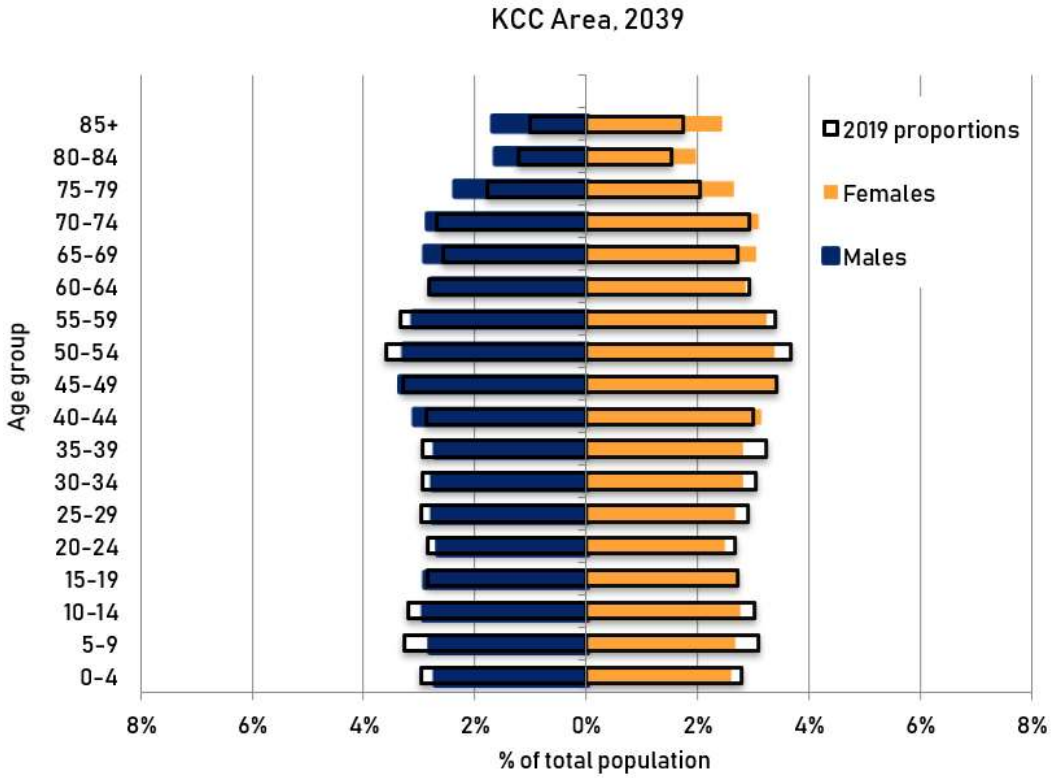
3.7. The increase in the proportion of people living into older age groups may also increase the challenges of isolation, loneliness and exclusion in rural communities. Given around a third of Kent's population lives in small rural communities that are heavily reliant on private vehicle use for mobility, if the proportion of residents in rural communities in older age groups increases the number of residents that may become reliant on non-private transport such as the bus may increase. The challenges of providing affordable and widespread public or community transport will remain though.

3.8. Attracting as many people of all ages as possible to public transport network will bolster patronage and support operators with running more services.

3.9. The pattern of population growth that is forecast is shown in Figure 32. The Borough of Ashford has the highest forecast growth, although if all the growth is realised in the places it is forecast to take place, Maidstone will remain the most populous area of Kent, followed by Canterbury which is also currently the second largest.

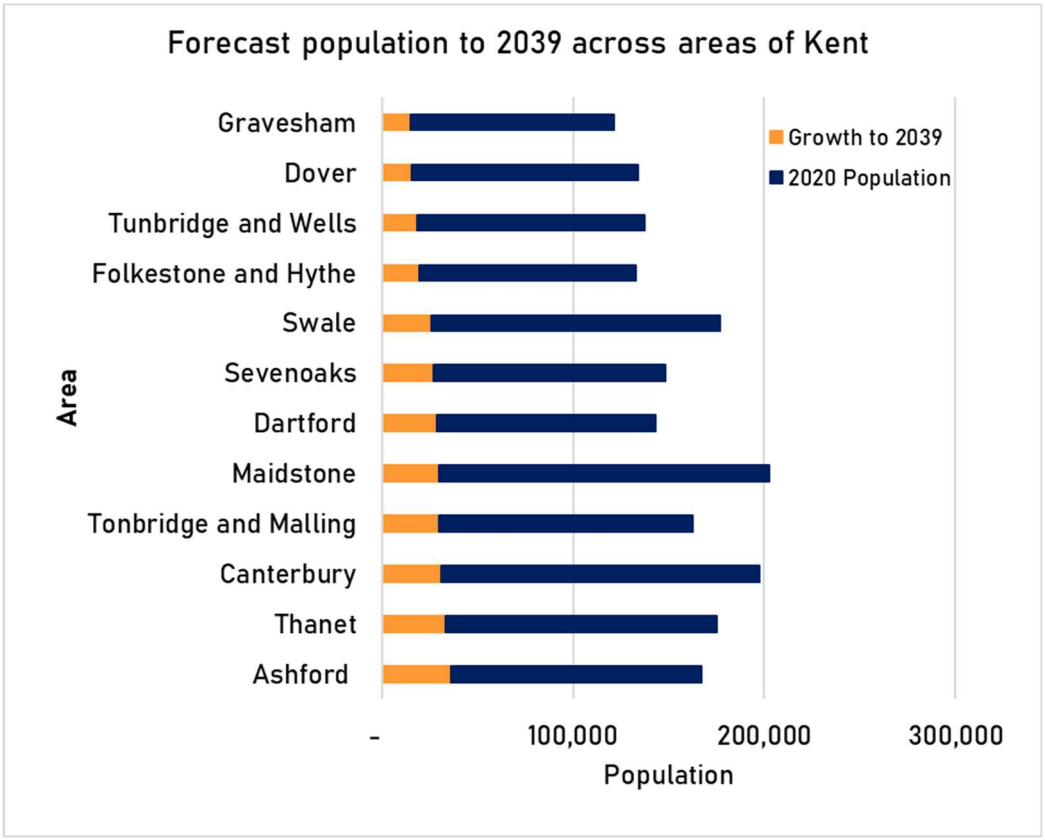
3.10. Dartford has seen high growth historically, and if the forecast growth is realised in that location, Dartford will jump further to become the 8th most populous place in the county, up from a current position of 10th. Whilst there is forecast to be some changes in the rank of most populous to least populous, what is clear is that growth is nonetheless forecast in all locations. This growth will present both challenges in terms of pressure on the road network, but also presents an opportunity in terms of the increased market that transport providers can attract.

Figure 31 - Forecast population pyramid for Kent in 2039



Source: KCC Housing Led Forecasts (November 2020) Kent Analytics, Kent County Council

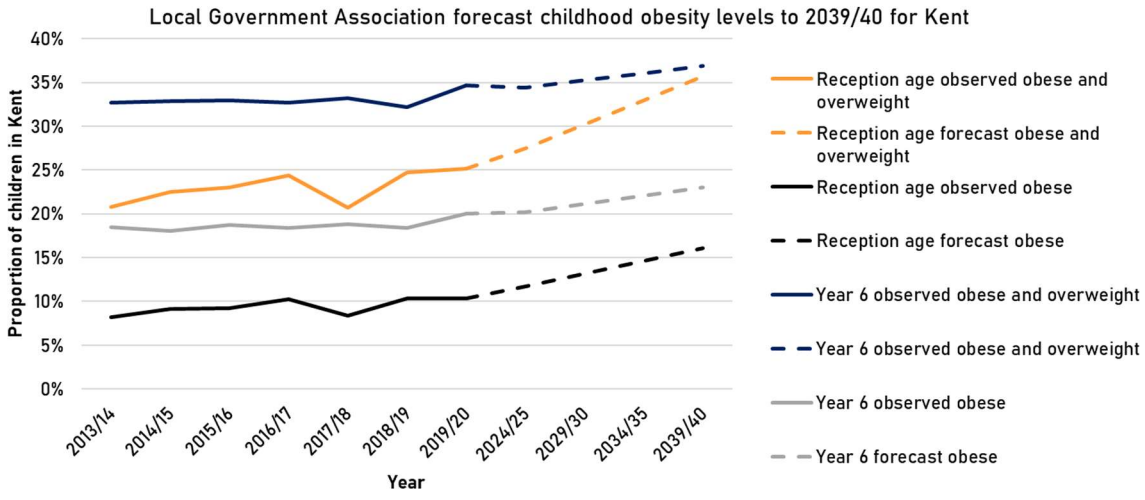
Figure 32 - Forecast population change to 2039 across areas of Kent



3.11. The health of communities in Kent may change over time. Due to the complexity of factors that impact the indicators in the Kent Public Health Observatory, forecasts of potential future change are not available across all the factors considered in section 2, however for obesity and overweight trends in children in Kent, some forecasting is available from the Local Government Association (LGA website).

3.12. The forecasts and how they were undertaken is available in more detail from the LGA website. What the forecasts show is a concerning potential for significant further increase in obesity and overweight children in Kent at both reception age and by Year 6 (10 to 11 year olds). If the forecasts were realised, there would a range of disbenefits created both for Kent's economy and for the children and their quality of life as they grow into adulthood.

Figure 33 - Forecast childhood obesity rates to 2040 in Kent (Source: Local Government Association)



3.13. Given the forecasts, they compound the importance of the transport as a wider determinant of public health and indicate that a long term focus on enabling everyone from as young an age as possible to lead active lifestyles including in terms of how they travel around should be a focus of our efforts in local transport. Furthermore, given that obesity is linked to life expectancy, with it estimated to reduce average life expectancy by 3 to 10 years and also increase the risk of developing asthma (amongst other ailments)[12], it suggests that those other indicators considered in section 2 could also worsen in the long term. This adds further weight to seizing opportunities in local transport to improve public health outcomes.

3.14. Kent's future environment

3.15. We do not know precisely how Kent's environment will change in the future. Our established Environment Strategy and supporting strategies such as Plan Tree, the Energy and Low Emissions Strategy and the Plan Bee strategy establish actions for a future environment in Kent which is or has:

- Resilient to changes.
- Supported by a circular economy.
- Conserved and enhanced quality and supply of the county of Kent's natural and historical resources and assets.
- Decarbonised, by delivering five-yearly set carbon budgets and the carbon emission reduction pathways to 2050 for Kent, with significant reduction by 2030.
- A county that produces more low carbon energy than it consumes.
- Increased capacity for Kent's natural environment to store carbon and offset the county's carbon emissions.
- Reduced air and water pollution.
- Increased flood storage capacity.
- Improved biodiversity.
- A recovery in pollinator populations.
- An increase in tree cover.

3.16. Many of the above actions are designed to adapt to and mitigate the effects of climate change. We have considered the potential scale of change to weather in Kent that those making journeys, and the transport networks themselves are likely to need to deal with. Specifically, the Met Office's UK Climate Projections from the UKCP18 model identifies these potential changes:

- Hotter summers with an increase in average summer temperature of 2°C to 3°C by 2040 and 5°C to 6°C by 2080.

[12] See National Health Service pages Obesity - NHS (www.nhs.uk) and Obesity - NHS (www.nhs.uk)

- Warmer winters with an increase in average winter temperature of 1°C to 2°C by 2040 and 3°C to 4°C by 2080.
- Drier summers with a reduction in average precipitation of 20% to 30% by 2040 and 30% to 50% by 2080.
- Wetter winters with an increase in average precipitation of 10% to 20% by 2040 and 20% to 30% by 2080.
- Increases in sea-level rise by up to 0.3m by 2040 and 0.8m by 2080.

3.17. The potential effects of these changes to the environment create the following risks for the transport network. Due to the range and potential impact, we have appraised that they have high urgency for being addressed, as detailed in our published Climate Change Risk and Impact Assessment.[13]

- Flooding and coastal change risks to transport networks affecting their availability and safety.
- Degradation to road surfaces, rail track and overhead line equipment defects and electrical equipment due to extreme temperatures.
- Risks to health, wellbeing and productivity from high temperatures including for people in transit in public and private vehicles.
- The suspension of services due to the failure of climate control equipment
- Structural defects to carriageway and rail embankments
- Risks to supply chains from climatic events impacting operations of transport networks and the delivery of transport infrastructure.

3.18. With the range of desired outcomes for Kent's environment set alongside the risks from current weather extremes and climate change, the evidence enables the need for an adaptive and evolving transport system to be considered in the development of the policies and proposals for the Local Transport Plan.

3.19. Kent's future transport network

3.20. Considering growth in the county, and also more widely across the country by using Department for Transport data, we forecast that the demand for trips across the road network will increase. The scale of potential increase is shown in Figure 34 – the change in trips volumes between 2019 and 2037 will be dependent on the rate of growth from new development, and other factors affecting population, as well as travel habits. Nonetheless though, it is highly likely that a rise will occur based on past trends and given what is known to be planned within Kent and countrywide. It is also possible that the forecast rises could be greater than those shown in Figure 34.

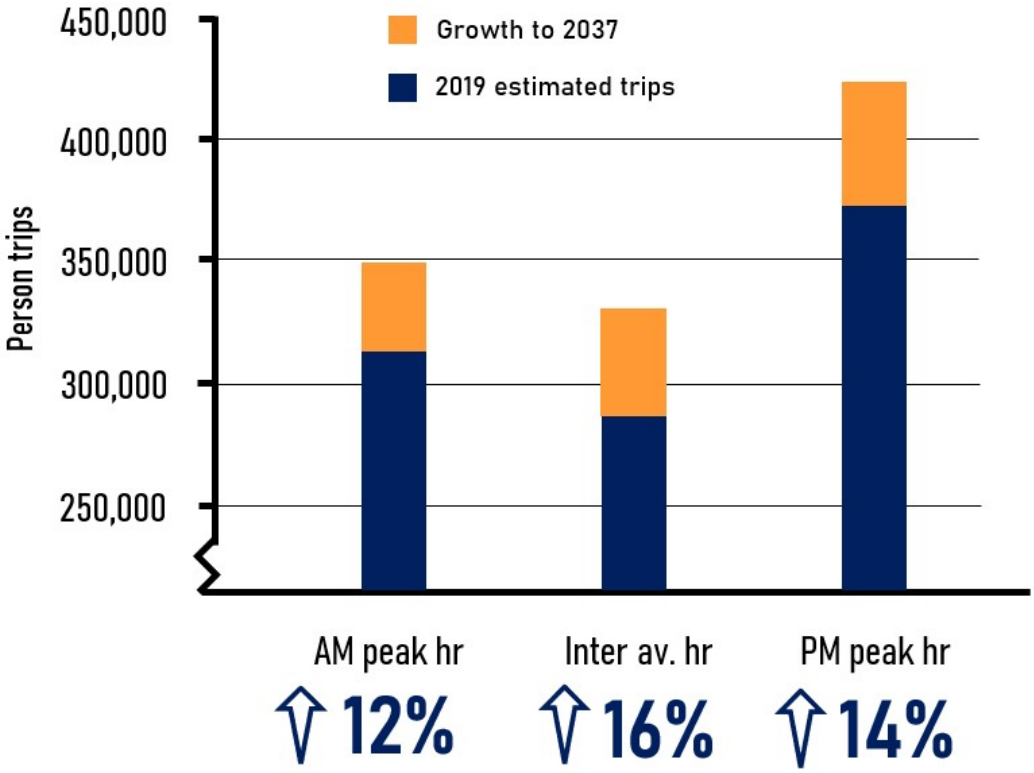
3.21. The forecast shows that the busiest hour in the day is likely to remain in PM peak, with a potential increase in person trips on the highway network of 14%.

[13] See Transport sector paper published at Climate change risk and impact assessment - Kent County Council

Assuming average vehicle occupancy of 1.5 people on average across all trip types, this equates to almost 1 extra vehicle on the road for every 10 currently.

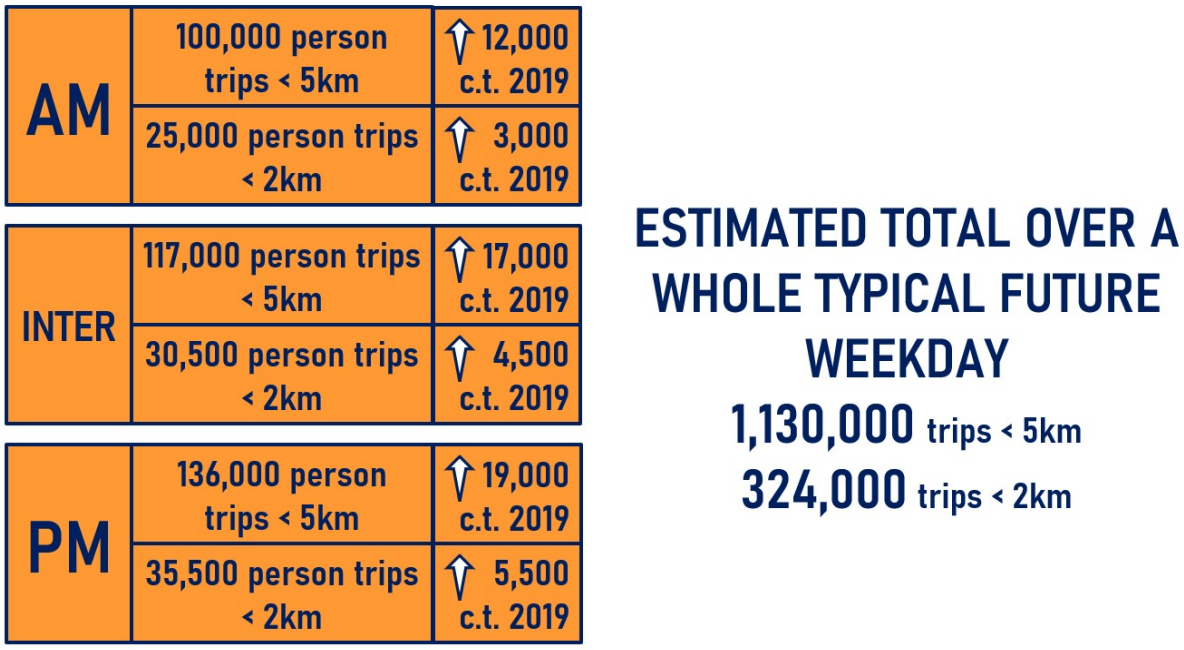
3.22. Also notable from the forecast is that the busiest hour in the period between the AM and PM peaks, known as the Inter peak, by 2037 may be busier than the current AM peak we see today in Kent. In general, then, the highway network in Kent will need to accommodate more vehicles than currently and likely with a network that is largely unchanged in capacity terms given the constraints and limits on road building that would be either achievable within the environmental constraints of the county or within the funding constraints.

Figure 34 - Forecast change in person highways trips between 2019 and 2037



3.23. In section 2 we considered the volume of trips on the highway network based on their distance, so that we could understand what proportion are short local trips that are likely made within the built-up areas of Kent. That assessment of the future forecast volume of trips is set out in Figure 35, and shows that if trip volumes rise by the extent of our forecasts, over 1.1 million trips per typical weekday could be made in Kent in the future, and over 320,000 under 2 km. This shows the market for local trips and transport could grow substantially.

Figure 35 - Proportion of private motor vehicle trips across the AM, Inter and PM periods forecast in 2037, by journey length of 2 km and 5 km



3.24. We have considered whether the increased time forecast to be spent on the highway network in the future is driven solely by an increase in the total volume of trips, or whether it is also due to individual trips taking longer too. Our forecasts indicate that journey speeds over time, as shown in Figure 39, may reduce causing journeys to take longer. The forecast average speed of a trip (which includes those journeys made on the trunk road network in Kent) could fall by around 2 mph across different times of the day.

3.25. The fall in journey speeds reflects the impact of the rising volume of traffic and the likely increased queuing and delay caused at junctions. The challenge at junctions is made clearer in Figure 37 which shows the number of junctions with significant delay could increase by 34%, from over 260 to almost 360 junction locations. As covered in section 3.22, the challenge is accommodating the increased volume of traffic without significant reductions in journey quality, speed and reliability, which will be challenging for the road network and the capability to increase its capacity given the constraints that has to take place within.

Figure 36 - Forecast changes in average speed of a journey on Kent road network between years 2019 to 2037

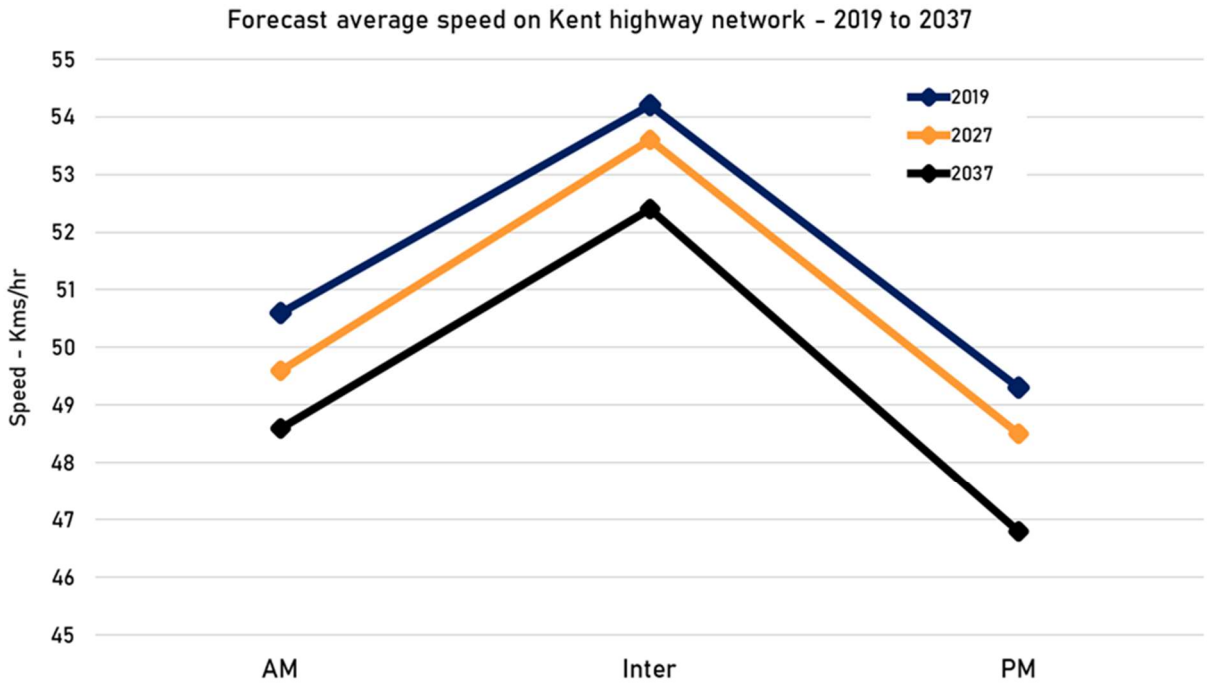
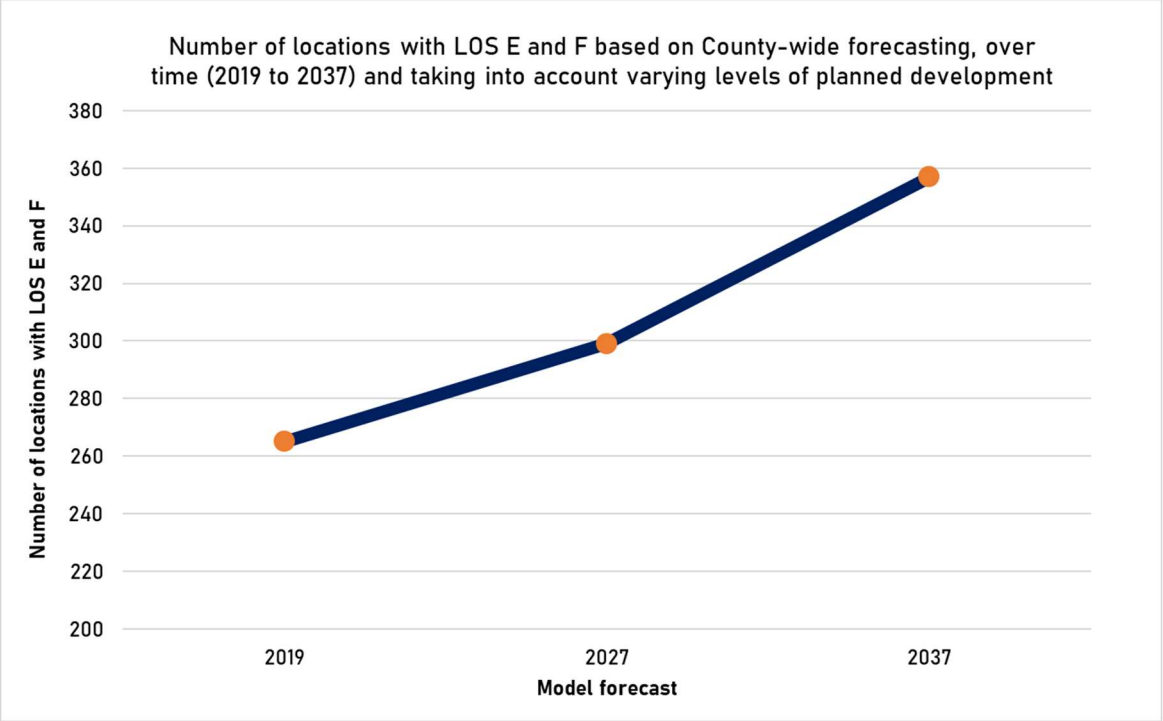


Figure 37 - Change in forecast number of junctions with significant delay between years 2019 and 2037

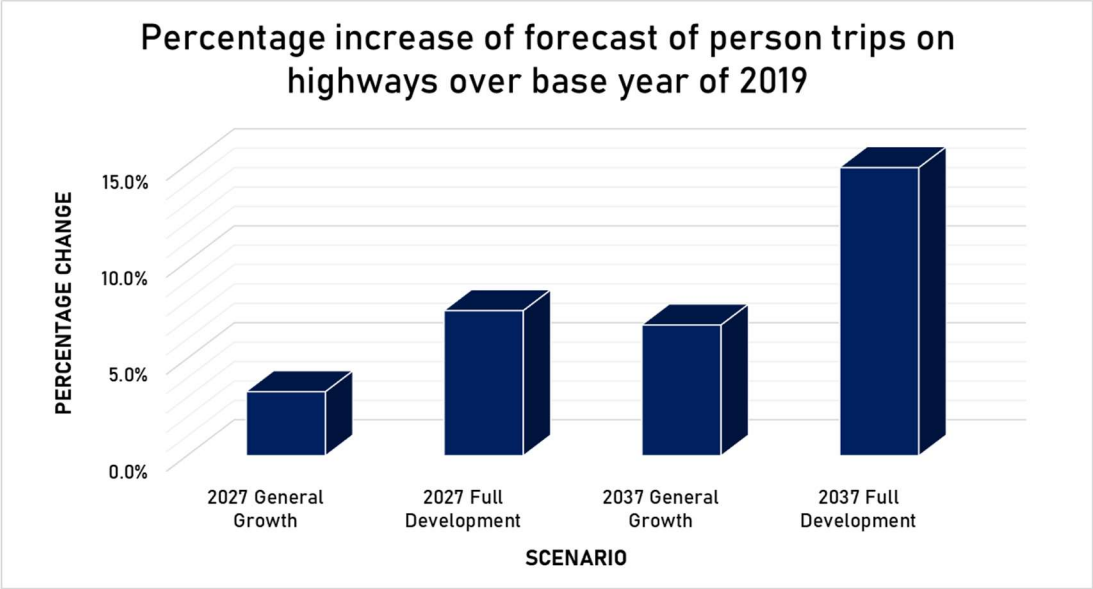


3.26. We have considered the extent to which future challenges are due to development growth in the county, and what focusing on that growth can achieve. The evidence in section 2 showed that there are challenges from traffic volumes on the network at the current time. We have considered how the

delivery of new development contributes to the future rise in trips and time spent on the road network in Kent.

3.27. The evidence from our forecasts is that around 55% of the future traffic on our network may arise due to new development and the resident and working populations that development brings that leads to new trips. Conversely 45% of future traffic is from the general rising tide from increased population nationwide and travelling to and through Kent, and changes in travel habits of the existing population in Kent.

Figure 38 - Effect of development in Kent on forecast future highways trips, compared to general demand growth



3.28. It is important to recognise that the percentage change shown in Figure 38 is on top of a very large baseline of existing trips being made in the county. We have considered the effect of improving the way 10% of new development trips make their journey compared to the effect of improving the way 10% of existing journeys are made. The impact is that addressing the existing volume of travel in the county would have a 6.7 times greater effect in terms of absolute volume of trips improved. This indicates the scale of the opportunity of focusing improvements on existing travel and trips in the county as opposed to concentrating on the impact of new development.

3.29. The evidence shows that a dual approach is necessary in focusing on both how existing trips are made as well as those arising from new development. Focusing only on the latter would yield more marginal gains in affecting countywide transport to the scale necessary to address the other challenges considered in this evidence base.

3.30. That is not to say that the impact of new development on the transport network can be disregarded. The evidence shows there is a clear cause and effect relationship between the impact of new development travel demand on the highway network with the forecast performance of junctions and journey times. The evidence clearly indicates that mitigating the impact of new development journeys will need to occur and justifies us in seeking those mitigations to be funded by new development or for new development to be designed to avoid those forecast effects on the highway network in the first place (such as by encouraging reduced reliance on motor vehicles through good development and transport network design).

3.31. Concerning plug-in electric vehicles, we do not know how the pattern of registrations is likely to change in Kent. However, based on the current spatial distribution of registrations within the county, it is likely greatest uptake will occur in the medium term in locations where incomes are higher as this both directly supports the purchase of plug-in vehicles given, they still carry a price premium. Higher incomes also correlate to larger, less dense housing which means that the capability for off-street, on-driveway parking and use of a domestic charging socket for vehicles (the cheapest way to recharge vehicle batteries) is higher. The logistics of owning and charging a vehicle may be easier at homes in these areas than areas of the county where at-home charging may not be possible.

3.32. At a national level there are estimates of the volume of chargers that are required. The government is targeting delivery of 300,000 chargers using government funding and private sector delivery. In Kent, we have considered the likely volume of chargers the national target of 300,000 equates to, including across the different types of chargers based on the speed at which they can charge a vehicle. The volume needed is, however, a moving target as it is influenced by the rate of EV sales. Given EV sales and use has slipped slightly behind former national forecasts to meet targets, the volume of chargers needed by particular dates may change.

3.33. Future funding sources for transport infrastructure in Kent

3.34. Future funding for transport infrastructure in Kent will be heavily determined by the new government's ambitions and spending programme and the manner in which it intends to enact that. Previously, we have experienced a degree of devolution of funding through the former Local Enterprise Partnership, who received a funding settlement from the government and determined the best way of spending that. More recently, the cessation of the Local Enterprise Partnership model coincided with a tendency for competitive bidding for funds.

3.35. For example, we bid for funding for highways capital projects through the Major Road Network pipeline, and also bid for active travel funding – having had at least three tranches of bidding through which the government and its body called Active Travel England have assessed bids and determined funding awards. Concerning the bus network, we have also bid for funding via the submission of our comprehensive Bus Service Improvement Plan and the government determined a funding award based on the quality of the plan and the limitation of its national funding, given all the other authorities that bid.

3.36. We also bid to funds such as the Local Electric Vehicle Infrastructure (LEVI) fund for the capital funding to deliver an on-street charging sockets programme, the Levelling Up Fund, and also local planning authority Community Infrastructure Levy funding pots.

3.37. The new government has indicated an ambition to stop running competitive bidding processes and has indicated an intention to focus on the award of settlements to devolved Mayoral and combined county authorities. We do not know how future funding will be made available for new capital infrastructure, but nonetheless it is likely that the funding we will be able to secure will continue to require evidence of a clear business case to assure the government that funding would provide value for money outcomes that deliver on policy objectives.

4. Making a distinction between urban and rural Kent

4.1. Our ambition is for the whole county, regardless of where people live and work. But we also understand that where people chose to live, and work can have a big impact on how they travel. Delivering our ambition will mean different things in different places and the characteristics of different places across Kent will influence what elements of our ambition we can more easily achieve within the limits of our financial resources.

4.2. To demonstrate the difference in urban and rural living, consider the typical lifestyle and behaviour for someone living in the example Kent town of Paddock Wood relative to the small village of Throwley Forstal near Faversham, in the Kent Downs National Landscape.

4.3. Our examples show the distinctly different type of places that exist within the broad categories of urban Kent and rural Kent. The benefits and opportunities from living and travelling to and from rural and urban locations are varied and so, accordingly, are the challenges we will need to overcome to deliver better journeys so that living and working in Kent is enjoyable and productive.

4.4. By drawing this distinction between rural and urban we are keeping in sight the impact of our policies and proposals on our rural and urban communities as we develop and then deliver the full Local Transport Plan.

Table 4 - Comparison of the characteristics and transport context of urban and rural locations in Kent

Rural living and transport in Kent	Urban living and transport in Kent
Throwley Forstal is the largest hamlet in the area called Throwley, south of Faversham in the Borough of Swale.	Paddock Wood is a small town lying between Maidstone and Royal Tunbridge Wells. The town is very flat, lying in the River Medway basin, and is at risk of flooding around its western and northern areas including the railway.
Consists of c, 35 dwellings, whilst the area of Throwley itself had 300 residents based on Census 2011.	Has a resident population of 7,840 based on the 2011 census, though this is significantly underestimating its population today owing to new residential developments that have been built to the east and southwest.
Has no shops or services. Just a post box on the village green.	Has a range of services and a mid-sized grocery store along a high street, Commercial Road, offset from the main car route through town (the B2160). Prospects for the high street are strong given the influx of new residents. It also has nurseries, pre-schools, a primary and secondary school.
Some cars are parked up on the verge of the green as some houses in Throwley Forstal pre-date the invention of the motor car.	The high street has increased space for pedestrians along some of its length, creating convivial areas for café culture and seating and set-down points for socialising. Car parking bays run along parts of the high street, with public car parks nearby.
Is situated in the Kent Downs National Landscape.	Is situated outside, to the north, of the High Weald National Landscape.
The rural setting provides an opportunity for local business, with one address rented out as a holiday cottage. The post office and pub are both long closed, however.	The town's location makes it very attractive to prospective residents. House prices are substantially above the national average and the new homes market is thriving.
A popular location for those that have sought the proximity to Kent's countryside, 10 properties have been sold in the	The town has a significant cluster of logistics and manufacturing businesses on its north side, with good

last 10 years.	access to the A228 dual carriageway and on towards the motorway network.
The village has walking links to nearby hamlets and villages via the Public Rights of Way network.	The centrally located railway station, with relatively fast and frequent services towards London and other nearby towns such as Maidstone and Tonbridge make it a popular residence for rail commuters.
It is a 2.2 km walk through fields and woods to the nearest pub in Badlesmere.	Is linked by a single bus route to the wider area, with Route 6 providing bus travel to Maidstone and Royal Tunbridge Wells, broadly replicating the rail corridor and serving villages along that route.
The nearest supermarket is in Faversham, just under 5 miles away - a 1.5 hour walk, a 25 minute cycle or an 11 minute drive. There are no bus services through Throwley Forstal. The nearest stop at Badlesmere takes passengers to Faversham or Ashford.	The popularity and prospect of cycling in this part of Kent is evident given the large cycle store in town.
Roads to Faversham all reach the national speed limit of 60 mph on stretches.	Roads across the town are largely 30 mph speed limit, including the main route the B2160, with traffic calming measures on routes into the main residential areas.
Superfast broadband is available in the village, providing maximum data download speeds of 80 MB/sec and upload of 20 MB/sec	Ultrafast broad band is available across the town, providing residents and business download and upload speeds of 1,000 MB/sec.
Addresses are served by the power grid so some residents can install wall sockets for fast charging of their Electric Vehicles, but some properties due to their terrace style and character would prefer not to have wall sockets and trailing cables to their car.	Electric vehicle charging infrastructure has arrived in Paddock Wood, with one public charging socket in the public car park near the high street.
Due to their location, residents understandably rely on their cars, effectively essential in the event of an emergency but also necessary for a visit to the pharmacy, cinema, restaurant, or cafe. Their distance from the towns that have these services means their mileage is above average along with the carbon emissions they generate.	Some residents have switched to electric vehicles, with home charging sockets easy to install as many residences have off-street car parking. The new housing developments are accelerating the ease of switching, with new addresses being built ready for EV socket installation, helping to reduce cost.

WHAT WOULD OUR AMBITION MEAN FOR RESIDENTS OF THROWLEY FORSTAL?	WHAT WOULD OUR AMBITION MEAN FOR RESIDENTS OF PADDOCK WOOD?
The road network is available for use with maintenance preventing closures. The impacts and risks of climate extremes are heightened in the rural area – with long hot dry summers risking field and forest fires, and heavy snowfall or surface ice a risk in the winter. The location's isolated position means the two roads into and out of the village are its lifeline. The local Parish and Borough Council has worked with KCC to explore the gaps in electric vehicle charging as more and more residents seek a switch. Electric charging points alongside the village green have been installed to help those charge whose properties either cannot or are not suited to wall sockets, and for the visitors that enjoy the cottage holiday rental. KCC's fully funded Bus Service Improvement Plan has helped to recover bus patronage since the pandemic's downturn, and the nearby 666 route through Badlesmere continues to run. No new major infrastructure for transport will be built in the area around Throwley Forstal because of the environmental protections of the AONB designation. On the same basis, no new housing or commercial development will take place and so the size of the market and lack of funding from development means there are no plans for passenger transport to serve Throwley Forstal directly.	The road network, especially the main road B2160, is maintained and resilient to climate extremes and particularly the risk of flooding which could threaten access out of and into the town from the north. The severance caused by the B2160 for the local community is reduced, with safe crossing points providing ease of walking and cycling from west of the town to the high street on Commercial Road and for reaching the station. Walking and cycling links from the new residential areas to the town centre are convenient and safe to use, helping to reduce local car trips to reduce noise and air quality impacts and keep the high street an attractive and thriving heart of the community. There is an increase in secure cycle parking in the town centre and upgraded parking at the railway station with CCTV coverage and secure security controlled sheltered bike storage. Electric vehicle charging sockets for public charging have increased in number. The Bus service and rail service through the town have seen increased patronage, with the service not under threat of cuts. The town's excellent position on the edge of the High Weald along with the improved cycle routes and their use in the town has compounded improvements made

An increased number of residents of Throwley Forstal have taken up cycling for occasional trips and recreation, supported by the range of cycling measures including free cycle training, improved road safety measures, better secure parking, and support facilities in Faversham when they visit there.	to walking and cycling links beyond the town as envisaged in Cycling and Walking Infrastructure Plans for the area and connecting with the National Cycle Network Route 18 section called the High Weald Ride between Royal Tunbridge Wells and Ashford.

5. Quantifiable Carbon Reduction from Kent's transport networks

5.1. What is Quantifiable Carbon Reduction in the context of the Local Transport Plan?

5.2. The Local Transport Act 2000 (and 2008 as amended) obliges us to consider climate change and Government's guidance in the creation of our Local Transport Plan. Government has indicated that its new guidance will seek Local Transport Plan's to include consideration of the current level of carbon emissions from transport infrastructure and its use. Although that guidance has not been published as final, we have been briefed by the DfT on the aim of the guidance and what best practice for new Local Transport Plans will entail.

5.3. Whilst the guidance has not yet been published, it is evident within industry standards such as PAS 2060 concerning Carbon Neutrality, and PAS 2080 concerning Carbon Management in Infrastructure, that considering carbon emissions at the plan-making stage is necessary to have the greatest chance of reducing carbon emissions. We will consider any new guidance that is published by the government prior to our adoption of the plan.

5.4. Establishing the scope of our Local Transport Plan carbon emissions assessment

5.5. As we are the Local Highway Authority, our focus is on our road maintenance, operations and upgrade activity, and the emissions of vehicles using our roads. For assessing the impact of our Local Transport Plan, we have included in our scope the carbon emissions generated by new and upgraded highways and from users of highways. We have not included the emissions from our operation and maintenance of our managed highway network for the reason given below. To be clear and transparent about all the emissions we have excluded from our consideration we have listed those below with the reasons given.

- The operation and maintenance of our managed highways
  5.5..1. *Why is this excluded?* This activity is outside the scope of our Local Transport Plan, which addresses our policies and proposals concerning how people travel and the transport networks that can be changed or created accordingly. Operation and maintenance of our managed highways network is a core activity which is determined by our asset management principles and priorities, as detailed in our Highways Asset Management Plan with the specific proposals set out in our Forward Works Programme. Our ambition is to include relevant impacts of these works within future assessment of new and upgraded highways network infrastructure that we propose with

our new Local Transport Plan as the carbon emissions of those changes over their whole life is informative to the national goal of net zero. Currently we have insufficient information to include this aspect, but we will bring it in to scope once we have developed intelligence in this area.

- The operation of our estate including those buildings and compounds from which our highways and transport functions are operated from.
  5.5..1. *Why is this excluded?* The carbon emissions associated with our estate are addressed by our existing Net Zero Action Plan which working to reduce emissions to net zero from our estate, operations, and traded services by 2030.

- The trunk road network
  5.5..1. *Why is this excluded?* The trunk road network is managed by National Highways. National Highways have their own set of powers and their own Net Zero Highways plan that is working to reduce the carbon emissions of how the highway network is operated, maintained, and upgraded, and also affect the traffic that uses the network. Given our own powers and responsibilities extend only to direct affecting our managed highways, so the trunk road is out of our scope. We will consider the effect of our plan on the trunk road network.

- The National Rail network.
  5.5..1. *Why is this excluded?* The National Rail network is run by a train operating company that delivers specifications contracted by government, whilst the infrastructure for the rail network is run by Network Rail and High Speed 1 Ltd who are responsible for investing in the upkeep and improvement of the network. Our powers and responsibilities cannot directly affect rail operations and therefore it is outside of our scope of our carbon assessment. As with the trunk road network, we will consider the effect of our plan on the National Rail network.

- Aviation
  5.5..1. *Why is this excluded?* Emissions from aviation occurring in the airspace of Kent start and end at airports beyond our administrative border. Furthermore, we do not possess powers or responsibilities over aviation activity. We are therefore neither obliged or in a position to impact aviation emissions. Aviation emissions are instead addressed by the government national strategy called Jet Zero. We do consider the impact of surface transport activity emissions on our road network associated with trips to and from airports during their construction and operation.

- The emissions generated by manufactures of fuel used by transport.
  5.5..1. *Why is this excluded?* Whether a vehicle uses petrol, electricity or hydrogen to power its motion, all fuel inputs to vehicles have been produced through an industrial process. The emissions associated with the generation of the power used cannot be traced given the information available to us. Therefore, if we know there is an electric van on our road network, we do not know whether the electricity used to charge its battery came from renewable or non-renewable sources. Given this, we do include the carbon emissions from fuel manufacture. Those emissions are instead accounted for in the relevant industrial sectors and the companies that operate in them.

- The emissions generated by the disposal of a transport asset at the end of its life.
  5.5..1. *Why is this excluded?* Currently, we do not have sufficient information about the carbon entailed in disposal of the asset at the end of the life, regardless of whether it is a car being scrapped, a road being replaced, or an electric charging socket being replaced. In time, as we strengthen our understanding of our works and the resource inputs throughout the life of the assets we manage in Kent, we will develop an understanding of the quantifiable carbon emissions of assets at the end of their life and incorporate that into our assessment and decision making.

5.6. Estimating current and future emissions from our road network's use

5.7. Currently, we estimate that vehicles on the Kent road network are producing around 1.35 million tonnes of Carbon Dioxide Equivalent a year based on current levels of traffic and the simulated length and speed of journeys – see Figure 1. This also reflects the level of estimated electric vehicles in use based on national averages estimated by Government. Those proportions are shown in Figure 40. We know from Government that the pandemic also lowered emissions from transport and changed behaviours which have had some sustained effect through 2023 based on the provisional estimates by government for that year.

Figure 39 – Estimated and forecast Carbon Dioxide Equivalent emissions from transport activity on the Kent County Council managed road network

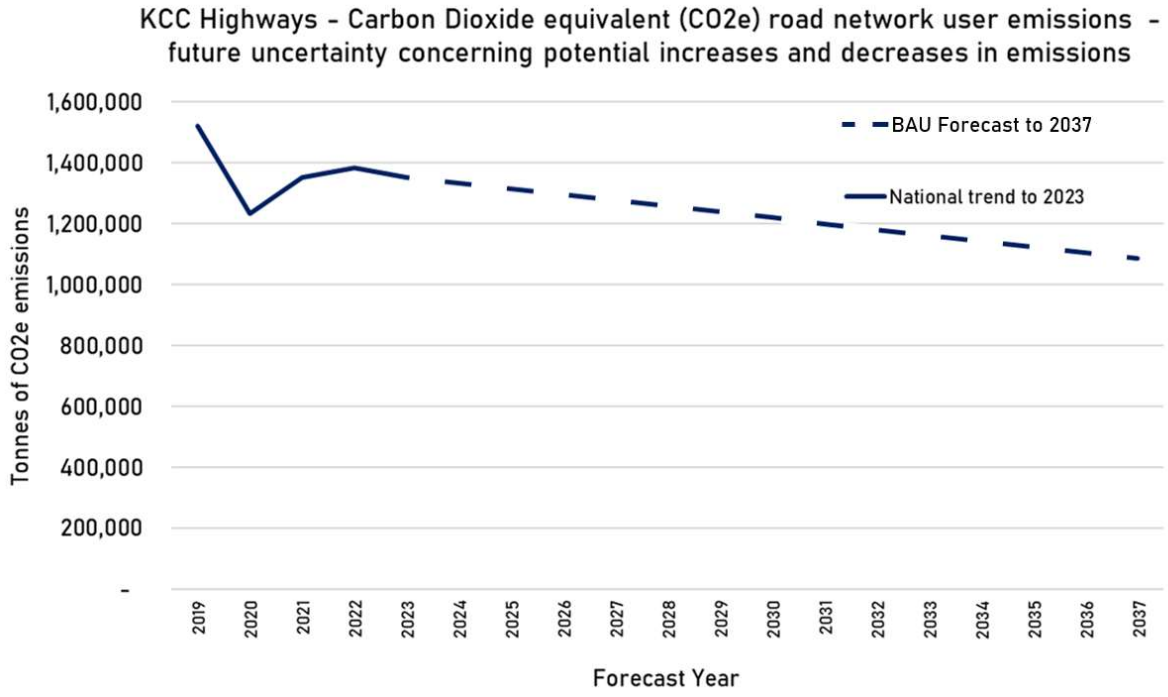


Figure 40 - Proportion of low and zero emission vehicles in national vehicle fleet incorporated into Kent forecasts (Source: Defra Emissions Factor Toolkit)

	Urban road type			Rural road type			Motorway road type		
Forecast Year	2019	2027	2037	2019	2027	2037	2019	2027	2037
Petrol or Diesel Car / LGV / Motorcycle	95%	84%	64.7%	92.2%	82%	63.4%	86.3%	77.4%	60%
Petrol or Diesel HGV / Bus / Coach	2.2%	2.1%	1.9%	5.2%	4.8%	4.6%	11.6%	10.7%	10.2%
Hybrid Cars	2.4%	9.5%	13.9%	2.1%	8.8%	13.1%	1.8%	7.8%	11.9%
Electric Car / LGV	0.4%	4.4%	19.4%	0.4%	4.2%	18.9%	0.3%	4%	17.9%

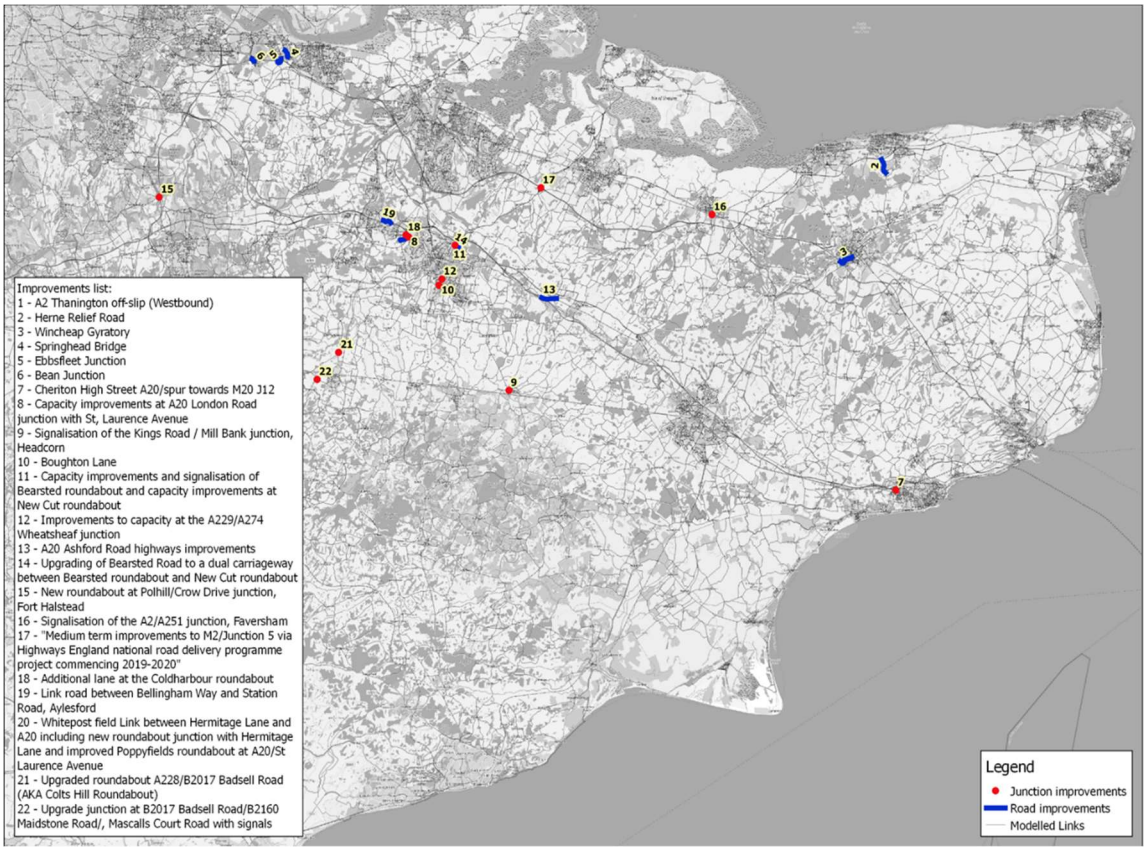
5.8. Evident from Figure 40 is that our carbon emissions forecast from road user emissions include a take-up of electric vehicles that yields 1 in 5 vehicles by 2037 being zero emission. This may appear to be low given the government's planned ban on new petrol and diesel car and LGV sales in 2030. With that ban it is important to note that some vehicles manufacturers will continue to sell petrol and diesel vehicles right up until the ban comes into effect. Furthermore, the ban applies to newly manufactured cars and LGVs only. As of today, there are circa 32 million vehicles on England's roads and that is an all-time high.

5.9. The used car market and existing ownership of petrol and diesel vehicles prior to the 2030 ban on new car and LGV sales will mean that these types of

vehicles form most of the vehicles on the road in England and this is reflected in the fleet mix assumptions from government shown in Figure 40.

5.10. We have assumed the delivery of the schemes shown in Figure 41 as many are funded or committed through development delivery.

Figure 41 - Funded and committed highways schemes on local and trunk road network assumed in our baseline highways modelling



5.11. Estimating the carbon budget pathway to net zero 2050 emissions from our road network's use

5.12. The UK's carbon budget and target of net zero 2050 is set at a cross-sectoral and national level. What this means is that there are no legislated carbon targets or budgets that must be met within the transport sector or the highways sector within that. Furthermore, there are no targets or budget set for local government. Our decisions and actions concerning the Local Transport Plan, whilst required to have regard to climate change as stated in the Local Transport Act, do not have to prove that they comply with the 2050 net zero target or the national carbon budget within the scope of only the transport and highways sector that our plan considers.

5.13. What this means is that currently the way the carbon budget and net zero 2050 target is set, at a national level, provides the flexibility for some sectors of activity in the country to fall short of the budget and target on the reasoned

presumption that other parts of the nation (e.g. another Local Transport Authority), or another industry sector (e.g. domestic energy) do better than the budget and target requires so that the excess emissions from Kent from highways use can be offset by the carbon reductions elsewhere. To date, it has not been necessary in decisions by Government to prove that this assumption will be correct. We therefore assume that this will remain the case for ourselves as a County Council too.

5.14. Whilst this context is important, we are nonetheless committed to understanding the impact of our Local Transport Plan on carbon and giving some estimation of that relative to the national target of net zero in 2050 and also the carbon budgets that are designed to transition activity in the country to that point. The target and budget pathway set at a national level broadly meets the aims of the international agreements the UK has signed – most recently the Paris Climate Agreement in 2015.

5.15. Since carbon budgets are not set for specific sectors or at a local level, we have derived a budget pathway to 2050 net zero (which as a single target can be applied at all sector and government levels). Our budget pathway is derived from the Climate Change Committee's 6th Carbon Budget. The Climate Change Committee is an independent, statutory body established under the Climate Change Act 2008, whose purpose is to advise the UK government on emissions targets. Those targets including the budgets (which form interim targets over time prior to net zero 2050) have been adopted by government and incorporated into law.

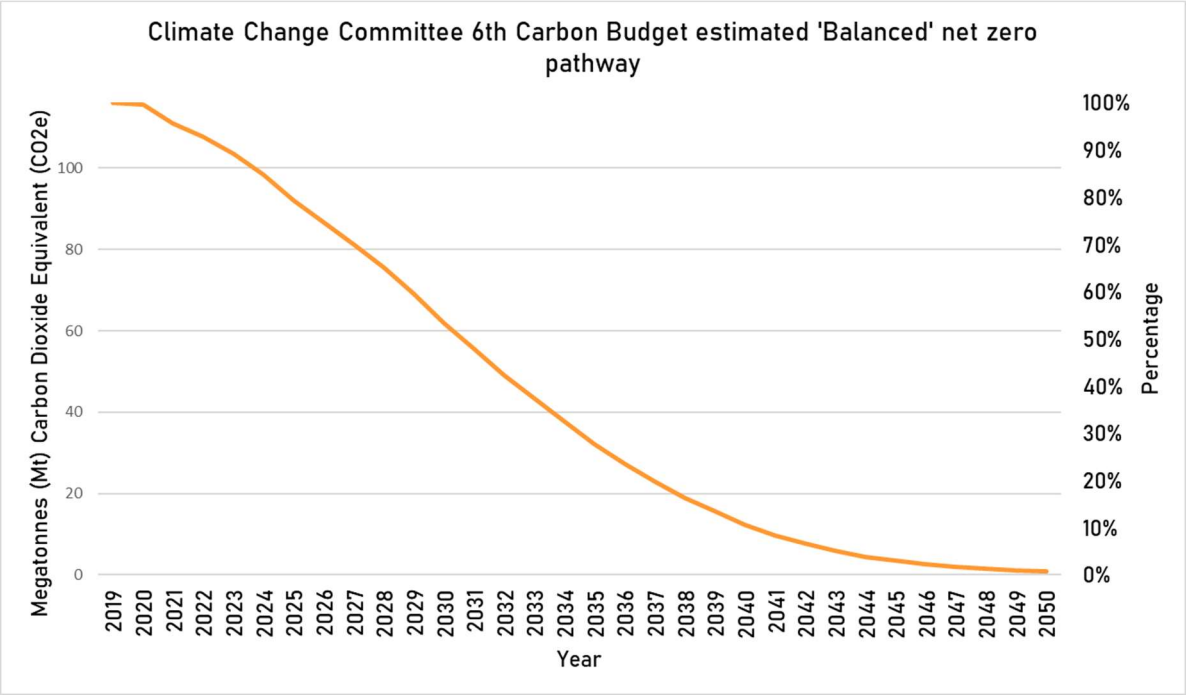
5.16. The Climate Change Committee's 6th Carbon Budget, published in December 2020, considered a range of scenarios of how net zero could be achieved. The core scenario is called the 'Balanced' scenario and represents an approach to net zero based "*what a broadly sensible path based on moderate assumptions"* would look like. The carbon budget that was recommended by the Climate Change Committee was based on this balanced scenario. Those assumptions, in summary, are that demand for travel on the road network rises at a lower rate than is forecast, that in the near term the efficiency of petrol and diesel vehicles improves further, and in the medium to long term the biggest impact is from shifting all vehicle types towards zero emission fuels.

5.17. We have taken the carbon budget pathway recommended by the Climate Change Committee (and adopted as law by government in 2021). We have converted the rate of absolute reduction in Carbon Dioxide equivalent emissions set out in the sixth carbon budget and calculated what indicates in terms of the percentage reductions. This is because the absolute volume of emissions from Kent's highways network is different from the national transport emissions that the Climate Change Committee used. It is not our role to reduce emissions by the absolute amount shown in Figure 42, indicated on the left axis.

5.18. We can be sure, however, that by considering emissions against the percentage proportion reductions over time shown on the axis on the right in Figure 42, we are measuring against a level that would mean our local road network makes the full contribution necessary to support national net zero and budget targets.

5.19. If we do not work to the pathway shown in Figure 42 then it requires assuming either that the overshoot on emissions from our managed road network activity is offset by carbon reductions elsewhere in the transport sector or other sectors in the country, or alternatively assuming we will offset our emissions ourselves through recognised credible mechanisms.

Figure 42 - UK's 6th Carbon Budget Pathway to Net Zero 2050 (Source: Climate Change Committee)

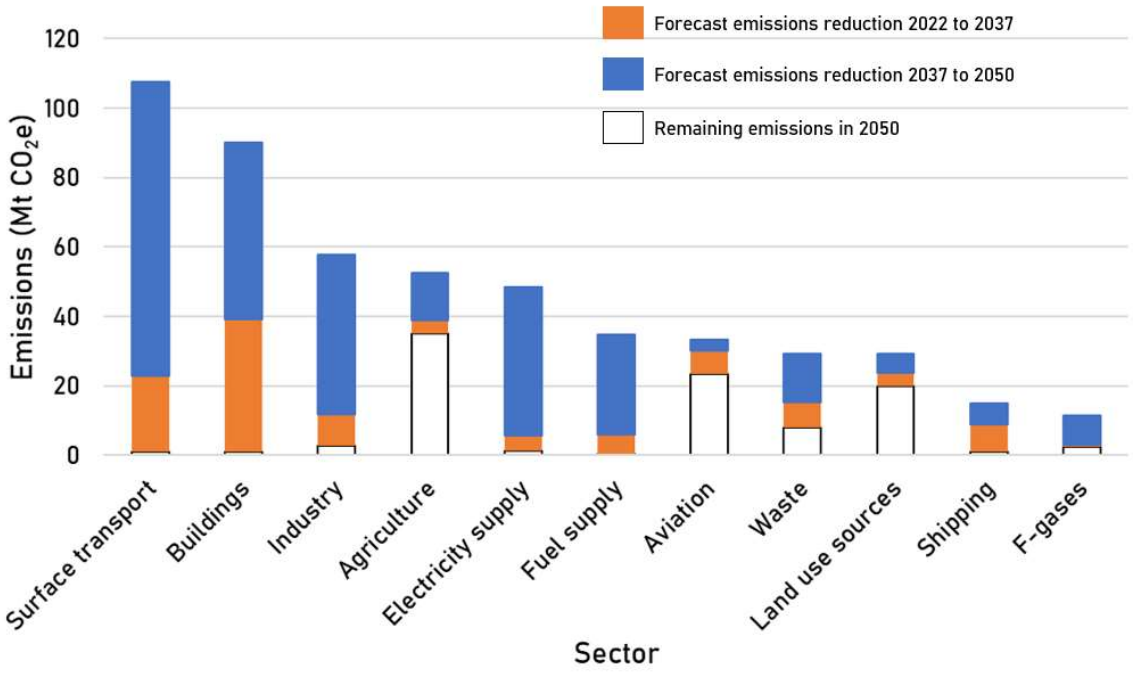


5.20. The Climate Change Committee published their forecast for how cross-sectoral emissions may change given the existing balanced budget pathway that the curve in Figure 42 is based on. The picture for transport is a very positive one – as Figure 43 illustrates, transport emissions have the potential to record a very substantial fall, moving the transport from a position as the highest emitting sector in the UK in 2022 to the one of the lowest between 2037 to 2050. This is based on the expectation by the Climate Change Committee that the electrification of the vehicle fleet in the UK will proceed at pace, with 80% of vehicles on the road by 2037 being zero emission at the tailpipe, along with a reduction in the average annual volume of road kms travelled per person of around 7% to 8%.

5.21. Whether these would be achieved by 2037 is unclear – the assumptions we used from the government's own emissions factor toolkit to generate our forecasts in Figure 39 were based on much lower levels of around between 20% to a rather than 80% of the national vehicle fleet being zero-emission by 2037.

5.22. These findings demonstrate that the transition of vehicles to alternative fuels, predominantly electrification, has a key role as a primary driver in transport. The forecasts and assumptions also suggest that even if the average volume of road kms travelled per person did not fall at all, or by not as much as the Climate Change Committee has assumed, if the electrification of vehicles takes place at the rate the Committee has assumed then there will still be a large reduction in emissions in the transport sector – likely larger in volume terms than any other sector.

Figure 43 - Climate Change Committee Balanced Budget Emissions forecast to 2037 for transport

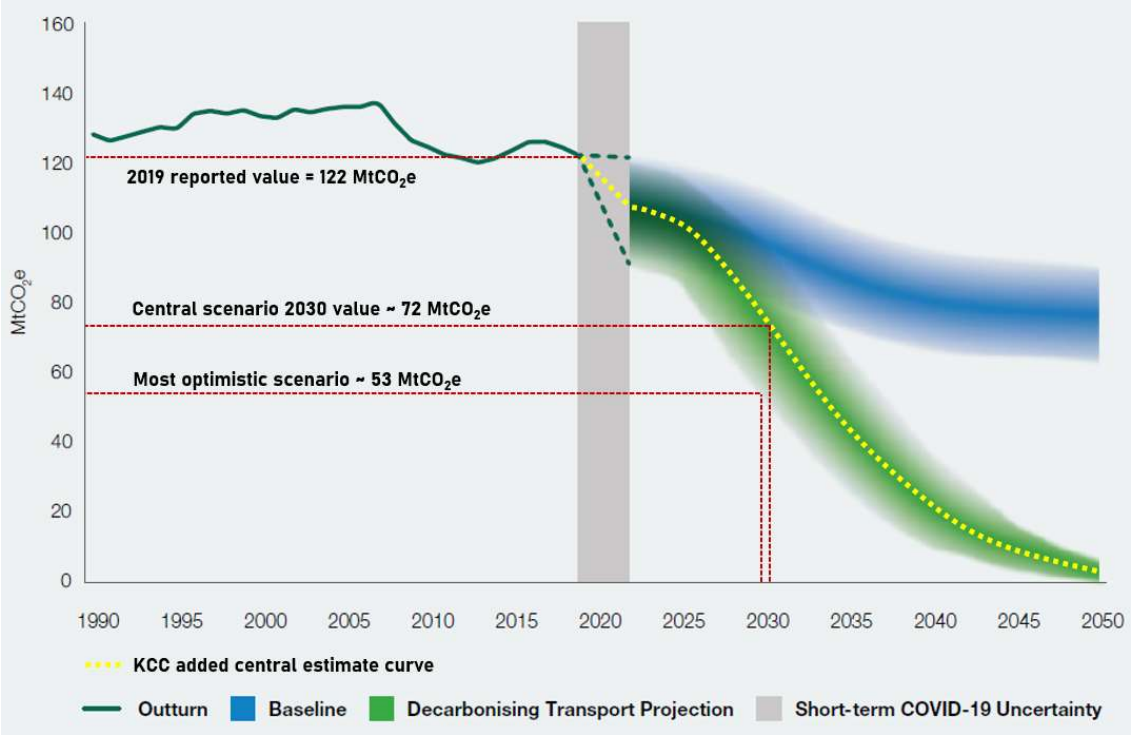


5.23. We have further validated this budget pathway to net zero by comparing it to the pathway considered within the government's Transport Decarbonisation Plan. The pathway in the Transport Decarbonisation Plan is depicted in an indicative manner, however it is possible to estimate the rate of decarbonisation it conveys. The pathway in the Transport Decarbonisation Plan is shown in Figure 44 and includes our own added curve in yellow which lies in the centre of the range of rates of decarbonisation estimated in different scenarios by the Department for Transport which authored the report. Using the yellow curve that we have added, we can read the value for 2030 and compare it to the 2019 emissions level plotted on in Figure 44.

5.24. By 2030, the rate of decarbonisation suggested by the yellow curve is 41% reduction on 2019 emissions. This compares to the carbon budget pathway we have derived from the Climate Change Committee's Sixth Carbon Budget, which came to a reduction of 47% by 2030 compared to 2019. We can see that the figures are of a similar magnitude. The most optimistic scenario shown in Figure 44 equates to a 57% reduction by 2030 compared to 2019.

5.25. We can see further that the carbon budget pathway values we are using lie comfortably within the range that the Department for Transport have considered in the Transport Decarbonisation Plan. Given these findings, we have undertaken the remaining assessment of quantifiable carbon impacts of our Local Transport Plan based on comparing to the pathway we derived from the Climate Change Committee's Sixth Carbon Budget and as set out in Figure 42.

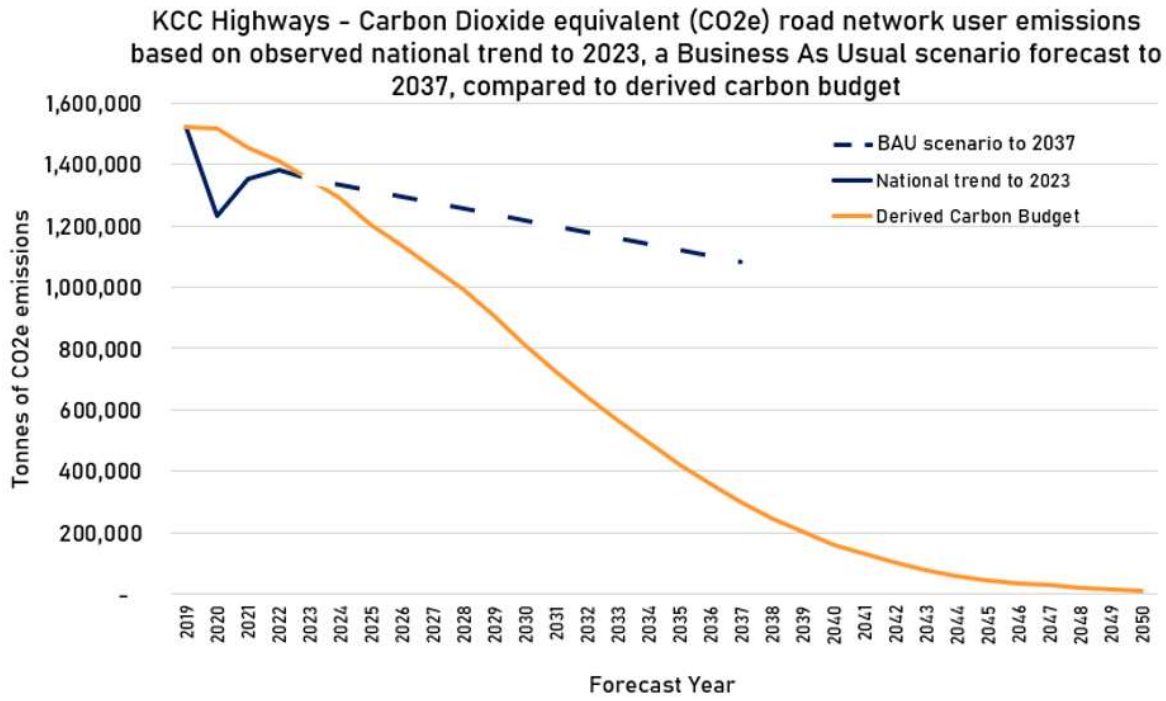
Figure 44 - Department for Transport's Transport Decarbonisation Plan decarbonisation pathway to 2050 (Source, DfT 2021)



5.26. **Kent County Council's forecast managed road network user emissions have likely been within our derived carbon budget pathway but are on course to overshoot the carbon budget pathway in future years and potentially miss the 2050 target.**

5.27. With an evidence-based carbon budget pathway to net zero established for application to our assessment of the Local Transport Plan, we have combined the charted curves in Figure 40 and Figure 42 into a single graph, shown in Figure 45. The forecasts we have stop at 2037, however given we know the net zero target concerns 2050, we can extrapolate from our 2037 forecast the rate at which emissions would need to fall to hit the 2050 target. Every year, an additional 83,000 tonnes of carbon dioxide equivalent further to the year before would need to avoid being produced.

Figure 45 - Estimated and forecast Carbon Dioxide equivalent emissions from Kent County Council managed highway network user emissions, compared to budget pathway to net zero 2050



5.28. We can see from Figure 45 that we are on the right track – carbon emissions are forecast to decline. This is because of the forecast increase in use of low and zero emissions vehicles such as electric cars. It is important to note at this point that our forecast emissions in Figure 45 **do not reflect the impact of potential policies and proposals we may plan to set out and implement in our final Local Transport Plan.** Rather, the forecast currently reflects the broad impact of our current focus of activity and the funded and committed schemes that we have within our capital budget.

5.29. Although the forecast in Figure 45 shows a declining volume of emissions year by year into the future, the rate of fall is insufficient to hit the carbon budget pathway to net zero. Although a fall occurred over 2020 and, we estimate, 2021 and 2022 due to economic activity and traffic levels having dropped due to the pandemic, activity is now recovering but without the decarbonisation in vehicles to deliver sufficiently low enough emissions.

5.30. We expect that emissions will have risen to a level similar but lower to 2019. There is a significant probability that emissions in 2023 may be exceeding the budget for the first time since our baseline of 2019, though we may not be able to confidently demonstrate this until 2025, when government publishes national data for that year's emissions. There are two key issues arising from our current rate of reduction if the budget pathway to net zero and net zero itself are a focus of our policy goals.

5.31. Affecting carbon emissions from use of our road network – the sensitivity of emissions to hypothetical policy impacts

5.32. As the Local Transport Authority, we can work to affect change to the way people travel in Kent by using many different instruments available to us. Those broadly range across those below:

- Changing and growing the networks that people use (such as constructing new roads, new pavements, or increasing the space on the existing networks so more people can use them).
- Improving the quality of the networks that people use so they are more reliable, better quality, and offer the services they need.
- Restricting use of our networks to disincentivise or incentivise their use in a particular way and to help networks perform better.
- Supporting and encouraging behaviour changes to improve the quality of journeys and their impact on others and the built and natural environment.

5.33. When we consider the types of journeys made in Kent, we can see that there are five core ways of travelling that we can affect to impact carbon emissions:

- Affect the type of private vehicle people or businesses use to travel, to encourage lower or zero emission vehicle use.
- Affect the use of bus travel for short to mid distance trips.
- Affect the use of rail travel for short to long distance trips.
- Affect the use of cycles for short distance trips.
- Affect the use of walking for short distance trips.

5.34. For each of these we have considered the effect, over time, of achieving an increase in these uses. It is important to recognise that we are not yet proposing precisely how any of the changes could be achieved. That aspect will be determined by the proposals we develop and propose in the full Local Transport Plan.

5.35. *The type of vehicle used – what if we take further action to enable more electric vehicle use?*

5.36. We considered the effect of efforts we could take to increase electric vehicle use by 25% over the business-as-usual level of use we have assumed. We estimate this could mean 6% of vehicles in use in Kent being full electric by 2027, compared to 4.8%, and by 2037 those figures being 27% instead of 21.8%.

5.37. Considering the rising volume of registered vehicles in Kent over time, which has risen on average 1.3% a year in the last decade, a 25% increase in the rate of electric vehicle take up means getting around 4,000 extra electric vehicles in Kent used each year until 2037. Doing so may reduce CO2e emissions by a total of circa 2 million tonnes over that period. This is equivalent to contributing a 30% fall towards the carbon budget pathway we have derived for our local road network.

5.38. The challenge is how electric vehicle ownership and use can be accelerated in Kent using the different mechanisms available to our Council and with the funding we could have over that period.

5.39. *Taking the bus – what if we take further action to get more people using buses?*

5.40. In the last 10 years, Kent has seen a fall in use of bus services. The highest use of buses reached was 62.3 million trips in the year of 2013/14. Since, use had declined to around 53 million before the Covid-19 pandemic occurred. This difference of 9 million over the course of a year represents 24,725 fewer passengers on average per day. What would be the effect of efforts we could continue to take beyond our current funded proposals being delivered by the Bus Service Improvement Plan, and achieve a new high of 63 million?

5.41. This would mean circa 27,000 more bus passenger journeys every day. Bus passenger journeys, as we saw in our evidence in Figure 25, tend to have distances that are between 5 and 20 km in length, although some travel longer and some shorter distances than this. We have therefore assumed the midpoint of 12.5 km.

5.42. Multiplying this distance of 12.5 km by the number of additional bus passengers per year and assuming 805 of trips are switching from petrol and diesel cars

gives a reduction in CO2e emissions of circa 87,000 tonnes. We have not assumed an increase in CO2e emissions from the increased bus mileage as this could be delivered by zero emission buses as is increasingly the norm across the country.

5.43. The value of 87,000 tonnes is enough to cover the highways capital projects we may want to deliver over the same period. This demonstrates that buses have an important role to play in reducing carbon emissions in the county. The challenge is how to continue to build on the investment and improvements we are delivering as part of our Bus Service Improvement Plan to sustain long term increased use of bus services in Kent.

5.44. *Taking the train – what if we take further action to get more people using rail services in the county?*

5.45. Rail services have an important role in reducing carbon emissions in Kent. This is because the rail network is almost entirely zero emission at use due to it relying on electricity to power the trains along for passenger services, as opposed to diesel trains. Rail also provides a fast way of travelling longer distances which, in a county that is almost 100 kms from east to west, provides an opportunity for some longer distance trips by road to shift to this clean form of travel. Due to the long average distance of rail journeys, they can have a large impact on reducing emissions of greenhouse gases.

5.46. For example, let's assume 10,000 people switch to train to make an outbound and return journey each day of the week by 2030, rising to 20,000 by 2037. In the context of a county that had 70 million entries and exits a year, equivalent to an average of 192,000 a day prior to 2020, this would represent a growth between 5% to 10% to 2030 - a reasonable estimate of increased demand overtime given historic passenger growth on the network prior to 2019. The rail network and the services on it have a very large amount of spare capacity outside of the very busiest times of the day, and more services could run beyond today's timetabled services. If many different types of journeys across all times of the week were to use rail more, the likelihood is the rail network would be able to seat the additional passengers.

5.47. Given the trip length distribution for rail over different distances that we presented in Figure 25, we have assumed that a new rail trip has an average distance of 50 kms. Since rail competes with door-to-door private transport on a station-to-station basis, we have assumed that rises in use of rail may attract 20% of their new passengers from private vehicle trips. Based on all these assumptions, we estimate that over the period of 2024 to 2037, rail could enable avoided CO2e emissions of circa 100,000 tonnes.

5.48. Given the estimate of carbon and the capability of the rail network in Kent which has one of the highest volumes of stations in a county compared to others in

the country, rail clearly has the potential to play a significant role in helping Kent turn the curve on carbon emissions, along with the other co-benefits that produces and the wider benefits of supporting Kent's economy.

5.49. *Riding a bicycle – what if we take further action to get more people using bicycles in the county?*

5.50. We set out in Figure 23 and **Error! Reference source not found.** the scale of short distance trips in the county made every day. Looking ahead to 2037, we forecast that the volume of trips under 5 kms a day could reach as many as 1.1 million. By 2037, Kent's population could grow to around 1.87 million, dependent on a range of factors such as birth and death rates, whether new homes are built, whether household sizes change and so on.

5.51. We have considered the effect of more people cycling in Kent. Cycling has become increasingly accessible to more and more people given the wide range of electric bikes to suit all types of users. They have increased the capability for those people less experienced at cycling to travel relatively long distances by the supported effort they provide the rider as they pedal. Their potential is illustrated by the take-away food industry where delivery riders are using electric bikes in large numbers in towns across Kent due to their affordability and flexibility.

5.52. We have estimated the carbon emissions impact if, initially, we got 10,000 more people cycling each day in Kent by 2027 and grew this to 100,000 more people by 2037. Given Kent's population, even 100,000 people is a small minority of people, at c. 5% of the county's future population. Achieving 10,000 people is therefore a substantially smaller proportion of the population and can be considered as being roughly 900 extra people in each district of Kent. Given these proportions, we consider this assessment realistic of the potential contribution cycling could make.

5.53. We have assumed that if these levels of cycling were achieved, not all new cyclists would be switching from vehicles. As such we have assumed 50% are new journeys that would not have been made, and 50% switching. Over time, from 2024 to 2037, we estimate that c. 160,000 tonnes of CO2e could be avoided or removed from our current forecast of road user emissions that were illustrated in Figure 45. This total could more than offset the capital carbon emissions that may be generated by works required to ensure the highway network can meet the needs of the county and its growing population.

5.54. With cycling, as with walking covered next, there is a big co-benefit of this zero-emission form of travel – the health benefits from undertaking the moderate exercise necessary to make a journey by bike. Over the period of 2024 to 2037, we estimate that circa £240m (in 2023 prices) of health benefits would be

generated – calculated using the Department for Transport Active Modes Appraisal Tool.

5.55. These health benefits are not the full benefits of increased cycling – there are other co-benefits such as air quality improvements, reduced wear and tear to highways, and potentially reduced congestion as traffic levels could fall, whilst highstreets could see more footfall as cyclists pop to town and avoid parking fees. As we develop our full Local Transport Plan and the detail of our Kent Cycling and Walking Infrastructure Plan, we will develop our estimate of the benefits of increasing cycling.

5.56. *Going on foot – what if we take further action to get more people walking in the county?*

5.57. We have considered the impact of walking on the same basis as cycling, assuming 10,000 new pedestrians making journeys by 2027 and by 2037 a step change up to 100,000 new pedestrians making journeys every day. Assuming these pedestrians all make return trips on foot, then at least 20,000 new walking journeys would be made daily in 2027 and by 2037, 200,000.

5.58. As with cycling, we have then considered what the effect would be if 50% of these new walking journeys were from people switching from private vehicle trips. At 100,000 journeys a day shifting, this would be around a third of the forecast volume of vehicle trips under 2 km in 2037. This is a realistic assumption – that many short vehicle trips remain whilst we have not specified the policies and projects that would be delivering increased numbers of pedestrians. Furthermore, given that some trips even at very short distances are being made for reasons that may not be possible or are very difficult to shift to walking.

5.59. The impact on CO2e emissions could total circa 47,000 tonnes over the period of 2024 to 2037. As with cycling, a big co-benefit from more journeys made on foot are the health improvements that arise. These alone total circa £75m (in 2023 prices). Adding the other benefits from walking to this, along similar lines to cycling, would increase the value to the county.

5.60. Summary of the impact that different travel methods could generate for avoiding emissions of carbon

5.61. The total effect on reducing CO2e emissions in year in 2030 is 144,000 tonnes avoided, shown in Table 5, which would equate to a 10% reduction compared to our business-as-usual scenario. By 2037, as we have assumed that the volumes rise across the different changes in the types of vehicles we use to travel or the way we get to our destination, the total emissions avoided totals 321,000 tonnes of CO2e and equates to 30% of the volumes of emissions forecast in the business-as-usual scenario.

Table 5 - Estimated in-year CO2e emissions avoided from hypothetical scenarios

Scenario	2030 (tonnes CO2e avoided)	2037 (tonnes CO2e avoided)
More EV use	118,000	260,000
More Rail use	14,000	14,000
More Bus use	6,000	12,000
More Walk	3,000	8,000
More Cycling	10,000	27,000
Total of all scenarios	144,000	321,000

5.62. Determining the impact of the Local Transport Plan proposals

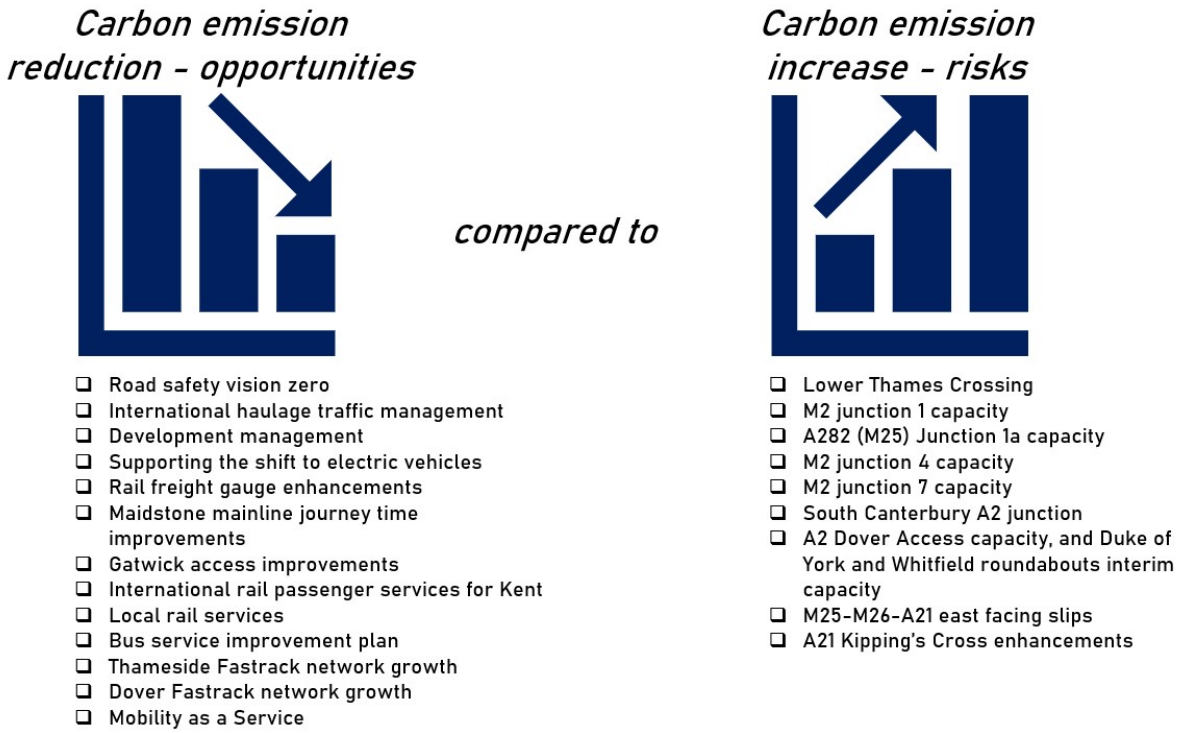
5.63. Our Local Transport Plan proposals include a balanced mix across the forms of transport provision in the county. We are primarily responsible for the local road network and therefore the majority of the work we do as a Council is focused on maintaining, upgrading and building new highway network to enable people to travel by vehicle, walking and cycling or bus to their destinations. These journeys are essential for Kent's economy, and we have a Network Management Duty to manage our road network accordingly. This means that by default our activity will tend towards highways schemes that could place an upward pressure on road user carbon emissions as the improvements we make may directly enable or encourage more travel in vehicles which, until they are all zero emission at the tail pipe, would generate carbon emissions.

5.64. This upward pressure on carbon emissions risks turning the carbon curve to net zero 2050 in the wrong direction. Given this, we have set out in our Local Transport Plan proposals for both our local road network and its role in public transport, as well as the remainder of the transport network in Kent, to help drive an overall reduction in carbon emissions from transport.

5.65. The proposals for our Local Transport Plan are not all developed enough to know with high accuracy what their effect on carbon emissions could be. What we have therefore done is consider whether the proposals may have potential to reduce carbon emissions or increase carbon emissions so we can understand the potential balance of our plan.

5.66. The opportunities and risks of our different strategic proposals are shown in Figure 46. Not all proposals have been determined to have a clear likely impact towards either reducing or increasing emissions.

Figure 46 - Potential impact of the Local Transport Plan proposals on transport sector carbon emissions



5.67. We have proposals which could have a direct impact on carbon emissions. Most notably, our proposal to deliver on-street electric vehicle charging infrastructure would provide direct support to the transition to zero emission vehicles. As our analysis has shown, if electric vehicle use increases, it is one of the most impactful ways of lowering emissions as it will reduce the volume of long distance trips emissions which are the greatest contributor to road user emissions on the Kent road network including our local road network.

5.68. We have set out a range of public transport improvements which can have a positive impact, with bus and rail travel helping to address mid to long distance trips which are also responsible for large volumes of carbon emissions relative to short distance journeys.

5.69. We have set out that our Road Safety Vision Zero can also have a positive impact by helping to remove some of the barriers that prevent a large number of Kent's 1.6 million residents from feeling confident to cycle on our local roads, or comfortable to make journeys on foot including crossing the highway. The Kent Cycling and Walking Infrastructure Plan would also have a positive impact, albeit it would target specific sections of the network, whereas Vision Zero could drive a change in overall behaviours that may have a wider impact on the propensity to use these zero emission forms of active travel.

5.70. In contrast, some of our proposals could create significant changes in the capacity of the road network and significantly change journey times and route availability. These changes may cause new traffic to use the network or to route longer distances. These could bring increased vehicle use and more mileage would entail increased carbon emissions if these miles were not undertaken by zero emission vehicles.

5.71. As will be clear from the consideration of each scheme in this evidence base, the need for schemes is not solely determined or driven by consideration of carbon emissions. Furthermore, with the maturity of some of the scheme's development being low, there is capability and opportunity in the future for these schemes to become increasingly low carbon emission in their construction, whilst in operation the carbon emissions they could cause will be mitigated by the transition to electric vehicles. By the time some of the highways schemes are constructed and open, the impact on carbon emissions could be very small.

5.72. Considering uncertainty in our forecasts

5.73. The level of maturity of the proposals in our Local Transport Plan and their effect, combined with the wide range of other variables that will have a bearing on how people travel and what volume of emissions will be created, means that at this stage there is recognised uncertainty in the forecasts we have made.

5.74. Some key drivers of uncertainty are:

- The cost of electric vehicles and charging infrastructure availability – these will have significant influence on the rate of fleet transition to zero emission vehicles, which will be relevant to existing trip emissions and future trips emissions including from changes to the road network.

- The price, availability and attractiveness of public transport. Public transport, both buses and rail typically enable lower emission travel due to either or both of the efficiencies from carrying multiple people in a single powered vehicle or from the electrified nature of that vehicle's propulsion. The extent of use of public transport instead of vehicles that may still be petrol / diesel vehicles, will have an impact on the level of road user emissions.

- Population growth – the more people there are using Kent's roads the more potential there is for the absolute number of users to be using more carbon intensive forms of travel, thus creating emissions.

- Employment and service access flexibility. The Covid pandemic drove a sudden change in travel behaviour associated with ways of working

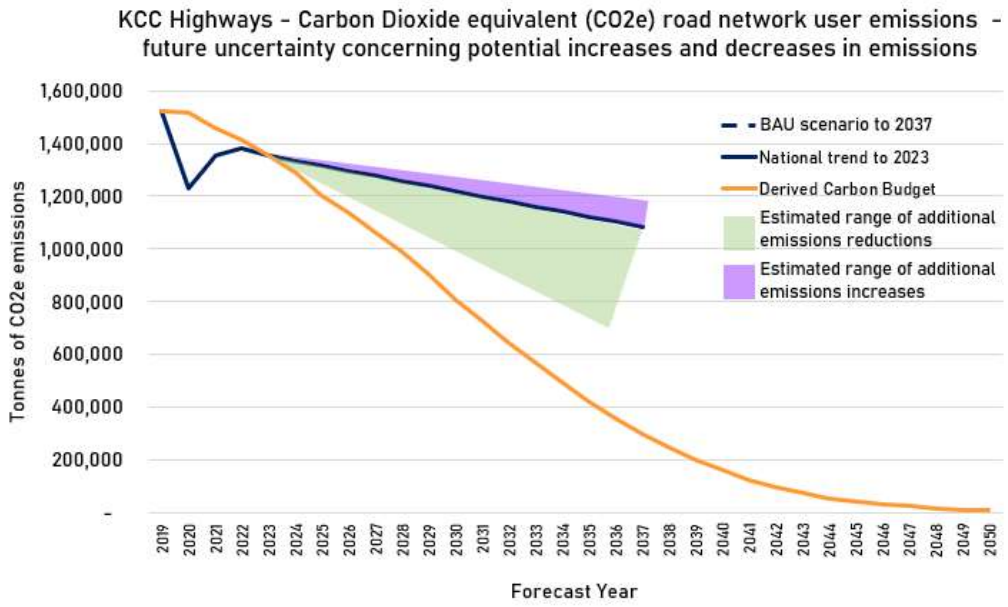
and accessing services. With the potential for service provision and working practices to continue to shift in the future and given these are aspects we have no direct influence on as a local transport authority, the impact of these on carbon emissions could be significant but difficult to predict.

- Shared transport services. In cities around the world, shared open access transport such as hire cycles, have created significant shifts in the approach to short distance travel. These are impactful on carbon emissions within built up urban areas as they generate very little carbon emissions. The extent to which they may be applicable and successfully applied by either the public or private sectors in Kent remains to be seen and is a recognised area of uncertainty.

5.75. Further to our assessment of the balance of impact of proposals in our Local Transport Plan, we recognise the uncertainty and have estimated how carbon emissions may change over time in the future. Overall, it is highly unlikely that emissions will rise. Therefore, in our scenario factoring in additional emissions increases, we still expect that the total volume of emissions will fall over time, but at a slower rate. This reflects that the rate of vehicle fleet transition to electric zero emission vehicles is such that it will increasingly have a tangible impact on reducing vehicle emissions.

5.76. In our estimated range of additional emissions reductions, we assume that the impact of our proposals is generally more positive than not in terms of their potential for causing shift of mode and take up of lower emission forms of transport. This could mean that in the future the volume of road user emissions in Kent could be significantly lower than our business as usual forecast and emphasises the need for funding to be certain and sustained so we can deliver these proposals and with partners sooner rather than later, to get the benefits embedded into the transport networks and drive behaviour changes.

Figure 47 - Uncertainty in our future forecast of road user emissions



5.77. The share of carbon emissions between our managed local road network and the National Highways managed trunk road network in Kent

5.78. In this section we have considered emissions from use of the Strategic Road Network in comparison to our managed local road network, and also the contrast between National Highways and our own road infrastructure projects.

5.79. In Kent, we forecast that more vehicle kilometres are driven on our managed local road network than on the Strategic Road Network managed by National Highways. In our baseline forecasting year of 2019, we forecast a split of vehicle kilometres of 57% taking place on our local road network and the remaining 43% on the Strategic Road Network. The type of traffic on these roads varies though – the Strategic Road Network has a higher proportion of HGV traffic and a higher proportion of diesel vehicles due to the longer distance of trips that tend to be made on these roads.

5.80. Due to these differences, as Figure 48 shows, the Strategic Road Network traffic produces a narrow majority of emissions in Kent, with the local road network accounting for 47% of the emissions around 2019. Looking forward, we forecast a declining share of the total for the local road network. This continues to be explained by the traffic type using local roads relative to the Strategic Road network. Local road trips are shorter, and a greater majority are private vehicles consisting of cars and LGVs. These vehicles are forecast to become electric in greater proportions than the mix of traffic on the Strategic Road Network which includes HGVs.

5.81. Alternatives to HGV petrol diesel vehicles remain in development and so by 2037 there remains a greater proportion of vehicles using petrol and diesel fuels on the Strategic Road Network. As Figure 49 show, the proportion of emissions arising from traffic on the local network is forecast to fall slightly, as decarbonisation of vehicles on these roads happens at a quicker rate than on the Strategic Road network.

5.82. Over the period to 2037, the Strategic Road Network will nonetheless see a fall in CO2e emissions as many cars and vans on those roads will switch to full electric power. We forecast a fall of circa 19% in emissions from Strategic Road Network use.

5.83. We have estimated that the emerging pipeline of highways schemes that may need to be delivered in Kent could produce circa 80,000 tonnes of CO2e. These schemes are local road schemes on our managed network. On the Strategic Road Network in Kent, National Highways are promoting schemes, the largest of which is the Lower Thames Crossing.

5.84. These schemes are typically larger in scale than our local road network schemes as they concern the sections of the road network that carry the highest volumes of traffic. The larger scale of their promoted schemes can mean a larger impact on CO2e emissions. For example, the Lower Thames Crossing is forecast to generate 1.76 million tonnes of CO2e from its construction – equivalent to more than a year's worth of road user vehicle emissions on our managed road network.

5.85. The scale of the figures associated with the road network improvements that may be required in Kent on either our managed network or that managed by National Highways demonstrate the challenge of growing the network at a time when carbon emissions are intended to fall fast in the coming decade.

Figure 48 – Percentage split of CO2e emissions produced by use of the local and Strategic Road networks in 2019

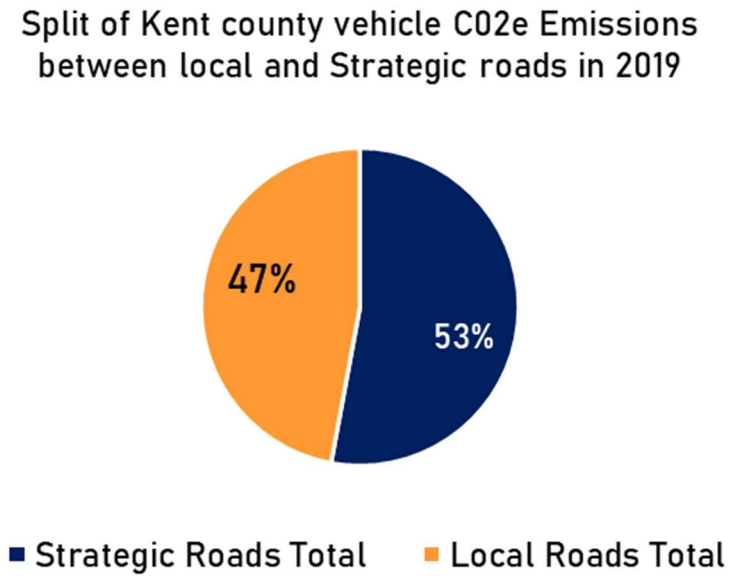
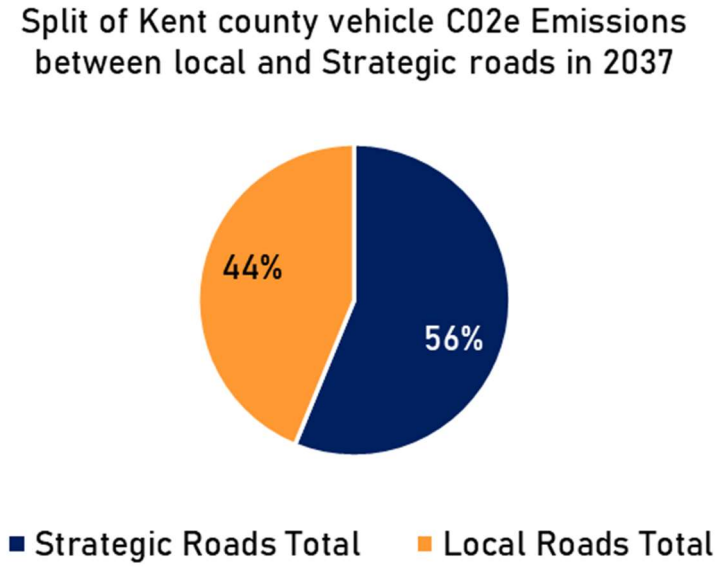


Figure 49 – Percentage split of CO2e emissions produced by use of the local and Strategic Road networks in 2037



6. Policy review and alignment

6.1. We have considered the wide policy landscape within which we carry out our work. This landscape is primarily driven by government policy which has set the basis and conditions on which much funding for transport schemes is awarded to Local Transport Authorities such as us. Furthermore, much of this policy landscape is new since 2020 and hence provided a driver for our determination to produce a new Local Transport Plan.

6.2. The policies we have taken account of in production of our Local Transport Plan are set out in Table 6. Legal requirements contained in legislation are not included in this assessment. Further below, we have assessed our Ambition against the policy landscape to validate that it sets a direction for our Local Transport Plan that should contribute towards fulfilling these policies.

6.3. Our ambition for our Local Transport Plan is as follows:

We want to improve the health, wellbeing, and economic prosperity of lives in Kent by delivering a safe, reliable, efficient and affordable transport network across the county and as an international gateway. We will plan for growth in Kent in a way that enables us to combat climate change and preserve Kent's environment.

We will do this by enabling emission-free travel by delivering effective dedicated infrastructure to electrify vehicles, increase public transport use and make walking and cycling attractive. This will be enabled by maintaining our highways network and delivering our Vision Zero road safety strategy. These priorities will ensure our networks are future-proof, resilient and meet user needs.

Table 6 - List of national, regional, county and local policies we have considered

Policy	Local, Council, Regional or National?
DfT Investment Strategy	National

DfT Departmental Objectives	National
DfT Action for Roads	National
National Networks National Policy Statement	National
DfT Future of Freight Plan	National
DfT Transport Decarbonisation Plan	National
Future Mobility	National
Gear Change	National
DfT Road Safety Statement	National
National Air Quality Strategy	National
Climate Change Committee	National
Levelling Up the United Kingdom	National
SELEP	Regional
Transport for the South East Transport Strategy	Regional
Transport for South East Future of Mobility Strategy	Regional
Transport for South East Freight Strategy	Regional
Kent Vision Zero Road Safety Strategy	County
Kent Highways Asset Management Plan	County
Bus Service Improvement Plan	County
Kent Rail Strategy	County
Active Travel Strategy	County
Kent Environment Strategy	County
Kent and Medway Energy and Low Emission Strategy	County
Kent Plan Tree	County
Kent Plan Bee	County
Kent Joint Health and Wellbeing Strategy	County
Kent and Medway Economic Framework	County
Local Plans and associated plans	Local
Air Quality Management Plans	Local

6.4. Alignment of our Local Transport Plan ambition with National Policy

6.5. We have assessed our Ambition against national policy used a Red-Amber-Green rating, where Green indicates that consider and can explain a strong fit with whichever policy is considered. Red represents a poor fit, and Amber a fair fit. As we developed our ambition for our Local Transport Plan, we considered how we can make it best fit with the widest range of national policies and, as Table 7 shows, we have achieved a strong fit across all policies.

Table 7 - Assessment of the LTP ambition compared to national policy

Policy	Red, Amber or Green fit?	Rationale
DfT Investment Strategy	Green	Our ambition is focused on the users and residents and businesses of Kent that are affected by transport, including its reliability as per the DfT investment strategy priorities. We are also focused on economic prosperity and global competitiveness given our international gateways, factors that form the strategy's priorities. The strategy is also focused on growth in housing. Our ambition is explicit about the need to cater for growth in the county.
DfT Departmental Objectives	Green	Our ambition supports the Department's priority outcomes as our ambition is clearly focused on growing the economy and improving transport users' experience by ensuring that the network is safe, reliable, and inclusive. We specifically recognise the importance of our global gateways in Kent and transport associated with those, which contributes directly to the Department's objective of increasing the global impact of the UK, boosting our influence and maximising trade. Tackling climate change and improving air quality by decarbonising transport are also focuses on our ambition.
Road Investment Strategy 3	Green	Our ambition directly addresses road safety and environmental outcomes from use and management of the road network – which addresses the first two objectives of the DfT Road Investment Strategy. Our focus on reliability and efficiency directly supports the Strategy's focus on network performance. We are also focused on economic prosperity and growth

		and incorporate the international gateways and their transport access into this, which is of particular relevance and support to the DfT's Strategic Road Network the Strategy concerns and specifically the objective for growing the economy. We focus on future proofing our networks which for us includes employing and using innovative new techniques and technology as we develop our network – directly supporting the Strategy's objective for a technology-enabled network.
National Networks National Policy Statement	Green	The NPS states in its summary of need that "A well-functioning Strategic Road Network is critical in enabling safe and reliable journeys and the movement of goods in support of the national and regional economies." We agree and have reflected this in our ambition so that the Local Transport Plan we develop is supportive of delivering on this need of the strategic road network.
DfT Future of Freight Plan	Green	Like the Future of Freight Plan, we have a focus on net zero and decarbonising transport in our ambition. We are also focused on the international gateways which lie in Kent and are responsible for some of the country's highest freight flows. Finally, we are focused on future-proofing transport in Kent including using innovation and new technologies. Combined, these aspects support the Freight Plan's priorities of a National Freight Network, Transition to Net Zero, Planning, and Data and Technology.
DfT Transport Decarbonisation Plan	Green	Our ambition has a focus on combatting climate change by delivering emission free travel across the transport mix. In so doing, our ambition fully supports the DfT's aim to deliver its Decarbonisation Plan.

Gear Change	Green	Our ambition's focus on health, safety and meeting user needs extends to those that can and want to travel by walking, cycling or wheeling. We are explicit in our ambition of our intention to deliver dedicated infrastructure to make walking and cycling attractive. Given this, our ambition is designed to deliver Gear Change.
National Bus Strategy	Green	The National Bus Strategy has a focus on revitalising bus networks across the country by making them more frequent, faster and more reliable, cheaper, more comprehensive and easier to understand. Our ambition directly addresses these aims – we are focused on delivering a reliable transport network in Kent that is affordable and that is more reliable through dedicated infrastructure for public transport including Buses.
DfT Road Safety Statement	Green	We have a bold and systems-wide approach to road safety as set out in our Vision Zero strategy and focused on in our ambition. In doing so, our ambition caters for the range and extent of action that the DfT Road Safety Statement in 2019 including building a culture of lifetime road safety. We are confident that our ambition will continue to have a strong alignment with the Government's new Statement once developed and published.
National Air Quality Strategy	Green	Our ambition is focused on preserving Kent's environment which covers both the natural and built environments. Health and wellbeing are further emphasised in our ambition. We have done so to ensure that not just our action targeted on air quality, but overall is driven towards actions that improve air quality impacts from transport rather than worsening them. In this way our ambition is set up to deliver the National Air Quality Strategy and as will be seen, the policy outcomes and objectives directly address the National Air Quality Strategy.

Climate Change Committee	Green	The Climate Change Committee set the carbon budgets and set out guidelines for the transport changes that are likely to be necessary to meet those. We have reflected in our ambition the need to address climate change and reduce emissions, and have particularly focused on electrification of vehicles, as the Committee set out estimates of the volume of charging sockets needed across the country to support that. In this way, we have written our ambition to focus on the actions that will support the pathway to net zero and turning the curve on emissions downwards towards the budget levels.
Levelling Up the United Kingdom	Green	Levelling Up aims to deliver a quality of transport across the country close to the standards in London. This focus on transport sits within the Levelling Up goal of boosting productivity, pay, jobs, and living standards by growing the private sector. Our ambition is economic prosperity and on the wide aspects of transport that make it successful in enabling people to have a quality of life envisaged by the Levelling Up policy.

6.6. Alignment of our Local Transport Plan ambition with regional policy

6.7. As we developed our ambition, we also had regard to the Transport Strategy of Transport for the South East and the South East Local Enterprise Partnership's strategy. Since we undertook this work, the future of the Enterprise Partnership has become clear, with it completing its work by 2024 and new prospects for devolved arrangements being set out in the Government's Levelling Up Bill.

6.8. We work within the partnership of Transport for the South East and so are closer in our work to the detail of the Transport Strategy which has been tailored to address the issues specifically facing the region Kent lies within. Our ambition supports the strategy by covering the three pillars that Transport for the South East is focused on – society, economy and environment.

6.9. We have gone further in our work to align with the Transport Strategy of Transport for the South East and assessed our policy outcomes and policy objectives against the goals and priorities of the Transport Strategy. The Cities and Local Government Devolution Act 2016 states that we, as a constituent authority of Transport for the South East, must exercise our transport functions with a view to securing the implementation of the proposals contained in the Transport Strategy.

6.10. Although Transport for the South East is not a statutory Sub National Transport Body that the 2016 Act legislates for the making of, we have worked within Transport for the South East to ensure that its work and operation is designed to enable it to become a statutory body in the future. Transport for the South East and its constituent authorities, including ourselves, were unsuccessful with a bid for statutory status in 2020. The potential for a future bid remains and so we continue to consider in detail our alignment with the Transport Strategy.

6.11. In our full Local Transport Plan, we demonstrate how our implementation plan's proposals align with those of the Strategic Investment Plan that Transport for the South East published in April 2023. The Strategic Investment Plan details the proposals Transport for the South East have for the region to deliver on its Transport Strategy.

Table 8 - Alignment of Local Transport Plan with Transport for the South East's goals and priorities

Kent Local Transport Plan proposed Policy Outcome	**Kent Local Transport Plan proposed Policy Objective**	**Associated *Transport for the South East* Transport Strategy Goals and Priorities**
POLICY OUTCOME 1: The condition of our managed highway network is brought to satisfactory levels, helping to maintain safe and accessible travel and trade.	POLICY OBJECTIVE 1 A): Achieve the funding necessary to deliver a sustained fall in the value of the backlog of maintenance work over the life of our Local Transport Plan.	➢ A safer transport network. ➢ More reliable journeys. ➢ A more resilient network.
POLICY OUTCOME 2: Deliver our Vision Zero road safety strategy through all the work we do.	POLICY OBJECTIVE 2 A): Achieve a fall over time in the volume of people killed or very seriously (life-changing) injured occurring on KCC's managed road network, working towards the trajectory to reach zero by 2050.	➢ A safer transport network. ➢ Promoting active travel and healthier lifestyles.
POLICY OUTCOME 3: International travel becomes a positive part of Kent's economy, facilitated by the county's transport network, with the negative effects of international haulage traffic decreased.	POLICY OBJECTIVE 3 A): Increase resilience of the road network serving the Port of Dover and Eurotunnel crossing, by adding holding capacity for HGVs across the southeast region to support establishment of a long term alternative to Operation Brock.	➢ Reducing the impact of travel. ➢ Protecting our natural, built and historic environments. ➢ Improving connectivity between major economic hubs, ports and airports. ➢ More reliable journeys. ➢ A more resilient network. ➢ A digitally smart transport network.
	POLICY OBJECTIVE 3 B): Increase resilience of the road network servicing the Port of Dover through delivery of the bifurcation strategy including	➢ Reducing the impact of travel. ➢ Protecting our natural, built and historic environments. ➢ Improving air quality.

	improvements to the M2 / A2 road corridor and its links to the M20 and a new Lower Thames Crossing for traffic towards the north.	➢ Improving connectivity between major economic hubs, ports and airports. ➢ More reliable journeys. ➢ A more resilient network.
POLICY OUTCOME 4: International rail travel returns to Kent and there are improved public transport connections to international hubs.	POLICY OBJECTIVE 4 A): International rail travel returns to Ashford International and Ebbsfleet International stations, supported by the infrastructure investment needed at Kent's stations **to** ensure they provide secure and straightforward journeys across the UK-EU border within the entry exit system.	➢ Reducing carbon emissions to net zero by 2050 at the latest. ➢ Reducing the impact of, and the need to, travel. ➢ An affordable, accessible transport network that is simpler to use. ➢ A more integrated transport network where it is easier to plan door-to-door journeys. ➢ Improving connectivity between major economic hubs. ➢ A more resilient network.
	POLICY OBJECTIVE 4 B): A fall in the time it takes by public transport to reach international travel hubs compared to conditions in 2023.	➢ An affordable, accessible transport network that is simpler to use. ➢ Improving connectivity between major economic hubs.
POLICY OUTCOME 5: Deliver a transport network that is quick to recover from disruptions and future-proofed for growth and innovation,	POLICY OBJECTIVE 5 A): Strengthen delivery of our Network Management Duty to deliver the expeditious movement of traffic by using our new	➢ More reliable journeys. ➢ Reducing the impact of travel.

aiming for an infrastructure-first approach to reduce the risk of highways and public transport congestion due to development.	moving traffic enforcement powers and modernising the provision of on-street parking enforcement.	
	POLICY OBJECTIVE 5 B): Reduce the amount of forecast future congestion and crowding on highways and public transport that is associated with demand from development by securing funding and delivery of our Local Transport Plan.	➢ Reducing the impact of travel. ➢ Protecting our natural, built and historic environments. ➢ Improving air quality. ➢ More reliable journeys. ➢ Better integrated land use and transport planning.
	POLICY OBJECTIVE 5 C): The prospects for the future of transport increase across the whole county, with new innovations in transport services having a clear pathway to trial or delivery in Kent.	➢ An affordable, accessible network that is simpler to use. ➢ A more integrated transport network where it is easier to plan and pay for door-to-door journeys. ➢ A digitally smart transport network.
POLICY OUTCOME 6: Access to Kent's historic and natural environment are improved.	POLICY OBJECTIVE 6 A): Proposals in our Local Transport Plan are clearly evidenced in terms of their contribution in providing new, quicker, or more inclusive access to historic and natural environment destinations in the county, with proposals targeting access to such locations where appropriate.	➢ Protecting our natural, built, and historic environments.
POLICY OUTCOME 7: Road-side air quality improves as decarbonisation of travel accelerates, contributing towards	POLICY OBJECTIVE 7 A): Reduce the volume of carbon dioxide equivalent emissions entering the atmosphere	➢ Reducing carbon emissions to net zero by 2050 at the latest. ➢ Reducing the impact of, and the

the pursuit of carbon budget targets and net zero in 2050.	associated with surface transport activity on the KCC managed highway network by an amount greater than our forecast "business as usual" scenario. This means achieving a greater fall than those currently forecast of 9% by 2027, 19% by 2032 and 29% by 2037.	need to, travel. ➢ Improving air quality.
	POLICY OBJECTIVE 7 B): No area in Kent is left behind by the revolution in electric motoring, with charging infrastructure deployed close to residential areas, reducing barriers to adoption.	➢ Reducing carbon emissions to net zero by 2050 at the latest. ➢ Improving air quality. ➢ An affordable, accessible transport network that is simpler to use. ➢ A more integrated transport network where it is easier to plan and pay for door-to-door journeys.
	POLICY OBJECTIVE 7 C): Proposals are clearly evidenced in terms of their contribution in providing lower emissions from transport in Air Quality Management Areas in the county.	➢ Improving air quality.
POLICY OUTCOME 8: A growing public transport system supported by dedicated infrastructure to attract	POLICY OBJECTIVE 8 A): We will aim to obtain further funding to deliver the outcomes of our Bus Service	➢ Reducing carbon emissions to net zero by 2050 at the latest. ➢ Improving air quality.

increased ridership, helping operators to invest in and provide better services.	Improvement Plan (or its replacement) beyond its current horizon of 2024/25. We will ensure that our Local Transport Plan proposals are clearly evidenced in terms of their contribution towards achieving our Bus Service Improvement Plan.	➢ An affordable, accessible transport network that is simpler to use. ➢ A more integrated network where it is easier to plan and pay for door-to-door journeys. ➢ More reliable journeys. ➢ A digitally smart transport network.
	POLICY OBJECTIVE 8 B): We will identify and support industry delivery of priority railway stations for accessibility improvements and route improvements to reduce journey times and improve reliability.	➢ An affordable, accessible transport network that is simpler to use. ➢ A more integrated transport network where it is easier to plan and pay for door-to-door journeys. ➢ Reducing carbon emissions to net zero by 2050 at the latest.
POLICY OUTCOME 9: Health, air quality, public transport use, congestion and the prosperity of Kent's highstreets	POLICY OBJECTIVE 9 A): We will aim to deliver walking and cycling improvements at prioritised locations in	➢ Reducing carbon emissions to net zero by 2050 at the latest. ➢ Reducing the impact of travel.

and communities will be improved by supporting increasing numbers of people to use a growing network of dedicated walking and cycling routes.	Kent to deliver increased levels of activity towards the Active Travel England target and support Kent's diverse economy, presented in a Kent Cycling and Walking Infrastructure Plan.	➢ Protecting our natural, built and historic environments. ➢ Minimising resource and energy consumption. ➢ Promoting active travel and healthier lifestyles. ➢ Improving air quality. ➢ An affordable, accessible transport network that is simpler to use. ➢ A safer transport network. ➢ A more resilient network. ➢ Better integrated land use and transport planning.
POLICY OUTCOME 10: The quality of life in Kent is protected from the risk of worsening noise disturbance from aviation	POLICY OBJECTIVE 10 A): We will make representations on behalf of the county's population on airport expansion proposals which evidence impacts on our communities, to oppose their causes and mitigate their effects.	➢ Protecting our natural, built, and historic environments.

6.12. Alignment of our Local Transport Plan with our County policies

6.13. Our own policies have been at the heart of our development of our ambition, policy outcomes and policy objectives. We have not set out any assessment of alignment here because they are directly cited and built upon in our Local Transport Plan in a way that is self-evident. Instead, to help the reader understand the policies we hold, we have summarised them in this section.

6.14. *Framing Kent's Future*

6.15. In Table 9 we have set out what *Framing Kent's Future* said we will do and what we have done through the scope and content of our Local Transport Plan to address those so that we are set up to make future progress subject to the funding we are likely to need.

Table 9 - Delivery of Framing Kent's Future Levelling Up Priority through our Local Transport Plan

***Framing Kent's Future "We Will"* Levelling Up statements**	**What we have done with our Local Transport Plan**
We will seek a specific national infrastructure assessment by the National Infrastructure Commission	With our Local Transport Plan, we have set out our requirement of the infrastructure and the funding needed, for transport in Kent, based on our assessment of growth, transport network conditions, and policy from national to local tiers of government.
We will rebrand Kent to attract national; and international investment by promoting all that the county has to offer for business learning, leisure, and tourism.	We have incorporated outcomes and objectives specifically focused on the role of transport in this respect. For example, the role of international rail and its importance to the Kent economy and different business sectors.
We will work with District Councils to regenerate town centres to re-establish them as economic and community hubs with renewed purpose and identity	We have set out proposals specifically for town centres, notably walking zones and potential improvements to realise better places and streets. These are based on our own Cycling and Walking Infrastructure Plan supplemented with the District Local Cycling and Walking Infrastructure Plans and any town centre focused movement strategies that Districts have developed.
We will explore opportunities with Government to gain control of more of the resources and decision-making that shape economic growth in the county.	We have set out the funding Local Transport Plan needs to deliver its proposals. Greater autonomy in decision-making and management of sustained funding would provide better flexibility to deliver the proposals in our plan as opportunities arise.

***Framing Kent's Future "We Will"* Infrastructure for Communities statements**	**What we have done with our Local Transport Plan**

We will explore innovative ways of delivering services in rural areas, including for example working more closely with Parish Councils, and using new technologies to improve the support people receive in more isolated areas.	We have set out a clear position on a range of new innovations in transport that can have a beneficial impact on Kent's rural communities. These opportunities will be reliant on future pilots in the county or wider country take place and enable us to learn about their prospects to make positive contributions to journeys.
We will challenge inappropriate development which does not have the physical infrastructure necessary to maintain the quality of life of new and existing Kent communities.	We have set out in our Local Transport Plan a restatement of our principles for management of the transport impacts from new development, supplementing our position in the published Guidance for Developers and the associated Transport Technical Appendix. Some of the proposals we have set out in the plan would, amongst other aims, help to mitigate the impact of traffic growth from new development.
We will invest in the condition and safety of Kent's highway assets, maximising funding opportunities from the Department for Transport where possible.	We have ensured our Local Transport Plan ambition, policy outcomes, policy objectives and proposals are focused on addressing the funding shortfall we have to meet the maintenance needs of the county's local roads and reflected in the proposals and funding we require for our Local Transport Plan.
We will deliver our ambition to reduce fatalities, serious injuries and the severity of collisions, including on the county's rural roads.	Delivery of our Vision Zero strategy is at the centre of our Local Transport Plan and the proposals we have set out in the plan will all provide an opportunity to improve highways safety through the design and delivery new and improved transport infrastructure.
We will accelerate priority local road improvement schemes to tackle congestion and air pollution.	We have set out in our Local Transport Plan our priority local road improvement schemes to tackle congestion, and we have set out a range of proposals that could have a positive impact on air pollution. These proposals also reflect the priority local road improvement schemes that districts have established through their Infrastructure Delivery Plans.
We will incentivise people to choose alternative options to the car by prioritising the maintenance and creation of safe and	We have set out in our Local Transport Plan that securing further government funding for investing in Kent's bus

accessible walking routes and cycle lanes and providing bus priority where appropriate.	networks is a priority for the county. The plan also sets out proposals for improved walking and cycling networks based on both our Cycling and Walking Infrastructure Plan supplemented with the District Local Cycling and Walking Infrastructure Plans and any town centre focused movement strategies that Districts have developed. We have also incorporated proposals for the Public Rights of Way Network which is an invaluable and expansive network integral to safe walking and cycling in Kent.
We will support the development of zero emission / new technology public transport projects, for example zero emission buses, to increase efficiency and sustainability of public transport options.	We have put this as a core part of our Local Transport Plan's ambition and set out our proposals to deliver a sustained programme of investment into on-street public charging sockets to help accelerate the shift to electric vehicles.
We will strengthen our position and levers in regard to strategic transport links in the county (e.g. Eurostar, Eurotunnel and HS1) to maximise opportunities and benefits for Kent, such as lobbying for the reintroduction of international rail stops at Ashford and Ebbsfleet.	We have incorporated outcomes and objectives specifically focused on international rail and responded to this with a clear proposal in the Local Transport Plan.

***Framing Kent's Future "We Will"* Infrastructure for Communities statements**	**Impact on development of our Local Transport Plan**

We will work with Districts to produce harder and stronger action plans for air quality management areas where required.	We have specifically considered air quality management areas in the development of our Local Transport Plan and have set out how our proposals can make a positive contribution to improved air quality at the road side.
We will improve access for our residents to green and natural spaces especially in urban and deprived areas, and through our Public Rights of Way network to improve health and wellbeing.	The plan also sets out proposals for improved walking and cycling networks based on both our Cycling and Walking Infrastructure Plan supplemented with the District Local Cycling and Walking Infrastructure Plans and any town centre focused movement strategies that Districts have developed. We have also incorporated proposals for the Public Rights of Way Network which is an invaluable and expansive network integral to safe walking and cycling in Kent.
We will set detailed emission reduction pathways to Net Zero by 2050, with significant reductions by 2030.	We have specifically considered carbon emission reduction pathways and set out how our proposals can make positive contribution to reduced carbon emissions. The plan makes clear that reduced emissions is not the sole benefit of the relevant proposals – there are significant co-benefits of these carbon reducing proposals, and it is these collective benefits that provide the basis for their inclusion in our plan.
We will establish a full assessment framework for commissioning, procurement, and policy decisions to support our services in contributing to Net Zero targets and minimising the impact on Kent's environment.	We have incorporated consideration of the carbon impacts of our plan's policies and proposals to understand how they contribute to net zero targets. We have identified those proposals that can make a particularly significant positive contribution to reducing carbon emissions.
We will turn the curve on transport emissions and road pollution by developing approaches to road space, parking, public transport, and electric vehicle infrastructure with a presumption towards more sustainable and low carbon travel modes.	We have set out the balance of the potential effect of the proposals in our plan on transport carbon emissions, to establish whether we are likely to turn the curve towards the levels necessary to contribute to the national carbon budget targets on the pathway to net zero 2050. We have considered options and included those proposals that can make a particularly significant positive contribution to

	reducing carbon emissions.
Strengthen contingency planning to ensure that our assets, services, and infrastructure, as well as communities, businesses, transport links and utilities are resilient to climate risks.	We have set out very clearly in our Local Transport Plan the need for funding maintenance and renewals of our vital highway assets and the importance across a number of areas including the ability to adapt and be resilience to climate risks. Our maintenance needs and the funding required that are promoted in the Local Transport Plan are based on consideration of climate risks, as described in our Highways Asset Management Plan.

6.16. *Highways Asset Management Plan*

6.17. Our Highways Asset Management Plan, published in 2021, sets out the required levels of investment needed for our highways network to achieve a steady-state level of condition, or an improving condition. The plan also sets out the actions we are taking to improve the way we maintain our assets and respond to challenges such as climate change. As the plan highlights, the rate of highway asset deterioration has far exceeded the rate of investment from central government both in terms of capital grant and revenue support. As such we have a backlog of maintenance work for an asset base which is the backbone of local transport and international transport.

6.18. *Vision Zero Road Strategy*

6.19. Our Vision Zero Road Strategy, published in 2021, sets out our aims and actions to establish a 'Safe System Approach' to road safety, which is designed with the human being at its core and accepting that even the most conscientious person will make a mistake at some point. The goal of Safe System is to ensure that these mistakes do not lead to a crash or, if a crash does occur, it is sufficiently controlled to not cause a death or a life-changing injury. By working to this approach, we aim to see a sustained fall in fatalities and very serious injuries on our road network, with an overall aim of reaching zero by 2050.

6.20. *Bus Service Improvement Plan*

6.21. Our Bus Service Improvement Plan, published in 2021, provides a strategic vision of how Kent's bus offer can be improved in line with the requirements of the National Bus Strategy (NBS). The plan sets out the existing bus offer in Kent through consideration of the current regulatory set up, the existing approach and known success stories. It also highlights the barriers and challenges that may be restricting greater bus use. Included in the plan are a series of proposals that we have begun to deliver with some of the funding we required from Government. The remainder of the plan can be delivered if we have all the remaining funding needed.

6.22. *Active Travel Strategy*

6.23. Our Active Travel Strategy, published in 2016, aimed to make active travel an attractive and realistic choice for short journeys in Kent. By developing and promoting accessible, safer and well-planned active travel opportunities, our Strategy has been helping to focus our work to improve walking and cycling.

6.24. The development of new national policy, Gear Change, and the use of Local Cycling and Walking Infrastructure Plans has provided an updated approach to

where and how to achieve improvements in walking and cycling, whilst the link with public health and environmental improvements has never been stronger. We are working across the county with Districts on the development of Local Cycling and Walking Infrastructure Plans and have been continuing our work to improve networks by securing new investment as part of the national Cycling and Walking Investment Strategy.

6.25. We are working further on developing our priorities for where in Kent to invest and improve active travel and are doing that in consultation with the new national commission Active Travel England which has an objective to achieve 50% of short distance trips in urban areas being walked, cycled or wheeled by 2030.

6.26. *Kent Environment Strategy*

6.27. Our Kent Environment Plan outlines KCC's role in delivering the national agenda locally, focusing on holistically protecting and enhancing the Kent environment. Our environment plan recognises the interconnected principles of environment, growth and health. By integrating these principles, the plan aims to align with existing and new strategies, leading to outcomes that are more sustainable, affordable and equitable.

6.28. Our Environment Plan identifies six goals – to deliver green energy and reduce carbon emissions (of particular relevance to our proposals for supporting the transition to electric vehicles); adapting to climate change; reduce flood risk and effectively manage resources; protect and improve the natural and built environment; manage resources through a circular economy; and conserve and promote Kent's natural beauty and heritage. Our LTP has directly addressed elements of these through both its outcomes and proposals associated with those.

6.29. *Kent and Medway Low Emission Strategy*

6.30. The Kent and Medway Energy and Low Emissions Strategy, published in 2020, sets out how we will respond to the UK climate emergency and drive clean, resilient economic recovery across Kent. Taking an evidence-based approach, it identifies a pathway to reduce greenhouse gas emissions, eliminate poor air quality, reduce fuel poverty, and promote the development of an affordable, clean and secure energy supply for this county. It is informed by and delivers, but does not duplicate, the priorities and actions from other strategies related to energy and the environment.

6.31. The strategy has an aim to set up a smart connectivity and mobility modal shift programme – linking sustainable transport, transport innovations, active travel, virtual working, broadband, digital services, artificial intelligence, and behaviour change. The strategy also has an aim to set five-year carbon budgets and

emission reduction pathways to 2050 for Kent with significant reduction by 2030. On both aspects, our new Local Transport Plan adds detail and proposals to deliver these aims.

6.32. *Kent Plan Tree*

6.33. Kent Plan Tree, published in 2022, sets an ambition for Kent to extend tree cover by 1.5 million new trees and increase the county's average canopy cover to 19%. Furthermore, our existing woodland and trees health will be restored and afforded greater protection from loss.

6.34. The Strategy sets out some specific actions that Kent County Council will take to progress delivery of the ambitions and objectives of Plan Tree. These actions focus on delivering against the tree establishment target; exemplar provision for trees on our own estate which includes the land we own around our highways network; improving protection to trees in Kent; improving our understanding of Kent's trees; and developing the Kent carbon offset market for unavoidable emissions. The actual delivery of these actions will be laid out in a more detailed implementation plan that will sit alongside the Strategy.

6.35. *Kent Plan Bee*

6.36. Kent's Plan Bee, published in 2022, is our pollinator action plan, adopted in 2019 and now refreshed after the initial two years of action. It is designed to take the lead in the county to mobilise everyone in Kent to act to improve the habitat and the food sources of these insects and to reverse their continuing decline. Plan Bee sets out what we are doing to help these insects vital to our environment, food, and economy. Among the commitments in our plan is to manage the land we own, control and influence in a way which benefits pollinators' habitat and forage. This includes the highways network and the land around it.

6.37. *Kent Joint Health and Wellbeing Strategy*

6.38. Our Joint Health and Wellbeing Strategy had a horizon to 2021.It is designed to deliver our vision to improve health and wellbeing outcomes, deliver better coordinated quality care, improve the public's experience of integrated health and social care services, and ensure that the individual is involved and at the heart of everything we do.

6.39. Transport affects health outcomes in a multitude of ways, from a person's physical fitness, how they live their lives and the opportunities they can access to improve their circumstances, through to the ability to access the care they need. We have placed a focus on public health within our ambition, policy outcomes and policy objectives in our Local Transport Plan.

6.40. Alignment of our Local Transport Plan with Local Policies

6.41. *Local Plans*

6.42. The District Authorities of Kent each have a Local Plan. There is a circular relationship in policy alignment terms between these Local Plans and our Local Transport Plan, with Local Plans required to consider and align their policies with that of the Local Transport Authority. Accordingly, this is clearly set out in the Local Plans across Kent and some of those more recently developed or in current development refer to our plan to update or renew our Local Transport Plan.

6.43. At the same time, we have considered the Local Plans in the development of our Local Transport Plan. The broad level of countywide growth that the Local Plans could deliver has informed our understanding of the challenges with transport and we have consulted the District Infrastructure Delivery Plans to begin building our understanding of the highways improvements needed to support new development sites allocated in the Local Plans.

6.44. We have worked with the Districts to understand the latest assessments of their Local Plan aspirations and to identify proposal options for consideration against our Local Transport Plan's ambition, policy objectives and policy outcomes. This has led to specific proposals for each district.

6.45. *Air Quality Management Plans*

6.46. We described the Air Quality Management Plans in effect in Kent at the current time, and highlighted the prospect of changes as the new National Air Quality Strategy sets new targets concerning fine particulate matter pollution (PM2.5) for 2028 and 2040.

6.47. Our understanding of the locations of Air Quality Management Plans and the thrust of the ambition we have set for our Local Transport Plans means we are confident we will make proposals that generate benefits of reduced transport generated air pollution in those parts of Kent where it does not meet target levels.

6.48. We have cemented the outcome by establishing clear policy outcomes and policy objectives explicit on air quality. Specifically, Policy Outcome 7 concerns improving road side air quality. The associated policy objective 7 C commits us to clearly evidencing the proposals for our full Local Transport Plan in terms of their contribution in providing lower emissions from transport in Air Quality Management Areas in the county. By implication this provides the driver to ensure that proposals developed for the full Local Transport Plan include proposals purposefully designed to target these discrete areas of Kent that carry the Air Quality Management Area designations.

7. Evaluation of the proposals for the Local Transport Plan against outcome 1

7.1. In this section, we have considered each policy outcome and its objective(s) and the proposals we have developed to deliver those. We set out how the proposal will meet the policy context at the national, regional and local level, and explain why we have determined this proposal over an alternative where that is the case. Where that is not the case, we have made clear the alternatives that remain to be considered.

7.2. Development of all the proposals will be subject to us obtaining the necessary funding to pay for the planning and development of designs and impact assessments. Furthermore, no proposal within the Plan is final – as each proposal is developed, further decisions will be made about design, construction, funding and operation as appropriate based on which functional body delivers any one proposal.

7.3. Policy outcome 1 states that *The condition of our managed highway networks is brought up to satisfactory levels, helping to maintain safe and accessible travel and trade.*

7.4. We have set an objective concerning delivery of this outcome: *Achieve the funding necessary to deliver a sustained fall in the value of the backlog of maintenance work over the life of our Local Transport Plan.*

7.5. The proposals we have identified to deliver on these are as follows.

7.6. **Maintaining the road network**

7.7. Location: Countywide.

7.8. Strategic aims:

- To deliver our Highways Asset Management Plan to support safe and reliable journeys to be made around and through the county.

- To ensure our highways network enables Kent's businesses and residents to complete the journeys they need to support a growing economy and improving quality of life.

- To reduce the backlog of maintenance work over a long-term sustained period.

7.9. Status: We have funding to maintain our road network, including indicative allocation of funds to 2033, however the funding we expect to have is insufficient to deliver all of our strategic aims.

7.10. **What needs to happen?** We need to secure funding over the next decade equivalent to c.£1 billion, to further improve the condition of our managed highway network and reduce the backlog of maintenance work.

7.11. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 10 below is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal is not expected to have a negative impact on any of the outcomes.

7.12. **What alternatives have we considered?** There are no alternatives we can consider. The alternatives are only a reduction in the availability and safety of the road network due to insufficient funding to maintain it to the level KCC aims for. All vehicle types use the network and therefore maintaining the road network is not a question of trade-offs between one group or users compared to another.

7.13. **Catering for uncertainty / scenario planning**. We have considered three scenarios relevant to this outcome that affect its need. The scenarios are higher use of our road network in the future, lower use of the road network in the future, and no change in the use of our road network.

- Higher use of our road network: If more vehicle mileage is made on our road network than at the current time, then this will likely add further wear and tear to the network and increase the need for maintenance. As such, although we have set out a need in terms of

funding for maintenance in our Local Transport Plan and long term capital budget, there is a possibility that even further funding could be needed.

- Lower use of our road network: If less vehicle mileage is made on our road network than at the current time, then this could lead to reduced wear and tear, although this is dependent on the type of vehicles and journeys, they are making and what roads they are using. Nonetheless, the funding for maintenance identified in our Local Transport Plan and long term capital budget is needed to address the backlog in maintenance work. Therefore, in this scenario the requirements of this proposal do not change, but the ability to be successful over the long term with it could be improved were traffic levels to fall. It should be recognised though that falling traffic levels can be an indicator of other undesirable effects such as declining economic activity. As such this scenario does not represent a necessarily positive outcome for delivery of our outcomes overall.

- No change in the use of our road network: If there is little change in vehicle mileage on our road network compared to the current time, then the funding requirement we have set out will remain necessary due to the backlog of works which has been growing year on year due to the current traffic levels on the network, the wider factors affecting road condition (such as seasonal weather), and the insufficient funding we have received from government to cover the total value of works we need to undertake.

Table 10 - Assessment of impact of Road Maintenance Proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	Positive	This proposal is to address the highway maintenance challenge KCC has by securing sustained funding and at a level necessary to meet KCC's goals for the condition of the local road network. Delivering this proposal would have a significant impact on the condition of KCC's managed roads, supporting journeys by private and public transport across the whole county.
2. Road Safety	Positive	This proposal would support the delivery of Vision Zero as the condition and maintenance of KCC's local road network has an important role to play within the system that creates safe door-to-door journeys. As the KCC Vision Zero strategy sets out, safe roads and streets is part of the total safe system necessary to achieve zero deaths.
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	Disruptions to the network can arise due to a wide range of causes. From road traffic collisions to extreme weather events. The ability of the network to recover from these disruptions will, in some instances, be significantly aided by a network that is maintained to a satisfactory condition. For example, heavy rainfall and surface flooding will have a shorter duration of disruption if KCC can maintain the drainage on its highway so that surface water is cleared quicker, and affected roads remain usable.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	No effect	
8. Public transport	Positive	Roads that are in a better condition could be less likely to have significant defects and problems which can result in extended and more impactful closures. Such closures and diversions can extend the journey time of public transport and increase the extent to which it can be caught in congestion and delays. It can also cause journeys to have to use stops more distant from usual stops, adding to journey

		times.
9. Active Travel	Positive	Where active travel users need to use the local road network as all or part of their journey, improvements to condition and maintenance of carriageways (such as the removal of potholes) should provide benefits in terms of both journey quality and safety.
10. Aviation	No effect	

7.14. **Trunking the road network**

7.15. Location: Maidstone District, A229 between M20 junction 6 to M2 junction 3; and A249 between M20 junction 7 and M2 junction 5.

7.16. Strategic aims:

- To obtain national recognition of the high volume of local and longer distance traffic using the routes, the criticality of their role in enabling strategic movement of traffic within and through Kent.

- To ensure that the roads receive long-term and sustained investment for their maintenance, renewal, operation, and upgrade as part of the national Road Investment Strategy delivered by National Highways, including delivery of National Highway policy aims concerning safety and the environment.

7.17. **What needs to happen?** The Department for Transport needs to determine whether trunking of the routes should proceed, and we will support National Highways in any remaining business case development it may need to undertake to complete the trunking process. The A229 improvement scheme that we are developing remains necessary for delivery and must proceed regardless of which highway body is responsible for the road (see our Local Road Network proposal for the A229).).

7.18. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 11 below is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal is not expected to have a negative impact on any of the outcomes.

7.19. **What alternatives have we considered?** We have considered the alternative of retaining responsibility for the assets as part of the considerations made with National Highways. With National Highways we determined that the volumes of traffic and the strategic function of the highways in question mean they are better suited to National Highway's management. If trunking does not happen, we will continue our business as usual approach to managing the highways day to day, whilst continuing to

develop our proposals for their improvements and upgrade, such as the A229 Blue Bell Hill proposal.

7.20. **Catering for uncertainty / scenario planning**. The main uncertainty rests with whether the government and Department for Transport will determine to trunk the highways routes. We do not know when a decision will be made on this and therefore to address that uncertainty, we are continuing our day to day work managing the routes and our planning and development of the longer term improvement proposal for the A229 Blue Bell Hill scheme. It is unlikely, given the very high volume of trips on these routes and given the planned changes to the Strategic Road Network and growth in Kent, that volumes of trips would fall by any significant amount that would negate their strategic status and undermine the case for trunking.

Table 11 – Assessment of impact of Trunking Proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	Positive	This proposal would rectify the status of the road network to reflect the levels of traffic and the movement and place function of roads currently in KCC's management. The roads listed carry levels of traffic at volumes most appropriate for strategic road network routes. Furthermore, the corridors provide a low place function but a strategic and high importance movement function, facilitating international and cross-county traffic. This is in addition to the local traffic they carry. The traffic burden falling on these roads, relative to the resources KCC has as a Local Highway Authority, means that trunking of these routes would better reflect their maintenance needs by placing them in the responsibility of National Highways (an agency with a more sustained, longer term, ring fenced funding status) rather than local authority highways maintenance funding. This would bring benefits to both local traffic using the routes in the future, and the strategic traffic reliant on them.
2. Road Safety	No effect	
3. International traffic	Positive	The proposal would affect routes which link the M20 and A2/M2 corridors, each of which are critical parts of the strategic network for international traffic between the county, wider nation, and the Channel crossing points in east Kent. By trunking the roads, their management and operation would better reflect this strategic function, to the benefit of international traffic.
4. International rail	No effect	

5. Network growth and resilience	Positive	The proposal would affect routes which link the M20 and A2/M2 corridors, each of which are critical parts of the strategic network for international traffic between the county, wider nation, and the Channel crossing points in east Kent. By trunking the roads, their management and operation would better reflect this strategic function, with their resilience and maintenance recognising this status, to the benefit of international traffic. Furthermore, growth of traffic on these routes may occur, which would increase the burden these roads experience and drive the need for increased maintenance and potential infrastructure improvements. Trunking them therefore gives them a better prospect of being managed over time to support growth in their use.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	No effect	
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

7.21. **A226 Galley Hill Road**

7.22. Location: Swanscombe, Dartford.

7.23. Strategic aims:

- To take a safe system approach, which understands that people make mistakes and therefore aims to ensure these mistakes do not cause a death or life changing injury.
- To improve safety in collaboration with Kent's local communities.
- To improve the quality of life by making Kent's highways safer for whatever choice of travel is used.

7.24. Status: The A226 road between Northfleet and Swanscombe is currently closed owing to a landslip which removed one lane of traffic. The risks of further slips and the safety around the existing slip and loss of highway has meant the entire road has been closed since the incident occurred. The loss of the road has caused lengthy diversions for all traffic including bus and Fastrack services. We have been determining the best way to bring movement along this corridor back into safe operation.

7.25. **What needs to happen?** We will complete the development of the options for this stretch of road and share those with the government. Given the scale of the

challenge to reinstate the road, we expect to need financial support to implement a solution for this important part of the road network.

7.26. **What impact could this proposal have on the outcomes of the plan?** Shown in is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal is not expected to have a negative impact on any of the outcomes.

Table 12 – Assessment of impact of A226 Galley Hill Road solution proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	Positive	This proposal would rectify the status of this busy section of road network, delivering a route that is available for all forms of travel, and reducing the burden of diverted traffic on other roads.
2. Road Safety	No effect	
3. International rail	No effect	
4. Network growth and resilience	Positive	The route exists in an area of very substantial housing and commercial development. The road corridor is critical to being able to easily access and construct the developments in the area and to establish the public, walking and cycling connections that the development will need and that existing communities have relied upon. With traffic diverted onto other road routes it makes them less resilient to further incidents.
5. Heritage and environment	No effect	
6. Air quality, carbon emissions	No effect	
7. Public transport	Positive	The availability of the corridor for movement will enable bus services to revert to lower cost, more direct routes that better meet user needs and are therefore more likely to achieve a growing level of use.
8. Active Travel	Positive	The availability of the corridor for movement will enable walking and cycling journeys that used the corridor to return, and which may have had to switch to alternative modes if the directness of their journey has been substantially worsened by the current closure of the highway.
9. Aviation	No effect	

8. Evaluation of the proposals for the Local Transport Plan against outcome 2

8.1. Policy outcome 2 states that we will *Deliver our Vision Zero road safety strategy through all the work we do.*

8.2. We have set an objective concerning delivery of this outcome: *Achieve a fall over time in the volume of people killed or very seriously (life-changing) injured occurring on KCC's managed road network, working towards the trajectory to reach zero by 2050.*

8.3. The proposals we have identified to deliver on these are as follows.

8.4. **Road Safety Vision Zero**

8.5. Location: Countywide.

8.6. Strategic aims:

- To take a safe system approach, which understands that people make mistakes and therefore aims to ensure these mistakes do not cause a death or life changing injury.
- To improve safety in collaboration with Kent's local communities.
- To improve the quality of life by making Kent's highways safer for whatever choice of travel is used.

8.7. Status: We adopted our strategy in 2021 and have implemented and have planned further actions for sites within Kent. Overtime, we will be able to see a clearer picture about the trend concerning fatalities and serious injuries and the extent to which we are having success in meeting the targets set out in Vision Zero.

8.8. **What needs to happen?** We will continue to deliver our Vision Zero strategy, implementing changes to our network and evaluating their impact, whilst working with local communities to explore their road safety concerns. Many of the proposals in our Local Transport Plan will have a role to play, with the new investment they bring providing opportunities to build safe systems into their design and operation. The further funding we can secure from government, the more we will be able to act.

8.9. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 13 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal is not expected to have a negative impact on any of the outcomes.

8.10. **What alternatives have we considered?** The alternatives are to revert to our approach prior to adopting our Vision Zero strategy. That approach saw reductions in deaths and serious injuries on our network, however that approach did not provide a systematic approach that could drive further significant reductions in deaths and serious injuries such that a vision of zero could become the driving force for action over the long term. In absence of Vision Zero and a national road safety strategy, it could be harder to make significant progress, as we would lack the framework to bring together a set of inter-dependent strands, encompassing safe speed, safe vehicles, safe behaviour, and safe streets.

8.11. **Catering for uncertainty / scenario planning.** Our Vision Zero strategy sets a long term goal to reduce deaths and serious injuries from incidents on our road network. There is of course high uncertainty about what will happen to the levels of deaths and serious injuries over time as they are influenced by a wide range of factors. This is, however, the very uncertainty that our Vision Zero strategy is designed to work with. By using the Safe Systems Approach which is based on the acceptance that humans make mistakes, and by working to a framework in safe systems that considers the inter-dependent strands of speed, vehicles, behaviour, and streets, we will be better placed to be able to take actions that have a better probability of leading to improved road safety outcomes.

Table 13 – Assessment of impact of the Deliver Vision Zero Proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	Positive	This proposal would support the delivery of KCC's aims for the condition of the road network, as it will help to deliver efforts to ensure that Kent's roads are safe by way of being in a state of satisfactory condition to help reduce the chances and consequences of collisions and incidents.
2. Road Safety	Positive	Vision Zero supports road safety by integrating the approach to safe systems across the work KCC does, making safety the first consideration whether addressing highways infrastructure and assets, speeds, behaviours, use of vehicles, and post collision response. Securing additional funding for Vision Zero will help to ensure beneficial actions can be taken across relevant activity that KCC and partners undertake.
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	No effect	
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	No effect	
8. Public transport	No effect	
9. Active Travel	Positive	A safe system on the highway network would support increasing levels of walking and cycling in Kent, by removing barriers such as safety concerns held by people which prevents them from selecting these methods to travel by. Research undertaken by KCC and more widely repeatedly shows that road safety and a feeling of safety, is important across all ages.
10. Aviation	No effect	

8.12. **Local Road Freight Management**

8.13. Location: Countywide.

8.14. Strategic aims:

- To support effective management of HGVs across the local road network to mitigate impacts on local communities.
- To support the private sector-led delivery of new parking capacity and welfare facilities, subject to the merits of each specific proposal that comes forward through the planning system.
- To promote the use of alternatives to road haulage to reduce the burden on Kent's local roads, such as rail and water-borne freight.

8.15. Status: We have an existing Freight Action Plan which describes a series of actions we established some years ago and have been working towards delivering, with success in a number of areas such as addressing informal illegal lorry parking. We understand from feedback we receive from communities across parts of Kent that there remain concerns about the routing and behaviour of freight vehicles on the local road network, with a common concern being the safety of those vehicles using narrower roads.

8.16. **What needs to happen?** We already undertake substantial activity to address the issues caused by HGVs on our local road network and gather evidence to support the need for interventions and mitigations. To support our future work, we will consider whether the aims and actions detailed in the Kent County Council Freight Action Plan need to be updated to take account of current trends and challenges on our network.

8.17. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 14 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal is expected to have a range of positive impact on the outcomes.

8.18. **What alternatives have we considered?** We initially consulted on a draft LTP that attempted to deal primarily with the burden of road freight traffic arising on Kent's roads due to the international crossing points for roll on roll off traffic at Folkestone and Dover. The feedback we received in our consultation demonstrated to us that the issues associated with freight traffic on the network are not solely related to international traffic and arise from use of the local road network. We therefore resolved to include this proposal to ensure the breadth of our LTP and its planned actions paid due regard to the specific different challenges of these two types of road freight traffic.

8.19. **Catering for uncertainty / scenario planning**. We prepared our previous Freight Action Plan in 2017 at a time when cross-channel freight traffic had

been having a significant effect on the county alongside a proliferation of illegal and informal lorry parking in lay-bys and at road sides. Since then there has been a step change in the scale and approach to managing international haulage traffic, albeit their impacts still remain commonplace – addressed by our other proposals. Nonetheless this has had an impact on the overspill onto the local road network.

8.20. Other factors also impact HGV traffic on local roads. For example, the trend of online shopping and ordering, hastened by changes to living and work patterns may also have instigated an increase in haulage traffic on local roads associated with supply and delivery of goods to residences. Certainly traffic statistics held by the DfT indicate HGV traffic is c. 10% higher weekday compared to March 2020 pre pandemic, and c. 5% higher on weekends on the same basis, both at a national picture.

8.21. Another area of uncertainty our proposal will help us consider is the future make-up of the HGV fleet in the nation and using our county local roads. There is an established national target for 2040 for all new vehicles sold to be zero carbon emissions at their tailpipe. Whilst the target could change (to be either sooner or later than 2040) we will also need to consider whether future fuels for HGVs could lead to a change in their use of the road network such as increased or decreased use of local roads to access re-fuelling locations.

8.22. Our proposal provides us the opportunity to reconsider our Freight Action Plan given these areas of uncertainty.

Table 14 – Assessment of impact of the Local Road Freight Management Proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	Positive	This proposal would support the delivery of KCC's aims for the condition of the road network, as it will help to focus efforts on actions that could reduce the propensity for HGVs to use less desirable routes which have higher risk of vehicles damaging the road surface or wider assets on the highway such as structures, lighting, signage etc.
2. Road Safety	Positive	By identifying and working towards delivery of actions to better manage HGVs across the local road network and working with the industry and local communities where possible to address specific local challenges, road safety for both HGV operators and other users could be improved.
3. International traffic	Positive	Although the proposal is targeted at local road freight and its effects on communities and transport networks in Kent, there are links

		between the experience from road freight using local roads and the international road freight travelling back and forth through the county. In general, reducing the potential and risks of adverse effects from local road freight should also make the local road network less likely to incur adverse effects from international road freight.
4. International rail	No effect	
5. Network growth and resilience	Positive	The proposal will help with addressing uncertainty associated with how the road freight sector may change in the future. This will therefore help KCC to plan its network and future-proof it for the challenges and opportunities that could arise.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Uncertain	Road freight can contribute to local air quality issues, and its role will become increasingly prominent as smaller vehicles such as cars and LGVs transition to low and zero emission fuels. The proposal we have set out will provide a further opportunity to consider established Air Quality Management Areas or Clean Air Zones in Kent designated by local planning authorities or the government, and whether there are any approaches that can be taken and justified as part of the Freight Action Plan to contribute towards improvements. Given this there is a potential positive effect although it is uncertain at this stage until further work can be undertaken.
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

9. Evaluation of the proposals for the Local Transport Plan against outcome 3

9.1. Policy outcome 3 states that *International travel becomes a more positive part of Kent's economy, facilitated by the county's transport network, with the negative effects of haulage traffic decreased.*

9.2. We have set two objectives concerning delivery of this outcome: *Increase resilience of the road network serving the Port of Dover and Eurotunnel by adding holding capacity for HGVs across the southeast region to support establishment of a long term alternative to Operation Brock.*

9.3. *Policy Objective 3B Increase resilience of the road network servicing the Port of Dover through delivery of the bifurcation strategy including improvements to the M2 / A2 road corridor and its links to the M20 and a new Lower Thames Crossing for traffic towards the north, and utilising further non-road freight opportunities.*

9.4. The proposals we have identified to deliver on these are as follows.

9.5. **International haulage traffic management**

9.6. Location: Countywide, with a focus on the approaches to the international crossing terminals of Dover and Folkestone.

9.7. Strategic aims:

- To increase resilience on the M2/A2 and M20/A20 road corridors to the Port of Dover, to support the KCC bifurcation strategy.
- To relieve congestion on the approach to the Port of Dover and Folkestone rail terminal, to support international trade, travel and enable local travel to avoid disruption to the benefit of the quality of life of Kent residents, businesses and visitors.
- To reduce the need for traffic management on-highway, including a permanent solution to remove the need for Operation Brock, by ensuring suitable vehicle management facilities exist across the corridor including at the international terminals.
- To ensure that international traffic is kept to the correct routes to reduce disruption and disturbance in local communities in Kent.

9.8. Status: KCC has been working on an ongoing basis with a wide range of organisations.

9.9. **What needs to happen?** We will continue to work with the government in developing and assessing traffic management interventions, from on-the-ground infrastructure through to digital communications and applications. This

is to help ensure changes to border controls and goods checks are delivered smoothly and effectively. These efforts will include establishing increased capacity to manage and process traffic off the road network, including at the international terminals.

9.10. We will work through Transport for the South East to ensure the burden of requirements for lorry facilities are shared across the region. We will continue to work with the existing HGV parking providers to support them in obtaining funding when opportunities arise from government to improve existing welfare facilities.

9.11. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 15 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal is not expected to have a negative impact on any of the outcomes.

9.12. **What alternatives have we considered?** We are a Local Transport Authority and consequently international traffic management does not, on face value, appear within our remit. The reality however is that the local transport network, users of it, and the residents and businesses that live along it are significantly impacted by the current national approach to international traffic management. Hence, the alternative to our proposal of not participating and attempting to steer the approach that the government, National Highways, and the international crossing terminals of Eurotunnel and the Port of Dover all take, would risk leading to outcomes that do not support delivery of our local ambition and Council strategy.

9.13. Our approach is multi-faceted, not solely based on highway infrastructure solutions, but covers also smart solutions around routing management, at terminal management of traffic, and utilising the capacity of the regional network. In this way, our proposal brings in what would otherwise be regarded as “alternatives” – in recognition of the fact that the scale of the problem and its impacts demands a range of approaches that collectively provide the best prospect of enabling Kent to see an end to the disruptive management of international traffic on Kent’s roads.

9.14. **Catering for uncertainty / scenario planning**. Due to this proposal addressing network resilience and reducing disruption within Kent, it is fundamentally designed to respond to uncertainty and its effects. International traffic volumes can vary significantly over the course of a year, whilst legislative changes arising from the UK’s withdrawal from the European Union has created new uncertainties associated with the movement of people and goods across the border. As a consequence, whether traffic volumes rise or fall over time, we know that the likelihood of current management approaches leading to disruptive effects in Kent are high. Given this, it is essential that this proposal is

delivered so that uncertainty does not contribute to international traffic impacts on Kent.

Table 15 – Assessment of impact of the International Haulage Traffic Management Proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	Positive	A fully functional bifurcation strategy and traffic management approach and facilities for international haulage traffic management would keep truck traffic on the strategic road network, reducing the encroachment that currently occurs on KCC's local road network - for both routeing and overnight parking. This in turn would provide benefits in local road network condition and maintenance requirements.
2. Road Safety	Positive	A fully functional bifurcation strategy and traffic management approach and facilities would keep truck traffic on the strategic road network, reducing the encroachment that currently occurs on KCC's local road network - for both routeing and overnight parking. This in turn would provide road safety benefits on our local road network.
3. International traffic	Positive	The proposal would support delivery of KCC's long-promoted bifurcation strategy by ensuring that the management of traffic by National Highways and the Kent Resilience Forum can be better undertaken and ensure that the right routes are used in the right way in a dynamic and effective manner. This proposal would ensure that the corridors through Kent that are carrying high volume and high value traffic for the economy, are equipped with the management and control systems that reflect their status and can deliver on local and national objectives.
4. International rail	No effect	
5. Network growth and resilience	Positive	A fully functional bifurcation strategy and traffic management approach and facilities would keep truck traffic on the strategic road network, but also enable route choice between the M2 and M20 for Channel port traffic. This would improve traffic dispersion on the network, in turn improving network resilience.
6. Heritage and environment	Positive	Improved traffic management would lead to less disruption to local transport networks and blight on the lives of communities due to disruption on the main road networks approaching the international Channel-crossing terminals at

		Dover and Folkestone, and due to informal parking and routing of HGVs away from the main road network and through rural communities. Reduced disruption would help ensure travel, access and enjoyment of Kent's natural environment and attractions such as those in Dover and Folkestone can occur, helping to support Kent's economy and quality of life.
7. Air quality, carbon emissions	Positive	Reduced stop-start of traffic due to queuing and traffic management measures can help to reduce emissions.
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

9.15. **Lower Thames Crossing**

9.16. Location: Gravesham, North Kent, to Thurrock and through Essex to the M25

9.17. Strategic aims:

- To add resilience to the Kent highway network by providing new capacity on an alternative route to the Dartford Crossing – supporting the bifurcation strategy of splitting traffic across the A2/M2 and M20 corridors.
- To support the movement of traffic across the country, including between the Channel crossing terminals and the Midlands and the North.
- To minimise adverse impacts from the growth in traffic as the population and economy grows.

9.18. Status: Currently in its planning process – awaiting a decision on its planning permission by the Secretary of State for Transport.

9.19. **What needs to happen?** The Lower Thames Crossing and the wider road network mitigations needed to realise its benefits must be funded, consented, and delivered. The scheme is critical to Kent and the nation's wider highway network – funding must be forthcoming by National Highways and the government to guarantee its delivery.

9.20. **What impact could this proposal have on the outcomes of the plan**? Shown in Table 166 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal will have a broadly positive impact although a negative impact has also been recorded due to the impact of the scheme on local roads use.

9.21. **What alternatives have we considered?** We contributed to the assessment of alternatives during the period in which the DfT and National Highways undertook development and consultation on options. We are clear – there is no other alternative that delivers the step change in capacity across the Thames necessary to reduce traffic via the Dartford crossing. That position is shared with National Highways.

9.22. **Catering for uncertainty / scenario planning.** The need for the scheme has been demonstrated by National Highways as part of the Development Consent Order process. Our view is that the Dartford crossing has been operating above its design capacity for many years and this has added to the disruptive effect it has on the local and trunk road network. Hence, whether traffic levels increase in the future or remain the same, the case for the scheme is clear.

Table 16 - Assessment of impact of the Lower Thames Crossing Proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	Negative	The project will significantly increase car and truck traffic on the A227, A228 & A229, as well as some other KCC roads to a lesser extent. This will in turn increase the maintenance burden for KCC.
2. Road Safety	No effect	
3. International traffic	Positive	The scheme will deliver new capacity and resilience for the regional road network which facilitates high volumes of road traffic between Kent (and by extension the international Channel crossing points in the county) and the midlands and north of England. This will reduce the burden on Dartford and on the M20 / A20 corridor and should improve operation of the strategic and local road networks (by way of the former's knock-on impacts on the latter). It forms part of KCC's long-promoted bifurcation strategy for international road traffic through the county.
4. International rail	No effect	
5. Network growth and resilience	Positive	The network resilience the proposal provides is significant - with it providing 75% additional capacity. This will mean that incidents affecting a direction of traffic at either the new crossing or the existing Dartford crossing will still leave traffic with a net increase in capacity across the Thames and far lower likelihood of major disruptions that spill on to the wider strategic and local road networks, helping to keep traffic in north and west Kent moving.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Positive	Currently, the areas around the Dartford crossing experience high volumes of traffic which can be slow moving or worse, at stand still during disruptions. The volume of traffic generates adverse impacts on local air quality. The proposal will add capacity on a new route, more distant from built up areas, and should help ensure traffic across the Thames operates more smoothly, with potentially lower volumes of traffic via the existing crossing. As a consequence, there is the potential for this proposal to contribute positively to local air quality in the Dartford area. There may also be some benefits in reduction of noise. The scheme is likely to lead to increased carbon emissions

		on the strategic and local road network as more capacity could enable more journeys - these were reported in the DCO supporting evidence but were not considered significant within the context of the national carbon budgets. Furthermore, the project aims to pave the way to establishing lower and zero carbon approaches to highway construction, which will help provide long term benefits to the highway capital delivery supply chain in the country.
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

9.23. **M2 Junction 1**

9.24. Location: Gravesham – eastern side of the district, close to the boundary with Medway Council.

9.25. Strategic aims:

- To ensure the junction avoids delays for the Strategic Road Network, to maintain the planned benefits of the Lower Thames Crossing and KCC's proposed bifurcation strategy which concerns the A2/M2 strategic road corridor.

9.26. Status: Concerns raised by National Highways about long term future junction performance. No scheme designed.

9.27. **What needs to happen?** National Highways needs to establish the capacity shortfall at Junction 1 and the primary drivers of that over future years. National Highways should at a minimum complete of the assessment of scheme options to inform planning of future Road Investment Strategies and identify any dependency associated with development growth pressures.

9.28. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 17 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal is not expected to have a negative impact on any of the outcomes, with positive impacts expected in ensuring that the road network can realise the benefits of its investment and meet growth in its use. There is some uncertainty as to whether a scheme that could add highway capacity and ease the movement of traffic could place an upward pressure on carbon emissions, however that will depend on the nature of the final option implemented and its timing given the transitioning of vehicle fleets to zero emission at-tailpipe.

9.29. **What alternatives have we considered?** The drivers of the need for the proposal are focused on the changes to the Strategic Road Network planned by National Highways, most notably the Lower Thames Crossing, and the impact of growth from proposals by local planning authorities. We do not have control over either of these drivers, but we have a strong interest in ensuring that the road network can realise the benefits intended from investment and function effectively if traffic volumes grow. Therefore, our proposal seeks to ensure that planning and development of Junction 1 takes place by National Highways to ensure there is a long term strategy for it rather than a reactive approach. Whether changes will be needed to the junction will ultimately be for National Highways to determine.

9.30. **Catering for uncertainty / scenario planning**. Related to the alternatives we have considered, the uncertainty with the proposal rests with whether the two drivers of traffic volumes through the junction materialise. There remains some uncertainty about whether the Lower Thames Crossing will be delivered and uncertainty about what growth could take place in the planning authority areas that would have the main impact on the junction. Given the uncertainty, our proposal aims for National Highways to establish a programme of work to develop scenarios for the junction and to identify the range of mitigations it may need to deliver, to ensure that the junction supports delivery of the benefits from planned road network investment.

Table 17 – Assessment of impact of the M2 Junction 1 Proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	Positive	The proposal aims to avoid performance of junction 1 from deteriorating due to growth in highways demand with a risk of a knock-on effect to the A2 corridor and its ability to realise the benefits from the Lower Thames Crossing on countywide movement of traffic per the bifurcation strategy.
4. International rail	No effect	
5. Network growth and resilience	Positive	This proposal will ensure that the long term operation and performance of the strategic network in Kent, on the border of Medway, continues to a standard that enables the county to fulfil its aims and day to day journeys effectively. This includes ensuring that the junction continues to operate effectively as the impacts of traffic changes due to the Lower Thames Crossing become evident, and also once growth occurs in Gravesham, Medway and more generally, which could increase throughput of road traffic through the junction.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Uncertain	Depending on the scale of a future proposal and its effect on capacity and journeys, the scheme may lead to more mileage on the trunk and local road network in the vicinity, which could push carbon emissions upwards. No air quality impacts are likely however as the junction is not closely bordered by any settlements that would warrant clear air quality concerns.
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

9.31. **M2 Junction 4**

9.32. Location: Medway, on the border with Maidstone District

9.33. Strategic aims:

- To ensure the junction avoids delays for the Strategic Road Network, to maintain the planned benefits of the Lower Thames Crossing and the bifurcation strategy which concerns the A2/M2 strategic road corridor.

9.34. Status: Recognised issue by National Highways and indicative proposals for new junction connections by Maidstone District Council as part of Lidsing Garden community proposals.

9.35. **What needs to happen?** National Highways needs to establish the capacity shortfall at Junction 4 and the primary drivers of that over future years. National Highways should commence the project lifecycle process to inform planning of future Road Investment Strategy activity and any dependency associated with development growth pressures.

9.36. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 19 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal is not expected to have a negative impact on any of the outcomes, with positive impacts expected in ensuring that the road network can realise the benefits of its investment and meet growth in its use. There is some uncertainty as to whether a scheme that could add highway capacity and ease the movement of traffic could place an upward pressure on carbon emissions, however that will depend on the nature of the final option implemented and its timing given the transitioning of vehicle fleets to zero emission at-tailpipe.

9.37. **What alternatives have we considered?** The drivers of the need for the proposal are focused on the changes to the Strategic Road Network planned by National Highways, most notably the Lower Thames Crossing, and the impact of growth from proposals by local planning authorities. We do not have control over either of these drivers, but we have a strong interest in ensuring that the road network can realise the benefits intended from investment and function effectively if traffic volumes grow. Therefore, our proposal seeks to ensure that planning and development of Junction 4 takes place by National Highways to ensure there is a long term strategy for it rather than a reactive approach. Whether changes will be needed to the junction will ultimately be for National Highways to determine.

9.38. **Catering for uncertainty / scenario planning**. Related to the alternatives we have considered, the uncertainty with the proposal rests with whether the two drivers of traffic volumes through the junction materialise. There remains

some uncertainty about whether the Lower Thames Crossing will be delivered and uncertainty about what growth could take place in the planning authority areas that would have the main impact on the junction. Given the uncertainty, our proposal aims for National Highways to establish a programme of work to develop scenarios for the junction and to identify the range of mitigations it may need to deliver, to ensure that the junction supports delivery of the benefits from planned road network investment.

Table 18 – Assessment of impact of the M2 Corridor Capacity Proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	Positive	The proposal aims to avoid performance of junction 4 from deteriorating due to growth in highways demand with a risk of a knock-on effect to the A2 corridor and its ability to realise the benefits from the Lower Thames Crossing on countywide movement of traffic per the bifurcation strategy.
4. International rail	No effect	
5. Network growth and resilience	Positive	This proposal will ensure that the long term operation and performance of the strategic network in Kent, on the border of Medway, continues to a standard that enables the county to fulfil its aims and day to day journeys effectively. This includes ensuring that the junction continues to operate effectively as the impacts of traffic changes due to the Lower Thames Crossing and the wider routing strategy to increasingly use the A2 / M2 corridor to Dover become evident, and also once growth occurs in Maidstone, Medway and more generally, which could increase throughput of road traffic through the junction.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Uncertain	Depending on the scale of a future proposal and its effect on capacity and journeys, the scheme may lead to more mileage on the trunk and local road network in the vicinity, which could push carbon emissions upwards. Given the scheme is linked to / required for local development delivery, it is challenging to discern the effect of the junction proposal from the effect of increased travel demand due to development

		generated population growth in the area.
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

9.39. **M2 road capacity enhancement**

9.40. Location: Medway to Swale, from junction 4 to junction 7 of the M2

9.41. Strategic aims:

- To ensure the corridor avoids delays for the Strategic Road Network, to maintain the planned benefits of the Lower Thames Crossing and the bifurcation strategy which concerns the A2/M2 strategic road corridor.

9.42. Status: Recognised issue by Transport for the South East. No current plans by National Highways for corridor itself, but M2 Junction 7 Brenley Corner scheme in development as part of the Road Investment Strategy.

9.43. **What needs to happen?** National Highways needs to diagnose the capacity shortfall based on planned changes to the wider road network and growth impacts over time. National Highways should at a minimum complete the 'Options Phase' to inform planning of future Road Investment Strategy activity and any dependency associated with development growth pressures.

9.44. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 19 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal is not expected to have a negative impact on any of the outcomes. There is some uncertainty as to whether a scheme that could add highway capacity and ease the movement of traffic could place an upward pressure on carbon emissions, however that will depend on the nature of the final option implemented and its timing given the transitioning of vehicle fleets to zero emission at-tailpipe.

9.45. **What alternatives have we considered?** The section of the M2 corridor in question forms part of one of two main routes between Kent's international corridors and the wider country via Kent. The main alternative is to limit the bifurcation strategy to use of the A2 M2 route from Junction 2 westwards. Thereby, traffic for the international terminals in east Kent would route entirely along the M20, reaching it via the A229. This alternative has not been adopted because it would place too substantial a burden on the M20 and the A229 connection and would lower resilience of the road network in Kent rather than improve it.

9.46. There are no other viable trunk road routes in the north Kent area to the coast, and therefore enabling the international traffic through the county to be accommodated, especially if it grows in the future, will entail considering the

bottleneck of the dual carriageway section of the M2. Our plan is proposing additional schemes alongside this 9both highway and rail based), but they are unlikely to be substitutes to it given their likely scale and effect.

9.47. How capacity could be delivered along the stretch of trunk road would need to be determined through an optioneering exercise by National Highways.

9.48. **Catering for uncertainty / scenario planning**. The need for the proposal to be delivered will depend on the impact of the National Highways changes to the wider trunk road network, most notably the Lower Thames Crossing. These changes will impact traffic levels across the M2 and M20 corridors between the crossing and destinations in east Kent, especially the international Channel crossing terminals at Folkestone and Dover. If traffic levels do not grow the current performance of the road corridor is likely to remain satisfactory. It is highly unlikely that the road corridor's use will fall in the medium to long term, especially if the Lower Thames Crossing is delivered. To address the uncertainty, it is essential that National Highways and KCC monitor traffic levels on the stretch of trunk road and determine what effect it may be having on the local road network and our aims for bifurcation.

Table 19 – Assessment of impact of the M2 Corridor Capacity Proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	Positive	The scheme will deliver new capacity and resilience for the regional road network which facilitates high volumes of road traffic between Kent (and by extension the international Channel crossing points in the county) and the midlands and north of England. This will reduce the burden on Dartford and on the M20 / A20 corridor and should improve operation of the strategic and local road networks (by way of the former's knock-on impacts on the latter). It forms part of KCC's long-promoted bifurcation strategy for international road traffic through the county. The scheme would support the additional capacity that schemes such as the Lower Thames Crossing and the M2 Junction 7 Brenley Corner would provide at the effective bookends of the M2 corridor in this proposal. This would help to ensure that the corridor does not emerge as a new bottleneck that erodes the benefits of the wider network improvements on

		this corridor in Kent.
4. International rail	No effect	
5. Network growth and resilience	Positive	The proposal will help to support the delivery of KCC's long-promoted bifurcation strategy which is designed to provide strategic resilience to the county road network to reduce the burden of international road traffic on the highway network. The proposal would support the additional capacity that schemes such as the Lower Thames Crossing and the M2 Junction 7 Brenley Corner would provide at the effective bookends of the M2 corridor in this proposal. This would help to ensure that the corridor does not emerge as a new bottleneck that erodes the benefits of the wider network improvements on this corridor in Kent. The proposal would support the long term growth in traffic that may occur along this corridor associated with international traffic and economic growth, and a growing population in the Districts along the corridor and in Kent more widely.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Uncertain	Although air quality impacts are unlikely to arise, there is some potential for carbon emissions from vehicle mileage to increase due to the additional capacity the proposal could deliver. The proposal aims to ensure future traffic flows along the corridor, enabled by wider schemes such as the Lower Thames Crossing can be accommodated without creating a new bottleneck. As such there is some uncertainty over whether the proposal would lead to clear induced traffic that would create additional carbon emissions.
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

9.49. **A2 Brenley Corner (M2 Junction 7) capacity enhancement**

9.50. Location: Swale Borough, east of Faversham

9.51. Strategic aims:

- To ensure the junction avoids delays for the Strategic Road Network, to maintain the planned benefits of the Lower Thames Crossing and the bifurcation strategy which concerns the A2/M2 strategic road corridor.
- To ensure the junction avoids delays for the strategic and local road network associated with future traffic levels, including from development growth.
- To ensure safety at the junction is improved, supporting the achievement of KCC's and National Highways' road safety strategies.
- To improve local connectivity through the junction area for all types of travel.

9.52. Status: The scheme needs to be progressed within the third investment cycle of the Road Investment Strategy, achieving planning consent and being ready for construction by the end of the cycle in 2030. This will enable the scheme to be delivered and open in time for the completion of the Lower Thames Crossing.

9.53. **What needs to happen?** The scheme needs to be progressed within the third investment cycle of the Road Investment Strategy, achieving planning consent and ready for construction by the end of the cycle in 2030. This will enable the scheme to be delivered and open in time for the completion of the Lower Thames Crossing.

9.54. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 20 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal is not expected to have a negative impact on any of the outcomes. There is some uncertainty as to whether a scheme that could add highway capacity and ease the movement of traffic could place an upward pressure on carbon emissions, however that will depend on the nature of the final option implemented and its timing given the transitioning of vehicle fleets to zero emission at-tailpipe.

9.55. **What alternatives have we considered?** The junction lies on a section of the M2 corridor that forms part of one of two main routes between Kent's international corridors and the wider country via Kent. The main alternative is to limit the bifurcation strategy to use of the A2 M2 route from Junction 2 westwards. Thereby, traffic for the international terminals in east Kent would route entirely along the M20, reaching it via the A229, and avoid having to route through the Brenley Corner junction. This alternative has not been adopted because it would place too substantial a burden on the M20 and the A229

connection and would lower resilience of the road network in Kent rather than improve it.

9.56. There are no other viable trunk road routes in area. How the junction is improved to ensure it has the necessary capacity to support trunk road and local traffic movements would need to be subject to optioneering by National Highways. Our plan is proposing additional schemes alongside this (both highway and rail based), but they are unlikely to be substitutes to it given their likely scale and effect. Also given that the challenge at Brenley Corner is associated with local traffic from A2 and A299 corridors that serve major towns across north and east Kent.

9.57. **Catering for uncertainty / scenario planning.** The need for the proposal to be delivered is widely viewed as already existing based on current traffic levels on the network. This is why the Network North plan government published announced an aim for acceleration in the delivery of the Brenley Corner junction scheme. Only in a scenario where traffic levels through the junction fall would the case for it wane. This is an unlikely scenario however, especially given the range of other potential changes that could occur. For example, local growth proposals across Thanet, Canterbury and Swale are likely to lead to increased vehicle trips on the road network, unavoidably placing greater demand on the Brenley Corner junction.

9.58. Although there are some proposals in our Local Transport Plan that could reduce the extent of traffic growth through the junction, these proposals need substantial development and are not likely to reduce demand to a sufficient degree to remove the case for the Brenley Corner scheme.

Table 20 – Assessment of impact of the M2 (A2) Brenley Corner Junction Proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	Positive	KCC and National Highways have, in past development work for the junction, investigated removal of active travel trips from Brenley Corner to a dedicated bridge over the A299 to the north of the intersection. This initiative would provide more capacity at the intersection, while also having road safety benefits in providing safer active travel connections between Faversham and Boughton-under-Blean.
3. International traffic	Positive	The proposal would support delivery of KCC's long-promoted bifurcation strategy by ensuring this junction can facilitate the throughput of current and future road traffic. This would

		support the benefits realisation of associated corridor proposals such as the Lower Thames Crossing and the M2 Junction 4 to Junction 7 proposals, so that the full benefits of the new strategic route, to relieve pressure on the M20 / A20 corridor, can be achieved. This would support the national economy by ensuring international traffic can route efficiently.
4. International rail	No effect	
5. Network growth and resilience	Positive	The proposal would support delivery of KCC's long-promoted bifurcation strategy by ensuring this junction can facilitate the throughput of current and future road traffic. This would support the benefits realisation of associated corridor proposals such as the Lower Thames Crossing and the M2 Junction 4 to Junction 7 proposals. This would support the full benefits being achieved of the new strategic route, to relieve pressure on the M20 / A20 corridor and add resilience through this alternative route, whilst simultaneously ensuring the strategic network does not become a constraint to local county growth.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Uncertain	This proposal is aimed at addressing a bottleneck on the trunk road network which is present currently and risks future road network performance as traffic flows on the A2 corridor could increase due to wider changes such as the Lower Thames Crossing. Since the scheme addresses an existing bottleneck, it has the potential to lead to increased mileage of vehicles which could generate additional carbon emissions. The area around the junction is likely to be subject to land use changes associated with new development, which may also create increased travel demand through the junction. Discerning the effect of the scheme from nearby changes in land use will be challenging.
8. Public transport	No effect	
9. Active Travel	Positive	KCC and National Highways are investigating removal of active travel trips from M2J7 Brenley Corner to a dedicated bridge over the A299 to the north of the intersection. This initiative would provide more capacity at the intersection, while also having road safety benefits in providing safer active travel connections between Faversham and Boughton-under-Blean.
10. Aviation	No effect	

9.59. **A2 Dover Access / Duke of York and Whitfield improvements**

9.60. Location: Dover District, between A2 Lydden Hill junction to A2 Duke of York junction.

9.61. Strategic aims:

- To increase resilience on the A2 corridor to the Port of Dover, supporting the bifurcation strategy and delivering national economic benefits by enabling international trade and travel.
- To relieve congestion on the approach to the Port of Dover, avoiding disrupting local traffic for the benefit of the quality of life of Dover residents, businesses and visitors.
- To improve the safety of the Strategic Road Network into Dover.
- To ensure the local road network and its junctions with the A2 are able to efficiently serve travel from the existing community and increased travel demand from local growth sites.

9.62. Status: The options for the corridor and the junctions have begun to be developed. No delivery schedule currently exists for improvements along the A2 corridor.

9.63. **What needs to happen?** National Highways needs to resume planning and design of options and set out a plan for when delivery will occur, subject to any necessary planning consents being obtained. We propose that National Highways should target planning approval in the third Road Investment Strategy cycle which runs from 2025-2030, with delivery in the following cycle running from 2030-2035. The required works to the local road junctions need to be designed and co-ordinated to support local growth and cater for potential long term delay in delivery by National Highways.

9.64. What impact could this proposal have on the outcomes of the plan? Shown in Table 21 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal is not expected to have a negative impact on any of the outcomes. There is some uncertainty as to whether a scheme that could add highway capacity and ease the movement of traffic could place an upward pressure on carbon emissions, however that will depend on the nature of the final option implemented and its timing given the transitioning of vehicle fleets to zero emission at-tailpipe.

9.65. **What alternatives have we considered?** The interim improvements associated with the Duke of York and Whitfield roundabouts were identified as necessary based on optioneering associated with the pattern of new development in the area through the District Local Plan development process. Those developments will inevitably add some traffic onto the highway network, even though step changes in public transport provision are also being provided

in the form of the Dover Fastrack network. As such there are no alternatives to whether the junctions need to be improved unless growth is constrained or not delivered, a factor that we have no control over.

9.66. National Highways will need to consider alternatives for the larger scale Dover Access scheme, but ultimately the likelihood of alternatives to highways proposals being identified are low. This is because the overarching change in the pattern of traffic movements through Kent between Dover the rest of the country will be impacted by other trunk road proposals such as the Lower Thames Crossing and by the trend in future traffic levels associated with cross-channel trade linked to economic performance of the British and European economy.

9.67. **Catering for uncertainty / scenario planning.** The proposal has been developed to address the uncertainty that exists around the likely timescale in which a major part of the proposal – the trunk road scheme called Dover Access, will be delivered. National Highways have previously commenced development of the Dover Access scheme but parked it owing to constraints on funding and delivery of the wider trunk road investment strategy. The need for the Dover Access scheme will be determined in part by the impact of the wider corridor changes such as the Lower Thames Crossing and other improvements to the M2 corridor.

9.68. Given the proximity of the proposal to the Port of Dover, the impact of investment in the function of the Port and its ability to process arriving traffic will also have an impact on the demands placed on the A2 access into Dover. Some of this uncertainty will resolve by 2027, and hence the opportunity will exist for National Highways to re-establish a programme for development of the proposal.

9.69. Due to this medium term uncertainty and in recognition of the growth proposals that are being progressed in the District, interim improvements of the Whitfield and Duke of York roundabouts are proposed to accommodate local traffic growth.

Table 21 – Assessment of impact of the Dover Access improvements to Whitfield and Duke and York Junctions Proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	Positive	The proposal would support delivery of KCC's long-promoted bifurcation strategy by ensuring these junctions on the A2 approach to the Port of Dover can better operate given Port traffic and arising local traffic from future growth. This would support the benefits realisation of associated corridor proposals and is consistent with KCC's approach to address both the strategic network and the route end in Dover to ensure the road network through the town does not become a bottleneck for traffic routing across the nation.
4. International rail	No effect	
5. Network growth and resilience	Positive	The proposal would ensure that international traffic impacts and growth can be managed whilst also allowing for local growth to take place within Dover. The proposals would help ensure this section of the strategic road network has greater resilience, helping to avoid delays to both international and local traffic, as their volumes rise over time.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Uncertain	The improvement of the junctions and route into Dover should enable smoother traffic flow of both local and trunk road traffic. These effects could be positive for air quality, with less stop-start traffic. The interim improvements for the junctions are associated with accommodating the effect of growth from new and changed land uses within the District. Given the proposals are linked, to an extent, with local development delivery, it is challenging to discern the effect of the junction proposals from the effect of increased travel demand due to development generated population growth in the area. Overall then there could likely be a balance of positive and negative impacts for this Outcome.
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

9.70. **Increasing rail freight for international goods movements**

9.71. Location – countywide

9.72. Strategic aims:

- To reduce the burden of haulage traffic on Kent's roads and communities by making better use of the rail network for freight transport between Europe and the UK.
- To support the decarbonisation of transport to deliver the government's Decarbonising Transport strategy – CO2 emissions per tonne of cargo delivered by rail can be 76% lower than by road, whilst also creating 10 times less particulate matter and 15 times less Nitrogen Oxides.
- For the rail freight network to be planned and managed in a coordinated manner across the regions of England.

9.73. Changing rail gauges would enable containerised loads to fit through tunnels in Kent and serve the Midlands and the North. As Network Rail stated in 2023[14], "Gauge clearance of the classic routes to W12 is still the rail freight industry's firm aspiration for the longer term and will be needed for anything like the extent and diversity of market enjoyed by Channel Tunnel rail freight in the late 1990s to ultimately return."

9.74. Status: KCC will work to provide its rich intelligence about the impact of road freight haulage on the county to Network Rail and the government so that they can fully consider this in determining whether to make the necessary investments in the rail freight network. KCC will work within Transport for the South East to ensure that the benefits to the region and other Sub-national Transport Bodies can be promoted.

9.75. These rail gauges would enable containerised loads to fit through tunnels in Kent and serve the midlands and north of England. As Network Rail stated in 2023[15,] "Gauge clearance of the classic routes to W12 is still the rail freight industry's firm aspiration for the longer term and will be needed for anything like the extent and diversity of market enjoyed by Channel Tunnel rail freight in the late 1990s to ultimately return."

9.76. **What needs to happen?** KCC will work to provide its rich intelligence about the impact of road freight haulage on the county to Network Rail and the government so that they can fully consider this in determining whether to make the necessary investments in the rail freight network. KCC will work within

[14] See Network Rail published report *International Rail Freight: Opportunities for Growth*, February 2023 at https://www.networkrail.co.uk/wp-content/uploads/2023/03/International-Rail-Freight-Opportunities-for-Growth.pdf

[15] See Network Rail published report *International Rail Freight: Opportunities for Growth*, February 2023 at https://www.networkrail.co.uk/wp-content/uploads/2023/03/International-Rail-Freight-Opportunities-for-Growth.pdf

Transport for the South East to ensure that the benefits to the region and other Sub-national Transport Bodies can be promoted.

9.77. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 22 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal is expected to have a positive impact on a number of areas, notably on reducing carbon emissions from transport by enabling a shift towards a far lower carbon intensive form of transport.

9.78. **What alternatives have we considered?** We do not have control over where international haulage traffic chooses to travel from. That is led by the logistics markets' preferences based on time and cost. The route from Kent to Europe is short in duration and has the flexibility of both rail crossings via the Channel Tunnel and via ferry crossings. Therefore, the alternative to reducing the impact of haulage traffic on Kent consisting of shifting traffic to alternative international terminals in the UK is not a realistic option.

9.79. Decarbonisation of the vehicle fleets used to transport goods across the Channel is likely to occur in the long term as battery capacity and charging infrastructure along with hydrogen fuel cell and refuelling facilities innovate to meet the logistics sectors' needs. There is uncertainty as to when that will take place and therefore it does not provide an alternative that delivers significant reductions in carbon emissions from haulage traffic within the next few years. The proposal to address rail freight gauge constraints would make best use of an existing asset that has substantial safeguarded capacity to meet the logistics industry's needs.

9.80. **Catering for uncertainty / scenario planning.** The proposal has been made in the context of two key industry factors which address uncertainty. The first is that there has been long-standing under utilisation of the Channel Tunnel by rail freight and that this is due to well documented reasons by both Network Rail and Getlink (the tunnel operators) that there is a lack of connectivity to the wider national rail domestic freight network. These industry actors work closely with logistics companies to understand the reasoning for their operations and appetite for other services. Second, the government has established a rail freight growth target for the first time – a 75% increase by 2050 (or a 2.3% annual compound growth rate).

9.81. These factors indicate the latent demand and capability of the rail network. The expectation is that even with current or lower volumes of cross-Channel traffic, there some certainty that removing barriers to the movement of goods by rail freight will lead to an increase in rail freight services. If cross-Channel traffic increases, it will also add to the case for the proposal as it will provide a greater market share that can be decarbonised, as well as any congestion and disruption effects reduced related to traffic management.

Table 22 - Assessment of impact of International Rail Freight improvements on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	Positive	Reduced volumes of heavy goods vehicles on the road network would have positive impacts for road condition, as heavy goods vehicles are particularly impactful due to their heavy loads and the stress this places on road surfaces.
2. Road Safety	No effect	
3. International traffic	Positive	This project provides two phased options to upgrade Kent's rail freight network to carry more international containerised traffic, helping to boost Kent's economy and decreasing the negative effects of international road haulage in the county. Enabling haulage to switch to rail would help reduce the burden of international road traffic on Kent's roads and communities and may even support reduced management events of port-bound traffic.
4. International rail	No effect	
5. Network growth and resilience	Positive	This project upgrades Kent's rail freight network to carry more international containerised traffic, helping to provide resilience when the highway network is disrupted or unavailable and to accommodate long term growth in international traffic associated with growing trade.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Positive	This project upgrades Kent's rail freight network to carry more international containerised traffic, helping to reduce the negative effects of international road haulage in the county, such as air quality, carbon emissions and noise impacts.
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

10. Evaluation of the proposals for the Local Transport Plan against outcome 4

10.1. Policy outcome 4 states that *International rail travel returns to Kent and there are improved public transport connections to international hubs*.

10.2. We have set two objectives concerning delivery of this outcome: Policy Objective 4A - *International rail travel returns to Ashford International and Ebbsfleet International stations, supported by the infrastructure investment needed at Kent's stations to ensure they provide secure and straightforward journeys across the UK-EU border within the entry exit system*.

10.3. Policy Objective 4B - *There is a reduction in the time it takes to reach international rail stations by public transport compared to conditions in 2023*.

10.4. The proposals we have identified to deliver on these are as follows.

10.5. **International rail services for Kent**

10.6. Location: Dartford (Ebbsfleet) and Ashford Boroughs

10.7. Strategic aims:

- To obtain a resumption of international rail services stopping at Ebbsfleet and Ashford International stations.
- To support the economic opportunities and prosperity of business sectors and improve the quality of life for Kent residents who have based decisions on where they locate owing to the ability to travel with ease internationally on the rail network.
- To ensure that the Kent stations are managed and maintained to a standard that enables them to be brought swiftly back into operation for international rail operators.
- To ensure the public funding invested in the international rail stations is delivering the intended benefits to the county and country's economy.

10.8. Status: Ashford has 24 years of sustained international rail connectivity before its withdrawal in March 2020 due to the Covid-19 pandemic travel restrictions temporarily reducing demand. Ebbsfleet International had enjoyed services since its opening in 2007. Both stations do not have any certainty about whether international rail services will return.

10.9. **What needs to happen?** KCC will develop the public interest case for international rail services stopping in Kent to help support decision makers in securing future services at Kent's stations. KCC will also ensure the case for Kent can be pitched to potential new international rail service operators.

10.10. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 23 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal is expected to have a positive impact on a number of areas, particularly international travel in the county.

10.11. **What alternatives have we considered?** The alternative is to rely on the London international station for access to international rail services or encourage all international travel to and from Kent via the road-based Channel crossings. These alternatives are not in the interests of residents and businesses in Kent. Reliance on the international terminal at London St Pancras creates additional costs in both cash and time terms, which are new barriers to some users using international services. Reliance on road based travel through Folkestone, Dover and other locations brings added pressure to the road network in those areas, the risk of heightened disruptions to travel in the local area, and higher carbon emissions from travel.

10.12. Given the public investment that has been sunk into Ebbsfleet and Ashford International stations, the resort to alternatives rather than realising the benefits of the existing infrastructure in Kent does not present any benefits to realising our ambition and outcomes for Kent.

10.13. **Catering for uncertainty / scenario planning.** The key factor that led to loss of international services, a loss of passenger demand due to Covid-19 pandemic travel restrictions, has resolved. The current operator is now considering its approach to future services given changes to border controls due to be introduced in late 2024. The current operator has stated that it will not review decisions on whether to stop in Kent until into 2025. There is therefore no certainty as to whether services will return to Kent and therefore how much longer the county will lack services that it otherwise had for 24 years prior to 2020.

10.14. New operators could introduce services on the line; however, this has high uncertainty given the historic lack of competition. Furthermore, there is no guarantee a new operator will choose to stop services in Kent. This uncertainty cannot be resolved by the actions we take through this Local Transport Plan proposal; however, our proposal will remove uncertainty about the impact that returning international rail services to Kent could have. This will help decision makers who can remove the uncertainty and act to return stopping services in Kent.

Table 23 - Assessment of impact of International rail services for Kent on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	Positive	This proposal involves international rail services resuming at Ashford and Ebbsfleet, supporting international travel to become a more positive part of Kent's economy, facilitated by the county's transport network. It provides an alternative to road-based travel.
4. International rail	Positive	This proposal involves international rail services resuming at Ashford and Ebbsfleet, supporting international rail travel returning to Kent with improved public transport connections to international hubs.
5. Network growth and resilience	Positive	A return of international rail services would provide further resilience to Kent's transport system and the region more widely, by providing both an alternative mode of travel for international travel when road-based crossings are disrupted. They also provide resilience by providing additional access points to the international rail line - valuable when transport access to London is disrupted.
6. Heritage and environment	Positive	International visitors to Kent provide a significant boost to the county economy and help to support the prosperity and preservation of heritage attractions enjoyed by all. The lack of international rail services is damaging in this regard and therefore achieving this outcome would have a positive impact - improving the ease for visitors to enjoy Kent's natural environment and heritage offer, in turn beneficial to the quality of life for all residents and businesses in the county.
7. Air quality, carbon emissions	Positive	International rail operators cite their significantly lower carbon emissions as a key benefit of their services compared to driving or flying between England and Europe. A return of services to Kent and switching to their use would therefore enable international travel using very low emission rail.
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

10.15. **Other proposals relevant to this proposal**

10.16. There are two further proposals relating to the rail network which would make a positive contribution to this outcome and deliver on objective 4B as they would reduce the journey time it takes to reach International stations in Kent. They are not fully assessed against this outcome however as they have been developed primarily to address outcome 8 concerning public transport. Please see that section for their full assessment.

10.17. The two proposals are Local Rail Services and Maidstone Mainline Journey Time Improvements, which set out proposals to increase the frequency of services on the mainline through Maidstone to Ashford, and the Medway Valley line from Maidstone to Ebbsfleet. In addition, the sub regional body Transport for the South East proposes improved cross-boundary rail connections from Ashford towards Hastings. These improved connections to international stations would improve the journey time catchment and attractiveness of rail services to these international stations, helping them to generate levels of demand that convince international operators to serve them.

11. Evaluation of the proposals for the Local Transport Plan against outcome 5

11.1. Policy outcome 5 states that we will *deliver a transport network that is quick to recover from disruptions and future-proofed for growth and innovation, aiming for an infrastructure-first approach to reduce the risk of highways and public transport congestion due to development*.

11.2. We have set three objectives concerning delivery of this outcome: Policy Objective 5A - *Strengthen delivery of our Network Management Duty to deliver the expeditious movement of traffic by using our new moving traffic enforcement powers and modernising the provision of on-street parking enforcement.*

11.3. Policy Objective 5B - *Reduce the amount of forecast future congestion and crowding on highways and public transport that is associated with demand from development by securing funding and delivery of our Local Transport Plan*.

11.4. Policy Objective 5C - *The prospects for the future of transport increase across the whole county, with new innovations in transport services having a clear pathway to trial or delivery in Kent*.

11.5. The proposals we have identified to deliver on these are as follows.

11.6. **Development management principles**

11.7. Location: Countywide

11.8. Strategic aims:

- To ensure Local Planning Authorities and developers work effectively with KCC to give the best prospect to design development and local transport to reduce its pressure on the existing road network.
- To implement an infrastructure-first approach to secure initial improvements to the transport system to reduce pressure on the road network.
- To recognise the uncertainty in how occupants of new developments will travel by assessing a range of outcomes and ensuring the right mitigations are implemented in response to observed outcomes.

11.9. Status: KCC has already set out in the Transport technical appendix to the KCC Developer Contributions guide about the requirement for the planning process to move towards a ‘decide and provide’ approach in respect of transport planning and impacts.

11.10. **What needs to happen?** Further to our existing Developer Contributions Guidance, we reiterate that we will deliver with district planning authorities a 'decide and provide' (also known as 'vision and validate') approach to planning and site development. This approach supports achieving a greater choice of transport modes to help reduce traffic generation onto the existing highway network whilst also addressing impacts that do require mitigation. This will be delivered by ensuring planning agreements for sites make provisions for uncertainty in transport impacts by applying a monitor and manage approach.

11.11. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 24 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal is expected to have a positive impact on a number of areas, particularly in creating new communities that have better prospects of being able to choose public transport or walking and cycling as worthwhile options alongside vehicle use.

11.12. **What alternatives have we considered?** The alternative is approach is known as predict and provide. Such an approach would rely on observed travel patterns from established development which, due to a lack of good design and measures to enable a choice of transport, have led to car-dependency. As such, the assumed approach to travel from new development would be continued car-dependency with mitigation solely focused on enabling that by providing changes to the road network. This approach is not preferred because it overlooks the capability and capacity of new development to provide a range of choices for transport that could reduce car trips and increase use of other types of transport. This is especially the case for large new communities of which there are a number proposed across Kent by developers and Local Planning Authorities.

11.13. This alternative has been the prevailing approach in the past and has led to new developments adding levels of traffic to the network such that both site-specific and wider network highway schemes have or are needed to keep traffic flowing smoothly. The preferred approach is designed to reduce pressure on the road network whilst ensuring necessary changes nonetheless take place.

11.14. **Catering for uncertainty / scenario planning.** This proposal is specifically designed to cater for and ensure the right responses take place in terms of transport network changes given the uncertainty on how people will travel at the planning stage of new development. The approach ensures a range of potential outcomes about what types of transport may be used based on what could be provided by new development are considered and provisions made as part of initial development delivery. Then, based on monitoring of actual outcomes, further identified actions could be implemented. The approach covered by this proposal is therefore aiming to strike a balance between ensuring new development provides changes to the transport network upfront to reduce

negative impacts on those, whilst taking further action based on observed travel patterns.

Table 24 - Assessment of impact of Development Management Principles on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	Positive	This proposal will see KCC work better with the local planning authorities and developers in ensuring that the impacts of movement, access and traffic generation are designed effectively and mitigated as necessary, to ensure that the network remains safe for all users.
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	This proposal will ensure that KCC works effectively with local planning authorities and developers to ensure that new land uses are designed to reduce impacts on the local road network, increase resilience of the transport system by designing in a good choice of travel options (e.g. by delivering effective new walking, cycling and bus links), and mitigate adverse impacts of developments by planning and then monitoring post opening. The proposal is fundamentally geared towards effective working to deliver an infrastructure first approach.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Positive	The public transport and active travel initiatives of the new Development Management System should provide benefits in air quality for future developments.
8. Public transport	Positive	The proposal will support KCC in working effectively with local planning authorities and developers to deliver new land uses that are designed to reduce impacts on the local road network by designing for local public transport connections to give them the best chance of being used and attracting patronage so that there is less burden placed on the road network by general traffic. In the instance of Kent Fastrack networks in particular, the proposal will continue to support KCC with securing transit oriented development. The proposal is

		fundamentally geared towards effective working to deliver an infrastructure first approach.
9. Active Travel	Positive	The proposal will support KCC in working effectively with local planning authorities and developers to deliver new land uses that are designed to reduce impacts on the local road network by designing for walking and cycling connections to give them the best chance of being used so that there is less burden placed on the road network by general traffic. The proposal is fundamentally geared towards effective working to deliver an infrastructure first approach.
10. Aviation	No effect	

11.15. **'Hoppit' – Kent's new Mobility as a Service (MaaS) platform**

11.16. Location: Thameside Fastrack area, with potential for county-wide

11.17. Strategic aims:

- To improve the range of travel choices and access to those, to make it easier to make journeys.
- To make it easier to use public transport and future shared transport by providing a service that can manage and pay for multiple fares and charges.
- To improve access to travel information and journey planning, to help users make informed choices suited to their needs or preferences.

11.18. Status: KCC has been developing the case for a Mobility as a Service (MaaS) application to be trialled in the Thameside area covering Dartford, Ebbsfleet and Gravesend due to the opportunity to incorporate the Fastrack network and potential transport improvements that the Ebbsfleet Garden City could deliver.

11.19. **What needs to happen?** Subject to the funding we can secure, we will aim to further develop and deliver a MaaS platform trial, called 'Hoppit' to evaluate its effectiveness, alongside learning from other MaaS roll-outs across the UK (such in the Solent Future Transport Zone). We will work to find opportunities more widely in Kent to apply the 'Hoppit' MaaS platform. Subject to the outcomes of the initial 'Hoppit' MaaS Ebbsfleet pilot, KCC will explore establishing a county-wide 'Hoppit' MaaS platform phased by Enhanced Bus Partnership areas with potential to also expand to Medway.

11.20. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 25 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal is expected to have a positive impact by improving the prospects of being able to choose public transport or walking

and cycling as worthwhile options alongside shared vehicle use. It will provide experience and learning on the role this new innovation could play in Kent and how it can be implemented, alongside learning from wider scheme's nationally, such as the Solent MaaS scheme in the Portsmouth, Southampton, Isle of Wight area.

11.21. **What alternatives have we considered?** We have already established travel information digital services in Kent, called Kent Connected. This option provides valuable information on travel choices, including the Explore Kent branded leisure routes for enjoying the county's towns and countryside. It provides information about those including the potential impacts on pollution and fitness gains. The platform does not provide access to booking or purchasing services.

11.22. A further alternative is the established Transport for London app which provides access to all TfL services including ticket purchase and journey information. The TfL network comes into the western part of Kent where it borders the Greater London Authority area. The extent of the network is not sufficient however to provide a significant range of journey choices compared to those alternatives managed solely within the Kent authority area by transport operators. The Solent Mobility as a Service platform has demonstrated capability for an application to be based on a selection of neighbouring towns / cities, which is similar to the nature of the Kent Thameside area between Dartford to Gravesend.

11.23. **Catering for uncertainty / scenario planning.** The proposal is limited to a pilot area within the Thameside area of Kent due to the uncertainty about the capability of the Mobility as a Service to provide a significant long term positive impact on how people make decisions, purchase, and access transport in Kent. The pilot will give an opportunity to understand the propensity for residents across a diverse area in Kent to use a bespoke service in comparison to existing means of accessing travel services.

Table 25 - Assessment of impact of Mobility as a Service on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	KCC's MaaS project is planned for phased implementation over Kent, delivering Fastrack, local buses, rail, cycle hire and car sharing under one convenient platform. This will deliver a transport network that is future proofed through innovation, meeting customer needs using modern technology.
6. Heritage and environment	Positive	KCC's MaaS project will improve access to the range of transport available to users, helping them to reach their destinations including accessing Kent's natural environment and heritage and historic attractions and assets.
7. Air quality, carbon emissions	Positive	KCC's MaaS project will attract further patronage to public transport, as well as promoting sustainable travel modes. Both should encourage improvements in road-side air quality and use of lower carbon transport, contributing towards the pursuit of carbon budget targets and net zero in 2050.
8. Public transport	Positive	KCC's MaaS project should improve access to the range of public transport services available, helping users to elect to travel that way. This would support a growing public transport system.
9. Active Travel	Positive	KCC's MaaS project should improve access to a range of transport options available, including cycle hire, cycle routes and cycle parking. MaaS can also incorporate walking or cycling as a journey leg to and from public transport stops. This would all help users to elect to travel in these ways and this can make a positive contribution to public health.
10. Aviation	No effect	

11.24. **Shared transport hubs (known as Mobility Hubs)**

11.25. Location: Countywide

11.26. Strategic aims:

- To evaluate the potential for shared transport mobility hubs to form part of the transport mix in appropriate locations in Kent in the future.
- To improve access to shared transport, including car clubs, public transport, cycle hire, etc.
- To increase choice and meet the needs of those for whom ownership of private transport is more difficult.

11.27. Status: There are no accredited (by the national body ComoUK) mobility hubs in Kent and very few within the UK as this is a relatively new concept. There are, however, a number of proposals across the country to trial the concept.

11.28. **What needs to happen?** KCC will work with developers and district councils on the planning of mobility hub networks where they are proposed. It is anticipated that hubs would be deliverable first in new developments, funded and delivered by development, which provides the opportunity to learn lessons and evaluate their suitability for other parts of Kent.

11.29. Where proposals do come forward in Kent, KCC proposes that those are anchored around electric car hire clubs given motorised travel is the most common type of transport in the county. These should be located to form part of a hub with existing public transport access points. Any mobility hub proposals in Kent should seek to achieve ComoUK accreditation.

11.30. Subject to implementation of a Mobility as a Service (MaaS) platform in Kent, mobility hubs should be operated and managed so that their use is purchasable through the MaaS platform.

11.31. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 26 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal has the potential to have a positive impact across a range of outcomes due to its potential to improve choice and access to transport services. The thrust of the proposal is to learn to be able to further validate these potential impacts in the future.

11.32. **What alternatives have we considered?** We cannot control the delivery of Mobility Hubs – they can be delivered on private land and be privately operated. Our proposal is designed to provide guidance about how any mobility hub should be planned so that it integrates best with Kent's transport system and has the best prospect for success.

11.33. The alternative is to provide no guidance and therefore there is a risk that a varied range of hubs could be established each offering different means of accessing and paying, and not delivered to the standard that would make them most successful. We have avoided this alternative as we think there is potential for hubs to be a part of Kent's future transport mix. As such, we want to ensure that we as the local transport authority set clear expectations, especially to help guide their delivery where operators may need to work with us, such as if they plan to use our highways estate.

11.34. The alternative of KCC providing mobility hubs is not currently possible owing to both no available funding from government and due to the need for a proof of concept to be delivered in different locations across Kent and more widely in the UK Hence our proposal is to provide guidance and assistance to the private sector where it seeks to deliver this new transport concept.

11.35. **Catering for uncertainty / scenario planning.** We recognise the uncertainty in the success and need for mobility hubs within the future transport mix for Kent by setting out a clear proposal to learn from the experience of mobility hubs currently planned by the private sector and more widely in England. Currently there is too much uncertainty about the effectiveness of mobility hubs in England and across a range of diverse locations that we have in Kent, such as smaller rural communities, mid-sized towns, through to low density but large urban areas covering a wide distance. We also have uncertainty about the market and its further innovation. Shared transport operators are still an emerging market in Kent – we do not know what parts of the shared transport mix may further come into Kent and which elements are most likely to be successful and can potentially be integrated into a mobility hubs model.

Table 26 - Assessment of impact of Mobility Hubs on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	Mobility Hubs may provide for transfer between two or more sustainable transport modes, possibly booked through a MaaS platform. As such, they would deliver a transport network that is future proofed for growth and innovation and would provide easier access to wider choice of modes, which should have positive implications for pressures on parts of the transport network.
6. Heritage and environment	Positive	Mobility Hubs could contribute to improving journeys to access and experience Kent's historic and natural environments, by increasing choice and access to shared transport, so that people would find it easier to reach their desired destinations, including Kent's natural environment and heritage and historic attractions.
7. Air quality, carbon emissions	Positive	Mobility Hubs centred around zero emission shared hired vehicles increase use and accelerate access for those people who do not or cannot purchase their own vehicle. This would aid road-side air quality, contributing towards the pursuit of carbon budget targets and net zero in 2050.
8. Public transport	Positive	Mobility Hubs may ease access to and encourage use of public transport by better integrating a range of transport choices around established public transport access points, such as rail and bus stations / stops, making it easier to complete whole journeys where public transport is a journey leg.
9. Active Travel	Positive	Mobility Hubs may ease access to and encourage use of active travel by better integrating a range of transport choices around established public transport access points, such as rail and bus stations / stops, making it easier to complete whole journeys where active travel is a journey leg (e.g. walking from a bus stop to home). Higher use of active travel would make a positive contribution towards public health.
10. Aviation	No effect	

11.36. **A229 Blue Bell Hill**

11.37. Location: Maidstone

11.38. Strategic aims:

- To improve the reliability of journey times and reduce congestion so that this critical route between the M2 and M20 can accommodate growth in traffic from new land uses and the Lower Thames Crossing's impact on the routing of traffic.
- To make best use of the existing road network, by enhancing it to deliver better outcomes for road safety, public transport, pedestrians and cyclists, and air quality.
- To ensure the effects of the Lower Thames Crossing on traffic movements are addressed on Blue Bell Hill and its junctions.

11.39. Status: The scheme is being developed in response to the government's Major Road Network and Large Local Major Schemes pipeline. The scheme has been granted some funding to develop a detailed Outline Business Case.

11.40. **What needs to happen?** The scheme needs to be funded by the government so that we can complete its development, planning and construction, subject to the necessary planning consents. A scheme to address capacity on this vital link is needed regardless of whether the Lower Thames Crossing is delivered.

11.41. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 277 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal has the potential to have a positive impact across a range of outcomes as it can provide new, safer more capacious infrastructure for highway users, including for pedestrians and cyclists at the junctions in scope of the proposal. The impact on international travel is due to the important role the Blue Bell Hill plays in linking the M20 to the M2, for vehicle traffic from Folkestone and Dover channel crossing terminals.

11.42. **What alternatives have we considered?** The proposal has already been subject to some early consultation on different options to inform the development of its Strategic Outline Business Case. There are no viable modal alternatives to addressing the highways route. The very high volume of vehicle traffic, both domestic and international, cannot be addressed sufficiently by providing public transport, walking of cycling alternatives. The need for a highway scheme has been recognised by the government, with the approval of the Strategic Outline Business Case and its proposed highways options.

11.43. **Catering for uncertainty / scenario planning.** Work has already taken place to explore uncertainty and scenarios as part of the Strategic Outline Business

Case. Two key drivers of uncertainty concern the likelihood of the Lower Thames Crossing being constructed, given its high cost and need for its Development Consent Order to be approved. If the Crossing is built, the forecasts by National Highways demonstrate that volumes on the Blue Bell Hill could increase. We have made representations about this concern as part of the Crossing's Development Consent Order examination. If the crossing does not progress, the need for upgrade to the Blue Bell Hill remains and the case has been made accordingly in the Strategic Outline Business Case.

11.44. A further source of uncertainty is whether the Blue Bell Hill route will be trunked and transfer into National Highways asset group. If so, National Highways would be responsible for ensuring that the challenges are addressed that our proposal would otherwise do. The need for the scheme will remain if the route is trunked unless National Highways implement other proposals to address the challenges.

Table 27 - Assessment of impact of A229 Blue Bell Hill proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	Positive	The proposal could deliver improvements to the operation and safety at busy junctions and along the A229 Blue Bell Hill - addressing locations with higher historic frequency of incidents and ensuring the upgraded highway is delivered to the latest standards in highway safety and asset condition.
3. International traffic	Positive	The proposal would support delivery of KCC's long-promoted bifurcation strategy by assisting movement between the M2 and M20 corridors. This would also support the benefits realisation of associated corridor proposals such as the Lower Thames Crossing and the M2 Junction 4 to Junction 7 proposals, thereby supporting the national economy by ensuring international traffic can route efficiently to and through the county.
4. International rail	No effect	
5. Network growth and resilience	Positive	The proposal would deliver new capacity and improved routing of traffic, recognising the route's role in facilitating strategic traffic movement between the M2 and M20 corridors. This would add resilience to this section of the road network and help to ensure that the route can accommodate longer term traffic growth generally and from specific local growth in

		Medway & Maidstone.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Uncertain	The proposal business case has an objective to support improvements to local air quality by addressing the constraints that lead to traffic congestion and disruption. There are designated air quality management areas (AQMA) in effect along the M20 in the Maidstone area, which cover the A229-M20 junction which the proposal aims to improve. There may also be some benefits in reduction of noise. There is however a risk of increased carbon emissions from increased mileage of vehicles enabled by new capacity that the scheme could deliver.
8. Public transport	Positive	The proposal has an objective to improve routes and provide suitable facilities for public transport. The proposal could deliver improvements to bus journeys - on the corridor there are multiple bus routes across operators that carry passengers and which experience delays and journey time unreliability owing to queuing and congestion that occurs on the A229 Blue Bell Hill. The proposal could improve these journeys and in turn make the choice of public transport between locations such as Maidstone and Medway more attractive.
9. Active Travel	Positive	The A229 Blue Bell Hill project aims provide suitable routes and facilities for public transport, pedestrians and cyclists. The plans for the junctions will provide opportunity to improve the crossing facilities for pedestrians and cyclists, with the latter helping to support use of the National Cycle Network which runs through the area of the Blue Bell Hill.
10. Aviation	No effect	

11.45. **North Thanet Link**

11.46. Location: Thanet

11.47. Strategic aims:

- To improve the local road network resilience, capacity and reliability to help support development of new land uses and to manage seasonal traffic peaks associated with the visitor economy to the coast and other attractions.
- To improve access to the Manston airport site.
- To improve road safety and provide new pedestrian and cycle links and offer new public transport route opportunities.
- To improve access to Manston Business Park.

11.48. Status: The scheme is being developed in response to the government's Major Road Network schemes pipeline. The scheme has completed an Outline Business Case.

11.49. **What needs to happen?** The government needs to swiftly determine whether the scheme should proceed following our submission of its business case. We will then require further funding from the government to undertake the remaining stages of scheme development and construction, subject to the necessary planning consents.

11.50. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 28 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal has the potential to have a positive impact across a range of outcomes as it can provide new, safer more capacious infrastructure for highway users, including for pedestrians and cyclists at the junctions in scope of the proposal. The impact on international travel is due to the important role the Blue Bell Hill plays in linking the M20 to the M2, for vehicle traffic from Folkestone and Dover channel crossing terminals.

11.51. **What alternatives have we considered?** This proposal, which is one of our largest schemes, has been in development for several years. The need for highways improvements were identified during the development of the Thanet Local Plan covering the period 2016 to 2031. A range of options concerning different configurations of new and upgraded highways routes were considered and reported as part of the Strategic Outline Business Case which the government approved. We consulted on details of our proposed scheme in 2023.

11.52. **Catering for uncertainty / scenario planning.** We are considering uncertainty per the government's requirements for the Major Road Network funding pipeline business case process. The proposal has been developed on the basis of our infrastructure-first philosophy. We intend the scheme to be delivered ahead of the majority of growth so that the pressure of traffic can shift to the new and upgraded highways links. Therefore, whilst we cannot control what or when development takes place, the rationale for the scheme is clear, with the need to provide its benefits to enable the delivery of the Local Plan growth.

Table 28 - Assessment of impact of A28 North Thanet Link on the LTP Outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	Positive	This proposal would deliver highway to the latest standards in highway safety and asset condition. The proposal will also deliver new shared walking and cycling infrastructure along its length, contributing to our Vision Zero road safety objectives.
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	The proposal would deliver new capacity and connections across a wide area in Thanet, providing a supplementary route to the existing A28. This would increase resilience of the road network. The proposal would also add new capacity by way of the new upgraded road routes, new connections and improved junctions. These improvements would help to ensure that increased growth in traffic associated with local development growth and Kent's growth more widely, can be accommodated with reduced adverse impacts on highways journeys.
6. Heritage and environment	Positive	The proposal is located near the east Kent coast, on the Thanet peninsula, which has a range of attractions within the coastal resort towns. The proposal, by providing new capacity, access and resilience supplemental to the existing A28 route across the peninsula, will help accommodate traffic growth and ensure that the natural and heritage attractions within the Thanet area remain easy and convenient to access by road.
7. Air quality, carbon emissions	Uncertain	There is a risk of increased carbon emissions from increased mileage of vehicles enabled by

		new capacity that the scheme could deliver. Given the proposals are linked, to an extent, with local development delivery, it is challenging to discern the effect of the proposal from the effect of increased travel demand due to development generated population growth in the area. The scheme will provide a new, capacious road corridor into and out of the Thanet peninsula, reducing the burden on the existing road corridors, many of which until 2023 were within a widespread air quality management area (currently the AQMA has been reduced to covering sections of Newington Road - Boundary Road - Margate Road). Overall then there could likely be a balance of negative and positive impacts for this outcome.
8. Public transport	Positive	Enhancements to the local road network will offer public transport routing opportunities and should also contribute to journey time consistency and reliability, in turn promoting the use of public transport in the area.
9. Active Travel	Positive	The proposal will deliver new shared walking and cycling infrastructure along it. This will help both new development and existing communities to travel around the area using walking and cycling.
10. Aviation	No effect	

11.53. **A228-A264 Corridor between West Malling to Tunbridge Wells**

11.54. Location: Tonbridge and Malling and Tunbridge Wells Boroughs

11.55. Strategic aims:

- To ensure the corridor delivers reliable journey times and sufficient capacity to meet the needs of its users and from future land uses along the corridor.
- To co-ordinate the design of interventions along the corridor to ensure they work effectively together, across district boundaries, to meet user needs.
- To find opportunities to deliver improvements for public transport, road safety and walking and cycling along the corridor.

11.56. Status: A range of potential schemes and interventions along the corridor have been identified by KCC and the district Local Planning Authorities as part of their Local Development Plan process.

11.57. **What needs to happen?** An A228 corridor plan needs to be developed by KCC to ensure that the site-specific pressures, arising in part from local growth,

are addressed in a co-ordinated way to deliver a sum greater than its parts. KCC should develop proposals within a single continuous programme for the corridor for development and delivery subject to securing developer and government funding. This should include a further review of the case for a Colts Hill bypass.

11.58. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 29 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal has the potential to have a positive impact across a range of outcomes as it can provide new, safer more capacious infrastructure for highway users, including for pedestrians and cyclists at the junctions in scope of the proposal. The impact on international travel is due to the important role the Blue Bell Hill plays in linking the M20 to the M2, for vehicle traffic from Folkestone and Dover channel crossing terminals.

11.59. **What alternatives have we considered?** There are a range of different proposals for different sites along the corridor. The different proposals could all make different contributions towards the overall objectives. The need for a corridor plan will entail considering the different combinations of the potential improvements to find those constituent elements that are priorities and have the biggest effect and which can be considered as lower priority alternatives. The approach can also include considering the options for individual sites based on localised aims and priorities for different road users. Public transport, walking and cycling remain features of the transport mix for consideration in this proposal. Although the rail network runs through the Medway Valley, it is not a viable option for providing large scale sustained relief to the A228-264 corridor, so highways options will need to be the primary focus.

11.60. **Catering for uncertainty / scenario planning.** There is significant growth planned locally and more may be determined as further district Local Plans are developed with longer time horizons. Additionally, there is the need to consider wider changes in travel patterns since the corridor in this proposal is long and will interface with a range of other journey patterns in the county. These uncertainties and scenarios will need to be further considered as part of the development of the package of schemes to ensure they provide sustained long lasting delivery of the strategic aims.

Table 29 - Assessment of impact of A228-A264 corridor improvements on the LTP Outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	Positive	The proposal could deliver a range of improvements along the A228 corridor which would provide an opportunity to incorporate improvements to road infrastructure safety. The upgrade of highway would be delivered to the latest standards in highway safety and asset condition.
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	There are a range of potential growth proposals along the corridor that may lead to increases across the corridor as a whole, as well as site specific pressures. This is in addition to growth more generally across Kent which will inevitably lead to increased traffic volumes on this corridor, given the range of destinations and services along it. The proposal could help ensure that the route remains effective in providing reliable journeys, by providing improvements to capacity. The corridor approach in the proposal would support ensuring that improvements are co-ordinated and not reactive, fulfilling the infrastructure-first approach.
6. Heritage and environment	Positive	The corridor serves a large rural swathe in central Kent and has a range of heritage attractions along its length (e.g. the Hop Farm, KCC Manor Park Country Park) including in Tunbridge Wells itself, and is one of the main road corridors in central Kent from the north to reach the High Weald AONB. Ensuring the corridor can provide reliable journeys as traffic volumes could rise in the future will help ensure that journeys to the natural and heritage attractions remain convenient and easy to do.
7. Air quality, carbon emissions	Uncertain	There is a risk of increased carbon emissions from increased mileage of vehicles enabled by new capacity that the proposal could deliver. The extent and range of potential interventions to add capacity along the corridor could be substantial and is likely to lead to inducement of traffic, hence the red rating. Given the proposals are linked, to an extent, with local development

		delivery, it is challenging to discern the effect of the proposal from the effect of increased travel demand due to development generated population growth in the area.
8. Public transport	Positive	The District has previously identified the potential for new and improved bus service routes through part of the corridor to better link towns in the District. Improvements to the performance of the highway corridor for journeys could include aiming to improve the reliability and time it takes to travel by bus, which could in turn support the viability of new future services.
9. Active Travel	Positive	The District has previously identified the potential for new and improved cycling routes through part of the corridor to better link towns in the District. Improvements to the highway corridor for journeys could include aiming to improve the infrastructure available for cyclists to make longer distance journeys easier and safer, especially given the ability and range E-bikes now provide. At junctions along the route there could be potential to improve pedestrian crossing facilities to make journeys on foot easier.
10. Aviation	No effect	

11.61. **Alkham Valley Spitfire Way Junction**

11.62. Location: Folkestone and Hythe

11.63. Strategic aims:

- To ensure the junction can cater for local traffic between Hawkinge, Folkestone and Dover, whilst meeting the needs of Port-bound traffic resulting from diversions during traffic management events.
- To improve road safety and provide any necessary new pedestrian and cycle facilities as part of any junction improvements.

11.64. Status: The potential need for a scheme to improve the junction has been identified given assessment of long term traffic growth forecasts including associated with traffic from development across Dover and Folkestone and Hythe districts.

11.65. **What needs to happen?** Development of a scheme and its future delivery will be dependent on monitoring of the junction which will inform potential solutions, and the timescales required. A potential scheme for the junction needs to be considered alongside a wider objective to encourage traffic between Folkestone

and Dover to use the A20, which is designed for heavy volumes of traffic through the North Downs National Landscape area (formerly called an Area of Outstanding Natural Beauty), rather than the Alkham Valley Road.

11.66. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 30 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal has the potential to have a positive impact across a range of outcomes as it could improve a fairly complex set of junctions that will need to meet the demands of both local traffic and its growth, as well as its role in conveying managed traffic for the Port.

11.67. **What alternatives have we considered?** We have set out a series of other proposals which have the potential to have a positive impact on international traffic. However, these proposals do not provide a solution to all the drivers of traffic through the junction. Other drivers, including from development growth in the wider area, will impact future use of the junction and its performance. The proposal we have set out does not pre-determine any solution for the junction and provides the scope for considering the options and alternatives for ensuring the junction can perform effectively in the future.

11.68. **Catering for uncertainty / scenario planning.** There is uncertainty about whether other proposals which can impact on international traffic levels will be delivered, as well as whether development sites that would generate further traffic demand through the junction will be built. Conversely, need for works to the junction could be hastened if changes occur that increase traffic demand through the junction. The proposal caters for this uncertainty and will enable us to determine when or if any intervention is ultimately needed for the junction over time.

Table 30 – Assessment of impact of Alkham Valley Spitfire Way junction improvements on the LTP Outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	Positive	This proposal would make improvements to a busy road junction used by both local traffic and strategic traffic when it has to reroute due to closure of the Roundhill Tunnel as part of Dover TAP. The proposal would help to deliver improvements to the junction to make it operate more effectively and more safely helping to deliver Vision Zero and avoid disruptions arising from junction incidents. For example, the Alkham Valley Road junction with the A260 has experienced a cluster of slight and serious collisions in the last 5 years.
3. International traffic	Positive	The proposal would address a junction that is used as part of the re-routing strategy for Dover TAP, which is triggered by high volumes of international traffic. The junction, on the local road network, consequently, sees an increased use at times due to re-routing off the strategic network. Delivering improvements to the junction would help ensure it can better carry out this role for re-routing traffic and also facilitate the movement of local traffic (such as access to and from Hawkinge town) so that the disruption caused by re-routing international traffic is reduced.
4. International rail	No effect	
5. Network growth and resilience	Positive	The proposal would help improve the operation and capacity of a junction used as part of resilience measures for international traffic management. In addition, the junction provides an important local traffic function and sits in an area where routes from growth areas will merge. The District has identified the junction as a location for potential improvement to support growth. The proposal therefore supports the growth of Kent and the impact of rising demand.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	No effect	
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

11.69. **Gravesend local junctions**

11.70. Location: Gravesham

11.71. Strategic aims:

- To ensure the junctions for access to and from the A2 can accommodate the impact of local development and strategic changes to the road network, such as the Lower Thames Crossing.
- Where works occur, to deliver improvements to safety for all road users including better facilities for pedestrians and cyclists.

11.72. Status: The need for junction improvements was identified in our previous Local Transport Plan and long term our forecasts suggest there may still be a need to ensure the junctions do not become pinch points. This reflects that there will be significant changes to the road network along the A2 corridor and changes to the volume of vehicles through the junctions as new development and changes in travel patterns occur over time.

11.73. **What needs to happen?** KCC needs to evaluate the junctions and monitor their performance, to identify options that meet the strategic aims and other objectives that arise over the course of this work. Consideration needs to be given to phasing the works, taking account of the timeframe for delivering of the Lower Thames Crossing and any disruption that may cause in the area.

11.74. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 31 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal has the potential to have a positive impact across a range of outcomes as it could improve future performance of a series of heavily used junctions.

11.75. **What alternatives have we considered?** Given the proposal concerns multiple junctions and that these provide access to and from the A2 which is part of the Strategic Road Network, there is unlikely to be an alternative to addressing the junctions themselves. For example, it is unlikely that public transport, walking or cycling alternatives can provide a significant enough change to traffic through these junctions to remove the potential need for interventions in the future. This includes due to the changes in traffic that may arise due to a rising population and changes to the wider road network that may change traffic patterns. The proposal we have set out does not pre-determine any solution for the junction and provides the scope for considering the options and alternatives for ensuring the junction can perform effectively in the future.

11.76. **Catering for uncertainty / scenario planning.** There are a range of factors that can impact traffic through the junctions over the long term. These will

include the impact of general changes in travel demand due to aspects such as population change, travel behaviours and wider transport network changes. Changes that could occur also include the impact of development growth and the travel demand it generates, which will also affect the volume of vehicles using the junctions. The proposal we have set out does not pre-determine any solution for the junction and provides the scope for considering the options and alternatives, given uncertainty we have identified.

Table 31 – Assessment of impact of Gravesend local junctions improvements on the LTP Outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	Positive	The proposal could deliver improvements to the operation and safety at the busy junctions identified, which interface with the A2.
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	The proposal would add capacity into the network along a heavily used corridor, which would enable the local road network to function more effectively as traffic levels rise in the future due to growth across Kent as well as specific local growth in the area of the scheme.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Positive	All three junctions are in an existing air quality management area (AQMA) along the A2 trunk road and in close proximity to residential development to the north. Improvements reducing congestion should provide benefits in air quality.
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

11.77. **A282 (M25) Junction 1A capacity**

11.78. Location: Dartford – on approach to Dartford crossing over the Thames.

11.79. Strategic aims:

- To reduce the disruptive effect of the Dartford Crossing traffic and delays on local traffic in Dartford.
- Enable the A282 Junction 1a to fulfil its role for local movement on the A206, addressing severance caused by the Dartford Crossing approach.
- To reduce the incidences of congestion and therefore its contribution towards poor air quality.

11.80. Status: Recognised issue by National Highways with plans in development between the councils and National Highways, with some potential funding support from local development.

11.81. **What needs to happen?** The challenges are current, associated with existing cross-river traffic and the performance of the crossing. Options need to be developed for the design of works to achieve the strategic aims and full funding found to deliver them. The timing of the works needs to be carefully planned around the Lower Thames Crossing project's delivery programme.

11.82. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 32 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal has the potential to have a positive impact on some outcomes, as it can address a busy local junction that interfaces with the Strategic Road Network and can cause adverse traffic impacts on the town of Dartford.

11.83. **What alternatives have we considered?** We have set out in our plan a proposal for the delivery of a new crossing of the Thames – see the proposal Lower Thames Crossing. This proposal will provide a step-change in cross-Thames traffic capacity and reduce the burden of traffic on the Dartford crossing. Whilst this should help reduce some of the disruptive effect that its felt from the crossing traffic onto junction 1A, there could still be needed to ensure that the junction can better facilitate local traffic movements. This is because National Highways forecasts for the Lower Thames Crossing indicate that the Dartford crossing will remain heavily used.

11.84. There are no other alternatives that are likely to reduce the need for improvements to the junction and therefore our focus is on identifying what options there may be for interventions at the site.

11.85. **Catering for uncertainty / scenario planning.** The proposal is being made due to the established recognised need from the high volume of traffic resulting

in congestion and delays. The Lower Thames Crossing project, which has the potential to have the largest impact on traffic volumes along the A282, which impact on junction 1A performance, creates uncertainty due to its status at the time of writing – it does not have planning permission to be constructed and it will also need to be funded.

11.86. Although the status is uncertain, the impact of the Lower Thames Crossing on traffic at the Dartford Crossing has been clearly estimated within the Lower Thames Crossing Development Consent Order submission. This has enabled us to consider both scenarios of the Lower Thames Crossing either being delivered or not. We have also considered the impact of growth in the district and more widely in Kent, as this can add traffic demand to the junction and increase the risk of congestion. We have determined that in either scenario there remain risks that justifies us developing options for improving the junction's capacity and performance.

Table 32 – Assessment of impact of A282 (M25) Junction 1A junction capacity on the LTP Outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	The proposal will help to support future increases in local traffic if Dartford and wider Kent grows, and as international traffic grows. The proposal would seek to deliver improvements so that the junction operates better in the event of disruption, particularly associated with the Dartford crossing.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Positive	Currently, the areas around the Dartford crossing experience high volumes of traffic which can be slow moving or worse, at stand still during disruptions. The volume of traffic generates adverse impacts on local air quality. The proposal will seek to improve operation of the junction to facilitate the movement of local traffic. This would reduce the volume of traffic experiencing disruption in this location and could help contribute positively to local air quality in the Dartford area. There may also be some benefits in reduction of noise.
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

11.87. **M25 Junction 3 enhancements**

11.88. Location: Sevenoaks – Swanley interchange – junction with the M20 and A20.

11.89. Strategic aims:

- To ensure the junction avoids delays for the Strategic and Local Road Networks, especially at times of incident at the Dartford Crossing.
- To ensure the junction can serve travel from the existing community and increased travel demand from local growth sites.

11.90. Status: The junction has been identified as a requiring potential improvement to mitigate the effects of growth arising from development allocated in the Sevenoaks Local Plan. We understand that National Highways agree with those conclusions. We are not aware of any proposals in development or planned for delivery by National Highways at the time of writing. The junction lies in close proximity to the town of Swanley and the junction can affect town centre traffic flows to and from the M25. The junction can also be affected by the traffic approach and delays and queues that build up for northbound crossings of the Thames through the Dartford tunnel. The junction also interfaces with the A20 - a busy local road corridor which provides an important north south route from mid Kent towards north Kent and the London area, alternative to the motorway network.

11.91. **What needs to happen?** National Highways needs to establish the capacity shortfall at Junction 3, including working with promotors of local growth sites to determine potential options to address constraints. As a short-term measure, the lane markings need to be reviewed and improved.

11.92. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 33 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal has the potential to have a positive impact on some outcomes by improving how the junction caters for its users.

11.93. **What alternatives have we considered?** The proposal has been made given existing performance of the junction and the forecast of potential pressure on the junction driven by Local Plan development delivery within Sevenoaks. In respect of Local Plan development impacts, we are not responsible for considering alternatives as part of Local Plan processes, however these will have been considered by the District including in consultation with transport organisations such as us and National Highways. Our plan also covers proposals which may have some impact on performance of the junction, such as the Lower Thames Crossing which may reduce traffic heading onto the junction for access to the Dartford crossing on the M25, and which may therefore reduce queuing and delay which can affect junction 3 performance. We have also identified options for the junction itself which are relevant to the further aspect of catering for uncertainty.

11.94. **Catering for uncertainty / scenario planning.** The proposal has been identified and caters for uncertainty in the following ways. There is uncertainty as to whether the Lower Thames Crossing will be delivered. Given this, it is prudent to identify the prospect of improvements to the junction to help it better perform with M25 traffic including those volumes headed towards the Dartford crossing of the Thames. Alongside this uncertainty about a proposal which may improve conditions at the junction, we also acknowledge the uncertainty associated with the delivery of local development. Some development is proposed close to the junction and could have a more direct effect on junction performance than other development across the district and beyond.

11.95. Given these uncertainties, our proposal has identified that there are smaller scale improvements which would be delivered at lower cost and risk which may provide some improvements whilst planning can cater for increased certainty that may come associated with other proposals in the LTP and development delivery of sites in the area.

Table 33 – Assessment of impact of M25 Junction 3 enhancements on the LTP Outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	Positive	The proposal may be capable of providing improved safety through improved lane marking and directional guidance and signage at the junction as well as the prospect of improving foot paths and crossing points given localised development near the junction may increase non-vehicle movements trying to negotiate the junction.
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	The proposal would support delivery of resilience to the local road network by providing a new access onto the strategic road network to facilitate longer distance journeys and easier access to Canterbury City. This would help to reduce pressure on the current local road network and existing junctions onto the A2 and support the long term growth of the southern and eastern areas of Canterbury City.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Uncertain	Due to the uncertainty about the extent of works that may be required to the junction, as

		discussed in 11.94, it is uncertain whether the improvements would be likely to cause a significant change in journey volumes and journey distances and therefore what effect may occur on vehicle emissions.
8. Public transport	No effect	
9. Active Travel	Positive	The proposal may have the potential to improve the availability of footpaths by improving existing fragmented routes on the junction and their crossing points. Doing so could have a positive impact on active travel – especially for any demand generated from localised developments destined for Swanley town centre.
10. Aviation	No effect	

11.96. **South Canterbury A2 junction access enhancements**

11.97. Location: Canterbury, between A2 Wincheap Interchange and A2 Bridge Interchange.

11.98. Strategic aims:

- To improve journey times and reduce delays from congestion by enabling more direct access to the A2 from southern Canterbury.
- To reduce the requirement for traffic joining the A2 London-bound and leaving the A2 coast-bound to use less suitable local rural roads and undertake multiple junction movements.
- To support traffic from the Strategic Road Network to access public transport for onward journeys into historic city of Canterbury.
- To support growth in the Canterbury area by reducing the traffic burden on the existing junctions which lack all-movement purpose-built on and off slips.

11.99. Status: The scheme needs to be designed and funded for delivery, with necessary approvals from National Highways. The scheme needs to provide an effective link to the local road network to achieve all the intended benefits.

11.100. **What needs to happen?** The scheme needs to be designed and funded for delivery, with necessary approvals from National Highways. The scheme needs to provide an effective link to the local road network to achieve all the intended benefits.

11.101. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 34 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal has the potential to have a positive

impact on a variety of outcomes by improving the way traffic routes to and from the city of Canterbury.

11.102. **What alternatives have we considered?** The proposal has been made a requirement of a development site's delivery by the district planning authority. The onus on considering alternatives does not therefore lie with us. Given the proposal is expected to be delivered to enable completion of a large development site in south Canterbury, the alternative that has been considered in the past was whether development could take place elsewhere in the District. The district planning authority will have considered this as part of the development of its Local Plan that ultimately made the site allocation and transport mitigations including the improved junction access to and from the A2.

11.103. **Catering for uncertainty / scenario planning.** The main uncertainty concerning the proposal relates to the delivery of the dependent development site which is obliged to deliver the new junction. In the event the development can occur without a need for the junction, or if the development does not get delivered, the need for the proposal will likely be affected. The case for the junction to deliver wider local traffic improvements in Canterbury would need to be considered and it determined whether the proposal still needs to be developed towards delivery.

Table 34 – Assessment of impact of A2 South Canterbury junction access enhancements on the LTP Outcomes

Outcome	Impact	Rationale
11. Network maintenance & condition	No effect	
12. Road Safety	Positive	The proposal would enable some or all turning movements at a new junction; providing a more direct, easier to follow route onto the trunk road network; reducing the unnecessary use of the local road network for circuitous routes along country lanes to access the A2 which may provide some safety benefits.
13. International traffic	No effect	
14. International rail	No effect	
15. Network growth and resilience	Positive	The proposal would support delivery of resilience to the local road network by providing a new access onto the strategic road network to facilitate longer distance journeys and easier access to Canterbury City. This would help to reduce pressure on the current local road network and existing junctions onto the A2 and support the long term growth of the southern and eastern areas of Canterbury City.

16. Heritage and environment	Positive	Improvements to this junction would improve journeys to access and experience Kent's historic and natural environments in the area. KCC believes that a key part of the efforts to get Canterbury City traffic out of the town centre and onto the orbital roads like the A2 is because of the high value heritage and visitor industry in the city centre, with the cathedral being a Unesco World Heritage Site, for example.
17. Air quality, carbon emissions	Positive	The proposal, by providing a route onto the strategic road network in close proximity to the focuses of growth in Canterbury City, could help to reduce the volume of traffic routing on the local network to access the A2. This could have positive impacts on avoiding deterioration in local air quality due to increasing traffic. There may also be some benefits in reduction of noise.
18. Public transport	Positive	The proposal could help facilitate a 1,000 space Park & Ride scheme proposed by the District authority, which could reduce visitors driving into the city centre while at the same time further promote public transport use.
19. Active Travel	No effect	
20. Aviation	No effect	

11.104. **M25-M26-A21 east-facing slips**

11.105. Location: Sevenoaks District, north west of Sevenoaks town at M25 Junction 5.

11.106. Strategic aims:

- To reduce traffic volumes along the A25 associated with west to east movements from the M25 to the M26 (for the M20), with requisite improvements to road safety, air quality and junction performance given significant growth along this corridor.
- To remove heavy traffic from inappropriate rural roads through villages such as Seal, Kemsing, Otford and Halstead.

11.107. Status: Options for delivery of the scheme have previously been explored and impacts on land ownership around the junction have been obstacles to its progression. The scheme is not in the National Highways Road Investment Strategy.

11.108. **What needs to happen?** Given past work and lack of progress, it is proposed that it is kept under review to identify any new imperative and critical new drivers for the scheme's case that would justify National Highways reconsidering options.

11.109. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 35 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal has the potential to have a positive impact on a variety of outcomes by improving the way traffic routes round and through Sevenoaks on the local road network and Strategic Road Network.

11.110. **What alternatives have we considered?** The issues specifically concern the routing of traffic due to constraints associated with junction 5 of the M25 and its interface with the A21 and M26. All these highways carry high volumes of traffic and therefore constraints in the range of movements between them result in high volumes having to use more circuitous routes that increase the burden of traffic in areas along them. Given the adjacent junctions of the M25 have the full range of movements and can already be used by traffic, but are distant from junction 5 and its locale, the other M25 junctions do not provide realistic alternatives for delivering a change in traffic volumes through junction 5 and across the A21 and M26.

11.111. **Catering for uncertainty / scenario planning.** There has been an established need for intervention at the junction for several years – our former Local Transport Plan and the TfSE Strategic Investment Plan set out proposals for improving the junction to enable a wider range of traffic movements. Given the strategic role of the M25 and the volumes of traffic that use it, variances in future traffic levels are unlikely to be of a sufficient scale such that the impacts of traffic having to route through Sevenoaks are made insignificant. In general, long term forecasts for traffic see an increasing use of the highway network due to rising population and associated with long term economic activity and growth.

11.112. Given these uncertainties, the fundamental issue at junction 5 and the negative impacts it creates on the network are likely to remain. Whether traffic patterns and volumes change to an extent that the case for intervening to upgrade junction 5 improves remains to be seen. This is why the proposal we have established is to keep the junction and its impacts under review.

Table 35 – Assessment of impact of M25-M26-A21 east-facing slips on the LTP Outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	Positive	This proposal would address a constraint in the strategic road network that leads to high volumes of traffic, which should ideally route along the strategic network, instead route along the local road network. The proposal would entail new connections to enable southbound and northbound traffic on the M25 to head east on the M26, instead of through Sevenoaks. By ensuring strategic traffic can use the strategic network, the burden of use of the local network

		is reduced, making the maintenance requirements of the local road network more in keeping with its designed purpose.
2. Road Safety	Positive	This proposal would remove high traffic volumes from the A25 local road route through populated areas of Sevenoaks; instead providing a more direct route onto the trunk road network. This should lead to road safety benefits on our local road network.
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	This proposal enhances route options on the strategic road network by providing more turning movements at this key interchange. This in turn increases traffic dispersion on the network; improving network resilience.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Positive	The proposal would enable strategic traffic to remain on the strategic road network and hence avoid routing through the built up area of Sevenoaks. A reduction in traffic through Sevenoaks could help to reduce the volume of vehicle emissions it experiences and air pollution arising from those. There may also be some benefits in reduction of noise.
8. Public transport	Positive	A reduction in strategic traffic from the local road network through Sevenoaks could be beneficial for road-based public transport given congestion and queuing may making journeys quicker or more reliable.
9. Active Travel	No effect	
10. Aviation	No effect	

11.113. **A21 enhancements**

11.114. Location: Tunbridge Wells Borough, A21 route between Pembury and Lamberhurst.

11.115. Strategic aims:

- To reduce traffic congestion and delays and ensure the route can accommodate growth within southern Kent and East Sussex.

11.116. Status: Pinch points and potential options along the corridor have been identified. The route has been proposed for interventions within the Transport

for the South East Strategic Investment Plan (but no detailed scheme proposals or funding exists for the all the interventions along the route.

11.117. **What needs to happen?** There needs to be a clear plan by National Highways for how planning and optioneering can take place, setting a clear timescale for progressing the scheme through the Road Investment Strategy. As the only trunk road route from Tunbridge Wells towards Hastings, this scheme would enhance the A21 Tonbridge to Pembury dualling that opened in September 2017.

11.118. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 36 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal has the potential to have a positive impact on a variety of outcomes by providing new capacity, improved junction layouts and modern infrastructure on a busy section of the Strategic Road Network linking southern Kent communities into East Sussex.

11.119. **What alternatives have we considered?** The stretch of the A21 that this proposal concerns is in a relatively isolated area in respect of whether there are other major transport links providing a viable alternative for journeys. Furthermore, due to the lack of other major routes, growth in the surrounding area may generate traffic that is likely to end up on the A21 and accessing it at the junctions concerned. There are therefore considered to be no substantial alternatives to the proposal, however it is acknowledged that the extent of works that may be need to the A21 needs to be subject to a more detailed assessment to develop a range of options.

11.120. **Catering for uncertainty / scenario planning.** On a similar basis to the preceding paragraph, the extent to which uncertainty and varied scenarios may have an impact on the need for enhancements to the A21 will be affected by the lack of viable alternatives for the routing of high volumes of traffic. Furthermore, there will be uncertainty related to whether growth proposals in the surrounding districts take place which would be likely to generate highways trips that route on the A21 and use the junctions. Ultimately it will be the responsibility of National Highways to factor in uncertainty and a range of scenarios to determine the timescales for when interventions may be needed and also what shape those intervention options may take.

Table 36 – Assessment of impact of A21 enhancements on the LTP Outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	Positive	This proposal includes three miles of upgrade from single to dual carriageway for the A21 between Kipping's Cross and Forstal Farm

		roundabouts, which could provide safety benefits by improving the layout of these busy junctions and the highway.
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	The proposal would deliver capacity improvements to a pinch-point on the strategic network and where it interfaces with the local road network connections towards Paddock Wood, Tunbridge Wells / Tonbridge and villages and towns in rural Kent such as Goudhurst and Lamberhurst. The proposal would ensure that this pinch-point can accommodate growing traffic in the future from growth across Kent, into East Sussex and specific nearby growth in the aforementioned locations.
6. Heritage and environment	Positive	The proposal would address a pinch-point on the strategic network on a corridor into the heart of rural Kent and where a cluster of popular natural and heritage attractions are, such as Bedgebury Pinetum, Scotney Castle, Bewl Water, and the wider High Weald AONB.
7. Air quality, carbon emissions	No effect	
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

11.121. **Sandwich bypass improvements**

11.122. Location: Dover

11.123. Strategic aims:

- To ensure the junctions along the bypass can accommodate the impact of local development and its effect on growing traffic volumes.
- To ensure that the corridor as a whole has sufficient capacity to realise the benefits of any junction upgrades and to provide reliable and safe journeys along its length.

11.124. Status: The need for junction improvements has been identified following assessment of long-term traffic growth forecasts associated with traffic from development across Dover. Wider corridor capacity improvements have been identified as potential options to address this but an overall scheme for the bypass corridor and its junctions has not yet been designed.

11.125. **What needs to happen?** Surveys and computer models of the junctions and stretch of road are required to determine the extent of works needed. The delivery and funding of the schemes will be influenced by the timing of consented development at Discovery Park, which would deliver improvements for the A256-A257 junction.

11.126. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 37 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal has the potential to have a positive impact on a variety of outcomes by providing new capacity, improved junction layouts and modern infrastructure on a busy section of the road network, however it may have an adverse impact on carbon emissions – this impact can be established if the proposal is developed.

11.127. **What alternatives have we considered?** The stretch of the A256 that this proposal concerns is in a relatively isolated area in respect of whether there are other major transport links providing a viable alternative for journeys. Furthermore, due to the lack of other major routes, growth in the surrounding area may generate traffic that is likely to end up on the A256 and accessing it at the junctions concerned. There are therefore considered to be no substantial alternatives to the proposal, however it is acknowledged that the extent of works that may be need to the A256 needs to be subject to a more detailed assessment to develop a range of options.

11.128. **Catering for uncertainty / scenario planning.** On a similar basis to the preceding paragraph, the extent to which uncertainty and varied scenarios may have an impact on the need for enhancements to the A256 will be affected by the lack of viable alternatives for the routing of high volumes of traffic. Furthermore, there will be uncertainty related to whether growth proposals in the surrounding districts take place which would be likely to generate highways trips that route on the A256 and use the junctions. Conversely there is the potential for even higher levels of growth in the corridor that could come forward if the future of some significant brownfield sites becomes clearer, such as Manston Airport. If funding is secured to by us to develop the proposal, we will aim to factor in uncertainty and a range of scenarios to determine the timescales for when interventions may be needed and also what shape those intervention options may take.

Table 37 – Assessment of impact of Sandwich bypass improvements

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	Positive	The proposal could deliver improvements to the operation and safety at busy junctions and along the A256 route itself by establishing new and

		upgraded infrastructure.
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	The proposal would add capacity into the network which would help it to function effectively as traffic levels rise in the future due to growth across Kent and specific local growth in the area of the proposal.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Uncertain	There is a risk of increased carbon emissions from increased mileage of vehicles enabled by new capacity that the proposal could deliver - it will depend on the extent of change to the bypass that is necessary to ensure it performs given rising demand for the route. Given the proposals are linked, to an extent, with local development delivery, it is challenging to discern the effect of the proposal from the effect of increased travel demand due to development generated population growth in the area.
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

12. Evaluation of the proposals for the Local Transport Plan against outcome 6

12.1. Policy outcome 6 states that *Journeys to access and experience Kent's historic and natural environments are improved*.

12.2. We have set an objective concerning delivery of this outcome: Policy Objective 6A - *Proposals are clearly evidenced in terms of their contribution to providing new, quicker, or more inclusive access to historic and natural environment destinations in the county, with proposals targeting access to such locations where appropriate*.

12.3. Many of our proposals have been determined to make a positive contribution to this outcome. The value of Kent's historic and natural environments is substantial, both to the quality of life for residents but also for the economy of Kent and the visitors attracted to enjoy these aspects.

12.4. We have indicated in our assessment of the outcomes of the proposals throughout this evidence base those that make a positive contribution. The

proposals are listed in Table 38. We have provided further commentary to demonstrate with examples why these proposals are likely to have a positive effect on realising this desired outcome of our Plan.

Table 38 - Proposals with a positive impact on accessing and experiencing Kent's historic and natural environments (Outcome 6)

Network-wide strategic proposals	Commentary
Proposals concerning the local transport network include: - North Thanet Link - Sandwich bypass - A228 corridor between Medway and Tunbridge Wells - Kent Cycling and Walking Infrastructure Plan - Public Rights of Way improvements	The schemes identified provide new connectivity to notable areas that have relatively high volumes of visitor trips due to the heritage, natural environment or both types of assets available. For example, the North Thanet Link and Sandwich proposals would improve performance of the road network which is essential for enabling seasonal and event traffic associated with attractions such as the heritage coast, the Turner Contemporary art gallery, or the famous Royal St George's Golf Club, amongst others. The A228 corridor in contrast, provides a similar role in mid to west Kent, connecting locations with nationally recognised heritage such as the spa town of Royal Tunbridge Wells, alongside rural heritage attractions such as the Hop Farm. Improved walking, cycling and public right of way networks provide the essential short distance connections that enable residents as well as visitors to be able to see the sights in comfort and safely, and in a way which avoids complete reliance on use of vehicles that create noise and pollution in sensitive settings such as historic town centres.
Proposals concerning the strategic trunk road network - Lower Thames Crossing - South of Canterbury access to A2 - International traffic management - A21 Kipping's Cross	The Lower Thames Crossing is a major change to the way in which journeys can be made to Kent in the future. By removing the bottleneck of the Dartford crossing and the lack of resilience and delays that can be experienced, visitors are likely to have more confidence and more reliable journeys in choosing to come and enjoy the attractions in Kent, whilst offering Kent's own residents' easier routes to enjoy what is on offer in Kent and the wider region. The Canterbury scheme could have a positive impact on reducing the volume of traffic on the historic city wall ring road, helping to provide an environment in which visitors and residents are better able to enjoy the heritage preserved in the city, a UNESCO world heritage site. The A21 Kipping's Cross scheme can provide improved access to Kent's rural heritage and attractions ranging from Scotney Castle to the Pinetum

	at Bedgebury, amongst other locations such as the popular Bewl Water for walking, cycling and water sport leisure activities.
Proposals concerning the public transport network - Maidstone mainline journey time improvements - Dover 7 Folkestone High Speed journey time improvements - International rail passenger services for Kent - Sturry and Canterbury West corridor improvements - Local services - Bus Service Improvement Plan - Mobility as a Service - Mobility Hubs	The rail proposals are important for providing significantly better access for visitors from within Kent and more widely to Kent's rural attractions. Kent's villages are comparatively well served by the rail network in terms of having stations, however they have unattractive service frequencies that make reliance on private transport more likely, bringing with it the negative impact of parking pressure on small rural communities. The rail network also connects the Kent coast to the wider region very well, given the range of routes and potential journey times such as on High Speed 1. However, there are opportunities to further reduce journey times which would give a further boost to Kent's coastal attractions and economy in attracting visitors. Our Bus Service Improvement Plan and proposals for exploring the future applicability of improved choice of travel methods and ways to access them can also have a positive impact. Bus services are low cost for users, and shared transport services remove the upfront sunk cost of transport ownership such as bicycles, or vehicles. They can therefore be an important means to enabling lower income residents and visitors to be able to take journeys in the county to enjoy heritage attractions and Kent's natural environment by travelling to established country parks or protected areas and their trails such as in the Kent Downs and High Weald National Landscapes.

13. Evaluation of the proposals for the Local Transport Plan against outcome 7

13.1. Policy Outcome 7 states the aim that *road-side air quality improves as decarbonisation of travel accelerates, contributing towards the pursuit of carbon budget targets and net zero in 2050.*

13.2. We have set three objectives for policy outcome 7: Policy Outcome 7A) *Reduce the volume of carbon dioxide equivalent emissions entering the atmosphere associated with surface transport activity on the KCC managed highway network by an amount greater than our forecast "business as usual" scenario. This means achieving a greater fall than those currently forecast of 9% by 2027, 19% by 2032 and 29% by 2037*.

13.3. Policy Outcome 7B) *No area in Kent is left behind by the revolution in electric motoring, with charging infrastructure deployed close to residential areas to reduce barriers to adoption*.

13.4. Policy Outcome 7C) *Proposals are clearly evidenced in terms of their contribution to providing lower emissions from transport in Air Quality Management Areas in the county*.

13.5. The main proposal we have identified to deliver lower emissions and cleaner air in Kent is covered below, however please also refer to section 5 which covers which proposals in our Local Transport Plan are likely to have a positive impact on carbon emissions (and thereby potentially air quality too), and whether any proposals may weigh against the objectives of this outcome.

13.6. **Supporting the shift to electric vehicles through new charging points**

13.7. Location: Countywide

13.8. Strategic aims:

- Improving access to Electric Vehicle Charging Points across rural and urban areas, particularly areas where the market is least likely to provide and where inequality to access could arise.
- To support, and potentially accelerate, the transition to electric vehicles to fulfil the national Decarbonising Transport strategy.
- To support delivery of better air quality across Kent by providing the charging infrastructure for vehicles with zero tailpipe emissions.

13.9. Status: KCC has been allocated funding by government of c. £12m. The funding has not yet been received and delivery of the on-street electric vehicle charging sockets has not yet begun.

13.10. **What needs to happen?** We will deliver a long-term programme of on street electric vehicle charging sockets once the required funding is in place and procurement completed, working with private sector charge point operators to ensure satisfactory delivery across our highway estate. We will monitor and engage with the market as new technology and opportunities arise.

13.11. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 39 is an assessment of the effect this proposal could have on the outcomes of the plan. This proposal has the potential to have a positive impact across a range of outcomes by supporting the national strategy to electrify vehicle fleets to decarbonise transport.

13.12. **What alternatives have we considered?** We have considered further ways to reduce emissions from the transport system. Some of those alternatives we have already acted on – for example the electrification of the Fastrack bus networks in Kent Thameside and Dover, given we have influence over those networks as the commissioning authority. Also, School Streets – we have locations with School Streets in Kent and more could be possible – we have already published a clear framework to help local communities explore the potential for school streets with us to get them established.

13.13. We considered the option of mobility credits as we set out in options in the 2023 Emerging Local Transport Plan consultation. Mobility credits could be designed to encourage scrapping of vehicles with poor emissions ratings. For the time being we have rejected this alternative because a successful scheme would rely on substantial government funding to be of a sufficiently large scale and sustained so that it could guarantee a change in transport use, resulting in lower emissions. This is in contrast to the option of funding local electric vehicle charging infrastructure for which the government does make funding available for and which targets the most preferred and highest emitting form of transport in the county – private vehicles.

13.14. We have considered the option of E-cargo bikes that respondents to the 2023 Emerging Local Transport Plan consultation proposed, as a further way to reduce carbon emissions from transport. We have set out proposals to improve cycling networks across the county and these would aid in the use of E-cargo bikes. Use of E-cargo bikes is ultimately a determination to be made by businesses and their logistics supply chains. Our efforts will help to provide a network that creates the opportunity for E-cargo bikes, however we cannot rely on E-cargo bike use as an alternative to our proposal to support electric vehicle infrastructure. That infrastructure will be of importance to businesses and logistics companies who can use zero emission electric light goods vehicles to make goods deliveries.

13.15. We have considered the option of reduced speed limits that respondents to the 2023 Emerging Local Transport Plan consultation proposed. There is experience more widely in the UK which has demonstrated that a blanket approach is not appropriate albeit the reasoning has not been on the basis of reducing emissions. A blanket approach does not strike a balance with the requirement for the expeditious movement of people and goods on the highways. We already have a clear policy concerning lowering speed limits and these are dealt with based on a broad consideration including road safety and community support.

13.16. The implementation of a widespread change to speed limits in towns would take time, including amendment of the Traffic Regulation Orders for roads and changes to signage and enforcement. The effect on emissions is likely to be small, as most mileage is on the inter-urban road network connecting towns including the high speed A and M roads. Lastly, the small effect on emissions would erode over time due to the increased portion of the vehicle fleet that is zero emission. Given these reasons, we have not considered further lowering speed limits in towns to address carbon emissions, however our existing policies and approach to speed limits based on wider considerations including road safety amongst other things remains, working on a case by case basis.

13.17. **Catering for uncertainty / scenario planning.** The approach to supporting the transition of vehicles to electric motors is taking place within a global transition. All mass market vehicle manufacturers have introduced a wide range of electric vehicles and there is now a substantial used vehicle market too in the UK. The government has put in legislation electric vehicle sales mandates which will drive the transition over time. Although there is the prospect that alternative fuels may have a role in future vehicle operations, it is likely that the mass market investment into further improving electric vehicles and specifically battery storage and range capabilities means electric vehicle charging infrastructure will be needed for the long term.

13.18. Due to the sales mandates in legislation, it also means that scenarios in which there could be decreased vehicle use due to perhaps lower economic growth or decline, or shifts in behaviour, will be marginal in comparison to the need for those remaining vehicle users that will need charging infrastructure. Given these uncertainties, it is clear that this proposal remains necessary for setting Kent up for the long term use of zero emission vehicles.

Table 39 - Assessment of impact of Local Electric Vehicle Infrastructure on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	Negative	Currently, electric vehicles are heavier than their comparable internal combustion engine equivalents. This means increased weight and stress on road surfaces, which could increase the rate of its deterioration. It is possible that as battery technologies improve, the weight they add to vehicles falls, making them more comparable to conventional internal combustion vehicle weights.
2. Road Safety	No effect	
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	The vehicle fleet in England is set to transition to fully electric vehicles over time, as part of the national strategy for decarbonising transport. This proposal would have a positive impact on the innovation towards electric vehicles and future proof Kent's highways network for use of such vehicles by anyone travelling in or through the county, by providing access to public charging points countywide.
6. Heritage and environment	Positive	As the vehicle fleet in the country shifts towards electric vehicles, the ability of users to be able to travel with confidence to attractions in the county will be aided by having widespread public charging points available. This proposal will therefore help to make a positive contribution to this outcome, by providing widespread provision of charging sockets, including where the market may be less prone to acting on its own commercial basis.
7. Air quality, carbon emissions	Positive	Electric vehicles are one of the most effective means to reducing carbon emissions and improving air pollution due to the eradication of at tailpipe emissions and the added prospect of electricity supply to come from renewables. The proposal, by improving the provision of charging infrastructure across the county, would therefore make a positive contribution to achieving this outcome.
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	

14. Evaluation of the proposals for the Local Transport Plan against outcome 8

14.1. Policy Outcome 8 states the aim for *a growing public transport system supported by dedicated infrastructure to attract increased ridership, helping operators to invest in and provide better services.*

14.2. We have set two objectives for policy outcome 8: Policy Objective 8A) *We will aim to obtain further funding to deliver the outcomes of our Bus Service Improvement Plan (or its successor) beyond its current horizon of 2024/25. We will ensure that our Local Transport Plan proposals are clearly evidenced in terms of their contribution towards achieving our Bus Service Improvement Plan*.

14.3. Policy Objective 8B): *We will identify and support industry delivery of priority railway stations for accessibility improvements and route improvements to reduce journey times and improve reliability*.

14.4. The proposals we have to deliver on this outcome are detailed below.

14.5. **Kent's Bus Service Improvement Plan**

14.6. Location: Countywide

14.7. The strategic aims set out below are a re-iteration of those established in the KCC Bus Service Improvement Plan which we have begun delivering with funding from government:

- To place the customer at the heart of everything we do through an established passenger charter, to help us work with operators on customer's behalf.
- Put buses at the centre of decision making in respect of new road schemes, planning and developments, and support bus operators and services in KCC's role as the highway authority.
- To improve the quality and accessibility of public transport information and services, including flexible and better value ticketing options.
- Consider and embrace innovative transport solutions such as Demand Responsive Transport and Mobility as a Service (MaaS) models as possible alternatives to the private car, make use of Bus Rapid Transit (BRT) where appropriate, and continue to support the community transport sector in Kent.

14.8. Status: KCC published its Bus Service Improvement Plan in 2021 and since 2023 has been implementing its delivery with initial government funding totalling £30m. Details of KCC's Bus Service Improvement Plan are available

on the KCC website[16]. The KCC Plan sought £220m of funding. Currently, there is no clarity on what further funding government will make available for bus services in Kent and the wider country from April 2025 onwards.

14.9. **What needs to happen?** The KCC BSIP needs to be further funded by government beyond March 2025. We have set out a detailed program of investment into all aspects of bus services, working in partnership with local authorities and the bus operators. The total estimated cost of those improvements over the period of 2025/26 to 2028/29 is £240m – equivalent to £60m per year. Stabilising and improving bus networks across the county will need KCC to demonstrate that buses are a strategic priority on all parts of its road network, to help operators in improving journey times, service reliability and reducing the cost of their operations.

14.10. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 39 is an assessment of the effect this proposal could have on the outcomes of the plan. This Bus Service Improvement Plan can have a widespread positive impact on our desired outcomes of our Local Transport Plan.

14.11. **What alternatives have we considered?** We have not needed to consider alternatives as the requirement for a Bus Service Improvement Plan was established by the government through its National Bus Strategy. Our Bus Service Improvement Plan has set out and we have begun delivering on a wide range of its initiatives designed to improve bus journeys in Kent.

14.12. **Catering for uncertainty / scenario planning.** Bus networks are an integral part of the public transport mix, not just in Kent but nationally. The government's National Bus Strategy sought to address the bus industry following the effect of the Covid-19 pandemic, which had a significant impact on bus network use and the viability of services. The thrust of our proposal is to ensure there is sustained and sufficient funding from government of our Bus Service Improvement Plan so that the county's network can be improved over the long term and hence provide more certainty about what bus users will be able to rely on in the future.

[16] See https://www.kent.gov.uk/about-the-council/strategies-and-policies/service-specific-policies/roads-paths-and-transport-policies/bus-service-improvement-plan-and-enhanced-partnership/bus-service-improvement-plan or search 'Kent bus service improvement plan'.

Table 40 - Assessment of impact of the Bus Service Improvement Plan on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	KCC's Bus Service Improvement Plan (BSIP) will involve a broad package of measures to put buses and bus passengers at the heart of the transport and development planning process, delivering a transport network that is future proofed for growth and innovation, and aiming to reduce the risk of congestion due to development.
6. Heritage and environment	Positive	KCC's BSIP will improve bus journeys which is likely to make it easier for people to access and experience Kent's historic and heritage attractions and natural environments such as parks and the coast.
7. Air quality, carbon emissions	Positive	KCC's BSIP would improve bus journeys which should help attract further patronage to public transport, as well as promoting sustainable travel modes. Both should encourage improvements in road-side air quality, as decarbonisation of travel accelerates, contributing towards the pursuit of carbon budget targets and net zero in 2050.
8. Public transport	Positive	KCC's BSIP would improve bus journeys which will attract patronage to public transport, involving measures such as bus priority schemes, fares schemes, travel information and ticketing. This will promote a growing public transport system supported by dedicated infrastructure to attract increased ridership, helping operators to invest in and provide better services.
9. Active Travel	Positive	KCC's BSIP delivery would make a significant improvement to the attractiveness and ease of using the bus network. Using a bus does, by its nature, entail increased levels of walking as users walk to and from bus stops rather than use private vehicles for door to door trips. If bus priority schemes such as bus lanes are delivered to improve the reliability and speed of bus journeys, they can also provide space on

		the road that cyclists can feel more comfortable using.
10. Aviation	No effect	

14.13. **Kent Thameside Fastrack**

14.14. Location: Gravesham and Dartford Boroughs

14.15. Strategic aims

- To build on the success of the current Fastrack network by identifying how it can serve communities in the future by delivering bus transit oriented development along new routes.
- To increase access to fast, reliable and zero carbon (at the tailpipe) public transport.

14.16. Status: Existing network expansion plans are in delivery, such as the new Bean road tunnels to link Fastrack from the eastern quarry development area direct to Bluewater. Preferred options for where to extend the Fastrack network beyond the existing core network area are yet to be developed.

14.17. **What needs to happen?** We will develop plans for where the Fastrack network in north Kent could be extended based on an assessment of corridor options and their relation to local growth proposals and make the case for funding to deliver our preferred option(s).

14.18. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 41 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal for growth of the Thameside Fastrack network can have a positive impact on a number of outcomes.

14.19. **What alternatives have we considered?** This proposal is at an early stage, and alternatives will be considered at any necessary stage. Nonetheless, there is an established Fastrack network in situ in Thameside and hence extending it is likely to be a leading option for enabling new locations in the area to be able to easily access and use the network for connectivity across the Gravesham and Dartford areas.

14.20. **Catering for uncertainty / scenario planning.** This proposal is at an early stage. As part of the development of the proposal, a range of scenarios can be considered to inform how the network can grow over time and what the best locations to serve could be. These considerations will be based on potential ranges of demand for new Fastrack network connections.

Table 41 - Assessment of impact of the Kent Thameside Fastrack proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	KCC's Thameside Fastrack network extension plan will help to deliver a public transport network that is future-proofed for growth, integrated into any new Mobility as a Service pilot, and seeking to integrate with new land uses for an infrastructure-first approach to reduce the risk of highways and public transport congestion.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Positive	KCC's Thameside Fastrack network growth will attract further patronage to public transport, as well as promoting sustainable travel modes through connections to rail stations and other bus services. Both should encourage improvements in road-side air quality, as Fastrack will soon be zero emission at the tailpipe due to electric buses, contributing towards the pursuit of carbon budget targets and net zero in 2050. There may also be some benefits in reduction of noise.
8. Public transport	Positive	KCC's Thameside Fastrack network growth will attract further patronage to public transport by providing fast and reliable journeys. This will promote a growing public transport system supported by dedicated infrastructure to attract increased ridership, helping operators to invest in and provide better services.
9. Active Travel	Positive	The delivery of dedicated new highway for Thameside Fastrack will also provide footpaths and cycle lanes, making a positive contribution to public health due to increasing numbers of people using a growing network of dedicated walking and cycling infrastructure.
10. Aviation	No effect	

14.21. **Kent Dover Fastrack**

14.22. Location: Dover

14.23. Strategic aims:

- To serve the Whitfield Urban Extension and connect it to Dover town centre and railway station.
- To increase access to fast, reliable and zero carbon (at the tailpipe) public transport.

14.24. Status: The initial Dover Fastrack network is under construction and will be operating by 2025. It will operate with an all-electric fleet of buses. The scheme has been funded by the government and Dover District Council.

14.25. **What needs to happen?** We will develop and seek to deliver network extensions of Dover Fastrack by working with Dover District Council and developers to ensure Fastrack access is at the heart of the Whitfield urban extension and future local development that it could serve where the opportunity exists to integrate bus priority for the network.

14.26. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 41 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal for growth of the Dover Fastrack network can have a positive impact on a number of outcomes.

14.27. **What alternatives have we considered?** The Dover Fastrack scheme has been purposefully designed to serve a large growth area around the Dover suburb of Whitfield. The scheme in delivery has been designed to have the capability for further extension of the network to serve future growth in the area. The network is therefore the primary option under consideration but should the transport options for future growth areas need government funding support and business case approval then the necessary consideration of alternatives will take place as part of that.

14.28. **Catering for uncertainty / scenario planning.** The Dover Fastrack scheme is being delivered to serve a growth area around Whitfield of predominantly new housing. Future network growth will likely be based around connecting further new housing areas into the network. Any new housing proposals have uncertainty associated with their delivery and timescales due to the complexities of the planning system and housing market.

Table 42 - Assessment of impact of the Dover Fastrack proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	KCC's Dover Fastrack network extension plan will help to deliver a public transport network that is future-proofed for growth as new housing in the Whitfield area occurs, aiming for an infrastructure-first approach to reduce the risk of highways and public transport congestion due to development.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Positive	KCC's Dover Fastrack network growth will attract further patronage to public transport, as well as promoting sustainable travel modes through its connections to the rail network at Dover Priory and other bus services into and out of Dover. Both should encourage improvements in road-side air quality, as Fastrack will soon be zero emission at the tailpipe due to electric buses, contributing towards the pursuit of carbon budget targets and net zero in 2050.
8. Public transport	Positive	KCC's Dover Fastrack network growth will attract further patronage to public transport by providing fast and reliable journeys. This will promote a growing public transport system supported by dedicated infrastructure to attract increased ridership, helping operators to invest in and provide better services.
9. Active Travel	Positive	The delivery of dedicated new highway for Dover Fastrack will also provide footpaths and cycle lanes, making a positive contribution to public health by enabling increasing numbers of people to use a growing network of dedicated walking and cycling infrastructure.
10. Aviation	No effect	

14.29. **Canterbury West and Sturry station and route corridor improvements**

14.30. Location: Canterbury district

14.31. Strategic aims:

- To take advantage of signalling upgrades along the rail corridor through Canterbury West to support delivery of regeneration and improvement of the station and its local surroundings.
- To take advantage of signalling upgrades along the rail corridor through Canterbury West and Sturry to deliver a reduced need for closure of the level crossing, to reduce highway congestion, improve journey times and improve air quality by reducing queuing and idling traffic.

14.32. Status: The signalling upgrades to the rail corridor through Sturry and Canterbury West station will be delivered in the Network Rail control period running from 2024 to 2029. The further improvements to Sturry and Canterbury West that could be delivered, in part enabled by the signalling upgrade releasing constraints to how the railway operates, are not funded.

14.33. **What needs to happen?** We will work with Canterbury City Council and the rail industry in their development of proposals, to obtain the necessary funding to deliver the schemes.

14.34. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 43 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal for the stations can have a positive impact on a number of outcomes.

14.35. **What alternatives have we considered?** There are no significant alternatives to the proposal. The opportunity is site-specific due to the detail of the operational rail systems and land and track layouts along the corridor. The opportunity to improve Sturry and Canterbury West stations arises from committed investment by Network Rail concerning the signalling system along the rail corridor in the control period 2024-2029. Precisely how the stations are improved to deliver the desired outcomes at each site will be subject to optioneering undertaken by the local authority and the rail operator and infrastructure owner Network Rail, along with us concerning any public highway interface with the stations.

14.36. **Catering for uncertainty / scenario planning.** The proposals will be mainly affected by any uncertainty associated with what the initial works to the rail corridor are able to deliver and unlock. For this reason, the proposals for the stations are being developed with the involvement of Network Rail at an early stage so that the optioneering for improving Canterbury West station and its surrounds, and the prospect of improving the arrangement of platforms and

stopping services at Sturry to reduce level crossing closure times, can be informed by resolution of uncertainty over time. The proposals will also need to consider the trend of local traffic volumes, which are affected by level crossing closures at Canterbury West and Sturry stations, and by rail passenger volumes who would benefit from improved stations. The proposals are in development at a time of rising passenger use of the rail and road networks as volumes increase from the lows seen due to the impact of the Covid-19 pandemic.

Table 43 - Assessment of impact of the Canterbury and Sturry station improvement proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	This pair of projects seeks to improve operations around the Canterbury West and Sturry stations, in turn improving the network for growth and innovation, enabling the proposed Canterbury Station Quarter project and relieving the blocking of the level crossing at Sturry. The projects would support Kent's infrastructure-first approach to attract rail patronage to reduce the risk of highway congestion.
6. Heritage and environment	Positive	This pair of projects seeks to improve operations around the Canterbury West and Sturry stations, in turn improving the network for journeys to access and experience Kent’s historic and natural environments.
7. Air quality, carbon emissions	No effect	
8. Public transport	Positive	This pair of projects seeks to improve operations around the Canterbury West and Sturry stations, supporting Kent's public transport system to attract increased ridership, helping operators to invest in and provide better services.
9. Active Travel	No effect	
10. Aviation	No effect	

14.37. **Maidstone mainline journey time improvements**

14.38. Location: Maidstone borough

14.39. Strategic aims:

- To better connect the county town across Kent and beyond.
- To encourage growth in use of a fully electrified, carbon-efficient rail network.
- To help reduce traffic on the town's road network.
- To reduce the time taken to make journeys by train to provide a more attractive service to prospective passengers.

14.40. Status: Following the Covid-19 pandemic there has been a continued reduction in some services serving the town, whilst welcome improvements from some new services such as to Charing Cross via London Bridge.

14.41. **What needs to happen?** A series of improvements are proposed that the rail industry and government should seek to deliver through the current specification of services, future replacement of rolling stock across the domestic and high speed rail fleets, and any further reforms to the management and delivery of services.

- Maidstone's county town status recognised through the return of a 3rd peak High Speed rail service.
- Establish the case for further High Speed services to Maidstone West.
- The Charing Cross via London Bridge service provided over the whole week.
- Avoid any worsening of journey times for services between Maidstone and Ashford if a new station is built on the route to serve development.
- Establish the case for reinstatement of direct services between Maidstone and Canterbury.
- Re-establish services across the week to Tonbridge to better connect Maidstone with Tunbridge Wells.

14.42. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 44 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal can have a widespread positive impact on the outcomes of the plan due to the rail network having higher capacity, low emissions, and providing reliable access to a wide range of destinations.

14.43. **What alternatives have we considered?** Given there is already a substantial established rail network in Kent, and which serves Maidstone, there is a good rationale for focusing on how it can better provide services, so they are more attractive and boost patronage. We have set out a range of other proposals in our plan which can provide improvements to other parts of the transport mix,

such as our Bus Service Improvement Plan, and improvements to the highway network, however the role and opportunity from rail is unique and it should be exploited. The alternative is for the status quo which risks providing a service that leads to limited growth and does not utilise the vast capacity of the rail system for supporting journeys in Kent.

14.44. **Catering for uncertainty / scenario planning.** A challenge for the rail sector and its passengers has been the uncertainty about services created by the impacts of the Covid pandemic. Services were reduced and have been partly reinstated on parts of the network. Passengers need a settled network with services that are convenient and meet the needs of their journeys. There has been uncertainty about whether the levels of pre-Covid demand would return and up to 2023 they had not – whilst highways demand has seen a strong return. There is therefore a need for the rail sector to consider scenarios designed to attract journeys onto the network to drive demand and growth and provide the wide range of positive impacts to the local economy and quality of life. The rail sector will need to consider scenarios concerning passenger volumes and the switching values that make increased services sustainable.

Table 44 – Assessment of Maidstone mainline journey time improvements proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	No effect	
4. International rail	Positive	As well as improving / restoring journey times between Maidstone and London, this project will also provide better access to Ashford for catching international rail when the station opens up to this market again. This will in turn support a better market for international operators to access / attract if they serve the station. Thus, the project supports the objective of improved public transport connections to international hubs.
5. Network growth and resilience	Positive	This proposal could support Kent's infrastructure-first approach by ensuring the rail network is improved so it can attract rail patronage from existing and new demand for travel and help to reduce the risk of highway congestion.
6. Heritage and environment	Positive	This project seeks to improve Maidstone mainline journey times, in turn improving the network for journeys to access and experience

		Kent's historic and natural environments – Maidstone town itself has a series of attractions aimed at the visitor economy, from museums to events and festivals at Mote Park. Improved access to intermediate stations between the main towns and onwards to locations like Ashford and Tonbridge and Tunbridge Wells would further support areas rich in the county's heritage and ways to access and enjoy the natural environment such as the routes along the Medway Valley.
7. Air quality, carbon emissions	Positive	Rail is one of the least carbon intensive forms of travel. on the lines serving Maidstone, the rail network is entirely electrified and is therefore very low emission. If more people are attracted to travelling by rail, then it can help to avoid emissions that can affect air quality in the built up urban area of Maidstone, which has Air Quality Management Areas.
8. Public transport	Positive	This project seeks to improve Maidstone mainline journey times, in turn supporting Kent's public transport system to attract increased ridership, helping operators to invest in and provide better services.
9. Active Travel	Positive	This proposal would make improvement to the attractiveness and ease of using the rail network. Using a train does, by its nature, entail increased levels of walking as some users walk and cycle to and from train stations rather than use private vehicles for door to door trips. This can help to increase levels of walking and cycling with the resultant benefits to public health and the local economy that they can provide.
10. Aviation	No effect	

14.45. **Gatwick rail access improvements**

14.46. Location: Countywide

14.47. Strategic aims:

- To better connect the county to the international gateway of Gatwick Airport.
- To reduce reliance on the busy road network.
- To make the impact of growth at Gatwick more sustainable.

14.48. Status: Network Rail has published what it terms Strategic Advice on Kent-Gatwick rail connectivity, concluding that there is a case for trialling an initial 1 train per hour service to at least Tonbridge.

14.49. **What needs to happen?** We will work to progress the strategic advice for Gatwick rail services to Kent (published by Network Rail in 2024) with the aim of increasing the prospect of bringing a service into operation. We will make representations on Gatwick growth through the planning process to ensure that new rail access is considered as a mitigation to reducing pressure on the road network.

14.50. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 45 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal can have some positive impacts due to the new accessibility and travel option it can provide to Gatwick.

14.51. **What alternatives have we considered?** The proposal has been in development by Network Rail who have considered alternatives and detailed some of those as part of their Strategic Advice note. That included considering the competing coach market between Kent and the airport. Further development of the proposal could include considering the options in terms of service routing and frequencies to drive patronage and improved access times to the airport.

14.52. **Catering for uncertainty / scenario planning.** A key element of uncertainty concerns the potential expansion of Gatwick airport. The Network Rail Strategic Advice has considered this prospect however further details have become available as the Development Consent Order process for the northern runway has been progressed. Further development work by Network Rail could consider further scenarios concerning future airport demand and the impact on the travel market to and from Kent, to further inform development and decision making associated with the proposal.

Table 45 – Assessment of Gatwick rail access improvements on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	Positive	This proposal provides better rail access between Kent & Gatwick, supporting international travel to become a more positive part of Kent's economy, facilitated by the county's transport network.
4. International rail	No effect	
5. Network growth and resilience	Positive	This proposal provides a more direct rail route between Kent and Gatwick Airport, helping to future-proof the network for growth and supporting Kent's infrastructure-first approach by attracting rail patronage to reduce the risk of worsening highway congestion.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Positive	Rail is one of the least carbon intensive forms of travel. On the lines between Kent and Gatwick the network is entirely electrified and is therefore very low emission. If more people are attracted to travelling by rail to the airport, then it can help to avoid emissions.
8. Public transport	Positive	This proposal provides a more direct rail route between Kent and Gatwick Airport, supporting Kent's public transport system to attract increased ridership, helping operators to invest in and provide better services.
9. Active Travel	No effect	
10. Aviation	No effect	

14.53. **Dover/Folkestone High Speed journey time improvements**

14.54. Location: Dover, Folkestone and Hythe and Thanet Districts.

14.55. Strategic aims:

- To better connect east Kent coastal communities by reducing their journey times to west Kent and London, focused on getting Dover to within an hour of London.
- To enable the High Speed rail network to support the growth of east Kent by ensuring that future rolling stock caters for the service opportunities that could be delivered.
- To support levelling up of the priority 1 areas of Thanet, Dover and Folkestone and Hythe by maximising the advantages of the High Speed 1 rail link.

14.56. Status: Initial pre-feasibility work has been undertaken by Network Rail and High Speed 1 Ltd which identified an opportunity to deliver new rail junctions near Folkestone so Southeastern High Speed services can access the High Speed rail link sooner in their journey, therefore running at faster speeds than on the domestic rail network. These network junction enhancements could be further exploited by replacement and expansion of the High Speed train fleet. Feedback on the Levelling Up Fund bid KCC made in 2022 indicated that the rationale and planned benefits of the enhancements were recognised.

14.57. **What needs to happen?** The rail industry and government will need to fund and develop the business case for the associated enhancements to determine the requirements from future rolling stock replacement. We will support their undertaking of that and ensure the case reflects the challenges and opportunities faced by the local communities in east Kent.

14.58. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 46 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal can have some positive impacts due to the new improved journey time accessibility it can provide between Dover and Folkestone with London.

14.59. **What alternatives have we considered?** There are no other viable options for improving the journey times between Folkestone and Dover to London. The High Speed 1 railway provides unrivalled journey times relative to the road network for the journey destinations concerned. Therefore, to improve on the existing journey times will inevitably require enhancements and investment in the existing rail network focused on the High Speed services.

14.60. **Catering for uncertainty / scenario planning.** A challenge for the rail sector and its passengers has been the uncertainty about services created by the

impacts of the Covid pandemic. There has been uncertainty about whether the levels of pre-Covid demand and fares income would return and, up to 2023 they had not – whilst highways demand has seen a strong return. There is therefore a need for the rail sector to consider scenarios designed to attract journeys onto the network to drive demand and growth and provide the wide range of positive impacts to the local economy and quality of life. The rail sector will need to consider scenarios concerning passenger volumes and the switching values that make increased services sustainable, to inform future stock requirements so as not to preclude the potential to improve high speed services to Folkestone and Dover.

Table 46 – Assessment of Dover / Folkestone High Speed journey time improvements proposal on LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	No effect	
6. Heritage and environment	Positive	This project seeks to seeks to improve journey times between Dover and London, in turn improving the network for journeys to access and experience Kent's historic and natural environments.
7. Air quality, carbon emissions	No effect	
8. Public transport	Positive	This project seeks to improve journey times between Dover, Folkestone and London, in turn supporting Kent's public transport system to attract increased ridership, helping operators to invest in and provide better services.
9. Active Travel	No effect	
10. Aviation	No effect	

14.61. **Local rail services**

14.62. Location: Countywide

14.63. Strategic aims:

- An approach to planning and delivery of rail services and infrastructure that is more balanced towards the needs within Kent and less focused on services to and from London so as to better connect towns across Kent.
- To substantially grow use of the rail network by making service frequencies far more attractive across the whole week, exploiting the high number of stations that means Kent has some of the best access to the rail network nationally.
- To enable the almost entirely electrified rail network in Kent to make a far higher contribution towards realising reductions in carbon emissions.
- To learn lessons from the National Bus Strategy and use of government funding to lower travel costs including through targeted local initiatives.

14.64. Examples of the system providing very low frequency services are:

- Canterbury to Faversham / Sittingbourne – 1 train per hour (tph)
- Sittingbourne <> Sheerness – 1 tph
- Maidstone <> Ashford / Dover / Folkestone – 1 tph
- Ramsgate <> Dover – 1 tph
- Canterbury <> Dover – 1 tph

14.65. **What needs to happen?** The rail network needs to move towards providing half hourly services on every mainline across the whole week to drive growth in its use. The fares pricing structure and cost of using services must be addressed, drawing lessons from the approach taken for the bus network. This includes the potential for offers on fares to support rail travel for local events.

14.66. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 47 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal can have a range of positive impacts on delivering the outcomes of the plan due to the added choice and implications it has for how some journeys would be made.

14.67. **What alternatives have we considered?** Given there is already a substantial established rail network in Kent serving a wide range of destinations including the largest towns as well as smaller towns and villages, there is a good rationale for focusing on how it can better provide services, so they are more attractive and boosts patronage. We have set out a range of other proposals in our plan which can provide improvements to other parts of the transport mix, such as our Bus Service Improvement Plan, and improvements to the highway network, however the role and opportunity from rail is unique and it should be

exploited. The alternative is for the status quo which risks providing a service that leads to limited growth and does not utilise the vast capacity of the rail system for supporting journeys in Kent.

14.68. **Catering for uncertainty / scenario planning.** A challenge for the rail sector and its passengers has been the uncertainty about services created by the impacts of the Covid pandemic. Services were reduced and have been partly reinstated on parts of the network. Passengers need a settled network with services that are convenient and meet the needs of their journeys. There has been uncertainty about whether the levels of pre-Covid demand would return and up to 2023 they had not – whilst highways demand has seen a strong return. There is therefore a need for the rail sector to consider scenarios designed to attract journeys onto the network to drive demand and growth and provide the wide range of positive impacts to the local economy and quality of life. Across Kent there are growth proposals which will increase the market for transport. Providing attractive rail services is an opportunity to generate established patterns of use that reduce the burden on existing users of the network and can boost use and viability of rail services to the benefit of all.

Table 47 - Assessment of Local Rail services proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	No effect	
6. Heritage and environment	Positive	This proposal concerns improving access to local rail stations and therefore removing barriers to using the rail system. Kent has a large number of stations with many serving smaller communities across the county with a range of heritage attractions and access to natural environment such as coastal and countryside trails. If the proposal to improve local rail access delivers, then there should be a positive impact on this outcome.
7. Air quality, carbon emissions	Positive	This proposal concerns improving access to local rail stations and therefore removing barriers to using the rail system. Rail is almost entirely electrified in the county and therefore more use of it for journeys which can often be mid or long distance (the most carbon emitting sort by volume) would contribute towards reducing carbon emissions from travel.

		Furthermore, the likelihood of using onward public transport for shorter journeys to and from the rail station could increase due to the proposal, adding further to the positive impact of the proposal.
8. Public transport	Positive	This proposal concerns improving access to local rail stations and therefore removing barriers to using the rail system and potentially also public transport such as bus services to and from the station, supporting Kent's public transport system to attract increased ridership, in turn helping operators to invest in and provide better services.
9. Active Travel	Positive	This proposal concerns improving access to local rail stations and therefore removing barriers to using the rail system. Using a train does, by its nature, entail increased levels of walking as some users walk and cycle to and from train stations rather than use private vehicles for door to door trips. This can help to increase levels of walking and cycling with the resultant benefits to public health and the local economy that they can provide.
10. Aviation	No effect	

14.69. **Improve local access to rail stations**

14.70. Location

14.71. Strategic aims:

- Enable use of the rail network by removing barriers to its access at stations.
- To help provide more choice for journeys by catering for different means of access to and from the station for rail journeys.

14.72. Status: The access to rail stations is a multi-faceted, multi-organisation endeavour requiring co-operation and planning. The rail industry itself directly addresses matters on its estate and receives capital funding to deliver improvements within stations to remove physical barriers to the use of services, particularly by implementing works to deliver step-free access from the street arrival at the station entrance all the way to the platform.

14.73. The rail industry has also made significant strides in improving cycle parking in Kent, with many stations having dedicated provisions including very secure parking facilities for hire at busier stations. We oversee Fastrack networks which are planned and operated to provide regular and reliable bus access to local rail stations such as Ebbsfleet International, Gravesend, Dartford and Dover Priory. Operations more generally are planned and delivered by bus operators and the rail industry can work with those to plan service timings. We have had a direct role in improving access to rail stations by developing and obtaining funding for schemes for delivery with the rail industry and other transport operators in the past.

14.74. **What needs to happen?** The rail industry should set out its current ranking of station priorities for Kent to provide clarity on when changes could be forthcoming. This will enable local stakeholders, including ourselves, to work with the rail industry to understand what actions can be taken to support a delivery of improvements at locations across the county.

14.75. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 48 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal can have a range of positive impacts owing to its scale and potentially transformative effect on transport in north Kent.

14.76. **What alternatives have we considered?** Given there are a multitude of ways in which access to local rail stations could be improved, and that this will vary from site to site, there will be a wide range of options that could be considered. Given this proposal does not predetermine the specific approaches that should be taken, it is not necessary to consider alternatives at this stage as the

underlying principle is an essential part of a successful public transport system open for all to access and use.

14.77. **Catering for uncertainty / scenario planning.** Given the proposal concerns removing barriers to access of public transport and journey opportunities more generally, it is well proofed to the uncertainty that exists concerning how future public transport and especially rail systems will be managed, operated, perform and used by passengers. In particular, if rail usage rises significantly, reducing barriers will be beneficial to improving the door to door journeys of existing users as well as those new users removal of barriers bring. If the rail system sees usage remain steady or decline, then removal of barriers to use of the railway will provide an increased market that can be attracted to using the system.

Table 48 - Assessment of improve access to local rail stations proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	No effect	
4. International rail	Positive	The proposal would significantly improve the ease with which a large market catchment could reach Ebbsfleet International rail services by public transport, which would help encourage international rail operators to call at the station.
5. Network growth and resilience	Positive	The proposal would provide a step change in capacity and connectivity to support growth in housing and employment in the north Kent corridor.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Positive	The proposal would provide a significant improvement in the quality of public transport provision which is electrified and low emission. It would help attract journeys to public transport helping to reduce emissions from journeys and in an area where heavy road use can contribute to local air pollution.
8. Public transport	Positive	The proposal would provide a step change in public transport provision in the north Kent area, compounding the effect of the existing rail, Fastrack and bus network offer, to help attract further journeys to public transport.

9. Active Travel	No effect	
10. Aviation	No effect	

14.78. **Elizabeth line extension to Ebbsfleet**

14.79. Location: Dartford and Gravesham Boroughs

14.80. The strategic aims for this proposal were made to government in 2021 as part of a Strategic Outline Business Case and remain the aim at this time. They are:

- Support ambitious and sustainable housing growth and regeneration in the north Kent corridor.
- Support employment growth, intensification, and productivity.
- Deliver an uplift in the quality and capacity of public transport to address current and future travel demands in the corridor.
- Support climate change and zero carbon goals and targets and environmentally sustainable growth.
- Improve connectivity from the corridor to key strategic and international gateways.
- The proposal must be affordable and have realistic funding prospects.

14.81. Status: The partnership of local organisations, which included Dartford Borough Council, Gravesham Borough Council, Ebbsfleet Development Corporation, a number of London authorities, and us submitted a Strategic Outline Business Case to government in 2021. The production of this was funded using a government grant of £4.85m. The business case demonstrated that there was potential for an extension of Elizabeth Line services to provide net positive economic benefits compared to the costs of its delivery.

14.82. **What needs to happen?** Government have been considering the business case that the partnership submitted. A decision by the government is needed about whether any of the options in the business case should be progressed and, if so, provide funding for the appropriate transport authorities to progress more detailed planning, design, and an outline business case. Any scheme will need to be funded by the government given the very high cost of extending the Elizabeth line.

14.83. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 49 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal can have a range of positive impacts owing to its scale and potentially transformative effect on transport in north Kent.

14.84. **What alternatives have we considered?** The Strategic Outline Business Case developed for the proposal considered a range of alternatives including bus rapid transit and national rail network improvements. The business case sets out conclusions for why the proposed preferred option was an extension of the Elizabeth line, owing to its journey time accessibility improvements, capacity and status as an integrated part of the London transport system, capable of supporting transformative development growth in the north Kent and south east London areas.

14.85. **Catering for uncertainty / scenario planning.** At the time of the Strategic Outline Business Case submission, the Elizabeth line was not operational. The business case dealt with that uncertainty accordingly, and the realised benefits and usage of the line demonstrates that the attractiveness of the line were well-founded assumptions. Remaining consideration in the business case of scenarios associated with growth levels remain relevant. As such the existing business case has made suitable consideration of uncertainty and scenarios. Further work can be undertaken in the next business case stage.

Table 49 – Assessment of Elizabeth line extension to Ebbsfleet proposal on the LTP outcomes

Outcome	Impact	Rationale
11. Network maintenance & condition	No effect	
12. Road Safety	No effect	
13. International traffic	No effect	
14. International rail	Positive	The proposal would significantly improve the ease with which a large market catchment could reach Ebbsfleet International rail services by public transport, which would help encourage international rail operators to call at the station.
15. Network growth and resilience	Positive	The proposal would provide a step change in capacity and connectivity to support growth in housing and employment in the north Kent corridor.
16. Heritage and environment	No effect	
17. Air quality, carbon emissions	Positive	The proposal would provide a significant improvement in the quality of public transport provision which is electrified and low emission. It would help attract journeys to public transport helping to reduce emissions from journeys and in an area where heavy road use can contribute to local air pollution.
18. Public transport	Positive	The proposal would provide a step change in public transport provision in the north Kent area, compounding the effect of the existing rail,

		Fastrack and bus network offer, to help attract further journeys to public transport.
19. Active Travel	No effect	
20. Aviation	No effect	

14.86. **Other local proposals to note**

14.87. There are a series of local proposals for improving access to rail stations on the Kent network. These can range from improving the highways network to reach stations through to addressing the facilities at stations themselves. Network Rail and the operator Southeastern have undertaken a rolling program of improvements to stations in Kent over many years. In part due to the fact the county has a relatively high number of stations, which is a positive attribute, there nonetheless remain a number of stations which are well used and where facilities could be improved. We have indicated those throughout the District-specific proposals in the Local Transport Plan document, but for ease of reference they are listed in Table 50 along with commentary on their rationale.

Table 50 - Local proposals for improved station facilities in Kent

Station Proposal	Commentary
Connections between Appledore Village and Appledore Station	Appledore station is one of the only stations unconnected from its local communities for non-vehicle users. The station has car parking, but the access for pedestrians involves walks along rural lanes and use of the public right of way network. Potential to improve these to make their use easier could be considered alongside wider improvements to the line and its services, as well as sub-regional scale walking and cycling improvements along the Royal Military Canal route, which could provide a further network improvement on which this station's access could be improved
Dartford Station onward journey interchange	Dartford station sits up and away from the main town centre and the main highway on which local bus services and Fastrack stop. The station is connected via a route across a Council and station car park and steps or a footbridge to the highway and town centre. Improving the proximity of the station to onward means of travel would help it to become part of more seamless town centre environment rather than detached and satellite as current. Dartford Council has been exploring options to improve its situation and interchange.
Swanscombe and Stone Crossing station access improvements	These stations are small local stations but in an area of substantial growth. Formerly in a rural hinterland between the towns of Gravesend and Dartford, the infill of this area with existing development and future potential development

	means these stations will have a more substantial role to play for the local community. It is important, therefore, that they are modernised to a standard that enables everyone in the local community to be able to use them. Resolving the barriers will be particularly challenging at Swanscombe owing to its location in a deep cutting, whilst at Stone Crossing, where some improvements have taken place to improve safety and avoid use of the level crossing, improved facilities at platforms and potentially lift access in the long term would be beneficial.
Westenhanger station upgrade for High Speed services	This station has the potential to increase access to the High Speed network and consequently help support future new communities planned in the area as part of the Otterpool garden community. The current station's platforms are too short for High Speed services but extending them is considered viable. Doing so would transform the area's connectivity with the wider county and region including London, whilst also offering the chance for increased service frequencies compared to the current time. Increased use of the station would also therefore benefit from step free access to the platforms and improved station facilities for passengers.
Maidstone West station step free access and station surrounds improvements	The station currently requires step free access to the platform 1 to take place by escorted access over the rail tracks from platform 2. This requires staff involvement and also entails safety risks for both the staff and passengers. Alongside this, Maidstone Borough Council has set out a vision for how further residential-led development could occur in the long term, further to the high density residential development that now occupies the area long the River, in place of the big box retail that currently surrounds much of the station. Further, one of the most used entry / exit points for the station spills into a car park used by both station users and local business customers and conflicts arise between vehicles and passengers due to a lack of pedestrian provision.
Medway Valley line step free access	The Medway Valley line between Maidstone and Tonbridge serves a number of communities, covering a relatively long distance. A series of stations do not provide step free access and facilities at some of the stations are basic and have poor ease of access for pedestrians. Improving step free access at a station like Yalding, which has relatively good vehicle facilities for parking, drop-off / pick-up would help improve access to the rail

	network for members of the local community who need step free facilities.
Marden step free access	Marden is relatively large rural settlement, and it has grown and may grow further in the future. It is our ambition that all stations in the county become step free over time to ensure we have a rail system fit for the 21st century, despite its Victorian origins. Delivering step free access at Marden would help ensure rail is an option for all potential users.
Edenbridge station facilities and step access	Edenbridge is a relatively large rural settlement served by two rail lines. The station facilities, particularly at Edenbridge on the Tonbridge line are relatively basic with small shelters on platform and no step free access. Since the stations are on different lines they do not act as one another's substitutes for journeys, and therefore ensuring both are upgrade including step free access will help to ensure rail is an option for all potential users.

15. Evaluation of the proposals for the Local Transport Plan against outcome 9

15.1. Policy outcome 9 states that *health, air quality, public transport use, congestion and the prosperity of Kent's high streets and communities will be improved by supporting increasing numbers of people to use a growing network of dedicated walking and cycling routes*.

15.2. Associated with this, we have set a policy objective: Policy objective 9A) *We will aim to deliver walking and cycling improvements at prioritised locations in Kent to increase activity levels and support Kent's diverse economy, presented in a Kent Cycling and Walking Infrastructure Plan*.

15.3. The proposals we have set out to deliver on this outcome are detailed below.

15.4. **Kent Cycling and Walking Infrastructure plan**

15.5. Location: Countywide

15.6. Strategic aims:

- To make clear where our priorities are for improvements to walking, wheeling and cycling across the county.
- To establish a prioritised programme of infrastructure improvements that we can seek funding for, contributing towards delivery of the national strategy led by Active Travel England.

- To complement district-led Local Cycling and Walking Infrastructure Plans (LCWIPs) to find opportunities where infrastructure investment can deliver benefits for both short distance trips within a neighbourhood and form part of a long distance continuous network across the county.

15.7. Status: A draft Kent Cycling and Walking Infrastructure Plan has been developed setting out fifteen corridors where we could focus future planning and design work to set out detailed proposals which we can make the case for receiving funding for.

15.8. **What needs to happen?** A draft Kent Cycling and Walking Infrastructure Plan (KCWIP) has been developed, setting out 15 cycling corridors and 15 walking zones where we could focus future planning and design work to make the case for funding. Each of the corridors and zones are indicative and the final route options will be determined when proposals are subject to development, design and consultation. For example, the corridor on the Isle of Sheppey could include parts of the Sheppey Light Railway Greenway, subject to design and consultation with local communities.

15.9. To do this, we will seek the funding necessary to further develop the KCWIP and its proposals to improve infrastructure in the corridors and zones it details. We have set out in the district sections of this LTP how our KCWIP proposals would complement proposals in the existing Local Cycling and Walking Infrastructure Plans (LCWIPs) that have been produced by the district and borough councils across Kent. We will continue to work with stakeholders, including the districts and borough councils, to develop and deliver LCWIPs and we will consider potential new priorities that may emerge for incorporation into our county plan.

15.10. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 51 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal can have a positive impact on a number of outcomes, demonstrating the broad impact and integral feature that particularly walking is of part of so many journeys each day**.**

15.11. **What alternatives have we considered?** The walking and cycling networks in Kent are a major asset group which we need to plan the future of. There is no alternative to them, and we cannot overlook their role. Maximising their use is aligned with national government policy. Within the options for how to improve the walking and cycling network in the county, there are a wide range of alternatives, and we have not pre-empted or selected one solution over another for those corridors in the Kent Cycling and Walking Infrastructure Plan. Those alternative ways of meeting user needs and delivering the desired outcomes place-by-place will be subject to future optioneering as we secure funding from government to do so.

15.12. **Catering for uncertainty / scenario planning.** We have developed the Kent Cycling and Walking Infrastructure Plan by considering a wide range of factors and have arrived at a healthy list of varied locations across the county. This helps to cater for uncertainty associated with the range of constraints and obstacles that may exist to getting infrastructure in place and users arising, benefiting from the infrastructure. Particularly in respect of cycling, the propensity to cycle can be affected by topography, the character and culture of a built up area, and the extent to which public support exists for improvements.

15.13. What is clear is despite the uncertainty, the plan has a wide range of options and future detailed proposals can be designed and developed to address local circumstances more closely. In broader terms, the need for good walking and cycling networks is unlikely to reduce – as the assessment against the outcomes has shown, these networks will be vital for enabling sustainable growth and resilience of our movement networks at times of disruptions, so that people can undertake the journeys they need. The government itself has set a stretching target of achieving 50% of urban journeys by walking and cycling, which adds to the onus to a need to continue planning for this part of the transport mix.

Table 51 - Assessment of impact of the Kent Cycling and Walking Infrastructure Plan proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	Positive	The Kent Cycling and Walking Infrastructure Plan (KCWIP) sets out proposals to make walking, wheeling and cycling easier within and between urban areas by providing improved infrastructure that will make it easier and safer for journeys to be made. These groups of road users are the most vulnerable and therefore lowering risk can have a strong impact of the quality of their journeys and safety.
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	Walking network in particular can be used by almost everybody. They have the most flexibility, by being combined with the public right of way network and do not rely on the use of a vehicle. When road incidents occur due to collisions or asset defects, walking networks often remain open and available. In this way, improving walking and cycling networks provide a more resilient transport network which is there to be relied on when our highways are disrupted for

		vehicles. By planning a future network there is greater prospect of ensuring new development is also able to link to the existing pedestrian, cycle and public rights of way, helping to also support a network that can better accommodate growth in population.
6. Heritage and environment	Positive	Kent's KCWIP details a network plan for walking and cycling, which identifies preferred routes and core walking and wheeling zones that KCC will direct its efforts for planning and securing investment in to supplement the District local cycling and walking infrastructure plans (LCWIPs). KCWIP corridors route from town centres, through suburbs into the rural swathe to connect on to local communities / places of interest *en-route* to the next town. As such, the KCWIP will support journeys to access and experience Kent's historic and natural environments.
7. Air quality, carbon emissions	Positive	Kent's KCWIP will contribute to attracting people to zero emission active travel, in turn improving road-side air quality and contributing towards the pursuit of carbon budget targets and net zero in 2050.
8. Public transport	Positive	Reaching public transport stops and using it, especially bus journeys, is supported by providing a walk and cycle routes that are safe, direct and comfortable to use. Most of these journeys, especially by bus, will be reached walking to stops. Cycling has an important role to play in accessing public transport too though - the rail system in Kent is becoming better adapted to rail journeys with secure parking facilities, lifts, and allowances for folded or conventional bikes at certain times of day, though more can be done. By delivering better highways and urban realm environments for active forms of travel, the propensity and ease with which to use the public transport network for the longer stretches is improved, meaning this outcome is better delivered.
9. Active Travel	Positive	Kent's KCWIP will attract people to sustainable transport modes and active travel. This will make a positive contribution to public health due to increasing numbers of people using a growing network of improved and dedicated walking and cycling infrastructure.
10. Aviation	No effect	

15.14. **Public Rights of Way**

15.15. Location: Countywide

15.16. Strategic aims:

- To provide a high quality, well-maintained Public Rights of Way network, that is well-used and enjoyed.
- Encourage active lifestyles by providing essential links within urban and rural communities to support safe walking, cycling, wheeling and riding.
- To have a well-maintained network that evolves to meet the needs of a growing Kent.

15.17. Status: We have an established Public Rights of Way Improvement Plan with a horizon to 2028 and to deliver a range of activity to manage the network.

15.18. **What needs to happen?** Delivering the wide-ranging and detailed actions in the KCC Public Rights of Way Improvement Plan to exploit the network and deliver better journeys and access across our urban and rural communities will need further funding to be secured. We need at least £26m over the next 10 years to undertake structural improvements to the existing network. When we undertake planning and design of detailed proposals for the corridors set out in the KCWIP, options for making best use of and upgrading public rights of way will be part of our approach.

15.19. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 52 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal can have a positive impact on a number of outcomes, demonstrating the broad impact and integral feature that particularly walking, which relies on the public rights of way network, is of part of so many journeys each day.

15.20. **What alternatives have we considered?** The government requires Local Transport Authorities to have Public Rights of Way improvement plans. The public rights of way network is substantial across the whole of Kent. There is no realistic alternative to the unique function it provides. The proposal concerns securing further future funding investment to enable improvements to the network. The alternative would be to avoid pursuing further investment, which, as examples in the Local Transport Plan have demonstrated, would reduce the capability of the public rights of way network to provide the function it can do across all its routes in the county.

15.21. **Catering for uncertainty / scenario planning.** The public right of way network, owing to its diversity in function and location is a well-utilised and important asset for movement across the county. Uncertainty affecting its future function and condition can arise from a range of factors. For example, the

network was more heavily used during the Covid-19 pandemic as people in Kent used the relief it provided of enabling journeys in their local area given the wider travel restrictions that were in place. Higher demand can create increased pressure on the condition of the network. Similarly, weather events can affect the network by further affecting its condition and ease of use.

15.22. Dealing with this uncertainty would be aided by having longer term improved funding so that the public right of way network can be improved and maintained, keeping it available for its users.

Table 52 - Assessment of impact of Public Rights of Way improvements proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	Positive	This proposal would deliver improvements to the existing public rights of way network which forms an essential part of the movement network in Kent by providing connections between highways, enabling more direct, faster and higher quality journeys in places. Improvements, as demonstrated in the plan's examples, would transform the condition of sections of the network, having a positive impact overall on network maintenance and condition.
2. Road Safety	Positive	The proposal would deliver improvements to the existing public rights of way network which forms an essential part of the movement network in Kent by providing connections between highways, sometimes in locations where there are no facilities on highway for pedestrians. Enabling pedestrians to use dedicated rights of way than share road space with traffic, especially in rural areas where speed limits can be higher, can improve the safety and comfort of journeys, removing barriers from travel taking place.
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	Public rights of way can provide new links through and from new development areas. They form part of the solution for enabling all choices of travel to be available helping growth in travel demand to reduce its burden primarily on the highway network. This proposal would help us to supplement and maximise the quality and extent of connections between new growth areas and the existing rights of way and, by implication, highway network.

6. Heritage and environment	Positive	The public rights of way network can often be the last leg of a journey to reach sites of heritage or access Kent's environmental assets, enabling residents and visitors to enjoy the quality of life the county has to offer. The proposal would help ensure we can invest in those sections of the network where demand is already high and therefore condition can degrade quickest, forming barriers to people's enjoyment, as well as keeping the network to a condition that helps support lesser explored locations.
7. Air quality, carbon emissions	Positive	Improving Kent's public rights of way network will contribute to providing a network that attracts people to zero emission active travel, in turn improving air quality and contributing towards the pursuit of carbon budget targets and net zero in 2050.
8. Public transport	Positive	Reaching and relying on journeys by public transport, reach bus stops and rail stations. By delivering improved public rights of way, ease of access to public transport stops is improved, reducing barriers, and providing safe and convenient journeys so that long distances travel can be achieved on public transport. The public rights of way network is important in both urban and rural communities, but particularly in rural communities where on-street provision for pedestrians can be reduced and the location of service stops can be fewer in number, limiting choice.
9. Active Travel	Positive	Improving Kent's public rights of way network is integral to enabling safe, convenient, and direct journeys for pedestrians, cyclists, wheeling and also for equestrians where bridleways and byways are in place. Since public rights of way exist extensively in both urban and rural communities, they can help in linking up improvements made to the highway for active travel to maximise benefits and the likelihood of people using these forms of travel.
10. Aviation	No effect	

15.23. **Cycle hire pilots in development areas**

15.24. Location: Countywide

15.25. Strategic aims:

- To evaluate the potential for cycle, hire to form part of the transport mix in appropriate locations in Kent in the future.
- To improve access to cycles to take advantage of cycle routes and infrastructure in place in the county.
- To realise the health benefits of cycling and support improved air quality in urban areas.
- To increase choice and meet the needs of those for whom cycling is a preferred means of travel but who do not have easy access to cycles.

15.26. **What needs to happen?** KCC will work with developers and district councils on the delivery of planned cycle hire schemes and monitor their impact. Performance of the pilots will assist KCC with any future consideration of cycle hire schemes in new developments and existing communities.

15.27. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 53 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal can have a positive impact on a number of outcomes, owing to this form of transport being zero emission and helping to provide part of a whole journey solution for longer distance travel that can include public transport use.

15.28. **What alternatives have we considered?** The main alternative we have considered is to deliver cycle hire facilities ourselves or to rule out their application in Kent. Concerning implementation, there is currently no available funding and the risks of creating a new innovative transport service in Kent which may not be well used and creates ongoing operational costs for the Council is currently not an approach that we have chosen to take. Instead, there is a lower risk approach of learning from implementation in Kent where developer's elect to offer and establish cycle hire pilots, as well as any learning we can do more widely within the country.

15.29. We consider it premature to rule out the long term potential of cycle hire in Kent, as there has been some small scale cycle hire providers set up in the county and given, we have been able to undertake a sustained programme of improvements to cycling routes through the governments Active Travel Fund, the conditions for cycle hire may change in the future. Therefore, our approach seeks to keep this option available into the future.

15.30. **Catering for uncertainty / scenario planning.** There is high uncertainty about whether cycle hire facilities would provide a significant and worthwhile impact

on cycling activity in the county. Most cycle hire schemes that have had significant impacts have been delivered in very large dense built up urban areas such as cities. In Kent there are not comparable urban areas and therefore we cannot be certain that cycle hire would be effective. New developments provide a scenario to learn from, where development proposals may be delivering higher density urban areas that provide the potential market for successful cycle hire services. We will aim to learn from these instances where they occur, to help us better understand the scenarios in which this form of transport may be successfully applied.

Table 53 - Assessment of impact of the Cycle hire pilots in development areas proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	Positive	Potential cycle hire proposals delivered by major new development areas would fulfil the infrastructure-first approach and could contribute to delivering a transport network that provides wider choice and enables more journeys to be made so as to reduce the risk of crowding on highways and public transport networks.
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	Positive	Cycle hire as part of major new developments could attract further patronage to low and zero emission forms of travel. This could improve road-side air quality and contribute towards the pursuit of carbon budget targets and net zero in 2050. There may also be some benefits as these are quieter forms of travel, creating more enjoyable urban environments and communities.
8. Public transport	Positive	Being able to rely on and use shared transport such as cycle hire facilities could reduce dependence on use of private transport and hence may help to increase propensity for using public transport as part of longer journeys. This would have a positive impact on public transport by increasing its use which helps to encourage more services.
9. Active Travel	Positive	Cycle hire as part of major new developments could attract people to active travel. This would make a positive contribution to public health due

		to increasing numbers of people using a growing network of dedicated cycling infrastructure.
10. Aviation	No effect	

16. Evaluation of the proposals for the Local Transport Plan against outcome 10

16.1. Policy outcome 10 states that *The quality of life in Kent is protected from the risk of worsening noise disturbance from aviation.* Associated with this we have set a policy objective 10 A): *Where there is evidence of impacts on our communities, we will make representations on airport expansion proposals and argue for measures to mitigate their effects*.

16.2. **Opposition to Gatwick Airport expansion**

16.3. Location: Tunbridge Wells Borough and Sevenoaks District

16.4. Strategic aims:

- To oppose a second runway at Gatwick Airport due to risk of noise disturbance and its impact on the quality of life for residents of Kent.

16.5. **What needs to happen?** The decision about whether Gatwick Airport can be expanded will be taken by the government. We will continue to set out clearly our concerns and work with the Airport and other stakeholders to explore if there are mitigations that can reduce adverse effects on our residents from the noise of being overflown.

16.6. **What impact could this proposal have on the outcomes of the plan?** Shown in Table 54 is an assessment of the effect this proposal could have on the outcomes of the plan. The proposal has an impact solely on the outcome it concerns.

16.7. **What alternatives have we considered?** This proposal concerns our position and response to proposals by Gatwick Airport Ltd and hence the onus is not on ourselves as to what alternatives there are to Gatwick Airport expansion. We have set out our clear expectations in respect of the airport proposals.

16.8. **Catering for uncertainty / scenario planning.** We have set out a clear position on Gatwick, published on our website and this remains as plans for Gatwick Airport Ltd are developed. Whether the airport receives its planning permission to expand and increase flights is not an aspect of uncertainty we can cater for. This is why we have established and held our consistent position.

Table 54 - Assessment of impact of the Opposition to Gatwick proposal on the LTP outcomes

Outcome	Impact	Rationale
1. Network maintenance & condition	No effect	
2. Road Safety	No effect	
3. International traffic	No effect	
4. International rail	No effect	
5. Network growth and resilience	No effect	
6. Heritage and environment	No effect	
7. Air quality, carbon emissions	No effect	
8. Public transport	No effect	
9. Active Travel	No effect	
10. Aviation	No effect	Our proposal aims to protect people in Kent from the adverse effects of flight path activity from Gatwick Airport by opposing the plans for expansion of the airport. If we are successful, we will be able to prevent or secure mitigations to prevent disturbance worsening.

17. What we will do next

17.1. We have used this evidence base to support the establishment of our Local Transport Plan 5 *Striking the* balance.

17.2. Our Plan is designed to strike a balance across the mix of transport, setting out how we would like to achieve improved journeys for all the different parts of the transport system across Kent. It is designed to strike a balance between the investment needed to improve the county economy, to make living and working better, whilst also preparing our transport networks to meet the environmental challenges facing the county.

17.3. What is clear from our Plan is that the proposals will require sustained and sufficient funding from government, not just for construction but for their design and development. We would also be able to support and drive progress with partners, such as National Highways and Network Rail, who are responsible for critical parts of the transport network in Kent and so will have a bearing on our ability to achieve our ambition.

17.4. We will aim to focus our delivery on the proposals it contains and follow our implementation framework, contained in our Local Transport Plan 5 Annexe, where appropriate. This approach will help us to be confident that our activity will be contributing to the needs of Kent and supporting national government in the delivery of its own policy objectives.