

Implementing 'Decide & Provide':

Requirements for Transport Assessments



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Foreword

The Local Transport and Connectivity Plan (LTCP) was adopted by Oxfordshire County Council in July 2022. Its ambition is to keep people connected, and to create a net zero transport system by 2040, improving health and wellbeing, tackling the climate emergency, reducing private vehicle use and prioritising walking, cycling and the use of public transport. Following the adoption of the LTCP a suite of supplementary documents is being produced to help translate its policies into action.

The Implementing Decide & Provide: Requirements for Transport Assessments is one of the first of these supplementary documents. It was developed through engagement with officers at the district and city councils and industry professionals. It includes key references to national and local policies and guidance.

This document signals a change in attitude to the issue of travel in the county. Replacing the 'predict and provide' model means we will stop using past traffic trends to determine the future need for infrastructure, as this maintains the status quo by perpetuating dependence on cars.

This is believed to be one of the first, if not the first, instance of a local highway authority expressly requiring new developments to do this, putting Oxfordshire County Council at the forefront of advancing transport planning practice.

The 'decide and provide' approach decides on a preferred vision and then provides the means to work towards that, while also accommodating the uncertainty of the future. This enables more positive transport planning and helps implement a hierarchy of users by considering walking, cycling and public transport upfront.

For example, where developers believe that schemes will lead to an increase in private cars, which the network cannot cope with, they must first consider providing high quality, sustainable and active travel facilities before identifying changes to infrastructure, such as junctions, to deal with additional traffic.

We also hope that this document's principles will help to shape the forthcoming district and city council local plans, so that development is allocated in locations where the need to travel is reduced and where opportunities can be realised for providing high-quality active and sustainable transport options.



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Executive Summary

Oxfordshire County Council's (OCC) Local Transport and Connectivity Plan (LTCP), adopted July 2022, outlines a clear vision to deliver a net-zero Oxfordshire transport and travel system by 2040, improving health and wellbeing, tackling the climate emergency, reducing private vehicle use, and prioritising walking, cycling, and public transport.

In order to achieve this, fundamental changes to the way the county's transport and travel system functions will need to be made. Such a substantial undertaking will necessarily entail a multi-pronged approach to reshaping the way places are connected.

Stemming from the framework set out in the LTCP there will be numerous strategies which will contribute to setting out how the transport and travel system is upgraded and reconfigured in order to achieve these aspirations. Amongst these, the forthcoming area transport strategies and transport corridor strategies will be key, as will OCC's new Parking Standards for New Developments (2022) document and the Street Design Guide (2021), which will help to ensure sites are master-planned to give primacy to high-quality walking, cycling, and public transport provision.

As set out in Policy 36 of the LTCP, another significant element of realising these aims will be to make the shift from an approach to transport planning characterised as 'predict and provide' towards adopting a 'decide and provide' approach instead.

This document details how the 'decide and provide' approach is to be implemented through the transport assessments (or transport statements) and infrastructure delivery mechanisms which accompany planning applications for proposed development.

Whilst the document focuses on how the transport assessment process needs to be adapted to help facilitate the 'decide and provide' approach, this forms only one part of working towards adopting this new approach to transport planning. Such an endeavour needs to stem from a comprehensive rethinking of spatial and transport planning, beginning at a strategic level and continuing throughout all stages of planning.

This document is primarily intended for use by developers and their consultants, transport officers at the county, and planning officers at the district and city councils. It applies to all developments but will be particularly pertinent to large residential and employment sites that are expected to generate significant travel demand. More detailed information on how

different developments will need to follow this document is provided under the section, 'Stage 2: Scenario testing' (see section 3.4, pp.17-19).

The document is based on guidance that TRICS (2021) has produced, called the 'Guidance Note on the Practical Implementation of the Decide & Provide Approach' with further detail and requirements provided relevant to the LTCP.

It is set out in three main parts: the first outlines the guiding principles that underpin this approach; the second discusses how potential traffic impacts are to be modelled and how trip rates should be appropriately evidenced; and the final part details the process for implementing the approach through transport assessments by modelling a range of plausible scenarios and monitoring and managing outcomes. The process is summarised in the flow-diagram (Appendix 1), accompanied by a step-by-step guide (Appendix 2), and a checklist for those producing or reviewing transport assessments (Appendix 3).

PART 1 | Guiding Principles

This first part of the document explains the principles underpinning the 'decide and provide' approach; how transport assessments have been undertaken in the past; how the new approach will be based on the TRICS guidance; the role that this document plays as part of a wider set of strategies to decarbonise the transport network; and how this document relates to the National Planning Policy Framework (Ministry of Housing, Communities and Local Government, 2021) and the policies of the county's five local plans.

1.1 'Decide and Provide' instead of 'Predict and Provide'

1.1.1 As outlined in the LTCP, 'predict and provide' can be broadly described as an approach to transport planning that uses current or historical traffic patterns to determine the future need for infrastructure. However, this approach tends to simply maintain the status quo by perpetuating dependence on the private car through provision of additional highway capacity.

1.1.2 By contrast, the 'decide and provide' approach to transport planning decides on a preferred vision of the future and then provides the means to work towards that whilst also accommodating uncertainty about the future. This offers the opportunity for more positive transport planning and will help to implement the LTCP transport user hierarchy by considering walking, cycling and public transport upfront.

1.1.3 This approach is captured in LTCP Policy 36 (2022a, p.106), which states that we will:

- a.** Only consider road capacity schemes after all other options have been explored.
- b.** Where appropriate, adopt a decide and provide approach to manage and develop the county's road network.
- c.** Assess opportunities for traffic reduction as part of any junction or road route improvement schemes.
- d.** Require transport assessments accompanying planning applications for new development to follow the County Council's 'Implementing 'Decide & Provide': Requirements for Transport Assessments' document.
- e.** Promote the use of the 'decide and provide' approach in planning policy development to support site assessment.

1.2 Transport Assessments and the TRICS database

1.2.1 Traditionally, standard practice has been for transport assessments for large residential and employment sites to use data from the TRICS database to determine the anticipated vehicular trip generation (or trip rates) of a proposed development based on recent traffic survey data for comparable sites across the country.

1.2.2 Combined with census data from the Office for National Statistics (ONS) to determine geographical distribution patterns, trip rates have then been used to identify the potential traffic impact on the highway network, and in combination with the identification of connectivity needs for active and sustainable modes, transport modelling has then been used to identify where capacity on the network is exceeded.

1.2.3 Typically, developers have been required to improve junctions that have been forecast to be over capacity in future years where issues arise as a direct result of impacts attributable to their development proposal. Alternatively, in locations where more comprehensive intervention has been identified as necessary, they have made financial contributions towards strategic schemes to be delivered by OCC. This tends to be in cases where third-party land is required, or where significant problems arise from the impact of multiple development sites and therefore not the responsibility of any individual development to resolve.

1.3 The new approach and the TRICS guidance

1.3.1 The new approach to undertaking transport assessments that OCC requires developers to follow is based on guidance that TRICS (2021) has produced, called the 'Guidance Note on the Practical Implementation of The Decide & Provide Approach'. OCC's document builds on the TRICS advice adding further detail where necessary and ensuring that it relates appropriately to the LTCP and Oxfordshire.

1.3.2 Essentially, this new approach still entails the need for proposed developments to assess their potential transport impact on the highway network, but instead of basing this

solely on previous travel patterns as before, transport assessments will be required to model a range of plausible scenarios. As such transport modelling will still be necessary.

1.3.3 These plausible scenarios will be based on the characteristics of the proposed development site's location, its existing connectivity, the mitigation or connectivity improvements that will be either delivered directly by the site developers or through financial contributions towards OCC schemes, and the extrapolation of trends in travel behaviour.

1.3.4 The document also sets out how, through S106 legal agreements and travel plans, the impacts of developments will need to be monitored and managed over time.

1.3.5 Further to this, rather than identifying junctions that are forecast to be over capacity and then providing schemes to increase capacity for private vehicles, developers will instead be expected to first consider the extent to which they could address these issues by making provision for sustainable and active modes. These provisions should be of a sufficiently high quality to achieve the requisite modal shift to address the identified capacity issues. It should also be ensured that the provisions comply with policies requiring the promotion of sustainable and active modes, including due consideration of the transport user hierarchy identified in policies 1 and 2 in

the LTCP (see further discussion of policy in sections 1.5-1.7).

1.3.6 Additionally, as before, in many cases development proposals will still be expected to make contributions towards strategic improvements to be delivered by OCC in addition to direct delivery of schemes by site developers as appropriate.

1.3.7 Whilst planning obligations will still be required to meet the tests set out in paragraph 57, p.16 of the National Planning Policy Framework (NPPF) and Regulation 122(2) of the Community Infrastructure Levy Regulations 2010, it is essential to note that following the requirements of this document will not afford developers an opportunity to reduce expenditure on appropriately justified infrastructure requirements or other planning obligations, such as contributions to public transport service enhancements or 'soft' measures such as car clubs, etc. As the TRICS guidance notes (2021a, paragraph 7.17, p.22):

It is important to state that the use of scenarios should not be carried out as a mechanism to minimise investment in the transport infrastructure. Using D&P [decide and provide] does not reduce the overall investment, rather it redistributes it to other travel modes.

1.4 The role of this document as part of other planning processes

1.4.1 It is important to note that individual sites will make a valuable contribution to decarbonising the transport network and are required to have demonstrated that they have mitigated their transport impact through policy-compliant means. However, decarbonising the transport network will not be most effectively achieved by only addressing transport needs on a site-by-site basis. Referring back to the necessarily multi-pronged approach to reshaping the transport network, this document, and the practices it requires are embedded through transport assessments (and transport statements), will form only one part of the means necessary to achieving the key aims of the LTCP.

1.4.2 Of fundamental importance will be ensuring that, through the forthcoming local plans for each of the district and city councils, development is allocated in locations where there are the best opportunities for reducing the need to travel by co-locating residential and employment uses, or where exists the best opportunities for providing high-quality active and sustainable transport infrastructure improvements.

1.4.3 These opportunities will need to be thoroughly explored and identified through the

associated plan-making processes, as well as in more detail at the planning application stage. It is also important to acknowledge that this document and its requirements apply equally to allocated and non-allocated development sites.

1.4.4 Further to this, it will be important to ensure that these new practices promoted by OCC – including the forthcoming LTCP corridor and area strategies (and any resultant strategic schemes identified by OCC), this document, and the new Parking Standards for New Developments document – are appropriately referenced within the core policies of the forthcoming local plans, as these carry greater weight in planning decisions than the LTCP does by itself.

1.5 National and local policy context

1.5.1 Although this document sets out a new way of undertaking transport assessments and puts a greater emphasis on giving primacy to ensuring high-quality walking, cycling, and public transport provision across the county than has previously been the case, there is a significant body of existing policy that is supportive of this new approach. Provided below is a summary of the relevant national and local policy that lends weight to moving towards the 'decide and provide' approach.

1.6 NPPF and the DfT's Decarbonising Transport plan

1.6.1 Section nine of the NPPF discusses the promotion of sustainable transport, which supports the aims of this document. Paragraph 104 (p.30) states that:

Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

- a.** the potential impacts of development on transport networks can be addressed;
- b.** opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;
- c.** opportunities to promote walking, cycling and public transport use are identified and pursued;
- d.** the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and
- e.** patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.

1.6.2 Additionally, paragraphs 110 to 113 (pp.31-32) stipulate how development proposals should be considered. Of particular note, it states that it should be ensured that (p.32), “appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location”.

1.6.3 Further to this, a key consideration when considering the sufficiency of connectivity provision for a development proposal is the requirement for it to be ensured that (p.32), “safe and suitable access to the site can be achieved for all users”. Bearing this in mind in the context of the subsequent paragraph, which states (paragraph 111, p.32):

Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

...if a proposed development has not provided for safe and suitable connections to the site for walking and cycling, this should be considered to be an unacceptable impact on highway safety.

1.6.4 Finally, the Department for Transport (DfT) has produced a plan which sets out the government's commitments and the actions needed to decarbonise the entire transport system in the UK, this is called, 'Decarbonising transport: a better, greener Britain' (DfT, 2021a), and states (p.158):

We recognise that the government has a role in helping Local Planning and Highways Authorities to better plan for sustainable transport and develop innovative policies to reduce car dependency. We need to move away from transport planning based on predicting future demand to provide capacity ('predict and provide') to planning that sets an outcome communities want to achieve and provides the transport solutions to deliver those outcomes (sometimes referred to as 'vision and validate'). We will continue to work with MHCLG to identify how we can best support local authorities to develop innovative sustainable transport policies as part of the planning process, how this can be used to better assess planning applications, and better monitor local transport outcomes to deliver on our ambitions for sustainable transport use.

1.7 Local Plan policies

1.7.1 The four district councils and the city council all have policies in their respective local plans strongly supporting the promotion of sustainable and active transport modes and seeking to reduce the need to travel, key extracts from these policies are listed below.

1.7.2 Cherwell Local Plan 2011-2031: Part One, Policy SLE 4: Improved Transport and Connections (p.55):

All development where reasonable to do so, should facilitate the use of sustainable modes of transport to make the fullest possible use of public transport, walking and cycling. Encouragement will be given to solutions which support reductions in greenhouse gas emissions and reduce congestion.

1.7.3 Oxford Local Plan 2036, Policy M1: Prioritising walking, cycling, and public transport (pp.104-106):

Planning permission will only be granted for development that minimises the need to travel and is laid out and designed in a way that prioritises access by walking, cycling and public transport.

1.7.4 South Oxfordshire Local Plan 2011-2035, Policy TRANS2: Promoting Sustainable Transport and Accessibility (pp.149-150):

The Council will work with Oxfordshire County Council and others to...

- i** ensure new development is designed to encourage walking and cycling, not only within the development, but also to nearby facilities, employment and public transport hubs;
- ii** support provision of measures which improve public transport (including Park & Ride), cycling and walking networks within and between towns and villages in the district;

and Policy TRANS4: Transport Assessments, Transport Statements and Travel Plans (p.153):

Proposals for new developments which have significant transport implications that either arise from the development proposed or cumulatively with other proposals will need to submit a Transport Assessment or a Transport Statement, and where relevant a Travel Plan. These documents will need to take into account Oxfordshire County Council guidance and Planning Practice Guidance and where appropriate, the scope should be agreed with Highways England.

1.7.5 Vale of White Horse Local Plan 2031: Part One, Core Policy 33: Promoting Sustainable Transport and Accessibility (p.124):

The Council will work with Oxfordshire County Council and others to:

- i** ensure that developments are designed in a way to promote sustainable transport access both

within new sites, and linking with surrounding facilities and employment

and Core Policy 35: Promoting Public Transport, Cycling and Walking (p.126):

- ii** ensure that new development is designed to encourage walking as the preferred means of transport, not only within the development, but also to nearby facilities and transport hubs

1.7.6 West Oxfordshire Local Plan 2031, Policy T1: Sustainable transport (p.90):

Priority will be given to locating new development in areas with convenient access to a good range of services and facilities and where the need to travel by private car can be minimised, due to opportunities for walking, cycling and the use of public transport, particularly where this would help to reduce traffic congestion on the routes around Oxford and the Air Quality Management Areas at Witney and Chipping Norton.

and Policy T3: Public transport, walking and cycling (p.101):

All new development will be located and designed to maximise opportunities for walking, cycling and the use of public transport.

PART 2 | Transport Modelling, Evidencing Trip Rates, and Document Updates

This part of the document sets out the assumptions that should be made for permitted, committed and planned growth; the suitability of various evidentiary sources; the consideration of the long-term effects of Covid-related transport impacts; the relationship between car parking provision and trip rates; the applicability of the car trip reduction targets in the LTCP; how this document should inform the evidence base for local plans; and the requirement for periodic updates to the document.

2.1 Assumptions for permitted, committed, and planned growth

2.1.1 As before, a scoping exercise will need to be undertaken to ensure that transport assessments (and transport statements) take appropriate account of permitted, committed, and planned growth which will generate traffic impacts on the area of the highway network also impacted by the proposed development.

2.1.2 Amongst other matters, this will need to be considered in the context of whether it is intended for TEMPro (using DfT data to forecast the growth in trip origin-destinations over time) to be used and the appropriate inclusion of growth allocated in an emerging or adopted local plan.

2.1.3 As with proposed development itself, different scenarios accounting for permitted, committed, and planned growth may be required based on various plausible trip generation scenarios. This may include scenarios that assume that background growth will generate trips derived from current travel behaviours or that reductions in private car dependence will be achieved, which can be attributed to suitable rationale and evidence.

2.1.4 When considering the scenarios to be tested to account for background growth reference should be made as appropriate to the scenarios and assumptions identified in Table 1 (p.29, 2018) of the DfT's Road Traffic Forecasts 2018: Moving Britain Ahead.

2.1.5 Further to this, future year scenarios will need to be tested appropriate to the specific development proposal (taking into account its scale, build-out programme, etc.) and will need to be agreed with OCC transport officers. Where relevant, future year scenarios will also need to be agreed with National Highways.

2.1.6 In this way, the transport assessment can ensure that the residual cumulative impacts on the transport network can be adequately identified and addressed as required in the NPPF (paragraphs 111 and 113, p.32).

2.2 Sources of evidence for justifying trip rates

2.2.1 As importantly noted in the TRICS guidance (2021a, p.24):

A clear evidence-based approach to D&P should be taken and reported upon in the TA (or TS) accordingly. A robust evidentiary base, transparently and accurately sourced, remains as important as ever. Up-to-date and relevant evidence should be cited wherever possible.

2.2.2 The starting point for determining existing and forecast multi-modal trip rates for all scenarios will be using the TRICS database. However, should supplementary evidence be considered useful or necessary, the inclusion of other evidentiary sources could be considered.

2.2.3 One such potential source may be to utilise travel to work data from the ONS census in 2011. Census data from 2021 is not suitable as it was undertaken in the midst of the Covid pandemic so is not representative of typical travel patterns due to a number of influencing factors. How TRICS and census data can be utilised is discussed in more detail in Part Three (pp.14-23).

2.2.4 Other potential sources may include existing survey data from other sites, survey data of other locations commissioned by the applicants of the proposed development, or empirical studies from academic sources as long as they are from an appropriate

timescale (typically no older than 3-5 years) and are sufficiently comparable in respect of location, proximity to key services, connectivity characteristics (i.e. walking, cycling, and public transport provision), and other significant variables.

2.2.5 The use of all evidentiary sources will need to be appropriately justified and their acceptability must be agreed with OCC transport officers. Where relevant, evidentiary sources will also need to be agreed with National Highways.

2.2.6 Use of DfT National Travel Survey (NTS) data to forecast multi-modal trip rates is not considered acceptable unless it can be justified that it is directly relatable to the specific characteristics of the proposed development. Typically, referencing national trends will be unacceptable as these are not directly relevant to any specific location. The NTS acknowledges the limitations of its findings in its Quality Report (DfT, 2020a, p.3), stating:

The NTS is not designed to produce robust data below regional level. Whilst it is possible to analyse data for smaller geographies than regions, for example local authorities, often many years of data need to be combined to obtain a suitable sample size. Even then this is not ideal as weightings are applied to the sample to be representative of England. This is likely to skew

analyses as demographics at sub-national level can vary significantly from the national level.

2.2.7 Furthermore, while the NTS identifies a trend in the reduction of annual trips (DfT, 2020b, p.1) at the national level, analysis of ONS census data from 2001 and 2011 (Marsden, et al, 2018) shows that this reduction has fallen more sharply in urban areas than in rural areas. Additionally, while the commuting mode share for private cars in London and regional centres has decreased over the same period, the mode share for private cars has instead increased in smaller towns and rural areas.

2.3 Accounting for Covid-related transport impacts

2.3.1 As noted in the LTCP (2022a, p.12), the long-term effects on travel behaviour resulting from the ongoing Covid-19 pandemic are still not yet known. Although much speculation has taken place about the potential shift towards more homeworking for office-based jobs, it remains too early to make any meaningful or quantifiable judgements about how shifts in travel behaviour are likely to be impacted in the mid to long-term.

2.3.2 Indeed, as of April 2022, traffic count data recorded across Oxfordshire by OCC shows that there is an uneven impact on peak time traffic levels and five-day average flows, with some areas seeing a return to pre-pandemic levels, while other locations are above or below pre-pandemic levels. Meanwhile, bus patronage typically remains significantly lower than pre-pandemic levels.

2.3.3 Accordingly, it may only be appropriate to include any predictions about Covid-related impacts on mode share or trip generation in future year scenarios as sensitivity tests at this juncture. However, should new travel patterns begin to emerge over the course of the coming years and there is suitable supporting data to evidence these new behaviours, these could be considered in transport assessments in

the mid to long-term as a separate scenario to be tested alongside other scenarios. Any suppositions made would also need to be carefully monitored to record whether these in fact materialise.

2.3.4 Collecting this data through monitoring will make an important contribution to understanding these emerging travel behaviour patterns, as recognised by the International Transport Forum in their Travel Transitions research report (2021).

2.4 Car parking provision and trip rates

2.4.1 Parking provision must be proposed in line with OCC's new Parking Standards for New Developments (2022). Studies have shown that the availability and convenience of car parking can have an effect on car usage, both at journey origin from residential developments (Transport for London, 2012 and Guo, 2013) and, in the context of commuting, at journey destination (Dalton, et al, 2013 and Christiansen, et al, 2017), with parking costs also an important factor.

2.4.2 However, these studies also show that there are a number of other factors that also influence car usage, including public transport availability and travel time or distance to work. Accordingly, when setting trip rate assumptions in transport assessments (or transport

statements), the proposed car parking provision can be considered as an influencing factor but should not be identified in isolation as a means of reducing anticipated car trips.

2.4.3 Providing car parking in line with the latest OCC standards (alongside cycle parking) will need to form part of a wider strategy to encourage modal shift by providing improvements to sustainable and active modes, demand management measures, and master planning (in accordance with OCC's Street Design Guide, 2021).

2.5 Use of LTCP car trip reduction targets

2.5.1 The LTCP includes the following targets for replacing or removing car trips across the County (2022a, p.6):

By 2030 our targets are to:

Replace or remove 1 out of every 4 current car trips in Oxfordshire

Increase the number of cycle trips from 600,000 to 1 million cycle trips per week

Reduce road fatalities or life changing injuries by 50%

By 2040 our targets are to:

Deliver a net-zero transport network

Replace or remove an additional 1 out of 3 car trips in Oxfordshire

By 2050 our targets are to:

Deliver a transport network that contributes to a climate positive future

Have zero, or as close as possible, road fatalities or life-changing injuries

2.5.2 At the time of writing, the means of achieving these targets have yet to be comprehensively identified. The forthcoming area transport strategies and transport corridor strategies, OCC's new Parking Standards for New Developments (2022) document and the Street Design Guide (2021) will all play important roles in working towards these targets, as will the emerging local plans, and individual development sites.

2.5.3 Therefore, it may be challenging to substantiate how these targets will be achieved to a sufficient degree of certainty for the purposes of modelling a core scenario. However, with respect to traffic generated by a development site or background and committed growth, it may be appropriate for transport assessments to include additional sensitivity scenarios with these target reductions as a basis for trip rate assumptions. For further discussion of how uncertainty should inform the choice of core and alternative scenarios, see paragraphs 1.3 and 3.50 of the DfT's Uncertainty Toolkit (2021b) and sections 3 to 5 of the DfT's TAG Unit M4: Forecasting and Uncertainty (2019).

2.5.4 Furthermore, as the means of achieving these targets will not solely be within the control of any particular development proposal – rather they will be contributing towards these aims – it would be inappropriate for an accompanying transport assessment (or transport statement) to assume the delivery of strategic improvements is sufficiently certain, notably in the potential absence of funding or planning permission.

2.5.5 Some exceptions may be made for a specific scheme if a particular impact on site traffic or background growth is directly attributable to said scheme and if it has sufficient certainty of delivery (e.g. is fully funded and has planning permission).

2.6 Transport modelling for Local Plans

2.6.1 It is anticipated that the evidence base produced for the local plans of the respective districts and the city will be supported by modelling undertaken using the Oxfordshire Mobility Model.

2.6.2 To ensure a consistent approach with transport assessments for individual development proposals, the evidence bases for local plan development should also adopt a similar methodology as required in this document by modelling a range of plausible scenarios, which incorporate different assumptions about trip generation.

2.6.3 In this way, the plan-making process (as described in section 1.4) can anticipate potential issues with various spatial strategies that may be under consideration. It will enable the more successful identification of opportunities to ensure suitably high-quality sustainable and active mode connectivity, and opportunities to reduce the need to travel.

2.6.4 Accordingly, as with the process for identifying impacts at the planning application stage, the transport evidence for plan-making must also consider multiple plausible scenarios for trip generation (see Stage 2: Scenario testing, pp.17-19) associated with the spatial strategy identified in the local

plan. This will help to ensure that connectivity for sustainable and active modes can be provided for sufficiently and instances where failing to do so results in locations on the highway network that are over capacity are understood.

2.7 Future updates to this document

2.7.1 In order to keep aligned to changes in local and national policy and legislation, this document will be periodically reviewed and updated. For example, the Planning for the Future White Paper (MHCLG, 2020, p.62) proposed significant reforms to the combined system of S106 contributions and the Community Infrastructure Levy by consolidating them into a single levy at a nationally-set rate. If such changes were to take place, this would prompt the requirement for this document to be amended accordingly.

2.7.2 It is recognised that the approach in this document represents a significant change in how transport assessments are undertaken, how the resultant connectivity improvements are identified, and how impacts are monitored over time. As the TRICS guidance acknowledges (para 11.7, p.29):

As transport professionals, we are directly experiencing the paradigm shift to a new D&P

approach. It can be uncomfortable moving on from familiar and ingrained ways of working and we can only learn by doing.

2.7.3 Considering this represents a new way of working it is also possible that changes will need to be made to refine how the document works in practice. It is anticipated that a review of the OCC document will take place every 12-18 months, in line with the timescales identified in the TRICS guidance (paragraph 1.8, p.8).

PART 3 | Implementing 'Decide and Provide' within Transport Assessments

This third and final part of the document details the process for implementing the 'decide and provide' approach through the transport assessment (or transport statement) accompanying a planning application. This is set out in three main stages: identifying accessibility characteristics; scenario testing; and monitoring and managing outcomes.

A flow-diagram summarising the three stages of the process is provided at Appendix 1 (see p.25). A supplementary step-by-step guide has also been produced, which is provided at Appendix 2 (see p.26), this is accompanied by a worked example for a residential development proposal. A methodology checklist for those producing or reviewing transport assessments is also included at Appendix 3 (see p.50).

It is critical that the process described below is undertaken thoroughly, all parameters are appropriately scoped and agreed with OCC, all assumptions are robustly evidenced, and that this is comprehensively and clearly reported in the resulting transport assessment (or transport statement). To this end, it is strongly recommended that pre-application highways advice is sought early in the application process to determine and agree the appropriate parameters (OCC, 2022b).

3.1 Stage 1: Identifying accessibility characteristics

3.1.1 The TRICS guidance advises that a visioning exercise should be undertaken to identify what kind of place is intended to be made through the proposed development. It states that three key questions should be answered (paragraph 6.5, p.17):

- What sort of place are we creating?
- What kind of activities do we need or desire to travel for?
- How will we provide for mobility?

3.1.2 These are very important questions to consider as part of a master-planning exercise and will help to identify and inform key elements of a proposed development such as its mix of uses and their relative locations to ensure that the optimal connectivity is achieved in accordance with the LTCP transport user hierarchy.

3.1.3 For the purposes of informing transport assessments, this high-level vision needs to be translated into suitably defined elements, which in turn can inform the necessary provision of on and off-site provision for all modes, parking levels, and public transport improvements.

3.1.4 This document considers accessibility as a combination of the influences of proximity and connectivity. Identifying the characteristics of a site inherent to its location, such as its proximity to key services, whether schools, leisure and healthcare centres are to be provided within the development, and those characteristics that can be changed through connectivity improvements, is fundamental to establish anticipated trip rates for the various scenarios to be tested by identifying comparable sites in the TRICS database.

3.2 Proximity and connectivity metrics for new developments

3.2.1 The comparable sites used in the TRICS database should be identified by following the general principles set out in the TRICS Good Practice Guide (2021b, see Section 4, pp.7-10). However, to ensure a sufficiently robust process has been undertaken in determining this comparability, in addition to this, the first activity for proposed residential development (for employment developments, see paragraphs 3.2.13-3.2.14) that should be undertaken is to determine which services are accessible within a 20-minute walk (i.e. 10 minutes each way) and whether the sites to be used as comparisons share similar accessibility characteristics.

3.2.2 The LTCP contains policies on promoting 20-minute neighbourhoods, including Policy 13 (2022a, p.61), which states that we will:

Work with our District and City Councils to ensure that regeneration schemes and new developments support application of the 20-minute neighbourhood model to create walkable, vibrant neighbourhoods.

As such, undertaking this assessment will also help to determine the extent to which a proposed development succeeds in meeting this policy objective. Furthermore, by identifying services that are beyond a

20-minute return walk, it will help to identify destinations to which improvements to cycling and public transport connectivity will need to be made. The 20-minute neighbourhood assessment is not intended as a comprehensive means of identifying all improvements for sustainable and active modes. Therefore, it should be noted that such improvements may also be required to destinations within a shorter distance and to other locations not identified through this process.

3.2.3 In line with the LTCP (2022a, see pp.56-61) and with the Town and Country Planning Association's (TCPA, 2021) guidance on 20-Minute Neighbourhoods, a 20-minute return walk should be based on an 800-metre walking distance, i.e. ten minutes there and ten minutes back. For the purposes of this document, this is taken to be within an 800-metre distance from the centre of the site. This must be based on available walking routes as opposed to a radius to better reflect actual, rather than theoretical, distances. The services to be identified as being within a 20-minute walk are:

- Primary school
- Secondary school
- Supermarket or local grocery shop (selling fresh food)
- GP surgery
- Employment (such as a town centre, science park, business park, industrial estate, or

other employment sites of a similar scale, e.g. major hospital, university, etc.)

3.2.4 If the provision of any of these five key services forms an intrinsic part of the proposed development, then the distance to these new locations can be used.

3.2.5 The acceptability of these five services should be agreed as part of the transport assessment (or transport statement) scoping exercise. For example, the schools identified should have sufficient capacity (or can be expanded) to accommodate new pupils.

3.2.6 This assessment must also take appropriate account of severance issues caused by railways, roads (particularly dual-carriageways and motorways), waterways, or any other obstacle that would impact on walking and cycling routes. It must also take account of the comparable quality of the provision for walking and cycling. For example: whether the routes have street lighting; controlled crossings; footways of a suitable width, etc.

3.2.7 In addition to comparison sites being of a similar proximity to the five key services identified above, they should also have similar provision in terms of cycling connections (in terms of both destinations served and quality) and access to similar levels of bus and rail services in terms of both frequency, journey

times (i.e. directness of service), and number of key destinations served.

3.2.8 The rationale for including these five services is based on the importance attributed to walkable access to education, healthcare, and jobs in the TCPA's guidance (pp.16-32).

3.2.9 Additionally, access to primary schools, supermarkets, and GP surgeries is identified in the Ministry for Housing, Communities, and Local Government's (MHCLG) English Indices of Deprivation 2019 Technical Report (p.51) as, "... important for people's day-to-day life and to which people need to have good geographical access". Proximity to these services is used as one of the indicators of deprivation.

3.2.10 Finally, the Department for Transport's National Travel Survey (DfT, 2020b, p.2) identifies the three most common trip purposes in 2019 (the most recent year for which data is available prior to the impacts of the Covid-19 pandemic) as being: leisure (26%); shopping trips (19%); and commuting (15%), which lends further weight to the identification of the proximity of the services listed above. Some geographical variations in trip purpose proportions may exist, but it is likely that these three general trip purposes are common to all locations.

3.2.11 Although leisure trips are identified as the most common trip purpose, these are derived from the combination of six

different journey purposes (as defined in the NTS): 'Visiting friends at private home'; 'Visiting friends elsewhere'; 'Entertainment / public activity'; 'Sport: participate'; 'Holiday: base'; and 'Day trip'. Consequently, given the diffuse nature of these destinations and their specificity to an individual, it is not possible to capture this trip purpose in the accessibility characteristics metrics.

3.2.12 Not all development proposals will be within a 20-minute walk of all of these key services but identifying the distances to these destinations will provide a sufficient understanding of whether a site's proximity to these locations is of appropriate comparability with sites in the TRICS database.

3.2.13 For proposed employment developments, the first step will be to identify existing employment sites of a similar scale to the proposed development and assess the proximity and scale of nearby settlements to establish the pool of potential employees for the site and the travel options available to them.

3.2.14 Instead of using the 20-minute neighbourhood metrics to establish the comparability of sites, an assessment should be undertaken to establish the relative quality of existing connectivity for walking and cycling, the frequency, journey times (i.e. directness of service), and number of key destinations served by bus and rail. In doing so, this will

provide an indication of the potential for prospective employees to reach the site and the opportunities they have (or will have following improvements) to access the site by active and sustainable modes.

3.2.15 It is acknowledged that there are numerous factors that can influence the travel behaviour of residents and employees and therefore the accessibility characteristics identified above are an unavoidably imperfect means of determining the potential trip generation of a proposed development. Nevertheless, this remains an important exercise, especially in the context of considering a site's compliance with the LTCP Policy 13. When choosing suitable sites to be used as comparisons, it may be preferable (and more robust) to use the average trip generation of multiple sites that are broadly similar instead of using only one site that is more directly comparable.

3.3 Mixed-use development: internalisation and localisation

3.3.1 In addition to the assessment described above, where a proposed development includes a mix of uses, the resultant internal and external trips will need to be identified and included in the modelling. These anticipated trip rates must be appropriately evidenced, and consideration will also need to be given as to how these trips can be provided for in respect of sustainable and active mode provision.

3.3.2 When considering the suitability of evidentiary sources these must take account of whether the sample data has appropriately comparable characteristics in terms of the ONS Indices of Multiple Deprivation, car ownership levels, rates of employment, and bus and rail connectivity. Additionally, the data sample size should be of a sufficient scale in order that small numbers of those working in that area do not unduly skew the data.

3.3.3 Examples of uses that may result in both internalisation and localisation (i.e. trips attracted from outside the development in the case of the latter) include schools, employment, sports and leisure facilities, and local shops within residential sites. Within large employment sites, examples include sports and leisure facilities and local shops.

3.3.4 The internalisation and localisation rates may vary between different future year scenarios depending on the phasing of facilities that are expected to influence these rates. For example, if there are future year scenarios to be modelled in 2025 and 2030 and a school is required to be provided on-site in 2028, its influence on internalisation and localisation rates should only be considered in the 2030 scenario.

3.4 Stage 2: Scenario testing

3.4.1 The testing of multiple scenarios is a central tenet of the approach advocated for in the TRICS guidance, which advises that (p.19):

Scenario planning covers a broad range of approaches, but in the context of this guidance it refers to the development of a set of plausible and divergent scenarios of the future that help expose uncertainty and, in turn, allow the uncertainty to be accommodated within plan making.

3.4.2 It later goes on to explain that the extent of scenario planning should be considered on a case-by-case basis with three main parameters to be considered to inform its requirement, these are (paragraph 9.5, p.25):

Scale – The need for scenario planning will increase with the project size. All major planning applications relating to 500+ homes or 5,000m² employment/retail floorspace should be supported by scenario planning.

Sensitivity – The need for scenario planning will also increase with increased project sensitivity, for example in less accessible rural areas or, conversely, highly congested, dense urban environments.

Complexity – The need for scenario planning will also increase with project complexity.

3.4.3 As such, these parameters should be applied to the consideration of whether a development proposal requires multiple scenarios to be modelled. It is likely that many sites that would not meet the criteria for scale would still be required to test multiple scenarios due to their sensitive locations. It is strongly recommended that pre-application highways advice is sought early on in the process to agree modelling requirements.

3.4.4 Whilst the requirement for modelling multiple scenarios based on different trip rates may be less likely for smaller sites and minor applications, the principles of reducing dependence on the private car and providing for sustainable and active modes are applicable in all contexts. As noted in the TRICS guidance (2021a, p.25), 'As an approach, a way of thinking or mindset, D&P is relevant to all scales of development and its application can be tailored accordingly.'

3.4.5 For all scales of development, if a proposed development is delivering (or contributing towards) any kind of improvements to active and sustainable modes and intending to base a reduction in vehicular trip rates in a transport assessment on that basis or intending to justify a reduction in vehicular trip rates for any other reason, then at least two modal share assumption scenarios will be required to be modelled.

3.4.6 However, if a development is not able to justify lower trips through the aforementioned means, it is less likely that there will be a requirement for additional scenarios to be tested. This would raise other concerns though, as it would suggest that the development proposal was insufficiently providing for sustainable and active modes, thus potentially suggesting that it is not policy compliant and that it is not a sustainable location for development.

3.4.7 In most cases it is likely that there will be a need to model between two and five scenarios. It is likely that the scenarios will need to incorporate different trip rate assumptions accounting for the development proposal, connectivity improvements, and extrapolated trends in trip rates for the site and background growth assumptions. These are explored in detail in this following section and are summarised as follows:

1 Reference cases: These scenarios are essential to establish the baseline or 'without development' conditions of the transport network. Appropriate scenarios will need to be identified to reflect different trip generation assumptions for permitted, committed, and planned growth.

2 Do-minimum: This will utilise trip rates derived from comparable sites from the TRICS database based on the proposed development's proximity to key services and its current connectivity provision (i.e. without proposed improvements).

3 With connectivity improvements: Once proposed connectivity improvements are identified, a second set of comparable sites from TRICS (or derived from other sources) is identified that resemble more closely the accessibility characteristics of the proposed development when taking into account the associated proposed improvements.

4 Requirement and phasing of further improvements: Should the proposed improvements modelled in the previous scenario prove to be inadequate to address the impacts of the development proposal, further improvements will need to be identified and modelled. This scenario may also be needed to identify the phasing of improvements, particularly for sites with a protracted build-out programme.

5 Extrapolated trends: Trend data from TRICS will be used to extrapolate potential future behaviour resulting in vehicular trip rates increasing or decreasing (or remaining broadly static) over time in order to accommodate the uncertainty of future travel patterns, this reduction or growth in vehicular trips should be applied to the site and the background growth assumptions as appropriate.

3.4.8 The 'do-minimum' will be based on multi-modal trip rates derived from the TRICS database using other comparable sites. Detailed justification must be provided as to why these comparison sites are suitable (see section 3.2) and reflect as closely as possible the characteristics of the proposed development's location in its current state, i.e. without any of the proposed off-site improvements.

3.4.9 This justification must be reported in the transport assessment (or transport statement as applicable) and will include the accessibility characteristics (see Stage One, pp.14-17) of the comparison sites plus an assessment of the connectivity provision at the comparison sites to ensure that the proposed improvements associated with the development proposal are also of a similar quality.

3.4.10 This means that the comparison sites should be of a similar proximity to the five services identified in stage one but also have

similar provision in terms of walking and cycling connections and access to similar levels of bus services (and rail services if applicable) in terms of both frequency, journey times (i.e. directness of service), and number of key destinations served. This latter point is very important as considering proximity in isolation is insufficient, the propensity to walk and cycle will also be influenced by the quality and attractiveness of facilities.

3.4.11 The 'with connectivity improvements' scenario will need to include a list of the proposed off-site connectivity improvements and bus service enhancements, accompanied by supporting evidence of their deliverability and ongoing viability respectively. This should also take account of improvements to be delivered by others if a particular impact on site traffic or background growth is directly attributable to said scheme and if it has sufficient certainty of delivery (e.g. is fully funded and has planning permission).

3.4.12 The identification of connectivity improvements should consider the transport user hierarchy referenced in LTCP policies 1 and 2 (2022a, pp.36-39) and the embodied carbon of infrastructure referenced in Policy 27 (2022a, pp.88-90) in the LTCP. The resultant improvements identified for sustainable and active modes should always be delivered at an early stage of the build-out of a development to ensure that suitable travel choices are available

and positive travel behaviours are embedded from the outset.

3.4.13 A separate review of the TRICS database can then be undertaken, this time to consider comparison sites that now more closely reflect a similar level of provision for walking, cycling and bus service levels, when taking into account the proposed connectivity improvement package associated with the proposed development, whilst also remaining comparable in respect of proximity to the five services identified in stage one.

3.4.14 The trip rates derived from this new set of comparison sites can then be used as a basis for modelling this subsequent scenario. If it is not possible to identify appropriately comparable sites in the TRICS database for the 'do-minimum' or 'with connectivity improvements' scenarios, then as discussed in section 2.2, other sources of evidence could be considered instead.

3.4.15 For instance, assuming that they can be demonstrated to have suitably comparable accessibility characteristics – using a similar methodology as described in section 3.2 – then the mode shares for travel to work data from the Lower Super Output Areas in the ONS 2011 census could be utilised. With appropriate justification, it could then be assumed that these modes shares apply to other trip purposes as well.

3.4.16 However, on the basis that TRICS covers the modal share of all trips generated by a site (regardless of purpose) and will likely be more up to date than the 2011 census, this should only be considered as a secondary option if it has already been established that there is no suitable data available from the TRICS database.

3.5 Further rationale for multiple scenario testing

3.5.1 Assuming improvements to active and sustainable transport provision are being proposed as part of a new development, it is critical that at least these two scenarios ('do-minimum' and 'with connectivity improvements') are modelled.

3.5.2 In any modelling exercise there is a reference case or a 'do-minimum' in order to enable the identification of the potential impacts of a proposal (in this case a development) and what the impact of any subsequently proposed mitigation (in this case connectivity improvements) are modelled as being. This is also necessary in order to inform whether any congestion issues arising from the development are satisfactorily addressed by the implementation of connectivity improvements or whether there remain residual impacts, the extent of said impacts, and therefore their acceptability. Without this reference case or 'do-minimum' scenario, the potential impacts of development will not have been adequately assessed as required in paragraphs 104 (p.30) and 113 (p.32) of the NPPF.

3.5.3 For example, if congestion issues are identified it is important that these do not have detrimental impacts on the journey time reliability of bus services or adversely hinder

the progress of walking and cycling. In such instances bus priority measures or walking and cycling provision will be required to address these issues (see paragraphs 3.6.2 and 3.6.6 for more on this).

3.5.4 Furthermore, the modelling will form part of the evidence to justify the requirement for the connectivity improvements. By quantifying the potential modal shift achievable through the active and sustainable transport improvements and demonstrating their efficacy in addressing network capacity issues, their compliance with the three tests of the Community Infrastructure Levy Regulations will be demonstrated.

3.5.5 Additionally, testing multiple scenarios will illustrate what could happen if the connectivity improvement proposals do not achieve their desired effect, are later found to be undeliverable due to unforeseen issues, or are omitted from the subsequent S106 and S278 legal agreements, including any potential safety implications. In this way modelling these two scenarios reflects the need to accommodate uncertainty and various plausible outcomes, as is advocated for in section seven of the TRICS guidance (see pp.19-23).

3.5.6 There may also be particular locations where a choice needs to be made between a capacity improvement or a sustainable and active mode improvement. In such instances,

the reference case or 'do-minimum' scenario will be necessary to properly inform this decision-making process, see further discussion of this issue in section 3.6.

3.5.7 Finally, the TRICS guidance advises practitioners (paragraph 7.19, p.22) to refer to the DfT's Uncertainty Toolkit to assist with identifying appropriate scenarios. In paragraph 3.31 (2021b, p.25) the toolkit states:

Scenarios can contain both pessimistic and optimistic elements, but objectivity and a balanced approach should be maintained. Optimistic scenarios (or scenarios which are beneficial to the proposal under consideration) should not be considered in isolation.

3.6 Considering further scenario testing and capacity improvements

3.6.1 It may be necessary to model an additional scenario in cases where significant congestion issues remain on the network after the modal shift attributable to the connectivity improvements identified in the second scenario have been taken into account.

3.6.2 For instance, capacity improvements may be justified in situations where congestion results in detrimental impacts on the journey time reliability – and therefore viable operation and attractiveness to passengers – of bus services but where the frequency of services

does not warrant bus priority measures, or where the availability of land renders bus lanes (or similar) undeliverable.

3.6.3 Other scenarios that may give rise to the consideration of capacity improvements include where congestion results in highway safety issues, air quality concerns, or the impedance to walking and cycling (where segregated provision is undeliverable). However, the appropriateness of any capacity improvements will need to be considered in the context of potential carbon impacts (both embodied and operational). Furthermore, it is important to reiterate that LTCP Policy 36 (2022a, p.106) states that we will, “only consider road capacity schemes after all other options have been explored.”

3.6.4 In some locations a choice may need to be made between either delivering a capacity improvement or a sustainable and active transport improvement. Assuming that choosing the improvement to sustainable and active modes does not potentially give rise to unacceptable impacts (as noted in paragraphs 3.6.2-3.6.3), there will be a presumption in favour of the improvement that accords with the LTCP transport user hierarchy.

3.6.5 It will also be pertinent to consider the extent of potential congestion; if an improvement to walking and cycling has been facilitated by choosing not to deliver a capacity improvement and this results in queueing traffic

for only short periods of the day but allows for an improvement for walking and cycling at all times, this should be considered in the decision-making process.

3.6.6 In other cases, there may be off-site sustainable and active mode improvements to be delivered (or contributed towards) by a development that do not conflict with potential capacity improvements.

3.6.7 Following the outcomes of the site’s monitoring (see section 3.7), if the anticipated mode shares are not achieved and car trips generated by the site are shown to be resulting in unacceptable impacts, it may be necessary for these capacity improvements to be delivered. However, it is important that such situations are given careful consideration: informed by suitable data; only considered once all sustainable and active mode improvements have been delivered; and that the requirement for the capacity improvement is considered as a ‘last resort’. Where relevant, these matters will also need to be agreed with National Highways.

3.6.8 In some instances, it may be appropriate for the monetary equivalent of the capacity scheme to be provided as a contribution towards strategic (i.e. delivered by OCC) improvements instead of the capacity scheme being delivered directly by the developer.

3.6.9 Another scenario will be required to identify whether the identified vehicular impacts based on current behaviour is shown to potentially increase when taking account of trends extrapolated from the TRICS database. If trends extrapolated from the TRICS database indicate an increase in vehicular trips, the potential resulting congestion will also need to be addressed appropriately, i.e. through further connectivity improvements.

3.6.10 Whether these trends actually materialise will need to be carefully monitored (see stage three on monitoring below) and if they do not transpire then the resultant issues will need to be addressed in the S106 agreement as described above. This approach is supported in the TRICS guidance, which states (paragraph 12.3, p.30):

Should the monitoring and evaluation plan report demonstrate that the forecast trips have exceeded or indeed have not materialised then a revised schedule of transport interventions should be prepared and agreed with the planning and highway authority. In this regard the application of the monitoring regime and commitment in the obligation to follow the findings of the monitoring will be crucial to ensuring that the “decide” element is followed by “provide”.

3.6.11 The process for acquiring and analysing trend data from TRICS is described in section 16 of the TRICS guidance (2021a, p.35) and summarised as follows:

To establish historic trip trends, it is necessary to undertake a separate TRICS analysis for various time slices (initial advice is 5 year periods but this may be amended if considered appropriate) using a consistent set of filtering parameters for each time slice. The attained information can then be combined into a spreadsheet whereby the individual trip rates for each classification can be compared throughout the individual time slices to create a graph showing how trip rates have changed over time.

3.6.12 Further to this, assuming that the potential detrimental impacts of congestion on sustainable and active modes and other environmental and ecological receptors can be suitably and satisfactorily ameliorated (including air quality), it may be acceptable to allow some capacity issues affecting private motor vehicles only as this can act as an incentive to change mode choice (Metz, 2018).

3.6.13 Nevertheless, the acceptability of such instances will need to be carefully considered on a case-by-case basis and will need to be considered in the context of network management matters and OCC's statutory duty under the Traffic Management Act (2004) to reduce and manage congestion.

3.6.14 Finally, sensitivity scenarios may be required to capture the potential impacts of strategic schemes delivered by OCC, including demand management projects. These will need to be considered appropriately according to the certainty of their delivery. It may also be useful for additional sensitivity scenarios to be tested utilising the LTCP targets of replacing or removing car trips, taking into consideration the discussion of the use of these targets in section 2.5.

3.7 Stage 3: Monitoring and managing outcomes

3.7.1 A fundamental part of implementing the 'decide and provide' approach as advocated in the TRICS guidance is the need to monitor the outcomes of its implementation through the travel plans accompanying development proposals. To this end, a Monitoring and Evaluation Plan (MEP) is required where a transport assessment (or transport statement) accompanies a planning application, which will be secured and implemented through the travel plan as part of the S106 agreement where needed.

3.7.2 The costs incurred by OCC having to ensure that the requisite monitoring is carried out by the applicant, plus the resources associated with reviewing the resultant monitoring outputs, will need to be covered by a

suitable fee and captured in the S106 agreement.

3.7.3 The MEP will record how the trip generation and mode share of the site evolves over time. The survey specification will need to be agreed with the appropriate OCC officers and should employ the TRICS Standard Assessment Methodology or similar (as outlined in section 22 of the TRICS Good Practice Guide, 2021). The surveys must be multi-modal, their frequency, and number will depend on the scale of the development and the timing of associated infrastructure delivery.

3.7.4 Survey design will need to take account of multi-modal trips from all access points, including walking and cycling only accesses in addition to main vehicular accesses. Attitudinal surveys should also be considered to collect qualitative data around travel behaviours. Additionally, if there are specific junctions of concern in the vicinity of the site, which may experience problems if the anticipated mode shares are not achieved, then monitoring of these locations should be included in the survey scope.

3.7.5 In the case of strategic housing or employment sites whose construction programmes span many years, monitoring the trip generation and mode shares over time is particularly important. This will facilitate an understanding of whether the expected trip generation rates identified in the various modelled scenarios are occurring in practice.

It may be appropriate for the requirement for surveys to be triggered by years passed since implementation and/or levels of dwelling occupations or floorspace.

3.7.6 Further to this, masterplans and design codes should be devised at the outset to allow for sufficient flexibility so that later phases of development can be adapted to influence travel behaviour and make better provision for active and sustainable modes or change layouts and levels of parking to respond to subsequent changes in policy.

3.7.7 If a phased approach to off-site connectivity improvements has been agreed, such as those identified as only being necessary through the fourth scenario, the results of the monitoring may be needed to be used to inform the timing of infrastructure delivery being adapted accordingly. As described in the TRICS guidance (2021a, paragraph 11.6, p.29):

The MEP should reflect the site build out and the timing of the monitoring and evaluation reports agreed with the relevant LPA and the highway authority. If transport outcomes have departed from the trajectories contained within the transport strategy, then the S106 must contain a mechanism to deal with the divergence from the agreed trip scenario.

3.7.8 The requirement for monitoring is particularly important given the need to ascertain whether the anticipated modal

change resulting from infrastructure provision, and the trends identified through the extrapolation of historic data, transpire in reality. For instance, in lieu of a more sophisticated (and disproportionately complex) predictive analysis, it is likely to be assumed that the increase (or decrease) in vehicular trip rates will continue at the same rate into the future, when in fact it may become apparent that over time these trends accelerate, decelerate, or plateau.

3.7.9 In the case of large-scale housing sites with a protracted build-out, it is important to monitor trip generation and mode share over multiple years as changes in behaviour may only be realised over a long-term period (Song, et al, 2017 and DfT, 2022).

3.7.10 Finally, if the proposed development generates traffic that will impact on any Air Quality Management Area in the vicinity, the MEP may also be required to monitor these impacts to ensure that vehicular traffic does not exceed that which is anticipated through any of the scenarios based on a reduction in trip rates. The methodology for any such monitoring and the potential ramifications of any exceedances will need to be agreed with OCC and the relevant Local Planning Authority.

Bibliography (NB: all hyperlinks correct at the time of publication)

Cherwell District Council (2015) [Cherwell Local Plan 2011-2031: Part One](#).

Christiansen, P., et al (2017) '[Parking facilities and the built environment: Impacts on travel behaviour](#)', Transportation Research Part A: Policy and Practice 95, pp.198-206.

Dalton, A., et al (2013) '[Neighbourhood, Route and Workplace-Related Environmental Characteristics Predict Adults' Mode of Travel to Work](#)', PLoS ONE 8(6): e67575.

DfT (2018) [Road Traffic Forecasts 2018: Moving Britain Ahead](#).

DfT (2019) [TAG Unit M4: Forecasting and Uncertainty](#).

DfT (2020a) [National Travel Survey 2019: Quality Report](#).

DfT (2020b) [National Travel Survey: England 2019](#).

DfT (2021a) [Decarbonising Transport: A Better, Greener Britain](#).

DfT (2021b) [Uncertainty Toolkit: TAG Supplementary Guidance](#).

DfT (2022) [Guidance: Enabling behaviour change – information pack](#).

Guo, Z. (2013) '[Home parking convenience, household car usage, and implications to residential parking policies](#)', Transport Policy 29, pp.97-106.

International Transport Forum (2021) [Travel Transitions](#).

Marsden, G., et al (2018) [All Change? The future of travel demand and the implications for policy and planning](#), First Report of the Commission on Travel Demand.

Metz, D. (2018) '[Tackling urban traffic congestion: The experience of London, Stockholm and Singapore](#)', Case Studies on Transport Policy 6, pp.494-498.

MHCLG (2019) [The English Indices of Deprivation 2019: Technical Report](#).

MHCLG (2020) [Planning for the Future White Paper](#).

MHCLG (2021) [National Planning Policy Framework](#).

Oxford City Council (2020) [Oxford Local Plan 2036](#).

Oxfordshire County Council (2021) [Street Design Guide](#).

Oxfordshire County Council (2022a) [Local Transport and Connectivity Plan](#).

Oxfordshire County Council (2022b) [Pre-application highways advice](#).

Song, Y., et al (2017) '[New walking and cycling infrastructure and modal shift in the UK: A quasi-experimental panel study](#)', Transportation Research Part A 95, pp.320-333.

South Oxfordshire District Council (2020) [South Oxfordshire Local Plan 2011-2035](#).

TCPA (2021) [20-Minute Neighbourhoods](#).

TfL (2012) [Residential Parking Provision in New Developments](#).

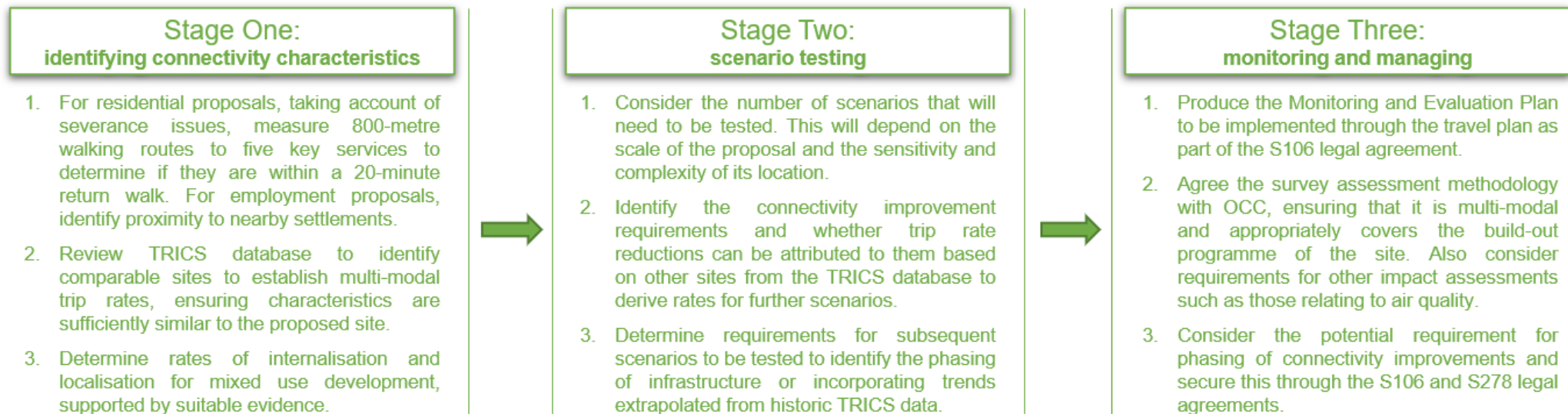
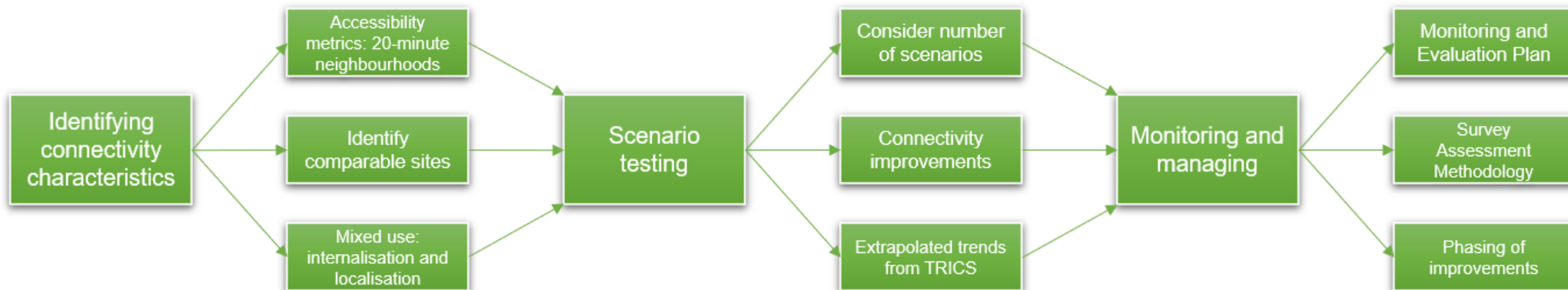
TRICS (2021a) [Guidance Note on the Practical Implementation of the Decide & Provide Approach](#).

TRICS (2021b) [TRICS Good Practice Guide](#).

Vale of White Horse District Council (2016) [Local Plan 2031: Part One](#).

West Oxfordshire District Council (2018) [West Oxfordshire Local Plan 2031](#).

Appendix 1: flow-diagram summarising the implementation process



Appendix 2: step-by-step guide

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Introduction

0.1 This step-by-step guide provides a simplified version of the details in the main document. Whilst this is intended as a guide for users, it should be read in conjunction with its 'parent' document, which details important background information and policy context. In addition to outlining the steps of the transport assessment methodology, this document provides a worked example to help illustrate the approach (see p.35 onwards).

0.2 It is critical that the process described is undertaken thoroughly, all parameters are appropriately scoped and agreed with OCC, all assumptions are robustly evidenced, and that this is comprehensively and clearly reported in the resulting transport assessment (or transport statement). To this end, it is strongly recommended that pre-application highways advice is sought early in the application process to determine and agree the appropriate parameters.

0.3 In most cases it is likely that there will be a need to model between two and five scenarios. It is likely that the scenarios will need to incorporate different trip rate assumptions accounting for the development proposal, connectivity improvements, and extrapolated trends in trip rates for the site and background growth assumptions. These are described

in detail in this step-by-step guide and are summarised as follows:

- 1 Reference cases (see steps 1-3):** These scenarios are essential to establish the baseline or 'without development' conditions of the transport network. Appropriate scenarios will need to be identified to reflect different trip generation assumptions for permitted, committed, and planned growth.
- 2 Do-minimum (see steps 4-8):** This will utilise trip rates derived from comparable sites from the TRICS database based on the proposed development's proximity to key services and its current connectivity provision, i.e. without proposed improvements.
- 3 With connectivity improvements (see Step 9):** Once proposed connectivity improvements are identified, a second set of comparable sites from TRICS (or derived from other sources) is identified that resemble more closely the connectivity characteristics of the proposed development when taking into account the associated proposed improvements.
- 4 Requirement and phasing of further improvements (see Step 10):** Should the proposed improvements modelled in the

previous scenario prove to be inadequate to address the impacts of the development proposal, further improvements will need to be identified and modelled. This scenario may also be needed to identify the phasing of improvements, particularly for sites with a protracted build-out programme.

- 5 Extrapolated trends and sensitivity scenarios (see steps 11-12):** Trend data from TRICS will be used to extrapolate potential future behaviour resulting in vehicular trip rates increasing or decreasing (or remaining static) over time in order to accommodate the uncertainty of future travel patterns, this reduction or growth in vehicular trips should be applied to the site and the background growth assumptions as appropriate. Additional sensitivity scenarios may also be required.

Stage 1: Identifying accessibility characteristics and scenario scoping

Step 1: Scoping scenarios for modelling

1.1 The extent of scenario planning should be considered on a case-by-case basis with three main parameters to be considered to inform its requirement, taken from the TRICS guidance, these are (paragraph 9.5, p.25):

- **Scale** – The need for scenario planning will increase with the project size. All major planning applications relating to 500+ homes or 5,000m² employment/ retail floorspace should be supported by scenario planning.
- **Sensitivity** – The need for scenario planning will also increase with increased project sensitivity, for example in less accessible rural areas or, conversely, highly congested, dense urban environments.
- **Complexity** – The need for scenario planning will also increase with project complexity.

1.2 As such, these parameters should be applied to the consideration of whether a development proposal requires multiple scenarios (using different trip rates) to be modelled. It is likely that many sites that

would not meet the criteria for scale would still be required to test multiple scenarios due to being in sensitive locations. It is strongly recommended that pre-application highways advice is sought early in the application process to agree modelling requirements.

1.3 Whilst the requirement for modelling multiple scenarios based on different trip rates may be less likely for smaller sites and minor applications, the principles of reducing dependence on the private car and providing for sustainable and active modes are applicable in all contexts. As noted in the TRICS guidance (2021a, p.25), 'As an approach, a way of thinking or mindset, D&P is relevant to all scales of development and its application can be tailored accordingly.'

1.4 For all scales of development, if a proposed development is delivering (or contributing towards) any kind of improvements to active and sustainable modes and intending to base a reduction in vehicular trip rates in a transport assessment on that basis or intending to justify a reduction in vehicular trip rates for any other reason, then at least two modal share assumption scenarios will be required to be modelled.

1.5 However, if a development is not able to justify lower trips through the aforementioned means, it is less likely that there will be a requirement for additional scenarios to be tested. This would raise other concerns though, as it would suggest that the development proposal was insufficiently providing for sustainable and active modes, thus potentially suggesting that it is not policy compliant and that it is not a sustainable location for development.

Step 2: Establishing committed and planned growth assumptions

2.1 A scoping exercise will need to be undertaken to ensure that transport assessments (and transport statements) take appropriate account of permitted, committed, and planned growth which will generate traffic impacts on the area of the highway network also impacted by the proposed development.

2.2 Amongst other matters, this will need to be considered in the context of whether it is intended for TEMPro (using DfT data to forecast the growth in trip origin-destinations over time) to be used and the appropriate inclusion of growth allocated in an emerging or adopted local plan.

2.3 As with proposed development itself, different scenarios accounting for permitted, committed, and planned growth may be required based on various plausible trip generation scenarios. This may include scenarios that assume that background growth will generate trips derived from current travel behaviours or that reductions in private car dependence will be achieved, which can be attributed to suitable rationale and evidence.

2.4 When considering the scenarios to be tested to account for background growth reference should be made as appropriate to the scenarios and assumptions identified in Table 1 (p.29, 2018) of the DfT’s Road Traffic Forecasts 2018: Moving Britain Ahead.

2.5 Further to this, future year scenarios will need to be tested appropriate to the specific development proposal (taking into account its scale, build-out programme, etc.) and will need to be agreed with OCC transport officers. Where relevant, future year scenarios will also need to be agreed with National Highways.

Step 3: Reference case modelling

3.1 Once steps 1 and 2 have been completed, the reference case will need to be modelled to establish the baseline or ‘without development’ conditions of the transport network.

Step 4: Residential sites – assessing proximity characteristics

4.1 To identify trip rates for the ‘do-minimum’ scenarios for proposed residential development, an assessment is required of which services are accessible within a 20-minute walk (i.e. 10 minutes each way). This assessment will also be required to determine whether the sites to be used as comparisons share similar proximity characteristics.

4.2 In line with the LTCP (2022a, see pp.56-61) and with the Town and Country Planning Association’s (TCPA, 2021) guidance on 20-Minute Neighbourhoods, a 20-minute return walk should be based on an 800-metre walking distance, i.e. ten minutes there and ten minutes back. For the purposes of this document, this is taken to be within an 800-metre distance from the centre of the site. This must be based on available walking routes as opposed to a radius (or straight line) to better reflect actual, rather than theoretical, distances. The services to be identified as being within a 20-minute walk are:

- Primary school
- Secondary school
- Supermarket or local grocery shop (selling fresh food)
- GP surgery
- Employment (such as a town centre, science park, business park, industrial estate, or

other employment sites of a similar scale, e.g. major hospital, university, etc.)

4.3 If the provision of any of these five key services forms an intrinsic part of the proposed development, then the distance to these new locations can be used.

4.4 The acceptability of these five services should be agreed as part of the transport assessment (or transport statement) scoping exercise. For example, the schools identified should have sufficient capacity (or can be expanded) to accommodate new pupils.

Step 4b: Employment sites – assessing proximity characteristics

4.5 For the purposes of the identifying trip rates for the ‘do-minimum’ scenarios for proposed employment developments, it will be necessary to identify existing employment sites of a similar scale to the proposed development and assess the proximity and scale of nearby settlements to establish the pool of potential employees for the site and the travel options available to them.

Step 5: Assessing connectivity characteristics

5.1 In addition to assessing the proximity of development proposals to the aforementioned locations in steps 4a and 4b, both proposed residential and employment developments should undertake an assessment to establish the relative quality of existing connectivity for walking and cycling. Additionally, a comparative assessment is required of the frequency of bus and rail services, plus their respective journey times (i.e. directness of service), and the number of key destinations served.

5.2 This assessment must also take appropriate account of severance issues caused by railways, roads (particularly dual-carriageways and motorways), waterways, or any other obstacle that would impact on walking and cycling routes. It must also take account of the comparable quality of the provision for walking and cycling. For example: whether the routes have street lighting; controlled crossings; footways and cycleways of suitable widths, etc.

Step 6: Selecting comparison sites in the TRICS database

6.1 The comparable sites used in the TRICS database should be identified by following the general principles set out in the TRICS Good Practice Guide (2021, see Section 4, pp.7-10). However, to ensure a sufficiently robust

process has been undertaken in determining this comparability, in addition to this, the same assessment exercise undertaken in either Step 4a or Step 4b and Step 5 must be applied to the sites to be used in TRICS.

6.2 When choosing suitable sites to be used as comparisons, it may be preferable (and more robust) to use the average trip generation of multiple sites that are broadly similar instead of using only one site that is more directly comparable.

6.3 The starting point for determining existing and forecast multi-modal trip rates for all scenarios will be using the TRICS database. However, should supplementary evidence be considered useful or necessary, the inclusion of other evidentiary sources could be considered. For further discussion of acceptable evidence, see section 2.2 of the main document.

6.4 As with identifying suitable comparison sites in TRICS, it will need to be demonstrated that the data to be used is sufficiently comparable in respect of location, proximity to key services, connectivity characteristics (i.e. walking, cycling, and public transport provision), and other significant variables.

Step 7: Determining internalisation and localisation

7.1 Where a proposed development includes a mix of uses, the resultant internal and external

trips will need to be identified and included in the modelling. These anticipated trip rates must be appropriately evidenced, and consideration will also need to be given as to how these trips can be provided for in respect of sustainable and active mode provision.

7.2 The internalisation and localisation rates may vary between different future year scenarios depending on the phasing of facilities that are expected to influence these rates. For example, if there are future year scenarios to be modelled in 2025 and 2030 and a school is required to be provided on-site in 2028, its influence on internalisation and localisation rates should only be considered in the 2030 scenario.

7.3 As discussed in section 2.3 of the main document, the mid to long-term effects on travel behaviour resulting from the ongoing Covid-19 pandemic are still not yet known. Shifts in travel behaviour remain in flux; such as increases in the prevalence of homeworking in some employment sectors. As such, it is challenging to make meaningful or quantifiable judgements about how vehicular trip rates are likely to be impacted in the mid to long-term. Accordingly, it may only be appropriate to include any predictions about Covid-related impacts on mode share or trip generation in future year scenarios as sensitivity tests at this juncture.

Stage 2: Scenario testing

Step 8: Modelling the do-minimum scenarios

8.1 The 'do-minimum' will be based on multi-modal trip rates derived from the TRICS database using other comparable sites as set out in steps 4-7. As outlined in Stage One, detailed justification must be provided as to why these comparison sites are suitable and reflect as closely as possible the characteristics of the proposed development's location in its current state, i.e. without any of the proposed off-site improvements. This justification must be reported in the transport assessment (or transport statement as applicable) and will include details of the proximity and connectivity characteristics of the comparison sites. The importance of modelling this scenario is discussed in section 3.5 of the main document.

Step 9: Identifying connectivity improvements and new comparison sites

9.1 The 'with connectivity improvements' scenario will need to include the proposed off-site connectivity improvements and bus service enhancements, accompanied by supporting evidence of their deliverability and ongoing viability respectively. This should also take account of improvements to be delivered by others if a particular impact on site traffic or background growth is directly attributable to said scheme and if it has sufficient certainty of delivery (e.g. is fully funded and has planning permission).

9.2 The identification of connectivity improvements should reflect the transport user hierarchy referenced in LTCP policies 1 and 2 (pp.36-39) and the embodied carbon of infrastructure referenced in Policy 27 (pp.88-90). The resultant improvements identified for sustainable and active modes should always be delivered at an early stage of the build-out of a development to ensure that suitable travel choices are available and positive travel behaviours are embedded from the outset.

9.3 A separate review of the TRICS database can then be undertaken, this time to consider comparison sites that now more closely reflect a similar level of provision for walking, cycling and bus service levels, when taking into account the proposed connectivity improvement package associated with the proposed development, whilst also remaining comparable in respect of proximity and connectivity as discussed in Stage One.

9.4 The trip rates derived from this new set of comparison sites can then be used as a basis for modelling this subsequent scenario. If it is not possible to identify appropriately comparable sites in the TRICS database for the 'do-minimum' or 'with connectivity improvements' scenarios, then as discussed in section 2.2 of the main document, other sources of evidence could be considered instead.

Step 10: Determining the requirement for further improvements

10.1 It may be necessary to model additional scenarios in cases where significant congestion issues remain on the network after the modal shift attributable to the connectivity improvements identified in the scenario in Step 9 have been taken into account.

10.2 Capacity improvements may be justified in situations where congestion results in detrimental impacts on the journey time reliability – and therefore viable operation and attractiveness to passengers – of bus services but where the frequency of services does not warrant bus priority measures, or where the availability of land renders bus lanes (or similar) undeliverable.

10.3 Other scenarios that may give rise to the consideration of capacity improvements include where congestion results in highway safety issues, air quality concerns, or the impedance to walking and cycling (where segregated provision is undeliverable). However, the appropriateness of any capacity improvements will need to be considered in the context of potential carbon impacts (both embodied and operational). Furthermore, it is important to reiterate that LTCP Policy 36 states that we will, “only consider road capacity schemes after all other options have been explored.”

10.4 In some locations a choice may need to be made between either delivering a capacity improvement or a sustainable and active transport improvement. Assuming that choosing the improvement to sustainable and active modes does not potentially give rise to unacceptable impacts, there will be a presumption in favour of the improvement that accords with the LTCP transport user hierarchy.

10.5 It will also be pertinent to consider the extent of potential congestion; if an improvement to walking and cycling has been facilitated by choosing not to deliver a capacity improvement and this results in queueing traffic for only short periods of the day but allows for an improvement for walking and cycling at all times, this should be considered in the decision-making process.

10.6 In other cases, there may be off-site sustainable and active mode improvements to be delivered (or contributed towards) by a development that do not conflict with potential capacity improvements.

10.7 Following the outcomes of the site’s monitoring (see Stage Three), if the anticipated mode shares are not achieved and car trips generated by the site are shown to be resulting in unacceptable impacts, it may be necessary for these identified capacity improvements to be delivered. However, it is important that such situations are given careful consideration:

informed by suitable data; only considered once all sustainable and active mode improvements have been delivered; and that the requirement for the capacity improvement is considered as a ‘last resort’. Where relevant, these matters will also need to be agreed with National Highways.

10.8 In some instances, it may be appropriate for the monetary equivalent of the capacity scheme to be provided as a contribution towards strategic (i.e. delivered by OCC) improvements instead of the capacity scheme being delivered directly by the developer.

10.9 Nevertheless, the acceptability of such instances will need to be carefully considered on a case-by-case basis and will need to be considered in the context of network management matters and OCC’s statutory duty under the Traffic Management Act (2004) to reduce and manage congestion.

10.10 In addition to the consideration of monitoring outputs in the context of connectivity improvements delivered by the development, other factors will also need to be taken into account. Where they provide new travel options for people accessing the development, these include matters such as the anticipated timing of the following:

- the introduction of new bus services (or improvements to existing services);
- the implementation of transport interventions delivered by OCC and;
- the build-out of other sites in the vicinity (both residential and employment) and their associated connectivity improvements.

All of these additional factors will have a bearing on travel behaviour and therefore whether or not efforts to encourage modal shift can be considered successful.

Step 11: Extrapolating trends

11.1 Another scenario will be required to identify whether the identified vehicular impacts based on current behaviour is shown to potentially increase when taking account of trends extrapolated from the TRICS database. If trends extrapolated from the TRICS database indicate an increase in vehicular trips, the potential resulting congestion will also need to be addressed appropriately, i.e. through further connectivity improvements or other means (see discussion in Step 10). This step is important to help illustrate what could happen to travel patterns without the intervention of sustainable and active mode improvements.

11.2 The process for acquiring and analysing trend data from TRICS is described in section 16 of the TRICS guidance (2021, p.35) and summarised as follows:

To establish historic trip trends, it is necessary to undertake a separate TRICS analysis for various time slices (initial advice is 5 year periods but this may be amended if considered appropriate) using a consistent set of filtering parameters for each time slice. The attained information can then be combined into a spreadsheet whereby the individual trip rates for each classification can be compared throughout the individual time slices to create a graph showing how trip rates have changed over time.

Step 12: Considering sensitivity scenarios

12.1 Sensitivity scenarios may be required to capture the potential impacts of strategic schemes delivered by OCC, including demand management projects. These will need to be considered appropriately according to the certainty of their delivery. It may also be useful for additional sensitivity scenarios to be tested utilising the LTCP targets of replacing or removing car trips, taking into consideration the discussion of the use of these targets in section 2.5 of the main document.

Stage 3: Monitoring and managing outcomes

Step 13: Scoping the Monitoring and Evaluation Plan

13.1 A Monitoring and Evaluation Plan (MEP) is required to be included where a transport assessment (or transport statement) accompanies a planning application, which will be secured and implemented through the travel plan as part of the S106 agreement where needed.

13.2 The MEP will record how the trip generation and mode share of the site evolves over time and the resultant impacts on the highway network. The survey specification will need to be agreed with the appropriate OCC officers and should employ the TRICS Standard Assessment Methodology or similar (as outlined in section 22 of the TRICS Good Practice Guide, 2021). The survey frequency and number will depend on the scale of the development and the timing of associated infrastructure delivery.

13.3 Survey design will need to take account of multi-modal trips from all access points, including walking and cycling only accesses in addition to main vehicular accesses. Attitudinal surveys should also be considered to collect qualitative data around travel behaviours. Additionally, if there are specific junctions of

concern in the vicinity of the site, which may experience problems if the anticipated mode shares are not achieved, then monitoring of these locations should be included in the survey scope. It may be appropriate for the requirement for surveys to be triggered by years passed since implementation and/or levels of dwelling occupations or floorspace.

13.4 Finally, if the proposed development generates traffic that will impact on any Air Quality Management Area in the vicinity, the MEP may also be required to monitor these impacts to ensure that vehicular traffic does not exceed that which is anticipated through any of the scenarios based on a reduction in trip rates. The methodology for any such monitoring and the potential ramifications of any exceedances will need to be agreed with OCC and the relevant Local Planning Authority.

Step 14: Determining triggers through monitoring

14.1 If a phased approach to off-site connectivity improvements has been agreed the results of the monitoring may be needed to be used to inform the timing of infrastructure delivery being adapted accordingly.

14.2 The requirement for monitoring is necessary given the need to ascertain whether the anticipated modal share and vehicular trip reductions, and the trends identified through the extrapolation of historic data, transpire in reality. If they do not, and unacceptable impacts are identified through the monitoring, this may prompt the requirement for further infrastructure improvements or financial contributions, see Step 10 for more on this topic.

Step 15: Implementing the Monitoring and Evaluation Plan

15.1 The costs incurred by OCC having to ensure that the requisite monitoring is carried out by the applicant, plus the resources associated with reviewing the resultant monitoring outputs, will need to be covered by a suitable fee and captured in the S106 agreement.

Worked example: residential development proposal

Development proposal: A total of 1,000 dwellings on a rural site at Brampton Heath Golf Centre to the north of Northampton, with a new footway and new cycleways adjacent to Sandy Lane and a new bus service through the site. Please note that this is a hypothetical example used for illustrative purposes only.

From the description above, the Transport Assessment accompanying the planning application will require multiple scenarios to be modelled as the development proposal would be for over 500 dwellings in a rural area with a new bus service and new walking and cycling infrastructure. Furthermore, multiple scenarios should also be modelled as during the pre-application stage, it is understood that the applicant is seeking to reduce vehicle trip rates in the Transport Assessment as the development proposal would deliver improvements to active and sustainable travel.

Scenario 1: Do Minimum

This scenario uses average trip rates and modes shares of comparable sites from the TRICS database which reflect the existing characteristics of the site, i.e. without connectivity improvements.


















This uses multi-modal trip rates obtained from the TRICS database without any adjustments for sites comparable to the application site to reflect existing walking, cycling and public transport infrastructure, as well as proximity to facilities and amenities.

In terms of assessing the proximity characteristics of the application site, the distance from the application site to those essential services that form the 20-minute neighbourhood are stated below.

- **Primary School = 1.6km**
The Bramptons Primary School, Harlestone Road
- **Secondary School = 4.4km**
Kingsthorpe College, Boughton Green Road
- **Supermarket or Local Grocery Shop = 3.0km**
Tesco Express, Link Road
- **GP Surgery = 3.3km**
The Pines Surgery, Harborough Road
- **Employment = 5.8km**
Moulton Park, Northampton

In terms of assessing the connectivity characteristics of the application site, a review of the area on Google Maps and Street View indicates that no walking or cycling infrastructure exists adjacent to the application site alongside Sandy Lane and no public transport services are accessible within 400m.

A footway does exist alongside Northampton Road, which also forms a route towards the town centre as part of the National Cycle Network. The nearest bus stops are located on Welford Road where the infrequent number 60 service calls.

Select	Reference	Description	Map	Town/City	Area	Location	DWELLS	Status	Reason for Deselection/Automatic Removal
<input checked="" type="checkbox"/>	DS-03-A-02	MIXED HOUSES		DERBY	DERBYSHIRE	Edge of Town	371	One-Off	
<input checked="" type="checkbox"/>	ES-03-A-03	MIXED HOUSES & FLAT		POLEGATE	EAST SUSSEX	Edge of Town	212	One-Off	
<input checked="" type="checkbox"/>	HC-03-A-24	MIXED HOUSES & FLAT		EASTLEIGH	HAMPSHIRE	Edge of Town	243	One-Off	
<input checked="" type="checkbox"/>	HC-03-A-25	MIXED HOUSES & FLAT		NEAR SOUTHAMPTON	HAMPSHIRE	Edge of Town	250	Re-Survey	
<input checked="" type="checkbox"/>	HC-03-A-26	MIXED HOUSES & FLAT		WHITELEY	HAMPSHIRE	Edge of Town	270	One-Off	
<input checked="" type="checkbox"/>	KC-03-A-06	MIXED HOUSES & FLAT		HERNE BAY	KENT	Suburban Area (PPS6 C)	363	One-Off	
<input checked="" type="checkbox"/>	KC-03-A-07	MIXED HOUSES		HERNE BAY	KENT	Edge of Town	288	One-Off	
<input checked="" type="checkbox"/>	NE-03-A-02	SEMI DETACHED & DET		SCUNTHORPE	NORTH EAST LINCOLNSH	Edge of Town	432	One-Off	
<input checked="" type="checkbox"/>	NF-03-A-06	MIXED HOUSES		GREAT YARMOUTH	NORFOLK	Edge of Town	275	Re-Survey	
<input checked="" type="checkbox"/>	NF-03-A-09	MIXED HOUSES & FLAT		NORWICH	NORFOLK	Edge of Town	984	Re-Survey	
<input checked="" type="checkbox"/>	NF-03-A-23	MIXED HOUSES & FLAT		WYMONDHAM	NORFOLK	Edge of Town	514	Re-Survey	
<input checked="" type="checkbox"/>	NF-03-A-30	MIXED HOUSES		SWAFFHAM	NORFOLK	Edge of Town	266	Re-Survey	
<input checked="" type="checkbox"/>	SC-03-A-05	MIXED HOUSES		HORLEY	SURREY	Edge of Town	207	One-Off	
<input checked="" type="checkbox"/>	ST-03-A-07	DETACHED & SEMI-DET		STAFFORD	STAFFORDSHIRE	Edge of Town	248	One-Off	
<input checked="" type="checkbox"/>	WS-03-A-06	MIXED HOUSES		WEST HORSHAM	WEST SUSSEX	Edge of Town	799	Re-Survey	
<input checked="" type="checkbox"/>	WS-03-A-11	MIXED HOUSES		WEST HORSHAM	WEST SUSSEX	Edge of Town	918	Re-Survey	
<input checked="" type="checkbox"/>	WS-03-A-15	MIXED HOUSES		BILLINGSHURST	WEST SUSSEX	Neighbourhood Centre	380	One-Off	

Use the TRICS database to obtain multi-modal trip rates for the Do Minimum scenario by identifying suitable surveys undertaken at sites which are comparable to the application site regarding location, proximity to essential services and connectivity characteristics, that is to say, walking, cycling and public transport provision.

The development proposal is for 1,000 dwellings at a site on the edge of Northampton; therefore, interrogation of the TRICS database was undertaken with the parameters stated below.

- 1 '03 – Residential' in the Main Land Use menu
- 2 'A – Houses Privately Owned' in the Sub Land Use menu
- 3 'Calculate Multi-Modal Trip Rates' to obtain mode share data
- 4 Only residential sites in England (excluding Greater London)
- 5 Between 200 and 1,800 dwellings in Suburban Area, Edge of Town and Neighbourhood Centre locations, with weekday surveys only

Robust Primary and Secondary Filtering of the TRICS database should be undertaken to ensure appropriate surveys are used. Following these two stages of filtering, a review of each site should be undertaken in detail to ensure that it is representative of the application site in terms of existing walking and cycling connections, access to public transport services which have similar frequencies, journey times and number of destinations, as well as proximity to facilities, amenities and essential services.

The interrogation of the TRICS database using the above parameters results in 17 surveys being available to obtain multi-modal trip rates, as shown in the screenshot below.

There is now a requirement to remove all surveys from the site selection list which are not representative of the application site, with reasonable justification. Only 3 surveys are considered representative due to connectivity or location characteristics, as shown in the screenshots below.

Select	Reference	Description	Map	Town/City	Area	Location	DWELLS	Status	Reason for Deselection/Automatic Removal
<input type="checkbox"/>	DS-03-A-02	MIXED HOUSES		DERBY	DERBYSHIRE	Edge of Town	371	One-Off	Connectivity Characteristics
<input type="checkbox"/>	ES-03-A-03	MIXED HOUSES & FLAT		POLEGATE	EAST SUSSEX	Edge of Town	212	One-Off	Connectivity Characteristics
<input type="checkbox"/>	HC-03-A-24	MIXED HOUSES & FLAT		EASTLEIGH	HAMPSHIRE	Edge of Town	243	One-Off	Connectivity Characteristics
<input type="checkbox"/>	HC-03-A-25	MIXED HOUSES & FLAT		NEAR SOUTHAMPTON	HAMPSHIRE	Edge of Town	250	Re-Survey	Connectivity Characteristics
<input checked="" type="checkbox"/>	HC-03-A-26	MIXED HOUSES & FLAT		WHITELEY	HAMPSHIRE	Edge of Town	270	One-Off	
<input type="checkbox"/>	KC-03-A-06	MIXED HOUSES & FLAT		HERNE BAY	KENT	Suburban Area (PPS6 C	363	One-Off	Connectivity Characteristics
<input type="checkbox"/>	KC-03-A-07	MIXED HOUSES		HERNE BAY	KENT	Edge of Town	288	One-Off	Connectivity Characteristics
<input type="checkbox"/>	NE-03-A-02	SEMI DETACHED & DET		SCUNTHORPE	NORTH EAST LINCOLNSH	Edge of Town	432	One-Off	Connectivity Characteristics
<input checked="" type="checkbox"/>	NF-03-A-06	MIXED HOUSES		GREAT YARMOUTH	NORFOLK	Edge of Town	275	Re-Survey	
<input type="checkbox"/>	NF-03-A-09	MIXED HOUSES & FLAT		NORWICH	NORFOLK	Edge of Town	984	Re-Survey	Removed: Site re-surveyed by NF-03-A-22
<input checked="" type="checkbox"/>	NF-03-A-23	MIXED HOUSES & FLAT		WYMONDHAM	NORFOLK	Edge of Town	514	Re-Survey	
<input type="checkbox"/>	NF-03-A-30	MIXED HOUSES		SWAFFHAM	NORFOLK	Edge of Town	266	Re-Survey	Location Characteristics
<input type="checkbox"/>	SC-03-A-05	MIXED HOUSES		HORLEY	SURREY	Edge of Town	207	One-Off	Connectivity Characteristics
<input type="checkbox"/>	ST-03-A-07	DETACHED & SEMI-DET		STAFFORD	STAFFORDSHIRE	Edge of Town	248	One-Off	Connectivity Characteristics
<input type="checkbox"/>	WS-03-A-06	MIXED HOUSES		WEST HORSHAM	WEST SUSSEX	Edge of Town	799	Re-Survey	Removed: Site re-surveyed by WS-03-A-11
<input type="checkbox"/>	WS-03-A-11	MIXED HOUSES		WEST HORSHAM	WEST SUSSEX	Edge of Town	918	Re-Survey	Connectivity Characteristics
<input type="checkbox"/>	WS-03-A-15	MIXED HOUSES		BILLINGSHURST	WEST SUSSEX	Neighbourhood Centre	380	One-Off	Location Characteristics

Select	Reference	Date	Day of Week	Survey Type	Description	Town/City	Reason for Deselection/Automatic Removal
<input checked="" type="checkbox"/>	HC-03-A-26	24/06/21	Thursday	MULTI-MODAL	MIXED HOUSES & FLATS	WHITELEY	
<input checked="" type="checkbox"/>	NF-03-A-06	23/09/19	Monday	MULTI-MODAL	MIXED HOUSES	GREAT YARMOUTH	
<input checked="" type="checkbox"/>	NF-03-A-23	22/09/21	Wednesday	MULTI-MODAL	MIXED HOUSES & FLATS	WYMONDHAM	

For the majority of the surveys in the site selection list, the nearest bus stops are too close to the relevant site and the frequency of the services which call at these bus stops is much greater than the frequency in proximity to the application site. This could result in a greater mode share for public transport use; therefore, these surveys should not be used to obtain multi-modal trip rates for the Do Minimum scenario.

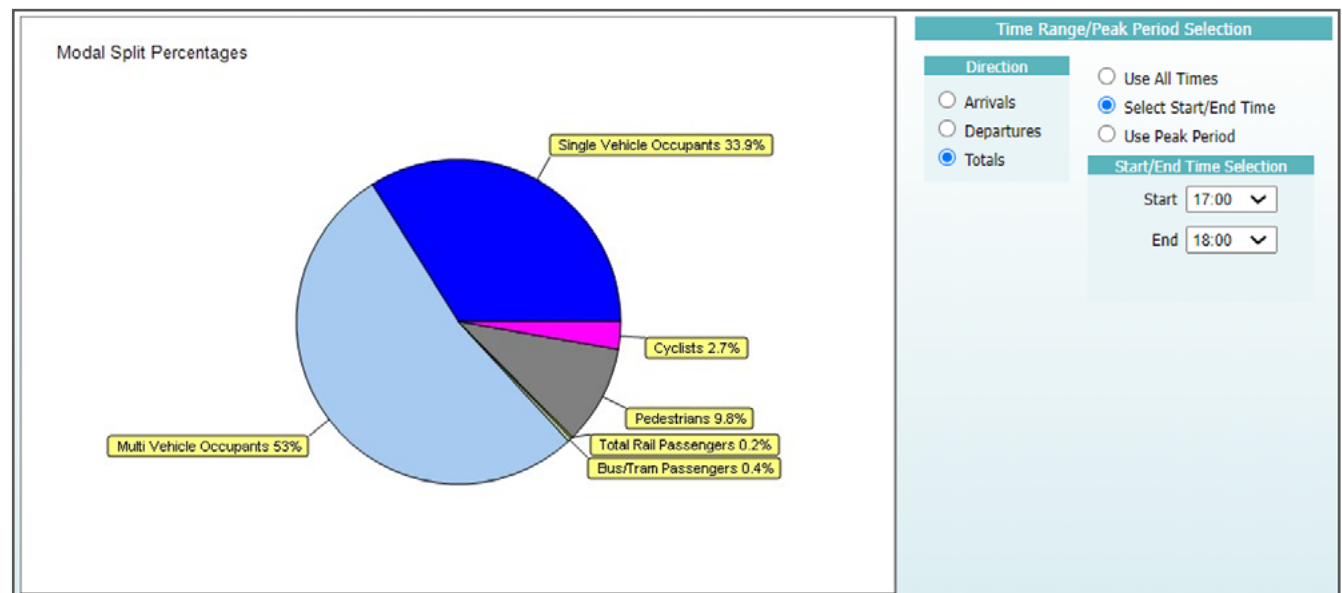
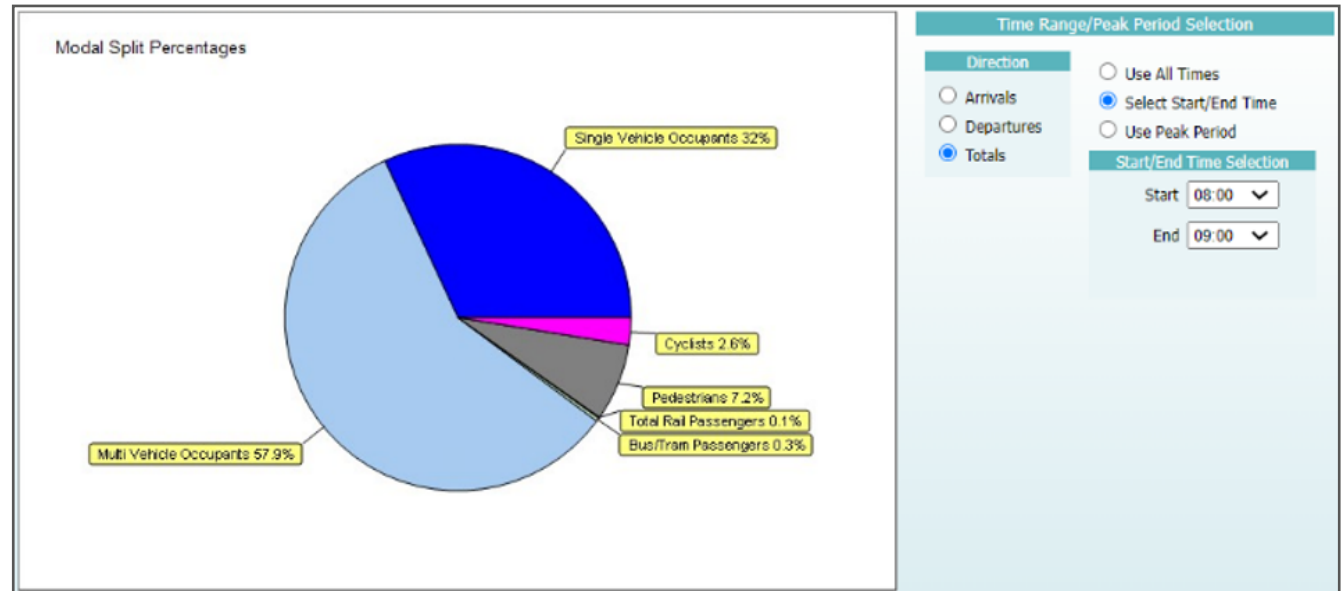
The average multi-modal trip rates from the 3 remaining sites for **'Total People'** for both the AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00), as well as between 07:00-19:00 are shown in the table below.

	IN	OUT	TOTAL
AM Peak (08:00-09:00)	0.225	0.869	1.094
PM Peak (17:00-18:00)	0.689	0.320	1.009
12-Hour (07:00-19:00)	3.979	4.167	8.416

The average multi-modal trip rates from the 3 remaining sites for **'Total Vehicles'** for both the AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00), as well as between 07:00-19:00 are shown in the table below.

	IN	OUT	TOTAL
AM Peak (08:00-09:00)	0.171	0.444	0.615
PM Peak (17:00-18:00)	0.398	0.179	0.577
12-Hour (07:00-19:00)	2.404	2.425	4.829

The likely mode share of the application site in both the AM peak hour and PM peak hour without the development proposal in place and therefore any walking, cycling and public transport improvements, is shown in the screenshots and the tables on the right (and on following page).



Transport Mode	AM Peak Hour (08:00-09:00)	PM Peak Hour (17:00-18:00)
	% Share	% Share
Walking	7.2%	9.8%
Cycling	2.6%	2.7%
Public Transport	0.4%	0.6%
Car / Van	89.9%	86.9%

A car/van mode share of 89.9% in the AM peak hour and 86.9% in the PM peak hour appears reasonable given the lack of walking and cycling infrastructure, as well as the lack of public transport services in the area.

Scenario 2:

With Connectivity Improvements

This scenario uses average trip rates from the TRICS database, or adjustments to baseline mode shares, which reflect the future characteristics of the site with the development in place and its associated connectivity improvements.

The With Connectivity Improvements scenario uses another set of multi-modal trip rates obtained from the TRICS database or adjustments to baseline mode shares from the Do Minimum scenario to reflect future walking, cycling and public transport infrastructure and potential opportunities for residents

and visitors to travel by sustainable and active modes of transport, as a result of the development proposal.

As part of the development proposal, a new footway and new cycleways would be provided alongside Sandy Lane to connect with the existing shared footway / cycleway alongside Northampton Road. Additionally, a new bus service through the site towards the town centre with up to 4 services per hour will be provided.

All new infrastructure improvements would be delivered prior to first occupation, so opportunities for residents and visitors to travel by sustainable and active modes of transport would be available from the outset. A primary school, grocery shop and GP surgery would also

be provided within the application site which would reduce the distance that residents would have to travel to these essential services.

An interrogation of the TRICS database was undertaken using the same parameters as before, for consistency. A review of each site should be undertaken in detail to ensure that it is representative of the application site in terms of future walking and cycling connections and access to public transport services, while also still comparable regarding proximity to facilities, amenities and essential services.

The interrogation of the TRICS database using the above parameters results in 17 surveys being available to obtain multi-modal trip rates, as shown in the screenshot below.

Select	Reference	Description	Map	Town/City	Area	Location	DWELLS	Status	Reason for Deselection/Automatic Removal
<input checked="" type="checkbox"/>	DS-03-A-02	MIXED HOUSES		DERBY	DERBYSHIRE	Edge of Town	371	One-Off	
<input checked="" type="checkbox"/>	ES-03-A-03	MIXED HOUSES & FLAT		POLEGATE	EAST SUSSEX	Edge of Town	212	One-Off	
<input checked="" type="checkbox"/>	HC-03-A-24	MIXED HOUSES & FLAT		EASTLEIGH	HAMPSHIRE	Edge of Town	243	One-Off	
<input checked="" type="checkbox"/>	HC-03-A-25	MIXED HOUSES & FLAT		NEAR SOUTHAMPTON	HAMPSHIRE	Edge of Town	250	Re-Survey	
<input checked="" type="checkbox"/>	HC-03-A-26	MIXED HOUSES & FLAT		WHITELEY	HAMPSHIRE	Edge of Town	270	One-Off	
<input checked="" type="checkbox"/>	KC-03-A-06	MIXED HOUSES & FLAT		HERNE BAY	KENT	Suburban Area (PPS6 C	363	One-Off	
<input checked="" type="checkbox"/>	KC-03-A-07	MIXED HOUSES		HERNE BAY	KENT	Edge of Town	288	One-Off	
<input checked="" type="checkbox"/>	NE-03-A-02	SEMI DETACHED & DET		SCUNTHORPE	NORTH EAST LINCOLNSH	Edge of Town	432	One-Off	
<input checked="" type="checkbox"/>	NF-03-A-06	MIXED HOUSES		GREAT YARMOUTH	NORFOLK	Edge of Town	275	Re-Survey	
<input checked="" type="checkbox"/>	NF-03-A-09	MIXED HOUSES & FLAT		NORWICH	NORFOLK	Edge of Town	984	Re-Survey	
<input checked="" type="checkbox"/>	NF-03-A-23	MIXED HOUSES & FLAT		WYMONDHAM	NORFOLK	Edge of Town	514	Re-Survey	
<input checked="" type="checkbox"/>	NF-03-A-30	MIXED HOUSES		SWAFFHAM	NORFOLK	Edge of Town	266	Re-Survey	
<input checked="" type="checkbox"/>	SC-03-A-05	MIXED HOUSES		HORLEY	SURREY	Edge of Town	207	One-Off	
<input checked="" type="checkbox"/>	ST-03-A-07	DETACHED & SEMI-DET		STAFFORD	STAFFORDSHIRE	Edge of Town	248	One-Off	
<input checked="" type="checkbox"/>	WS-03-A-06	MIXED HOUSES		WEST HORSHAM	WEST SUSSEX	Edge of Town	799	Re-Survey	
<input checked="" type="checkbox"/>	WS-03-A-11	MIXED HOUSES		WEST HORSHAM	WEST SUSSEX	Edge of Town	918	Re-Survey	
<input checked="" type="checkbox"/>	WS-03-A-15	MIXED HOUSES		BILLINGSHURST	WEST SUSSEX	Neighbourhood Centre	380	One-Off	

Similar to the previous stage, there is now a requirement to remove all surveys from the site selection list which would not be representative of the application site with the development proposal and its associated connectivity improvements in place.

A total of 12 surveys could be used to obtain the alternative multi-modal trip rates as each site has suitable walking and cycling infrastructure in place with representative bus service provision, as shown in the screenshots below.

Select	Reference	Description	Map	Town/City	Area	Location	DWELLS	Status	Reason for Deselection/Automatic Removal
<input checked="" type="checkbox"/>	DY-03-A-01	MIXED HOUSES		DERBY	DERBY	Edge of Town	371	One-Off	
<input type="checkbox"/>	ES-03-A-03	MIXED HOUSES & FLAT		POLEGATE	EAST SUSSEX	Edge of Town	212	One-Off	Location Characteristics
<input checked="" type="checkbox"/>	HC-03-A-24	MIXED HOUSES & FLAT		EASTLEIGH	HAMPSHIRE	Edge of Town	243	One-Off	
<input type="checkbox"/>	HC-03-A-26	MIXED HOUSES & FLAT		WHITELEY	HAMPSHIRE	Edge of Town	270	One-Off	Connectivity Characteristics
<input checked="" type="checkbox"/>	KC-03-A-06	MIXED HOUSES & FLAT		HERNE BAY	KENT	Suburban Area (PPS6 C)	363	One-Off	
<input checked="" type="checkbox"/>	KC-03-A-07	MIXED HOUSES		HERNE BAY	KENT	Edge of Town	288	One-Off	
<input checked="" type="checkbox"/>	NE-03-A-02	SEMI DETACHED & DET		SCUNTHORPE	NORTH EAST LINCOLNSH	Edge of Town	432	One-Off	
<input type="checkbox"/>	NF-03-A-06	MIXED HOUSES		GREAT YARMOUTH	NORFOLK	Edge of Town	275	Re-Survey	Removed: Site re-surveyed by NF-03-A-29
<input checked="" type="checkbox"/>	NF-03-A-09	MIXED HOUSES & FLAT		NORWICH	NORFOLK	Edge of Town	984	Re-Survey	
<input type="checkbox"/>	NF-03-A-23	MIXED HOUSES & FLAT		WYMONDHAM	NORFOLK	Edge of Town	514	Re-Survey	Location Characteristics
<input checked="" type="checkbox"/>	NF-03-A-30	MIXED HOUSES		SWAFFHAM	NORFOLK	Edge of Town	266	Re-Survey	
<input checked="" type="checkbox"/>	SC-03-A-05	MIXED HOUSES		HORLEY	SURREY	Edge of Town	207	Initial Survey	
<input checked="" type="checkbox"/>	SP-03-A-02	MIXED HOUSES & FLAT		NEAR SOUTHAMPTON	SOUTHAMPTON	Edge of Town	250	Re-Survey	
<input checked="" type="checkbox"/>	ST-03-A-07	DETACHED & SEMI-DET		STAFFORD	STAFFORDSHIRE	Edge of Town	248	One-Off	
<input type="checkbox"/>	WS-03-A-06	MIXED HOUSES		WEST HORSHAM	WEST SUSSEX	Edge of Town	799	Re-Survey	Removed: Site re-surveyed by WS-03-A-11
<input checked="" type="checkbox"/>	WS-03-A-11	MIXED HOUSES		WEST HORSHAM	WEST SUSSEX	Edge of Town	918	Re-Survey	
<input checked="" type="checkbox"/>	WS-03-A-15	MIXED HOUSES		BILLINGSHURST	WEST SUSSEX	Neighbourhood Centre	380	One-Off	

Select	Reference	Date	Day of Week	Survey Type	Description	Town/City	Reason for Deselection/Automatic Removal
<input checked="" type="checkbox"/>	DY-03-A-01	10/07/18	Tuesday	MULTI-MODAL	MIXED HOUSES	DERBY	
<input checked="" type="checkbox"/>	HC-03-A-24	10/11/21	Wednesday	MULTI-MODAL	MIXED HOUSES & FLATS	EASTLEIGH	
<input checked="" type="checkbox"/>	KC-03-A-06	27/09/17	Wednesday	MULTI-MODAL	MIXED HOUSES & FLATS	HERNE BAY	
<input checked="" type="checkbox"/>	KC-03-A-07	27/09/17	Wednesday	MULTI-MODAL	MIXED HOUSES	HERNE BAY	
<input checked="" type="checkbox"/>	NE-03-A-02	12/05/14	Monday	MULTI-MODAL	SEMI DETACHED & DETACHED	SCUNTHORPE	
<input checked="" type="checkbox"/>	NF-03-A-09	24/09/19	Tuesday	MULTI-MODAL	MIXED HOUSES & FLATS	NORWICH	
<input checked="" type="checkbox"/>	NF-03-A-30	23/09/21	Thursday	MULTI-MODAL	MIXED HOUSES	SWAFFHAM	
<input checked="" type="checkbox"/>	SC-03-A-05	01/04/19	Monday	MULTI-MODAL	MIXED HOUSES	HORLEY	
<input checked="" type="checkbox"/>	SP-03-A-02	12/10/21	Tuesday	MULTI-MODAL	MIXED HOUSES & FLATS	NEAR SOUTHAMPTON	
<input checked="" type="checkbox"/>	ST-03-A-07	22/11/17	Wednesday	MULTI-MODAL	DETACHED & SEMI-DETACHED	STAFFORD	
<input checked="" type="checkbox"/>	WS-03-A-11	02/04/19	Tuesday	MULTI-MODAL	MIXED HOUSES	WEST HORSHAM	
<input checked="" type="checkbox"/>	WS-03-A-15	23/11/21	Tuesday	MULTI-MODAL	MIXED HOUSES	BILLINGSHURST	

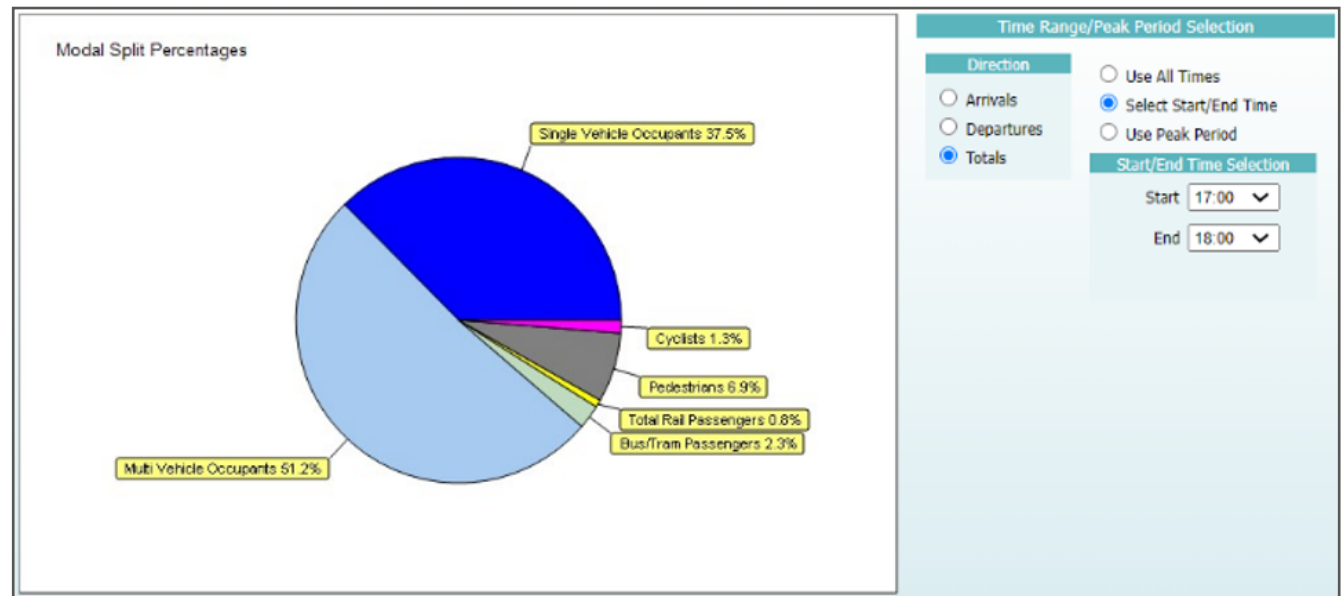
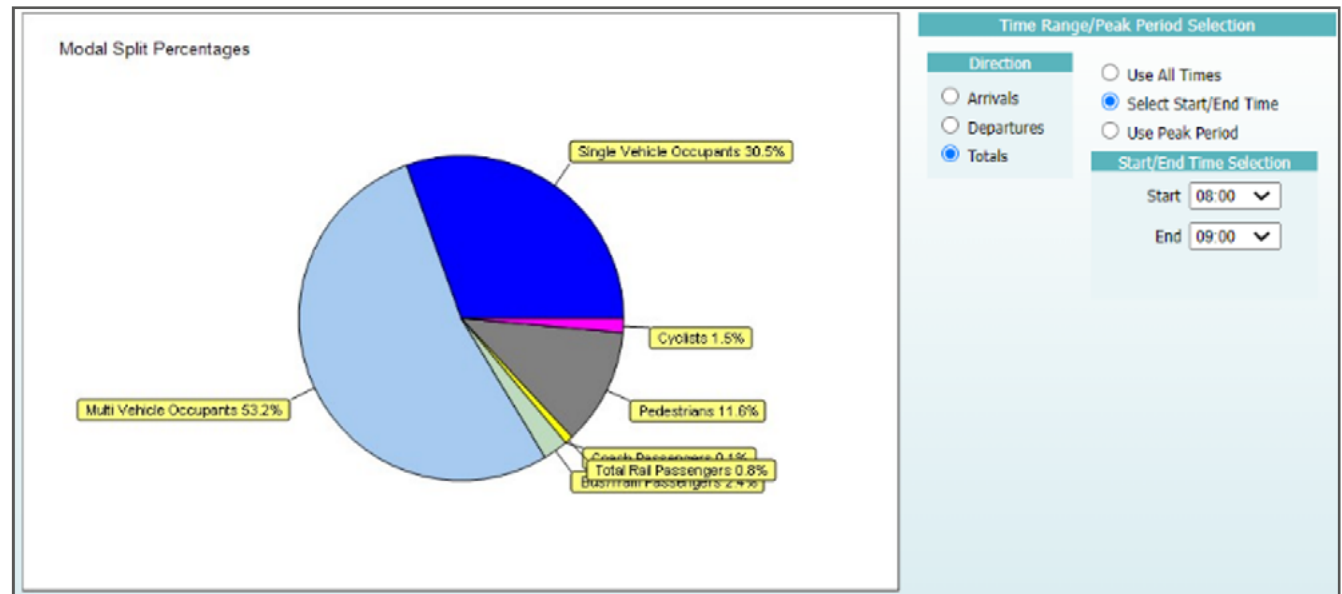
The average multi-modal trip rates from the 12 sites for 'Total People' for both the AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00), as well as between 07:00-19:00 are shown in the table below.

	IN	OUT	TOTAL
AM Peak (08:00-09:00)	0.188	0.727	0.915
PM Peak (17:00-18:00)	0.581	0.248	0.829
12-Hour (07:00-19:00)	3.550	3.554	7.104

The average multi-modal trip rates from the 12 sites for 'Total Vehicles' for both the AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00), as well as between 07:00-19:00 are shown in the table below.

	IN	OUT	TOTAL
AM Peak (08:00-09:00)	0.124	0.360	0.484
PM Peak (17:00-18:00)	0.342	0.151	0.493
12-Hour (07:00-19:00)	2.066	2.081	4.147

The likely mode share of the application site in both the AM peak hour and PM peak hour with the development proposal in place and the improvements to walking, cycling and public transport infrastructure, is shown in the screenshots on the right.



Transport Mode	AM Peak Hour (08:00-09:00)	PM Peak Hour (17:00-18:00)
	% Share	% Share
Walking	11.6%	6.9%
Cycling	1.5%	1.3%
Public Transport	3.3%	3.1%
Car / Van	83.7%	88.7%

The infrastructure improvements to come forward as part of the development proposal would likely result in a greater proportion of future residents using public transport to travel, with a public transport mode share of 3.3% in the AM peak hour and 3.1% in the PM peak.

Scenario 3: Extrapolated Trends

Scenario 3 is to analyse Extrapolated Trends to understand if the identified vehicular impacts based on current behaviour is shown to potentially increase or decrease when taking into consideration trends extrapolated from the TRICS database.

To establish historic trip trends to determine future travel patterns, undertake separate analysis for various time slices using a consistent set of filtering parameters for each.

The filtering parameters for each of the time slices is the same as those used to obtain multi-modal trip rates in the Do Minimum scenario, as stated below for reference.

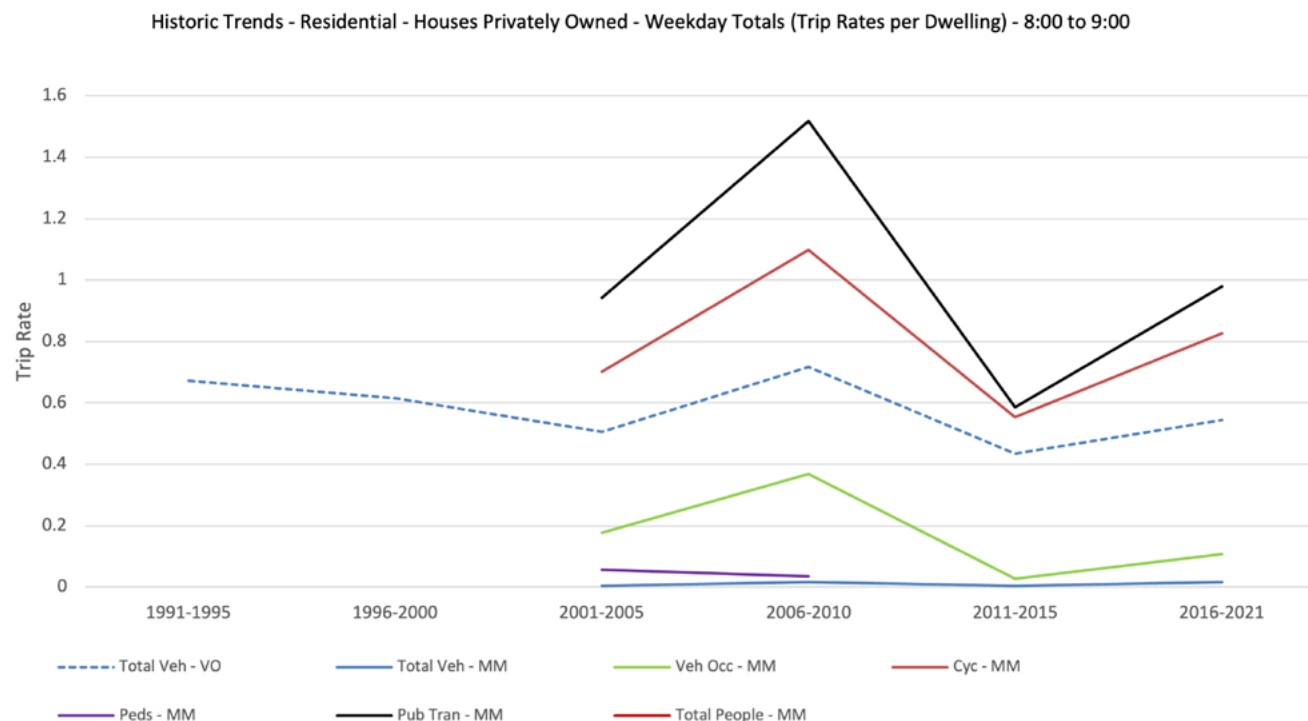
- 1 '03 – Residential' in the Main Land Use menu
- 2 'A – Houses Privately Owned' in the Sub Land Use menu
- 3 Only residential sites in England (excluding Greater London)
- 4 Between 200 and 1,800 dwellings in Suburban Area, Edge of Town and Neighbourhood Centre locations, with weekday surveys only

Scenario 3 can be used to determine historic trip trends for both vehicle only trips and multi-modal trips, although multi-modal data only goes back to the year 2000 so data before this time will only consist of vehicle only data. In this example, six different time slices

each of 5 years have been used to determine historic trip trends. Each of the slices contains a different mixture of sites that all meet the defined parameters set out above.

- Time Slice 1: 1991 to 1995
- Time Slice 2: 1996 to 2000
- Time Slice 3: 2001 to 2005
- Time Slice 4: 2006 to 2010
- Time Slice 5: 2011 to 2015
- Time Slice 6: 2016 to 2021

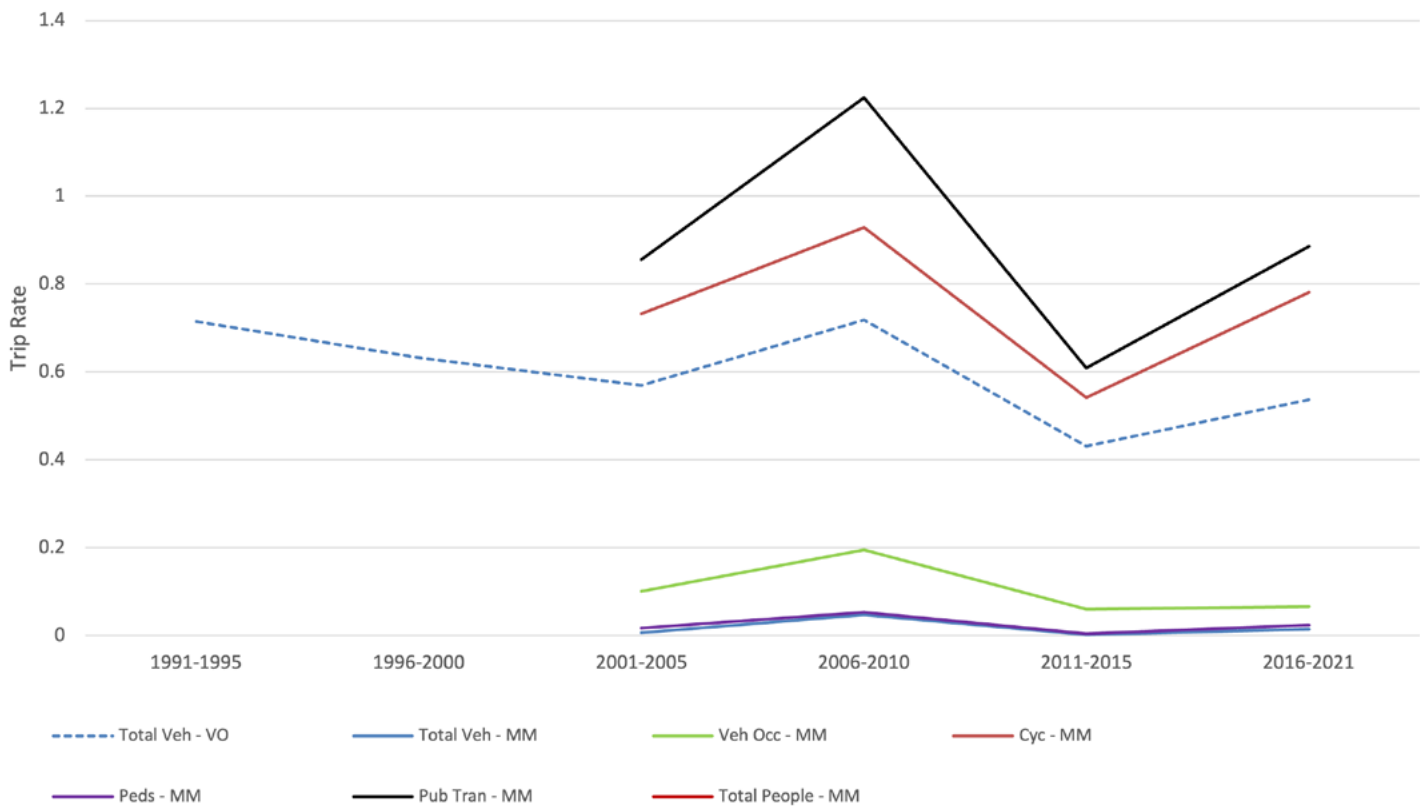
The 'Historic Trends' Excel spreadsheet produced by the TRICS consortium (available [here](#)) is used to analyse historic trip trends and generate a graphical representation of these historic trip trends using data from the TRICS database. The graphical representation of historic trip trends for both the AM peak hour and PM peak hour, as well as for between 07:00 and 19:00 hours, are shown below. The multi-modal data is shown from the year 2000 onwards.



The two graphs on this and previous page suggest that vehicle trip generation from residential developments in similar locations to the one at the application site is likely to continue increasing in the short term in both the AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00) to follow the trend of the previous 5 years. The use of public transport and cycling would surpass car use though over the short term.

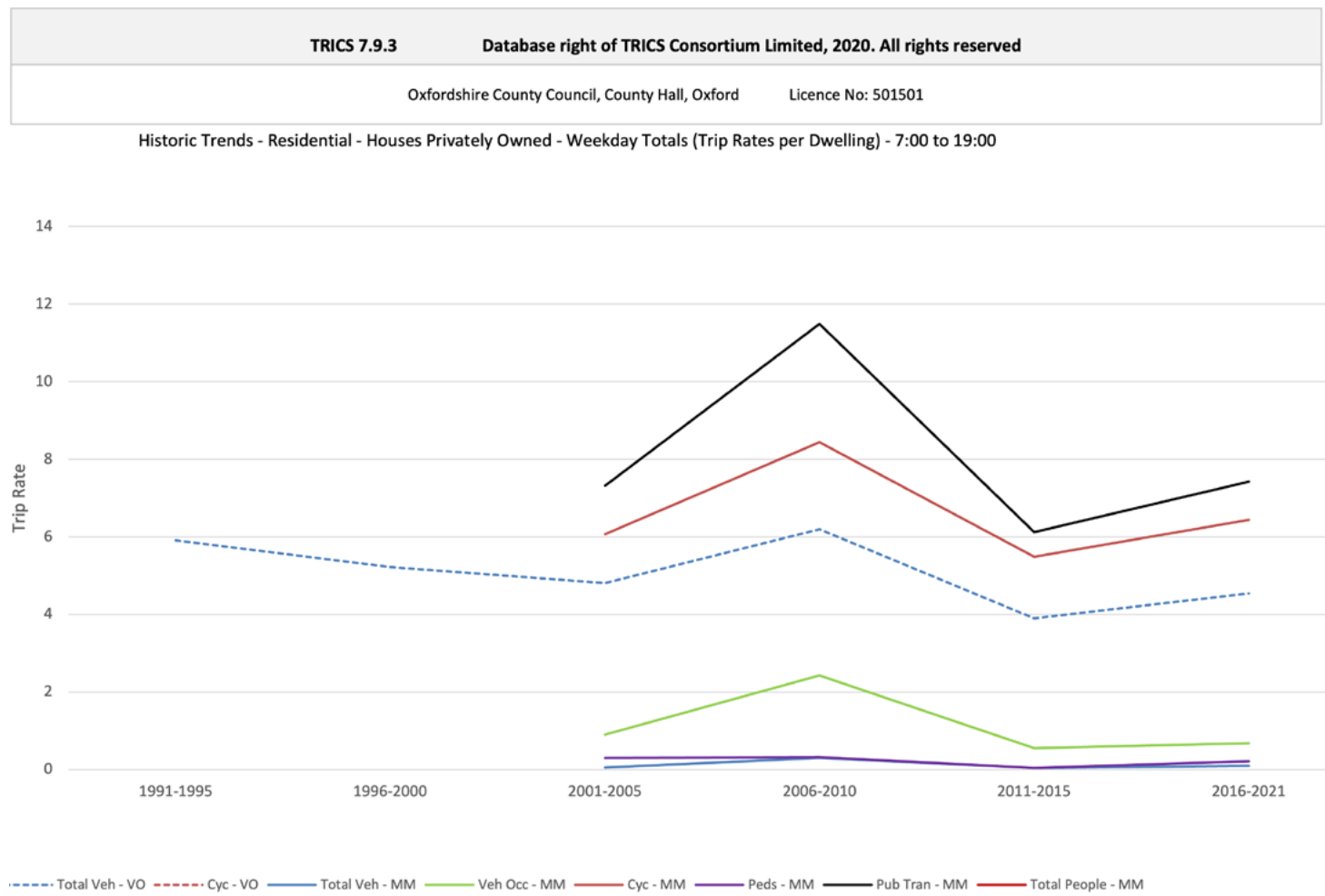
TRICS 7.9.3	Database right of TRICS Consortium Limited, 2020. All rights reserved	
	Oxfordshire County Council, County Hall, Oxford	Licence No: 501501

Historic Trends - Residential - Houses Privately Owned - Weekday Totals (Trip Rates per Dwelling) - 17:00 to 18:00



The below graph suggests that, while the trip rates of public transport and cycling would be higher than the trip rates for vehicles, the use of all three travel modes would increase at the same rate in the short term to follow the trends of the previous 5 years.

These graphs can be used to determine likely multi-modal trip rates of the development proposal for specific years in the future, particularly at the time of full occupation of all 1,000 dwellings in 2026, by assuming the historical trends would continue as shown.



The extrapolated multi-modal trip rates for **'Total People'** and **'Total Vehicles'** in 2026 at the time of full occupation for both the AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00), as well as between 07:00-19:00 are shown in the table below.

	Total People	Total Vehicles
	TOTAL	TOTAL
AM Peak (08:00-09:00)	1.100	0.650
PM Peak (17:00-18:00)	1.005	0.650
12-Hour (07:00-19:00)	7.200	5.000

A summary of the **'Total People'** and **'Total Vehicles'** multi-modal trip rates for **Scenario 1** (Do Minimum), **Scenario 2** (With Connectivity Improvements) and **Scenario 3** (Extrapolated Trends) are shown in the table below.

	Total People	Total Vehicles
Scenario 1: Do Minimum		
AM Peak (08:00-09:00)	1.094	0.615
PM Peak (17:00-18:00)	1.009	0.577
12-Hour (07:00-19:00)	8.416	4.829
Scenario 2: With Connectivity Improvements		
AM Peak (08:00-09:00)	0.915	0.484
PM Peak (17:00-18:00)	0.829	0.493
12-Hour (07:00-19:00)	7.104	4.147
Scenario 3: Extrapolated Trends		
AM Peak (08:00-09:00)	1.100	0.650
PM Peak (17:00-18:00)	1.005	0.650
12-Hour (07:00-19:00)	7.200	5.000

Decide and Provide Methodology (to be read alongside the Implementing 'Decide & Provide': Requirements for Transport Assessments document) – checklist for: Site, application number, description			
Date of assessment:			
Assessed by:			
Step	Question	YES/ NO	Has suitably detailed justification and evidence been provided for this step of the methodology and its inclusion/exclusion? (text in this column is for guidance)
1: Scoping scenarios for modelling	Has more than one trip rate scenario been modelled?		(scale, sensitivity, complexity) – note compulsory for 500+ homes or 5000m ² employment/retail floorspace or where reduction in vehicular trip rates is proposed on basis of sustainable travel improvements.
If NO can be justified, then there is no need to follow the remaining steps but the application must demonstrate principles of reducing car dependence, providing for sustainable and active modes, and supporting the application of 20-minute neighbourhoods in line with LTCP policies 1 (Transport user hierarchy), 12 (Guidance for new development), and 13 (20-minute neighbourhoods). Has this been demonstrated? YES/NO			
2: Establishing committed and planned growth assumptions	Have alternative scenario(s) of background growth been modelled? (Must be evidenced)		Not compulsory but must show that this has been considered.
3: Reference case modelling	Has a suitable reference case been modelled?		
4a: Assessing proximity characteristics	<p>For residential sites: Has a 20-minute walk assessment been carried out assessing the walk time to the facilities below? (10 mins each way or 800m walking distance from centre of site).</p> <ul style="list-style-type: none"> ▪ Primary school ▪ Secondary school ▪ Supermarket or local grocery shop (fresh food) ▪ GP surgery ▪ Large scale employment 		

Decide and Provide Methodology (to be read alongside the Implementing 'Decide & Provide': Requirements for Transport Assessments document) – checklist for: Site, application number, description			
4b: Assessing proximity characteristics	For employment sites: Have existing employment sites of similar scale to proposed development been identified, with comparable proximity and scale of nearby settlements and travel options?		
5: Assessing connectivity characteristics	Has an assessment been carried out of the quality of walking and cycling routes and public transport connectivity to locations in 4a and 4b?		e.g. street lighting, crossings, widths of footways and cycleways. Take account of any severance. For public transport consider frequency, journey times and destinations served.
6: Selecting TRICS comparison sites	Have comparable sites been selected from TRICS, taking account of connectivity characteristics in steps 4 and 5? Or has alternative evidence been used?		It may be preferable to use the average trip generation of multiple sites that are broadly similar. Supplementary or alternative evidence may be used but see section 2.2 of guidance re acceptability.
7: Determining internalisation and localisation	For mixed use developments only: Has internalisation of trips been considered in overall trip generation, and is this evidenced and if necessary, applied appropriately to future year scenarios, taking into account likely build out?		
8: Modelling do-minimum scenario	Has an appropriate 'Do Minimum' scenario been modelled (i.e. without the connectivity improvements)?		Should be based on multi-modal trip rates derived from the TRICS database using other sites comparable to the current state of the site, i.e. without any of the proposed off-site improvements (see steps 4 and 5)

Decide and Provide Methodology (to be read alongside the Implementing 'Decide & Provide': Requirements for Transport Assessments document) – checklist for: Site, application number, description			
9a: Identifying connectivity improvements and new comparison sites	Have connectivity improvements been identified, with evidence of deliverability and/or ongoing viability, and have comparison sites in TRICS* been identified that more closely reflect similar provision for sustainable modes AND have the same proximity characteristics as identified in Step 1?		*Or suitable evidence from alternative sources
9b: Modelling the 'with connectivity improvements' scenario	Has the 'with connectivity improvements' scenario been modelled?		May be more than one, to test different mitigation.
10: Determining the requirement for further improvements	Has consideration been given to the need for further improvements and modelling of these? Have highway capacity schemes for private vehicles only been considered after all other options have been explored?		See main document regarding types of further improvements.
11: Extrapolating trends.	Have trip generation trends been extrapolated from the TRICS database, and another scenario modelled to reflect the trends?		
12: Sensitivity scenarios	Has the need for any sensitivity scenarios been considered?		
13-15: Monitoring and managing	Although not necessary for a TA, has consideration been given to scoping a monitoring and evaluation plan for the S106/S278 agreement?		