



Suffolk County Council Transport Mitigation Strategy for the Ipswich Strategic Planning Area

August 2019

Contents

1. INTRODUCTION	3
2. APPROACH.....	7
3. ADJUSTMENT METHODOLOGY	9
4. BACKGROUND	18
4.2. Demographics from The State of Suffolk Report 2019.....	18
4.3. Future of Travel Demand Report.....	20
4.4. Department for Transport – review of national trends in commuting (2017)	20
4.5. Transport for quality of life	22
4.6. Sustrans & Arup (2019) Review of Bike Life	23
4.7. Natural modal shift	24
4.8. Summary.....	25
5 MITIGATION APPROACH	26
5.1. SMARTER CHOICES	28
5.2. Achieving Modal Shift.....	30
5.3. Summary.....	34
5.4. WALKING AND CYCLING	35
5.5. Summary.....	36
5.6. BUS PROVISION.....	37
5.7. QUALITY BUS PARTNERSHIP	38
5.8. Achieving Modal Shift.....	39
5.9. Achieving Bus Passenger Growth in Ipswich.....	42
5.10. Consolidation of Bus Stations	43
5.11. Cross-Over with Other Mode-Shift Projects.....	43
5.12. Further considerations.....	44
5.13. Summary.....	44
5.14. PARK & RIDE SERVICES	45
5.15. Achieving modal shift.....	46
5.16. Summary	49
5.17. DEMAND RESPONSIVE TRANSPORT	51
5.18. Achieving modal shift.....	Error! Bookmark not defined.
5.19. Summary	53
5.20. PARKING	54
5.21. Shift in travel patterns	59

5.22.	Achieving modal shift	61
5.23.	Workplace parking levy	Error! Bookmark not defined.
5.24.	Summary	62
5.25.	TECHNOLOGY	64
5.26	Public Transport	66
5.27	Deliveries	66
5.28	Private Cars	66
5.29	Walking/Cycling.....	67
5.30	Parking.....	Error! Bookmark not defined.
5.31	Smart Infrastructure.....	67
5.32	Other	67
5.33	Summary.....	68
6	LEGISLATION.....	69
6.2	Clean air zone	69
6.3	Congestion charging	70
6.4	Summary.....	71
7	ENVIRONMENT	72
7.2	Air Quality.....	72
7.3	Climate emergency	72
8	INFRASTRUCTURE	73
8.2	Junction & Link Capacity	74
8.3.	Smarter Choices.....	77
8.4.	Walking and Cycling.....	77
8.5.	Bus services.....	77
8.6.	Park & Ride and DRT	78
9.	COSTS	79
9.1.	Cost apportionment	79
9.2.	Estimated costs	79
10.	Funding	82
10.1.	Funding source.....	82
11.	Deliverability.....	Error! Bookmark not defined.

1. INTRODUCTION

- 1.1.1. The Ipswich Strategic Plan Area (ISPA) incorporates Suffolk County Council (SCC), Ipswich Borough Council, Babergh District Council, Mid Suffolk District Council and East Suffolk Council (in relation to the area of the former Suffolk Coastal District). The ISPA Board of members representing the five authorities provides a forum in which the five local authorities can work together to develop, promote and deliver their vision for the Ipswich Strategic Planning Area, recognising Ipswich and neighbouring communities as a major economic growth area within the Greater Ipswich sub region, County of Suffolk and New Anglia Local Enterprise Partnership area. Working together enables them to co-operate as local planning authorities on the preparation and monitoring of their Local Plans and share relevant evidence and intelligence.
- 1.1.2. To understand the cumulative impact on the highway network of growth updated in the local plans to 2036, assessments were undertaken using the Suffolk County Transport Model (SCTM), which is a strategic highway model built in Saturn (a transport program) that has been calibrated and validated to reflect traffic conditions for a base year of 2016. The SCTM is a network wide model for assessing traffic schemes and developments, and as such it is appropriate to use as a tool for assessing network wide impacts.
- 1.1.3. An initial modelling report, January 2019¹, identified impacts on the highway network associated with the model run for 2036, incorporating Suffolk Coastal District Council and Ipswich Borough Council's Preferred Options and Babergh and Mid Suffolk District Council's development options. This model run output identified areas within each district that would require mitigation in addition to a cumulative substantial impact on highway network within Ipswich. When the results from the 2016 baseline model run was compared with the 2036 model run, an additional 29 nodes (key junctions or links) within the model, excluding the Strategic Road Network (SRN), were

¹ WSP (January 2019) – Local Plan Modelling for Babergh & Mid Suffolk, Ipswich and Suffolk Coastal. Forecasting Report – Volume 2: Suffolk Coastal and Ipswich Preferred Option.

shown as being near or over capacity in the AM peak hour and 34 nodes in the PM peak hour.

- 1.1.4. Whilst not all the issues that are predicted would materialise in the exact manner modelled, they indicate the location and nature of future issues, further modelling could provide more detail of this. However, the important point to note is that the built up area of the Ipswich network comes under particular strain, that in a number of locations the ability to deliver road capacity improvements is highly constrained by available space and could also move the problem 'further down the road'.
- 1.1.5. The following representation was provided by SCC in relation to the Suffolk Coastal Final Draft Local Plan.
- 1.1.6. *“In respect of strategic transport impacts, the Plan could be considered sound subject to further clarity on the means of delivering the mitigation measures. The January 2019 WSP Study indicates a number of locations where the network is likely to experience additional pressure arising from development. It is accepted that the Local Plan cannot be delivered with nil detriment to the highway network; there will be an increase in users of the highway network; but the District Council, the County Council and Highways England are required by national policy to demonstrate that there is a strategy in place to ensure that severe impacts can be avoided and significant impacts limited to an acceptable degree. The mitigation schemes set out in Appendix B are broad estimates which, collectively, total to a large amount of funding required.*
- 1.1.7. *The impacts on the County Council’s highway network, outside of Ipswich, are significant but of a scale which could reasonably be mitigated to an acceptable degree by developer led schemes – such as junction realignment - and sustainable transport measures. It is the impact on the junctions of the A12 and A14, within Highways England’s control, that could require a mixture of measures and where funding is less certain. In principle, impacts within Ipswich could be mitigated largely by a Smarter Choices package of incentives and sustainable transport improvements to routes, infrastructure and services) enabling and encouraging significant modal shift. This would*

require a secure funding mechanism and commitment from the Ipswich Strategic Planning Area local planning authorities.

- 1.1.8. *The measures identified in Appendix B are broadly appropriate for managing the transport related impacts of additional growth in the Plan period, based on the transport evidence which underpins the Plan. Subject to further clarity on the delivery of the identified measures, the County Council envisages identifying modifications to the Plan through a Statement of Common Ground with the District Council.”*
- 1.1.9. This report details the work undertaken to provide the strategy to support plan led growth in the Ipswich Strategic Planning Area. The focus of this strategy is mitigation within Ipswich as it addresses the cumulative impact of the ISPA local plans within the county town, this work will support the Local Transport Plan strategy for Ipswich. Mitigation outside of Ipswich will be addressed within each planning district through the Infrastructure Delivery Framework, recognising that good practices identified within the Ipswich focussed strategy could be effectively applied outside of this area.
- 1.1.10. Significant impacts were identified on the SRN (the A14 and A12) including the junctions around Ipswich. In undertaking this work the County Council has liaised with Highways England and shared the outcome of the transport modelling. A modelling report on the impact on the SRN has been prepared. It is for Highways England to provide proposals to address these impacts and a response to the ISPA local plans.
- 1.1.11. The result of this work will be to develop a strategy to inform a mitigation delivery programme, this will include measures with associated indicative costs, delivery mechanism and a consideration of funding alternatives. The aim of the work is not to achieve a ‘nil-detriment’ impact on the network, as even with the assessed mitigation it is very likely that traffic would worsen within the area, but to sufficiently mitigate the impacts.
- 1.1.12. The purpose of this work is to develop a transport mitigation strategy that informs an implementation programme of measures that will support the ISPA local plans by delivering modal shift in Ipswich. The ISPA transport mitigation strategy sits under the Suffolk County Council Local Transport

Plan (LTP)² and will form part of the refreshed LTP Town Strategy for Ipswich, which is under development.

- 1.1.13. The strategy developed in this report is consistent with the County's long-term transport strategy identified in the LTP. Reviewing the performance of measures and programmes implemented elsewhere in the England together with experience, as the Highways Authority, of delivery in Suffolk; provides a review of the evidence base to support the development of an implementation programme with sufficient detail to support the ISPA local plans. This is not a static or standalone document, it is expected to develop as part of the LTP refresh; develop based on performance of the measures through the local plan period; and develop in accordance with emerging and new Council and national government policy and strategy.

² Suffolk County Council (2011) *Suffolk Local Transport Plan 2011-2031*

2. APPROACH

- 2.1.1. To develop a mitigation strategy, work focussed on modal shift both within the existing Ipswich population and for new residential and employment development within ISPA.
- 2.1.2. An additional assessment year, 2026, was also identified for assessment to tie-in with the end of the next Highways England Road Investment Strategy (RIS) funding period in addition to providing a practicable period for delivering change. Reference to the end of the next RIS period reflects uncertainty of inclusion of current improvements to key A14 junctions submitted for funding by SCC, for delivery by Highways England (HE), in early 2017. Measures available to mitigate for 2036 impacts would build on the 2026 work, be open to opportunities provided by changing Government policy and funding, the declared climate emergency and the behavioural attitude landscape and provide further opportunity for improvements by HE through the RIS process.
- 2.1.3. To assess the potential mitigation of modal shift, an additional traffic modelling exercise was undertaken using the Suffolk County Transport Model, (SCTM). This exercise modelled future years of 2026 and 2036. The modelling has been undertaken on the network AM (08:00 to 09:00) and PM (17:00 to 18:00) peak hours, which are the hours where the overall road network generally comes under the most strain. The modelling was also been used to identify those locations where the potential for modal shift is greatest and where the relative demand for movement between and within areas is greatest to help inform potential proposals.
- 2.1.4. Running parallel to the modelling exercise, an analysis has been undertaken of range of transport initiatives, including a review of research into their relative success in achieving modal shift in Suffolk and across the country, and the potential for introduction within Ipswich to mitigate planned growth within the ISPA area. No strategy is a “one size fits all”, and the strategy to mitigate the ISPA planned growth needs to consider the characteristics of the area. However, given the most substantial impacts are peak hours, the initiatives are specifically focussed around influencing commuter related

traffic, to include linked school related trips, to reduce the identified cumulative impacts.

- 2.1.5. The principles behind this assessment are set out in Chapter 3 (Adjustment Methodology) and are broadly based on the fact that the relative distance of a journey and the environment that journey is undertaken in would affect the likelihood for that journey to switch to sustainable modes.

3. ADJUSTMENT METHODOLOGY

3.1.1. As part of the work undertaken, trip rate adjustments were made within the SCTM model assessment to reflect a reasonable level of modal shift and to understand the implications of achieving this modal shift. Adjustments were made to both existing trips and to trips associated with new development using the following methods; addressing new development only did not provide the opportunity to affect the number of trips needed to deliver the level of modal shift identified.

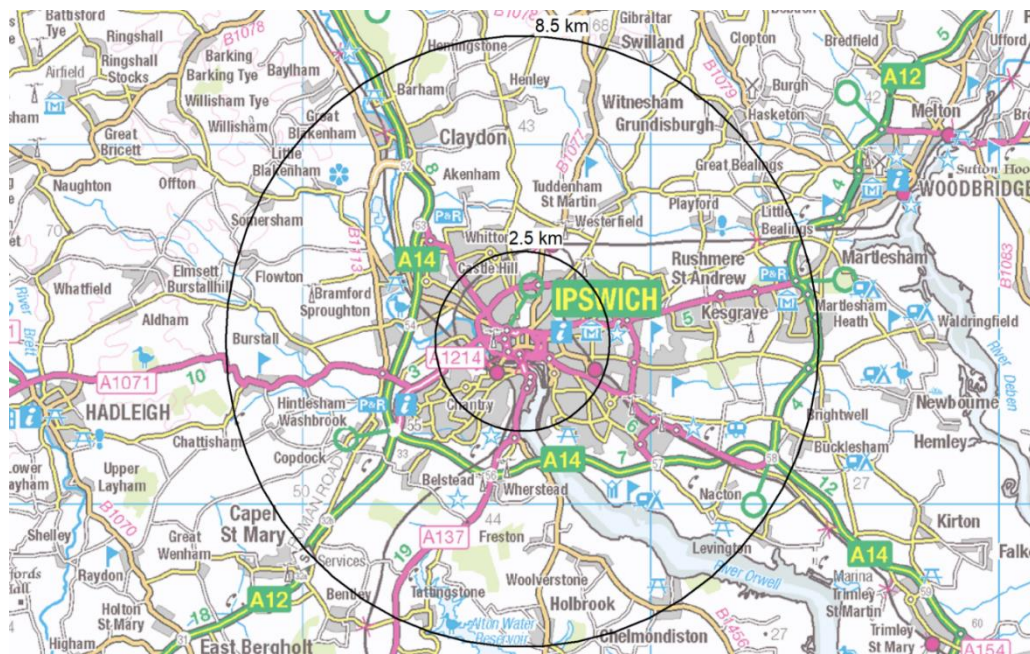
Existing Road Users

3.1.2. Model zones were classified as urban or rural in accordance with the 2011 Census classification. Travel distance was also determined between model zones on the basis of 'as the crow flies' distances between zone centroids. This combination of urban / rural classification and trip length determined which of the reduction factors shown in Table 1 were applied to the existing road users / travel patterns. Figure 1 shows the extent of the zones relative to the centre of Ipswich.

Table 1: Trip Generation Reductions Applied to Existing Road Users

Trip type	0-2.5km	2.5km-8.5km	8.5km+
Urban-urban	30.00%	15.00%	5.00%
Urban-rural / rural-urban	5.00%	5.00%	5.00%
Rural-rural	0.00%	0.00%	0.00%

Figure 1: Trip Zones



3.1.3. The factors used are considered a reasonable starting point for assessing the impacts of modal shift and are applied to all existing road users. The factors are based on the distance being travelled and the environment being travelled in. Therefore, shorter distance trips are considered more likely to be able to shift to alternative modes and trips within or to/from built up urban environments where, generally, more developed transport infrastructure exists, would more readily support a switch to sustainable modes.

3.1.4. The 2011 Census shows that 53% of the employed residents of Ipswich travel less than 5km to work and, of these, 46% drive a car or van for their journey to work.³

3.1.5. Whilst adjustments between certain categories could be fine-tuned, in some cases the relative number of trips being impacted was small, so, as an example, for the urban-rural trips a consistent 5% was applied, as this was considered the minimum realistic figure for all urban – rural categories.

New Road Users

³ 2011 Census - DC7701EW1a

3.1.6. New road users relate to the trip generation from specific developments included within the respective current Local Plans, in preparation. Development land uses were classified as either employment or residential, and then further classified into Town Centre, Urban or Rural based on their location.

3.1.7. The following thresholds were used to determine whether a residential development could be considered to be Small, Medium or Large:

- Small – 10 to 99 dwellings
- Medium – 100 to 499 dwellings
- Large – 500 dwellings +

3.1.8. The following thresholds were used to determine whether an employment development could be considered to be Small, Medium or Large:

- Small – 0 to 1,499sqm gross floor area
- Medium – 1,500 sqm to 2,499sqm gross floor area
- Large – 2,500sqm+ gross floor area

3.1.9. As with adjustments to the baseline traffic above, adjustments have been made based on the environment the development is located within (e.g. trips within or to/from built up urban environments) where, generally, more developed transport infrastructure exists, or could be introduced, that would more readily support a switch to sustainable modes and where people generally travel shorter distances. It has also been assumed that developments of greater size would be better placed to introduce supporting infrastructure and Travel Plans to support a greater switch to sustainable modes.

3.1.10. Whilst adjustments between certain categories could be fine-tuned, in some cases the relative number of trips being impacted was small. As an example, there are no large residential town centre developments, so no adjustment is made as it would not impact on the results.

Table 2: Trip Generation Reductions Applied to Development Trip Generations

Land Use Type	Development Type	Small	Medium	Large
Residential	Town Centre	10.00%	12.50%	0.00%

Residential	Urban	5.00%	10.00%	10.00%
Residential	Rural	2.00%	2.00%	2.00%
Employment	Town Centre	15.00%	20.00%	20.00%
Employment	Urban	10.00%	15.00%	15.00%
Employment	Rural	3.00%	3.00%	3.00%

3.1.11. For any development from which trip rates and trip generation has been determined by an existing Transport Assessment, no trip generation reduction was applied as it was assumed a shift to sustainable travel was already accounted for within the Transport Assessment. No further reduction was applied to avoid doubling the shift to sustainable modes (i.e. especially for the larger developments, the Transport Assessment would have more specifically assessed the development's traffic impacts based on its location and mitigation strategy). The agreed mitigation for these developments have already been included within the SCTM.

3.1.12. Overall, this approach to trip reduction results, broadly, in a 9% shift to the background traffic (existing road users) and a 7% reduction to the new trips.

3.1.13. A summary of the results of the additional traffic modelling is provided below.

2026 AND 2036 RESULTS

3.1.14. The results indicate that the number of junctions that are either at or approaching capacity increases between 2016 and 2026, and 2016 and 2036 both with and without the application of the trip reduction adjustment - tables 3 and 4. Therefore, although impacts have been reduced the general traffic conditions will deteriorate in the forecast years. The level of residual impact in 2026 after the modal shift adjustment, is considered acceptable, recognising that this could be further mitigated by increased modal shift. It is also considered that further mitigation could reduce impacts in 2036, however it is not reasonable to accurately predict those

changes at this time and additional mitigation measures to increase modal shift would need to identify the most effect measures in phase 1, to 2026.

Table 3: Junctions with overall V/C of 85%+ (am peak)

	2016 Base	2026 ISPA NoAdj	2026 ISPA wAdj	2036 ISPA NoAdj	2036 ISPA wAdj
Ipswich	2	8	6	15	12
Suffolk Coastal	1	2	2	3	3
Mid Suffolk	0	1	0	3	2
Babergh	1	3	3	5	4
Total	4	14	11	26	21

Table 4: Junctions with overall V/C ratio of 85% + (pm peak)

	2016 Base	2026 ISPA NoAdj	2026 ISPA wAdj	2036 ISPA NoAdj	2036 ISPA wAdj
Ipswich	1	12	6	23	16
Suffolk Coastal	1	2	2	4	3
Mid Suffolk	0	0	0	1	0
Babergh	1	4	4	6	6
Total	3	18	12	34	25

3.1.15. Tables 5 and 6 show the number of links, (sections of highway between modelled junctions), within the ISPA area that have a volume/capacity ratio exceeding 100% in 2026 and 2036.

Table 5: Link capacity overall V/C ratio of 100%+ (am peak)

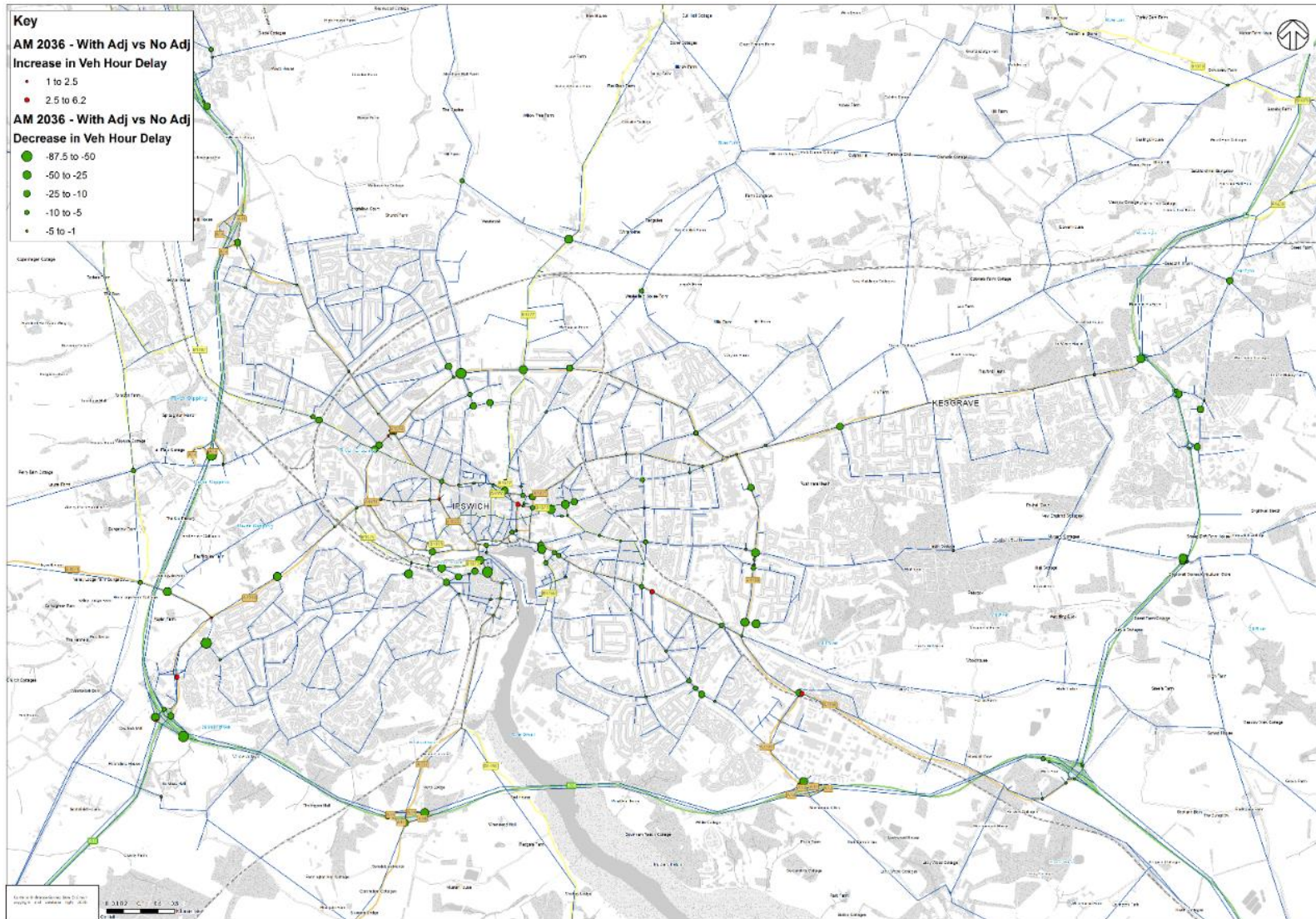
	2016 Base	2026 ISPA NoAdj	2026 ISPA wAdj	2036 ISPA NoAdj	2036 ISPA wAdj
Ipswich	7	33	19	60	43
Suffolk Coastal	3	9	7	26	17
Mid Suffolk	3	11	6	20	16
Babergh	1	13	7	15	16
Total	14	66	39	121	92

Table 6: Link capacity overall V/C ratio of 100%+(pm peak)

	2016 Base	2026 ISPA NoAdj	2026 ISPA wAdj	2036 ISPA NoAdj	2036 ISPA wAdj
Ipswich	6	33	13	69	49
Suffolk Coastal	1	7	4	21	13
Mid Suffolk	2	11	5	17	15
Babergh	0	14	11	19	17
Total	8	65	33	126	94

- 3.1.16. Figure 2 indicates the change in vehicle hour delay in the am period 2026 with the trip adjustment vs no adjustment; and Figure 3 indicates the change for 2036.
- 3.1.17. The modelling results of the trip adjustments has shown a demonstrable effect in reducing impact on junctions and links experiencing congestion. For the link capacity the adjustment resulted in a 40% to 60% reduction in links in 2026 and approximately 25% reduction in 2036.
- 3.1.18. The results support the approach to mitigate the impacts of planned growth in the ISPA local plans identified in this strategy.
- 3.1.19. The following chapters will review methods that will shape the strategy and inform the delivery programme proposed delivery programme.

Figure 3: 2036 (am peak) Changes in Vehicle Hours Delay



4. BACKGROUND

4.1.1. The following provides context and supporting information that has informed this report and the mitigation strategy. It is based on evidence from a wide range of reports, studies and evaluations of Suffolk and wider within the UK.

4.1.2. Information relating to autonomous and electric vehicles is covered within the Technology section.

4.2. DEMOGRAPHICS FROM THE STATE OF SUFFOLK REPORT 2019

4.2.1. Population structure; compared to England, Suffolk has a higher proportion of people aged 65 and over and a lower proportion of working age people. Population growth since 2011 has been exclusively in older age groups and this is expected to continue, with the number of people aged 65 and over increasing while the proportion aged under 65 falls. The working age population is expected to decline slightly – with implications for the local economy. Over the next 20 years, we can expect that 1 in 3 Suffolk residents would be aged 65 and over, compared to 1 in 4 for England (and 1 in 5 in Suffolk currently), that is an increase in over 65's of 43%. The number of people aged 85 and over in Suffolk would almost treble from 21,500 to 59,000 if current trends continue.

4.2.2. Compared to Suffolk, Ipswich has a lower proportion of people aged 65 and over and a higher proportion of working age people. Population growth since 2011 has been primarily in the older age groups and this is expected to continue, with the number of people aged 65 and over increasing while the number at working age is static. Over the next 20 years, the working age population is expected to increase slightly. Over the next 20 years, we can expect that 1 in 5 Ipswich residents would be aged 65 and over, compared to 1 in 3 for Suffolk, that is an increase in over 65's of 45%. The number of people aged 85 and over in Ipswich would almost double from 3,400 to 6,600 if current trends continue.

4.2.3. Transport needs of an older population are likely to be different to that of the general population, in particular they travel at different times of day and need to access a range of local services.

4.2.4. Research by the RAC Foundation found that the lowest income families spend 20% of their disposable income on buying and running a vehicle annually. The ONS Living Costs and Food Survey 2016 showed that for all UK households, transport (including public transport) remained, on average, the single biggest area of expenditure, at 14% of disposable income.

4.3. IPSWICH AND WAVENEY HOUSING MARKET AREAS: STRATEGIC HOUSING MARKET ASSESSMENT, 2017 & 2019 UPDATE

4.3.1. The Strategic Housing Market Assessment (SHMA) reviewed the commuting patterns of Ipswich and Lowestoft to distinguish the two separate housing market areas. Based on the 2011 Census, the level of commuting containment within the IPSA was very high at 79% of commuting trips within the area.

4.3.2. In reviewing past trends, Ipswich was noted as having the greatest increase in population of the four local authorities between 2001 and 2015 but that the rate of increase for the wider area had slowed down recently owing to lower rates of natural change and overseas migration.

4.3.3. Likely the State of Suffolk Report, the SHMA also notes that the population aged 65 and over is forecast to increase dramatically in the area - from 104,985 in 2018 to 153,578, a rise of 46.3%.

3.4. FUTURE OF TRAVEL DEMAND REPORT

- 4.3.1 There are five headline trends which emerge from the evidence on how travel demand has and is changing, both behaviour and across different age groups
- 4.3.2 The 'baby boomers' who are entering retirement now have higher car ownership levels and drive more than previous cohorts, in Suffolk there is coastal migration of this generation and a related dependence on car ownership due to rurality.
- 4.3.3 Across society, people are living longer and so some of the population growth we expect is from ageing. Retirees, whilst using the car more on average than previous cohorts, have different trip making patterns to people who work
- 4.3.4 Younger people, and in particular younger males, are far less likely to have a driving license and to subsequently drive less than previous generations
- 4.3.5 The gap in how much people travel by age group has closed significantly
- 4.3.6 Increased on-line shopping has changed retail behaviour resulting in a reduction of personal trips and an increase in personalised deliveries.

4.4 DEPARTMENT FOR TRANSPORT – REVIEW OF NATIONAL TRENDS IN COMMUTING (2017)

- 4.4.1 The study found that:
 - Between 1988/92 and 2013/14 there has been a downward trend in the number of commuting trips from 7.1 journeys per worker per week to 5.7
 - The average distance per commute trip has risen by 10% and the number of people in work has never been higher.
 - The net effect of this, despite economic growth and population growth, is a decline in annual commuting journeys from 8.5 billion to 7.9 billion.
- 4.4.2 The study used a range of different statistical datasets to explore why these trends might be occurring. The definition of a commute trip itself may be a problem as journeys which include stop-offs, school drop-offs for example, are not counted. They find that:
 - Workers are commuting to work fewer days per week

- There has been growth in the number of workers who do not have a fixed usual workplace
- Working from home is growing both on an occasional and usual basis
- Part-time and self-employment has grown, which generally have fewer commute trips

4.4.3 Whilst the findings of the Department point towards a change in travel behaviours, we must be mindful that they are based on UK wide data and as such, do not reflect the results of the modelling undertaken or the situations in Suffolk that residents, and those travelling through the county, experience. Whilst mode share may be changing elsewhere, it is not the case for Suffolk, but for areas that have experienced a reduction in car use, there are keen lessons to be learnt and good practice to be reviewed.

4.4.4 Public Health England suggests that adults should aim for 150 minutes moderate aerobic exercise every week or 75 minutes vigorous activity, yet only 66% of men and 58% of women achieve this. Inactivity is believed to be a significant contributor to the rise in obesity with obesity prevalence increasing from 15 per cent in 1993 to 26 per cent in 2014. There is also an increase in childhood obesity with one in three children in Year 6 measured as obese or overweight. Although there has been an increase in distances cycled, cycling trips in England have declined as have walking trips under one mile, 2015 levels are almost half the level they were in 1994/96. Whilst there are many factors which explain why these changes have happened, there is evidence from many cities across Europe that, where investments favour the creation of good environments for walking and cycling more people do it. Stockholm for example has seen an increase in cycling from 4% to 9% across the whole county and from 4% to 17% in the inner-city areas.

4.4.5 .

4.5 CHOICES FOR BETTER JOURNEYS SURVEY (2019)

4.5.1 Public views on future options for urban transport, from the 2019 [Greater Cambridge](#) consultation on the future of transport, indicate that there is

likely to be public support for measures to improve transport options and reduce the impact of traffic as a result of growth.

4.5.2 Choices for Better Journeys survey results:

- 82% of respondents backed the vision to significantly improve public transport.
- 81% of respondents chose a traffic-reducing measure as their first choice for both funding public transport and reducing congestion.
- 44% of respondents chose pollution charge as their first or second choice option for funding public transport and cutting congestion, followed by a flexible charge to drive at the busiest times (36%).
- 32% of respondents chose introducing pedestrianised zones or physical restrictions, as their first or second choice.
- 29% opted for introducing a Workplace Parking Levy, which would charge employers for parking spaces that they provide.
- 20% of respondents thought higher parking charges would be the best option.
- 19% of respondents put forward an alternative idea first, including improving public transport to encourage greater use, better Park & Ride provision and higher taxation to fund better vehicles.

4.6 TRANSPORT FOR QUALITY OF LIFE

4.6.1 Nearly a quarter of all households do not have access to a car, rising to 44% of households in the lowest income quintile⁴. So many people, particularly those on low income, have difficulty accessing jobs, shops, parks and green spaces, and even people in other parts of town, in much of their 'home' area. Nationally historic under-investment in public transport has led to increasing car-dependency: people are forced to drive in order to access employment and services. Around 80% of the working age population can (theoretically) reach 7 or more large employment centres by car compared with 20% by public transport.⁵ Viable alternative transport

⁴ DfT (2017). National Travel Survey Table NTS0703. www.gov.uk/government/statistical-datasets/nts07-car-ownership-and-access

⁵ Within 45 minutes. DfT (2016). Road Use Statistics. www.gov.uk/government/statistics/road-usestatistics-2016

options are required to reduce car dependency and enable everyone, not just the well-off, to access jobs, facilities and services.

4.6.2 Shifting car trips from the road network⁶ to high quality alternatives would free up space for essential road users. DfT's former Chief Scientist has commented: "Congestion on the SRN largely occurs near population centres where locally generated traffic impedes long-distance traffic. If carriageway is added, at considerable expense, the locals take advantage of initially higher speeds to increase trip length, most importantly when they change jobs or move house. These longer trips restore congestion to what it was, and long-distance users are no better off."⁷

4.7 Sustrans & Arup (2019) Review of Bike Life

4.7.1 Bike Life is the largest assessment of cycling in seven UK cities. It found that women, disabled people and older (65+) cycled less than the average population:

- Men are twice as likely to cycle as women – 11% of women cycled at least once a week in comparison to 22% of men
- Most women never cycle – 73% of women do not cycle
- Safety is a significant barrier – Only one in four women (25%) felt cycling safety was good in their city
- Women want to cycle more – 32% of women who currently do not cycle would like to
- Older people cycle less than any other adult age group – 7% of people aged 65 or over cycle at least once a week, in comparison to 18% of 16-64-year olds
- Less interest exists amongst older people to start cycling – Two-thirds of older people do not cycle and do not want to cycle, although 15% would like to start cycling

⁶ 80% trips are < 25 miles across all road types. 28% of the miles driven across all road types are < 25 miles. DfT (2015). Strategic Road Network statistics. www.gov.uk/government/uploads/system/uploads/attachment_data/file/448276/strategic-road-networkstatistics.pdf

⁷ Metz, D. (2014) "Why are we planning to spend so much on new roads when we live in an information age?", Local Transport Today, 16 December 2014 [LTT 662]

- Older people do not think cycling is safe – Only 21% of people aged 65 or over think cycling safety in their city is good
- Older people tend to take different journeys – Older people are far less likely to cycle for work and more likely to cycle for fitness or enjoyment or shopping than younger adults
- Disabled people are less likely to drive – Disabled people are less likely to have access to car (62%) in their household than non-disabled people (85%)
- Most disabled people never cycle – Only 7% of disabled people cycle at least once a week, in comparison to 19% of non-disabled people. 84% of disabled people never cycle
- There is strong appetite to start cycling – One third of disabled people (33%) currently do not cycle but would like to
- Disabled people think more people cycling would improve their city – 66% of disabled people agree their city would be a better place to live if more people cycled

4.8 NATURAL MODAL SHIFT

- 4.8.1 The majority of reasons around travel choice are based around a number of different factors, including, but not limited to, convenience, cost (e.g. fuel and time), lifestyle, distance, health, security, safety, facilities and other needs, such as picking up children from school etc.
- 4.8.2 It is therefore reasonable to assume that as travel time increases for the private car, its attractiveness as a mode of travel decreases. While the journey time by private car would naturally increase as a result of increased traffic, the journey time by walking and cycling is far less likely to do so, certainly not as significantly.
- 4.8.3 Therefore, as delay for drivers increases there would be a natural shift towards sustainable modes of travel as the relative attractiveness of the different modes becomes more comparable. However, the exact nature of this impact is more difficult to predict.

4.9 SUMMARY

- 4.9.1 It is evident that an ageing population, changes to working patterns and a rise in relative deprivation are emerging and/or developing trends within Ipswich and Suffolk. There is, therefore, a need to consider the impact of these within the development of mitigation measures as they will ultimately impact upon travel and transport needs.
- 4.9.2 An ageing population and an aging workforce determine the need to accommodate a wide range of mitigation measures, with changes to working patterns influencing the potential for peak spreading.
- 4.9.3 Evidence of the linkage between modal choice and income highlights the need to improve access to employment, further education and training, and to improve the affordability of transport for the lowest income households.
- 4.9.4 These elements will be considered in the development of mitigation measures that form the subsequent sections of this report.

5 MITIGATION APPROACH

- 5.1.1 Mitigation of the transport issues within Ipswich has been identified as delivering modal shift in the order of 7% for new development and 9% for existing trips. The mitigation approach considers key areas that could deliver these changes.
- 5.1.2 It is widely recognised that there is not a single measure that can sustain the delivery of modal shift, a combination of mitigation types will therefore need to be considered in the development of a mitigation implementation programme. This section considers key mitigation workstreams, this is not considered to be an exhaustive list, but that which is currently deemed most relevant to this work. The mitigation measures will consider positive intervention measures alongside demand management and focus primarily on the am/pm peaks as defined in the modelling. However, all the measures would have benefit to all transport users regardless of journey purpose or time.
- 5.1.3 The following mitigation options have been reviewed;
- Smarter Choices
 - Walking and Cycling
 - Bus Services
 - Park and Ride and Demand Responsive Transport Services
 - Parking
 - Technology
 - Legislation
 - Infrastructure Improvements
- 5.1.4 The assessment of these mitigation workstreams has included a review of the performance of measures and interventions, to identify where these have positively influenced the use of sustainable transport.
- 5.1.5 Although some mitigation options include improvements to infrastructure; it is recommended that improvements to junctions to ease vehicle congestion or increase vehicle capacity are provided only if sufficient modal shift has not been achieved using a combination of the proposed measures. This approach excludes improvements currently identified as part of the funded

Ipswich Radial Route programme of improvements or committed improvements relating to consented planning applications.

1.1.1. In developing a programme of measures to deliver a mitigation strategy, each workstream has been considered against the following factors,

- Effectiveness
- Deliverability
- Acceptability
- Affordability

1.1.2. To improve the effective delivery of change, a baseline of travel by mode choice and by trip purpose would need to be established and the effectiveness of the implementation programme determined and informed through ongoing monitoring.

5.1. SMARTER CHOICES

- 5.1.6 This approach considers influencing travel choices through behaviour change or nudges. This is a flexible concept for understanding how people think, make decisions and behave. It helps people improve their decision making, manage change and modify existing behaviour based on the choices available to them. This is a more sophisticated and sustainable approach to achieving change than the traditional methods of instruction, enforcement and regulation. It is often achieved through a number of small interactions rather than one large (and therefore unachievable or sustainable) action. This approach is referred to as Smarter Choices.
- 5.1.7 Dedicated Smarter Choices Projects have shown that a 10% modal shift away from single occupancy vehicle travel is possible to achieve locally and can be evidenced in the evaluation of the Sustrans Smarter Choices project targeted at household level in Ipswich in 2010.
- 5.1.8 It should be noted in reading the following evidence, that not all figures are directly comparable; assessing change can vary between percentage change within a target area and change per capita. In considering the effectiveness of the schemes in this section, it is the direction of effect that is important.
- 5.1.9 The DfT Local Sustainable Transport Fund (LSTF) supported 96 projects in local authorities between 2011 and 2015. At £540 million, it was the biggest-ever competitive funding programme for sustainable transport initiatives in England. The combination of capital and revenue funding enabled local authorities to invest in infrastructure schemes to increase bus and rail patronage and active travel, while providing complementary initiatives such as new bus services, cycle training and travel support for jobseekers. During the LSTF period, per capita traffic volumes in the Large Projects fell by 2.6%, whereas traffic volumes in a national comparator group of local authorities only fell by 0.3%.
- 5.1.10 Nottingham achieved the biggest reduction in per capita car traffic of any English local authority outside London during the LSTF period (-8.2% between 2009-11 and 2015). LSTF funded development of a pay-as-you-

go smartcard covering bus, tram and local rail, which can be topped up at on-street ticket machines or local shops. The smartcard also provides access to a car club, 17 secure cycle parking hubs and a network of 500 bikes for hire. Five community-based behaviour change programmes ran local events, activities, services and a travel support package for jobseekers. 600 bikes were loaned to staff and students at the universities. Nottingham's LSTF programme was delivered alongside the context of major expenditure on public transport and introduction of a workplace parking levy.

- 5.1.11 For the Large Projects (which accounted for nearly half of LSTF funding), there was a 2.3 percentage point reduction in per capita traffic volumes, 2.2 percentage point reduction in per capita carbon emissions, 5.2 percentage point increase in per capita bus use and 7 percentage point increase in the proportion of adults who cycled (all relative to a comparator group). These changes were across a population in the 12 Large Project areas of over 8 million people, meaning that relatively small changes are likely to have had a large cumulative impact. Economic benefits are partly captured by a post cost-benefit analysis, which found a 'best estimate' programme-level benefit-cost ratio for the Large Projects of 5.2 – 6.1, representing very high value for money as defined by Department for Transport. There was also qualitative evidence that LSTF interventions supported local economies in a variety of ways.
- 5.1.12 DfT Best Practice suggests on average a 15% modal shift can be achieved among employees who work for organisations that implement a Travel Plan (<https://webarchive.nationalarchives.gov.uk/20110504043814/http://www.dft.gov.uk/pgr/sustainable/travelplans/work/essentialguide.pdf>)
- 5.1.13 In 2004, three towns - Darlington, Peterborough and Worcester – jointly received £10 million funding from the DfT for the implementation of large-scale 'smarter choice' programmes over a five-year period, as part of the 'Sustainable Travel Towns' (STT) demonstration project. All three programmes put in place a range of initiatives aiming to encourage more use of non-car options – in particular, bus use, cycling and walking – and to discourage single-occupancy car use. The strategies adopted by the

three towns included the development of a strong brand identity; travel awareness campaigns; public transport promotion; cycling and walking promotion; school and workplace travel planning; and large-scale personal travel planning work. An evaluation conducted on behalf of the DfT of the impacts of the STT project concluded that it was successful in reducing travel by car and increasing the use of other modes, from a comparison with trends in other medium-sized urban areas. Overall, in the three towns, there was a reduction in total traffic levels in the order of 2%, together with a reduction of 7-10% in the number of car driver trips per resident. A cost-benefit analysis, undertaken on a relatively conservative basis and considering congestion benefits only, produced a BCR of 4.5:1

5.2 ACHIEVING MODAL SHIFT

- 5.2.1 To achieve modal shift at the minimum levels of 10% it would be necessary to create an effective and efficient programme of engagement with workplaces, schools, places of further education and other organisations across the project area. The programme would be long term, ideally no less than five years, in order to achieve sustained modal shift rather than an intervention which may only achieve unsustainable 'quick wins' and are little value for money. A long-term programme would also reap the benefits of the associated capital improvements identified within other workstreams that would take longer to achieve due to the nature and scope of works identified.
- 5.2.2 Smarter Choices could be delivered across the ISPA and extending to areas of travel origin that impact on the most affected areas. This is likely to include travel patterns originating in areas such as Felixstowe, Stowmarket, Needham Market and Sudbury. Rather than focusing on destination choices within the centre of Ipswich, an effective programme of behaviour change would provide a broad-spectrum range of tools, initiatives, campaigns and additional bespoke projects.
- 5.2.3 As identified in the evaluation of the LSTF projects, it is recommended that this is balanced with some 'disincentives'/demand management, in order to effectively tip the balance in favour of sustainable travel. Measures such as parking controls or increased parking charges could potentially

encourage sustainable travel across Ipswich and are outlined in the other workstreams.

- 5.2.4 A successful Smarter Choices programme would require the creation of a of stakeholder support and partnership working. Examples of stakeholders include public transport operators, business support such as the Chamber of Commerce, retailers and charities such as Sustrans, Living Streets and Cycle UK. These would bring additional levels of expertise, engagement, trust, cooperation and coordination across the project.
- 5.2.5 The potential for modal shift associated with smarter choices has been assessed using the Suffolk County Transport Model, using sector analysis, see Appendix 1 for the model sector plan. The adjustment assessment modelled a reduction of approximately 3,000 peak hour trips that both started and ended in Ipswich. This adjustment was based on journey distance and location and, importantly, identified significant potential for modal shift, particularly associated with short distance trips. However, the assessment highlighted the potential for further modal shift, as the modelling indicates approximately 15,000 peak hour trips which both start and end in Ipswich.
- 5.2.6 Within the ISPA area number of higher population locations have reasonable public transport connections to/from Ipswich (e.g. Felixstowe, Kesgrave, Martlesham, Melton, Needham Market, Stowmarket and Woodbridge) that also could be impacted by an improved Smarter Choices strategy, and these represent a total demand of approximately 6,000 peak hour trips, with only a small proportional reduction modelled, approximately 10%. There are other locations, such as Felixstowe which also see a high number of internalised trips, which could be influenced by a strong smarter choices strategy. This indicates that there is potential to increase the level of modal shift later within the local plan period, with a comprehensive Smarter Choice project.
- 5.2.7 Experience of delivering a Smarter Choices project in the wider Ipswich area shows that this must be an agile programme of work, taking into account wider influencers and disruptors in the system. In the Fresh Ways

to Work - an ERDF project within Ipswich - regular monitoring of both the targets against the baseline and the success of the interventions enabled changes to be made during the project so that interventions that did not achieve modal shift were removed and replaced with more effective interventions. For example, the rapid take up of smart phones promoted the use of mobile bus tickets and app development to improve car sharing.

- 5.2.8 Car Clubs can also be an effective intervention; a study by Steer Davis Gleave on behalf of Carplus (2018) showed that the number of car club members across the UK increased almost eight-fold between 2007 and 2017 to just under 250, 000 members. This was not limited to London, with growth appearing across the whole of the country, including rural areas such as Scotland which had a membership growth of almost 30% in a 12-month period to 2017.
- 5.2.9 The University of Bristol Transport Plan was initiated in 1999 to support more sustainable transport of both staff and students by making parking more limited and expensive, whilst simultaneously increasing the attractiveness of alternative modes of transport to the car.
- 5.2.10 A survey of the impact of the plan between 1998 and 2007 found:
- the percentage of respondents who reported that they usually (four to five times per week) walk to work increased from 19% to 30%
 - the percentage of respondents who reported that they usually cycle to work increased from 7% to 12%
 - the percentage of respondents who usually commuted by car decreased from 50% to 33%
- 5.2.11 Conservative estimates suggest approximately 70% of commuters usually cycling or walking were meeting at least 80% of their weekly recommended guidelines of physical activity. (Brokman and Fox, 2010)
- 5.2.12 In the 2017 LSTF projects Evidence from the Strategic Employment Sites and Business Parks Case Study suggested that car parking restraint (or lack of it) was a key influence on car driver mode share. The research confirmed previous findings that there was a tendency for workplace travel interventions to concentrate on easy 'pull' initiatives, such as providing

encouragement and information, rather than more challenging, but more effective, 'push' initiatives such as reducing or restraining parking. This suggests that in order for workplace travel planning interventions to be effective, easy 'pull' initiatives need to be combined with measures to reduce or ration car parking. Car parking restraint appeared to have been a key influence. Controlling for other factors, sites with restricted car parking showed lower single occupancy car commuting and higher cycle commuting than other sites. Interviews with senior managers confirmed restricted parking was, in fact, a main motivator for firms to engage with sustainable transport initiatives.

5.2.13 The 2010 Sustrans Smarter Choices Project for Ipswich engaged with 12,000 households in a two-year period at a cost of £474,098. Overall it achieved a 11% car with single driver trip modal shift, which is in line with previous success, but this was not sustained due to the lack of long-term engagement. This project did not include the areas identified by the current modelling as key target sectors, North-West and South East Ipswich.

5.2.14 The range of evaluations and research on behaviour change programmes all show that this type of intervention has a positive effect on mode choice. The different outputs are due to the different evaluation methods and results achieved. The evaluations have not assessed the findings in a like for like scenario, hence the range of mode shift across the projects delivered.

5.2.15 Further development of a Smarter Choices project would utilise the following approach;

- Baseline data collection of both quantitative and qualitative data. Face to face interviews, focus groups, online surveys, multi modal counts, supported by non-numerical feedback to inform the project on a year to year basis – what is working well, what isn't working, be prepared for external influences and disruptors outside of local authority remit or control.
- Engagement of employers across a range of workplaces including large and those who identify as SMEs – of which there are a significant

number in Suffolk. Likely to be in the region of 25 per year based on previous projects.

- The integration of Smarter Choices interventions in the 17 new schools planned in the ISPA area. Success of this is based on the requirement for travel plans to be produced via planning permission, development related travel plans are considered to be business as usual and will support wider Smarter Choices measures.
- Working with existing primary and secondary schools to update, implement and monitor travel plans.

5.2.16 The effectiveness of Travel Plans secured through the planning process would only provide a contribution towards positive modal shift if fully supported. There needs to be a firm endorsement of the role that Travel Plans have in the effective mitigation of development supported through local plan policy.

5.3 SUMMARY

5.3.1 The evidence from the research available points to the ability for a Smarter Choices project to positively affect transport choice away from single vehicle occupancy. A programme of initiatives and interventions would be developed and those that have worked well in Ipswich, could then also be applied more widely in Suffolk.

5.3.2 A key benefit of a Smarter Choices project is that it can be agile and adaptable and coordinate with initiatives and measures associated with developments and new funding streams.

5.3.3 This type of project could be delivered by: Growing over time; upskilling the delivery team, monitoring performance against baseline data collection (one of the first and essential elements of the project): a full-scale wide area intensive project could be delivered, this would take longer to scope and resource and would require higher start-up costs. Or a combination of these two approaches.

5.4 WALKING AND CYCLING

- 5.4.1 Walking and cycling are key sustainable modes of transport that can be effective options for shorter journeys. They are also an affordable choice that have public health benefits. The provision of infrastructure can be a factor in achieving modal shift to these modes. Improvements would complement other infrastructure and softer measures to reduce the demand for car travel to an acceptable level.
- 5.4.2 Across Suffolk improvements to the walking and cycling network have been delivered primarily through specific grant funded projects such as the Bury St Edmunds Malthouse cycle bridge, S106 agreements in new developments or alongside major capital projects – significantly road building projects. These projects also include Travel Ipswich, Lowestoft Northern Spine Road, Beccles Southern Relief Road, and Bury Eastern Relief Road.
- 5.4.3 The county council has continued to build on these improvements and is developing a Local Cycling and Walking Infrastructure Plan (LCWIP). The plan will identify key gaps in the network and provides the framework for future improvements and mitigation options.
- 5.4.4 DfT guidance describes the 5 factors required for a well-appointed cycling and walking corridor.
- Coherent network linking desired origins and destinations which is easy to navigate
 - Direct route providing direct and fast routes
 - Safe network including the cyclists' perception of their safety
 - Comfortable well surfaced with minimal stopping along the route
 - Attractive making the journey pleasurable
- 5.4.5 Analysis has been undertaken and will inform the Suffolk County Council's LCWIP using DfT approved tools the Walking Route Audit Tool (WRAT) and the Cycling Level of Service (CLoS). This process will identify the some key links that will require improvement.

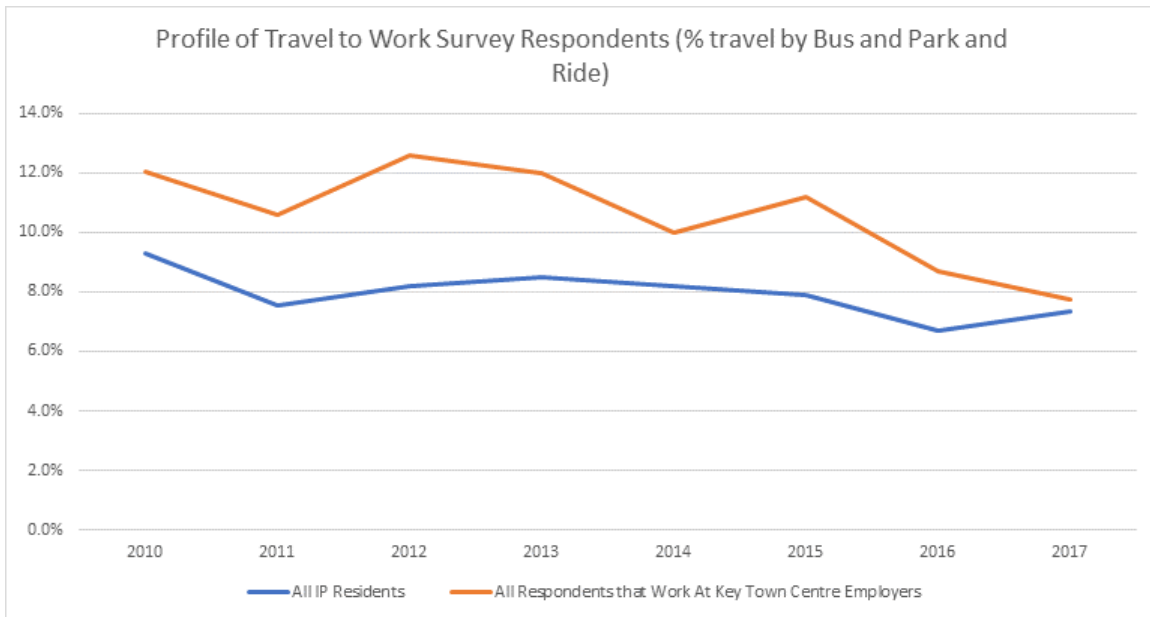
5.5 SUMMARY

- 5.5.1 Work on the walking and cycling strategy is ongoing and builds on the adopted 2016 Ipswich Cycling Strategy SPD. However, as part of the ISPA mitigation strategy implementation programme a review of the potential to introduce more ambitious measures would be undertaken, with focus on improving sustainable access to areas of employment. This workstream is tightly linked to improvements for bus services, where combined access improvements could be provided.

5.6 BUS PROVISION

- 5.6.1 For the purposes of this report, bus services and park & ride bus services are considered separately. This section also considers potential benefits in the consolidation of bus stations.
- 5.6.2 Suffolk has seen one of the largest declines in bus patronage, when compared to other counties with a similar size population. When pitched against neighbouring authorities (Cambridge and Norwich) the decline in bus patronage in Suffolk is 22%, double that of the decline in patronage in Cambridge. In Norwich, bus patronage has continued to grow.
- 5.6.3 Suffolk County Council has recently reduced subsidies on some bus routes. This decision was made after considering a multiple of factors including the level of patronage, trip purpose and the level of subsidy. Six routes, that provide a link between rural areas and Ipswich have had subsidies withdrawn. The principle of utilising subsidies to encourage patronage, particularly to accommodate commuter trips, will be considered as part of the wider package of mitigation work; with a focus on funding opportunities through developments.
- 5.6.4 The reduction in bus usage across Suffolk is also prevalent in Ipswich, as indicated in Travel to Work Surveys, which are issued to a number of workplaces across Ipswich. The chart below shows the results for bus use. Most notable is the reduction in the number of bus passengers that do not live in Ipswich, which could be an indication of poor bus penetration and bus frequency in areas outside of Ipswich and the commercial viability of these services.

Figure 4 – Travel to work survey bus patronage



5.6.5 There are a number of bus targeted measures that could be implemented across Ipswich, however, rather than the transport authority taking the decision on what is best for increasing bus patronage, working in partnership with bus operators through the establishment of Quality Bus Partnerships (QBPs) is considered to be much more effective.

5.7 QUALITY BUS PARTNERSHIP

5.7.1 Quality Bus Partnerships are being used in counties across the UK as a means to increase bus patronage growth by improving bus services through working with bus operators to target investment in bus routes. Although Ipswich had one of the UK's first Quality Bus Partnerships (QBP) in 1995, which increased patronage by 65%, since that time no QBPs have been established with bus operators in Ipswich.

5.7.2 A Quality Bus Partnership (QBP) can be a voluntary or statutory agreement between local authorities and bus operators to improve the quality of a bus service. The QBP can cover certain routes, areas, or an entire network.

5.7.3 The concept of Quality Partnership Schemes (QPS) was introduced by Government in the 2000 Local Transport Act. The QPS arrangement was ratified further in the 2008 Local Transport Act, which made it easier for Local Authorities and bus operators to implement a QPS, and the Act

provided further opportunity for local authorities and bus operators to agree frequency of service and fares. Since then, The Bus Services Act 2017 has introduced three new partnership models: Franchising, Advanced Quality Partnership and Enhanced Quality Partnership.

5.7.4 A study was commissioned by the DfT to evaluate the effectiveness of more recent Quality Bus Partnerships across the country. The study shows that QBPs can have an impact of increasing bus patronage of between 7% and 30%.

https://www.transportforqualityoflife.com/u/files/Smarter_Choices_Changing_The_Way_We_Travel_chapter6.pdf

5.8 ACHIEVING MODAL SHIFT

5.8.1 The report (Transport for Quality of Life) commissioned by the DfT concludes that the effectiveness of the QBP to enable the patronage growth is dependent upon the level of investment. Table 7 shows the predicted level of patronage growth likely to be achieved against low, medium and high investment scenarios.

Table 7: Patronage growth achieved against investment

Improvement Type	Worst Case Patronage Growth	Average Patronage Growth	Best Case Patronage Growth
Minimal Infrastructure Improvement	-25%	5%	10%
Comprehensive conventional route upgrade	5%	15%	50%
The 'X factor' something better than conventional	20%	30%	45%

5.8.2 The examples in Table 8 further demonstrate the percentage bus patronage increase achieved against the level of Quality Bus Partnership investment. Although each case is based on different levels of investment, on average investment drew about a 30% increase in patronage.

- 5.8.3 The research shows that the higher levels of investment did not necessarily draw higher patronage but indicated that success is dependent upon the funding of three areas: marketing and passenger information, bus infrastructure improvements and investment in bus fleet. The information in Table 8 also comes with a number of caveats: that the funding figures in some examples are over ten years old, the level of funding recorded by local authorities is categorised differently and over different time frames, investment in areas fluctuate year on year, and tracking of spend is not accurate and is based on interpretation.
- 5.8.4 However, Table 8 does show that investment in a Quality Bus Partnership is an effective way to deliver passenger footfall growth. An example from the Ipswich area shows the ability to increase bus patronage by 65% through investment in the Route 66 guided busway.

Table 8: Quality Bus Partnership Investment and Passenger Growth

Area	Type of QBP	Marketing Spend	Revenue Spend	Bus Operator Spend	Percentage switch from car
Nottingham	Statutory	£85k PA (local authority spends 2003 figures) £250k PA (operator spend 2003 figures)	£5m (PA) over 10-year period	£20m (new bio-fuel buses) £900,000 (Nottingham City Transport – EV vehicles) £2.5m Smart ticketing	Study claims over half of footfall increase has been driven by marketing and promotion 48% over a two-year period
Birmingham	Statutory	£425k (PA)	£10m	£25m+	29% over an 18-month period. Total for three services,
Brighton and Hove	Statutory	£60k (PA) (2003 figures)	£4.5m	£6m	5% per year (45% over a 9-year period)
Bristol	Moved from Voluntary to Statutory	Dependent on the scale of the campaign	£42m over a 5-year period (DfT) S106 (£5.7m) Local Authority £1.8m Approximately 5-year programme	£20m	Covered 10 bus corridors. Average 29.2% over a 7-year period
Ipswich Route 66	Voluntary	Dependent on the scale of the campaign	Guided Busway opened in 1995. Cost of Cambridgeshire Guided Busway (original price £87m)	Unknown	63% over a 5-year period
South Yorkshire Travel Options Planning		£176k (2003 figures)	£18.3m (awarded in 2013, spent over a 4-year period)	£7m (2016)	18% increase

5.9 ACHIEVING BUS PASSENGER GROWTH IN IPSWICH

- 5.9.1 An increase in passenger growth can be achieved through the right level of engagement with bus operators.
- 5.9.2 A Voluntary Quality Bus Partnership should be considered as a first step towards improving the quality of bus services in Ipswich. This would allow for commitments between stakeholders and bus operators to be made to improve bus services.
- 5.9.3 Local Authority commitments could include:
- infrastructure improvements to make bus travel more rapid, comfortable and more accessible than the car;
 - investment in marketing;
 - regular meetings with bus operators to discuss areas of investment;
 - joint working on funding applications to improve fleet;
 - regular communication with bus operators about highway maintenance work, and
 - Support of improved bus services to support commuter trips, optimising contributions through development.
- 5.9.4 Bus operator commitments could include:
- information and marketing investment;
 - upgrade of bus fleet;
 - meeting punctuality targets; and
 - increase in routes operated and frequency of service.
- 5.9.5 The Sector Analysis on the predicted trip rates for 2026 associated with the Ipswich Strategic Planning Area indicates where the majority of trips could take place. This data can be used to show where the priority bus corridors for Quality Bus Partnership investment could be focussed and can be phased to be aligned with housing and commercial growth.
- 5.9.6 The following areas of Ipswich from the 2026 modelling analysis with no adjustments show where high demand in the AM and PM peak would exist (in order of highest to lowest) and indicate, subject to discussions with bus companies, the prioritisation of the review of bus routes:

- South East quarter of Ipswich
- South West Ipswich
- North West Ipswich
- North East Ipswich
- Ipswich Central.

5.10 CONSOLIDATION OF BUS STATIONS

5.10.1 Work was undertaken in 2018 to review the viability and potential benefits of consolidating the two existing bus stations – Old Cattle Market and Tower Ramparts – into one central transport hub. The study found that there would be benefits in passenger experience, accessibility and service delivery. A central bus station with dynamic bus stands could offer significant benefit to bus services and provide wider transport benefits. However, further analysis is required to determine the feasibility, potential costs and wider impacts of the proposal. It is recommended that active engagement with the bus companies would be needed, through a QBP, in addition to further analysis of travel patterns are monitored to inform the potential consolidation of the bus stations.

5.11 CROSS-OVER WITH OTHER MODE-SHIFT PROJECTS

5.11.1 The work to deliver an increase in bus patronage crosses over a number of other mode-shift project areas: predominantly Park and Ride and Smarter Choices work. It would therefore be essential that consideration is given to bring the QBP work together with the Park and Ride and Smarter Choices work to gain more value from the partnership and spread the benefits wider.

5.11.2 Smarter Choices campaigns and Personalised Travel Planning projects can help to drive the marketing and promotion of the bus service as well as gather feedback on routes and frequencies that would encourage bus use, and opinions on bus fleet and passenger facilities.

5.11.3 The delivery of new highway schemes through Government spend or through development fund (e.g. S106 and S278) are opportunities for Suffolk County Council to deliver its funding responsibility to a Quality Bus Partnership. Work could also be undertaken to identify

maintenance/enhancement projects which could also benefit bus infrastructure – such as increased bus priority through the installation of new traffic lights.

5.12 FURTHER CONSIDERATIONS

- 5.12.1 Further work should be conducted to identify the phasing of growth in the ISPA area and the existing bus services that serve those communities. Research could be undertaken to understand current barriers to bus patronage.
- 5.12.2 Identification of budgets and potential funding pots should also be undertaken, as well as the coordination of maintenance and potential minor highway improvements.

5.13 SUMMARY

- 5.13.1 The current phasing of growth in the ISPA area is based upon estimated buildout rates and the delivery of sites based on the uncertainty log. The accuracy of this phasing should be monitored to inform the phasing of and funding for bus service improvements.
- 5.13.2 Identification of budgets and potential funding pots should also be undertaken, as well as where committed maintenance and new highway schemes are planned to take place.
- 5.13.3 A bus service improvement plan could be developed.

5.14 PARK & RIDE SERVICES

- 5.14.1 Ipswich is currently served by two Park & Ride sites, one in Copdock and one in Martlesham. The sites have capacity for approximately 1,000 cars, which is split almost evenly between the sites, and services operate on a 15-minute frequency. The occupancy rates average between 250-300 cars arriving during the AM peak per site per day.
- 5.14.2 As part of formation of this Strategy, Suffolk County Council has surveyed other local authorities to compare the provision of Park & Ride in similar urban areas and to determine best practice.
- 5.14.3 The survey requested information on the number of sites serving the urban areas, the number of car parking spaces at each site and average occupancy rates alongside service-related questions including service cost, frequency and marketing.
- 5.14.4 The survey also requested information on factors that affect the Park & Ride service including the extent of bus priority provision on the routes into town and city centres and whether the authority that operates the Park & Ride site can exert influence over the availability and cost of town or city centre car parking.
- 5.14.5 The responses were then scaled using the workday population of the town or city (where figures were obtainable) to compare the provision of Park & Ride with that in Ipswich.
- 5.14.6 It was found that the level of Park & Ride provision in Ipswich lags behind that of other similar towns and cities. Ipswich has 50% of the average workday population of the urban areas compared, but only offers 35% of the number of car parking spaces at Park & Ride sites. Furthermore, Ipswich has fewer Park & Ride sites on average compared with other urban areas.
- 5.14.7 Feedback provided by Essex County Council shows a link between the cost and availability of town or city centre parking with occupancy rates of Park & Ride services. Chelmsford has two Park & Ride sites – Chelmer Valley and Sandon – compared with one site serving Colchester. Colchester has 70% of the number of car parking spaces than that of Sandon, but only 22%

of the occupancy rate. It has a similar number of car parking spaces to Chelmer Valley but only 40% of its occupancy rate.

- 5.14.8 Car parking seasons tickets in Chelmsford and Colchester are similar in cost, but a scarcity of provision necessitates a waiting list for season tickets in Chelmsford. Day tickets are comparatively expensive within Chelmsford meaning that those looking for regular long-stay car parking, such as commuters, are less able to find regular, inexpensive car parking in Chelmsford than in Colchester. The effect is that there is a higher propensity to use the Park & Ride services among commuters in Chelmsford than in Colchester, which is demonstrated by the significantly higher occupancy rates at the Park & Ride sites serving Chelmsford.

5.15 ACHIEVING MODAL SHIFT

- 5.15.1 There are two sites in Ipswich that have the potential to accommodate additional Park & Ride services. A site at Bury Road which operated a Park & Ride until its closure in 2011 and a site reserved in the current local plan near to Ravenswood, off Nacton Road.
- 5.15.2 The Bury Road site can accommodate 600 car parking spaces and, when it was operational, occupancy was averaging 300-350 cars per day, a rate of 50%-58%. This represents a viable alternative to private car use for journeys from the north-west of Ipswich, Mid Suffolk, West Suffolk and beyond. Although there is inherent potential for patronage reassignment (particularly from London Road P&R site) by reinstating Bury Road P&R, occupancy rates from 2011, when all three sites were last operational, suggest similar patronage can be achieved across all sites, with evidence also suggesting only a modest increase in occupancy at London Road upon initial closure of Bury Road.
- 5.15.3 Sectoring analysis shows that the Bury Road Park & Ride site is likely to influence a proportion of the 1,142 additional car journeys entering the centre of Ipswich (sector 800 of the model) from a north-westerly direction during the AM peak and could influence 3,000 additional car journeys traveling to wider areas of Ipswich (sectors 802-804 of the model) that

would filter past the Bury Road P&R site. This could have a significant impact on the volume of traffic and delay experienced on the route. The potential number of journeys to Ipswich town centre and wider Ipswich areas that could be influenced by reinstating the Bury Road P&R site as defined by the model are shown in the tables below:

Tables 9 & 10

Ipswich Central O-D

2026 No Adj AM to Ipswich (800)

Area		
Origin	Sector	Number of Trips
Ipswich NW	801	682
Stowmarket	810	71
Bury St Edmunds	811	24
Newmarket	812	3
Mid Suffolk North	815	24
Mid Suffolk Central	816	154
Mid Suffolk South	817	124
Forest Heath & St Edmundsbury	826	38
Needham Market	831	22
Total		1142

2026 No Adj AM to Ipswich (801, 802, 804)

Area		
Origin	Sector	Number of Trips
Ipswich NW	801	1534
Stowmarket	810	247
Bury St Edmunds	811	80
Newmarket	812	11
Mid Suffolk North	815	56
Mid Suffolk Central	816	296
Mid Suffolk South	817	586
Forest Heath & St Edmundsbury	826	109
Needham Market	831	81
Total		3000

5.15.4 The Suffolk County Transport Model (SCTM) predicts significant delay to journey times between the proposed Park & Ride site at Bury Road and the town centre and several junctions along the route are predicted to exceed their capacity. These delays are shown (in seconds) in table 11.

Table 11

Junction	Arm	AM Delay (s)	PM Delay (s)
Bury Road/ Old Norwich Road	Bury Road	15	16
	Old Norwich Road	3	19
Norwich Road/ Whitehouse Road	Whitehouse Road	7	16
Norwich Road/ Cromer Road	Cromer Road	21	14
Norwich Road/ Chevallier Street	Norwich Road (N)	96	44
	Valley Road	0	0
	Norwich Road (S)	8	33
	Chevallier Street	22	16
Norwich Road/ Anglesea Road	Anglesea Road	12	3
Norwich Road/ Bramford Road	Bramford Road	29	1
Norwich Road/ Orford Street	Orford Street	2	18
Total			
		215	180

- 5.15.5 A maximum frequency of 15 minutes would be required to adequately accommodate the demand for Park & Ride services and be attractive to potential passengers. Smart ticketing and inter-ticketing with related services would help to achieve the level of modal shift by making the service simpler and more user-friendly. Infrastructure improvements/bus priority at pinch points would also provide benefit to all bus services.
- 5.15.6 A site in Ravenswood has been reserved in the current local plan for the potential future use as a Park & Ride site.
- 5.15.7 Whilst the sectoring analysis predicts a limited catchment for a potential Park & Ride site at Ravenswood for those traveling to town centre, the potential for this site should be monitored. It is likely that car journeys originating in south-east Ipswich, Felixstowe or Suffolk Coastal South are the most likely to be influenced by the introduction of a Park & Ride service at Ravenswood. The tables below summarise the predicted additional car journeys.

Tables 12 & 13

Ipswich Central O-D

2026 No Adj AM to Ipswich (800)

Area		
Origin	Sector	Number of Trips
Ipswich SE	803	504
Felixstowe	809	138
Suffolk Coastal South	833	80
Total		722

2026 No Adj AM to Ipswich (801, 802, 804)

Area		
Origin	Sector	Number of Trips
Ipswich NW	801	342
Ipswich NE	802	979
Ipswich SW	804	381
Total		1702

4.15.15. The SCTM predicts an additional delay on the route into town centre during the AM peak of 151 seconds and 209 seconds during the PM peak. The table below summarises the delay by junction:

Table 14

Junction	Arm	AM Delay (s)	PM Delay (s)
Nacton Road/Maryon Road	Nacton Road (N)	11	-1
Nacton Road/Landseer Road	Nacton Road (S)	9	66
	Landseer Road	3	17
Landseer Road/Sandyhill Lane	Sandyhill Lane	2	10
Duke Street/Fore Street	Duke Street	30	3
	Fore Street	20	4
College Street/Bridge Street	College Street	16	47
College Street/Star Lane	College Street	49	50
	Grey Friars Road	11	13
Total		151	209

4.16. SUMMARY

4.16.1. The provision and pricing of parking within Ipswich will heavily influence the attractiveness and take up of Park and Ride services. With higher long stay parking charges supporting the uptake of these services. Work to support the existing and future Park and Ride schemes will therefore need to consider and influence the demand for parking within the town.

- 4.16.2. The analysis shows benefit in reintroducing the Bury Road Park & Ride service, although timing the introduction of this site would need to be considered alongside the current service and parking demand.
- 4.16.3. A number of locations that bus services would experience delays have been identified through the traffic modelling. The identification and implementation of mitigation measures should be developed with a Quality Bus Partnership.

4.17. DEMAND RESPONSIVE TRANSPORT

- 4.17.1. Demand responsive transport, (DRT), is generally defined as a flexible service provided by a fleet of low capacity vehicles available to the general public that responds to changes in demand by altering the route or timetable.
- 4.17.2. Studies have found that DRT works most effectively in areas of low population density. Users value the service and those who use it for work tend to be more frequent passengers (Wang et al., 2015).
- 4.17.3. However, Leicestershire County Council trialled a rural DRT service in 2018 to replace existing fixed-route bus services. The council operated five demonstration services over a three-week period, mirroring the existing bus services. They found that two services failed to attract any passengers, another carried one return journey while the remaining two carried seven return journeys plus one and two single journeys respectively. The council cited public concerns over the suitability of the service and a lack of understanding as to how the service works as reasons for its failure to attract more passengers (LTT, 2018).
- 4.17.4. Furthermore, there is evidence that DRT faces issues of low public awareness and a perception that the service is designed for the elderly or mobility impaired. This is compounded by the marketing of services which is often targeted at these demographics (LTT, 2016).
- 4.17.5. DRT services have experienced success in other urban areas. ArrivaClick has implemented a service in Sittingbourne, Kent and have reported encouraging figures. In 2018, of the 12% of Sittingbourne's population who had downloaded the app, 60% used the service a few times a week and 43% had adopted the service as part of their daily commute. 34% of customers use the service for leisure trips while 31% uses the service to visit friends and relatives. Perhaps the most encouraging finding was that 89% of users would recommend the service to a friend, suggesting that there is a significant untapped market for DRT (Intelligent Transport, 2018).
- 4.17.6. The SCTM predicts a notable increase in journeys in the east of Ipswich, with an additional 4,785 car journeys in Ipswich North-East and Ipswich

South-East during the AM peak and 4,424 additional car journeys in the PM peak. The majority of this growth is expected to be internal trips in Ipswich South-East with 2,196 extra car journeys in the AM peak and 2,143 in the PM peak. It is reasonable to suggest that Ransomes Europark is a key destination for these trips and Ipswich Hospital represents a significant destination in Ipswich North-East. A summary of the model outputs can be found below:

Tables 15 & 16

**Ipswich O-D
2026 No Adj AM to
Ipswich (800)**

Area	Number of Trips
NE - NE	674
NE - SE	936
SE -NE	979
SE - SE	2196
Total	4785

Area	Number of Trips
NE - NE	536
NE - SE	931
SE -NE	814
SE - SE	2143
Total	4424

- 6.18.7. The Ipswich Buses number 2 route is currently a half-hourly fixed-route service connecting Gainsborough and Ravenswood with Ransomes Europark and onwards to Ipswich Hospital, but the route is long, indirect and infrequent. Little alternative public transport is available to link south-east Ipswich with north-east Ipswich. Improvements to the public transport provision connecting the two areas is necessary to mitigate the impact of ISPA growth.
- 6.18.8. The evidence from Sittingbourne suggests that DRT could play a role in encouraging modal shift and improving public transport provision in East Ipswich. When implemented effectively, DRT can become a regular part of people’s commutes and leisure trips and those who use the service regularly value its benefits. However, it is essential that any DRT service in or around Ipswich is promoted appropriately, user-friendly and provides a frequent, reliable service.

6.19. SUMMARY

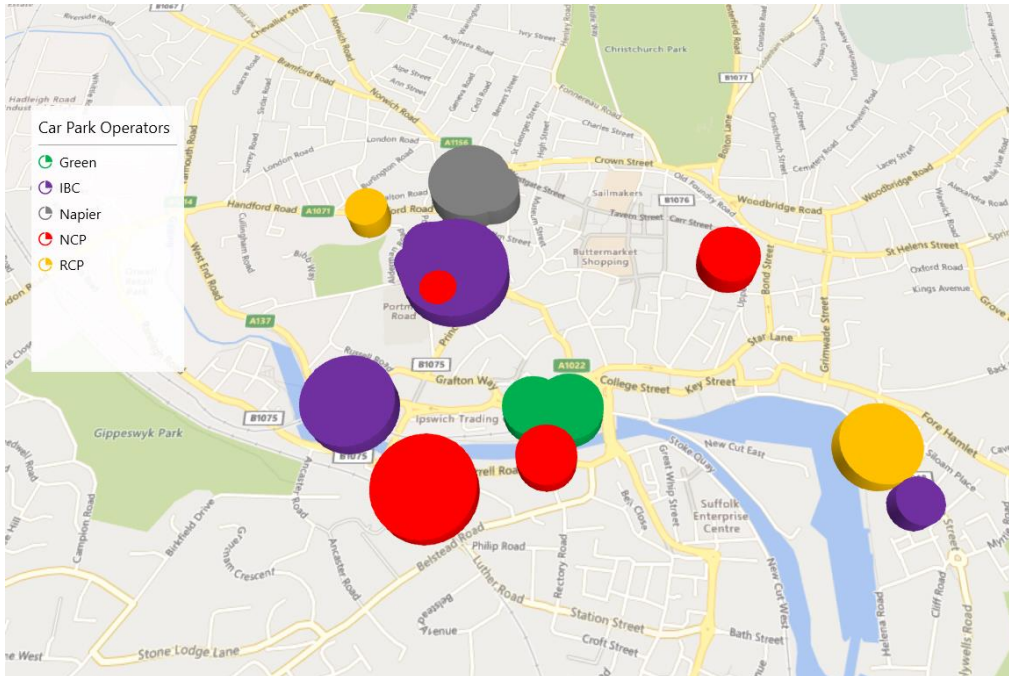
6.19.1. The evidence suggests that DRT can play a role in encouraging modal shift and improving public transport provision in East Ipswich. When implemented effectively, DRT can become a regular part of people's commutes and leisure trips and those who use the service regularly value its benefits. However, it is essential that any DRT service in or around Ipswich is promoted appropriately, user-friendly and provides a frequent, reliable service.

6.20. PARKING

- 6.20.1. Ipswich has both significant private and public, pay for, parking provision. This section reviews the current provision and potential for managing this to provide demand control to assist with modal shift and to support other measures such as Smarter Choices, bus patronage and P&R. Recommendations have been drawn from analysis of the market control and influence that IBC have regarding the provision of public parking within Ipswich town centre, and assessments of the impact and availability of private parking. An emphasis has been placed on measures that may actively contribute to engendering modal shift and consequently assist in alleviating growing constraints on the local road network.
- 6.20.2. It is recognised that parking regulations and parking pricing can play an important role in ensuring that the highway network is able to operate efficiently and also functions as a demand management tool.
- 6.20.3. Ipswich Borough Council's recent Parking Strategy (March 2019 produced by WYG Transport Planning) estimates that there are:
- 6,817 public, off-street car parking spaces in and around the town centre (including 147 disabled spaces);
 - 2,406 (c.35%) are operated by the Borough Council;
 - 4,411 are operated privately, of which approximately 1,800 (c.40% of all privately-operated and c.26% of the total number of publicly available car parking spaces) are under control of a single operator, NCP.
- 6.20.4. This demonstrates the constraints of both control and influence that Ipswich Borough Council (IBC) have over the provision of public car parking spaces within the town centre. However, with the forthcoming expiry of existing temporary car park licences (all of which are set to expire no later than Spring 2021), this balance is shifting.
- 6.20.5. The existing provision of car parking spaces provided for by temporary car parks equates to approximately 1,940 spaces (of which 433 - c.18% - are operated by IBC). Therefore, and should this supply not be alternatively accommodated for at the point of licence expiration, IBC would operate

1,973 of 4,877 publicly available car parking spaces within the town centre (approximately 40.5%).

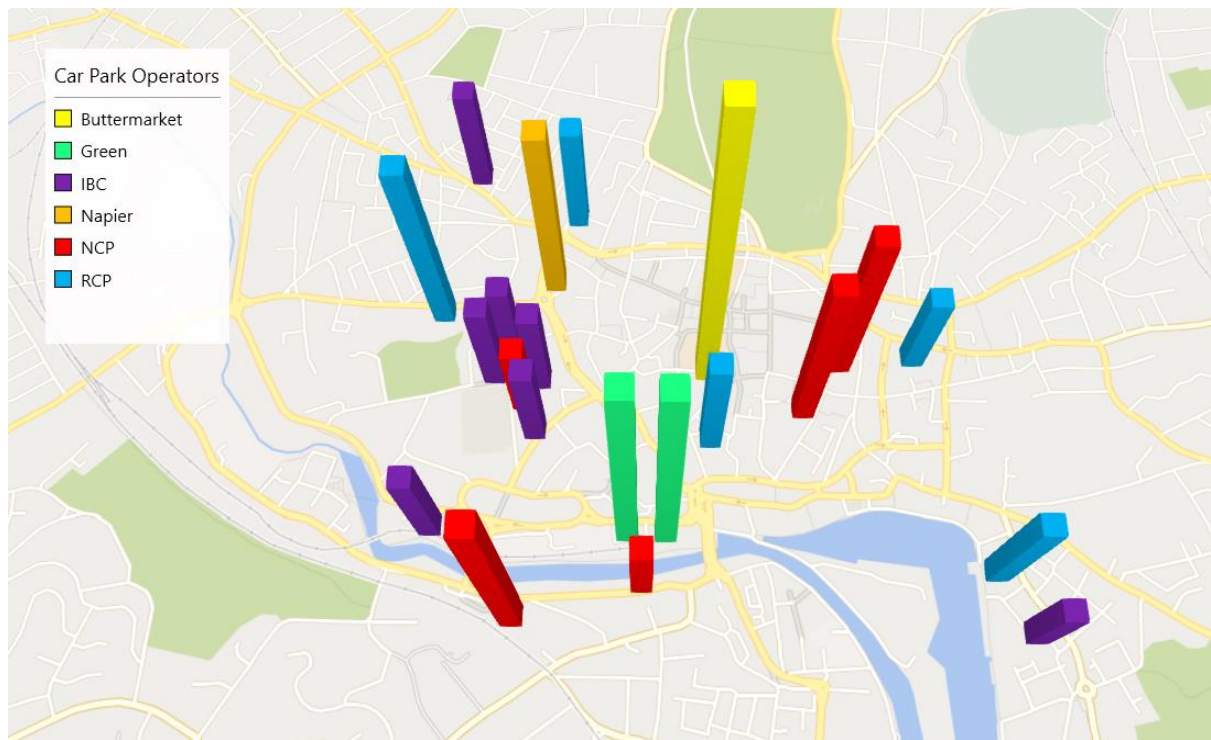
Figure 5: Long-Stay Car Park Locations by Operator and No. of Spaces - highlighting existing IBC constraints over influence



- 6.20.6. The report surveyed 5,670 of the existing 6,817 publicly available car parking spaces within the study area (approximately 22% of spaces surveyed are operated by IBC).
- 6.20.7. For the benefit of analysis WYG Transport Planning identified five zones within the study area (as depicted in Figure 6). It is considered that a zonal approach such as this could be effectively applied to better connect car park types with land use and destinations (such as employment districts, retail areas, leisure and education facilities). This could be augmented by tariffs delineating long-stay from short-stay provisions, and coupled with improvements to wayfinding and signage, could enhance the parking environment of the town and more strategically manage flow on the network and increase turnover of spaces. These recommendations are detailed further in subsequent sections of this report.

- 6.20.8. The report highlighted an existing lack of distinction between car park types. Car parks currently offering long-stay tariffs also offer competitive short-stay tariffs. This conflicting agenda can be detrimental to the effectiveness of usage and turnover of spaces as commuter traffic may be displaced by saturation of long-stay car parks by short-stay users, and vice-versa (where such tariffs exist).
- 6.20.9. With this in mind, consideration should focus on segregating long-stay parking from short-stay provisions. Cambridge, Chelmsford, Nottingham and Oxford City Councils all offer examples of strategic management of car park types by location with an emphasis on the placement of long-stay parking provisions predominantly to the outskirts of the urban centre and closely linked to Park & Ride provisions or alternative sustainable onward routes to their respective centres.
- 6.20.10. It is recommended that, in conjunction with Ipswich Borough Council, further analysis is conducted with the aim of analysing existing car park tariffs and occupancy rates in Ipswich with a view to both optimise revenue and engender modal shift. This approach could also provide a funding source to contribute to implementing modal shift measures identified in this report.
- 6.20.11. Figure 6 demonstrates the variance in long-stay tariff charges across the study area and clearly highlights an opportunity for IBC to consider increased tariffs to align with private operators and to optimise revenue. Consideration should also reflect tariffs of competing destinations.

Figure 7: Car parks (>50 spaces) by location, operator and all-day tariff



6.20.12. Suffolk County Council have also conducted case study reviews of parking regulation and control measures implemented by other local authorities in the assessment of option viability, analyses of strengths and weaknesses and in the determination of best practice.

6.20.13. The case studies selected for review were as follows:

- Oxford City Council's 'Urban Centre Parking Restraint Strategy' (2014);
- Nottingham City Council's 'ParkSmart' (2009) and 'Workplace Parking Levy' (2012);
- Cambridge City Council's 'Peak-Time Tariff' (2018); and
- Parking policy, strategy and pricing assessments of nearby and competing destinations - Cambridge, Chelmsford, Colchester and Norwich.

6.20.14. In the selecting of the following recommendations, Suffolk County Council have been mindful of the Ipswich context and the policies as set out in Ipswich Borough Council's 'Parking Strategy' and '- Local Plan' as well as Suffolk County Council's 'Local Transport Plan'.

- 6.20.15. In the future, patterns of falling car ownership supported by an increasing reliance on Mobility as a Service (MaaS) offers increased opportunity in the reduction in the scale of parking required. This should be factored into assessments over the future supply of car parking spaces in lieu of the forthcoming expiration of temporary car park licences and potential reduction of available car parking spaces.
- 6.20.16. Evolving technology, including the growth in electric vehicle numbers. MaaS services including the rise in autonomous vehicles may, however, change the nature of parking provision requirements in the future.
- 6.20.17. In response to changing technologies, new technology must equally play a major role in effective management of parking supply. Vehicle detection could be adopted to more effectively manage available parking supply, and better information dissemination on the extent and location of available spaces would reduce circulating time - estimated to be responsible for approximately 30% of inner-urban congestion (Navigant Research, 2018).
- 6.20.18. A case can also be made for utilising newly introduced technologies to dynamically manage the demand for parking, not just the supply of parking. For example, variable charges at different times of the day could be used to reflect constraints on the network at peak times or during special events in the town. Conversely, reduced tariffs could be used to attract visitors outside of these periods or to more effectively manage the spread of demand throughout the day, and future consideration should be given to this.

6.21. SHIFT IN TRAVEL PATTERNS

- 6.21.1. Prioritise the efficient use of space in the allocation and re-allocation of parking by adopting a policy of segregating long-stay and short-stay parking provision through location (linked to land use sectoring) and tariff control;
- 6.21.2. Increase long-stay parking tariffs to align with nearby and competing destinations to optimise revenue from long-stay parking activities. This

additional income should be ringfenced for reinvestment in sustainable alternatives;

- 6.21.3. Improved and enhanced signage and wayfinding, such as Variable Message Signs (VMS), should be installed to assist and augment network and route management to reduce the impact of cruising and to improve the user experience;
- 6.21.4. Consideration of the introduction of a Workplace Parking Levy (WPL), such as that successfully implemented by Nottingham City Council in 2012⁸, has been investigated as a potential future development and as part of a wider, and comprehensive, traffic management strategy. By way of example of the potential revenue, if £1 per space per day was applied to the largest employers in the town (including Ipswich Hospital), approximately £1.2million could be raised each year (approximately £252 per workplace parking space). Historically this has been a difficult measure to introduce and engagement with businesses and other authorities would be needed before this could be considered further. It does not currently have political support of the County Council.
- 6.21.5. Introduction or trial of a 'Peak-Time Parking Tariff' as a further mechanism for deterring commuter parking and associated traffic in the town centre, such as that recently trialled by Cambridge City Council in 2018⁹.
- 6.21.6. The long-term potential of dynamic tariffs (based on the incorporation of new and advancing technologies, and flexible payment options) should be further examined as an additional measure to enhance the effectiveness of parking controls at tackling, in particular, peak-time congestion;
- 6.21.7. Future consideration should also be given to the reduction of parking supply in line with reduction in demand as mitigation schemes take effect.

⁸ Nottingham City Council's 'Workplace Parking Levy' (2012) <https://www.nottinghamcity.gov.uk/information-for-residents/transport-parking-and-streets/parking-and-permits/workplace-parking-levy>

⁹ Cambridge City Council's 'Peak-Time Parking Tariff' (2018) <https://www.cambridge.gov.uk/tackling-congestion>

6.22. ACHIEVING MODAL SHIFT

- 6.22.1. The most efficient means of managing peak-time congestion on the network caused by drivers searching for parking is to locate long-stay parking to the outskirts of the town centre, thus reducing the need for commuter traffic to enter the town centre road network as evidenced by Oxford City Council's urban centre parking restraint strategy and Park & Ride developments, which have resulted in little fluctuation in the levels of car traffic entering the central area over the last 4 years, despite wider growth in the area¹⁰.
- 6.22.2. This could be achieved by adopting a strategic, zonal approach to the location of car park types. This approach would assist in filtering out commuter traffic from the inner-urban environment whilst permitting short-stay visitors (i.e. shoppers) to access the town centre and short-stay parking provisions. This would significantly contribute to the alleviation of peak-time congestion brought about by localised growth providing there is sufficient a provision for walking, cycling and/or public transport links, such as Park & Ride and/or "Park & Stride", for onward journeys to the town centre and employment sectors and could be promoted through a comprehensive Smarter Choices package.
- 6.22.3. Increased long-stay parking tariffs act as a deterrent to commuter parking (and therefore, associated traffic) from the town centre whilst enabling visitors of the high street through the provision of short-stay parking (recommended to be set at a maximum 3- to 5-hour permitted stays). It also assists in engendering modal shift where suitable alternative provisions exist. Therefore, improvements to alternative services, such as walking and cycling, bus and Park & Ride infrastructure and services are imperative in order to achieve targets for mode shift and congestion relief without inducing significant displacement of parking activities elsewhere on the network or causing overspill to locally available on-street parking provisions.

¹⁰ ATCM, 'In-Town Parking: What Works?' (2014) <https://thegreatbritishhighstreet.co.uk/pdf/GBHS-What-Works.pdf>

- 6.22.4. Improved signage and wayfinding, such as VMS, assist congestion relief through improved network management and route guidance as evidenced by Nottingham City Council's 'ParkSmart' concept (reviewed and approved by the DfT)¹¹. A similar approach could be implemented in Ipswich to establish a zonal based strategy of car park types by location, connecting car parking provisions and land use within the town, with directional signing used to navigate drivers to available car parking spaces within their desired destination zone. This would reduce the amount of time drivers spend on the network in search of car parks and/or available spaces (cruising time), alleviating constraints on the network caused by such activities. This would also enhance user experience.
- 6.22.5. A 'Peak-Time Parking Tariff' for example an additional 50p/hr charge for cars arriving between 8-9.30am Mon-Fri, such as that trialled by Cambridge City Council in 2018, would act as a further deterrent to commuter traffic accessing the town centre parking provisions during the AM peak. This also operates as an effective tool for promoting alternative services, with particular reference to Park & Ride, due to the financial disincentives of parking during the peak AM comparable to such services.

6.23. REFERENCES

- 6.23.1. <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/P-OST-PN-0538> Around 15-30% of land in large cities is currently designated to parking spaces.
- 6.23.2. <https://www.wsp.com/en-GB/insights/autonomous-vehicles> New mobility models could reduce the need for parking
- 6.23.3. <https://www.itf-oecd.org/shared-mobility-simulations-helsinki> freeing up land for building new homes or green and open spaces.

6.24. SUMMARY

- 6.24.1. The Ipswich Parking Management Strategy and additional research has provided a comprehensive overview of parking in the town. Noting that

¹¹ Nottingham City Council's 'ParkSmart' (2009)
https://www.siemens.co.uk/traffic/pool/documents/articles_papers_and_presentations/tec_apr09_p156-157.pdf

there are both opportunities and barriers faced by the variety of operators across the town around provision, cost, location and availability.

- 6.24.2. The recommendations for parking control are varied and there is a need to support IBC in the development of an updated parking strategy that acknowledges and understands the wider pressures on traffic management in Ipswich. This recognises that parking management is a key opportunity, in conjunction with other workstreams, to influence mode choice and promote sustainable travel as a priority whilst balancing income from their car parks to maximise use.
- 6.24.3. Cost is wide ranging and not yet included, however, it is likely that quick wins such as improved signage on location and availability of spaces would be lower cost and quicker to deliver than projects such as rationalisation of provision or the construction of new car parks.
- 6.24.4. Regarding improved wayfinding and signage, SCC and IBC are currently undertaking a partnership project to introduce nine VMS signs across Ipswich town centre. Predominantly these would be used to display car parking information, however, they would also have capacity to display wider, key messages about the network. The estimated cost of implementation is approximately £300,000 (with contributions from each authority roughly shared equally).
- 6.24.5. A 'Peak-Time Parking Tariff' cost analysis has yet to be undertaken but is considered a change that could be implemented early within the local plan period. Additionally; parking activities should be managed through appropriate enforcement.

6.25. TECHNOLOGY

6.25.1. Advances in technology have the ability to drastically alter the way in which people access and use the transport systems of the future. There exists a variety of changes to transportation technologies which have been described as the Three Revolutions¹²:

6.25.2. **Electrification of the vehicle fleet.**

- This would, in the UK context, reduce the per mile costs of driving substantially due to the high duty on petrol and diesel and low VAT on domestic energy. The additional purchase price is very quickly being offset by these 'in-use' benefits. Reductions in per mile costs have previously been associated with additional travel.
- As part of their Transport Assessment guidance DfT, (Table 1.3.9)¹³, see Table 17, represents their predictions for the vehicle kilometres driven split by fuel types (petrol, diesel and electric). These assumptions are based on current expectations of the Ultra-Low Emission Vehicles (ULEV) market, given firm and funded policies. It is estimated that electric vehicles will represent approximately 7% of total vehicle mileage by 2026 and 26% by 2036.
- This predicted increase in market uptake of ULEVs could also positively contribute to current air quality concerns related to motorised vehicular traffic, although the extent of this would need to be assessed in a context proportional to growth.

¹² Sperling, D. (2018) Three Revolutions: Steering Automated, Shared and Electric Vehicles to a Better Future, Island Press

¹³ DfT: 'TAG A1.3 & Data Book table A1.3.9'

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/799862/forthcoming-change-2019-vehicle-kilometers-splits.pdf

Table 17: Vehicle Km split by fuel type

Annex A: Updated Vehicle KM Split

Table A 1.3.9: Proportion of cars, LGV & other vehicle kilometres using petrol, diesel or electricity			
Year	Cars		
	Petrol	Diesel	Electric
2004	73.10%	26.90%	0.00%
2026	50.00%	43.23%	6.76%
2027	49.89%	41.64%	8.47%
2028	49.67%	40.05%	10.28%
2029	49.33%	38.48%	12.19%
2030	48.80%	36.91%	14.29%
2031	48.17%	35.47%	16.36%
2032	47.45%	34.16%	18.39%
2033	46.65%	32.97%	20.38%
2034	45.79%	31.86%	22.34%
2035	44.90%	30.86%	24.24%
2036	43.99%	29.93%	26.08%

- 6.1.1 **Automation of the driving task** – whilst it remains unclear how fast and how far the automation of driving would reach, it promises to reduce the workload on drivers on long-distance journeys and to open up greater travel possibilities to people who currently find accessing the transport system, such as the disabled.
- 6.1.2 **Widespread adoption of shared mobility** – increased sharing of vehicles has long been a goal of transport planning to reduce, in particular, peak hour congestion. Services such as Lyft and Uber have added to longer-standing firms such as Liftshare with more dynamic ride sharing services in some places. The economics of shared use of a pool of vehicles changes significantly if they can be automated and this could trigger a shift away from individual ownership.
- 6.1.3 Despite a multitude of roadmaps to deployment and speculative studies of the potential impacts of these technologies, there is significant uncertainty about if, and if so how quickly, some or all of this might come to pass, as well as they would alter the way we travel today and the impacts they have.
- 6.1.4 Below is a list of some of the technologies available, although this list is not exhaustive it does provide an insight to what is already available and some of the emerging technology.

6.2 PUBLIC TRANSPORT

- Demand Rapid Transport (DRT) referred to in previous sections of this report
- Smart ticketing – ticketless and seamless tickets allowing the passenger to move between modes without purchasing tickets
- Company funded routes – in Slough one large business has developed its own service to transport employees, as well as allowing general public to utilise.
- Zero emission vehicles/Electric vehicles – improving environmental impact
- Low emission bus zones in London
- Bus priority on Urban Traffic Management Control (UTMC) – in Ipswich, a UTMC system is in place, further development of this system could place additional priority at junctions in order to make the services more reliable.
- Real Time Passenger Information (RTPI) - additional screens at stops with real time information about when the next bus will arrive

6.3 DELIVERIES

- 6.3.1 Zero emission delivery vehicles do exist but are currently not widely used. These are likely to become the 'norm' with the possibility of some vehicles becoming autonomous. Last mile/first mile delivery is also an emerging area for technology with Ecargo bikes and zero emission vehicles, via a distribution centre located on the edge of the town. This will rely on extensive traffic regulation orders in the town centre to omit HGV's and LGV's.

6.4 PRIVATE CARS

- 6.4.1 With the emergence of autonomous vehicles, it is not clear how the market will react to this. Through vehicle automation, moving around independently may be possible to a much wider proportion of the population. It remains to be seen what will happen with private car ownership, users may move towards not owning a car and, instead, relying on private hire, where an app is used to call a vehicle.

6.4.2 Alternatively, people may choose to own their own autonomous vehicle. This may have a significant impact on the number of vehicles on the network with vehicles collecting and dropping their owners at a required destination before returning home. That same vehicle would then enter the network to collect its owner later in the day, creating many more additional trips on the network.

6.5 WALKING/CYCLING

6.5.1 Technology is being developed to tackle some of the barriers to cycling. Electric bikes are far most accessible, reliable and alongside a network or charging points make assisted cycling more attractive.

6.5.2 Assisted bikes are also coming onto the market to aid those with disabilities to become more independent and cycle around.

6.5.3 Bike hire schemes have been used in parts of the UK with varying degrees of success. Advances in technology could improve the viability of such businesses through GPS tracking, App development and simple payment options.

6.6 SMART INFRASTRUCTURE

6.6.1 Infrastructure – smart street lighting that can provide WiFi networks, monitor local road conditions such as temperature and lighting levels. Air quality monitoring systems are also developing such that they can be installed in street lighting allowing the local authority to closely monitor and react to changes in air quality.

6.6.2 UTMC – urban traffic management control can be used to intelligently manage traffic flow and congestion by coordinating traffic signals within a defined area. This would be a key tool in managing congestion.

6.7 OTHER

- Internet of Things (IOT) – highway assets connected to the internet
- Smart roads
- Next Gen GPS

6.7.1 In spring 2019 the Government published its Future of Mobility Strategy. Reviewing the impact of technology with the role out of aspects of 'Mobility as a Service' (MaaS). The strategy identifies that although further research

is required on the impact of ride-hailing services on congestion in the UK, evidence from around the world suggests that such services will increase vehicle miles travelled in urban areas. San Francisco is one example of where congestion growth is attributed to ride-hailing services.

6.7.2 The DfT's Road Traffic Forecasts identified that travel demand could increase with the deployment of connected and self-driving vehicles, and that levels of demand could be highly dependent on whether ride-sharing is widely adopted.

6.7.3 New mobility models could reduce dependency on car ownership, increasing vehicle utilisation rates and allowing urban space to be used more efficiently as parking spaces are removed. This could allow for more green space, with associated benefits including improved physical and mental health and mitigating the higher temperatures and air pollution of urban areas.

6.8 SUMMARY

6.8.1 It is recognised that the use of existing and emerging technologies would bring great benefit to the range of mitigation recommendations offered here and there is likely to be crossover between the recommendations through technological advancement.

6.8.2 However, it should not be the case to defer all recommendations in the report until the advancement of technology appears. This is likely to be a detriment to delivery & adoption of effective measures as much of this will emerge in the future and may require legislation or other measures to allow uptake by the public.

6.8.3 New and emerging technology may have benefits in terms of lower costs, energy use and maintenance requirements, there may be integration with other service and wider public benefit not directly attributed to the transport network, bringing added value to the local authorities involved and the end users of the transport network.

7 LEGISLATION

7.1.1 Suffolk County Council as the Highways Authority has the legislative delegation to introduce a number of measures. These are considered to be measures that would be introduced in the longer term once the effectiveness of the programme of measures identified in this report have been explored.

7.2 CLEAN AIR ZONE

7.2.1).In May 2017 the Department for Environment Food and Rural Affairs (DEFRA and DfT jointly published their Clean Air Framework (CAF). The CAF set out the principles for setting up Clean Air Zones and identifies two types chargeable and non-chargeable

7.2.2 Clean Air Zones are expected to support local growth and ambition, accelerate the transition to a low emission economy and take immediate action to improve air quality and health. It is expected that, as part of any Clean Air Zone, there would be improvements to optimise traffic flow, which could include the following:

- improving road layouts and junctions to improve traffic flow and create safer more convenient conditions for active travel.
- improved traffic signing strategies to highlight pollution levels and alternative routes.
- improving road layouts and junctions to optimise traffic flow, for example by considering removal of road humps.
- bus priority schemes to improve reliability and journey times, making buses more attractive as an alternative mode.
- public realm improvements to create town centre environments that are attractive to cyclists and walkers.
- optimising traffic signal operation to reduce unnecessary traffic queues, and the associated emissions.
- creating safe, continuous and convenient cycling and walking networks.
- developing connected vehicle and smart infrastructure strategies which improve traffic conditions and support sustainable urban mobility.

- using real-time information to better inform travellers of their choices and to manage demand for transport.

-

7.2.3 As set out above, the introduction of any Clean Air Zone would be complementary to projects that aimed to improve sustainable transport provision. This approach would support the management of and potential reduction in Air Quality Management Areas in Ipswich.

7.3 CONGESTION CHARGING

7.3.1 As part of the 2000 Local Transport Act, Suffolk County Council, as the highway authority has the power to introduce Road User Charging Schemes on its road network. There is no requirement to hold local referenda or to obtain approval from the Secretary of State. However, the charging authority may seek views from local stakeholders at its own discretion.

7.3.2 There has generally been a reluctance to adopt economic pricing principles as they are seen as being politically unacceptable. As a result, in the United Kingdom, schemes are rare, with the London Congestion Charging Zone being the most prominent, but the first scheme that was introduced was the Durham Congestion charge in 2002.

7.3.3 The purpose of a charging scheme may vary, with the aim often being to reduce access to an area during certain time periods or to certain types of vehicles rather than more generally.

7.3.4 The purpose of the Durham scheme is to reduce traffic congestion and pollution and improve air quality in the Durham Peninsula. It also aims to encourage out-of-hours use of the area, creating safer and more attractive streets. It operates from 10am until 4pm Monday to Saturday using Automatic Number Plate Recognition (ANPR). The daily charge for the scheme is £2; however, failure to pay can result in a penalty charge.

7.3.5 Initial monitoring of the scheme identified an approximate 85% drop in vehicles using the street and a 10% increase in pedestrians. Approval of the scheme rose from 49% to 70% following its implementation.

- 7.3.6 The introduction of any Charging Zone would need to be targeted and complementary to improving access by other modes and could be aimed at the town's historic core so to not detrimentally impact the more arterial routes. It would also help improve air quality and could be targeted to relevant hours of the day so to not detrimentally impact certain drivers (e.g. shoppers) or to reduce the attractiveness of travelling during the peak hours. A scheme would likely be effective in reducing congestion for the area it is implemented within, but could potentially have knock on effects, especially if not supported by improved access by sustainable modes.
- 7.3.7 Congestion charging would require the support of business, Ipswich Borough Council and Suffolk County Council. It does not currently have political support of the County Council.

7.4 SUMMARY

- 7.4.1 The process to enable the use of legislation through a Clean Air Zone or Congestion Charging is relatively straight forward. However, considerable work would be required to establish the timing of the need for introduction of such measures and political and business support for these measures. There is evidence that there could be public support for such schemes – if delivered alongside other complimentary measures that support walking, cycling and public transport uptake.
- 7.4.2 Such schemes are flexible and can be tuned to the needs of the network and its users.
- 7.4.3 The cost of delivery of such schemes would require Traffic Regulation Orders (TROs), public consultation and the provision of technology – such as ANPR or similar along with a back-office function and a maintenance regime. It would be possible to deliver this in a scaled approach across the area.

8 ENVIRONMENT

- 8.1.1 The strategy to mitigate the highway impacts of proposed development is focussing on modal shift, i.e. moving trips away from single occupancy car trips to multiple occupancy trips and more sustainable modes.

8.2 AIR QUALITY

- 8.2.1 Ipswich Borough contains four Air Quality Management Areas. A separate piece of work has been undertaken, funded by the ISPA authorities to use the traffic model outputs, without adjustment for mitigation, to undertake an air quality screening process. This will then identify the level of additional air quality modelling required to support the IBC local plan. The results from this piece of work are not included within this document. However, a focus of trip reduction, increased use of sustainable transport with an aim to reduce congestion and delay, will support improvements to air quality in the town centre.
- 8.2.2 It will be important to consider the air quality modelling outputs in developing the implementation programme to deliver the mitigation strategy.

8.3 CLIMATE EMERGENCY

- 8.3.1 In March 2019 the County Council declared a Climate Emergence and its ambition to achieve net zero carbon emissions for its own operations by 2030 and to work with partners with the aim to make Suffolk carbon neutral by 2030. The Council is to develop a strategy to deliver carbon neutrality by 2030. In order to deliver this target, it will be essential to take informed decisions and develop mitigation in accordance with the emerging strategy. Managing reductions in all emissions critical to the delivery of health and environmental improvements the County Council is committed to.

9 INFRASTRUCTURE

- 9.1.1 It is recognised that infrastructure improvements will be required to support the delivery of the mitigation strategy. This will include measures identified within the mitigation chapters and potential improvements to key junctions and links within Ipswich; improvements required outside of Ipswich (such as the Strategic Road Network) are connected with, but are outside of this report.
- 9.1.2 This section provides a summary of the number of junctions and links impacted in 2026 and 2036, as identified by the modelling, in addition a list of junctions that are affected to a lesser extent but which are recognised to be at risk of having capacity or delay issues in future years.
- 9.1.3 Some junctions have already been identified for improvements in relation to committed planning applications. The delivery of infrastructure improvements on the Strategic Road Network is the responsibility of Highways England.
- 9.1.4 The most effective form of implementation of infrastructure improvements is to monitor key junction and link performance as growth comes forward. Current modelling considers build out rates estimated by each local plan authority. The order and impact of actual growth will be an important factor in need and design.

9.2 JUNCTION & LINK CAPACITY

9.2.1 The WSP Results Reports for 2026 and 2036 identifies the number of junctions within Ipswich that have an overall capacity of 85%+ and the links which are over capacity of 100%+. These are standard capacity thresholds for intervention.

Table 18: Ipswich Junction & Link Capacity

	2016 Base	2026 No Adj	2026 With Adj	2036 No Adj	2036 With Adj
No. of Junctions exceeding capacity					
am	2	8	6	15	12
pm	1	12	6	23	16
No. of Links exceeding capacity					
am	7	33	19	60	43
pm	6	33	13	69	49

9.2.2. The results show that the number of over-capacity links reduces by approximately 40% to 50% in 2026 and 24% in 2036. Although future mitigation will consider the link capacity of the network to ensure a coordinated approach, the focus for mitigation will be the junctions.

9.2.3. The SCTM shows that even after the adjustment for modal shift, the junctions in the tables below still show strain by 2026 and 2036. The number of junctions exceeding 85% capacity, across all arms, is reduced by the trip adjustment, however, the number still exceed 2016 levels. This impact can be partially reduced by improvements to infrastructure, although the effectiveness of this intervention will be dependent on detailed design. There will still be a residual impact over 2016 conditions over the local plan period.

9.2.4. The priority has been determined by a review of safety issues, the strategic function of the route and the level of strain predicted in the model in 2026 or 2036.

9.2.5. Tables 19 and 20 below list those junctions identified for the plan period up to 2036. A number of the junctions will be improved as a result of

current development commitments (such as through section 106 obligations). Table 21 lists junctions that have been identified in the model as having capacity issues on individual approaches, but do not exceed the 85% capacity threshold for the junction as a whole. This list is consistent with the junctions identified by SCC as being under pressure. The performance of the remainder of the junctions will be monitored as development comes forward to determine the timing of any improvements. It is likely that most improvements will manage capacity rather than significantly increase capacity due to physical constraints on the Ipswich highway network.

Table 19: 2026 Junctions

Location	Delivery
A1214 SB (south of Scrivener Drive Roundabout)	Currently identified Developer Funded
B1113 / A1071	Currently identified Developer Funded
A1214 / B1077	Currently identified Developer Funded
Heath Road/Foxhall Road	Potential signalisation and increased capacity on approach arms. Identified separately in the IDP
A1071 / Hadleigh Road	Potential signalisation. Option could be linked to future development site
Grimwade Street / Fore Street 2	Review options for increased capacity on approach to signals

Table 20: 2036 Junctions

Location	Delivery
A1214 / Tuddenham Road	Currently identified Developer funded
A1214 / Henley Road	Currently identified Developer funded
Dale Hall Ln / A1214	Coordinate with A1214/Henley Road
Star Lane A1156 / Grimwade Street	
Upper Orwell Street / Old Foundry Road / St Helen's Street	
A137 (near Brantham)	
A1022 College St / Bridge St (by St Peter's)	
College Street / Foundry Lane	
Lower Orwell Street / Key Street	
Northgate Street / Old Foundry Road	

Table 21: Additional Junctions to be monitored

Locations	
Sproughton Road/ Bramford Road	Woodbridge Road/ Heath Road/ Colchester Road
Chevallier Street (Norwich Road to Bramford Road)	Duke Street/ Fore Hamlet
London Road/ Hadleigh Road	Nacton Road/ Ransomes Way
London Road/ Yarmouth Road	Felixstowe Road/ Ransomes Way
Civic Drive (St Matthews Street to Handford Road)	Ranelagh Road (Ancaster Road to Princes Street)
Crown Street (Museum Street to Northgate Street)	Novotel Roundabout
Argyle Street	Bridge St/Vernon St

St Helens Street/ Warwick Road	Felixstowe Road/ Derby Road
Felixstowe Road/ Nacton Road	

9.2.6. The cost of physical works is generally high, in the order of £200k to £5m, and often result in significant delay during construction. This area of mitigation will therefore be investigated more fully during the growth period in conjunction with the Suffolk County Council Local Transport Plan and the associated Town Strategy for Ipswich, that is currently under development.

9.2.7. Potential infrastructure mitigation will include increasing capacity on approach to junctions and managing delay by signalling junctions. The hierarchy of factors considered in identifying infrastructure mitigation will be safety, support sustainable travel, pedestrian/cycle access, capacity, delay management.

9.3. SMARTER CHOICES

9.3.1. The effectiveness of a Smarter Choices programme is dependent on infrastructure measures supporting sustainable transport options such as walking and cycling infrastructure and bus priority. Other infrastructure such as 5G broadband underpins the technology that improves the convenience, reliability and desirability of some services.

9.4. WALKING AND CYCLING

9.4.1. The cost of improvements to improve walking and cycling infrastructure, include filling in gaps, providing new infrastructure to improve access to employment sites, new on-road/off-road facilities and links to bus priority improvements. The cost of this type of infrastructure will therefore vary considerably.

9.5. BUS SERVICES

9.5.1. Infrastructure requirements would be determined through consultation with bus operators within a quality partnership or agreement. This could include bus priority and the relocation of the bus station.

9.6. PARK & RIDE AND DRT

- 9.6.1. Infrastructure requirements would be determined through consultation with bus operators within a quality partnership or agreement.
- 9.6.2. .
- 9.6.3. The type of works would include bus priority on key routes, the extension of bus lanes and alterations to the gyratory on Woodbridge Road East.
- 9.6.4. The Major Road Network within this area of Suffolk, incorporates the A12 to the east of Ipswich from the A14 going north, and the A140. Proposals for improvements to address congestion and delay on these routes, associated with the proposed growth, have been submitted to Transport East for prioritisation to be submitted to the Department for Transport for funding. The proposed schemes would increase capacity over that required by the Brightwell Lakes development to accommodate wider growth; increase capacity on the A12 at Woodbridge and provide a localised relief road between the A1120 and A140 to address delay associated with conflicting turning movements.

1.1. SUMMARY

- 9.6.5. The provision of infrastructure needs to be considered for all workstreams in the transport mitigation implementation programme. It is intended that most improvements will manage capacity rather than significantly increase capacity due to physical constraints on the Ipswich highway network.
- 9.6.6. The trip adjustment reduced the number of junctions that would exceed capacity in 2026 and 2036 showing a residual impact on the network over that experienced in 2016, this is considered acceptable to the Highway Authority.

10. COSTS

10.1. COST APPORTIONMENT

- 10.1.1. This piece of work assesses the combined impact of the ISPA authorities' local plans, with particular focus on impacts in Ipswich. Consideration of the relative contributions of each authority to impacts and the associated mitigation will enable the financial contribution for the delivery of that mitigation to be assessed.
- 10.1.2. Highways England have confirmed that funding, through the capital funding programme for schemes up to £20m, could be provided for improvement works on the local network that would provide benefit to the strategic network. Funding from this and other sources could reduce the total costs of the package of measures that would then be apportioned to development in the districts and Borough.
- 10.1.3. This assessment considered the trips into and out of Ipswich by district and borough, recognising that both movements impact the network. The apportionment would apply to both the town wide measures and improvements to junctions within Ipswich.

Table 22: Trips In/Out of Ipswich

LPA	% trips
Ipswich Borough Council	45
Suffolk Coastal District Council	28
Babergh District Council	14
Mid Suffolk District Council	13

10.2. ESTIMATED COSTS

- 10.2.1. Broad costs have been estimated for workstreams based on experience of delivering similar measures within Suffolk and elsewhere in the country. This includes early infrastructure being delivered up to 2026. All costs are estimates at 2019 prices and, therefore, subject to inflation and scheme development. Costs associated with infrastructure are therefore presented as a range to address this uncertainty. Delivery of the

workstreams will be profiled over the early plan period, phase 1 of the implementation programme, as indicated in Table 23.

Table 23 Delivery profile by workstream

2020/21	2021/22	2022/23	2023/24 to 2026/27
Monitoring			Monitoring
Smarter Choices	Smarter Choices	Smarter Choices	Smarter Choices
	QBP	QBP	QBP
		Park & Ride	Park & Ride
	Parking related measures	Parking related measures	Parking related measures
		Bus Priority Imp	Bus Priority Imp
Infrastructure	Infrastructure	Infrastructure	Infrastructure
	Technology	Technology	Technology

- 10.2.2. Overall the capital cost of infrastructure within Ipswich up to 2026, at 2019 prices, will be between £16m and £20m
- 10.2.3. Revenue costs will cover the monitoring, the Smarter Choices programme, incentives, running the Quality Bus Partnership, expansion of the Park & Ride services and support for emerging/enhanced bus services.
- 10.2.4. Therefore, the estimated total cost to 2026/2027 would be between £23.34m and £28.4m, as summarised in Table 24.

Table 24 – Phase 1 cost estimate

Workstream	Range of costs to 2026	
Monitoring	500,000	700,000
Smarter Choices & QBP project team	2,300,000	2,500,000
Incentives, including bus route subsidy	4,440,000	5,000,000
Parking review	100,000	200,000
Infrastructure	16,000,000	20,000,000
Technology	incl	tbc
Total	23,340,000	28,400,000

- 10.2.5. These costs would be covered in accordance with the apportionment of trips identified in Table 22.
- 10.2.6. For 2020/2021, it is proposed that work would commence by undertaking the baseline monitoring against which future performance will be assessed. The Smarter Choices programme will develop over two to three years, building as the extent of engagement with businesses, schools and communities increase. The cost associated with incentives will also increase as the workstream develops. The county council staff forming the Smarter Choice team will also provide some of the resource for work to develop the Quality Bus Partnership, it is anticipated that this will take a year to set up. Similarly work relating to the review and potential changes to parking will be initiated during this period, for implementation in the following years.
- 10.2.7. The estimated revenue costs for 2020/2021 is £600k and for 2021/2022 is £400k.
- 10.2.8. The estimated capital costs for 2020/2021 is £100k and for 2021/2022 is £1.6m.
- 10.2.9. Costs associated with working with Highways England on works to alleviate the A14 have not been included.
- 10.2.10. There are no Major Road Network (MRN) schemes within Ipswich .

11. FUNDING

11.1. FUNDING SOURCE

- 11.1.1. The planned growth should cover the cost of delivering the mitigation identified; there is some certainty up to 2026, however, beyond this an agreed mechanism will need to be agreed to fund mitigation that has not currently been identified in detail. The following funding sources have been considered to meet the mitigation identified:
 - 11.1.2. Section 278 funding – there is potential for some infrastructure to be funded alongside the specific mitigation of development but this will not address the town wide mitigation such as Smarter Choices.
 - 11.1.3. Section 106 funds can only be secured if the mitigation is directly related to the development. In this case, the direct relationship is the need for modal shift to release highway capacity. However, the influence of wider background growth in traffic would have to be clearly excluded. Furthermore, other sources of funding would have to be explored including funding that could address air quality, health improvement, and mitigation for the strategic route network for example.
 - 11.1.4. The Community Infrastructure Levy (CIL) is a potential source that would require the district councils to agree releasing. However, this is not a consistent mechanism across the ISPA authorities. Ipswich Borough Council does not operate a CIL; East Suffolk has CIL, with the ability to fund transport infrastructure; Babergh and Mid Suffolk District Councils have CIL but without a mechanism to fund transport infrastructure. With changes to regulations in September 2019, an agreed mechanism for contributing to wider funding measures could be agreed if the CIL-charging districts agree that this is the most appropriate mechanism for their circumstances.
 - 11.1.5. The actual delivery programmes for the local plans are unlikely to enable contributions to be available during the early years of the mitigation programme. Therefore, options need to be identified for early funding.
 - 11.1.6. Suffolk County Council Local Transport Plan. The level of funding currently available is limited, this funding stream may therefore contribute to or

support measures, but widescale delivery of medium to high cost infrastructure schemes is unlikely to be fully funded from this source.

- 11.1.7. Local Growth Fund – this is a potential source of funding to deliver early phases of the mitigation.
- 11.1.8. Highways England, this is a potential source of funding for schemes that would provide benefit to the SRN, indicative scheme values up to £20m. However, the details of the mechanisms to bid for this funding have not been established.
- 11.1.9. Historically, the government produces new funding opportunities for transport related schemes. The work developed to support the local plans would form a strong basis for bidding for funding to deliver sustainable transport measures, should an opportunity become available.

12. IMPLEMENTATION PROGRAMME

12.1.1. The focus of the implementation programme is to deliver mitigation within Ipswich to address the impact of cumulative growth identified in the ISPA planning authorities' local plans. Recognising that this work will support the specific Local Transport Plan strategy for Ipswich.

12.1.2. Modal shift has been identified as the mechanism to mitigate the impacts of this growth. Trip rate adjustments were made within the SCTM model assessment to reflect a reasonable level of modal shift. This approach to trip reduction results, broadly, in a 9% shift to the background traffic and a 7% reduction to the new trips. However, the aim should be to exceed this and a target of 10% for new and existing users applied as an aspirational target to inform the development of the individual projects. The implementation programme focusses on measures that will deliver this level of modal shift.

12.1.3. Recognising that the current local plans run to 2036, an additional assessment year, 2026, was identified for assessment to tie-in with the end of the next Highways England Road Investment Strategy, (RIS), funding period in addition to providing a practicable period for delivering change. Measures available to mitigate for 2036 impacts will build on the 2026 work. The programme costs cover phase 1 of the programme, to the period to 2026; with measures up to 2036 to be confirmed. It is anticipated that the phase 2 costs are likely to be greater than phase 1 as these will include linked roads and junctions within the town's network.

12.1.4. The transport modelling with the trip adjustment demonstrated that the impact within the wider Ipswich area reduced the number of junctions that would exceed capacity in 2026 and 2036 showing a residual impact on the network over that experienced in 2016, this outcome is considered acceptable to the Highway Authority.

12.1.5. The implementation programme will comprise:

- A monitoring programme will establish a baseline and process to assess the delivery of the implementation programme. This will help inform good practice and optimise the detail of the overall programme

going forward. An evidence-based approach will also support future opportunities for funding.

- A Smarter Choices programme to deliver modal shift through the engagement of businesses, schools and communities that generate trips in Ipswich, it is anticipated that this will include some businesses outside of the town boundary. Costs of implementation include incentives, for example subsidised bus travel.
- Set up a Quality Bus Partnership, initially this will be a voluntary partnership, to optimise and grow the public transport provision within Ipswich. This will include the identification and prioritisation of infrastructure improvements that will support the bus service. Identify where demand responsive transport will provide optimum improvements to public transport and enhance the more traditional bus service.
- Work with Ipswich Borough Council to review the current parking provision and charging strategy, to provide a form of demand management that has been demonstrated to be a key factor in delivering modal shift.
- Identify improvements to the current park & ride services and if the viability of an additional service is proven, during phase 1 re-introduce further park & ride services.
- Infrastructure will be required to support bus prioritisation, improvements to walking and cycling networks and optimising the management of capacity of junctions. This will include the use of UTMC.
- The use of technology will be considered for all mitigation measures and improvements, especially where it will provide a cost-effective mechanism to deliver the implementation programme and improve modal shift.

12.2. Phase 1 of the Implementation Programmed is shown in table 23 below.

Table 23 - Implementation programme

2020/21	2021/22	2022/23	2023/24 to 2026/2027
Monitoring			Monitoring
Smarter Choices	Smarter Choices	Smarter Choices	Smarter Choices
	QBP	QBP	QBP
		Park & Ride	Park & Ride
	Parking related measures	Parking related measures	Parking related measures
		Bus Priority Imp	Bus Priority Imp
Infrastructure	Infrastructure	Infrastructure	Infrastructure
	Technology	Technology	Technology

12.3. The estimated cost of delivery of mitigation to 2026, phase 1, is summarised in Table 24, copied below. The cost for delivery of phase 2 could be higher for infrastructure related works.

Table 24 – Phase 1 cost estimate

Workstream	Range of costs to 2026	
Monitoring	500,000	700,000
Smarter Choices & QBP project team	2,300,000	2,500,000
Incentives, including bus route subsidy	4,440,000	5,000,000
Parking review	100,000	200,000
Infrastructure	16,000,000	20,000,000
Technology	incl	tbc
Total	23,340,000	28,400,000

12.4 The apportionment of costs by Local Planning Authority is defined in Table 22, copied below.

Table 22: Trips In/Out of Ipswich

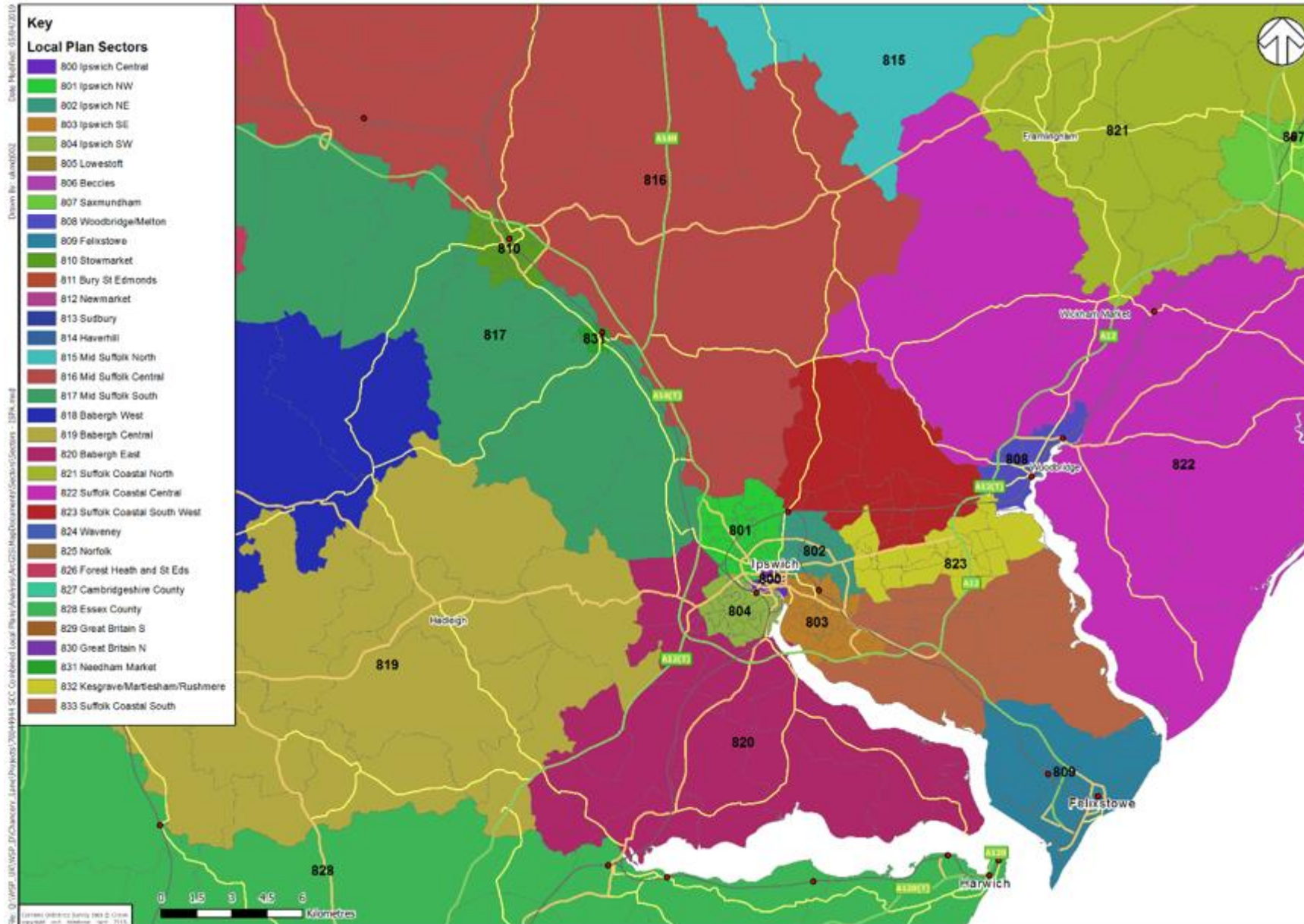
LPA	% trips
Ipswich Borough Council	45
Suffolk Coastal District Council	28
Babergh District Council	14
Mid Suffolk District Council	13

12.2 Next Steps

12.2.1 Having identified the mitigation required to deliver modal shift to support the ISPA local plans; the first priorities over the years 2020/2022 will be:

- Undertake baseline monitoring of current commuter travel behaviour in Ipswich
- Commence the Smarter Choices programme
- Commence the QBP
- Start the review of parking and parking charges in Ipswich
- Develop and deliver infrastructure improvements in the town, focussing on sustainable measures.

Appendix 1 – Modelling Sector Plan



Key

Local Plan Sectors

- 800 Ipswich Central
- 801 Ipswich NW
- 802 Ipswich NE
- 803 Ipswich SE
- 804 Ipswich SW

