Winchester Local Plan 2020-2040: Transport Assessment

Strategic Transport Assessment

Winchester City Council

July 2024

Hampshire Services
Hampshire 2050
Hampshire County Council
Elizabeth II Court
Winchester
Hants
SO23 8UL

www.hants.gov.uk/sharedexpertise

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Hampshire 2050
Hampshire County Council
Third Floor, EII Court South,
The Castle,
Winchester,
SO23 8UL

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1. Introduction

Purpose

1.1 This document is the Winchester District Local Plan Strategic Transport Assessment (STA 2023), produced by Hampshire Services, (Hampshire County Council's trading name) contracted to coordinate the STA on behalf of Winchester City Council (WCC). The STA forms part of the evidence base for the emerging Winchester District Local Plan (2020-2040). The STA provides an assessment of the potential implications of the proposed site allocations on transport networks. It considers how the proposed developments will align with national, regional, and local policy goals, including the National Planning Policy Framework, and Hampshire County Council's newly adopted Local Transport Plan 4.

1.2 It has been positively prepared with involvement from both Highway Authorities (Hampshire County Council, and National Highways) and has had regard to Statements of Common Ground (SoCG) with neighbouring authorities and other relevant organisations[1]. In addition, WCC took part in Active Travel England (ATE)'s pilot scheme, testing their new statutory consultee role in the planning system through Local Plans, aiming to ensure active travel is embedded in Local Plan policies. Specifically, ATE reviewed and made recommendations to the Transport Topic chapter of WCC Local Plan, which have been incorporated in the Reg 19 version of the Plan.

1.3 Local Plans are overarching development plans prepared by local authorities detailing the policies and proposals that will shape development and land use in the local area over a set period. They are used to guide decision making at all scales and identify the interventions necessary to support sustainable development that facilitates economic and population growth while protecting the natural environment and the health of the population.

1.4 Winchester City Council's currently adopted Local Plan consists of the following parts:

- Local Plan Part 1 – Joint Core Strategy Adopted March 2013
- Local Plan Part 2 – Development Management and Site Allocations Adopted April 2017
- Gypsy, Traveller & Travelling Showpersons Development Plan Document Adopted February 2019

1.5 These documents will be replaced in due course by the emerging Winchester Local Plan, which will inform development across the Winchester district outside of the South Downs National Park until 2040. The emerging Local Plan covers the three

[1] Currently Winchester City Council is party to SoCGs with the Partnership for South Hampshire (PfSH), Havant Borough Council, Fareham Borough Council, South Downs National Park, and East Hants District Council

spatial planning areas of the district, known as Winchester Town Area, South Hampshire Urban Areas and Market Towns and Rural Areas.

1.6 The Department for Transport (DfT) requires all Local Plans to be supported by a robust transport evidence base. This is normally produced in the form of a STA, comprising a cumulative assessment of the transport implications of all proposed development.

1.7 This STA describes the availability and operation of the transport infrastructure and networks within the Winchester district and considers the potential transport related impacts of the proposed Local Plan growth. It is important to note that, as agreed with WCC, all references to the Local Plan allocations in this STA and in the strategic traffic model refer to the Regulation 18 version of the Local Plan. The Regulation 19 version of the Winchester Local Plan, due for consultation in the summer 2024, includes changes that have been made by WCC to the site allocations since the publication of the Regulation 18 and although the assessments within this STA have not been updated to reflect these changes, a high-level review of the potential implications to the assessments presented in this STA as a result of the updates is provided in Section 7 of this STA.

1.8 Although proposed development details are limited at this stage, this STA includes the impacts of the redevelopment of the latest strategic site allocations in Winchester which is the Ministry of Defence (MOD)'s Sir John Moore Barracks (SJMB) site (mainly residential for between 750 and 1,000 homes) and assumes this development will help bring forward a new c.850-space Park & Ride facility.

1.9 The STA also assumes that National Highways (NH) committed improvement schemes to the M3 Junction 9 and M27 Junction 10 will be completed within the Local Plan period.

1.10 The STA considers what potential interventions may be required to address any identified cumulative impacts specifically resulting from the Local Plan growth that may have significant or severe transport related adverse effects. Any recommended interventions will be incorporated in the Winchester Infrastructure Delivery Plan (IDP) to be delivered alongside proposed development.

Background

1.11 Reflecting growing recognition of the impacts of transport on our health and environment, there have been a significant number of changes to national, regional, and local transport related policies in recent years. Specifically, there has been a drive towards net zero emissions and while action is being taken to decarbonise transport, the proposed location of growth and whether new developments would genuinely be sustainable remain important factors in demonstrating that a local authority area is on a pathway to net zero and therefore compliant with the requirements of the Climate Change Act 2008.

1.12 The National Planning Policy Framework (NPPF)'s approach to spatial planning reflects this and requires strategic policy-making authorities and community groups responsible for preparing local and neighbourhood plans to only promote development at locations that are or can be made sustainable and where opportunities to maximise walking, wheeling, cycling, public transport and shared travel have been identified.

1.13 This approach seeks to make the most efficient use of capacity within the overall transport network, improve health and wellbeing, and support government policies, strategies, policies, and guidance which aim to reduce the negative environmental impacts of development. These strategies, policies and guidance at a national level include:

- NPPF;
- Transport Decarbonisation Plan;
- Future of Freight Plan;
- Clean Growth Strategy;
- Clean Air Strategy;
- Net Zero Strategy;
- National Design Guide;
- National Model Design Code;
- Local Authority Toolkit;
- Inclusive Mobility;
- Local Transport Note 1/20 Cycle Infrastructure Design; and
- Cycling and Walking Investment Strategy (second edition).

1.14 The Transport Decarbonisation Plan and the Future of Freight Plan also recognise that local planning and highway authorities need help when planning for sustainable transport and developing innovative policies to reduce car dependency. In terms of transport assessment methodology, this includes a move away from transport planning based on predicting future demand to provide capacity ('predict and provide') and towards planning that sets an outcome communities want to achieve and provides the transport solutions to deliver those outcomes (vision-led approaches including 'decide and provide', 'vision and validate', and 'monitor and manage').

1.15 Transport assessment guidance is currently largely provided in government's 'Transport evidence bases in plan making and decision taking' Planning Guidance Practice published in 2015 but it is widely accepted that the guidance has not kept abreast of recent policy changes. The current Transport Assessment (TA) guidance remains in support of transport assessment methodology that follows the 'Predict and Provide' approach, which delivers more road capacity at the detriment of other modes as well as reducing overall transport choice. All relevant guidance is outlined in Chapter 2. It is understood that TA guidance is currently under review.

1.16 In the absence of updated transport assessment guidance, a vision-led approach to assessments has been considered in this STA in line with National Highway's approach in Circular 01/2022 and comprises of the development of a demand forecasting model

that accounts for the effect of possible transport interventions and scenarios that enable walking, cycling, wheeling, public transport and shared travel to shift demand towards less carbon-intensive forms of travel and to move away from focussing on capacity enhancements to the highway networks for motor vehicles, including to the Strategic Road Network (SRN) to meet the worst-case demand.

Report Structure

1.17 The remainder of this report is structured as follows:

- Chapter 2: summarises the policy and strategic context for the WCC Local Plan and this STA;
- Chapter 3: provides an overview of the Vision-led approach for this STA;
- Chapter 4: describes the provision and operation of the existing transport infrastructure and provides a commentary on current transport related issues within the District as a whole and for the three spatial areas of the District specifically; Winchester Town Area, South Hampshire Urban Areas and the Market Towns and Rural Areas;
- Chapter 5: assesses the planned improvements in sustainable transport in the emerging Local Plan;
- Chapter 6: discusses the modelling methodology, describes the scope and use of the Sub Regional Transport Model, and presents an overview of the modelled scenarios assessed, including the 2041 baseline[2], the 2041 Do-Minimum and 2041 Do-Something scenarios;
- Chapter 7: provides a comparative assessment between the 2041 Baseline and 2041 Do-Minimum scenarios, i.e. an assessment of the modelled future level of transport impacts of the proposed Local plan developments before any mitigation is considered;
- Chapter 8: identifies and describes schemes to mitigate the identified 'significant or severe' impacts from the Do-Minimum scenario;
- Chapter 9: describes the final 2041 Do-Something model run outputs, which include potential mitigation measures and schemes and discusses any residual impacts;
- Chapter 10: explains how the identified potential mitigation measures and schemes would be funded and delivered; and
- Chapter 11: summarises the WCC Local Plan STA.

[2] The end of the Winchester district plan period is 2040 but 2041 has been elected for consistency with the strategic model forecast year of assessment.

2. Policy and Strategic Context

2.1 The detailed review of the national, sub-regional and local transport related policies and strategic context relevant to this STA policies are provided in Appendix A and considers the following documents:

- Ministry of Housing, Communities and Local Government, 'National Planning Policy Framework' (2023)
- Ministry of Housing, Communities and Local Government, 'Transport evidence bases in plan making and decision taking' (2015)
- National Highways and The Department for Transport, Circular 01/2022 Strategic road network and the delivery of sustainable development, and Planning for the future: a guide to working with National Highways on planning matters (October 2023)
- Department for Transport, 'Decarbonising Transport: a better, greener Britain' (2021)
- DfT, 'Road Investment Strategy 2 (RIS2): 2020-2025'
- DfT, 'The Transport Investment Strategy' (2017)
- Transport for the South East (TfSE), 'Transport Strategy for the South East' (2020)
- Hampshire County Council - Local Transport Plan 4 (2024)
- HCC – Enhanced Partnership Plan (Bus Service Improvement Plan BSIP) (April 2023)
- HCC - Local Cycling and Walking Infrastructure Plans (LCWIPs)
- Winchester City Council WCC and HCC - 'City of Winchester Movement Strategy' (2019)
- Winchester Electric Vehicle Charging Strategy – Draft (January 2019)
- WCC and SYSTRA - 'Local Plan 2038 Transport Assessment – Stage 1 Report (September 2020)

2.2 Planning in England has been transformed by successive changes to local governance and planning legislation over the past decade. Changes have also happened in terms of people's working patterns as a result of the global Covid-19 pandemic. There is more planning change on the horizon with the changes that are currently being proposed by the Labour Government as a result of the 2024 General Election. Broadly, the more recent policies are all aimed at facilitating sustainable development to support population and economic growth while preserving the natural environment (Figure 1). This has transcribed into local-plan making guidance to consider planning and transport matters in a more cohesive way by ensuring every opportunity for reducing travel demand and promoting healthier travel choices is available at the onset of any new development. This means interventions to the transport system should no longer be reactive to address specific impacts of a development but should form an integral part of any wider strategy for communities at a local level.

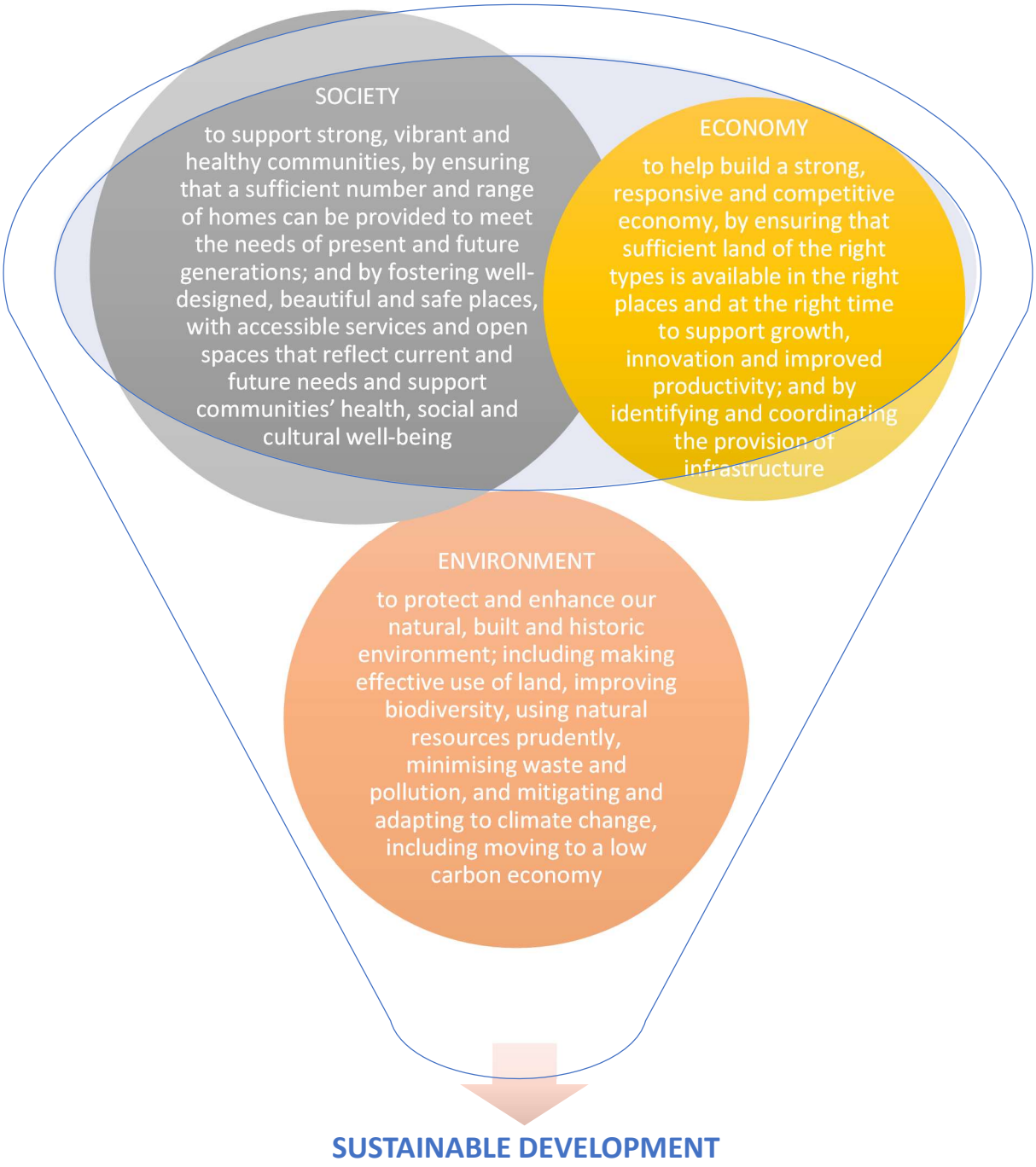


Figure 1 – NPPF Objectives to achieving sustainable development

2.3 Nationally and locally, the emphasis is now on place-making rather than capacity improvements by enabling travel by public transport, walking and cycling to lessen the impacts of road traffic and realise the wider benefits offered by these more sustainable modes; for example, carbon reduction, better use of public space, and benefits to public health e.g. through improvements in air quality, reductions in road casualties, and improved opportunities for physical activity through the trips people make every day.

Further guidance

2.4 In addition to the above policies and strategies, the development of appropriate improvements/mitigation considered in this STA have considered updated design guidance including:

- National Design Guide and the National Model Design Code
- Manual for Streets (1 and 2, as well as HCC's companion guide to MfS2)
- Design Manual for Roads and Bridges
- Inclusive Mobility – a guide to best practice on access to pedestrian and transport infrastructure
- Local Transport Note (LTN) 1/20 Cycle infrastructure design

3. Vision

3.1 Transport assessments have traditionally been firmly rooted around a traffic focused 'predict and provide' approach, whereby a prediction was made as to how many people would likely drive, an acceptable level of convenience was set for commuters during peak hours and the road network was designed to accommodate that. Since the publication of DfT's 'decarbonising transport' strategy, the focus for assessing transport has been shifting towards a 'vision' led approach which focusses more on providing genuine transport choice, including public transport and active travel. The aim of a vision-led approach is to decide on what we want to see in future and design accordingly so that the primary objective of decarbonisation is achieved.

3.2 This approach means a fundamental shift in both engagement with stakeholders and transport analysis. It means working more closely with relevant statutory stakeholders, including Highway Authorities and Active Travel England, to ensure the Local Plan strongly supports delivery of national and local transport policies and guidance. It also means changing how transport assessment is undertaken. This change is already present in some areas of planning policy and is just starting to find its way into the methodology of transport assessment, particularly in relation to site-specific transport assessments, with several Highway Authorities[3] adopting vision led, Decide and Provide approaches. Although HCC has not yet updated its guidance to transport assessments to either of these approaches, HCC recognises that "the only certainty about 2050 is that the world, and our part in it, will be very different from how it is today" (Hampshire 2050, Vision for the Future).

3.3 Change, however, means a great deal more than simply reducing the predicted trips by an amount and still providing for the residual demand. In some circumstances, it may mean using road capacity as a tool to limit or reduce traffic volumes. While this STA will continue to use a traditional transport model, (the Sub Regional Transport Model -SRTM), to inform and quantify the potential future travel characteristics on the highway network, the outputs will not be used as the 'pass or fail' arbiters of the 'predict and provide' world. Instead, the model outputs will help to identify potential sustainable travel interventions to mitigate the impacts of the proposed allocations on the transport networks and provide a monitoring framework against the following vision and objectives:

[3] For example, Oxfordshire County Council, Transport for the North, Transport Scotland, Somerset Council.

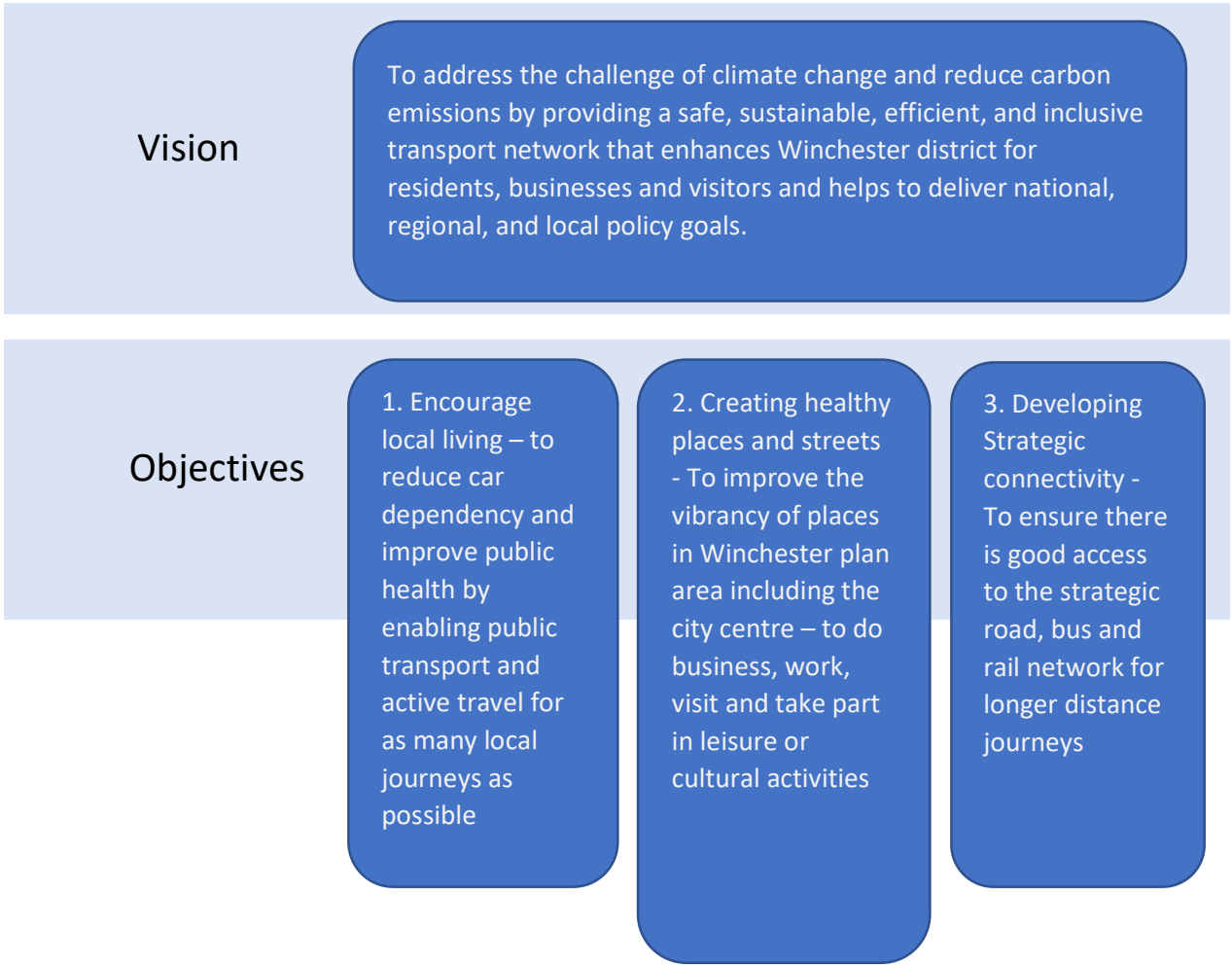


Figure 2 – WCC Local Plan Strategic Transport Assessment Vision and Objectives

3.4 The vision and objectives interpret and seek to deliver HCC's new Local Transport Plan. WCC has agreed the vision and associated objectives with the highway authorities (HCC and NH).

3.5 The first objective is about maximising local living, by ensuring that the community provides the facilities that satisfy day to day living and that there are genuine alternative options to reach them without overreliance on the private car. These facilities include schools, leisure facilities such as open spaces, jobs, day to day shopping, health facilities, means of receiving deliveries, and means of working 'from home'.

3.6 The second objective supports creating a place where local living is possible by a good choice of means of access, in order of priority and following HCC's road user utility framework, with opportunities to reduce the need to travel (including digital connectivity) first, followed by prioritising the needs of vulnerable users, then walking, cycling, public and shared transport, delivery of goods, and then lastly, other motor vehicles. The primary movement networks may well be active travel and public transport networks alongside which there may be roads.

3.7 The third objective is about connectivity, by which we mean beyond the local area, through a good choice of means across the day, but in order of priority; active travel,

public transport, then shared travel followed by single occupancy private vehicle travel. There may be a different priority for some business travel and access to the SRN.

3.8 The approach to mitigation to address the transport impacts of the Local Plan growth has been developed in line with the above vision and objectives. This means that the transport interventions considered include a wider range of measures than simply relying on traditional highway capacity improvements. This is discussed further in Section 8.

4. Transport Baseline

Overview

4.1 A detailed description of the existing transport network and operations within the district was prepared as part of the evidence base for the Winchester Local Plan Regulation 18. Although the Stage 1 TA report[4] was commissioned prior to the COVID-19 pandemic, baseline information and travel patterns that were presented in the report remain for the most part valid and should be read in conjunction with this TA.

4.2 Nevertheless, it is recognised that while traffic volumes have reverted to pre-2019 levels across the UK[5], people's behaviour, transport patterns, changes to working patterns which often involves working hybrid approach to working at home and in the offices and the way that we all access urban and rural areas have seriously altered during the pandemic. Moving forward, there is a real opportunity in the Local Plan for WCC to create a greener, cleaner, and healthier district.

4.3 The following baseline sections provide a summary of the findings from the Stage 1 report and updates to reflect the changes since the end of the pandemic. It also presents a review of the potential for sustainable travel across the district and how these travel patterns can be harnessed to increase accessibility and mode choice in future.

4.4 It is recognised that there are disparities in transport provision across the district and as with the Stage 1 report, this baseline report has been broken down into the three spatial areas of the district in the existing Local Plan; Winchester Town Area (WTA), South Hampshire Urban Areas (SHUA), and Market Towns and Rural Areas (MTRA), as detailed below. It is noted that while the South Downs National Park makes up a large part of the district, it does not form part of this evidence base as that falls under the responsibility of the South Downs National Park Authority, which has its own Local Planning area.

- Winchester District - For planning purposes covers the whole of the district excluding the area covered by the South Downs National Park
- Winchester Town Area - This covers the city centre and the surrounding residential areas
- South Hampshire Urban Areas - This consists of the two strategic allocations of North Whiteley and West of Waterlooville and also includes the existing urban area of Whiteley
- Market Towns and Rural Area (MTRA) - This consists of the two market towns (New Alresford and Bishop's Waltham), all other settlements and the rural area within the district (excluding the South Downs National Park). Larger rural

[4] Local Plan 2038 Transport Assessment Stage 1 Report (September 2020)

[5] https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic/domestic-transport-usage-by-mode

settlements include Wickham, Denmead, Colden Common and Kings Worthy. The Intermediate rural settlements include Hursley, Otterbourne, South Wonston, Sutton Scotney, and Waltham Chase.

4.5 In addition, in presenting the baseline transport conditions in support of the Local Plan, this STA has focussed on specific evidence and data for the areas that will potentially be immediately affected by the proposed site allocations in the Regulation 19 Local Plan.

4.6 Winchester District is well connected through a variety of transport networks, with connections to the national Strategic Road Network (SRN) and routes of both regional and sub-regional importance. It is also served by Winchester, Micheldever and Shawford railway stations and a comprehensive bus network, with services connecting all key settlements. The district has a network of cycling routes of varying quality and accessibility. There is however a significant disparity of opportunity to travel by sustainable modes across the three areas within the district, with, unsurprisingly, the greatest opportunities for sustainable travel focussed in and out of the Winchester Town Area.

4.7 The transport networks in relation to the spatial areas of the district are shown in Figure 3.

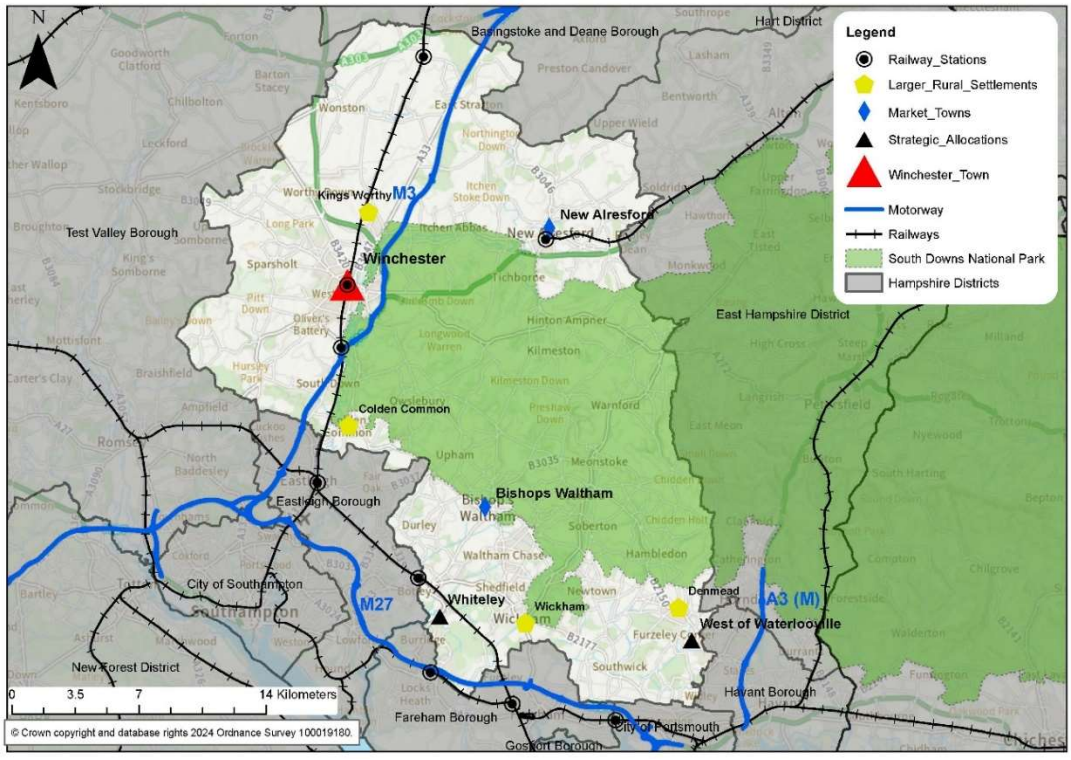


Figure 3 - Major Transport Links across Winchester District Spatial Areas

Winchester Town Area (WTA)

4.8 A large proportion of the site allocations are focussed in the urban areas within and immediately adjacent to Winchester City, as shown on Figure 4 and referred to thereafter as the Winchester Town Area (WTA). This approach focusses development

on locations which already have the highest levels of accessibility and opportunity for active and public transport trips. Several car park sites are proposed for redevelopment alongside new park & ride spaces outside of the centre, to act as both carrot and stick in reducing car trips in the centre of Winchester.

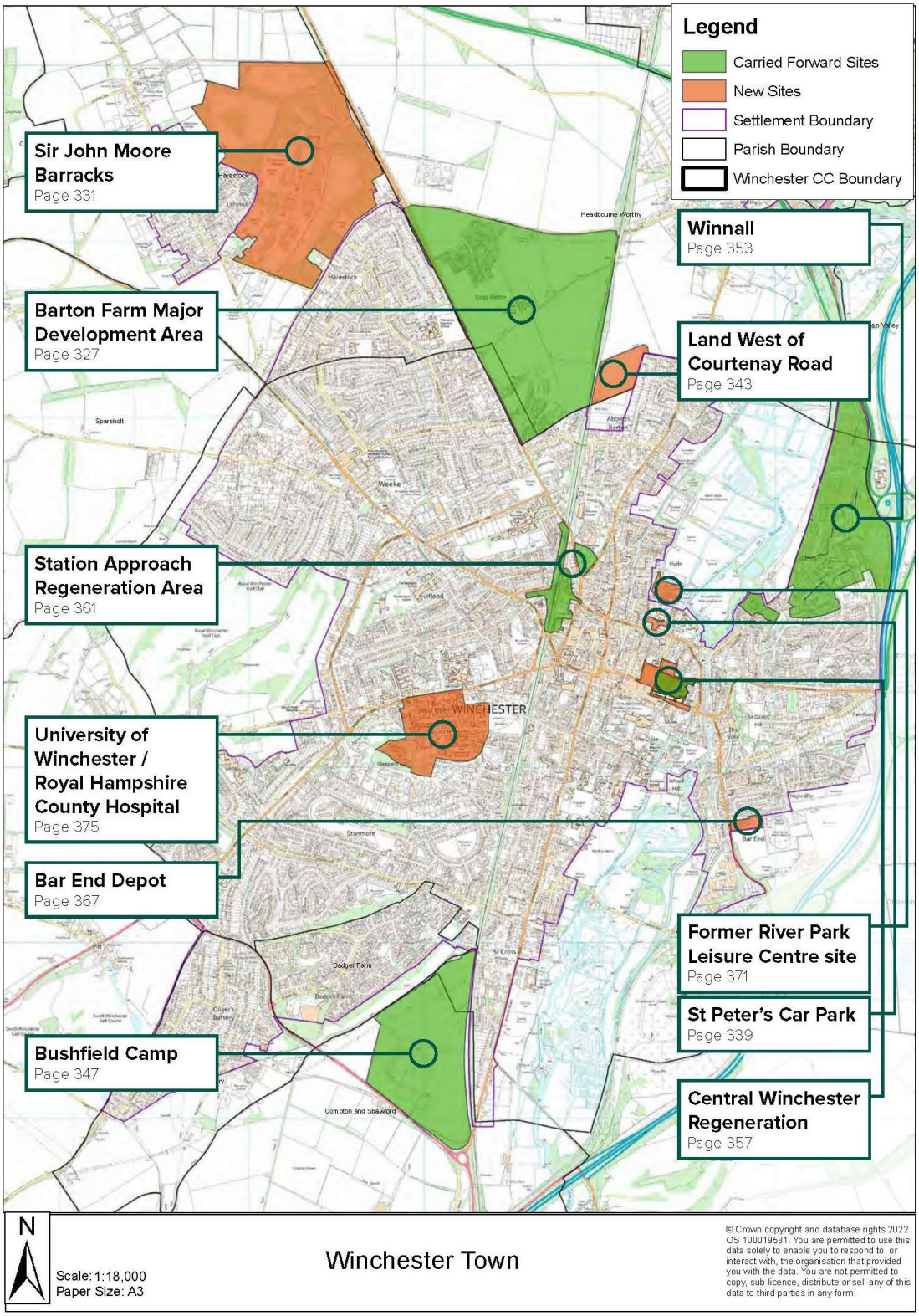


Figure 4 – Site Allocations within Winchester Town Area (Source: Winchester District Local Plan, Reg 18 consultation document, 2022)

4.9 The Winchester Town Area consists of the Winchester wards plus the adjoining built up areas of Badger Farm, Oliver's Battery, Littleton, Harestock and Barton Farm.

4.10 The transport networks serving the Winchester Town Area are extensively described in the Movement Strategy, which also provides a summary of two phases of consultation which sought to understand experiences of travelling into and around Winchester and residents and stakeholders' views on priorities for improving movement throughout the city.

4.11 Winchester Town Area's roads comprise of a dense street network with a one-way system to manage the high levels of traffic movement within and around the city centre. Several major roads surround the town, including the M3 motorway to the east and south and the A34 to the north, both of which are part of the Strategic Road Network (SRN) managed by National Highways (NH) alongside the A31 to the east (which forms part of the Major Road Network), managed by HCC.

4.12 The average speed data collected as part of the Movement Strategy illustrates where congestion and delays occur in the district and highlights that, typically, this is in the city centre and on roads into the city. This reflects feedback from residents[6], who frequently cited the city centre one-way system, Romsey Road, and the mini roundabout at Stockbridge Road/Chilbolton Avenue/Bereweeke Road as locations where they commonly experience delays.

South Hampshire Urban Areas (SHUAs)

4.13 The South Hampshire Urban Areas (SHUAs) cover two areas on the southern edge of the District where major development is proposed to be carried forward from the adopted plan, located in urban areas that fringe the District, at West of Waterlooville (strategic housing allocation for approximately 3,000 of which 2,500 dwellings are in Winchester district) and North Whiteley (approximately 3,500 dwellings), as shown on Figure 5.

[6] Resident's telephone survey conducted during Phase One consultation for Winchester Movement Strategy

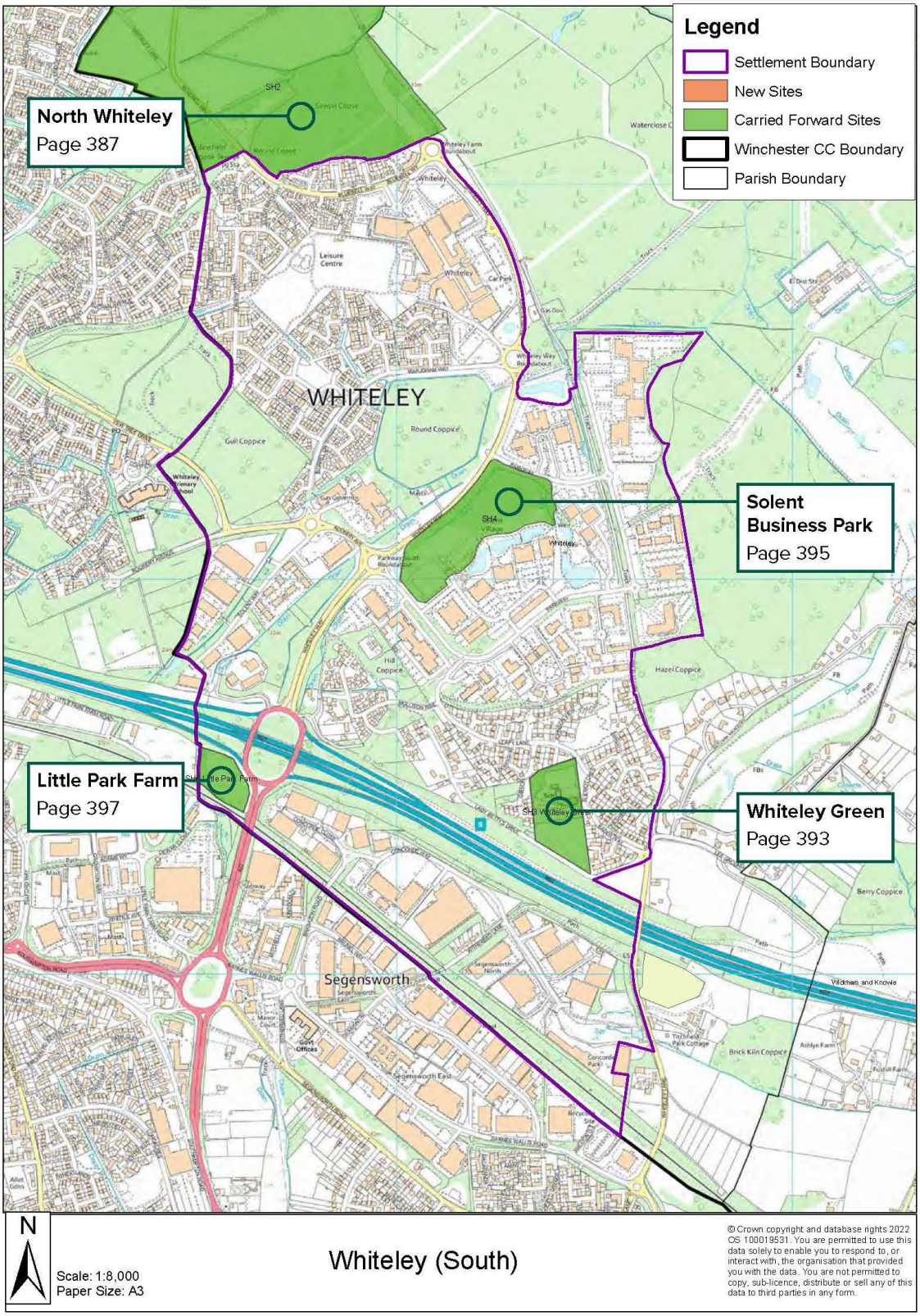


Figure 5 - Site Allocations within SHUA (Source: Winchester District Local Plan, Reg 18 consultation document, 2022)

4.14 The highway network within the SHUAs comprises a mix of small residential roads, several minor country roads connecting villages and towns, and links to the strategic road network in the form of the M27 and A3 (M). This proximity to the strategic road network, combined with the lower levels of amenities and employment opportunities

within each urban area, encourages commuting trips to other towns being made by car, compounded by available public transport options being infrequent and limited in terms of accessible destinations and journey time.

4.15 The parts of the network understood to be most congested are generally located close to residential settlements and occur on both A and B class roads. Junction 9 of the M27 has also been identified as an area of congestion.

Market Towns and Rural Areas (MTRAs)

4.16 This area includes approximately 50 smaller settlements ranging from market towns, with a population of several thousand, to small hamlets of a few dwellings. Most large site allocations have been identified in the Market Towns of Bishop's Waltham and New Alresford, along with additional allocations in the settlements such as Colden Common, King's Worthy, Otterbourne, South Wonston and Swanmore.

4.17 Most of these settlements have a major or minor through road which distributes traffic to the other settlements and has a distinctly higher level of traffic flow than the rest of the roads within the settlement.

4.18 The development patterns present within the MTRAs (and the distances between towns) are generally less conducive to supporting longer trips by active of public transport but could support many day-to-day trips like journeys to school, for shopping, or to the doctors – particularly in the larger settlements which maintain a variety of local services. However, it is recognised that footpath networks within rural areas are generally of a lower quality than urban areas, and people cycling often have to ride amongst fast-moving traffic. Conversely, people living in rural areas typically experience lower levels of air pollution than urban areas. The health of people living and working within the MTRAs is of course affected by a range of different factors, however the potential for transport to improve health in these areas will be dependent on the level of facilities and infrastructure present within acceptable distances to residential areas. This is a key characteristic of sustainable development which will need to be considered in detail in the choosing of new development sites for the district.

4.19 The National Travel Survey[7] (NTS) provides details of why (journey purpose), how often (trip rate) and how (mode of transport) people travel across England. The latest survey available is for 2022 when data collection was still impacted by the Covid-19 pandemic, this has been compared with the pre-pandemic trends observed in 2019 and also over the last 20 years (2002 NTS). Analysis of the responses shows that the profile of respondents was more like those achieved in pre-pandemic years, but a degree of caution remains when interpreting these results. They do however show changes in travel patterns and behaviour to the pre-pandemic which are expected to remain going forward.

[7] https://www.gov.uk/government/statistics/national-travel-survey-2022

4.20 The key headlines from the 2022 NTS were that:

- People spend less time travelling than in 2019 and did not travel as far;
- Cars remained the most popular mode of travel (58% of all trips) but the proportion of trips that were walked was higher in 2022 than in 2019 (a 5-percentage point increase);
- The most common trip purpose in 2022 remains unchanged from 2019 as shopping (18% of all trips) followed by commuting (14%) but interestingly the number of people 'just going for a walk' (11%) overtook personal business as the third most common trip purpose when compared with 2019;
- Car ownership has increased by a 5-percentage point average over the last 20 years, with 78% of all households now owning at least one car[8]. However, the percentage of people with access to a pedal cycle as well as an upward trend in average cycling miles travelled has increased significantly for middle aged (40 to 59 years) and the younger (5 to 16 years) generations, perhaps reflective of the availability of electric and cargo bikes in recent years. The proportion of leisure cycling trips has reduced while that of commuting and education have increased, which suggest that people are now viewing cycling as a more utilitarian mode of transport than before;
- The average number of walking trips increased by 14% during the pandemic, although this now brings the proportion of walking trips back to 2002 levels. The average walking distance in 2022 however was the highest on record since 2002. Compared to 2019, there was an increase in the percentage of walking trips to and from school in 2022 that were made by children between the ages of 5 to 16; It should be noted that the NTS survey only collects the main mode for each trip purpose and does not include the first and last mile. Consequently, walking and cycling and other multi-modal trips are under-represented, as is the importance of these networks.

4.21 The 2022 NTS also presents an indication of the difference in trip purpose between urban and rural areas[9] which shows that trip purpose remains broadly similar regardless of the location of residence, be it in a city, urban or rural location.

4.22 On the other hand, the survey[10] highlights the disparity in realistic choice and accessibility to sustainable means of travel for people living in urban/rural towns (inc. Market Towns) and fringes or in rural villages/hamlets and isolated dwellings (Figure 6).

[8] It is also worth noting that younger people are choosing not to own a car due to financial, cultural and environmental concerns (https://www.racfoundation.org/media-centre/overwhelming-majority-of-young-people-expect-to-be-regular-drivers)

[9] National Travel Survey 2022 - Table NTS9906b: Average number of trips by trip purpose and rural-urban classification of residence (trips per person per year): England, 2002 onwards

[10] National Travel Survey 2022 – Table NTS9903b: Average number of trips by main mode and rural-urban classification of residence (trips per person per year): England, 2002 onwards

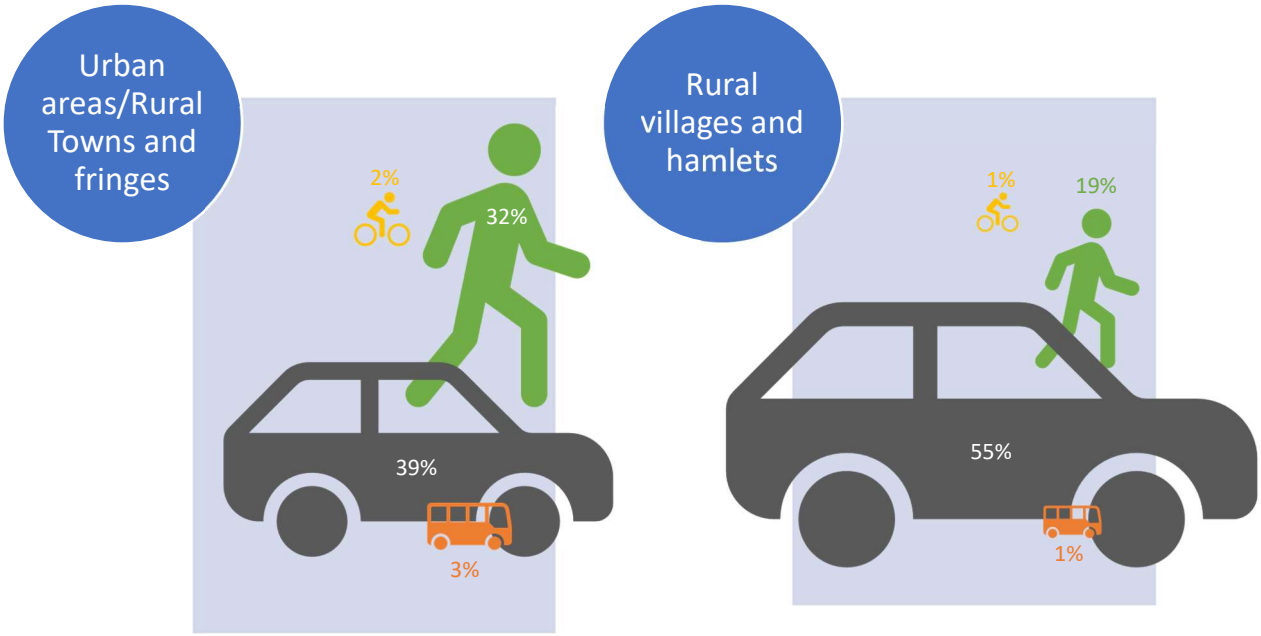


Figure 6 – Mode choice in Built-up vs Rural areas

4.23 The above differences in choice of mode of travel by area of residence reflects the baseline observations across the three different areas of the district.

Transport and Health

4.24 Transport has significant impacts on population health, and transport networks can be affected to improve health outcomes. For example, active lifestyles and active travel are recognised as beneficial to reducing the risk of chronic health conditions and improving mental health and wellbeing safer transport networks can reduce traffic related injuries and lower transport pollution (e.g. from a reduction in car use and higher public transport use) can improve local air quality. Good local transport networks can provide a wider range of mode choice in accessing medical services, particularly for older people or people with disabilities. Spatial planning can affect how easily and frequently people incorporate physical activity to their daily lives. The percentage of adults that achieve at least 150 minutes physical activity per week for Winchester district is 63.4%, compared to 56% nationally[11]. Across the district, 30.4% adults walked for travel (not leisure) and 6.9% cycled for travel. The percentage of people walking was much higher than the Hampshire average of 26.2%[12].

4.25 While urban environments such as the Winchester Town Area may have lower levels of open green space than other areas of the district, the compact, higher density and mixed-use patterns of development present can enable people to incorporate active travel into their daily journeys and commutes. For this to be encouraged however, the public realm needs to be attractive to people travelling without a car, with wide, level

[11] Winchester District Health and Wellbeing Partnership Board - Action Plan 2016/18
[12] Active Lives | Results (sportengland.org)

pavements and crossings, good quality cycle routes and environments able to cater for all levels of accessibility.

4.26 Future development allocations will need to ensure that housing and supporting transport infrastructure are able to accommodate the changing demographics of the area. This means ensuring sufficient provision of safe and attractive walking and cycling routes and appropriate locations for care homes which are not overly reliant on car travel for access by residents, visitors, and staff.

4.27 Similarly, the number of cars and vans owned per household is a useful indicator of the travel needs of the current population. While statistics on vehicle ownership do not indicate how frequently they are used, the proportion of the population who do not own a vehicle can indicate whether people's travel needs are either being met by non-car modes or affected by economic and demographic factors, such as earning levels, age, etc.

Winchester Town Area

4.28 There is no specific data on physical activity through active travel per week for the Winchester Town Area; however it is likely that the resident population has higher levels of physical activity compared to the average for the district, and this accords with the WTA having much higher proportions of households who do not have a car or van (22.4%) than the average across the district (13.5%) and in South East England (16.4%)[13]. Despite this, at 44% WTA also has the highest proportion of households who own at least 1 car/van across the district (38.4% average).

4.29 WTA is the most populated spatial area of the district, comprising around 44,000 residents based on the 2021 Census[14] (~38%). Of these, around 25% of the population was under the age of 18, which is the same proportion as the district as a whole, and 23% were aged 60 or over, which is slightly lower than district as a whole (27%).

South Hampshire Urban Areas

4.30 The current patterns of development and transport networks within the SHUAs are likely to support a lower level of active travel behaviour, particularly regarding longer trips like commuting. That said, the district's higher than average levels of the population who receive more than the recommended 150 minutes physical exercise per week suggests people living in the SHUAs can find places and methods for regular exercise.

4.31 Analysis of the population currently living in the SHUA presents issues due to large parts of the allocated development sites not yet completed (North Whiteley).

[13] Table KS404EW, Nomisweb.co.uk

[14] Table KS101EW, Nomisweb.co.uk - *Note that the area to the north of the Winchester Town Area including Barton Farm was excluded due to the size of the census output area being likely to skew the data.

4.32 A total of 3,961 residents have been identified, of which 31% are below the age of 18, while 8% are aged 60 or over. The population is of a very similar age profile to the Winchester Town Area, with a slightly higher proportion of younger people. The age profile of the SHUAs suggests that there is a likely to be a particularly high demand for travel to educational establishments, which are typically amenable to being made by sustainable or active modes. The lower population density of these areas can mean that distances to schools are greater however, encouraging trips being made by car or where possible, bus.

4.33 In addition, very few households within the SHUAs have no cars or vans (8.4%) while 93.4% have one or two cars or vans[13], suggesting that most people in these areas perceive car or van travel to be essential for mobility.

Market Towns and Rural Areas

4.34 The MTRAs have the highest proportion of residents over the age of 60 out of the three spatial areas of the district, at nearly one third. This demonstrates the importance of ensuring that basic accessibility to services and support for independent living is maintained in future planning. This may come through existing services such as Community Transport (e.g. Dial-A-Ride, Neighbourcare Schemes) or newer forms such as car clubs or shared taxi services. At the time of writing, an HCC consultation on savings proposals for community transport had just closed.

4.35 As with other areas of the district, most households have at least one car or van (92%), however this figure is slightly lower than for the South Hampshire Urban Areas. This may be explained by the much larger sample size affecting the data, but otherwise may suggest the residents are less dependent on private vehicles for their travel needs.

Transport Related Issues

Road Safety

Winchester Town Area

4.36 Collision and casualty data for the Winchester Town Area has been assessed for the most recent five-year period, from October 2018 to September 2023. This identified a total of 238 collisions, equating to an average of 48 collisions per year, 2 of which resulted in fatalities (1%), 52 in serious injuries (22%) with the vast majority (77%) resulting in slight injuries. As the largest proposed allocations are within this area, the data was assessed in more detail, revealing that just over a third (34%) of those injured were people walking or cycling.

4.37 Clusters of collisions took place in the city centre; at the High Street (unpedestrianised section), Jewry Street, North Walls (at the junctions) and Stockbridge Road but outside the city centre. The locations where the highest number of collisions took place were St Cross to Southgate Street, Worthy Lane to Worthy Road, Romsey Road, Andover Road and the Weeke commercial area including Stockbridge Road and Stoney Lane.

South Hampshire Urban Areas

4.38 Collision and casualty data for the South Hampshire Urban Area has been assessed for the most recent five-year period, from October 2018 to September 2023. This identified a total of 51 collisions, equating to an average of 10 collisions per year, of which 7 resulted in serious injuries (14%) with the vast majority (86%) resulting in slight injuries.

4.39 Clusters of collisions took place both in the Whiteley and Waterlooville areas; at the M27 Junction, Parkway South Roundabout, Rookery Avenue Roundabout and Maurepas Way, Waterlooville. The locations where the highest number of collisions took place were Parkway South (Whiteley) and Maurepas Way (Waterlooville) roundabouts.

Market Town and Rural Areas

4.40 Collision and casualty data for the Market Towns and Rural Areas has been assessed for the most recent five-year period, from October 2018 to September 2023. This identified a total of 784 collisions, equating to an average of 157 collisions per year, of which 15 resulted in fatalities (2%), 192 in serious injuries (24%) with the vast majority (74%) resulting in slight injuries.

4.41 Clusters of collisions predominately took place in the settlements in particular New Alresford, Bishops Waltham, and Wickham.

Pollution, Air Quality and Carbon Reduction

4.42 The levels of harmful emissions in parts of central Winchester currently exceed national standards and legislation requires that the City Council and Hampshire County Council work together to develop strategies to improve conditions within the city centre.

4.43 An Air Quality Management Area (AQMA) was originally declared in 2003 due to exceedances of the annual mean nitrogen dioxide (NO_2) objective and 24 hourly mean PM_{10} objective[15], however the Council achieved compliance with legal standards for PM_{10} in 2012 and successfully applied to the government to 'undeclare' on its duty to monitor PM_{10}. The boundary of the AQMA is shown in Figure 7.

[15] Winchester Air Action Plan 2017

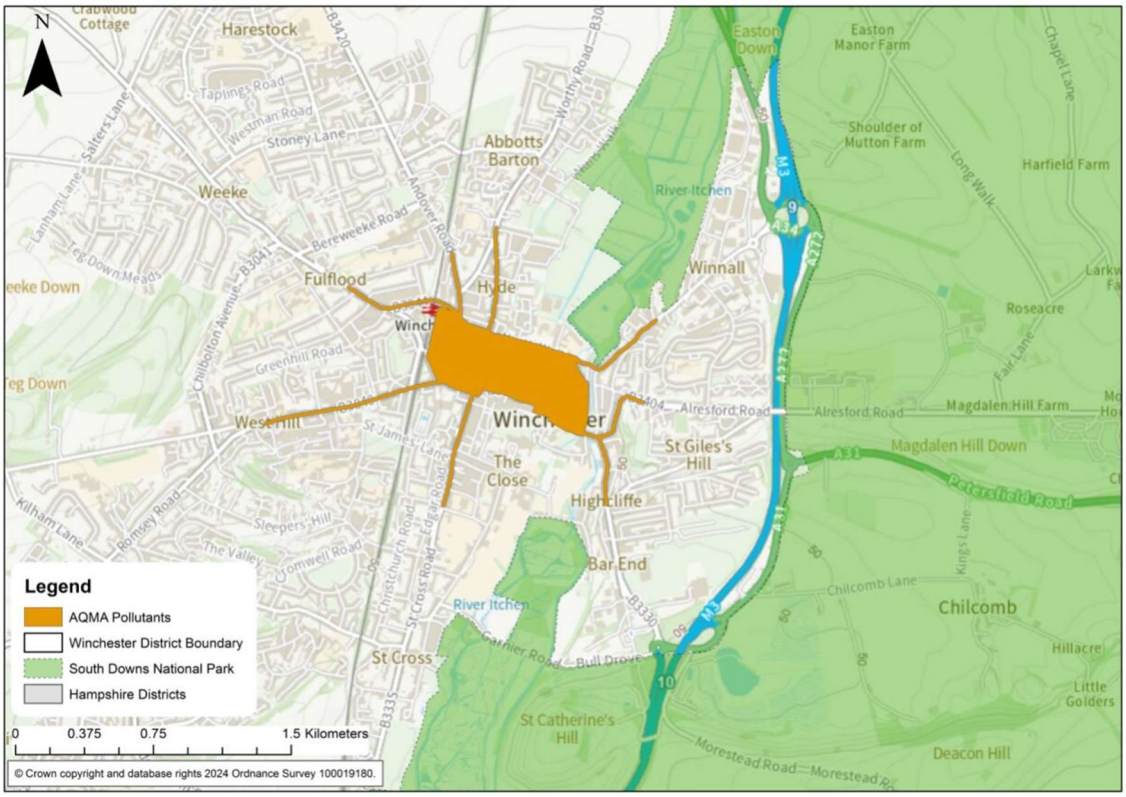


Figure 7 – Map of AQMA in Winchester City Centre (source: WCC Air Quality Action Plan (2017))

4.44 Monitoring shows that following local and national initiatives, all air quality objectives set within national legislation have now been met across this AQMA from 2020 onwards. This includes compliance with the annual mean air quality objective for Nitrogen Dioxide of 40 ug/m3, which requires compliance with a precautionary limit of 36ug/m3 to allow for data accuracy.

4.45 The Winchester Town Centre AQMA remains in place due to government concerns over any temporary improvements achieved by temporary reduced traffic flows resulting from travel restrictions introduced in the Covid-19 pandemic years of 2020 and 2021. However, it is expected that compliance will continue and that the AQMA should be amended or fully revoked in Spring 2025.

4.46 Due to the likelihood of compliance continuing, DEFRA has agreed with WCC that the Air Quality Action Plan (AQAP) of 2017 does not currently need updating despite being over the advisory 5-year refresh period. There is no need for such an AQAP once the AQMA has been revoked.

4.47 Winchester City Council recognises health guidance and research that shows negative health impacts continue to occur below current national air quality objectives, which is supported by latest recommendations from the World Health Organisation (WHO)[16]. Work is now well underway on the adoption of a local Air Quality Strategy

[16] WHO global air quality guidelines: particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulphur dioxide and carbon monoxide (https://www.who.int/publications/i/item/9789240034228)

(AQS) for the whole of its district, as encouraged by the Department for Environment, Food and Rural Affairs (DEFRA) guidance[17].

4.48 It is anticipated this local AQS will be ready for public consultation in summer 2024. This will look to continue the initiatives and good practice already encompassed within the current Air Quality Action Plan. It will also aim tackle the health impacts presented by fine particulate matter (e.g. from brake dust) referred to as $PM_{2.5}$.

4.49 Amongst other measures this local AQS will look to support transport initiatives across the district that either directly or indirectly result in the reduction of such localised or regional background pollutant levels.

4.50 WCC's most recently published Air Quality Status Report (May 2023) found that all the NO_2 sites outside the city centre remained in compliance with the annual mean objective. This is consistent with there being no AQMAs declared outside Winchester town centre.

4.51 As with the SHUAs, the monitoring of air quality within the MRTAs is considerably less comprehensive than for the Winchester Town Area. There are no AQMAs declared within this spatial area and WCC's most recently published Air Quality Management Report (2016) found that all the NO_2 sites outside the city centre remained in compliance with the annual mean objective.

Traffic Conditions

4.52 With travel to work representing the second highest trip purpose overall and the highest during highway peak hours, Journey to Work data is also a key indicator to how Winchester residents working both within or outside of the district and people from elsewhere and work in Winchester travel for work. The latest available census is the 2021 Census but as this is a snapshot of travel patterns during the Covid-19 pandemic, results from the previous censuses have also been reviewed (2001 and 2011 census).

4.53 As shown on Figure 8, while the main mode of travel to work across the district remains the private car, the trend over the last 20 years suggests that residents of the district are changing their travel behaviour with increasing use of home working as the main reason for reductions in the use of the car (and car sharing).

[17] Local Air Quality Management Policy Guidance (PG22) August – section2.14 Local Air Quality Strategies (2022https://laqm.defra.gov.uk/wp-content/uploads/2023/11/LAQM-Policy-Guidance-2022.pdf)

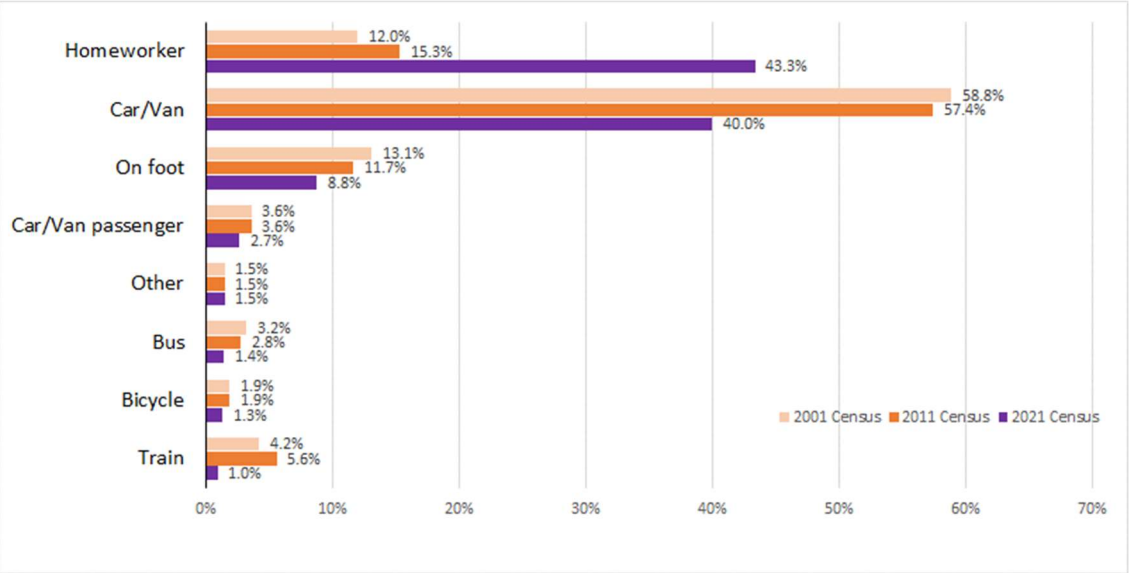


Figure 8 – Travel to Work Modes 2021 census vs 2011 census (Winchester district)

4.54 On the other hand, the drop in public transport (bus and rail) use is partly explained by the travel restrictions and associated changes to the level of service during the pandemic. The National Travel Survey data for 2022 suggests that travel demand and modal choice since the end of the pandemic are reverting to 2002 levels.

4.55 Whilst the 2021 census reflected travel behaviour during the pandemic, changes in travel habits such as homeworking, online shopping and socialising are here to stay and there is a significant opportunity for the modal trends for commuting to continue in future. These changes should also be viewed in the context of overall reductions in the number of trips during traditional commuting peaks.

4.56 As the largest settlement in the District, Winchester City accommodates around 36% of the district's population and provides about 50% of the total district employment provision[18]. However, there is a mismatch between the skills of the workforce and residents which results in significant patterns of in and out commuting, as illustrated on Figure 9.

[18] Winchester Local Plan Part 2 (LPP2)

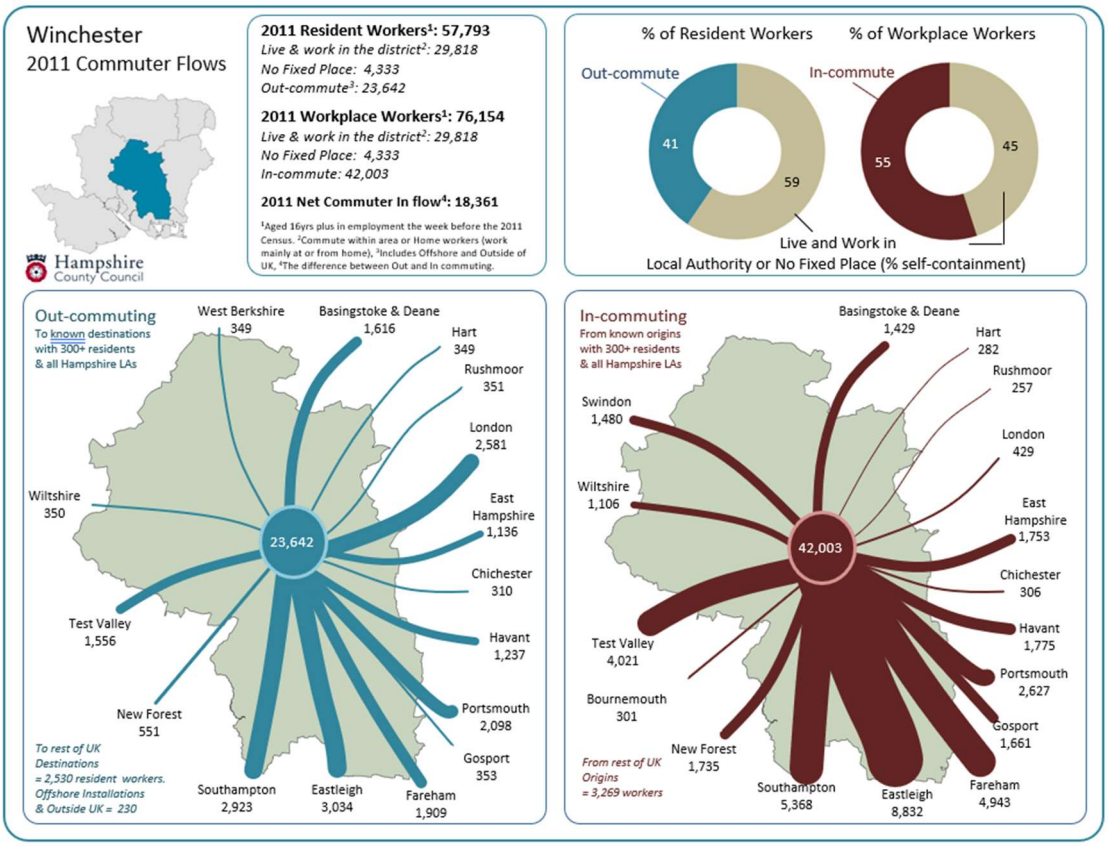


Figure 9 - Winchester 2011 Commuter Flows (Source: 2011 Census)

4.57 Overall, up to 76% of traffic into or from within the WTA travels to destinations outside of the city, with only 7% of traffic observed as through traffic and a further 17% as traffic moving within the city[19]. This translates in congestion in the city centre, which is primarily caused by journey to work. The impact of commuting tends to be during peak hours and reflects Winchester's role as a regional employment centre.

4.58 The analysis of the current transport networks, car ownership and parking data for the existing developed parts of the SHUAs indicate that driving is ingrained in the travel behaviour of most residents and the employment base working in this spatial area. In Whiteley, high levels of parking around employment sites have been mitigated by providing additional (on-street) places to park but as well as the negative implications of on-street parking, providing increased capacity is unlikely to be a long-term solution to parking stress. Fundamental shifts to how and where people work, and the method of travels taken to access workplaces, is therefore likely to be necessary.

4.59 Key developments of the SHUAs are yet to be completed, and so these present strong opportunities for communities to develop which are more self-sufficient, as well as incorporating measures for encouraging sustainable and active travel behaviour into site masterplans. Existing areas will require different approaches, such as maximising and improving the options for people to travel by alternative modes to common

[19] WCC's Movement Strategy

destinations such as workplaces, encouraging car sharing and hire cars, and forming safe active travel networks to key destinations.

4.60 The potential for developments in the MTRAs to facilitate sustainable travel is limited in parts due to the lack of direct access to the rail network, however buses can provide an attractive alternative option for many journeys. Some frequent bus services currently exist which connect these market towns and provide access to Winchester city centre. These tend to follow major highway corridors meaning access between adjacent settlements is not always possible by bus unless market towns fall on the same inter-urban corridor.

Active Travel

Winchester Town Area

4.61 The Winchester Town Area is relatively small, compact and is visually attractive, meaning it is potentially conducive for most people choosing to walk for part, if not all of many regular journeys. In fact, most of the people who live and work in the city currently walk or cycle to work (60%)[20].

4.62 Despite this, distances, and the time required to walk from one place to another in Winchester can be lengthy. In Winchester town centre, where many of the streets are historic, narrow, and full of underground utility infrastructure, there are problems in balancing the needs of different modes of transport. Most roads and streets in Winchester have historically been designed for horses and carts and then gradually upgraded primarily for cars. This has normalised car driving within the city to the detriment of active travel. While these issues were identified in the Winchester Walking Strategy (2014), feedback from the consultations undertaken for the City of Winchester Movement Strategy (2019) suggests that these issues are yet to be resolved. Half of respondents spoke of concerns regarding motorised traffic, with many finding the proximity and speed of vehicle movement threatening, particularly around the one-way system.

4.63 Although the WTA benefits from being served by the National Cycle Route 23 (running from Reading to Southampton via Basingstoke, Alresford, Winchester and Eastleigh), compared to the relative suitability of Winchester town area for walking, the level of trips made by cycling is particularly low for a city of Winchester's size and form. Recent data suggests that across all trips made within the town area, levels of walking and cycling are low, with cycling to school being only 1% of all trips[21].

4.64 As expected for an urban environment, the WTA is only partially covered by Public Right of Ways (PRoWs), which are typically more prominent in rural areas where the footway network infrastructure is more limited (Figure 10).

[20] Winchester Local Plan Part 2 (LPP2)
[21] Winchester Movement Strategy

4.65 Nevertheless, there are several PRoWs on the approaches to the city providing important links for people walking between the outer fringe of the urban area and the centre of the town. Despite the M3 corridor being a key barrier for accessibility to the east, the South Downs Way bridleway is highlighted as a long-distance route between Winchester and the National Park. Similarly, several PRoWs link with St Swithun's Way to provide an additional north-south long-distance route, parallel to the M3 corridor.

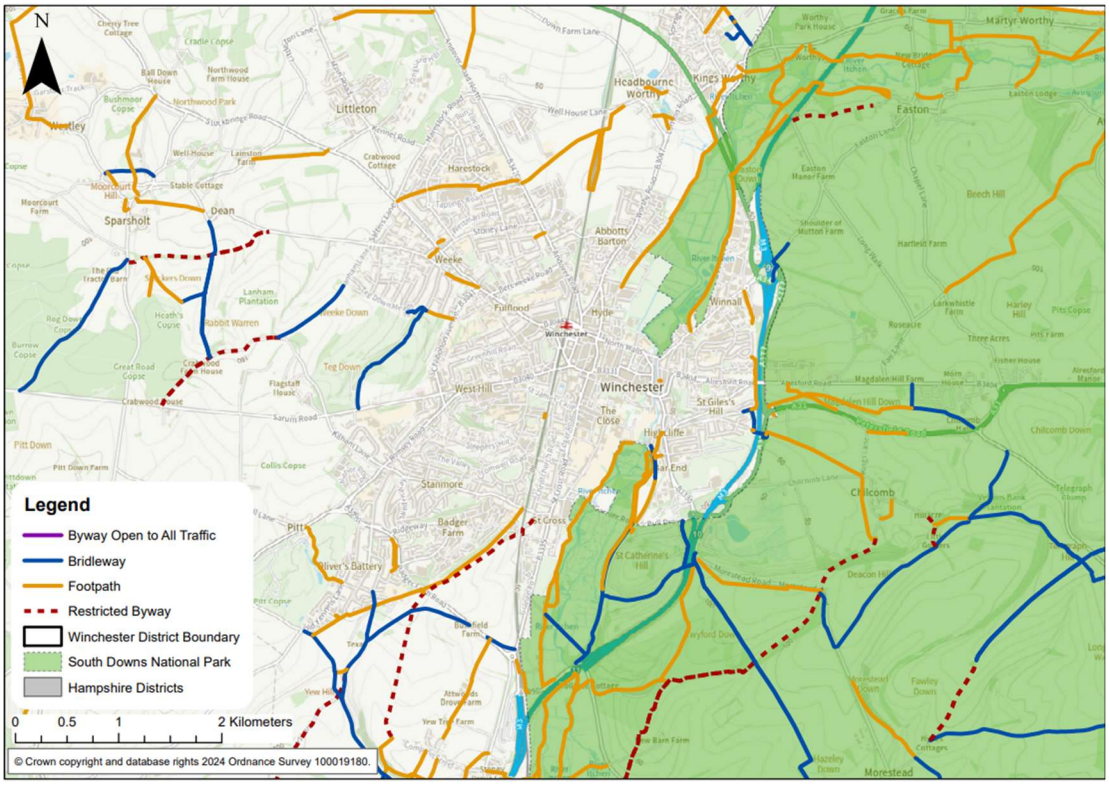


Figure 10 – Public Right of Way Network within the WTA

4.66 Cycle infrastructure within the Winchester town area is currently limited, with people cycling generally required to cycle on-street with motorised traffic. Some wayfinding exists to encourage use of quieter on-road routes into the city centre from the north and south, but while many of the roads and pedestrianised areas within the city centre may be attractive for cycling, the narrow road widths on the one-way system combined with the gradient of some roads means that cycling is unattractive for many.

4.67 The design of Winchester city centre's road network presents some barriers to walking and cycling in that the opportunity to reduce road widths to increase space for walking and cycling when the one-way system was introduced was missed, meaning some roads are now considered to be unattractive for active travel. It is however noted that solutions are being considered through the Winchester Movement Strategy, Local Cycling and Walking Infrastructure Plan (LCWIP) and review of the one-way system. Details of the LCWIP are provided in the following section.

South Hampshire Urban Areas

4.68 Most existing housing developments within the SHUA provide footpaths connecting to adjacent areas, albeit with some roads having footpaths on one side of the road only and many crossings being uncontrolled. Pedestrian facilities within the main urban areas are typically attractive enough for most people to consider making short trips on foot, however the distances to destinations are likely to make travelling by this mode unattractive for some trips.

4.69 There is a reasonable number of PRoWs available across the SHUA that will be affected by the Local Plan allocations (Figure 11). Specifically, the PRoW network provides links over the M27 along Whiteley Lane providing an important connection to the neighbouring borough of Fareham and the Segensworth Business area.

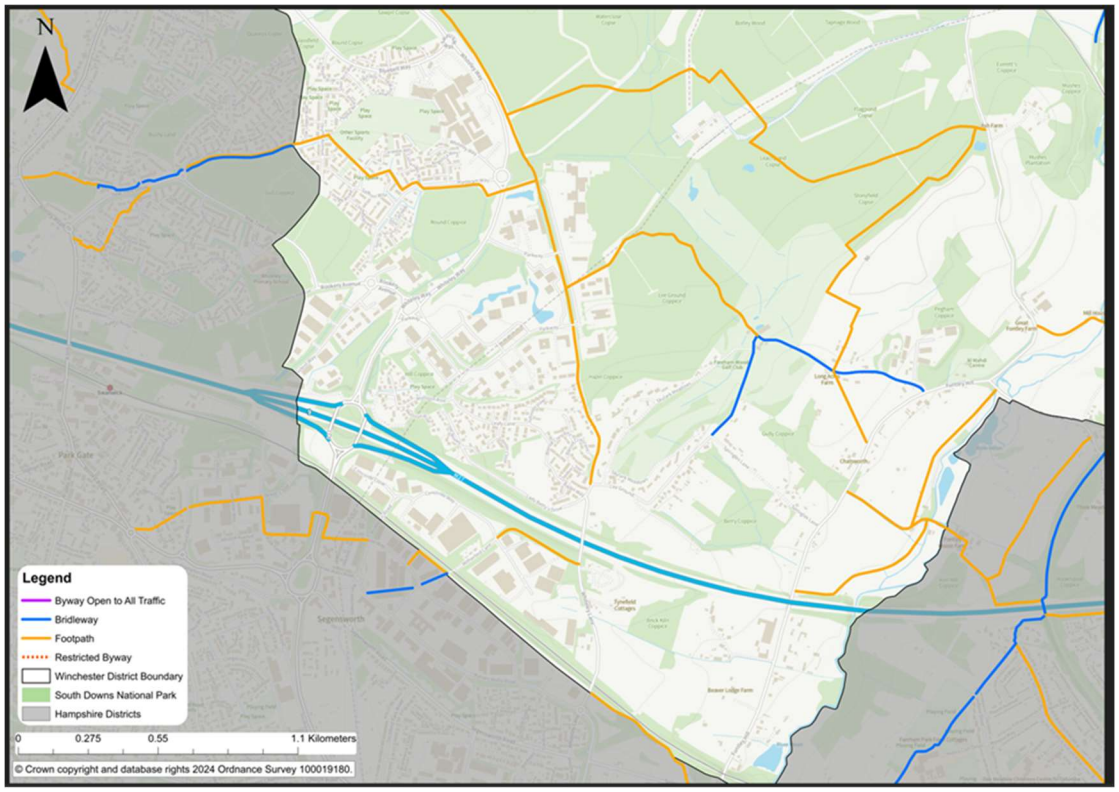


Figure 11 – Excerpt of Public Right of Way Network within the SHUA (Whiteley)

4.70 Some cycle route signage and facilities exist, particularly on the main roads through the settlements. While many of the residential roads experience traffic levels low enough for confident people to be comfortable cycling on the carriageway, encouraging potential riders to cycle regularly is likely to require significant improvements in infrastructure e.g. protected cycle lanes and/or reductions in speed limits, along with and facilities at crossings to comply with national design guidance. These will need to be tailored to their specific intended locations, however the over-arching principles of good design from Manual for Streets and LTN1/20 will apply.

4.71 An LCWIP is being developed for Winchester and further details are provided in Section 5.0 of this STA.

Market Town and Rural Areas

4.72 The provision of infrastructure for walking and cycling in the MTRAs is varied, with main roads and areas surrounding newer residential developments having relatively good footway networks, and lightly populated areas and older settlements often having limited continuous infrastructure. The presence of obstacles, such on-street parking reducing footway width and side roads which lack dropped kerbs, may present difficulties to people with reduced mobility or wheeling, though the provision is likely to be sufficient for most people to traverse the areas safely. Should these areas be extended by additional housing however, the current provision will need to be assessed to ensure key local destinations are able to be accessed on foot, using routes which are attractive to residents.

4.73 The PRoW network across the MTRAs (Figure 12) is relatively extensive, particularly around the Market Towns which sit on the periphery of the South Downs National Park area. This network is most appropriate to accommodate the demand for leisure walking activities in those areas but does not necessarily provide high quality utility routes.

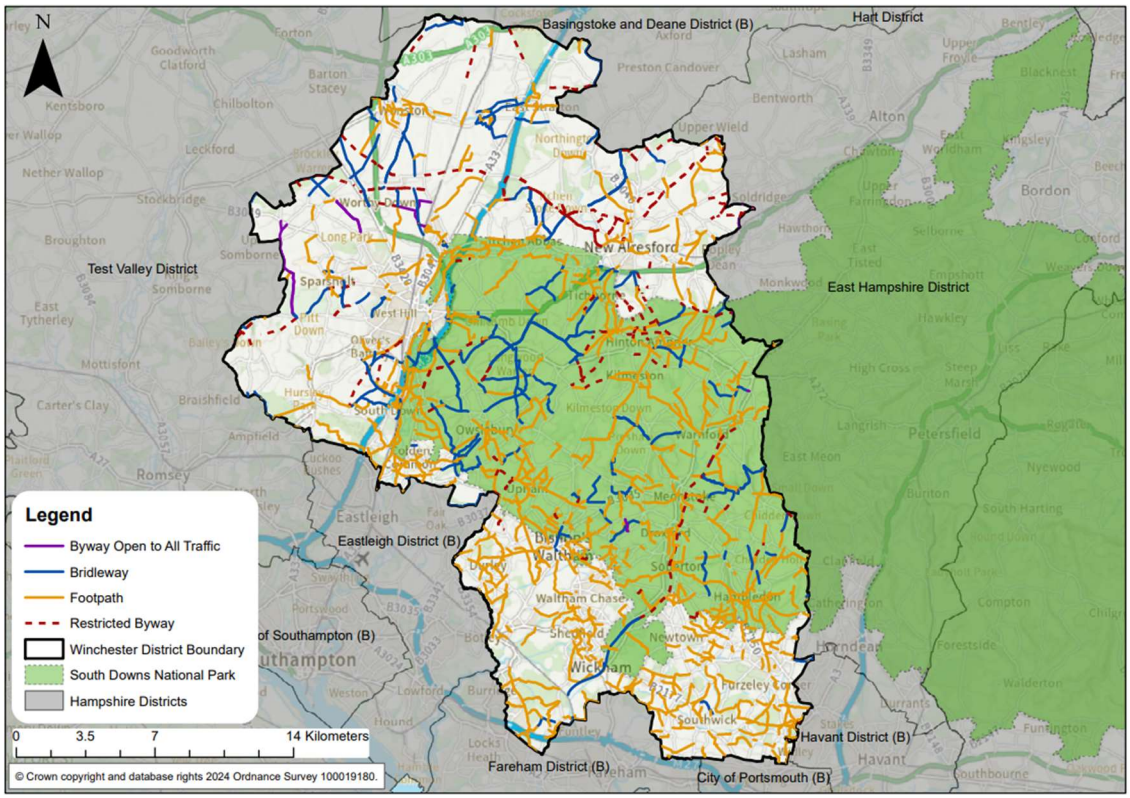


Figure 12 - Public Right of Way Network within the district.

4.74 As shown on Figure 13, National Cycle Route 224 provides a route between Wickham and Gosport and from Farnham to Medstead. Whilst it is the only national cycle route in this part of Winchester district, it nevertheless demonstrates a suitable, active travel route option for some short and medium-length journeys. The route within the Winchester district generally uses quieter roads with occasional off-road sections.

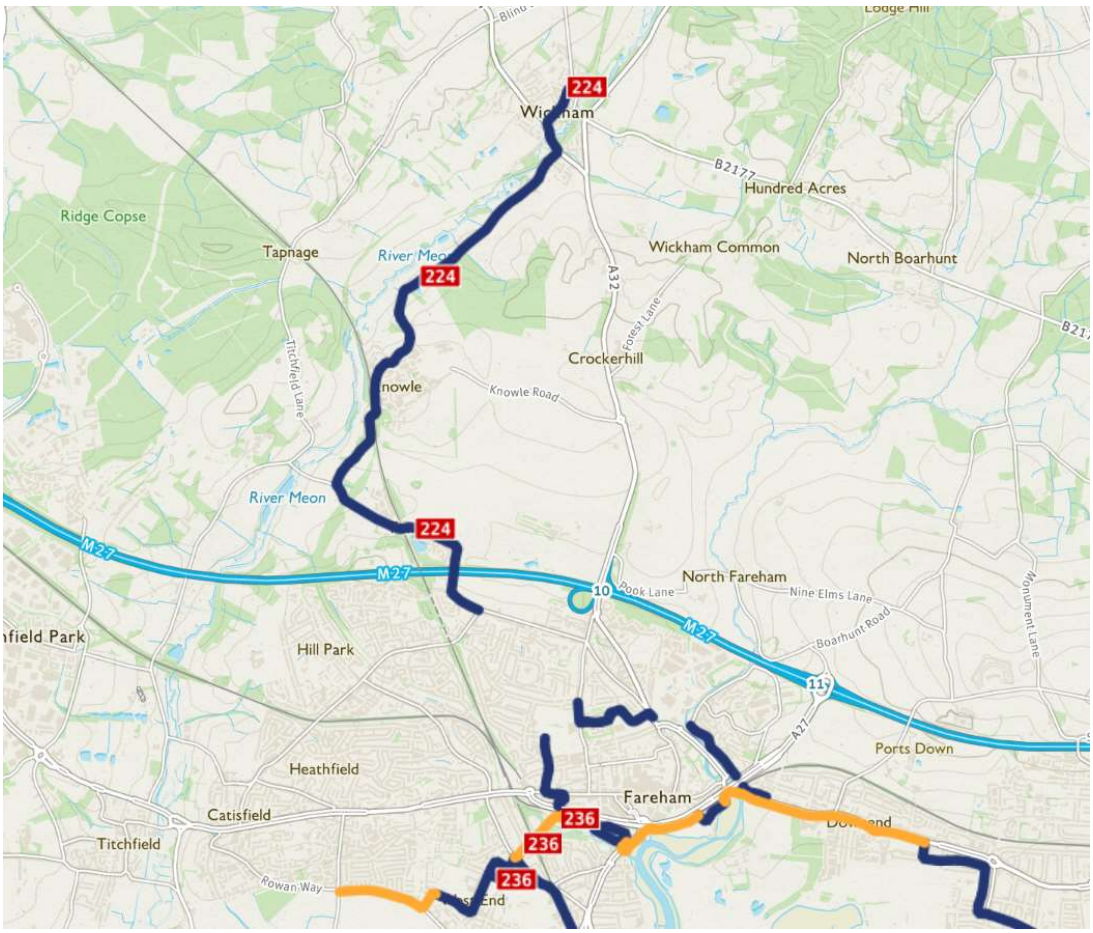


Figure 13 – Excerpt of the National Cycle Network Map in Wickham (Source: Sustrans.co.uk / OSmaps.ordnancesurvey.co.uk)

Public Transport

Winchester Town Area

4.75 Journeys by public transport can be feasible and attractive, providing that journey times are comparable to trips made by car and the cost of using public transport is a cheaper alternative than using the private motor vehicle. Winchester Town Area's public transport options comprise buses, operated by Stagecoach and Bluestar, and national rail services from Winchester station. Buses associated with Winchester's Park & Ride system provide an additional service between Monday and Saturday.

4.76 Winchester Town Area offers a wide variety of route options by bus, most of which provide access to the city centre using the main arterial routes. Most of their services are provided by Stagecoach, and a map showing the route options is displayed in Figure 14.

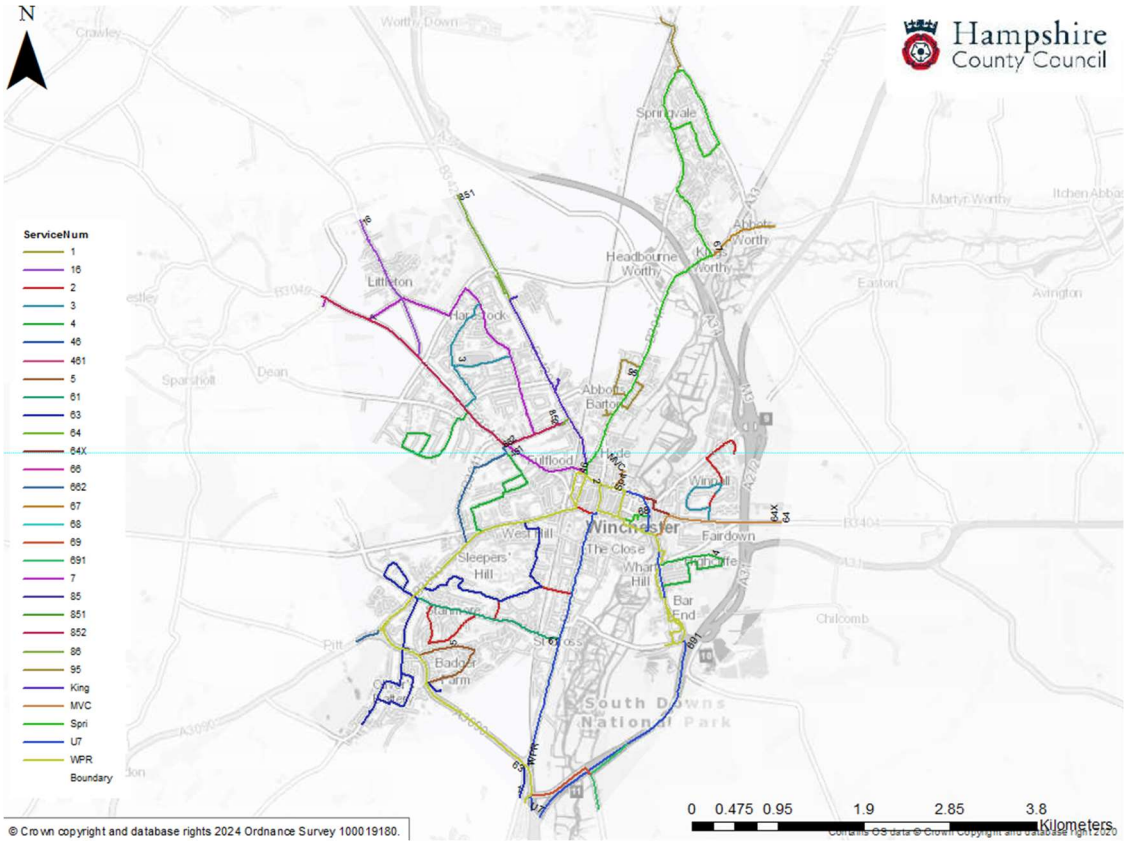


Figure 14 – Winchester Bus Network Map – All services (2023)

4.77 Buses run at a frequency of up to five services in the peak periods, with most providing services at weekends and Bank Holidays. Traffic volumes within the city centre mean that local bus services can be irregular and unreliable, making them less attractive as an alternative to the car. As part of the Movement Strategy, WCC is investigating the potential use of bus priority measures on key radial routes into the city centre, although further detailed investigation is needed to mitigate the impact of necessary traffic re-routing around the network.

4.78 The Winchester Town Area has access to the national rail network via Winchester railway station. The station is on the South Western Main Line and provides services around the country, with journey times to central London being approximately 1 hour, and services to other key employment centres including Southampton and Eastleigh. The central location of the station facilitates multi-modal journeys, acting as an interchange for a range of travel modes. Winchester station currently features a car park with 411 parking spaces, 286 cycle parking spaces, a passenger lift and underpass between the two platforms[22].

[22] Nationalrail.co.uk

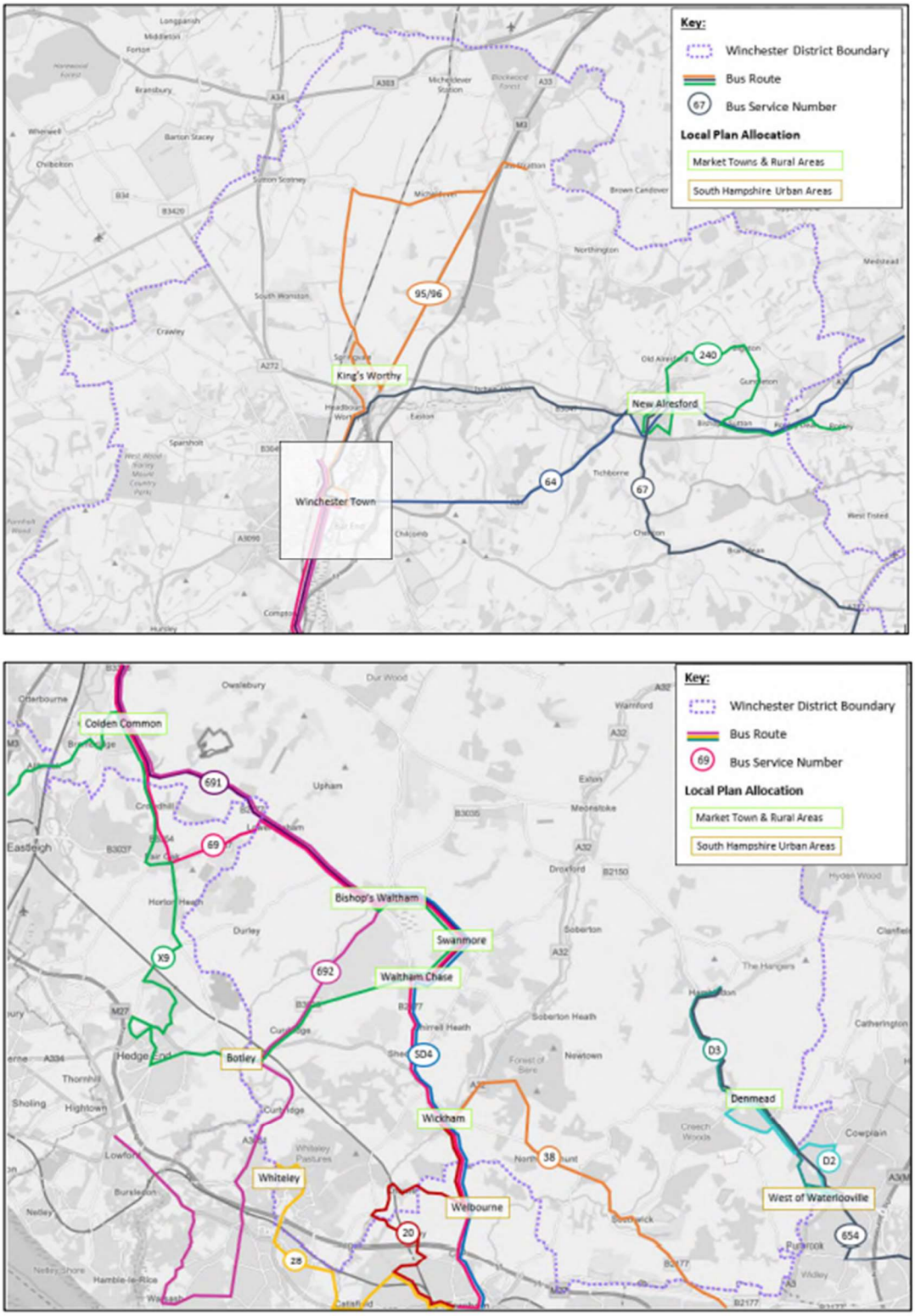
South Hampshire Urban Areas

4.79 Public transport options within the SHUA currently comprise a limited number of bus services which operate less frequently, although it is noted that some areas (particularly the west of Waterlooville where the A3 ZiP bus corridor is present) benefit from access to services operating in neighbouring authorities, such as Havant and Fareham. Access to the national rail network is limited, with the only station within this area of the district located in Botley. Access to other rail stations is only possible via a multi-modal journey as there are no further railway stations within this spatial area. Swanwick railway station (in Fareham Borough) is approximately a 25-minute walk from Whiteley, however, providing some potential route options.

4.80 Bus services, provided mainly by Stagecoach and First Group, provide connections between the larger towns within the central and southern parts of the district and most also cross administrative boundaries to connect with neighbouring large towns, as illustrated on Figure 15. Some rural areas require convoluted and indirect journeys using multiple services however, which is likely to discourage some users.

4.81 There are a limited number of buses serving the SHUAs, which provide access to other small settlements and enable interchanges with other bus services. The frequency of the bus services is relatively low however, at up to two services per hour in the peak periods, and few services on Sundays.

4.82 There are currently gaps in the bus network between the West of Waterlooville site and South West parts of the district, resulting in convoluted longer distance multi-modal trips unless trips are made via car. While major employment opportunities and destinations on this route may be few, more frequent, reliable commercial bus services would be beneficial to support the extensive numbers of new houses planned for the SHUA to avoid future residents being reliant on private car ownership, or having the perception that it is essential for daily needs.



Source: Traveline. It is noted that there are several other additional bus routes provided by other bus companies, however they offer infrequent or irregular services only and have not been included on in these plans.

Figure 15 – Bus Route Map – SHUA and MRTA

Market Town and Rural Areas

4.83 As with the SHUAs, the main public transport option accessible from the MTRAs is the bus services which link market towns with some of the smaller villages. There is a number of services to neighbouring authorities, such as those linking a number of villages to services to/from Petersfield and the U7 UniLink express bus service between Winchester and Southampton.

4.84 Access to the national rail network from the MTRA is possible at Micheldever station in the north of the district and Shawford south of Winchester. The former provides services to London Waterloo and Portsmouth on an hourly basis, while Shawford station is served by services to Winchester, Southampton, Bournemouth and Basingstoke and Portsmouth Harbour on a regular basis, with stopping services to London Waterloo also calling here.

4.85 Distances to stations outside the Winchester District (such as Botley, Swanwick, Portchester, Fareham, and Eastleigh) are small enough to allow rail to be included in some regular multi-modal journeys. Several bus services provide sustainable access options to the larger towns and areas, with most offering at least one peak hour service.

Other Infrastructure promoting Sustainable Travel

4.86 The opportunity for increasing levels of sustainable travel by residents in the WTA is likely to be higher than the rest of the district due to the existing services available and the concentration of development (particularly workplaces) in this area being higher, meaning the amount of people for which taking the bus is viable is also higher. This is demonstrated in the success of the city's park & ride scheme.

4.87 The ability to encourage active travel (e.g. walking and cycling) is also potentially high due to residents of the area being likely to also work within a relatively short distance, meaning journey times may be viable, although this is less likely to be the case for villages further from the centre due to the current lack of infrastructure reducing the attractiveness of active travel. This could be maximised by providing improved routes into the central area for people walking and cycling. More detail is provided in Chapter 5 regarding the emerging Local Cycling and Walking Infrastructure Plan.

EV Charging

Winchester Town Area

4.88 WCC adopted an Electric Vehicle Charging Strategy in January 2019 to provide additional infrastructure in selected locations to meet forecast demand, which currently provides a network of fast and rapid electric vehicle charging infrastructure (EVCIs) across the district. The vast majority (43 EVCIs) are available in the Winchester Town Area, as shown on Figure 16.

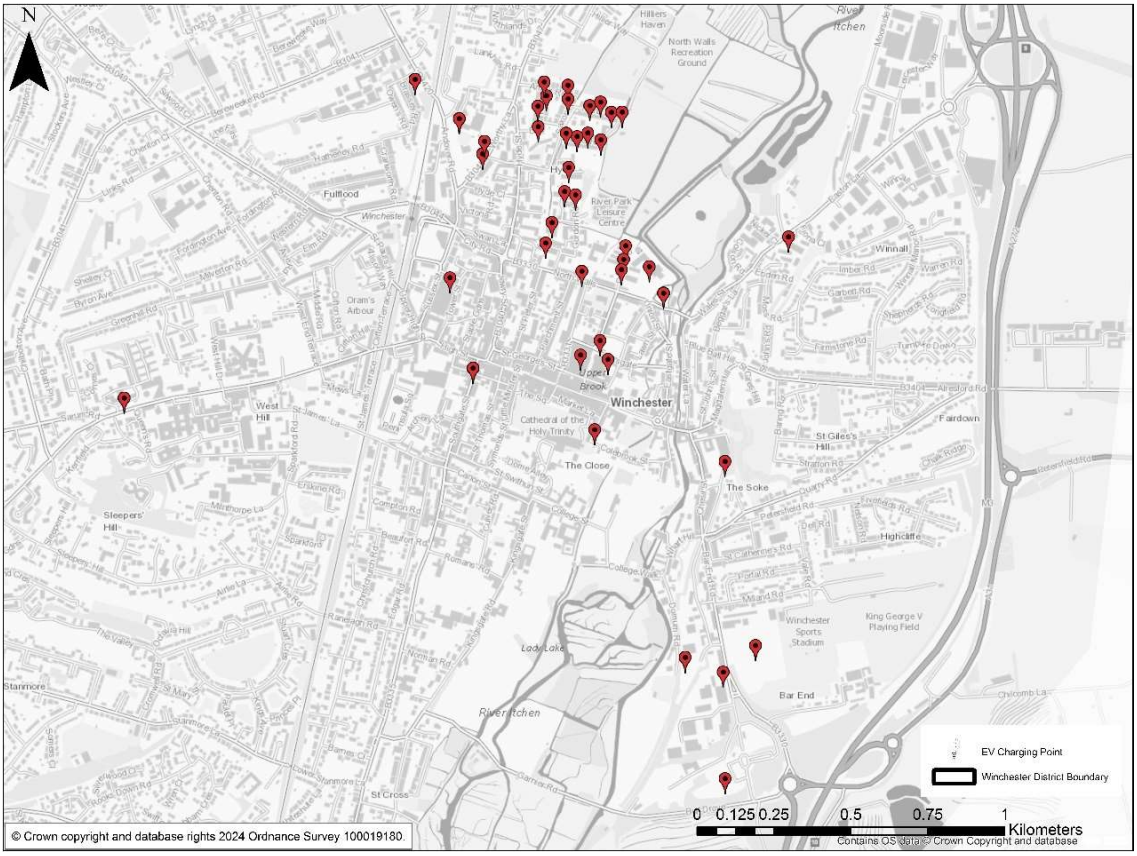


Figure 16 – Existing publicly available EVCI Locations - WTA

South Hampshire Urban Areas and Market Town and Rural Areas

4.89 A review of online EVCPs mapping has identified that there are now several publicly accessible charging locations in the SHUAs and MTRAs (Figure 17) but the overall provision in the SHUAs remains low, with facilities limited to car parks in Whiteley and Hedge End. The short-term strategy which was included in WCC's Electric Vehicle Charging Strategy (2019) for increasing EVCI within Winchester district did not propose any new locations within the SHUA car parks.

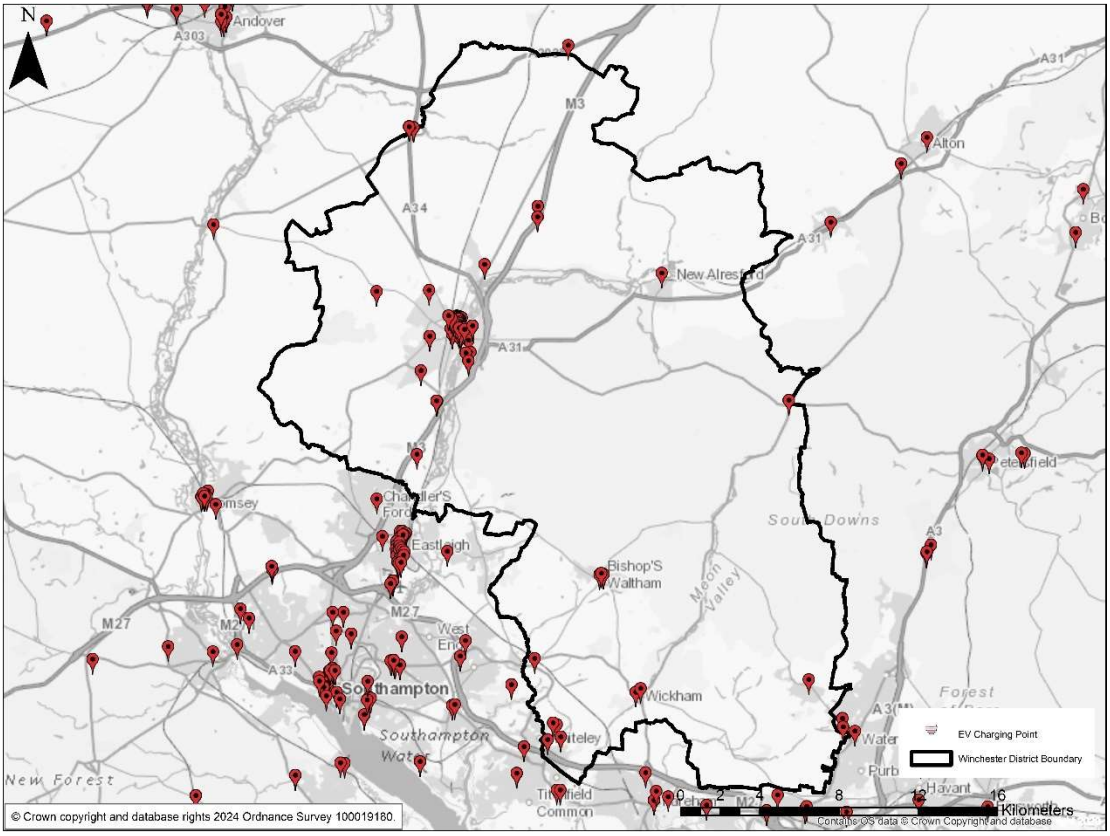


Figure 17 – EVCI Locations – across the district including SHUAs and MTRAs

Park & Ride

4.90 Park & Ride facilities have sought to move parking from the city centre to the outskirts of the city through provision of additional parking and dedicated public transport services.

4.91 There are five Park & Ride sites on the periphery of WTA (South Winchester, Pitt, Barfield, Barfield II, and St Catherine's), providing over 2,100 spaces. All are located to the south of the city and are primarily accessed from the M3 corridor, although direct access from the motorway at J10 is only available for trips to/from the south on the M3. There are currently no Park & Ride car parks to the north of the city, although a new Park & Ride lite facility for up to 200 spaces is now proposed off Andover Road as part of the consented Kings Barton development. The need for additional facilities has been considered in the emerging Local Plan with proposals understood to be in development for an additional Park & Ride site at the proposed allocated Sir John Moore Barracks site.

4.92 The Park & Ride car parks are available for use seven days a week but there are no bus services on Sundays or Bank Holidays, when parking is free in town (Park and Walk car parks e.g. Chesil, Cattle Market, Worthy Lane, Coach Park). Late evening and Sunday Park & Ride bus services will only be considered if sufficient demand warrants it but there were no plans for this at the time of writing.

4.93 Prior to the Covid pandemic, the Park & Ride car parks (and the associated bus services) operated close to capacity in peak times[23] and although this is no longer the case, they remain well used. Buses generally use the same road space as other vehicles as there are currently limited bus priority systems within the network, meaning high traffic volumes within the city centre impact on the journey times and reliability of the park and ride bus services. This can make it less attractive as an alternative to travel by private car, even if it is cheaper than town centre car parks.

Transport Baseline Summaries

Winchester Town Area

The Winchester Town Area has the highest levels of transport accessibility across the District, with services and supporting infrastructure for public transport, walking, and cycling in the district. The area's roads comprise of a dense street network with a one-way system, necessary for managing existing high levels of traffic movement within and around the centre.

Travel demand in the highway peaks is primarily caused by the significant in and out-commuting patterns to/from the centre of Winchester and reflects the City's role as a regional employment centre.

Travel by sustainable modes continues to be negatively impacted by private car use predominantly associated with vehicles accessing the town from outer areas, despite the popular Park & Ride scheme specifically targeting these trips. Traffic volumes within the centre and observed congestion in the centre of town and on the approaches to the centre mean that local bus services can sometimes be irregular and unreliable, making them less attractive as an alternative to the car.

Overall, the area experiences issues because of the dominant highway network including congestion, some areas of poor air quality and road casualties, although improvements have been made in recent years and significant plans are in place for improvements.

[23] Winchester Parking Strategy 2014-2018

South Hampshire Urban Area

Most existing housing developments within the SHUAs provide footpaths which are attractive enough for most people to consider short trips by foot, however the distance to destinations reduces the attractiveness of trips being made by this mode. Public transport options currently consist of limited and infrequent bus services between settlements.

The SHUAs highway network comprises a mix of minor country roads connecting villages and towns, smaller roads within the settlements and good links to the strategic M27 and A3 (M) routes, although parts of the latter are susceptible to suffering from congestion, which is expected to increase in future.

The SHUAs have very high proportions of car or van ownership by households, as well as higher proportions of residents who are in older age categories than Winchester Town Area. This, combined with the lower levels of service for public transport and active travel modes means that the existing population is likely to have a relatively high dependency on private car travel which could result in issues relating to air quality (currently within objective levels) as well as worsened highway congestion and parking demands as development increases if alternative options are not sufficiently provided.

Market Towns and Rural Areas

As with the SHUAs, relatively limited and infrequent bus services link market towns with smaller villages within the MTRA itself but there is good access to bus services from neighbouring authorities. Access to the rail network is from Micheldever and/or Shawford stations, both of which are served by frequent services to local major settlements.

Several junctions experience congestion, which tend to be in the vicinity of the larger market towns and rural areas, with the number likely to increase in future at a similar level to the other spatial areas.

The MTRAs have similar population demographics, vehicle ownership and air quality levels to the SHUAs. Based on the current situation, the relatively high distance from the settlements within this spatial area to the strategic road network may mean that increased development could result in higher congestion on the local road networks as well as other transport-related impacts such as vehicle collisions and reduced air quality.

5. Planned improvements in sustainable transport

Introduction

5.1 Sustainable transport measures will form the main part of any mitigation required to provide additional mobility capacity within the system. Although the demand forecasts are unconstrained it is likely that in practice, other factors (new schemes outside the scope of the Local Plan mitigation) could affect the overall demand for and routing of travel on the network. It is recognised that providing additional highway capacity is only likely to provide a short-term benefit, that may be eroded as suppressed traffic demand is unlocked. Therefore, investment in providing alternatives is important.

5.2 This section considers additional potential sustainable transport measures within the local area to assist in reducing the traffic impact of the Local Plan. Whilst encouraging modal shift and healthier choices because of reduction in car usage, some measures should also be considered as alternatives or supporting physical improvements to highway mitigation.

Local Cycle Walking Implementation Plan

5.3 The Winchester Local Cycle Walking Implementation Plan (LCWIP) is currently being produced as one document but in two parts; with Part 1 focussed on the wider District and Part 2 focussing on the City.

5.4 The District focus document went out to consultation in May 2024. The City focus part of the LCWIP produced by Atkins and consulted on in 2020 and is currently being further developed to include additional secondary routes.

5.5 Together, the two parts of the LCWIP will propose a network of cycling corridors and core walking zones which are audited and proposed improvements will be suggested in line with LTN1/20 guidance. They will also incorporate the Healthy Streets principles which are reinforced in LTP4. Potential improvements on the cycle routes and walking zones will be prioritised for delivery as funding opportunities arise. The LCWIP also summarises where the main trip generators are within Winchester and sets out current travel behaviour in the area.

Bus Service Improvement Plan

5.6 The Hampshire Bus Service Improvement Plan (BSIP) was published in October 2021 to set out a high-level vision for Hampshire's bus network, including journey time and reliability targets as plans to deliver them. There have so far been two annual progress reports published, which present a summary of the measures implemented to date.

5.7 The key issues for bus services in Winchester were identified as:

- Several radial bus routes into central Winchester show significantly high levels of journey time variability which in turn impacts on bus service regularity. The corridors with the highest levels of variability are Alresford Road and Stockbridge Road. This is due to queuing traffic on Bridge Street and at the mini roundabout with Chesil Street and traffic queues on the approach to the Carfax junction. There are also delays at peak times on Romsey Road between Battery Hill and the Hospital and on St. Cross Road between St. James' Lane and High Street.
- As Winchester is a historic medieval city, there isn't the physical space to accommodate dedicated bus lanes. The amount of current bus priority is very limited.
- Congestion in the city centre results in low bus speeds.
- There are opportunities to improve bus/rail interchange, with scope to re-route or extend some inter-urban bus services, so that these call at Winchester Rail Station.

(Source: Appendix B Section B.5, BSIP, June 2024).

5.8 In terms of future bus-related infrastructure schemes in the Winchester district area, the following have been identified as part of the Winchester Movement Strategy:

- A new 200 -spaces Park & Ride lite facility at Kings Barton is proposed to serve the north side of Winchester;
- A new bus lane on Andover Road;
- Two new bus gates (in the Bridge Street/Chesil Street area and the northern end of Southgate Street);
- Access restrictions on Jewry Street between St George's Street and City Road;
- Changes to the location and number of bus stands and stops in the east part of the city centre linked to the Central Winchester Regeneration scheme; and
- Potential future expansion of existing P&R parking spaces on the edge of Winchester to enable some city centre car parks to be closed and redeveloped.

Travel Plans and Smarter Choices

5.9 The forecast trip generation for the local plan growth is based on trip rates from the TRICS database and does not therefore take account of any reduction in traffic generation that may be achieved through the delivery of Travel Plan measures aimed at reducing sole occupancy car trips for these developments by promoting journeys by public transport, walking, and cycling.

5.10 Travel Plans are a requirement of the validation of certain planning applications where development has significant transport implications and are managed through s106 agreements with Hampshire. HCC as the Local Education Authority also requires all schools to develop and implement Travel Plans.

5.11 Within Winchester district, there are 19 active Travel Plans being monitored by HCC including the North Whiteley, Kings Barton and West Waterlooville MDA Travel Plans, all of which are expected to have a notable impact on reducing single car occupancy trips from these developments.

5.12 In addition to Travel Plans, 'smarter choices' measures could also be considered. The initiative is based around several simple concepts intended to encourage and incentivise the uptake of either sustainable transport where a journey is essential, or the utilisation of modern technology or working practices. The use of sustainable transport will only work where infrastructure is currently located or can be made available in order that informed choices can be made by individuals. For Winchester, the use of these initiatives could assist in reducing the number of single-occupancy vehicles on the network. 'Smarter Choices' is an established approach which includes a range of measures such as:

- Workplace and School Travel Plans;
- Personalised Travel Planning;
- Teleworking, teleconferencing, and home shopping;
- Travel Awareness campaigns;
- Public Transport Information and Marketing;
- Local Collection Points; and
- Car Clubs and car sharing schemes.

5.13 The DfT undertook research regarding Smarter Choices that indicated that at suitable sites (with a good range of viable alternatives to driving) and adequate promotion, a modal shift away from single occupancy car use of approximately 10% can be achieved[24].

[24] https://www.gov.uk/government/publications/smarter-choices-main-report-about-changing-the-way-we-travel

6. Modelling methodology

Moving away from a Predict and Provide approach

6.1 As mentioned earlier, transport (and society) is in a state of flux, and this brings into question the traditional methods of planning and transport assessments that have been centred on a forecast-led concept of Predict & Provide (P&P). This P&P methodology is akin to a 'business as usual' approach, whereby transport practitioners and modellers replicate and project past trends associated with developments and traffic levels, thus reinforcing the status quo: doing what we always did and getting what we always got. The possible consequences of a P&P approach that perpetuates car-led development include:

- the potential over-provision of highway capacity which, in turn, can induce motorised traffic (exacerbating efforts to reduce direct CO_2 emissions from the transport sector);
- the potential under-provision or erosion of walking and cycling infrastructure or public transport services; and
- the risk of planning and developing underutilised or even stranded developments that become completely dependent on car-based travel.

6.2 Traditionally, transport assessments of developments have followed the principles of assessing the impact of motorised trips on the highway network based on how many additional trips each person will make to and from a specific land use, based on a historical data and surveys. In 2019, the Chartered Institution of Highways and Transportation (CIHT) recognised these "outdated assessment methodologies" as a barrier to better planning[25].

6.3 Transport assessments of development in a Local Plan area are still predicated on the use of trip rates and census data to estimate what **will** happen rather than to focus on what **could** happen. As evidenced since the Covid-19 pandemic, transport related policy and other societal factors outside of the highway and planning authorities' control can have a huge impact on people's travel habits and behaviour. This is the essence of the 'Decide and Provide' (or Vision-led) approach to modelling, which involves developing future scenarios that draw upon insights on:

- **past changes in trip rates** (from use of the TRICS Historic Trends Analysis Tool (see further below) as well as consideration of wider observed changes over time, such as those apparent from the National Travel Survey);
- **critical uncertainties for society that could influence future trip rates**, as explored by, and reflected in the Department for Transport's 2018 Road Traffic Forecasts and latterly in its seven so-called Common Analytical Scenarios set

[25] Para 3.1, *Better planning, better transport, better places*, CIHT (2019) https://www.ciht.org.uk/knowledge-resource-centre/resources/better-planning-better-transport-better-places/

out in its Uncertainty Toolkit (and in turn accounted for in the National Trip End Model); and

- **development design features with the capacity to shape change e.g.** (and affect the number of person trips and the share of those undertaken by motor vehicles)"[26], such as quantum and mix of the development to increase the opportunity for internalisation of trips including social infrastructure enhancements (community areas, schools, local shopping, etc.), movement-based street hierarchy based on Manual for Street and LTN1/20 guidance, application of 5-minutes' walk principle, etc.

6.4 This approach involves evidence-based judgment and scenario-testing, which necessarily involve a detailed understanding of site-specific development proposals. Applying the principles of scenario testing to Local Plans would be disproportionate and prohibitively expensive, given that the highway authorities (HCC and NH) have required this strategic transport assessment to use the available strategic transport model. This STA has therefore been produced based on traditional methodology and the existing strategic transport model to establish the worst-case transport impacts (Do-Minimum scenario) on the highway network in the first instance, albeit the mitigation approach does not take the traditional approach of providing enough capacity to relieve all the issues identified.

6.5 However, while the impact of 'traditional' mitigation measures such as local highway capacity enhancements has also been assessed using the strategic model (Do-Something scenario), this STA also presents a qualitative assessment of the potential impact of wider mitigation measures and policies in line with the objectives of LTP4 and national policy. Since there are no guarantees, that the trip rate in any local plan or site-specific transport assessment will come about in future, having a monitoring and evaluation plan becomes critical to the success of any proposal. This STA therefore also considers the implementation of a Monitor & Manage obligation to ensure that the Vision Led transport impacts of development within the Local Plan timeframe are realised or if not, that a revised schedule of transport interventions and behavioural change approaches is available. Further details relating to the mitigation and monitoring approach are described in more detail in Chapters 8 and 11.

Background to the Sub Regional Transport Model (SRTM)

6.6 At the request of the Highway Authorities, this STA uses an existing strategic transport model, originally developed for Solent Transport[27], the SRTM, to support a wide-ranging set of interventions across the Solent Transport sub-region, and is specifically required to be capable of:

[26] TRICS Decide and Provide Guidance Summary (November 2022)

[27] Originally established in 2007, Solent Transport is an apolitical partnership between the councils of the Isle of Wight, Hampshire County, Portsmouth, and Southampton. In collaboration with the local community, business, government and transport operators, Solent Transport undertakes research; develops transport policy and strategy; submits and supports funding bids; and lobbies for transport improvements (www.solent-transport.com)

- Forecasting changes in travel demand, road traffic, public transport patronage and active mode use over time because of changing economic conditions, land-use policies and development, and transport improvement and interventions (schemes);
- Testing the impacts of land-use and transport policies and strategies within a relatively short model run time; and
- Testing the impacts of individual transport interventions in the increased detail necessary for preparing submissions for inclusion in funding programmes.

6.7 A full description of the SRTM's functions and components, model assumptions for the Winchester Local Plan and the results, reflecting the position before (baseline) and with new development (Do Minimum) associated with the Local Plan, is presented in SYSTRA's SRTM Strategic Modelling report for the Winchester Local Plan, attached as Appendix B. This STA presents a summary of the key findings in the following sections and should be read in conjunction with the SYSTRA report.

6.8 The current model includes a revalidated 2019 base year, which was developed in early 2021 and has been used to assess the projected impact of traffic growth and additional travel demands associated with proposed development in Winchester district to the end of the plan period (2040). It should be noted that the model has not been adjusted to reflect post-Covid traffic levels. Although no analysis is yet available to determine any divergence between the traffic levels recorded in 2019 and those post-covid within Winchester district, there is evidence elsewhere within the UK of overall reduction of up to 10% in the number of movements being made[28]. The model therefore presents a higher baseline in terms of traffic levels across the district (and region).

6.9 The SRTM is a model is a multi-modal transport model and is compliant with DfT Transport Appraisal Guidance (TAG). It is a suite of linked models comprising the following components that considers a proportion of trips that are made by walking and cycling (active travel) and by public transport and allows for modal shift away from the private car in line with current national policy:

- The Main Demand Model (MDM) which predicts when (time of day), where (destination choice) and how (choice of mode) journeys are made;
- The Gateway Demand Model (GDM) which predicts demand for travel from ports and airports;
- The Road Traffic Model (RTM) which determines the routes taken by vehicles through the road network and journey times, accounting for congestion;
- The Public Transport Model (PTM) which determines routes and services chosen by public transport passengers; and

[28] Department for Transport (December 2023) National Travel Survey 2022 'Introduction and main findings'

- A Local Economic Impact Model (LEIM) which uses inputs including transport costs to forecast the quantum and location of households, populations, and jobs.

6.10 Although active modes (walking and cycling) are represented in the SRTM, the demand is not assigned to a network unlike those for car/van and public transport trips. This is because there are multiple similar route options available to people walking and cycling including travel via links considered too minor to be included in the SRTM network, which was primarily designed for motorised modes at a strategic scale. It is expected that the impact of proposed mitigation measures likely to affect demand for active travel will be assessed separately at a more detailed and site-specific level, as appropriate, as part of any Transport Assessment report prepared in support of the relevant planning application for the site allocations.

6.11 Another issue affecting the assessment of some mitigation measures at a detailed and site-specific level is linked to the zone structure of the SRTM. While the majority of Winchester District including Winchester Town is within the Core Fully Modelled Area, zones are larger in less densely populated areas with zones in the core area accommodating a population of approximately 1500 persons. As a result, the associated trips from most site allocations, which are considered relatively small in scale, will be 'added' to existing zones. Changes to the sites' individual trip characteristics to reflect proposed sustainable travel and accessibility enhancements (such as trip rates, mode share, etc.) would therefore also apply to the remainder of the zone. The cost of creating new zones within the SRTM for each new individual allocation would be prohibitive and except for the larger sites (Sir John Moore Barracks and Bushfield), the existing SRTM zone structure has been retained.

Overview of SRTM modelling scenarios for the Local Plan

6.12 In accordance with TAG guidance, three weekday periods are modelled in the SRTM:

- AM peak: busiest hour between 07:00 and 10:00, (defined as 40.5% of the three hours for Highway and 40% for Public Transport);
- Inter peak: average of 10:00 to 16:00 (i.e., 16.7% of the six hours for both modes); and
- PM peak: busiest hour between 16:00 and 19:00, (defined as 36.8% of the three hours for Highway and 40% for Public Transport)

6.13 The SRTM has a base year of 2019, and forecast years of 2026, 2031, 2036, and 2041. The Winchester Local Plan period ends in 2040 and the transport modelling has used the closest available model forecast year of 2041. This extra year means growth outside of Winchester will be slightly higher than in 2040 and therefore provides a more robust basis for assessment in terms of travel demand.

6.14 A number of model runs have been undertaken to assess the projected impact of the Local Plan growth:

- Scenario 1 – 2041 Baseline, no Winchester Local Plan development except for committed sites.
- Scenario 2 – 2041 Do Minimum, full Winchester Local Plan development without transport mitigation/connectivity improvements.
- Scenario 3 – 2041 Do Something, full Winchester Local Plan development with transport mitigation/connectivity improvements.

Scenario 1: 2041 Baseline

Highway and PT network

6.15 As a starting point, the Baseline scenario uses standard SRTM reference case networks for all modelled years. The SRTM has a base year of 2019 and represents forecast conditions up to the year 2041. Known developments and committed highway schemes are included within the model's reference case scenarios (2026, 2031, 2036 and 2041) to provide the most accurate representation of future year conditions. A list of the committed (funded) highway schemes included in the Reference Case is provided as Appendix A of the SYSTRA's report (Appendix B of this STA).

6.16 Of particular relevance to Winchester District are the following larger committed transport schemes:

- Closure of Andover Road North to motor vehicles between the junctions with Wellhouse Lane and Stoney Lane and a provision of a new parallel route (Winchester Avenue) via the Kings Barton development. It should be noted that in the case of the SJMB site allocation (policy W2), the SRTM includes modelling of the associated traffic from SJMB to route through the Kings Barton development and not via Andover Road.
- A new bus lane on Andover Road
- Provision of a 200 space Park & Ride Lite facility within Kings Barton development
- Extension of Whiteley Way to A3051 as part of the development at North Whiteley.

6.17 In addition to committed schemes, National Highways has advised that the M3 Junction 9 scheme proposals (free-flow arrangement between A34 and M3) should be included in all model scenarios related to Winchester Local Plan. The M3 J9-14 Smart motorway scheme is not included in any model scenarios further to the government's decision in early 2023 to cancel any new Smart Motorway schemes.

Non-Winchester District Land Use Assumptions

6.18 In this study, the SRTM Reference Case inputs populate the Baseline scenario for all model areas except Winchester District.

6.19 Within the Reference Case land use, in addition to committed sites, "permissible" sites are included. These refer to those locations identified as suitable for future development (within the adopted Local Plans) but that have not yet been subject to planning approval. The locations and maximum land use quantum of the permissible

sites are based on the inputs collated up to April 2020 in accordance with adopted Local Plans at that time. The take up of permissible developments is determined by the LEIM module of SRTM and is based on the local conditions (the relative 'attractiveness' of the development, e.g., accessibility).

6.20 LEIM controls the level of overall development growth within the model in accordance with the adapted TEMPro (v8.0) employment and population trajectories for the subregion as set out in Section 1.2.4. This is equivalent to allowing for background traffic growth within the modelling process.

Winchester District Completions and Committed Development Land Use Assumptions

6.21 The starting point in the Baseline is to update all the standard reference case inputs beyond the base year of 2019 for SRTM model zones within Winchester District. In place of these, the actual site completions through to 2023 have been added plus hard committed future developments (i.e. planning permissions). Baseline growth to 2041 for Winchester District for all land use categories has also been applied.

6.22 Within the Baseline there are several larger residential developments that are currently under construction or have planning permission. These sites include:

- Kings Barton development, City of Winchester, approximately 2000 dwellings
- North Whiteley development, approximately 3500 dwellings
- West of Waterlooville development, approximately 2500 dwellings
- New Alresford development, approximately 425 dwellings

Scenario 2: 2041 Do-Minimum

Highway and Public Transport network

6.23 All elements of the highway and public transport networks remain unchanged between the Baseline and Do Minimum scenarios.

Non-Winchester District Land Use Assumption

6.24 In the Do Minimum, the land use outside of Winchester District is the same as in the Baseline. By assessing the Local Plan in this way, there are no changes to the number of households, jobs, or population outside of Winchester. By ensuring land use inputs outside of Winchester are unchanged, the cumulative impacts of the Local Plan development can be isolated.

Winchester District Completions and Committed Development Land Use Assumptions

6.25 The Winchester District Local Plan development allocations are included within the Do Minimum scenario. All totals account for full growth in the Local Plan period (i.e., the totals also include for the Baseline growth).

6.26 For residential growth there is an increase of 4,612 dwellings between the Baseline and Do Minimum in 2041. From that total, the largest individual new residential development site is at Sir John Moore Barracks to the north of City of Winchester with

a total of 900 dwellings[29]. The largest individual non-residential site is at Bushfield Camp to the south of City of Winchester and totals 100,000sqm of mixed used development, based on a masterplan for this site endorsed by WCC's Cabinet in June 2023 (and not the live application at the time of writing).

Scenario 3: 2041 Do Something

6.27 The Do Something scenario builds on the Do Minimum scenario with the addition of identified potential mitigation measures following the assessment of significant and severe impacts from the proposed Local Plan allocations.

6.28 The highway network for the Do Something scenario includes changes at three junctions within the district and the introduction of a new c.850-space Park& Ride site at the Sir John Moore Barracks site in order to mitigate against the predicted cumulative impacts of the Winchester District Local Plan and in line with the Winchester Movement Strategy to reduce car-based movements into the city centre. More information on the location and type of mitigation for each of the schemes can be found Section 8, with the modelling results in Section 9. These potential mitigation measures represent the worst-case solution to resolving highway issues, with the preferred approach being to reduce travel demand and improve accessibility and infrastructure to public transport and active modes.

6.29 In addition, the mitigation modelled in this STA seeks to address the impact of the Local Plan developments only, as opposed to impacts resulting from background growth in traffic over the Local Plan period, as assessed in the Baseline scenario.

6.30 There are no changes to the public transport network compared to the Do-minimum scenario, as there were no committed public transport schemes identified at the time of the assessments specifically aimed at mitigating impacts of the Local Plan.

[29] Local Plan W2 refers to 750-1000 dwellings - 900 dwellings have been tested in the SRTM.

7. Do Minimum modelling results

Local Plan Allocations

7.1 At the time of the SRTM modelling, the Winchester Local Plan allocations to be assessed were agreed with WCC and reflect the Regulation 18 version of the Local Plan. Details of these allocations can be found on the Council's website[30].

7.2 It is noted, however, that the Regulation 19 submission of the Winchester Local Plan will include minor amendments to a number of the allocations. The list of changes is summarised in Table 1.

Table 1 – Summary of changes to Winchester Local Plan Allocations – Regulation 19 document

Policy Ref.	Site name	Reg 19 Change
W4	Courtenay Road	Increase of 50 dwellings
W10	River Park	Removal of student housing - decrease of 100 dwellings equivalent
W11	Winchester University/Hospital	Removal of student housing - decrease of 200 dwellings equivalent
Student housing allowance	Overall contribution towards housing supply from purpose-built student accommodation somewhere at Winchester Town.	New allowance for student accommodation – increase of 250 dwellings equivalent
SH1	West of Waterlooville	Increase of 50 dwellings
SH2	North Whiteley	Increase of 10 dwellings equivalent
SH3	Whiteley Green	Decrease of 45 dwellings and addition of 1 primary school
SH5	Little Park Farm	Site deleted – decrease of c. 4,000 sqm employment
WK2	The Glebe	Site now completed (80 dwellings)
WK5	Mill Lane	New site - 40 dwellings
WK6	Southwick Rd / School Rd	New site - 60 dwellings
KN1	Ravenswood	Re-numbered (previous Ref WK4)
KW2	Cart and Horses site	Increase of 5 dwellings
SU1	Land at Brightlands	New site – up to 60 dwellings
WC1	Morgans Yard	Decrease of 20 dwellings
BW2	Albany Farm	Site now completed (120 dwellings)
BW3	Tollgate Sawmill	Mix of uses widened to allow for the doctor's surgery to be relocated on part of the employment area if necessary
BW4	Rareridge Lane	Minor amendment to site boundary

[30] https://www.localplan.winchester.gov.uk/key-topics/test

7.3 The proposed changes to Reg 19 allocations would in effect result in a decrease of 40 dwellings (including student accommodation dwelling equivalent) and in a reduction of c.4,000 sqm employment to the proposed development taken forward in the SRTM modelling for the 2041 Do-Minimum. This level of change in residential development is unlikely to affect the modelled development traffic levels across the network and as it represents a decrease in overall development across the district, it is considered that the SRTM 2041 Do-Minimum scenario represents a worst-case.

7.4 Similarly, it is understood that an outline planning application for development at Bushfield Camp was submitted in November 2023. The submission of the application was made after commissioning of the modelling of the 2041 Do-Minimum STRM and given that this application has yet to be determined. It was agreed with WCC that the development criteria set out in Local Plan Policy W5 would remain as the basis of assessments in the SRTM, and a masterplan (Appendix C) endorsed by WCC's Cabinet in June 2023 has been used as the basis for model inputs. The assessment of the cumulative transport impacts of the Local Plan allocations presented in this STA for the Do-Minimum scenario therefore do not reflect the specific proposals put forward by the applicants, and the transport implications to the development at Bushfield Camp will need to be reviewed by the local highway authority as part of the planning process in due course.

2041 Scenario 2 Do Minimum compared to 2041 Scenario 1 Baseline

Population, Dwellings, Jobs

7.5 The Local Economic Impact Model (LEIM) makes up part of the SRTM and uses input including transport costs to forecast the quantum and location of households, populations, and jobs.

7.6 As illustrated in Figure 18, the Local Plan proposes approximately 4,600 households by 2041, over a baseline which includes significant permitted developments not yet built such as West of Waterlooville and North Whiteley. Linked to the increase in dwellings is a population increase of 11,600. The additional employment land use included in the Local Plan provides approximately 10,400 jobs in the District during the same period.

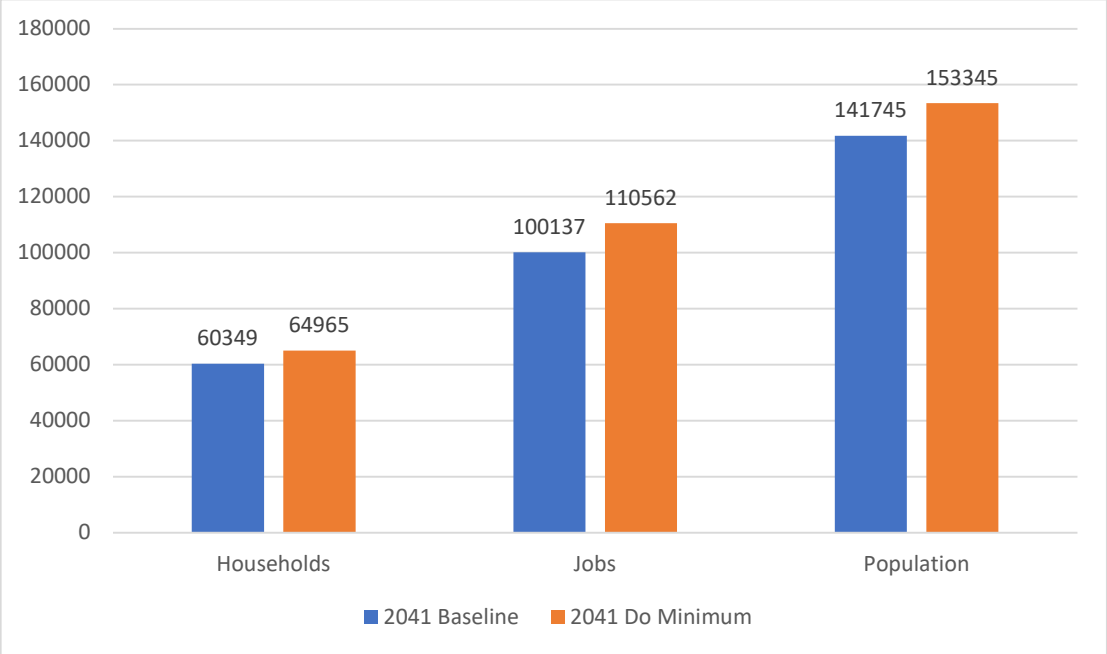


Figure 18 – Local Plan Growth – Population/Jobs

Total Person Trips and Mode Share

7.7 The total person trips (represented in the model as a journey between an Origin-Destination pair), and percentage mode share to, and from, Winchester District for a 24-hour period are summarised in **Error! Reference source not found.**.

Table 2 – Person Trip to/from Winchester district – 2041 DM vs Baseline

Scenario		From Winchester			To Winchester		
		Highway	Public Transport	Active modes	Highway	Public Transport	Active modes
Absolute	2041 Baseline	328,663	18,376	75,329	323,730	18,761	75,370
	2041 DM	359,067	20,814	83,198	352,890	21,154	83,240
	Difference	30,405	2,438	7,870	29,161	2,393	7,870
Mode Share (%)	2041 Baseline	77.8%	4.4%	17.8%	77.5%	4.5%	18.0%
	2041 DM	77.5%	4.5%	18.0%	77.2%	4.6%	18.2%
	Difference	-0.3%	0.1%	0.1%	-0.3%	0.1%	0.2%

7.9 The mode share across the 2041 Do Minimum scenario remains similar to the 2041 Baseline albeit with a small increase in public transport and active travel mode shares at the expense of motorised vehicles, most likely because of increased highway congestion.

Emission Outputs

7.10 The SRTM provides an indication of vehicle-based emission forecasts and the change in emissions for Winchester District between the Baseline and Do-Minimum scenarios is summarised in Table 3. There is a general increase in emissions that is not

unexpected on an unmitigated network, because of Local Plan growth. Across all the emission types represented there is an approximate increase of 2-3%.

Table 3 – Impact of Local Plan (pre-mitigation) on vehicle-based emissions in Winchester District

Emissions (kg/12hr)	NOX	NO2	PM10	PM2.5	HC	Carbon Monoxide	Carbon Dioxide	Benzene	Methane	13 Butadiene
DM-Baseline	96	26	1.1	1.0	12	306	136,130	0.2	2.5	0.1
% difference	2.1%	2.4%	2.6%	2.6%	2.5%	2.3%	2.0%	3.3%	3.1%	2.8%

Highway Network Performance

7.11 The highway traffic growth within Winchester, arising from the introduction of the Local Plan allocations, generates a forecast increase in total vehicle hours driven in the AM peak hour of approximately 2% and 4.5% in the PM. Total vehicle kilometres driven in Winchester District are forecast to increase by approximately 1% in the AM peak hour and 1.5% in the PM Peak, whilst average speed is forecast to decrease by approximately 1.5% and 3% in the AM and PM peaks respectively due to the increased network delay. These outputs are consistent with the highway network within Winchester accommodating greater trips and experiencing increasing congestion.

7.12 The impact on the wider, full core model area is considered small/negligible as land use changes between the scenarios are focussed solely on Winchester District.

Highway Link Flows, Delays and Capacity Hotspots

7.13 The outputs of the Road Traffic Model (RTM) have been analysed with respect to highway volume of traffic (link flow), delay and capacity. The outputs shown are for those which exceed the following thresholds, as agreed with both HCC and National Highways, as Highway Authorities:

- Junction approach links where the ratio of traffic volume to capacity of the road (V/C) is greater than 85% in either 2041 AM or PM peak hour;
- 'Significant' increase in V/C is where the V/C is greater than 85% and has increased by more than 5% on any approach arm; between the 2041 Baseline and 2041 Do Minimum; and
- 'Severe' increase in V/C is either where the V/C is greater than 95% and has increased by more than 10%, or where delay is greater than 120 seconds and has increased by more than 60 seconds on any approach arm, between the 2041 Do Minimum and 2041 Baseline.

7.14 All of the junctions identified as experiencing a 'significant' or 'severe' impact are located in the Winchester Town Area, reflecting WCC's spatial strategy of locating the majority of new development in the vicinity of Winchester.

7.15 The largest changes in traffic flow in the AM peak are in the vicinity to the Bushfield Camp employment site to the south of the City. The model forecasts that traffic

entering the model zone on Badger Farm Road will be 969 PCUs[31] and traffic leaving the zone will be 350 PCUs. The high traffic demand associated to the Bushfield development is projected to cause capacity issues at the junctions of A3090 Badger Farm Road/ Hockley Link roundabout, M3 J11 N/B off slip roundabout, and Pitt Roundabout (A3090/ B3040).

7.16 An impact of the capacity problems at these locations is that traffic is either delayed upstream at these junctions and/or rerouting to avoid the congestion. This in turn produces apparent flow reductions at some locations. A particular impact is that traffic previously routeing via Otterbourne Road and Badger Farm Road towards Romsey Road is diverting off Otterbourne Road via Poles Lane to A3090 to access Romsey Road. The congestion at A3090 Badger Farm Road/ Hockley Link roundabout and M3 J11 N/B off slip roundabout is also projected to result in a reduction in traffic continuing towards the city centre via St Cross Road. Addressing these congestion points would be expected to result in fewer diverted trips via Poles Lane and potentially a net increase in traffic on St Cross Road towards the City centre.

7.17 The model also shows traffic increases on the roads adjacent to the Sir John Moore Barracks residential development site to the north of the City. Traffic volume on Andover Road is expected to increase by approximately 130 PCUs in both directions in the AM peak hour. The additional traffic demand is forecast to exacerbate queuing and delays on the A272/B3420 (Three Maids Hill) roundabout north of the site and Andover Road/Harestock Road signal junction south of the site.

7.18 Other notable flow increases include: the city centre one-way system and some of its main approaches including Andover Road, Easton Lane, Romsey Road, and B3404 Alresford Road.

7.19 The PM peak displays a tidal impact compared to the AM Peak. Similarly to the AM peak, the largest changes in the PM peak are in the vicinity to the Bushfield Camp employment site. Notable increases in flow are also forecast near the Sir John Moore Barracks during the PM peak with Andover Road flows increases by up to approximately 130 PCUs in the southbound direction.

7.20 As illustrated on Figure 19, there are a total of seven junctions that meet the 'severe' criteria and 11 that are classed as 'significant' as defined above. All seven of the junctions classified 'severe' are to the south of the City of Winchester. Due to its location, it is considered that, in the absence of mitigation and a comprehensive Travel Plan being agreed for the site, the Bushfield Camp site and associated traffic is the likely cause of most of these severe impacts.

[31] Passenger Car Units (PCUs)

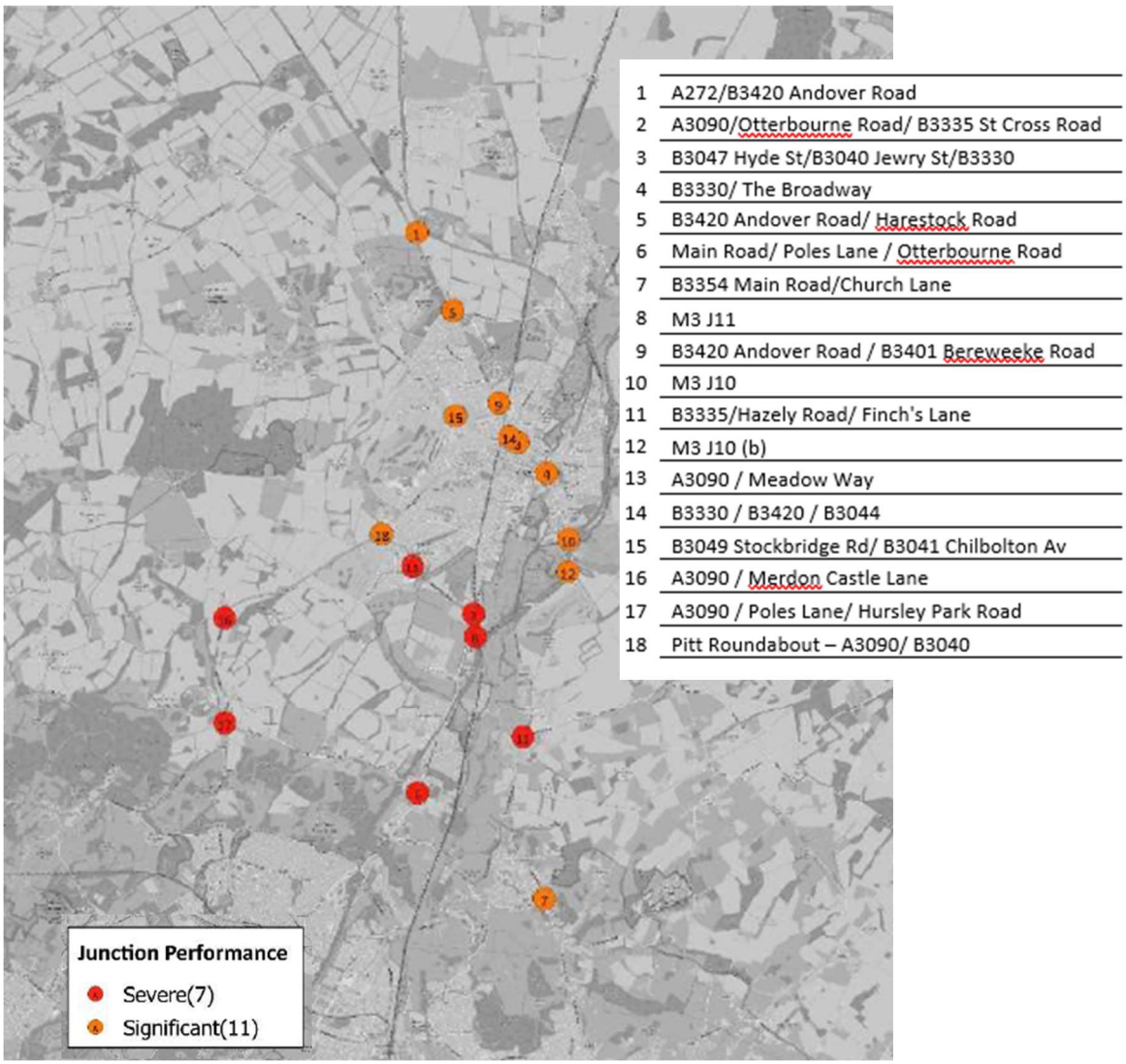


Figure 19 – 2041 DM vs 2041 Baseline 'Significant' and 'Severe' Impacted Junction Locations

Public Transport Passenger Flow

7.21 The PT passenger flow difference plots (the change in passenger volumes on PT services - rail and bus) follow a similar format to the highway flow difference plots with the value identified adjacent to the appropriate link.

7.22 For rail, passenger flow increases are forecast on both the Southampton mainline and the line branching off at Eastleigh towards Fareham. Where the lines converge, the maximum AM increase is approximately 130 passengers on the northbound section between Eastleigh and Winchester. In the PM peak hour, there are approximately 110 passengers making the reverse journey (southbound) on this section of the line.

7.23 For bus, the focus of passenger flow changes is primarily on the park & ride routes for Winchester City. The proposed P&R lite facility at Kings Barton plus existing sites at Bar End have increased passenger volumes. The South Winchester and Pitt sites have small reduction which is most likely the result of forecast highway delay increases in the vicinity to these sites particularly at the junctions of A3090 Badger Farm Road/ Hockley Link roundabout and Pitt Roundabout (Badger Farm Road/ Romsey Road) plus

the increased flows on Badger Farm Road itself. As buses on this route are for the most part mixed in with general traffic, the traffic congestion also increases the journey time for buses. It is noted in particular that the journey time increased for the routes through Otterbourne (Otterbourne Road) and Shawford (Shawford Road) when compared to the Baseline. This is primarily due to the lack of specific bus priority on either route, resulting in the bus services being exposed to the same delay increases as general motor traffic.

7.24 Route E1, adjacent to the South Winchester P&R site, has a notable passenger increase of approximately 190 passengers in the AM towards the City centre along St Cross Road. Due to the increased congestion on the P&R route, it appears passengers are using the parking facility at the South Winchester site but are then taking the E1 service towards the centre.

Road Safety

7.25 Traditionally, forecasting road casualty impacts of new road schemes has been based on a review of historical data and derivation of casualty rates with or without development at various locations on the network using the DfT Transport Analysis Guidance (TAG)[32] and the COBALT (Cost and Benefit to Accidents – Light Touch) software. This cost benefit analysis however is predicated on changes to vehicle kilometres travelled across a road network and does not reflect or quantify the potential impacts (beneficial or adverse) on other road users, such as pedestrians, cyclists or public transport passengers and their infrastructure networks.

7.26 A high-level spatial review of the location of existing casualties (within the last five years) against the proposed Local Plan allocations was nevertheless undertaken, as summarised in Table 4, to identify potential areas of the network where an existing road safety issue may already be present. HCC, as the highway authority, has confirmed that there are currently no specific road safety schemes for consideration at these locations at the present time.

Table 4 - Summary of casualty locations in the vicinity of LP site allocations

Site Ref	Site Name	Settlement	No of collisions within 250m		
			Fatality	Serious	Slight
W01	Barton Farm MDA	Winchester Town	1	5	8
W02	Sir John Moore Barracks	Winchester Town	0	1	8
W03	St Peter's car park	Winchester Town	0	4	8
W04	Land West of Courtenay Rd	Winchester Town	0	0	0
W05	Bushfield Camp	Winchester Town	0	2	10
W06	Winnall	Winchester Town	0	7	43
W07	Central Winchester Regeneration Area	Winchester Town	0	8	28

[32] Department for Transport TAG Unit A4.1 Social Impact Appraisal https://www.gov.uk/government/publications/tag-unit-a4-1-social-impact-appraisal)

Site Ref	Site Name	Settlement	No of collisions within 250m		
			Fatality	Serious	Slight
W08	Station Approach Regeneration Area	Winchester Town	1	12	26
W09	Bar End Depot	Winchester Town	0	3	4
W10	Former River Park Leisure Centre	Winchester Town	0	3	4
W11	University of Winchester/Royal Hants County Hospital	Winchester Town	0	1	12
SH1	West of Waterlooville MDA	WoW	0	2	17
SH2	North Whiteley MDA	Whiteley	0	1	6
SH3	Whiteley Green	Whiteley	0	1	1
SH4	Solent Business Park	Whiteley	0	3	12
SH5	Little Park Farm	Whiteley	0	1	8
BW1	The Vineyard/Tangier Lane	Bishop's Waltham	0	0	0
BW2	Albany Farm	Bishop's Waltham	0	0	6
BW3	Tollgate Sawmill	Bishop's Waltham	0	0	6
BW4	Land north of Rareridge Lane	Bishop's Waltham	0	0	0
CC1	Clayfield Park	Colden Common	0	0	5
CC2	Colden Common Farm	Colden Common	0	0	5
CC3	Land at Main Road	Colden Common	0	0	1
CC4	Land adjoining 85 Church Lane	Colden Common	0	0	1
KW1	Cornerways and Merrydale	Kings Worthy	0	0	0
KW2	Land adjoining the Cart and Horses PH	Kings Worthy	1	2	12
NA1	The Dean	New Alresford	0	2	1
NA2	Sun Lane	New Alresford	0	0	0
OT01	Land East of Main Road	Otterbourne	0	0	3
SW01	Land at West Hill Road North	South Wonston	0	0	0
SW1	The Lakes	Swanmore	0	2	2
WC1	Morgans Yard	Waltham Chase	0	0	1
WK1	Winchester Road and Mill Lane	Wickham	0	1	1
WK2	The Glebe	Wickham	0	7	13
WK3	Welborne Open Space	Wickham	0	3	8
WK4	Ravenswood	Wickham	0	0	0

7.27 Although a more in-depth analysis would be required to correlate a specific environment to casualty types, Table 4 clearly indicates that the majority of historical casualties occurred within the urban area of Winchester, where the risk of conflict between road user types is likely to be greater than in rural areas due to the higher number of people and vehicle movements. While it would be simple to assume that an increase or decrease in motorised movements from a specific development would result in an equivalent increase or decrease in casualty rates, this would fail to take account of the specific contributory factors of casualties at a particular location. Some will relate to human behaviour (failing to look properly, inappropriate speed, driving under influence, etc.) whilst others may relate to road conditions or layout. It would also be difficult to attribute any change in road safety conditions to individual sites

given that the SRTM assesses the cumulative impact of the Local Plan growth, including re-assignment of traffic between corridors based on estimated delay in the highway peak periods.

7.28 The standard process to review and address any such impacts would therefore be through future site-specific transport assessments through the planning process. In the case of sites with resolution to grant, this process will already have been undertaken.

Summary

Do-Min vs Baseline

Based on the SRTM modelling the Bushfield Camp development site to the south of Winchester City has the biggest cumulative impact on traffic flows in the district with significant additional vehicle trips to and from the zone. The site is accessed from Badger Farm Road and there are projected additional delays and congestion particularly at the junctions on either end of this road (junctions with Romsey Road and Hockley Link) and the northbound off-slip of M3 J11. In addition, there is rerouting of trips away from the Bushfield Camp area using routes such as Poles Lane.

Although the Sir John Moore Barracks site to the north of the City will be required to route via the Kings Barton development following closure of Andover Road in the area, the site also has an impact on highway flows on Andover Road, beyond the point of the proposed road closure, with increases in flows of more than 100 PCUs in both directions in the AM and PM peaks. There are also general increases in traffic through the centre (via the one-way system) of Winchester City.

A total of 140 junctions within Winchester district are forecast to operate with a V/C greater than 85%. This is an increase of 4 junctions across the district in comparison to the 2041 Baseline. Of those 140 junctions, it is forecast that 11 junctions will experience a 'significant' impact and 7 junctions a 'severe' impact in comparison to the 2041 Baseline. The 'severe' sites are all located to the south of the City, and it is considered that in the absence of any mitigation and a comprehensive Travel Plan being agreed for the site, the Bushfield Camp employment site is the main contributing factor to this.

The list of 18 junctions forecast with either 'significant' or 'severe' impact were recommended to form the starting point for more detailed review and development of potential mitigation measures in consultation with the Highway Authorities.

8. Mitigation and infrastructure measures

Approach to mitigation

8.1 This section provides a summary of the approach to mitigation and identifies the measures that may be required to address the identified impacts resulting from the proposed Local Plan growth i.e. the difference between the baseline and Do-Minimum scenarios.

8.2 As detailed in Section 3, the approach taken in this STA has been to decide on what the transport provision within the district looks like so that the objectives of the STA, to encourage local living, create healthy places and streets and develop strategic connectivity (Figure 2), are achieved. This means that the transport interventions considered to mitigate the cumulative impacts of the Local Plan allocations have been broadened to a wider range of measures than traditional highway capacity improvements.

8.3 In the first instance, any transport mitigation should seek to reduce the need to travel and enable the uptake of active travel and public transport, in line with HCC's LTP4 vision and objectives.

8.4 Increases in highway capacity will only be considered as a last resort to further mitigate any residual impacts, but the focus will be on improving the network for road users in line with the LTP4 road user utility framework; i.e. people walking and wheeling first, then public transport users, then single car-occupiers .These measures are required because levels of traffic congestion on many parts of the district's road network are such that they prevent the achievement of the above STA objectives, and there is insufficient physical space to overcome these problems through simple engineering efforts such as increased capacity or basic bus priority measures.

8.5 This STA has followed the three-step process detailed in Figure 20 for each of the Local Plan allocation policies that have been taken forward for assessment in the SRTM. This approach considers a range of mitigation on a site-by-site basis and has informed amendments to policy of the emerging Local Plan.

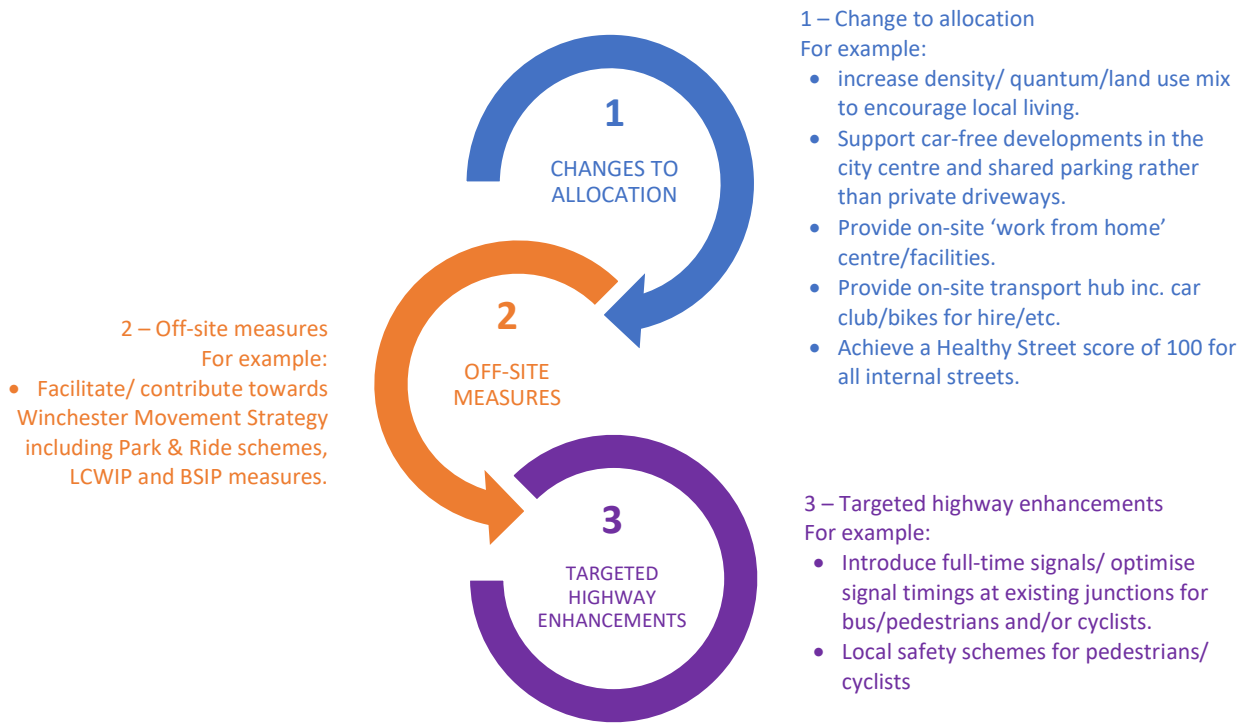


Figure 20 – Mitigation Priorities

Limitations of the SRTM

8.6 While the SRTM has been used to quantify the transport impacts of the Local Plan growth on the transport networks, the following limitations of the model restrict the assessment to that of the physical interventions proposed (the targeted highway and public transport infrastructure schemes).

- Measures to reduce trips rates including connectivity improvements and the mandated use of travel plans have not been included.
- Measures such as car free development in the city centre could not be tested as the allocations do not sit within their own model zones, and the cost of adding these new zones was not proportionate to the scale of development.
- Measures such as increased walking and cycling resulting from improvements in associated infrastructure have also not been modelled as evidence to support these is not available in a suitable form for the model.

8.7 As such, the results presented in the following section should be taken as representing the worst-case scenario of the cumulative Local Plan growth on the transport networks within the district.

8.8 It is expected that, as part of any planning application, new developments will need to consider a package of transport measures in accordance with the above mitigation priorities approach (Figure 20) and the draft Policies of the Local Plan (Table 5) and will be required to prepare site specific transport assessments to consider how best to reduce reliance on trips made by private car and assess how their impacts could be mitigated e.g. through contributions to public transport networks, and walking and cycling networks. This may result in additional and/or alternative targeted highway schemes than those assessed by this STA.

Table 5 – WCC Local Plan Draft Transport Policies

Draft Policy – WCC Reg 18	Example of mitigation measures to be considered:
Strategic Policy T1 sustainable and active transport and travel	• Land mix and development density related to spatial criteria to minimise need for travel; • Adopt the concept of 20-minute neighbourhoods; • Adopt and implement Travel Plans; • Support delivery of the LCWIPs; • Provide high quality public realm and landscape design; • Include suitable infrastructure for EV charging; and • Include financial contributions towards improvements to infrastructure in the wider district.
Policy T2 Parking for New Developments	• Support 'car-free' developments in city centre locations or where located within easy walking distance of a range of services and facilities; • Minimise on-site car parking provision; • Provide high quality, secure and undercover cycle parking provision and associated facilities to encourage cycling and other forms of e-mobility; and • Introduce transport hubs for last mile delivery by sustainable transport.
Policy T3 Promoting sustainable travel modes of transport and the design and layout of parking for new developments	• Priority parking for active and e-mobility travel and car clubs; • Include cycle parking and facilities that meet local parking standards and guidance; • Include charging facilities;
Policy T4 Access to New Developments	Improvements to existing infrastructure or new access to be prioritised based on Road User Utility Framework, putting pedestrians, cyclists and public transport users' safety and convenience first.

8.9 Notwithstanding, the SRTM has been used to test the residual impact of the Do Something scenario at a macro-level. From this strategic model, a number of junctions have been identified where the Do Something is predicted to produce a significant or severe impact on capacity over the baseline and Do Minimum situations.

Review of DM Junction Performance

8.10 The list of 18 junctions defined as experiencing a 'severe' or 'significant' impact on junction performance following the SRTM DM scenario (detailed in Section 7) was reduced to 12. Junctions that did not meet this secondary set of criteria were considered to have acceptable impacts:

- Junction approaches with delays of over 10s per vehicle, unless;
- Traffic queues block back across the next junction, or where there are;
- Very high flows (defined as flows over 850 vehicles per approach)

8.11 Potential mitigation measures for the 12 junctions identified were discussed with the relevant highway authorities to agree which impacts were acceptable, which could not be mitigated, and which would (or would not) comply with LTP4 and vision of this TA. These discussions resulted in 3 junctions being taken forward for highway mitigation, as shown on Figure 21.

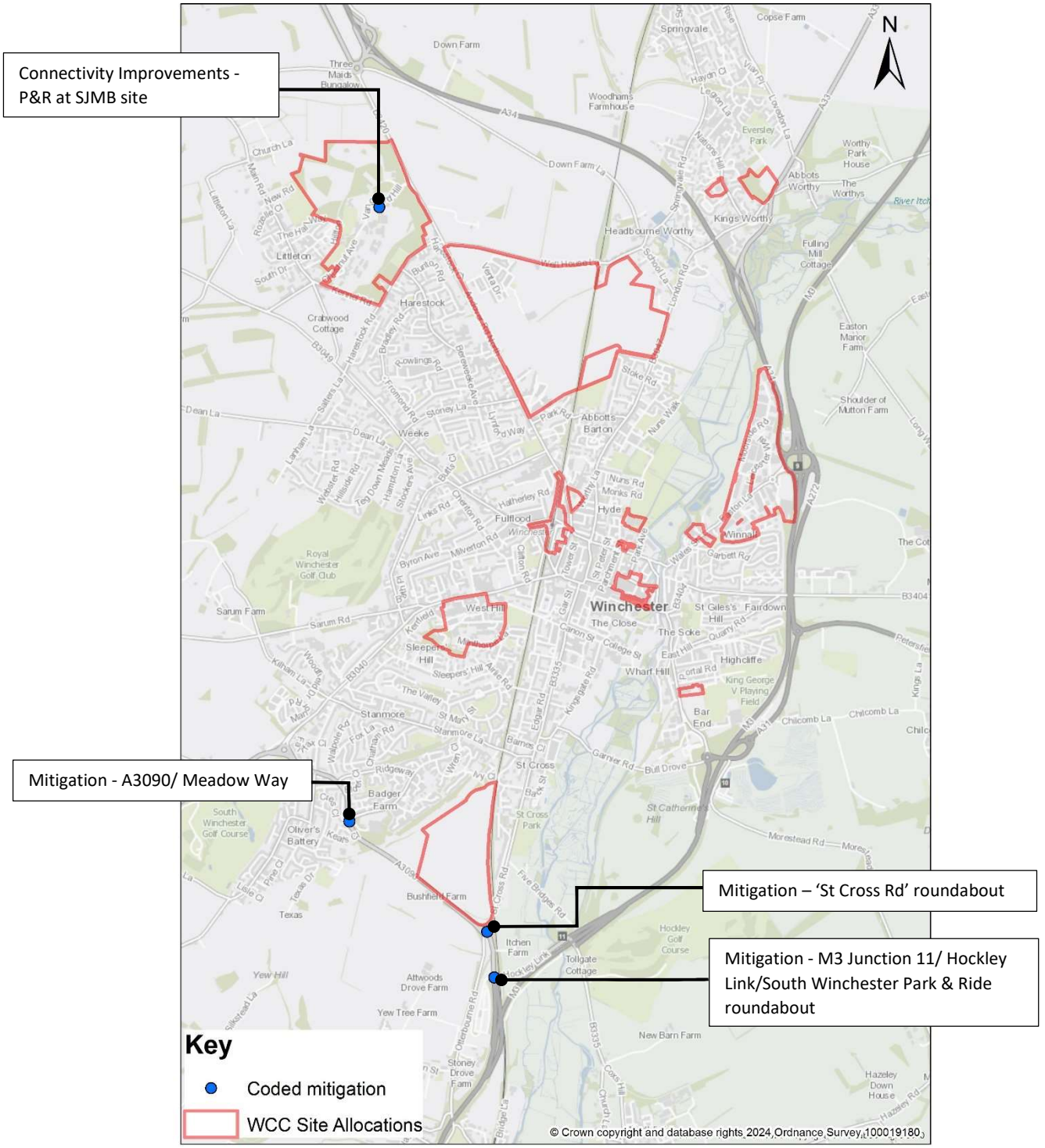


Figure 21 – Location of proposed mitigation/connectivity improvements in relation to Local Plan allocations

8.12 Table 6 provides a summary of those discussions for each junction, with the three locations identified for highway mitigation highlighted in green.

Table 6 – Summary of Mitigation Review of the 12 Do Minimum Junctions

ID	Junction	Approach Arm	Type[(1)]	Proposed Mitigation agreed with Highway Authorities
1	A272/B3420 Andover Road	Down Farm Lane	R	NO – Delays are expected but would not affect bus services. A modal filter may be considered on Down Farm Lane in future but no further mitigation necessary at this stage.
2	A3090/Otterbourne Rd/B3335 St Cross Rd	A3090 (N) and Otterbourne Rd	R	YES – Signalisation of roundabout proposed with P&R services to be provided with bus priority.
3	B3047 Hyde St/ B3040 Jewry St/ B3330	B3047 Hyde St	S	NO - Delays acceptable to the HAs. In addition, city centre sites are proposed as "car free" or "low car" development which could not be tested in the SRTM.
5	B3420 Andover Rd/ Harestock Rd	Harestock Rd and B3420 (S)	S/P	NO – targeted highway mitigation not compliant with policy in city centre location. The introduction of the P&R site at SJM Barracks site (which will be tested) may improve this junction.
6	Main Road/ Poles Lane/Otterbourne Rd	Otterbourne Rd	R/P	NO - Mitigation suggested for Jct ID 2 expected to have a beneficial impact at this location so no additional mitigation proposed.
8	M3 J11/ Hockley Link	Hockley Link	R	YES – increased northbound capacity and lane allocation adjustments are proposed.
11	B3335/Hazely Rd/ Finch's Lane	Finch's Lane and B3335 High St (S)	S	NO – no policy compliant mitigation possible, and therefore, delays acceptable to the HAs.
12	M3 J10(b)	M3 SB Main carriageway	R	NO - Delays acceptable to the HAs.
13	A3090/ Meadow Way	Badger Farm (N)	R	YES – New flared lane on A3090 SB approach proposed.
14	B3330/B3420/B3044	B3420 Sussex St (S)	S	NO – targeted highway mitigation not compliant with policy in city centre location. In addition, city centre sites are proposed as "car free" or "low car" development which could not be tested in the SRTM.

ID	Junction	Approach Arm	Type[(1)]	Proposed Mitigation agreed with Highway Authorities
16	A3090/ Merdon Castle Lane	A3090 (N)	P	NO - Delays acceptable to the HAs.
17	A3090/ Poles Lane/ Hursley Park Rd	A3090	S	NO - Mitigation suggested for Jct ID 2 expected to have a beneficial impact at this location so no additional mitigation proposed.

(1) S signalised junction; P priority junction; R roundabout

8.13 Details of the mitigation schemes taken forward are summarised below.

- A3090 Badger Farm Road/Meadow Way/Sainsburys/Parliament Way roundabout – the Badger Farm Road southbound approach has been widened to two lanes and the southern Badger Farm Road exit widened from a single lane to two lanes to allow the main north to south traffic movement to use both lanes around the roundabout. The other arms remained unchanged.

- A3090 Badger Farm Road/St Cross Road/Hockley Link/Otterbourne Road St Cross Rd roundabout – the mitigation option tested is similar to a proposal submitted by Pell Frischman on behalf of the applicant to Hampshire County Council in support of the Bushfield Camp planning application. Changes to the SRTM were made to reflect proposals for an enlarged partially signalised roundabout with widening of the circulatory carriageway and increased flaring on many approaches. Only the Otterbourne Road arm would remain as a give way entry on to the roundabout.

- M3 Junction 11/Hockley Link/South Winchester Park and Ride roundabout - The mitigation tested is similar to a proposal submitted by Pell Frishman on behalf of the applicant to Hampshire County Council in support of the Bushfield Camp planning application and involves realignment of the existing roundabout slightly to the west. The only associated change in geometry to be included in the SRTM DS is an increased flare length on Hockley Link east.

8.14 Prior to including the above in the SRTM for the DS scenario, the mitigation proposed at the three junctions was initially tested using local junction models (Linsig3 for signalised junctions and Arcady Junction 9 for roundabout junction) to provide a more accurate predictions of potential delays at these locations.

8.15 The Arcady model presents results as an indication of theoretical Ratio of Flow over Capacity (RFC), which provides a measure of the utilised capacity of a junction approach arm. Arms exceeding a ratio of 0.85 (i.e. 85% capacity utilised) are considered to be approaching capacity and characteristically have light-to-moderate levels of queued traffic flow. The Linsig model presents results as Practical Reserve Capacity (PRC), which is a measure a measure of how much additional traffic could pass through a junction whilst maintaining a maximum degree of saturation of 90%

on all lanes. Negative (figures below zero) PRCs show that the junction is congested, and queues will form.

8.16 The results of this additional local junction modelling indicated the following:

- A3090 Badger Farm Road/Meadow Way/Sainsburys/Parliament Way roundabout - the Arcady model indicates that the proposals at this location would satisfactorily mitigate the 2041 AM peak Do Minimum capacity issues on the Badger Farm Road southbound approach, with Ratio of Flow to Capacity (RFC) of 0.81 in the 2041 AM peak and of 0.34 in the PM peak, which would be within capacity.
- A3090 Badger Farm Road/St Cross Road/Hockley Link/Otterbourne Road 'Bushfield roundabout' – the Linsig3 results indicate that the proposal to partially signalise the roundabout could comfortably accommodate the 2041 Do Minimum traffic flows in both the AM and PM peak, with a PRC of 17.3% and 14.6% respectively.
- M3 Junction 11/Hockley Link/South Winchester Park and Ride roundabout - The Arcady model results indicate that the proposed realigned roundabout would be able to accommodate the 2041 Do Minimum traffic flows within capacity, with the Hockley Link north arm operating with an RFC value of 0.76 in the AM peak and of 0.78 in the PM peak, which would be within capacity.

8.17 In addition to the above three junctions, the Do Something (DS) scenario also includes the introduction of a new Park & Ride site of 850-spaces with bus services to Winchester city centre at the Sir John Moore Barracks site, in accordance with draft Policy W2 of the Local Plan. The bus route will also incorporate the Kings Barton P&R facility and will provide bus services every 10 minutes in the peaks and every 15 minutes in the interpeak/off-peak.

8.18 Further details of the modelling of the proposed highway mitigation measures are available in the SYSTRA report (Appendix B).

9. Do Something modelling results

Introduction

9.1 The above mitigation measures have been included in the SRTM to provide the 2041 Do Something (DS) scenario, with full details of the modelling and residual impacts of the mitigation measures presented in the next section and the SYSTRA SRTM Modelling Report. As agreed with the local highway authorities, these mitigation measures are presented as worst-case options with trip reduction, active travel and public transport solutions to be sought first.

9.2 The nature of the SRTM means that where additional capacity is introduced on a modelled network that is operating under unconstrained demand, re-routing of traffic occurs and released capacity often attracts traffic demand from other routes or modes (known as induced demand). This can reduce the benefits of mitigation schemes in terms of junction performance. The observed forecast traffic flow increases at the locations where mitigation measures have been implemented to alleviate capacity issues are due to this phenomenon. This can also result in congestion points elsewhere on the network that are not forecast in the earlier DM model. This re-assignment of traffic is representative of actual changes in driver behaviour when deciding to avoid a congested route and, whilst several factors other than driver delay can affect route choice, traffic re-assignment within the network is an expected knock-on effect of the model.

9.3 Details of knock-on effects resulting from the potential mitigation measures elsewhere on the network are explored later in this section and the results from the SRTM summarised in the following paragraphs should not be taken in isolation but in context of the above.

Do something vs Baseline

9.4 To provide a comparative assessment of the mitigation measures, the results of the DS model have been compared those of the Baseline scenario rather than against the DM model. This is to understand the wider implications of the mitigation measures across the network. Where mitigation measures increase highway capacity, and potentially attract further traffic, the expected reduction in delay from the mitigation may be dampened or absorbed entirely by the impact of the increased traffic volume. In addition, the provision of traffic signals will inherently produce an element of delay due to the red signal periods and for certain traffic movements this may be greater than the scenario without the signals, particularly in time periods where capacity or congestion issues are not present / forecast.

Total Person Trips and Mode Share

9.5 As highlighted in Table 7, the mode share for the Do-Something scenario remains similar to the Baseline (and DM) scenario. In the DS, there is a very small increase in

PT mode share at the expense of highway compared to the baseline, but Active Travel remains unchanged.

Table 7 – Person Trip to/from Winchester district – 2041 DM vs Baseline

Scenario		From Winchester			To Winchester		
		Highway	Public Transport	Active modes	Highway	Public Transport	Active modes
Absolute	2041 Baseline	328,663	18,376	75,329	323,730	18,761	75,370
	2041 DS	360,055	21,029	82,824	354,735	21,401	82,866
	Difference	31,392	2,653	7,496	31,005	2,640	7,496
Mode Share (%)	2041 Baseline	77.8%	4.4%	17.8%	77.5%	4.5%	18.0%
	2041 DS	77.6%	4.5%	17.9%	77.3%	4.7%	18.1%
	Difference	-0.2%	0.2%	0.0%	-0.2%	0.2%	0.2%

Highway Network Performance

9.7 In terms of network performance statistics, the mitigation included in the DS has had a broadly similar effect on both peak periods, with the total vehicle kilometres driven in Winchester District forecast to increase by approximately 1.5% in both the AM and PM peak hours. Average vehicle speed is forecast to decrease by approximately 1.5% and 3% in the AM and PM peaks respectively. The pattern of these changes is similar to the Do Minimum vs Baseline comparison but the scale of increase for vehicle hours and vehicle kilometres is slightly greater in the Do Something. This can be attributed to the highway mitigation facilitating/ attracting more highway trips.

9.8 The impact on the wider, full Core model area is again considered small/negligible.

9.9 As with the Do-Minimum (DM), all of the junctions identified as experiencing a 'significant' or 'severe' impact are located in the Winchester Town Area, reflecting WCC's spatial strategy of locating the majority of new development in and around Winchester. In terms of comparison between the DS and DM scenarios, the difference is small with 21 junctions identified as experiencing a 'severe' or 'significant' impact when compared with the original 18 in the DM. It is recognised that this increase is mainly due to the induced demand phenomenon, where additional capacity is introduced on a modelled network that is operating under unconstrained demand, re-routing of traffic occurs and released capacity often attracts traffic demand from other routes or modes.

9.10 The outputs reported in the sections below focus more specifically on the locations where mitigation has been included.

Highway Link Flows, Delays and Capacity Hotspots

9.11 The network in the immediate vicinity to the Bushfield Camp allocation continues to show the highest flow increases. Following the inclusion of the mitigation, the improved performance of the St Cross roundabout in particular has reduced traffic

using the back roads between Otterbourne Road and A3090 with more traffic now using Badger Farm Road. Traffic on St Cross Road has increased because of the improvements tested at the St Cross Roundabout. This has the effect of putting additional pressure on a number of side road junctions along St Cross Road.

9.12 The new P&R site at Sir John Moore Barracks (SJMB) allocation is helping reduce traffic flow beyond the site towards the city centre but it is also increasing traffic on the section of Andover Road North between the P&R site and the A34, as a result of traffic using this road to access the parking at the P&R site.

9.13 The highway mitigation schemes at St Cross roundabout, M3 J11 NB offslip/ Hockley Link and Badger Farm Road/ Meadow Way have reduced some of the larger delays that were present in the Do Minimum scenario. However, the traffic that has reassigned as a result of mitigation is resulting in a high delay increase of 142s (AM peak) on the B3335 at the signal junction with the M3 J11 S/B, and a further high delay increase of 189s (AM peak) on Shawford Road at the junction with Otterbourne Road. In the PM peak, the Finch's Lane approach to the signal junction with B3335 has a high delay increase of 207s.

9.14 Based on the first set of criteria (para 7.13), there are a total of eight junctions that meet the 'severe' change criteria and a further 13 that are classified as 'significant' in the Do Something scenario, as illustrated on Figure 22. The total of 21 junctions includes eight junctions that were not previously flagged in the Do Minimum. There are also five junctions that were previously flagged in the Do Minimum that are no longer triggering either threshold, these include the St Cross roundabout, Pitt roundabout, Hyde Street/Jewry Street, Andover Road/Bereweeke Road and the M3 J10b. As with the DM, all but one of the junctions classed as 'severe' are to the south of the City of Winchester, as shown in Figure 22.

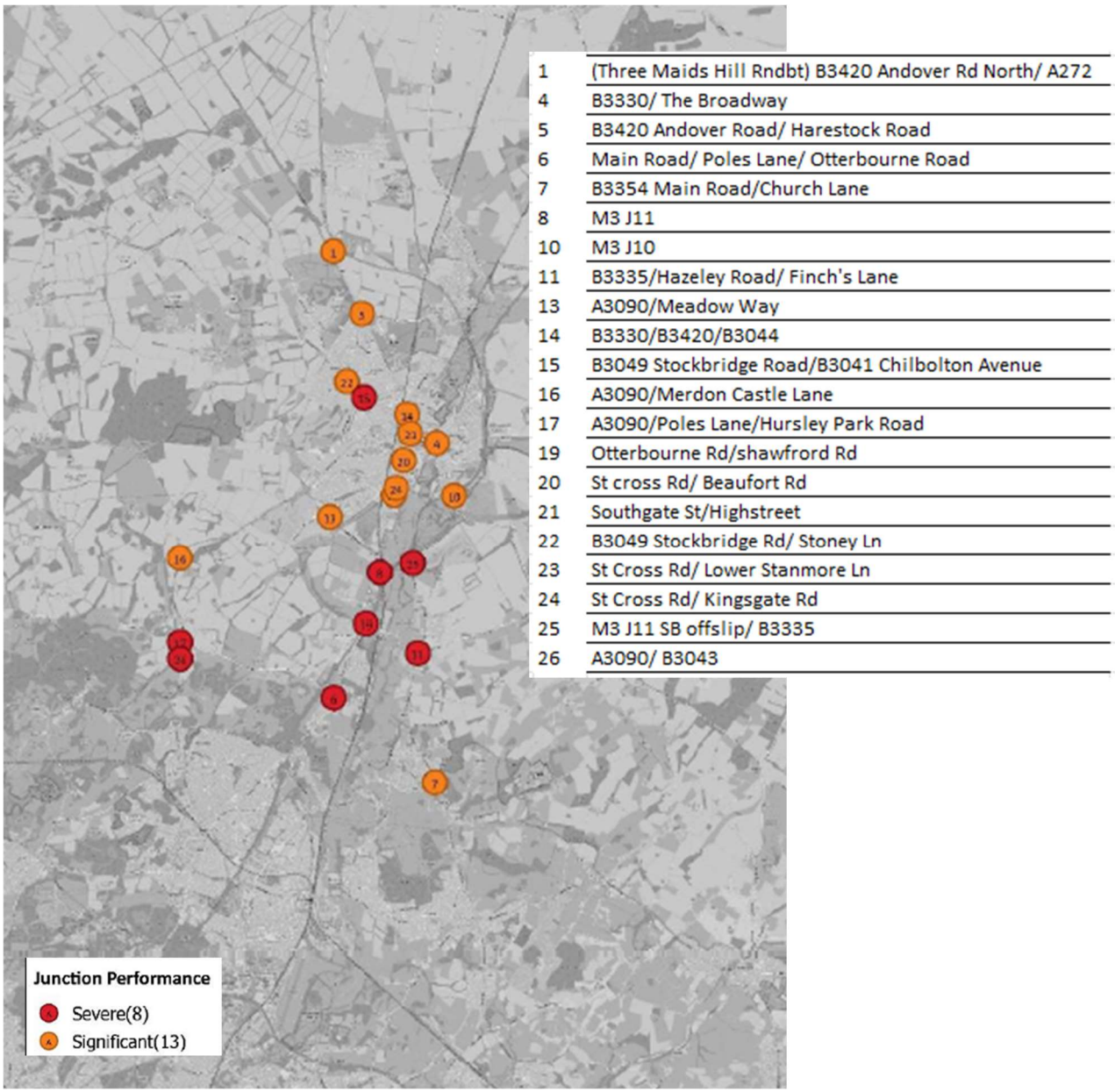


Figure 22 - 2041 DS vs 2041 Baseline 'Significant' and 'Severe' Impacted Junction Locations

9.15 Due to its location, it is considered that, in the absence of mitigation measures other than the tested highway capacity improvements, the Bushfield Camp site and associated traffic remain the likely primary cause of the majority of the impacts to the south of the city. This is one area where, through the application of the mitigation priority approach detailed on Figure 20 previously, changes to Policy W5 of the emerging Local Plan have been agreed with WCC for inclusion in the Regulation 19 Local Plan.

9.16 With regard to the impact of the highway mitigation schemes assessed in the DS, the proposed improvements at Badger Farm Road/ Meadow Way roundabout and the Hockley Link/ M3 J11 roundabout have resulted in improved performance but the additional traffic now using both junctions (resulting from the St Cross roundabout improvements) means the junctions are still triggering significant and severe thresholds respectively. At the Meadow Way roundabout, the northbound approach

is now flagged as significant (as opposed to the southbound approach in the DM). At Hockley Link/ M3 J11, the southbound approach of Hockley Link is still flagged as severe, but all other arms are below the thresholds.

9.17 As noted in Chapter 8, the capacity hotspot criteria used in this analysis are not the only measure by which junction/ network performance or scale of impact associated to transport growth can be classified. They are considered a starting point (consistent with other SRTM commissions) for comparison of network performance from which subsequent more detailed assessment may refine those locations considered most impacted.

Public Transport Passenger Flow

9.18 For rail, passenger flow increases are forecast on both the Southampton mainline and the line branching off at Eastleigh towards Fareham. Where the lines converge, the maximum AM increase is approximately 105 passengers on the northbound section between Eastleigh and Winchester. In the PM peak hour, there are also approximately 105 passengers making the reverse journey (southbound) on this section of the line. This rail demand is slightly lower than the comparable movements in the Do Minimum. This is most likely the result of the highway mitigation proposals at the St Cross roundabout and M3 J11 N/B off-slip junction increasing the relative attractiveness of car trips approaching Winchester City from the south.

9.19 For bus, and similarly to the Do Minimum, the focus of passenger flow changes in the Do Something is primarily on the Park & Ride routes for Winchester City. The new P&R facility at the SJMB, included in the DS SRTM, is increasing bus ridership on the northern side of the city. In combination with the Kings Barton P&R site, there is an approximate 135 passenger increase towards the city in the AM peak hour and approximately 150 out of the city centre in the PM peak hour. Route E1, adjacent to the South Winchester P&R site, continues to have a notable passenger increase of approximately 125 passengers in the AM peak hour towards the city centre along St Cross Road from the Baseline.

Road Safety

9.20 As with the DM scenario, the standard process to review and address impacts on road safety would be through future site-specific transport assessments through the planning process. In the case of sites with resolution to grant, this process will already have been undertaken.

10. Knock on impacts

10.1 The improvements made in the mitigation package have resulted in some rerouting of traffic on certain routes. Unsurprisingly, the P&R site at SJMB, in addition to the P&R lite at Kings Barton, will also attract additional traffic on their access corridors but this will be balanced with reductions in traffic levels into the city centre beyond these sites, as well as an increase of public transport passenger numbers into the city.

10.2 There are eight junctions not previously identified as having "significant" or "severe" impacts in the DM but seven of these were already operating at or close to capacity in both the Baseline and DM without triggering the 'significant' or 'severe' thresholds. New junctions triggering one of the criteria are not unexpected due to the incorporated mitigation measures potentially releasing bottlenecks that then impact downstream locations or cause changes to the assignment of vehicles through the network. It is also noted that this analysis is in the context of 140 junctions across the district already experiencing delays in the Baseline (i.e. V/C ratio of 85% or over). As such, even minor variations in traffic flows at these locations are likely to exacerbate delays and junction capacity. The 21 junctions identified as experiencing significant or severe impacts from the DS runs have been reviewed to determine if any additional mitigation is necessary.

10.3 Furthermore, the overall results for the 21 junctions were reviewed against the second set of criteria set out in para 8.10 and discussions to share these results with the HA (HCC and NH) were held. Table 8 provides a summary of those discussions for each junction, with the eight junctions previously not targeted for mitigation in the DM highlighted in light grey.

10.4 It is noted that, in respect of the Bushfield Camp allocation (draft Policy W5), the HAs provided their response in light of separate discussions being held with the developers of the site as part of the ongoing planning application process. Specifically, the HAs' response is subject to the outcome of a VISSIM model that is being developed by the developers to demonstrate that their proposals can satisfactorily be accommodated on the network. At the time of writing, it is understood that the applicant has submitted this VISSIM modelling to the Highway Authorities for their review. Notwithstanding, HCC has agreed the recommendations to the respective policy wording for the Bushfield Camp allocation, as well as SJM barracks.

Table 8 – Summary of Review of the 21 DS Junctions

ID	Junction	Approach Arm	Type[(1)]	Summary of the HAs' positions at each junction
1	A272/B3420 Andover Road	A272 (W)	S	DS mitigation supported. No further mitigation proposed.
4	B3330/The Broadway	Andover Rd (N)	S	Delays acceptable to the HAs. No further mitigation proposed
5	B3420 Andover Rd/ Harestock Rd	Harestock Rd	P	DS mitigation supported. No further mitigation proposed.

ID	Junction	Approach Arm	Type[1]	Summary of the HAs' positions at each junction
6	Main Road/ Poles Lane/Otterbourne Rd	Main Rd	R	Additional mitigation recommended – signalisation not supported but options to alter existing roundabout to reduce delay for buses supported.
7	B3354 Main Road/Church Lane	Main Rd (S)	R	Delays acceptable to the HAs. No further mitigation proposed
8	M3 J11/ Hockley Link	Hockley Link	R	Subject to outcome of VISSIM model
10	M3 J10	Bull Drove	R	Delays acceptable to the HAs. No further mitigation proposed
11	B3335/Hazely Rd/ Finch's Lane	Finch's Lane and B3335 High St (S)	S	Additional mitigation recommended – signal optimisation and active travel enhancements
13	A3090/ Meadow Way	Badger Farm (S)	R	Subject to outcome of VISSIM model
14	B3330/B3420/B3044	B3330 City Rd and B3420 Sussex St (S)	S	Low/no car city centre sites supported. No further mitigation proposed.
15	B3049 Stockbridge Road/B3041 Chilbolton Avenue	All	R	Delays acceptable to the HAs. No further mitigation proposed
16	A3090/ Merdon Castle Lane	A3090 (N)	P	DS mitigation supported. No further mitigation proposed.
17	A3090/ Poles Lane/ Hursley Park Rd	A3090	S	Additional mitigation recommended – signal optimisation and active travel enhancements
18	Pitt Roundabout - A3090/B3040	A3090(W)	R	Delays acceptable to the HAs. No further mitigation proposed
19	Otterbourne Rd/Shawford Rd	Shawford Rd	P	Subject to outcome of VISSIM model
20	St Cross Rd/ Beaufort Rd		P	Delays acceptable to the HAs. No further mitigation proposed
21	Southgate St/ High St	Southgate St	S	Delays acceptable to the HAs. No further mitigation proposed
22	B3049 Stockbridge Rd/ Stoney Ln	Stockbridge Rd (E)	R	Delays acceptable to the HAs. No further mitigation proposed
24	St Cross Rd/ Lower Stanmore Ln	St Cross Rd (S)	P	Delays acceptable to the HAs. No further mitigation proposed
25	St Cross Rd/ Kingsgate Rd	Kingsgate Rd	P	Delays acceptable to the HAs. No further mitigation proposed
26	M3J11 SB offslip/ B3335	M3J11 offslip and B335(S)	S	Additional mitigation recommended – signal optimisation
27	A3090/ B3043	A3090(W)	S	Additional mitigation recommended – signal

ID	Junction	Approach Arm	Type(1)	Summary of the HAs' positions at each junction
				optimisation and active travel enhancements

S signalised junction; P priority junction; R roundabout

10.5 Aside from five junctions where additional mitigation would be supported by the HAs, they confirmed that they did not have concerns that the remaining 16 locations would affect bus routes or result in unacceptable levels of delays and blocking back, leading to a focus for trip reduction, active travel and public transport mitigation in all locations. Measures to support access by local bus (such as bus priority and bus infrastructure), active travel (such as walking and cycling schemes) and place-making (such as 20-minute neighbourhoods) will be considered. The BSIP and Winchester LCWIP contain details of proposed measures.

Monitor & Manage

10.6 It should be acknowledged that the above conclusions were drawn based on unconstrained[33] traffic growth to 2041 to reflect a worst-case scenario. It is entirely possible that some of the forecasted demand may not materialise in the modelled time periods due to travellers avoiding congestion by altering their route, travelling at a different time of day ('peak-spreading') or choosing to travel to/from a different location. The modelling undertaken, and therefore the conclusions drawn also do not take account of the impact of HCC's LTP4 Vision and Objectives that seek to increase active travel and public transport use in future as well as other national and local interventions and strategies, including new technology, to reduce carbon emissions from transport. The long-term impact of these policies on travel demand is currently unknown.

10.7 In addition, the assessment considers all travel demand (demand flows in traffic modelling terms) that intend to go through individual junctions and assumes all this travel demand can reach the specific junction during the modelled time period. It is commonly recognised that some of the travel demand may not materialise in the modelled hours due to congestion elsewhere in the network, which leads to lower actual flows that arrive during a given period.

10.8 The mitigation suggested in this STA will therefore require further refinement or investigation in close liaison with HCC and NH when developments in the Local Plan come forward in the future. The preference before highway mitigation is considered will be to maximise measures to reduce the need to travel and increase active modes and public transport use. Whilst suggestions have been made in this STA, the final design and implementation of mitigation measures will be determined by HCC as the

[33] In the SRTM unconstrained demand means that the decision to travel by car will not be constrained by other factors such as cost of travel (fuel, parking, time) comfort and safety factors or road quality. This does not imply capacity constraints along the network will not affect route choice but simply that any road users wishing to access the local highway network during a specific time can do so unconstrained.

Highway Authority as part of any review of Transport Assessments to be submitted in support of planning applications.

10.9 Specifically, and as detailed previously, although this STA has relied on the SRTM strategic traffic model to assess the cumulative impact of the Winchester Local Plan, a 'Monitor and Manage' approach will need to be taken to mitigation in order to encourage investment into public transport and active travel first, and to only consider new highway capacity, when no other options are available and when the increase in capacity would not negatively impact on other modes. This will require the local planning and highway authorities to work together in responding to planning application submissions to ensure that these developments first seek to reduce travel demand, and secure investment in active travel and public transport infrastructure linked to Travel Plan monitoring of targets.

11. Funding and delivery of mitigation

High-level cost estimates of mitigation

11.1 The implementation costs for the mitigation detailed in Chapter 8 have been estimated based on preliminary designs with basic detail to indicate the likely costs of delivery. The estimate is built up using recent tendered rates from HCC's GEN-5-2 framework. Fees are estimated as a percentage based on HCC fees for similar sized projects, with £5 million being the threshold for adopting the lower rates.

11.2 An optimism bias has also been applied to the costs at 46% to cover unknowns. This is a mechanism to cover uncertainty and risks throughout design and delivery and is in line with the HM Treasury 'Green Book' guidance for a standard Civil Engineering projecting. This figure may be reduced after a robust project risk analysis and reduction process, as detail and certainty are increased.

11.3 Table 9 provides an indication of costs (rounded to the nearest £5,000) to implement the mitigation detailed in Chapter 8.

Table 9 – Indicative Costs of mitigation

Mitigation	Estimates (£)
A3090/ Meadow Way	£1,135,000
A3090/Otterbourne Rd/B3335 St Cross Rd	£10,130,00
M3 J11/ Hockley Link	£9,225,000

11.4 In addition to the costs above, a connectivity improvement of a c.850 space Park & Ride is proposed at the Sir John Moore Barracks Site. A previous scheme delivered by HCC at Winchester South site cost c.£6.5m in 2010. Any agreements around future applications will need to consider an updated figure.

11.5 Mitigation of the cumulative impact of the Local Plan is not solely limited to the above targeted schemes and is likely to include the implementation of the measures identified in BSIP and the LCWIPs. Indicative costs for these measures are or will be available when the associated documents are published.

Funding

11.6 The strategic nature of the modelling does not allow the identification of a link between the potential mitigation and specific Local plan allocation sites, as only the total cumulative impacts of the Local Plan developments and of the mitigation have been assessed at the end of the Plan period. Although, it is not unreasonable to note that the majority of impacts identified in the southern part of Winchester are likely as a result of the Bushfield Camp allocation (draft Policy W5), it is not possible at this stage to draw conclusions on possible development contributions towards the above mitigation, especially as these are also required to address issues arising from background growth and any contributions would need to be proportionate.

11.7 Furthermore, given that the implementation of highway capacity improvements forms part of a 'last resort' approach to mitigation, it is envisaged that the costs of the above mitigation could be used to secure alternative transport interventions to the active travel and public transport networks that have not been assessed in this STA to address the cumulative transport impact of the Winchester Local Plan.

11.8 Irrespective of priority, and where considered necessary following a review of mitigation works from subsequent individual planning applications, funding for the works identified in this STA will be secured in parts via Section 106 contributions based on the proportionate impact of individual development sites and upon review of the individual Transport Assessments/Statements to be submitted as part of any planning application for the sites.

Phasing

11.9 The potential infrastructure improvements modelled in this STA are based on assessments of the junction performance in the 2041 DS compared to the 2041 Baseline. However, in many cases all or part of the Local Plan growth is planned to come forward prior to 2041 and therefore mitigation may also be required prior to that date.

11.10 As the SRTM has not assessed the impact of the Local Plan growth in other years than 2041, it does not reflect the potential delivery phasing of the development sites. Furthermore, the DS model only assesses the impact of the mitigation as a single package of works, and it is not possible to specifically identify with any accuracy phasing of the mitigation or links to specific developments.

11.11 However, professional judgment has been applied to provide an indication of the relative importance of the successful implementation of the Local Plan. This is based on the performance of junctions with and without the Local Plan development growth and their location on the network. In respect of the proposed P&R at the SJMB site, if the introduction of this scheme is delayed, the predicted performance of junctions and the uplift in passenger numbers on bus services nearer the centre of Winchester is unlikely to materialise.

11.12 As a result, short-medium term implementation of the connectivity improvement mitigation(e.g. the P&R facility at SJMB site, BSIP and LCWIP schemes) would be required to affect changes in travel habits and behaviour as soon as possible, while implementation of the highway improvement mitigation would be required in the medium to long term and/or once the combined effect of other mitigation (reduced travel demand and promotion of active travel and public transport use) can be measured.

11.13 Notwithstanding the above phasing recommendations, it should be noted that, as detailed earlier in this chapter, the final design and implementation of mitigation measures will be determined by HCC as the Highway Authority and as part of any review of Transport Assessments to be submitted in support of planning applications in line with the 'Monitor and Manage' approach. This may mean that as

developments come forward, some junctions may require mitigation at an earlier stage than the end of the Local Plan period or the need for highway capacity mitigation required can be reduced.

12. Summary and conclusions

Approach to the STA

12.1 This Strategic Transport Assessment (STA) has been prepared to identify and describe the cumulative transport related impacts of the proposed Winchester Local Plan.

12.2 Major societal shifts and the increased use and availability of new technology may have had significant impact in the way we travel but the way we assess the effects of increasing travel demand and how we plan for the cumulative transport effects of development has undergone little significant change over the last 20 years. By the same token, it is difficult to forecast with any certainty the potential changes to travel demand by 2040, the end of the emerging Local Plan period, based on historical trends.

12.3 Following a comprehensive review of national, regional and local policy, and positive engagement with the Highway Authorities and ATE, a Vision-led approach has been taken in the preparation of this STA. This approach aligns with policy at all levels, which is aimed at facilitating sustainable development to support population and economic growth, with an emphasis on reducing travel demand and enabling travel by public transport, walking, and cycling to lessen road traffic growth and its associated negative outcomes for society and the environment.

12.4 Specifically, the mitigation that has been identified in this STA has focussed on solutions that will achieve the STA's objectives of encouraging local living, creating healthy places and streets and developing strategic connectivity. Highway capacity improvements have only been considered as a last resort and to provide an indication of works that may need to be implemented if other measures to reduce travel demand and increase active travel and public transport use fail.

Spatial and Accessibility Review

12.5 Winchester district covers a wide geographical area, which also varies significantly in character, resulting in disparities in transport provision across the district. The review of baseline transport conditions was broken down into the three spatial areas of the district in the existing Local Plan; Winchester Town Area (WTA), South Hampshire Urban Areas (SHUA), and Market Towns and Rural Areas (MTRA). The South Downs National Park makes up a large part of the district, but was excluded from this STA, as it falls under the responsibility of the South Downs National Park Authority, which has its own Local Planning area.

12.6 The Winchester Town Area has the highest levels of transport accessibility across the District, with services and supporting infrastructure for public transport, walking, and cycling in the district. The area's roads comprise of a dense street network with a one-way system, necessary for managing existing high levels of traffic movement within and around the centre.

12.7 Travel demand in the highway peaks is primarily caused by the significant in and out-commuting patterns to/from the centre of Winchester and reflects the City's role as a regional employment centre. Travel by sustainable modes continues to be negatively impacted by private car use predominantly associated with vehicles accessing the town from outer areas, despite the popular Park & Ride scheme specifically targeting these trips. Traffic volumes within the centre and observed congestion in the centre of town and on the approaches to the centre mean that local bus services can sometimes be irregular and unreliable, making them less attractive as an alternative to the car.

12.8 Overall, the area experiences issues because of the dominant highway network including congestion, some areas of poor air quality and road casualties, although improvements have been made in recent years and significant plans are in place for improvements.

12.9 Comparatively, the SHUAs' highway networks comprise a mix of minor country roads connecting villages and towns, smaller roads within the settlements and good links to the strategic M27 and A3 (M) routes, although parts of the latter are susceptible to suffering from congestion, which is expected to increase in future. Most existing housing developments within the SHUAs provide footpaths which are attractive enough for most people to consider short trips by foot, however the distance to destinations reduces the attractiveness of trips being made by this mode. Public transport options currently consist of limited and infrequent bus services between settlements.

12.10 With very high proportions of car or van ownership by household, higher proportions of residents who are in older age categories than Winchester Town Area, and lower levels of service for public transport and active travel modes, the existing population has a relatively high dependency on private car travel. This could result in issues relating to air quality as well as worsened highway congestion and parking demands as development increases if alternative options are not well provided for.

12.11 As with the SHUAs, relatively limited and infrequent bus services link market towns with smaller villages within the MTRA itself but there is good access to bus services from neighbouring authorities. Several junctions experience congestion, which tend to be in the vicinity of the larger market towns and rural areas, with the number likely to increase in future at a similar level to the other spatial areas.

12.12 The MTRAs have similar population demographics, vehicle ownership and air quality levels to the SHUAs. Based on the current situation, the relatively high distance from the settlements within this spatial area to the strategic road network may mean that increased development could result in higher congestion on the local road networks as well as other transport-related impacts such as vehicle collisions and reduced air quality.

Spatial Strategy of the Winchester Local Plan

12.13 The proposed growth locations in the Local Plan to accommodate forecast population and economic growth, took a wide range of factors into consideration, including transport and access implications. Most of the Local Plan growth is located either within or on the edge of Winchester, within the Winchester Town Area, providing good opportunities for trips to be made by modes of transport other than the private car. This approach is further supported through the allocation of several sites within the city centre itself, which are proposed to be built on existing car parking provision which will not be replaced. These are proposed as low/no car developments which have been included as specific criterion in the respective site allocations policies. In addition, of those two largest allocations, one will bring forward a new park & ride provision to the north of the City. Consequently, the proposed growth in the Local Plan is generally in sustainable locations in terms of transport and access.

Summary of Transport Impact Assessments

12.14 A sub-regional traffic model ('SRTM') has been used to assess the current operation of the road network and the traffic impact due to forecast population and economic growth up to 2041, both with and without the Local Plan growth.

12.15 Interpretation of the SRTM results needs to consider the following observations:

- The SRTM uses a revalidated 2019 base year (to 2021) which has not been adjusted to reflect post-covid changes in travel patterns and specifically the potential reduction in the number of trips per household experienced elsewhere in the UK. The SRTM model therefore presents a higher baseline in terms of traffic levels across the district (and region).
- The forecast trip generation for the Local Plan growth is based unconstrained growth and historical trend trip rates and does not, therefore, take account of any reduction in traffic demand that may be achieved through the delivery of sustainable measures; such as travel plans, trip reduction, walking and cycling infrastructure and public transport schemes (other than Park & Ride at the SJMB site) aimed at reducing single occupancy car trips by promoting alternative modes of transport.

12.16 The traffic modelling has identified that congestion is forecast to increase across the road network, both with and without the Local Plan growth. Demand at several key junctions is forecast to exceed available capacity which will result in additional delays during peak periods. All the junctions identified as meeting the criteria for further detailed assessment and mitigation are located in the Winchester Town Area (WTA).

12.17 Consequently, minimising the number of vehicle trips generated by the Local Plan growth through a combination of maximising the accessibility of sites by modes of transport other than the private car and the implementation of robust, site specific travel plans, that have ambitious targets for maximising trips by alternative sustainable modes of travel, should be considered prior to investment in junction

improvements to alleviate forecast incremental traffic congestion caused by the Local Plan growth.

12.18 By comparing the 2041 Baseline to the 2041 Do Minimum scenario, the potential worst-case traffic impact of the Winchester Local Plan has been established, with eleven junctions to experience a "significant" impact and seven junctions a "severe" impact. These 18 junctions were taken forward for more detailed review and development of potential mitigation measures.

12.19 An in-depth analysis of each of the junctions was undertaken examining delay per vehicle, queue lengths and whether they adversely affected public transport corridors. On sharing this information with the HAs, it was agreed that mitigation measures at the following three junctions were required:

- A3090 Badger Farm Road/Meadow Way/Sainsburys/Parliament Way roundabout
- A3090 Badger Farm Road/St Cross Road/Hockley Link/Otterbourne Road 'St Cross Rd roundabout'
- M3 Junction 11/Hockley Link/South Winchester Park and Ride roundabout

12.20 In addition to the above three junctions, mitigation also considered connectivity improvement in the form of a new Park & Ride site of 850-spaces with bus services to Winchester city centre at the Sir John Moore Barracks site, in accordance with Policy W2 of the Local Plan.

12.21 The overall conclusions of the modelling work post-mitigation (Do Something) were:

- Public Transport passenger trips in and out of Winchester city centre will increase significantly, leading to associated reductions in delays and impacts from car-based movements on the routes leading to the centre.
- In the absence of other mitigation to capacity enhancement, a total of 21 junctions were identified as likely to experience a significant or severe impact. Of these junctions, eight junctions were not previously flagged in the Do Minimum while five that were previously flagged in the Do Minimum were no longer triggering either a Significant or Severe threshold, including the St Cross roundabout, Pitt roundabout, Hyde Street/Jewry Street, Andover Road/Bereweeke Road and the M3 J10b, and;
- Further, detailed local junction modelling of the above three 'mitigated' junctions revealed that the proposed capacity enhancements would satisfactorily accommodate the increased demand from the Local Plan allocations;
- The overall results for the 21 junctions were reviewed and discussed with the highway authorities (Hampshire County Council and National Highways), who confirmed that none of those locations would result in unacceptable levels of delays and/or blocking back, for either bus services or general traffic, subject to confirmation of the outcome of the VISSIM model undertaken for the Bushfield Camp site. At the time of writing, it is understood that the applicant

has submitted this VISSIM modelling to the Highway Authorities for their review.

12.22 Given the strategic nature of the SRTM and the unconstrained traffic growth applied to 2041 across the network, any mitigated location in terms of highway capacity will result in additional demand being attracted to those locations and congestion relocating upstream or downstream, known as 'knock-on effects.' The mitigation suggested in this STA will therefore require further refinement or investigation in close liaison with HCC and NH when developments in the Local Plan come forward in the future. The preference before highway mitigation is considered will be to maximise measures to increase active modes (such as pedestrian and cycle schemes), public transport (such as bus priority and bus infrastructure) and reducing the need to travel (such as 20-minute neighbourhoods). Whilst suggestions have been made in this STA, the final design and implementation of mitigation measures will be determined by HCC as the Highway Authority as part of any review of Transport Assessments to be submitted in support of planning applications.

12.23 Concept schemes to mitigate the traffic impact of Local Plan growth at the three junctions have been prepared and evaluated for their effectiveness. Cost estimates for these schemes have also been prepared, although it is recognised that, as mitigation of the cumulative impact of the Local Plan is not solely limited to the above targeted schemes, it is likely to include the implementation of other measures identified in BSIP and the LCWIPs. Costs for these measures will also need to be considered. It is expected that funding for the identified mitigation schemes will be secured in parts by developer contributions (S106 obligations). It will be a requirement of the Local Plan to seek developer contributions towards the mitigation measures identified in this Strategic Transport Assessment through a 'Monitor and Manage' approach to scheme prioritisation and delivery.

12.24 The comparison between the Baseline and Do-Minimum scenarios has also indicated that the Local Plan growth could increase traffic demand in current collision areas. However, the standard process to review and address any such impacts would be through future site-specific transport assessments through the planning process. In the case of sites with resolution to grant, this process will already have been undertaken.

Highway Authorities Endorsement

12.25 The methodology, criteria and outputs of model runs contained within this STA have been shared with both Highway Authorities (Hampshire County Council and National Highways) throughout the development of the STA. Feedback has been sought and additional sensitivity tests carried out to address the concerns of both authorities.

12.26 In respect of the Bushfield Camp allocation (Policy W5), it is noted that the HAs provided their response in light of separate discussions being held with the developers of the site as part of the ongoing pre-application process. Specifically, the HAs' response is subject to the outcome of a VISSIM model that is being developed by the

developers to demonstrate that their proposals can satisfactorily be accommodated on the network. Notwithstanding, HCC has agreed the recommendations to the respective policy wording for SJM Barracks and Bushfield Camp sites.

12.27 Throughout the preparation of this STA, there has been positive engagement with both Highways Authorities (HCC and National Highways), which has led to recommendations being incorporated in the Regulation 19 version of the Local Plan. Similarly, Active Travel England (ATE) has used the emerging Local Plan as a pilot and provided recommendations to the Transport Topic section of the LP. WCC will continue to engage with the authorities following their response to this document, and the associated transport evidence base.

Conclusion

12.28 In conclusion, based on the work of this Strategic Transport Assessment, it is considered that the quantum and distribution of the development proposed in the Winchester Local Plan, and the resulting transport impacts, are capable of mitigation at the strategic level, and that the plan is therefore deliverable and sound from a transport perspective.

Appendices

Appendix A – Policy Context

National

Ministry of Housing, Communities and Local Government, 'National Planning Policy Framework' (2023)

The National Planning Policy Framework (NPPF) was most recently updated in December 2023. The framework sets out the national policy expectations relating to transport, its place within the planning process, and its contribution to the achievement of sustainable development. It outlines the requirements of the transport evidence base in relation to Local Plans, all of which is included through this STA and other documents in support of Winchester's emerging Local Plan.

Paragraph 108 of the NPPF details the transport issues that should be considered in plan making:

- the potential impacts of development on transport networks;
- opportunities from existing or proposed transport infrastructure, and changing transport technology and usage;
- opportunities to promote walking, cycling and public transport use;
- the environmental impacts of traffic and transport infrastructure; and
- patterns of movement, streets, parking, and other transport considerations.

Furthermore, the NPPF identifies that significant development should be focused on locations which are, or can be made, sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and planning applications. This is a particularly important point as accessibility and the choice of transport modes in Winchester Town is completely different from the rural area and market towns that make up a large part of the district.

Paragraph 110 states that the planning policies should:

- support an appropriate mix of uses across an area, and within larger scale sites, to minimise the number and length of journeys needed for employment, shopping, leisure, education, and other activities;
- be prepared with the active involvement of local highways authorities, other transport infrastructure providers and operators and neighbouring councils, so that strategies and investments for supporting sustainable transport and development patterns are aligned;

- identify and protect, where there is robust evidence, sites and routes which could be critical in developing infrastructure to widen transport choice and realise opportunities for large scale development;
- provide for attractive and well-designed walking and cycling networks with supporting facilities such as cycle parking (drawing on Local Cycling and Walking Infrastructure Plans);
- provide for any large-scale transport facilities that need to be located in the area, and the infrastructure and wider development required to support their operation, expansion, and contribution to the wider economy. In doing so they should take into account whether such development is likely to be a nationally significant infrastructure project and any relevant national policy statements; and
- recognise the importance of maintaining a national network of general aviation airfields, and their need to adapt and change over time – taking into account their economic value in serving business, leisure, training and emergency service needs, and the Government's General Aviation Strategy."

Paragraphs 111 to 113 also provide guidance on the setting of local parking standards for residential and non-residential development and recommend local planning authorities to consider accessibility; type, mix and use of development; availability of and opportunities for public transport; car ownership levels; and an overall need to reduce the use of high-emission vehicles. In town centres, local authorities should seek to improve the quality of parking so that it is convenient, safe, and secure, alongside measures to promote accessibility for pedestrians and cyclists.

In allocating sites for development plans, NPPF paragraph 114 states it should be ensured that:

- appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
- safe and suitable access to the site can be achieved for all users;
- the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code, and;
- any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

The consideration of mitigation of a development's transport impacts on the transport networks has also been re-prioritised as set out in para 116 to:

- give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the

catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

- address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
- create places that are safe, secure, and attractive – which minimise the scope for conflicts between people walking, cycling, and driving, avoid unnecessary street clutter, and respond to local character and design standards;
- allow for the efficient delivery of goods, and access by service and emergency vehicles; and
- be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible, and convenient locations.

Within this context, enhancements to highway capacity will be considered as a last resort and one which should not be considered until all opportunities to maximise sustainable transport options have been exhausted. The methodology used within this STA reflects the above approach to mitigation.

Ministry of Housing, Communities and Local Government, 'Transport evidence bases in plan making and decision taking' (2015)

NPPF is accompanied by a suite of Planning Policy Guidance (PPG) to support the framework. This Guidance Note was published in March 2015 and sets out how strategic Transport Assessments should be undertaken to support Local Plans. The Note states that the key issues the transport evidence bases should seek to consider are:

- The existing situation and likely generation of trips over time by all modes and the impact on the locality in economic, social, and environmental terms;
- The opportunities to support a pattern of development that, where reasonable to do so, facilitates the use of sustainable modes of transport;
- The promotion of opportunities to reduce the need for travel where appropriate;
- Identification of opportunities to prioritise the use of alternative modes in both existing and new development locations if appropriate;
- Consideration of the cumulative impacts of existing and proposed development on transport networks;
- Assessment of the quality and capacity of transport infrastructure and its ability to meet forecast demands; and
- Identification of the short, medium, and long-term transport proposals across all modes.
- The baseline information required to inform the Transport Assessment includes:

- All current transport issues as they affect all modes and freight covering, for example, accessibility, congestion, mobility, safety, pollution, affordability, carbon reduction across the whole Plan area and, within relevant areas of the Plan, including existing settlements and proposed land allocations;
- The potential options to address the issues identified and any gaps in the networks in the short, medium, and longer term covering, for example, accessibility, congestion, mobility, safety, pollution, carbon reduction;
- The locations of proposed land allocations and areas/corridors of development and potential options for the provision of sustainable transport and transport networks to serve them;
- The scope and options for maximising travel planning and behavioural change; and
- Accessibility of transport nodes such as rail/bus stations to facilitate integrated solutions.

It is recommended that the Transport Assessment should identify any significant highway safety issues and provide an analysis of the recent personal injury accident history of the affected/impacted areas. The extent of the safety issue considerations and casualty analysis will depend on the scale and type of developments in the context of the character of the affected Strategic Road Network. The need to minimise conflicts between vehicles and other road user groups should be adequately addressed.

Critical locations on the road network with poor accident records should be identified. This is to determine if the proposed land allocations will exacerbate existing problems and whether highway mitigation works, or traffic management measures will be required to alleviate such problems.

Although as stated above, it is understood that the guidance is undergoing a review, the need to establish a suitably comprehensive baseline which will allow full analysis to take place in accordance with all assessment elements remains valid.

National Highways and The Department for Transport, Circular 01/2022 Strategic road network and the delivery of sustainable development, and Planning for the future: a guide to working with National Highways on planning matters (October 2023)

This circular explains how the Highways Agency (National Highways) engages with the planning system and was revised in December 2022 to align with the latest amendments to NPPF and with the National Design Guide, National Model Design Code, Manual for Streets (MfS), Local Transport Note (LTN) 1/20. In October 2023, NH published their planning guide 'Planning for the Future' which provides further advice for development promoters, strategic policy-making and local highway authorities and other organisations involved in development proposals that may result in any impact on the Strategic Road Network (SRN).

The circular and guide apply to the whole of the SRN but not to the Major Road Network (MRN), except in relation to its junctions with the SRN. In Winchester, this relates to the M3 and A34.With regards to plan making, National Highways will engage in the Local Plan process to ensure safety and to reduce the potential for creating congestion on the SRN, to make most efficient use of the limited available capacity. Within this context, National Highways will be supporting developments that facilitate a reduction in the need to travel by private car and focused on locations that are or can be sustainable. This approach seeks to make the most efficient use of capacity within the overall transport network, improve health and wellbeing, and support government policies, strategies and guidance that aim to reduce the negative environmental impacts of development.

In framing its contribution to the development of Local Plans, National Highways will therefore expect strategic policy-making authorities and community groups responsible for preparing local and neighbourhood plans to only promote development at locations that are or can be made sustainable and where opportunities to maximise walking, wheeling, cycling, public transport and shared travel have been identified.

Capacity enhancements and infrastructure required to deliver strategic growth should be identified at the Local Plan stage, which provides the best opportunity to consider development aspirations alongside the associated strategic infrastructure needs. New connections (for example, new junctions or direct accesses) on the SRN lead to more weaving and turning manoeuvres, which in turn create additional risk to safety and reduce the reliability and efficiency of journeys, resulting in a negative impact on overall national economic activity and performance. On this basis the principle of creating new connections on the SRN should be identified at the plan-making stage in circumstances where an assessment of the potential impacts on the SRN can be considered alongside whether such new infrastructure is essential for the delivery of strategic growth. Moreover, National Highways will need to be satisfied that all reasonable options to deliver modal shift, promote walking, wheeling, and cycling, public transport and shared travel to assist in reducing car dependency, and locate development in areas of high accessibility by sustainable transport modes (or areas that can be made more accessible) have been exhausted before considering options for new connections to the SRN.

Department for Transport, 'Decarbonising Transport: a better, greener Britain' (2021)

The document follows on from 'Decarbonising transport: setting the challenge', published in March 2020, which laid out the scale of additional reductions needed to deliver transport's contribution to legally binding carbon budgets and delivering net zero by 2050.

The Plan outlines strategic priorities to achieve net zero; to accelerate mode shift to public and active transport; decarbonise road transport and how we deliver goods. The plan sets out how the government will improve public transport and increase support for active travel to make these the natural first choice for all who can take them. It sets

out government's commitments and the actions needed to decarbonise the entire transport system in the UK.

The document focuses on increasing cycling and walking by delivering the Prime Minister's bold vision for cycling and walking investing £2 billion over five years with the aim that half of all journeys in towns and cities will be cycled or walked by 2030.

In addition, the document focuses on commitments for zero emission buses and coaches by delivering 4,000 new zero emission buses and the infrastructure needed to support them, as well as the first All-Electric Bus Town or City and a phasing of new non-zero emission buses.

The Plan also focuses on decarbonising the railways by delivering a net zero railway network by 2050, with sustained carbon reductions in rail along the way. This would include the aim to remove all diesel-only trains (passenger and freight) from the network by 2040.

DfT, 'Road Investment Strategy 2 (RIS2): 2020-2025'

RIS2 sets out the long-term vision for the Strategic Road Network (SRN) which in the Winchester district includes the M3 and A34. It specifies the planned road enhancement schemes; and states the funding that we will make available during the five-year period. Within Winchester District, the following scheme is included:

- M3 Junction 9 – upgrade to the junction to allow free movement from the A34 to the M3.

In addition, the M27 Southampton Junction 8 scheme (additional capacity at junction 8 through improvements to the Windhover roundabout) is also committed as part of RIS2 and has been included in the baseline for this STA due to its proximity to the District.

DfT is also currently developing RIS3 which will cover investments to the SRN between April 2025 to March 2030 and the pipeline of projects identified in RIS2 for funding as part of RIS3, which includes works at the M27 Southampton Access, are being reviewed. Given that the status for these projects is unknown at the time of producing this STA, these projects have been excluded from the baseline, in agreement with the highway authorities.

DfT, 'The Transport Investment Strategy' (2017)

As part of this Strategy, the Government committed to creating a Major Road Network (MRN) across England to cover the busiest and most economically important local authority A roads. In creating this network, the Government has five central policy objectives: reduce congestion; support economic growth and rebalancing; support housing delivery; support all road users; support the SRN.

In Winchester district, the MRN comprises of the A31.

Regional and sub-regional

Regionally, Winchester City Council (WCC) works with several other organisations involved in delivery and management of transport networks, these include:

- Hampshire County Council - the Highway Authority for the highway network in Winchester district, and relevant Rights of Way authority. All liaison with neighbouring local planning authorities such as Test Valley, Basingstoke and Deane, East Hampshire, Eastleigh, Gosport, Fareham, Portsmouth, and Havant are directed via the Local Highway Authorities of Hampshire County Council;
- National Highways - responsible for maintaining, operating, and improving the Strategic Road Network (SRN), which includes the sections of M3, and A34 corridors that are within the district boundaries;
- Partnership for South Hampshire (PfSH) - voluntary partnership of all the local authorities in South Hampshire together with Hampshire County Council to support the sustainable economic growth of the sub region and to facilitate the strategic planning functions necessary to support that growth;
- Solent Transport – an apolitical partnership between the councils of the Isle of Wight, Hampshire County, Portsmouth, and Southampton working with PfSH to deliver the transport objectives of PfSH's plans to promote economic regeneration in the sub-region. Solent Transport has developed two public-facing services, which aim to improve travel around the Solent area; My Journey[34] and SolentGO[35].
- Transport for the South East (TfSE) – a partnership bringing together local authorities, local enterprise partnerships (LEPs), transport providers and other stakeholders to speak with one voice on the south-east's strategic transport needs. The area covers the six Berkshire authorities, Kent, Medway, Hampshire, Portsmouth, Southampton, the Isle of Wight, Surrey, East and West Sussex and Brighton & Hove.
- Public Transport Operators and Network Rail.

Policies developed by or with these organisations relevant to the Local Plan are set out below.

Transport Strategy for the South East (2020)

In July 2020, Transport for the South East (TfSE) published its transport strategy for the South East for the next 30 years. The strategy presents a shift away from traditional approaches of transport planning - one based on planning for a future based on recent trends and forecasts – to an approach of actively choosing a preferred future and setting out a plan to get there, together. In doing so, TfSE recognised that there needs to be a

[34] https://myjourneyhampshire.com/
[35] http://solentgo.co.uk/

transition from the current focus on 'planning for vehicles' towards more 'planning for people' and more 'planning for places.'

The transport strategy has since been complemented by five area studies which identify and prioritise the specific interventions required across the South East. The outputs from these area studies have also been fed into a Strategic Investment Plan, a blueprint for investment which will be delivered with government and national bodies such as Network Rail and National Highways. The final Strategic Investment plan was submitted to government in March 2023 and Transport for the South East is shifting its focus towards implementation.

The Strategic Investment Plan for Romsey/Southampton North and Winchester is summarised on Figure A-1, noting the particular relevance of intervention R1 (M3 Junction 9 upgrades) and R12 (A34 Junction and Safety Enhancements between Winchester and Newbury):

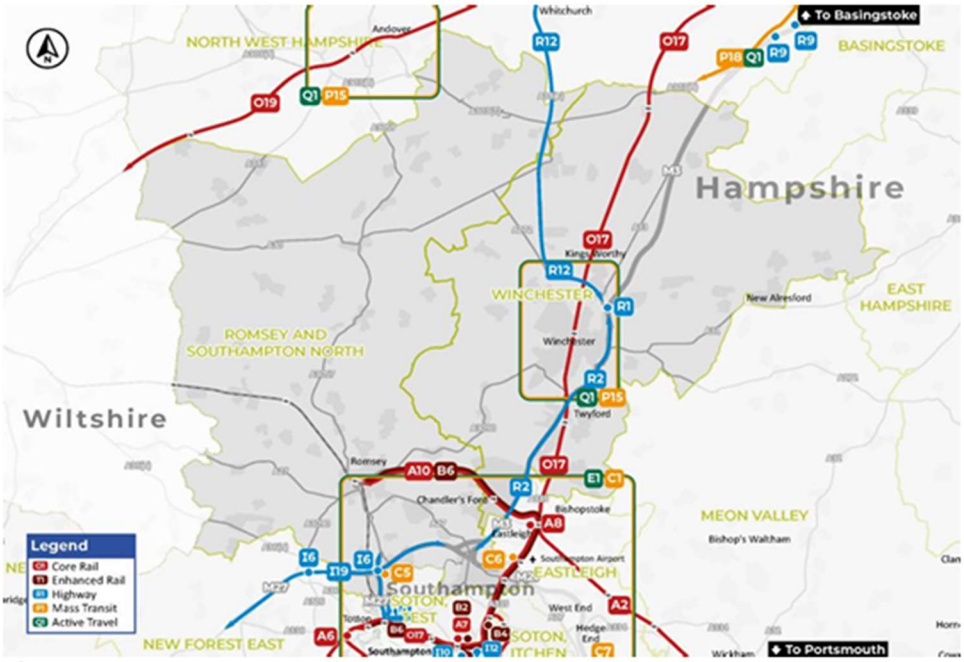


Figure 1: Romsey and Southampton North; Winchester schemes from TfSE's Strategic Investment Plan

In addition to place-specific schemes, a number of wider policy interventions have been identified. These include:

- **Decarbonisation:** faster delivery on net zero carbon, including through the use and adoption of green technologies
- **Public transport fares:** support for public transport, including subsidies for reduced fares
- **New mobility:** capturing the benefits for new modes of travel, new ways of paying for our travel, and new technologies
- **Road user charging:** support for a national scheme, and one that local areas can integrate with for additional measures (e.g. Clean Air Zones)
- **Virtual access:** making best use of technology to reduce the need to travel and help plan better, more sustainable journeys
- **Better integration:** at stations, hubs and between modes, but also better integration with spatial planning and service delivery

Figure A-1– Romsey/Southampton North and Winchester schemes from TfSE's Strategic Investment Plan

Hampshire County Council - Local Transport Plan 4 (2024)

Hampshire County Council (HCC) adopted a new Local Transport Plan in February 2024. The new Plan states that it;

- describes our transport vision for 2050, the key transport outcomes we are seeking to achieve, and the principles that would guide future investment and decision making in relation to transport and travel;
- sets out transport polices covering all aspects of transport planning, delivery, and operation (i.e. the 'rules' about how we would do things and how we want others to do things);
- presents our approach to delivering the Plan – 'making it happen', setting out a roadmap to 2050 and how we would prioritise, fund, and deliver interventions, and monitor our progress; and
- supports the County Council's wider strategies, plans and priorities.

HCC's LTP4 sets out transformational changes which:

- shift away from planning for vehicles, towards planning for people and places;
- meet national priorities to decarbonise the transport system;
- reduce reliance on private car travel;
- gives people a choice of high-quality travel options;
- support sustainable economic development and regeneration; and promote active lifestyles.

LTP4 has the following vision for transport:

"A carbon neutral, resilient and inclusive transport system designed around – and with - people, which: supports health, wellbeing and quality of life for all; supports a connected economy and creates successful and prosperous places; and respects and seeks to enhance Hampshire's unique natural and built environment".

The above vision will be delivered through the following guiding principles and policies (Figure A-2):

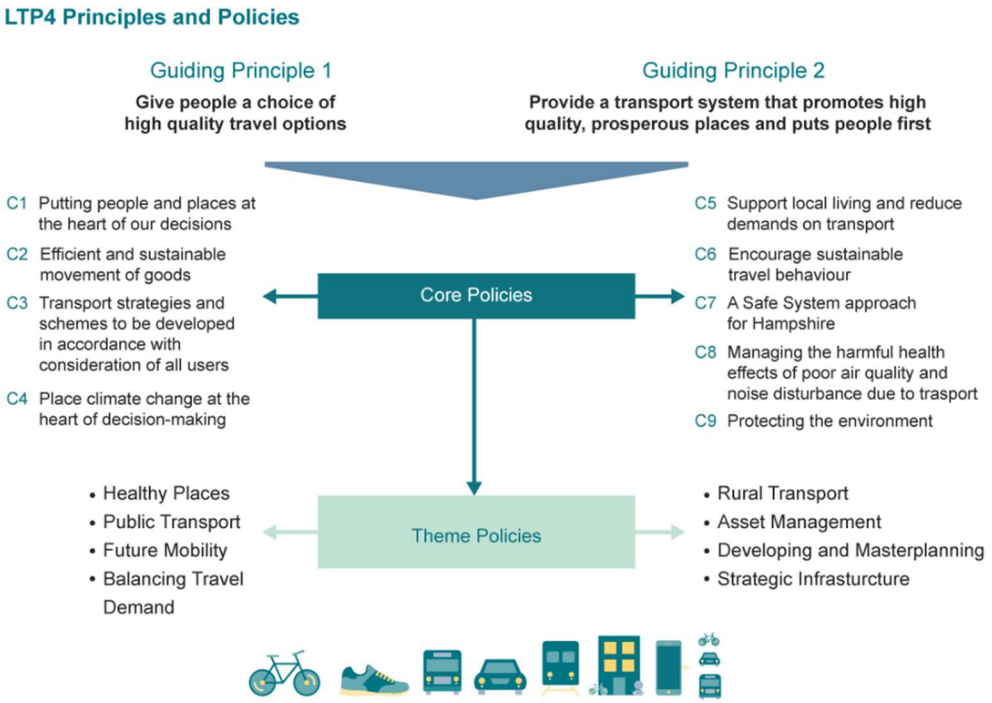


Figure A-2 – HCC LTP4 Principles and Policies

Policy C1 focuses on putting people and places at the heart of HCC's decisions and will shortly develop the following approach to infrastructure improvements, against which future site-specific applications will need to give due regard (Figure A-3).

We will:

a. develop and apply a **Movement and Place Framework** to manage the transport network in accordance with its function in different locations, i.e. to decide what type of measures are needed where (see also Chapter 7, Healthy Places, Policy HP1 and 2; Balancing Travel Demand, Policy BTD1; Asset Management, Policy AM2; Development and Masterplanning, Policy DM3);

b. prioritise the needs of walking and cycling, public transport users and delivery vehicles, in accordance with the specific function of different types of location (see Core Policy C3: **Road User Utility Framework**);

c. use a **'Healthy Streets' approach** and our **'Hampshire Walking and Cycling Principles'** to plan and design welcoming, comfortable, safe and inclusive networks for everyone regardless of ability, confidence, age and disability (see Healthy Places, Policy HP1.3);

d. seek opportunities to **create or reallocate road space** to create better walking and cycling routes and faster routes for buses (see also Healthy Places, Policy HP1; Balancing Travel Demand, Policy BTD1); and

e. **support targeted highway capacity improvements** where there is a strong economic, safety, health, social or environmental case and where the Movement and Place Framework is achieved.

Figure A-3 – Policy C1 – HCC LTP4

It is recognised that transport issues are considered in the early stages of Local Plan preparation and LTP4 Policy DM1 requires greater integration between transport and strategic land use planning to reduce car dependency, while Policy DM2 supports proactive master planning of new development sites for high quality neighbourhoods.

It is understood that HCC will be developing a suite of companion strategies and action plans to accompany LTP4 including development management plan, parking strategy, and EV strategy. All new developments will also need to assess the needs of all road users using the Hampshire Movement and Place Framework, the Road User Utility Framework and Healthy Street principles.

HCC - Bus Service improvement Plan (2021)

The Bus Service Improvement Plan (BSIP) sets out HCC's high-level vision for Hampshire's bus network, including journey time and reliability targets, and plans to deliver them.

HCC has delivered several initiatives which have helped to improve the quality and the attractiveness of local bus services which will be built upon through the BSIP. Most notably Winchester benefits from good Park & Ride services with scope to expand and the proposed new homes at North Whiteley will offer scope to improve the current infrequent bus connections towards Fareham.

Appendix 1 of the BSIP sets out the full list of potential bus infrastructure options currently under consideration by HCC. It summarises the bus infrastructure that has been proposed by bus operators and identifies those sections of the highway network where operators know that bus services are currently experiencing regular delays due to queuing traffic and congestion and the infrastructure solutions that operators are proposing should be considered as potential options for addressing these issues. Some of these improvements also reflect the proposals set out in the Winchester Movement Strategy, including:

- a need for a new 200-space Park and Ride site serving the north side of Winchester (planned for the Sir John Moore Barracks allocation proposed in this Plan),
- a new bus lane on Andover Road,
- two new bus gates (on Chesil Street and Southgate Street),
- additional Park & Ride parking spaces on the edge of Winchester to enable some car parks in the city centre to be closed and redeveloped.

HCC - Local Cycling and Walking Infrastructure Plans (LCWIPs)

LCWIPs are a relatively new approach to identifying cycling and walking improvements required at the local level. They enable a long-term approach to developing local cycling and walking networks, ideally over a 10-year period, and form a vital part of the government's strategy to increase the number of trips made on foot or by cycle.

An LCWIP is being developed for Winchester and further details are provided in Section 5.0 of this STA.

Local

Winchester City Council WCC and HCC - 'City of Winchester Movement Strategy' (2019)

The City of Winchester Movement Strategy (WMS) is a joint policy document which was endorsed by WCC and approved by HCC and sets out an agreed vision and long-term priorities for travel and transport improvements in Winchester over the next 20-30 years. It also covers, at a high level, plans for how these priorities might be met, including indicative timescales and costings.

The overarching vision of the strategy is to support strong and sustainable economic growth for the city of Winchester whilst at the same time enhancing it as a place and community where people can have an excellent quality of life. The vision is supported by three key strategic priorities for movement across Winchester:

1) Reduce city centre traffic;

2) Support healthier lifestyle choices

3) Invest in Infrastructure to support sustainable growth

Potential workstreams for meeting these priorities were assessed and since 2019, WCC have been working on six workstreams, as follows:

- Park & Ride Expansion and Bus Priority- expand Park & Ride provision with new sites and extension of existing sites;
- Parking & Access Strategy – reduce the total amount of public car parking available in the city centre in conjunction with expansion of P&R provision;
- Local Cycling and Walking Infrastructure Plan (LCWIP) – Deliver a comprehensive network of high-quality walking and cycle routes through the Winchester LCWIP;
- City Centre Movement and Place Plan – Improve streets within the city centre by reallocating road space from private vehicles and change how parts of the one-way system operate;
- Bus provision – Improve the attractiveness of local bus services through investing in bus priority measures and providing bus stops in convenient locations;
- Reducing Impact of Freight Deliveries on city centre – minimise the number of freight movements into the city centre at busiest times.
-

It is understood that many of these schemes are now being taken forward and implemented since the production of the Movement Strategy and the WMS Update[36] published in September 2023 identified 10 priorities for the next 10 years. Of particular relevance is the concept of liveable neighbourhoods which aim to create a more liveable, cleaner, and greener city through the delivery of a co-ordinated set of improvements that will encourage more use of Park and Ride, bus, walking and cycling and help reduce dependence on private car travel. At present, HCC and WCC are jointly promoting the 'Fulflood Liveable Neighbourhood' pilot scheme, which is expected to be finalised in Winter 2024/25.

While the Movement Strategy primarily concerns movement within and through the city of Winchester, it provides up-to-date information regarding the status of transport schemes and priorities which can be used to gauge measures for other areas around the district.

Winchester Electric Vehicle Charging Strategy – Draft (January 2019)

In order to meet its legal obligations, WCC adopted its Air Quality Action Plan in 2017, which set out a number of core and complimentary measures. One of these measures is to 'seek to commit to introduce more electric vehicle charging points with car parks.' The strategy recommended that in the first five years, the city council should introduce 32 chargers to serve 16 parking bays in various areas within the district. Since that strategy was agreed, there have been a number of additional Electric vehicle Charging Points (EVCPs) installed by WCC at the Leisure Centre and Barfield Multi Storey car parks, with smaller installations at Guildhall Yard and Cypher House car parks. An update on progress and full review of publicly accessible charging points are provided in the Transport Baseline section of the STA.

WCC and SYSTRA - 'Local Plan 2038 Transport Assessment – Stage 1 Report (September 2020)

WCC's adopted Local Plan covers the period (LPP1) was adopted in March 2013, and identified the key sites which the council would allocate for development to meet housing and employment land targets. Local Plan Part 2 (LPP2) was adopted in April 2017 and provided an update to LPP1 by identifying the additional development sites necessary to meet the remainder of the growth requirements. WCC now intends to prepare an update to the current Local Plan to extend its coverage up to 2040, with a targeted timescale for submission in 2025.

Given the time that has passed since the modelling of the previous base scenario for the adopted Local Plan, in 2020, WCC commissioned SYSTRA Ltd (SYSTRA) to update the transport evidence base to assess the impact of the allocated developments to be consistent with the revised Local Plan period.

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https://democracy.winchester.gov.uk/documents/s26435/Winchester%20Movement%20Strategy%20Update%20-%20HEP%20Cttee%20-%20Sept%202023.pdf

The SYSTRA report (Appendix B of the STA) was also commissioned prior to the outbreak of COVID-19 and in this respect, the baseline information and travel patterns that were presented in this report are data that has been gathered prior to the outbreak of the pandemic.

This STA forms the subsequent phase of assessment and reporting and provides the testing of future development scenarios and proposed connectivity improvements and mitigation.

The Stage 1 TA report acknowledges there are substantial areas in the district where current provision for sustainable travel is limited. Recent transport policy and guidance confirms that sustainable development cannot be achieved without significant changes in how transport and accessibility is considered, and the report sought to provide a solid foundation for assessing the suitability of site allocations in Stage 2 of the Transport Assessment process. It is therefore necessary to adopt a different approach to spatial planning, ensuring sustainability is at the heart of planning decisions, whilst still providing the homes and jobs required.

Appendix B – Winchester Local Plan – SRTM Strategic Modelling Report

WINCHESTER LOCAL PLAN – SRTM STRATEGIC MODELLING

Solent Transport

SYSTRA

WINCHESTER LOCAL PLAN

WINCHESTER LOCAL PLAN – SRTM STRATEGIC MODELLING

IDENTIFICATION TABLE	
Client/Project owner	Winchester City Council
Project	Winchester Local Plan
Study	Winchester Local Plan – SRTM Strategic Modelling
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APPROVAL

Version	Name		Date	Comments
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	Checked By	Emma Douglas	08/11/2023	
	Approved By	Chris Whitehead	08/11/2023	
2	Author	Shaun Fuller Cesar Rossetti Emma Douglas	27/11/2023	Updated in response to comments from Hampshire Services
	Checked By	Chris Whitehead	27/11/2023	
	Approved By	Chris Whitehead	27/11/2023	
3	Author	Shaun Fuller Daniel Savage Emma Douglas	13/02/2024	Updated to account for new zone representing Bushfield Camp development site. BL (GCJ) DM (GCK)
	Checked By	Chris Whitehead	14/02/2024	
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4	Author	Shaun Fuller Emma Douglas	30/05/2024	Includes outputs from Do Something (GDX) model run
	Checked By	Chris Whitehead	31/05/2024	
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	Checked By	Chris Whitehead	27/06/2024	
	Approved By	Chris Whitehead	27/06/2024	

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1. INTRODUCTION

1.1 Study Background

1.1.1 SYSTRA has been commissioned by Hampshire Services to apply Solent Transport's Sub-Regional Transport Model (SRTM) to inform the update to Winchester Local Plan that includes growth through to 2040. The SRTM has been used to model the Local Plan proposed land allocations and identify key transport implications resulting from the scale and location of the allocations. The SRTM outputs form inputs to a Transport Assessment undertaken by Hampshire Services and reported in a separate document.

1.1.2 This application of the SRTM was commissioned by Hampshire Services in September 2023.

1.2 Winchester City Council Local Plan Development Scenarios

1.2.1 To assess the transport impacts of the Local Plan, three model scenarios have been developed:

- Scenario 1 – 2041 Baseline, no Winchester Local Plan development except for committed sites.
- Scenario 2 – 2041 Do Minimum, full Winchester Local Plan development without transport mitigation/connectivity improvements.
- Scenario 3 – 2041 Do Something, full Winchester Local Plan development with transport mitigation/connectivity improvements.

Scenario 1 – 2041 Baseline *No Winchester Local Plan Development Except Committed Sites*

1.2.2 The Baseline forms the scenario against which the proposed Local Plan development quantum scenarios are assessed.

1.2.3 In this study the Baseline includes all current (as of July 2023) completed development and infrastructure within Winchester District, in addition to all committed development and infrastructure through to 2041. In the Baseline, no allowance is made for Local Plan allocations in Winchester.

1.2.4 Outside of Winchester, development growth is assumed to continue as 'normal' and in line with the adopted Local Plans for the respective Neighbouring Authorities and in accordance with an adapted version of Department for Transport's (DfT) TEMPRO[1] v8.0 growth projections. The adapted version of TEMPRO v8.0 was specified by Hampshire County Council (HCC) and agreed for application in the SRTM by the Solent Transport Authorities (HCC, Isle of Wight Council, Portsmouth City Council, Southampton City Council). It has also been endorsed by the Department for Transport and supported by

[1] TEMPRO is a piece of software owned by Department for Transport (DfT) and used to access the National Trip End Model (NTEM) datasets forecasting future year growth for use in transport modelling. The forecasts take account of national projections of population, employment, housing, car ownership and trip rates. TEMPRO provides for a common approach for accounting for growth in transport modelling within England but, as with all forecasts, the data is subject to uncertainty especially when disaggregated to local zones or travel modes.

National Highways through discussions held during July 2023. The adapted version was developed following concerns by HCC that v8.0 of TEMPRO underrepresented by approximately 80,000 dwellings the residential growth within the County in the period 2019-40. The adapted version of TEMPRO v8.0 used in the Winchester Local Plan application of SRTM includes the following assumptions:

- Within the Hampshire County boundary, residential growth delivery rates are assumed in line with adopted local plans. Beyond the end of Local Plan periods, growth delivery rates are assumed to continue at the rates from the preceding Local Plan. Employment growth rates are assumed in-line with TEMPRO v8.0.
- Outside of the County boundary residential and employment growth is assumed to be in line with TEMPRO v8.0 projections.

Scenario 2 – 2041 Do Minimum *with Full Local Plan Development, without Mitigation Measures/Connectivity Improvements*

1.2.5 The Do Minimum scenario builds on the 2041 Baseline with the addition of the full quantum of proposed development associated to the Winchester Local Plan. Growth outside the Local Plan area is identical to the Baseline. By comparing the outputs of the Do Minimum scenario with the Baseline, the transport impacts resulting from the Local Plan proposals can be isolated.

Scenario 3 – 2041 Do Something *with Full Local Plan Development, with Mitigation Measures/Connectivity Improvements*

1.2.6 Scenario 3 has incorporated the connectivity improvements/interventions developed by Hampshire Services as part of the improvement options chapter of the Transport Assessment report for the Local Plan. Scenario 3 captures the impact of these interventions in the wider context of the full District and surrounding areas.

2. SOLENT TRANSPORT – SUB REGIONAL TRANSPORT MODEL (SRTM) BACKGROUND

2.1 Model Development

2.1.1 SYSTRA was commissioned, as part of a wider team, to support Solent Transport[2] with the development and application of the SRTM for this nationally important area. An update to the original 2010 model was completed in early 2017 to bring the base year forward to 2015. In early 2021, a further update was completed to revalidate the model against a 2019 base year.

2.1.2 The SRTM has been developed to support a wide-ranging set of interventions across the Solent Transport sub-region, and is specifically required to be capable of:

- Forecasting changes in travel demand, road traffic, public transport patronage and active mode use over time as a result of changing economic conditions, land-use policies and development, and transport improvement and interventions (schemes);
- Testing the impacts of land-use and transport policies and strategies within a relatively short model run time; and
- Testing the impacts of individual transport interventions in the increased detail necessary for preparing submissions for inclusion in funding programmes.

2.2 Sub Regional Transport Model Context and Scope

2.2.1 The SRTM is a suite of linked models comprising the following components as shown in Figure 2-1:

- The Main Demand Model (MDM) which predicts when (time of day), where (destination choice) and how (choice of mode) journeys are made;
- the Gateway Demand Model (GDM) which predicts demand for travel from ports and airports;
- the Road Traffic Model (RTM) which determines the routes taken by vehicles through the road network and journey times, accounting for congestion;
- the Public Transport Model (PTM) which determines routes and services chosen by public transport passengers; and
- a Local Economic Impact Model (LEIM) which uses inputs including transport costs to forecast the quantum and location of households, populations and jobs.

2.2.1 Active Mode (walking and cycling) demand is represented in the SRTM, but the demand is not assigned to a network. To expand, the active demand matrices are produced in the main demand model (MDM) for each zone pair (origin to destination) in the same manner that highway and public transport (PT) matrices are created. Both walking and cycling active sub-mode demand are generated, although these are reported in combination in

[2] Originally established in 2007, Solent Transport is an apolitical partnership between the councils of the Isle of Wight, Hampshire County, Portsmouth and Southampton. In collaboration with the local community, business, government and transport operators, Solent Transport undertakes research; develops transport policy and strategy; submits and supports funding bids; and lobbies for transport improvements (www.solent-transport.com).

mode share outputs. Unlike highway and PT trips, (which are routed and represented on their respective transport networks), the routes which active mode trips would use between the origin and destination pair are not represented. This is because there are generally multiple similar alternatives available to walkers and cyclists including options along links considered too minor to be included in the current SRTM network, which was primarily designed for motorised modes. In addition to the network density there are also other factors which may influence active route choice which would need to be considered. In theory some of these influences could be incorporated into the model (such as denser network, levels of segregation, traffic levels, gradients). Other factors may be more subjective, difficult to include and more likely to differ based on personal preferences (route ambience/greenness, perceived safety, access to shops enroute etc).

2.2.2 For all OD pairs the cost of the trip by each mode is represented in the form of a generalised cost that monetises all components of a trip both time-based (waiting time, journey time etc) and financial (PT fare, fuel, etc). Changes to generalised cost drive mode choice changes such as implementation of a scheme to reduce journey time or conversely congestion increasing journey time. For highway and PT, representation of new schemes or the impact of congestion are direct inputs or outputs to the model and are applied at a network level. By default, in the model the generalised cost of travel for active mode does not change but can become more, or less, attractive relative to the other modes depending on the changes to highway and PT generalised costs. It is possible to manually change the generalised cost for Active mode to represent, say a time saving. However, this is applied at a zonal level so would be applied to all trips between the specific OD pairs and is best applied to larger schemes e.g. a corridor-based package of improvements, as opposed to a smaller single scheme.

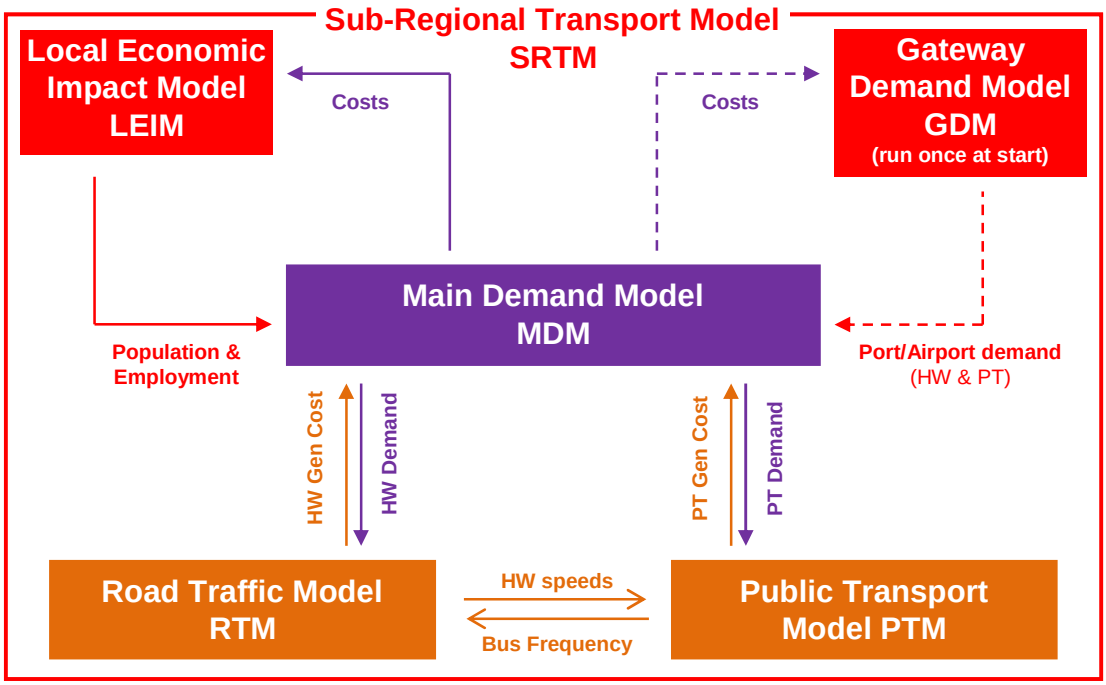


Figure 2-1 Solent Transport Sub-Regional Transport Model

2.2.3 The modelled area of the SRTM is divided into four regions, shown in Figure 2-2, which differ by zone aggregation and modelling detail. The majority of Winchester District including Winchester City is within the Core Fully Modelled Area. The SRTM model zone

structure for Winchester District is shown in Figure 2-3. Zones are larger in less densely populated areas with zones in the core area accommodating a population of approximately 1500 persons.

2.2.4 In accordance with guidance, three weekday periods are modelled in the SRTM:

- AM peak: busiest hour between 07:00 and 10:00, (defined as 40.5% of the three hours for Highway and 40% for Public Transport);
- Inter peak: average of 10:00 to 16:00 (i.e., 16.7% of the six hours for both modes); and
- PM peak: busiest hour between 16:00 and 19:00, (defined as 36.8% of the three hours for Highway and 40% for Public Transport).

2.2.5 The SRTM has a base year of 2019, and forecast years of 2026, 2031, 2036, and 2041. For the Winchester Local Plan assessment, scenarios were forecast to 2041. The Winchester Local Plan period ends in 2040 and the transport modelling has used the closest available model forecast year of 2041. This extra year means growth outside of Winchester will be slightly higher than in 2040 and therefore providing a more robust basis for assessment in terms of travel demand.

2.2.6 The SRTM is a strategic model, and the scope of the model is extensive. As such the analysis of specific localised traffic conditions necessitates a degree of interpretation and a common-sense approach in conjunction with a knowledge of local baseline conditions.

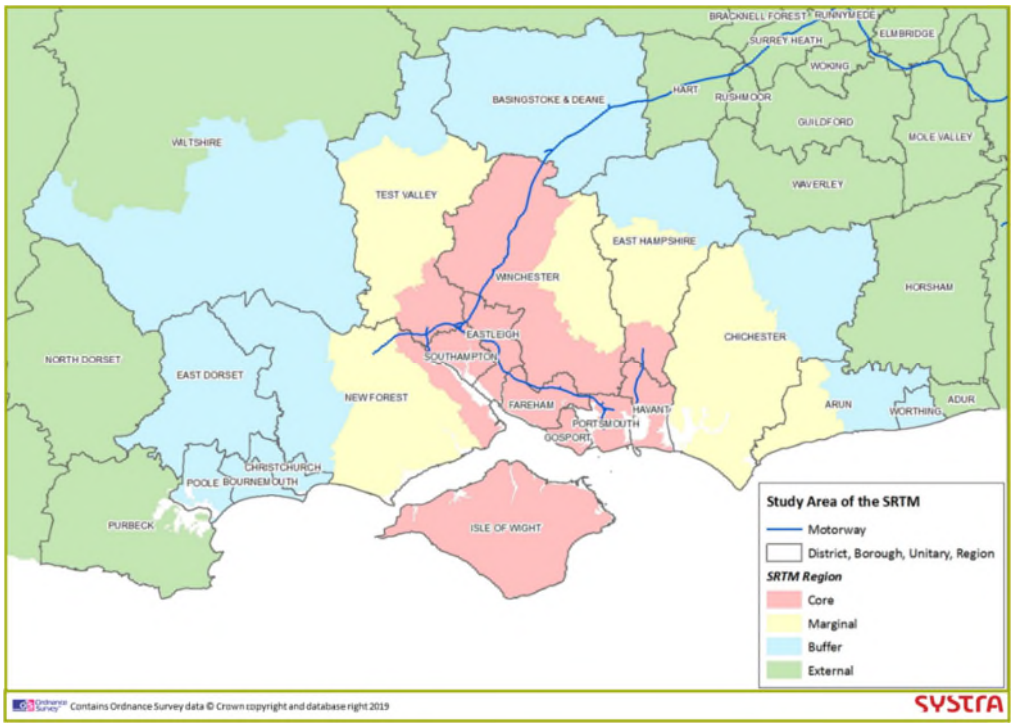


Figure 2-2 SRTM Study Area

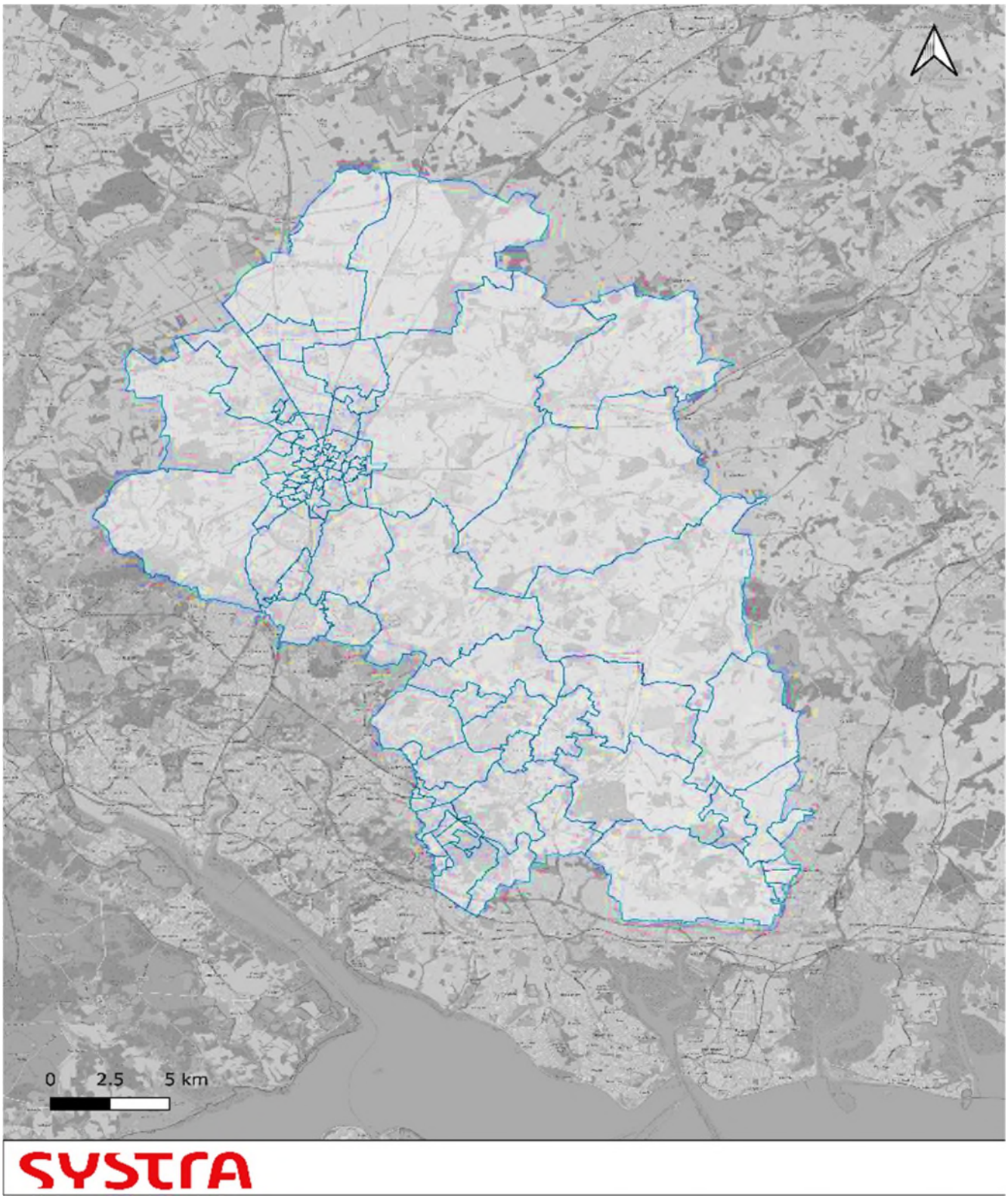


Figure 2-3 SRTM Winchester District SRTM Zone Structure

3. WINCHESTER DISTRICT MODELLING ASSUMPTIONS

3.1 Introduction

3.1.1 This chapter summarises the development of the model scenarios, and their land use, highway, and public transport (PT) inputs.

3.1.2 The following sections provide a breakdown of the key modelling processes, inputs, and outputs. Committed development, and infrastructure information through to 2041 to be used in this study was provided and confirmed by WCC, HCC, and National Highways Officers in the period July to September 2023.

3.2 Scenario 1 – 2041 Baseline

Highway and PT network

3.2.1 As a starting point, the Baseline scenario uses standard SRTM reference case networks for all modelled years. The SRTM has a base year of 2019 and represents forecast conditions up to the year 2041. Known developments and committed highway schemes are included within the model's reference case scenarios (2026, 2031, 2036 and 2041) to provide the most accurate representation of future year conditions. A list of the committed (funded) highway schemes included in the Reference Case is provided as **Appendix A.**

3.2.2 Of particular relevance to Winchester District are the following larger committed transport schemes:

- Closure of Andover Road North to motor vehicles between the junctions with Wellhouse Lane and Stoney Lane and a provision of a new parallel route (Winchester Avenue) via the Kings Barton development.
- Provision of a 200 space Park & Ride Lite facility within Kings Barton development
- Extension of Whiteley Way to A3051 as part of the development at North Whiteley.

3.2.3 In addition to committed schemes, National Highways has advised that the M3 Junction 9 scheme proposals (free-flow arrangement between A34 and M3) should be included in all model scenarios related to Winchester Local Plan. The M3 J9-14 Smart motorway scheme is not included in any model scenarios further to the government's decision in early 2023 to cancel any new Smart Motorway schemes.

Non-Winchester District Land Use Assumptions

3.2.4 In this study, the SRTM Reference Case inputs populate the Baseline scenario for all model areas except Winchester District.

3.2.5 Within the Reference Case land use, in addition to committed sites, "permissible" sites are included. These refer to those locations identified as suitable for future development but that have not yet been subject to planning approval. The locations and maximum land use quantum of the permissible sites are based on the inputs collated up to April 2020 in accordance with adopted Local Plans at that time. The take up of permissible developments is determined by the LEIM module of SRTM and is based on the local conditions (the relative 'attractiveness' of the development, e.g., accessibility).

3.2.6 LEIM controls the level of overall development growth within the model in accordance with the adapted TEMPro (v8.0) employment and population trajectories for the sub-region as set out in Section 1.2.4. This is equivalent to allowing for background traffic growth within the modelling process.

Winchester District Completions and Committed Development Land Use Assumptions

3.2.7 The starting point in the Baseline is to update all the standard reference case inputs beyond the base year of 2019 for SRTM model zones within Winchester District. In place of these, the actual site completions through to 2023 have been added plus hard committed future developments (i.e. planning permissions). Baseline growth to 2041 for Winchester District for all landuse categories is summarised in Table 3-1. Figure 3-1 shows the location of the Baseline residential development growth sites within the district by model zone. **Appendix B** includes the Baseline landuse inputs by model zone.

3.2.8 Within the Baseline there are several larger residential developments that are currently under construction or have planning permission. These sites include:

- Kings Barton development, City of Winchester, approximately 2000 dwellings
- North Whiteley development, approximately 3500 dwellings
- West of Waterlooville development, approximately 2500 dwellings
- New Alresford development, approximately 425 dwellings

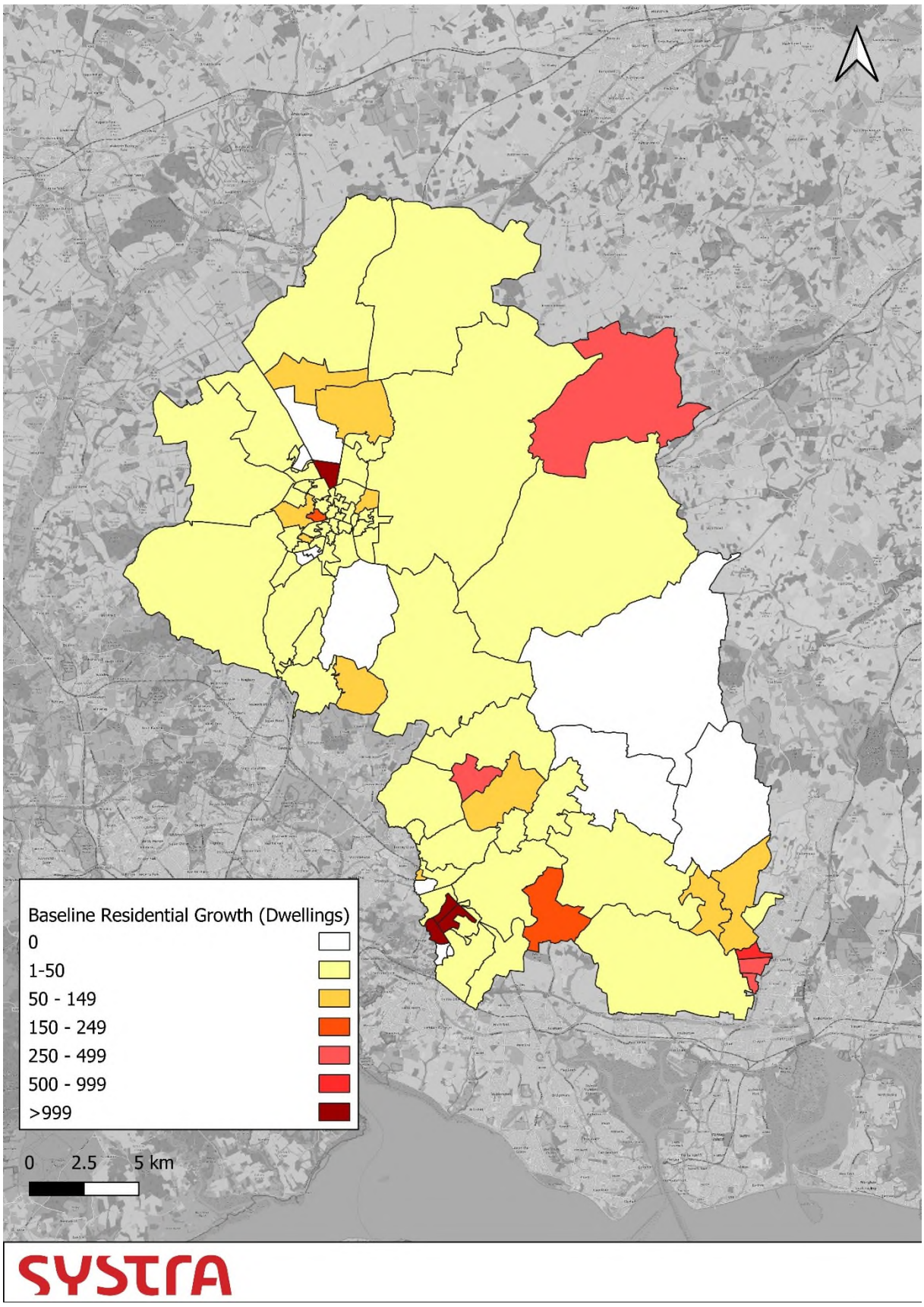


Figure 3-1 2041 Baseline – Residential Growth by model zone for Winchester District

Table 3-1 Baseline: Winchester District Land Use Inputs 2019 – 2041

	RESIDENTIAL	EMPLOYMENT (SQM)								
	Dwellings	Retail	Office	Industrial	Warehouse	Primary & Secondary Education	Adult Education	Hotel & Other Accomm	Healthcare	Leisure
SCENARIO 1 BASELINE 2019-2041 (Completions and Committed Developments)	9,490	13,526	48,913	53,454	22,486	5,953	0	3,532	0	15,929

3.3 Scenario 2 – 2041 Do Minimum

Highway and PT network

3.3.1 All elements of the highway and PT networks remain unchanged between the Baseline and Do Minimum scenarios for all modelled areas.

Non-Winchester District Land Use Assumptions

3.3.2 In the Do Minimum, the land use outside of Winchester District is the same as in the Baseline. By assessing the Local Plan in this way, there are no changes to the number of households, jobs, or population outside of Winchester. By ensuring land use inputs outside of Winchester are unchanged, the cumulative impacts of the Local Plan development can be isolated.

Winchester District Local Plan Land Use Assumptions

3.3.3 The Winchester District Local Plan development allocations are included within the Do Minimum scenario. The Winchester Local Plan development totals for the Do Minimum scenario are shown in Figure 3-2 and Table 3-2. All totals account for full growth in the Local Plan period (i.e., the totals also include for the Baseline growth). **Appendix B** includes the Do Minimum landuse inputs by model zone.

3.3.4 Table 3.3 summarises the difference between the Baseline growth in Table 3-1 and the Do Minimum growth in Table 3-2 for 2041. Figure 3-3 shows the difference in residential growth by zone between the Baseline and Do Minimum. For residential growth there is an increase of 4,612 dwellings between the Baseline and Do Minimum in 2041. From that total, the largest individual residential development site is at Sir John Moore Barracks to the north of City of Winchester with a total of 900 dwellings. The largest individual non-residential site is at Bushfield Camp to the south of City of Winchester and totals 100,000sqm of mixed used development.

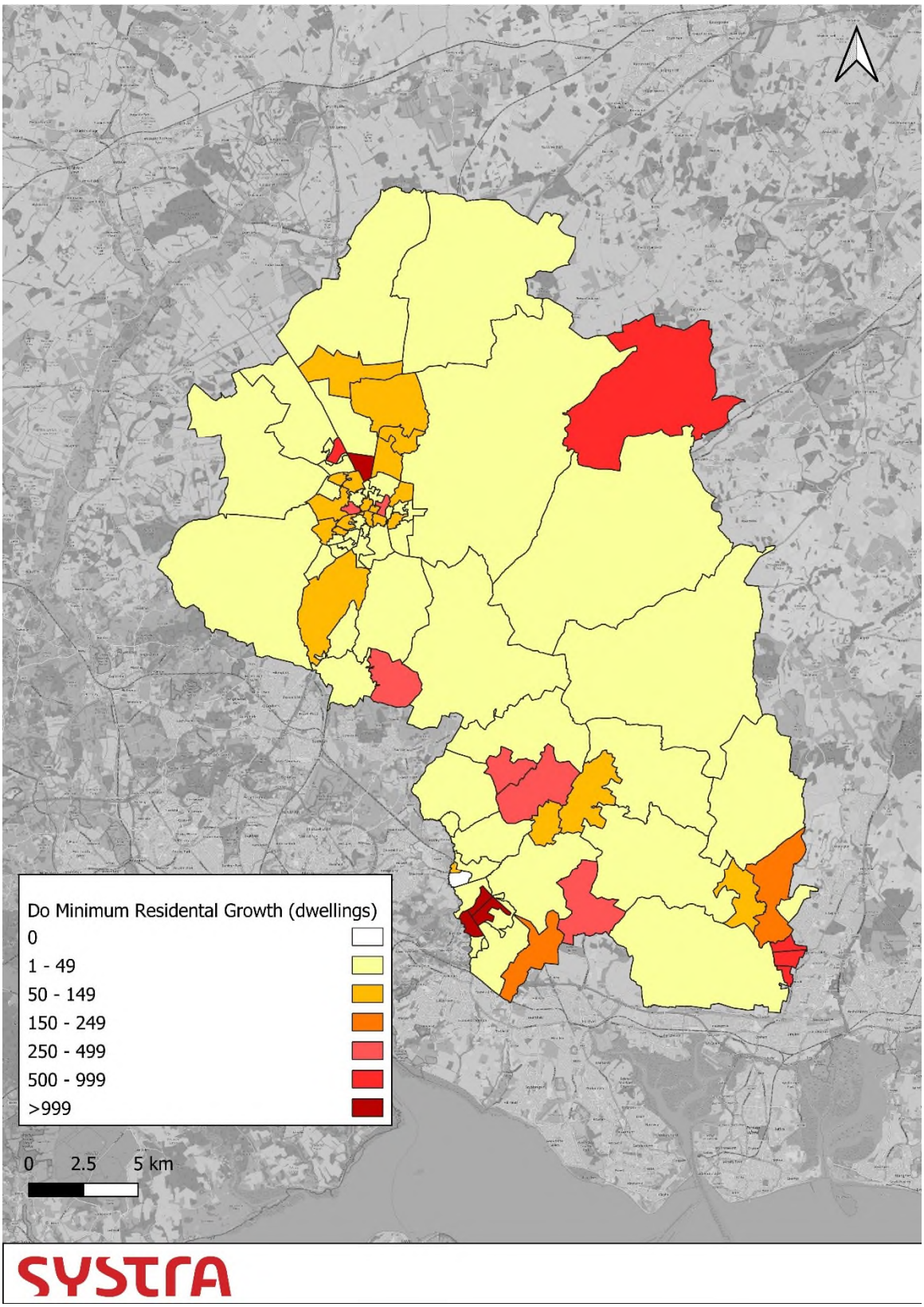


Figure 3-2 2041 Do Minimum Residential Dwelling growth by model zone for Winchester District

Table 3-2 Do Minimum: Winchester Land Use Assumptions 2019 – 2041 (totals include for Baseline values)

	RESIDENTIAL	EMPLOYMENT (SQM)								
	Dwellings	Retail	Office	Industrial	Warehouse	Primary & Secondary Education	Adult Education	Hotel & Other Accomm	Healthcare	Leisure
SCENARIO 2 DO MINIMUM (2041 Local Plan Development)	14,102	29,004	148,604	60,639	29,883	5,953	19,000	27,252	7,450	41,429

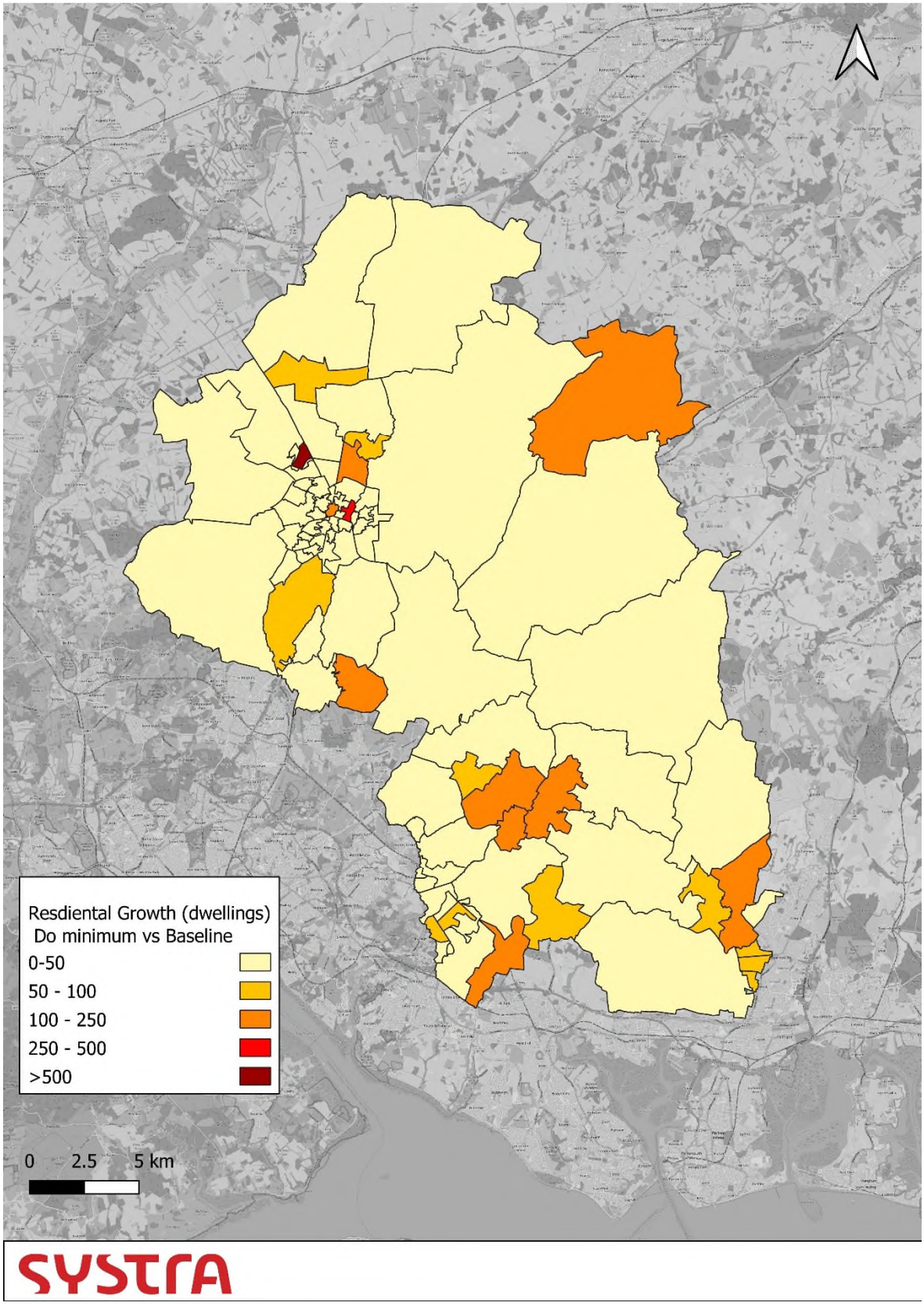


Figure 3-3 Difference in residential dwelling growth between 2041 Baseline and 2041 Do Minimum

Table 3-3 Isolated Cumulative Local Plan Growth (Do Minimum minus Baseline), 2019 – 2041

	RESIDENTIAL	EMPLOYMENT (SQM)								
	Dwellings	Retail	Office	Industrial	Warehouse	Primary & Secondary Education	Adult Education	Hotel & Other Accomm	Healthcare	Leisure
SCENARIO 2 DO MINIMUM (2041 Local Plan Development)	4,612	15,478	99,691	7,185	7,397	0	19,000	23,720	7,450	25,500

3.4 Scenario 3 – 2041 Do Something

Highway and PT network

3.4.1 The Do Something scenario includes the infrastructure measures identified to help mitigate the transport impacts associated to the Winchester Local Plan that could be coded into the model. The final mitigation sites/measures and selection process are identified in the Strategic Transport Assessment prepared by Hampshire Services. The modelled Do Something schemes are listed below, and **Appendix D** includes further details and drawings of the schemes were available:

- Park and Ride (P&R) facility (850 spaces) at the Sir John Moore Barracks and linking to Winchester City Centre. The bus route will also incorporate the Kings Barton P&R facility. Bus service every 10 minutes in AM and PM peaks and every 15 minutes in the interpeak.
- St Cross Roundabout (junction of Badger Farm Road/ St Cross Road/ Otterbourne Road/ Hockley Link). Conversion of standard roundabout to signalised roundabout.
- M3 Junction 11/ Hockley Link Roundabout. Lane allocation adjustments and increased northbound capacity between this junction and St Cross Roundabout.
- A3090 Badger Farm Road/ Meadow Way roundabout. New flared lane on A3090 southbound approach.

3.4.2 It should be noted that where mitigation measures increase capacity, and potentially attract further traffic, the expected reduction in delay from the mitigation may be dampened or absorbed entirely by the impact of the increased traffic volume. In addition, the provision of traffic signals will inherently produce an element of delay due to the red signal periods and for certain traffic movements this may be greater than the scenario without the signals particularly in time periods where capacity or congestion issues are not present/ forecast.

Land Use Assumptions

3.4.3 All Land Use assumptions in the Do Something are identical to the Do Minimum for all modelled areas and the full build-out of the Winchester Local Plan is accounted for.

4. LAND USE MODEL RESULTS

4.1.1 This section summarises the outputs of the land use model for the Baseline, Do Minimum, and Do Something scenarios. Note that the land use for both the Do Minimum and Do Something is identical with both including the growth associated to the Winchester Local Plan allocations.

4.2 Population, Dwellings, Jobs (LEIM Module Outputs)

4.2.1 Table 4-1 summarises the forecasts produced by the LEIM module of the SRTM, for the population, number of dwellings, and number of jobs within the Winchester District. In the table, the 2041 Do Minimum/ Do Something scenario has been compared against the 2041 Baseline scenario.

4.2.2 The Do Minimum/ Do Something has an increase of approximately 4,600 households compared to the Baseline in 2041 and is consistent with the model inputs and isolates the Local Plan growth. Linked to the increase in dwellings is a population increase of 11,600. The additional employment land use included in the Local Plan provides approximately 10,400 jobs in the district during the same period. Dwellings, Population and Jobs all increase in the region of 10% in the Do Minimum/ Do Something compared to the Baseline.

Table 4-1 LEIM outputs for Winchester District, 2041 Do Minimum/ Do Something vs 2041 Baseline

	2041 BASELINE	2041 DO MINIMUM/ DO SOMTHING	DIFFERENCE	% DIFFERENCE
Population	141,745	153,345	11,600	8%
Dwellings	60,349	64,965	4,617	8%
Jobs	100,137	110562	10,425	10%

5. MAIN DEMAND MODEL (MDM) RESULTS

5.1 Introduction

5.1.1 This section summarises the forecasts produced by the MDM module of the SRTM for the Baseline, Do Minimum and Do Something scenarios in order to isolate the cumulative impacts of the Local Plan development.

5.2 Person Trip Demand

5.2.1 The total person trips (represented in the model as a journey between an Origin-Destination pair), and percentage mode share to, and from, Winchester District for a 24-hour period are summarised in Table 5-1 and Table 5-2. Person trips are the standard unit used in the MDM prior to mode of travel being determined.

5.2.2 Table 5-1 shows the trip generation associated directly with the Local Plan (Do Minimum scenario) against the 2041 Baseline. The Do Minimum and Do Something scenarios include for an approximate increase of 11,600 population and 10,400 jobs within Winchester District when compared to the Baseline and there is an increase in demand across all modes of transport. The increases for Car and PT are slightly higher in the Do Something compared to the Do Minimum. This is consistent with the Do Something scheme mitigation and associated increased capacity provided for these modes.

5.2.3 The mode share for both the Do Minimum and Do Something scenarios remains similar to the Baseline. For the Do Minimum there is a very small increase in PT and Active mode share at the expense of highway most likely because of increased highway congestion in that scenario. For the Do Something the there is a very small increase in PT mode share at the expense of highway compared to the Baseline, but Active mode share is unchanged.

Table 5-1 Person Trips (24h) to / from Winchester (2041)

	SCENARIO	FROM WINCHESTER			TO WINCHESTER		
		HIGHWAY	PT	ACTIVE	HIGHWAY	PT	ACTIVE
ABSOLUTE	2041 Baseline	328,663	18,376	75,329	323,730	18,761	75,370
	2041 Do Minimum	359,067	20,814	83,198	352,890	21,154	83,240
	2041 Do Something	360,055	21,029	82,824	354,735	21,401	82,866
	Difference (Do Minimum vs Baseline)	*30,405*	*2,438*	*7,870*	*29,161*	*2,393*	*7,870*
	Difference (Do Something vs Baseline)	*31,392*	*2,653*	*7,496*	*31,005*	*2,640*	*7,496*

Table 5-2 Mode Share (24h) to / from Winchester (2041)

	SCENARIO	FROM WINCHESTER			TO WINCHESTER		
		HIGHWAY	PT	ACTIVE	HIGHWAY	PT	ACTIVE
MODE SHARE	2041 Baseline	77.8%	4.4%	17.8%	77.5%	4.5%	18.0%
	2041 Do Minimum	77.5%	4.5%	18.0%	77.2%	4.6%	18.2%
	2041 Do Something	77.6%	4.5%	17.9%	77.3%	4.7%	18.1%
	Difference (Do Minimum vs Baseline)	*-0.3%*	*0.1%*	*0.1%*	*-0.3%*	*0.1%*	*0.2%*
	Difference (Do Something vs Baseline)	*-0.2%*	*0.2%*	*0.0%*	*-0.2%*	*0.2%*	*0.2%*

5.3 Emissions Outputs

5.3.1 The SRTM outputs vehicle-based emissions forecasts for 10 emission types as shown in Table 5-3 and Table 5-4.

5.3.2 Table 5-3 summarises the change in emissions for Winchester District between the Baseline and Do Minimum. There is a general increase in emissions that is not unexpected on an unmitigated network because of Local Plan growth. Across all the emission types represented there is an approximate increase of 2-3% in the Do Minimum.

5.3.3 Table 5-4 summarises the emissions data for the Do Something compared to the Baseline. The emission increases are smaller compared to the Do Minimum because of the Do Something schemes mitigating some of the highway delay resulting from the Local Plan traffic growth.

Table 5-3 Vehicle Based Emissions (Winchester District) – 2041 Do Minimum vs. 2041 Baseline

Winchester District Emmissions (2041)	NOX (kg/12hr)	NO2 (kg/12hr)	PM10 (kg/12hr)	PM2.5 (kg/12hr)	HC (kg/12hr)	Carbon Monoxide (kg/12hr)	Carbon Dioxide (kg/12hr)	Benzene (kg/12hr)	Methane (kg/12hr)	1 3-Butadiene (kg/12hr)
Do Minimum vs Baseline	96	26	1.1	1.0	12	306	136,130	0.2	2.5	0.1
% Difference	2.1%	2.4%	2.6%	2.6%	2.5%	2.3%	2.0%	3.3%	3.1%	2.8%

Table 5-4 Vehicle Based Emissions (Winchester District) – 2041 Do Something vs. 2041 Baseline

Winchester District Emmissions (2041)	NOX (kg/12hr)	NO2 (kg/12hr)	PM10 (kg/12hr)	PM2.5 (kg/12hr)	HC (kg/12hr)	Carbon Monoxide (kg/12hr)	Carbon Dioxide (kg/12hr)	Benzene (kg/12hr)	Methane (kg/12hr)	1 3-Butadiene (kg/12hr)
Do Something vs Baseline	83	22	0.9	0.8	10	234	100,708	0.1	2.0	0.1
% Difference	1.8%	2.0%	2.1%	2.1%	2.0%	1.7%	1.5%	2.9%	2.5%	2.7%

6. HIGHWAY AND PUBLIC TRANSPORT (PT) MODEL RESULTS

6.1 Introduction

6.1.1 This section summarises the SRTM highway and PT outputs across Winchester District for the following Scenarios:

- 2041 Do Minimum vs. 2041 Baseline;
- 2041 Do Something vs 2041 Baseline.

6.1.2 For each comparison, the following aspects of the modelled highway and PT outputs have been reviewed:

- Highway Network Performance Statistics
- Highway Flow Difference
- Highway Delay Difference
- Highway Junction Capacity Hotspots
- PT passenger Flow Difference

6.2 2041 Do Minimum vs. 2041 Baseline

Highway Network Performance Statistics

6.2.1 The key highway network statistics for Winchester District and the full SRTM core study area have been summarised, including total travel time on the network (vehicle hours), total travel distance on the network (vehicle kilometres), and average speed. For reference, Figure 2-2 in Chapter 2 identifies the core model area for the SRTM.

6.2.2 The performance of the highway network for the AM and PM periods for 2041 Baseline, and 2041 Do Minimum is shown in Table 6-1 and Table 6-2 . The highway traffic growth within Winchester, arising from the introduction of the Local Plan allocations, generates a forecast increase in total vehicle hours driven in the AM peak hour of approximately 2% and 4.5% in the PM. Total vehicle kilometres driven in Winchester District are forecast to increase by approximately 1% in the AM peak hour and 1.5% in the PM Peak, whilst average speed is forecast to decrease by approximately 1.5% and 3% in the AM and PM peaks respectively due to the increased network delay. These outputs are consistent with the highway network within Winchester accommodating greater trips and experiencing increasing congestion.

6.2.3 The impact on the wider, full Core model area is considered small/negligible as land use changes between the scenarios are focussed solely on Winchester District.

Table 6-1 AM Highway Model Statistics, 2041 Do Minimum vs. 2041 Baseline

		BASELINE 2041	DO MINIMUM 2041	DIFFERENCE	% DIFFERENCE
Vehicle Hours	Core Model Area	175,821	176,839	1,018	0.58%
	Winchester	34,904	35,670	766	2.19%
Vehicle kms	Core Model Area	6,835,990	6,848,639	12,649	0.19%
	Winchester	1,716,267	1,730,954	14,688	0.86%
Average Speed (kph)	Core Model Area	38.9	38.7	-0.2	-0.39%
	Winchester	49.2	48.5	-0.6	-1.31%

Table 6-2 PM Highway Model Statistics, 2041 Do Minimum vs. 2041 Baseline

		BASELINE 2041	DO MINIMUM 2041	DIFFERENCE	% DIFFERENCE
Vehicle Hours	Core Model Area	184,500	185,905	1,405	0.76%
	Winchester	36,426	38,068	1,642	4.51%
Vehicle kms	Core Model Area	7,481,085	7,503,604	22,519	0.30%
	Winchester	1,824,431	1,849,557	25,126	1.38%
Average Speed (kph)	Core Model Area	40.5	40.4	-0.2	-0.46%
	Winchester	50.1	48.6	-1.5	-2.99%

Highway Link Flows, Delays and Capacity Hotspots

6.2.4 The outputs of the Road Traffic Model (RTM) have been analysed with respect to highway volume of traffic (link flow), delay and capacity. For clarity, the outputs shown are for those which exceed a given threshold which is specified in the following appropriate paragraphs. The plots included in the report are an overview of the Winchester District – with more localised plots of Winchester City being provided as appropriate.

6.2.5 In addition to the new traffic directly associated with the Local Plan sites, these plots highlight any re-routing of traffic that may result from localised congestion or redistribution of existing trips. These plots identify where the net change to traffic flow is most pronounced.

Change in Highway Traffic Flow

6.2.6 For the flow difference plots the absolute difference traffic volume (in passenger car units, PCUs[3]) is identified adjacent to the appropriate link. Blue lines identify a reduction against the comparative scenario and pink/red lines an increase in addition, the scale of the change is represented graphically with the coloured lines of varying width. Only flow differences of 30 PCUs or greater are displayed in the plots.

6.2.7 Figure 6-1 and Figure 6-2 identify the change in traffic flow in the AM and PM peak hours between the 2041 Do Minimum and 2041 Baseline scenarios, at an overall district level. Figure 6-3 and Figure 6-4 provide more detail of the flow changes in Winchester City.

6.2.8 The largest changes in traffic flow in the AM peak are in the vicinity to the Bushfield Camp employment site to the south of the city. The model forecasts that traffic entering the model zone from Badger Farm Road will be 969 PCUs and traffic leaving the zone via Badger Farm Road will be 350 PCUs. The high traffic demand associated to the Bushfield development is causing capacity issues at the junctions of A3090 Badger Farm Road/ Hockley Link roundabout (St Cross roundabout), M3 J11 N/B offslip roundabout, and Pitt Roundabout (A3090/ B3040). An impact of the capacity problems at these locations is that traffic is either delayed upstream at these junctions and/or rerouting to avoid the congestion. This in turn produces apparent flow reductions at some locations. A particular impact is that traffic previously routeing via Otterbourne Road and Badger Farm Road towards Romsey Road is diverting off Otterbourne Road via Poles Lane to A3090 to access Romsey Road. The congestion at A3090 Badger Farm Road/ Hockley Link roundabout and M3 J11 N/B offslip roundabout is also resulting in a reduction in traffic continuing towards the city centre via St Cross Road. Addressing these congestion points would be expected to result in fewer diverted trips via Poles Lane and potentially a net increase in traffic on St Cross Road towards the City centre.

6.2.9 The model also shows significant traffic increases on the roads adjacent to the Sir John Moore Barracks residential development site to the north of the city. Traffic volume on Andover Road is expected to increase by approximately 130 PCUs in both directions in the AM peak hour. The additional traffic demand is forecast to cause strain on the A272/B3420 (Three Maids Hill) roundabout north of the site and Andover Road/Harestock Road signal junction south of the site.

6.2.10 Other notable flow increases include: the city centre one-way system and some of its main approaches including Andover Road, Easton Lane, Romsey Road and B3404 Alresford Road.

6.2.11 The PM peak displays a tidal impact compared to the AM Peak. Similarly to the AM peak, the largest changes in the PM peak are located in the vicinity to the Bushfield Camp employment site. The increase in traffic on Badger Farm Road accessing the development, and the forecast capacity problems at the A3090 Badger Farm Road/ Hockley Link roundabout, are forcing a diversion route from A3090 via Poles Lane to

[3] A PCU is common unit of measurement when reporting traffic volume or queue length in traffic modelling to account for the different size of vehicles. For example, a car typically represents 1 PCU but a larger vehicle such as a bus would have a higher PCU value of (say) 2 PCUs.

Otterbourne Road for traffic moving away from the City. This is the reverse movement to that reported in 6.2.8 for the AM peak.

6.2.12 Notable increases in flow are also forecast near the Sir John Moore Barracks during the PM peak with Andover Road flows increases by up to approximately 130 PCUs in the southbound direction.

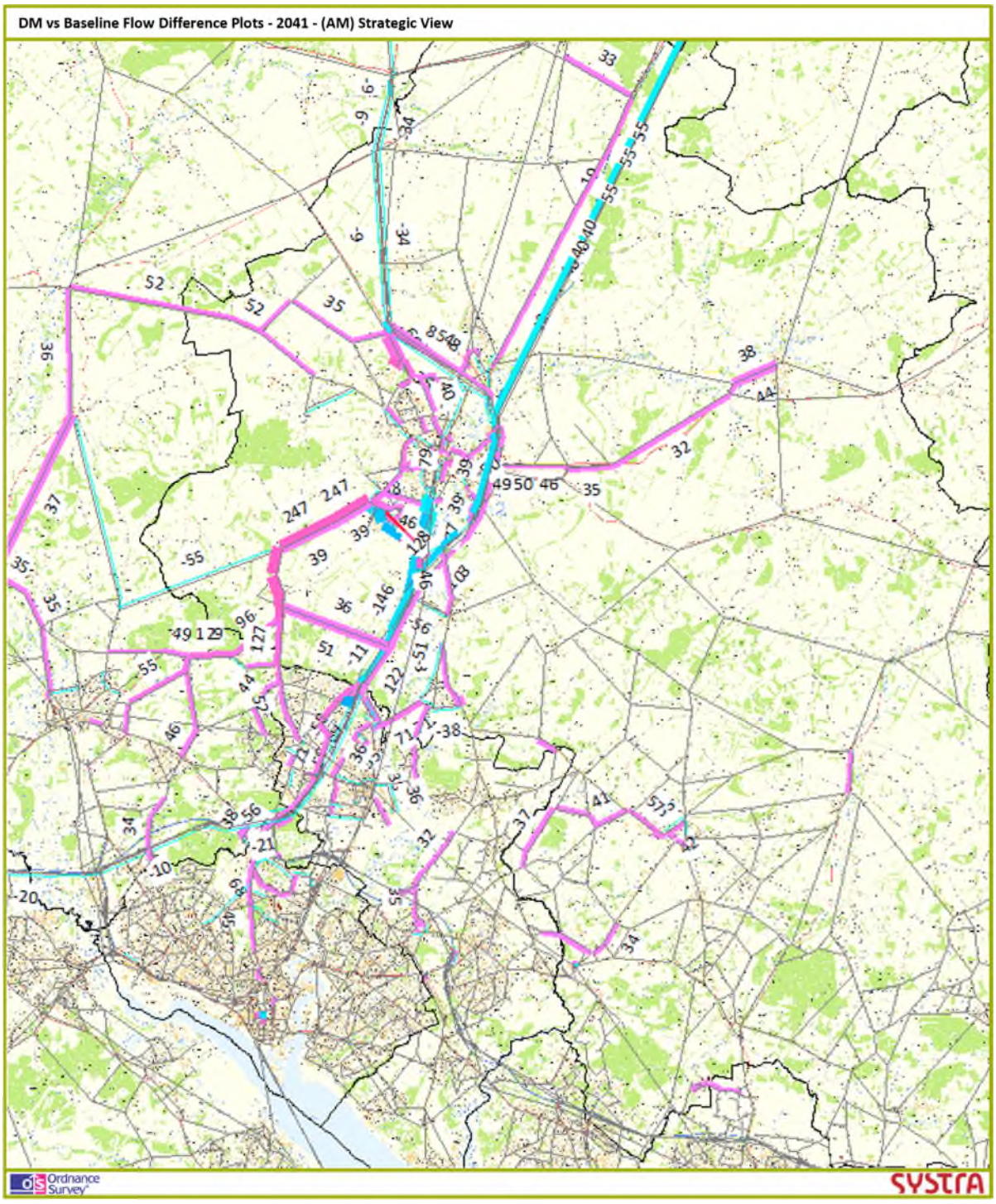


Figure 6-1 Highway Flow Difference – 2041 DM vs. 2041 Baseline (AM) – strategic view

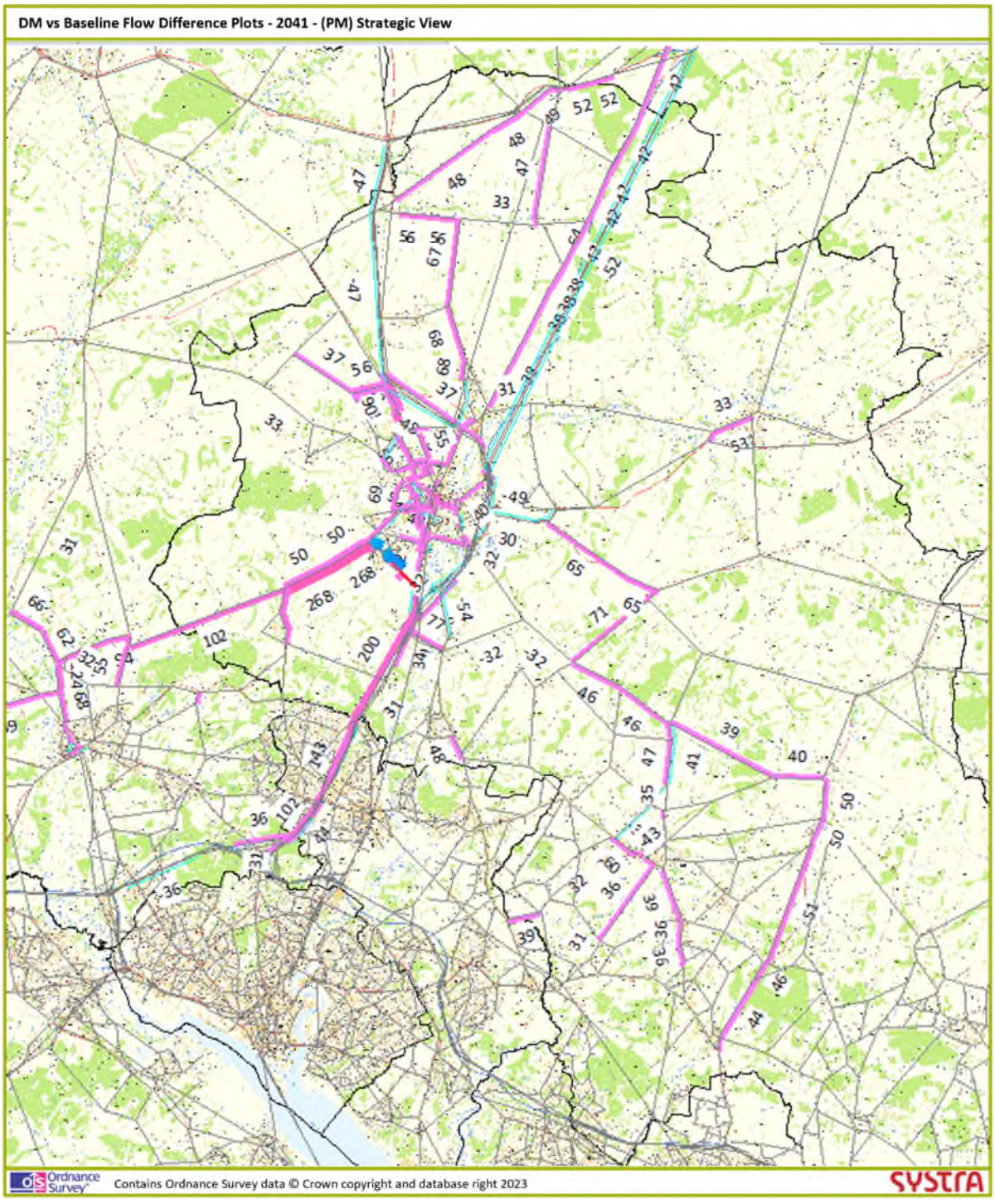


Figure 6-2 Highway Flow Difference – 2041 DM vs. 2041 Baseline (PM) – Strategic View

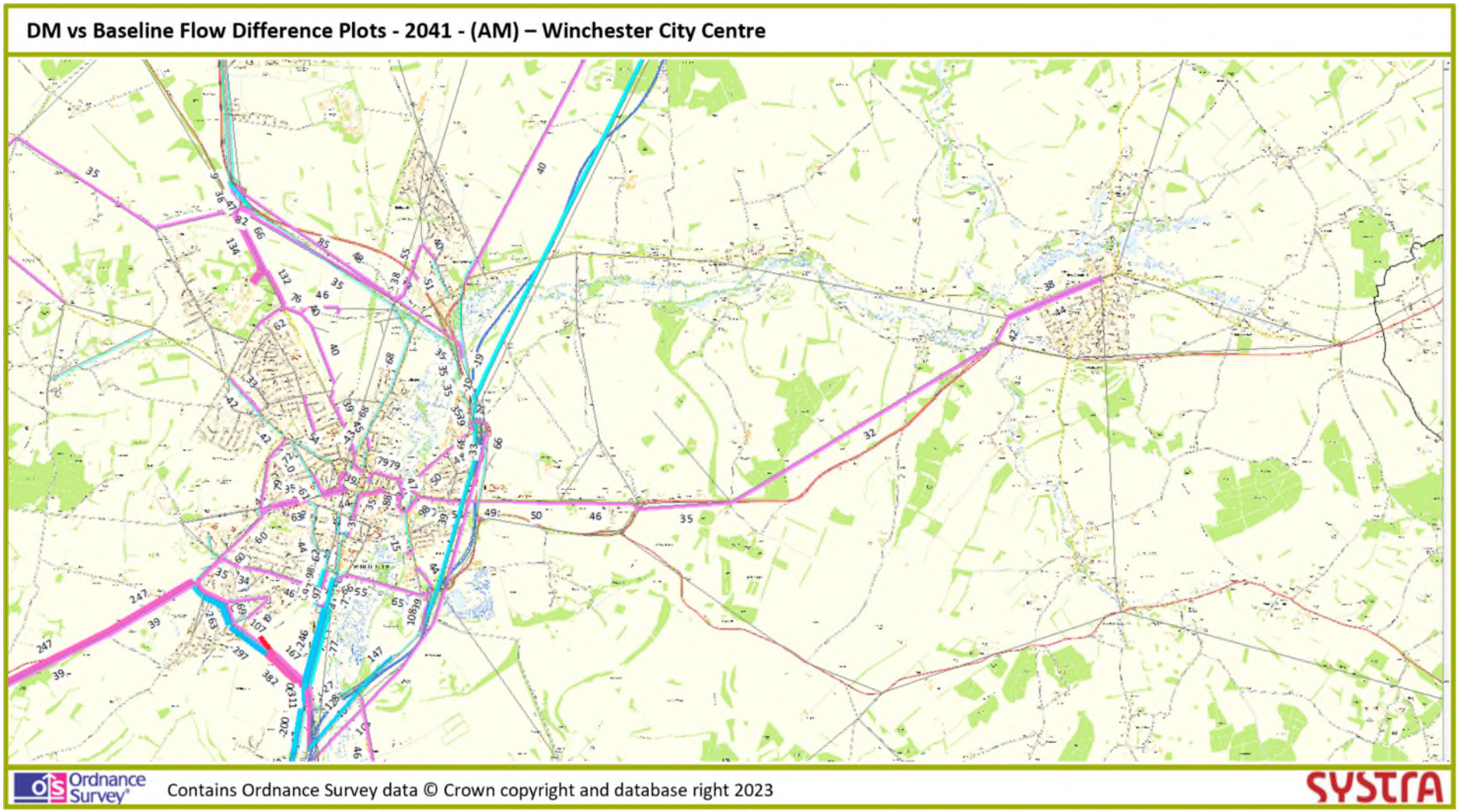


Figure 6-3 Highway Flow Difference – 2041 DM vs. 2041 Baseline (AM) – Winchester City centre

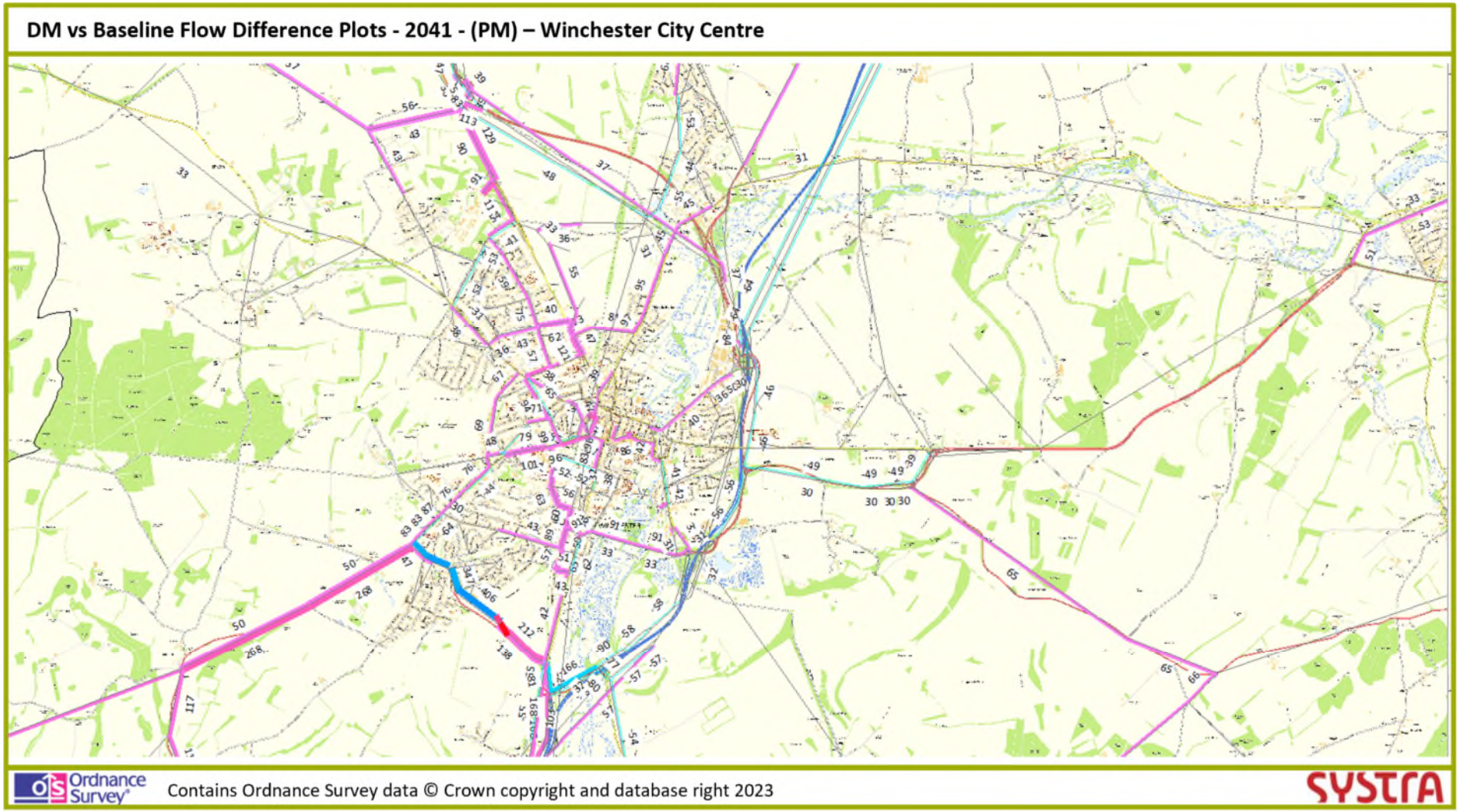


Figure 6-4 Highway Flow Difference – 2041 DM vs. 2041 Baseline (PM) – Winchester City centre

Highway Delays

6.2.13 The absolute difference in delay in seconds per PCU is identified adjacent to the appropriate link. Blue lines identify a reduction and pink/red lines an increase. In addition, the scale of the change is represented graphically with the coloured lines of varying width. Only delay differences in excess of 5 seconds are displayed in the plots.

6.2.14 Figure 6-5 and Figure 6-6 identify the change in vehicle delay in the AM and PM peak hours between the 2041 Do Minimum and 2041 Baseline scenarios, at an overall district level. Figure 6-7 and Figure 6-8 provide more detail of the delay changes in Winchester city centre for AM and PM peak hours respectively.

6.2.15 The largest increase in delay in the AM peak is on Hockley Link (133s) at the junction with Badger Farm Road. The southbound approach of Badger Farm Road at the junction with Meadow Way has an increase of 91s and the westbound approach of Hazeley Road at the junction with B3335 High Street has an increase of 70s. The B3335 northbound approach at the junction with the M3J11 southbound offslip has an increase of 64s. The proximity of the Bushfield Camp development site and associated traffic generation is considered to be the main cause of these delay increases.

6.2.16 In the PM peak the largest increase in delay is forecast on Hockley Link southbound (143s) at the M3 J11 N/B offslip roundabout. A delay increase of 126s is forecast on the eastbound approach of Badger Farm Road at the junction with the Hockley Link and a 105s increase on Otterbourne Hill southbound to the junction with Poles Lane. Due to the proximity to the zone containing Bushfield Camp site, these delays are considered to be primarily as a result of the Bushfield Camp employment site.

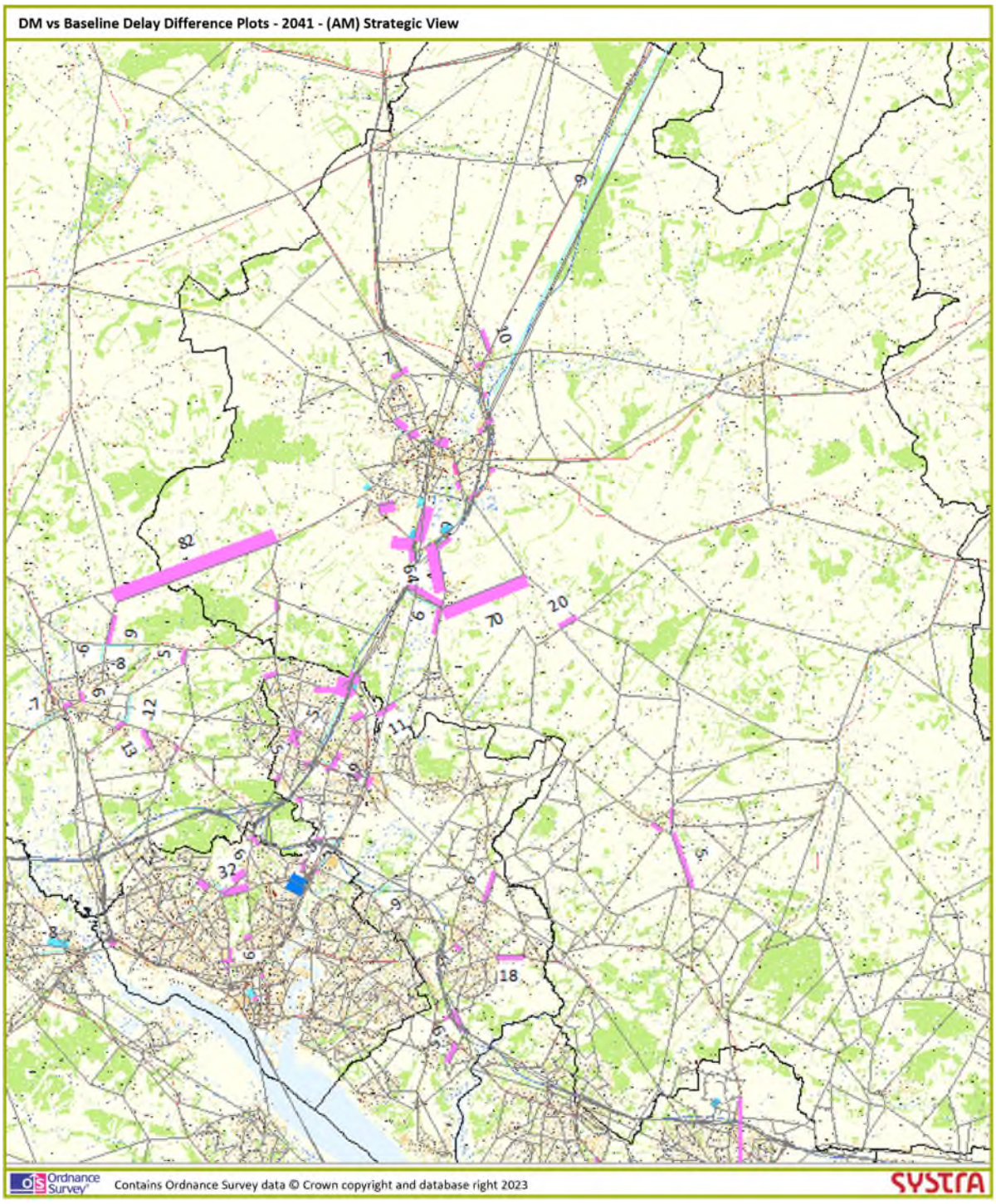


Figure 6-5 Delay Difference 2041 DM vs. 2041 Baseline (AM) – strategic view

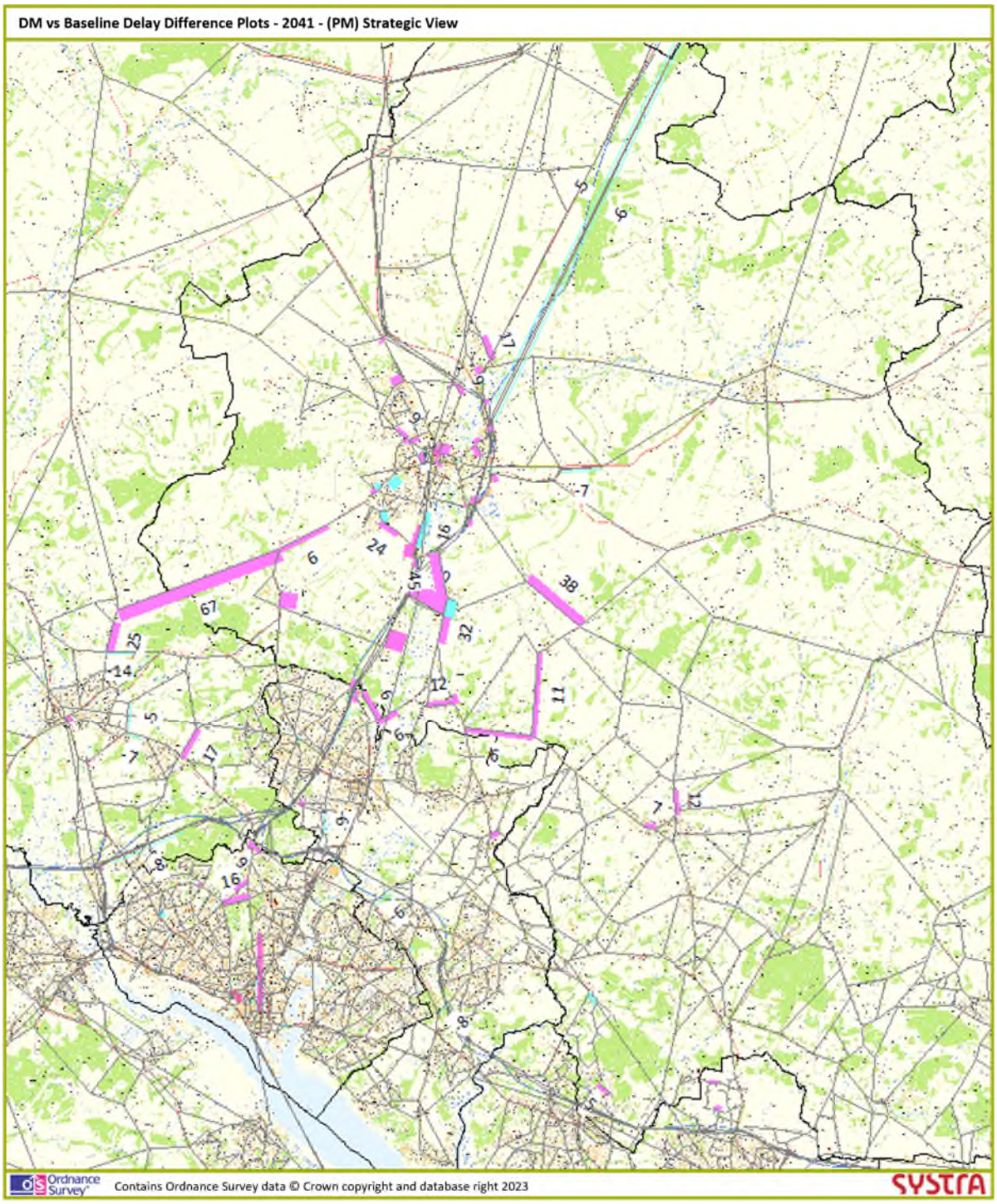


Figure 6-6 Delay difference 2041 DM vs. 2041 Baseline (PM) – strategic view

DM vs Baseline Delay Difference Plots - 2041 - (AM) – Winchester City Centre

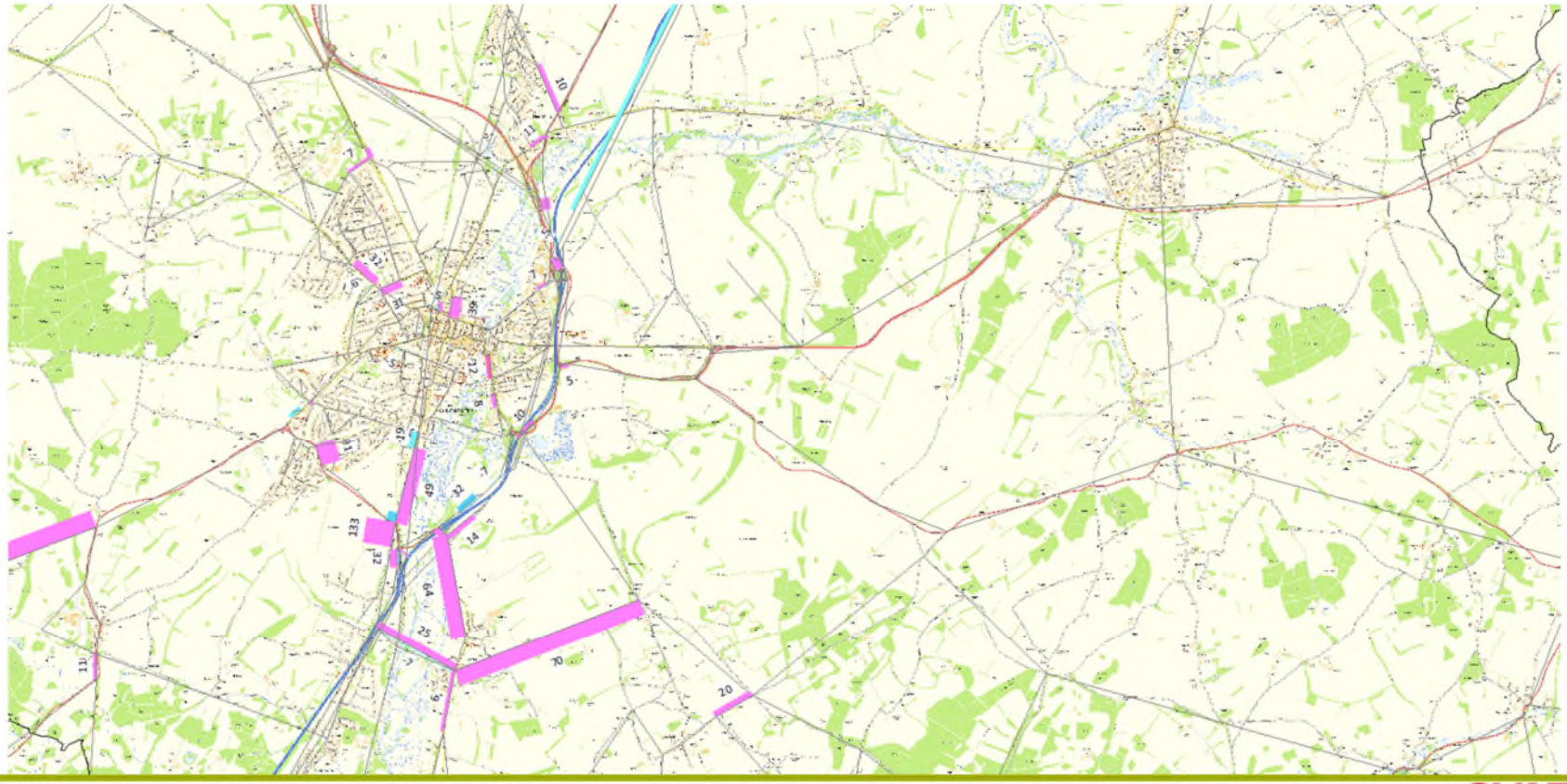


Figure 6-7 Delay difference 2041 DM vs. 2041 Baseline (AM) – Winchester City centre

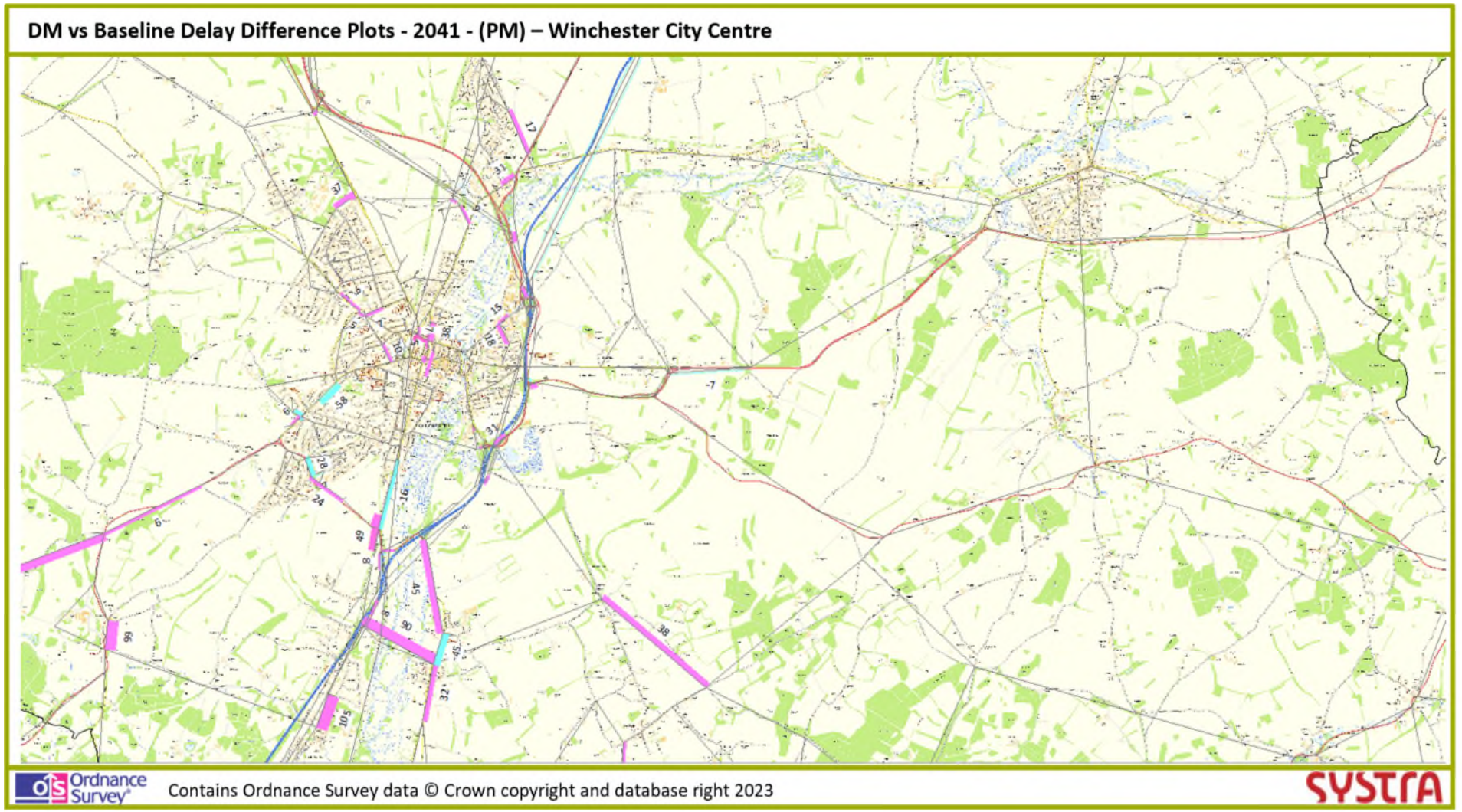


Figure 6-8 Delay difference 2041 DM vs. 2041 Baseline (PM) – Winchester City centre

Highway Junction Capacity Hotspots

6.2.17 In order to identify locations with potential highway capacity issues as a result of proposed cumulative Local Plan allocations, the operating capacity on all links on the approaches to junctions within Winchester District have been assessed. Capacity is defined as the maximum traffic volume that a road can accommodate in a set time period, typically 1 hour. Junction approaches have been reviewed based on the ratio of traffic volume to the capacity of the road (known as V/C) on each approach – hence identifying links with a high V/C is a proxy for identifying junctions with capacity issues.

6.2.18 The following criteria has been used to identify a long list of junctions with relatively high V/C values for each scenario tested:

- Junction approach links where the V/C is greater than 85% in either 2041 AM or PM peak hour.

6.2.19 If the V/C is near, or in excess of 90%, then the junction may be subject to queuing and delays; a value of 90% is normally taken as the practical capacity value for design purposes. A value of >100% means that the junction is forecast over capacity and significant queues and delay could occur.

6.2.20 In peak hours, it is not unexpected that a relatively high number of junctions have a V/C in excess of 85%. The analysis has been refined further to identify the junctions potentially impacted the most by traffic associated to Local Plan development growth.

6.2.21 The change in V/C and delay between the scenarios has been calculated to identify locations where the forecast highway network performance deterioration is most pronounced in terms of junction performance. The following criteria has been applied to identify junctions where operational performance worsens either significantly or severely These criteria have been used on similar SRTM commissions for Local Plans and agreed with HCC and National Highways, as the Highway Authorities:

- 'Significant' increase in V/C is where the V/C is greater than 85% and has increased by more than 5% on any approach arm; between the 2041 Baseline and 2041 Do Minimum; and
- 'Severe' increase in V/C is either where the V/C is greater than 95% and has increased by more than 10%, or where delay is greater than 120 seconds and has increased by more than 60 seconds on any approach arm, between the 2041 Do Minimum and 2041 Baseline.

6.2.22 It should be noted that the above criteria are not the only measure by which junction/ network performance or scale of impact associated to transport growth can be classified. They are considered a starting point (consistent with other SRTM commissions) for comparison of network performance from which subsequent more detailed assessment may refine those locations considered most impacted.

6.2.23 A detailed list of junction performance for comparison is provided in **Appendix C**

6.2.24 To provide context with regard to the number of junctions with high V/C irrespective if they have experienced significant impact form Local Plan traffic, Figure 6-9 and Figure 6-10 display the junctions forecast to have an V/C greater than 85% in the 2041 Baseline

and 2041 Do Minimum respectively (in any time period). 136 junctions meet this criterion in the 2041 Baseline and therefore would be approaching capacity without Local Plan growth, with the 2041 Do Minimum forecast to have 140 junctions meeting the criteria once Local Plan growth is accounted for.

6.2.25 Further to the analysis identifying those junctions with V/C more than 85% in either the Baseline or Do Minimum scenarios, we have applied the threshold detailed in Section 6.2.21 to identify those junctions within Winchester District most impacted by highway growth between both scenarios.

6.2.26 Applying the criteria there are a total of 7 junctions that meet the 'severe' change criteria and 11 are classified as 'significant' as summarised in Figure 6-11, and Table 6-3

6.2.27 All 7 of the junctions classified 'severe' are to the south of the City of Winchester. Due to the location, it is considered that the Bushfield Camp site and associated traffic is the likely cause of the majority of these severe impacts.

Table 6-3 2041 Do Minimum vs 2041 Baseline Impacted Junction List

ID	JUNCTION NAME	'SIGNIFICANTLY' IMPACTED	'SEVERELY' IMPACTED
1	A272/B3420 Andover Road	Y	
2	A3090/Otterbourne Road/ B3335 St Cross Road (St Cross Roundabout)		Y
3	B3047 Hyde Street/B3040 Jewry Street/B3330	Y	
4	B3330/ The Broadway	Y	
5	B3420 Andover Road/ Harestock Road	Y	
6	Main Road/ Poles lane/ Otterbourne Road		Y
7	B3354 Main Road/Church Lane	Y	
8	M3 J11 NB offslip/ Hockley Link		Y
9	B3420 Andover Road / B3401 Bereweeke Road	Y	
10	M3 J10 NB offslip	Y	
11	B3335/Hazeley Road/ Finch's Lane		Y
12	M3 J10 SB onslip	Y	
13	A3090/ Meadow Way		Y
14	B3330/ B3420/ B3044	Y	
15	B3049 Stockbridge Road/ B3041 Chilbolton Avenue	Y	

ID	JUNCTION NAME	'SIGNIFICANTLY' IMPACTED	'SEVERELY' IMPACTED
16	A3090/ Merdon Castle Lane		Y
17	A3090/ Poles Lane/ Hursley Park Road		Y
18	Pitt Roundabout – A3090/ B3040	Y	

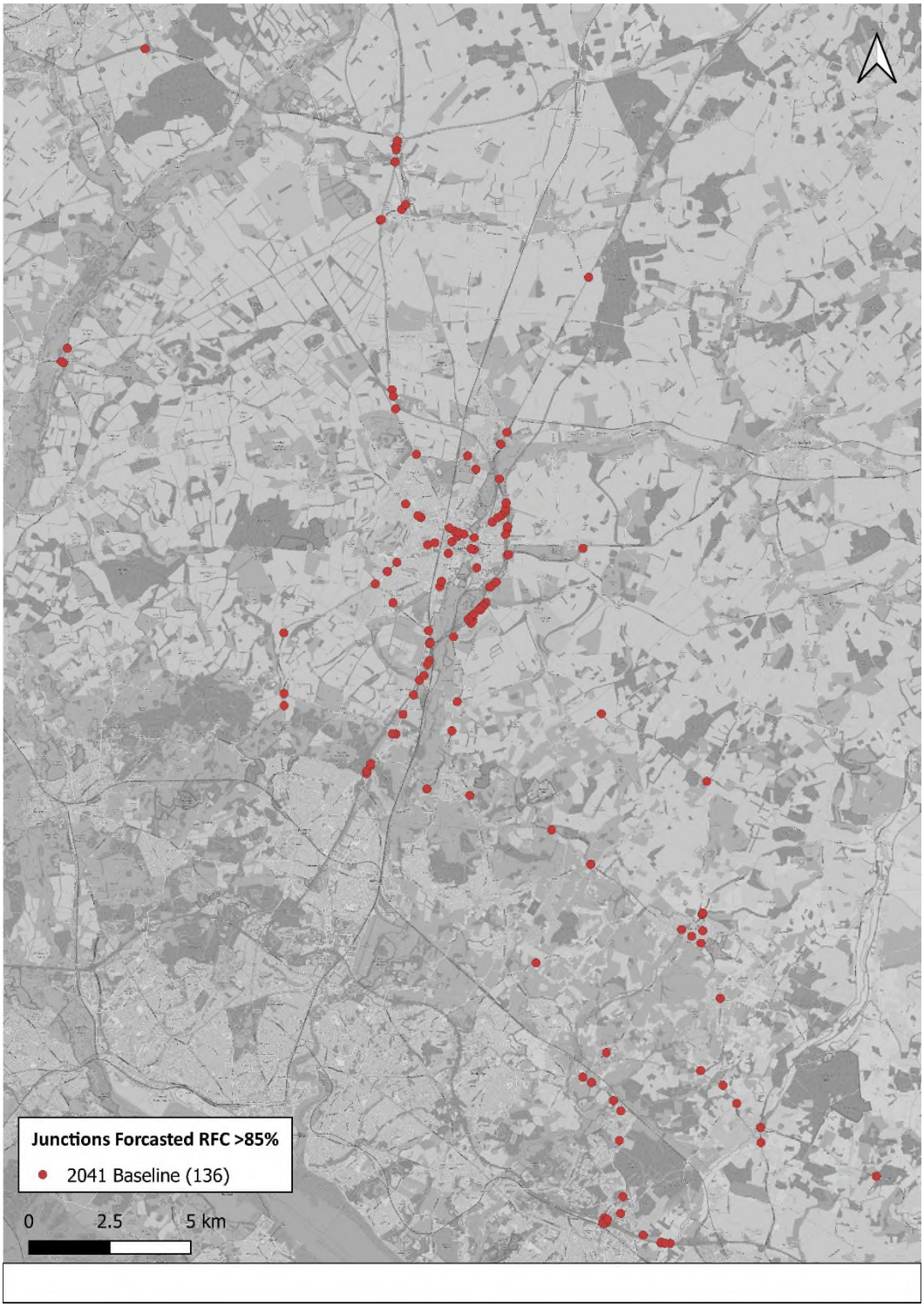


Figure 6-9 Junctions Forecast to have a V/C >85% in 2041 Baseline

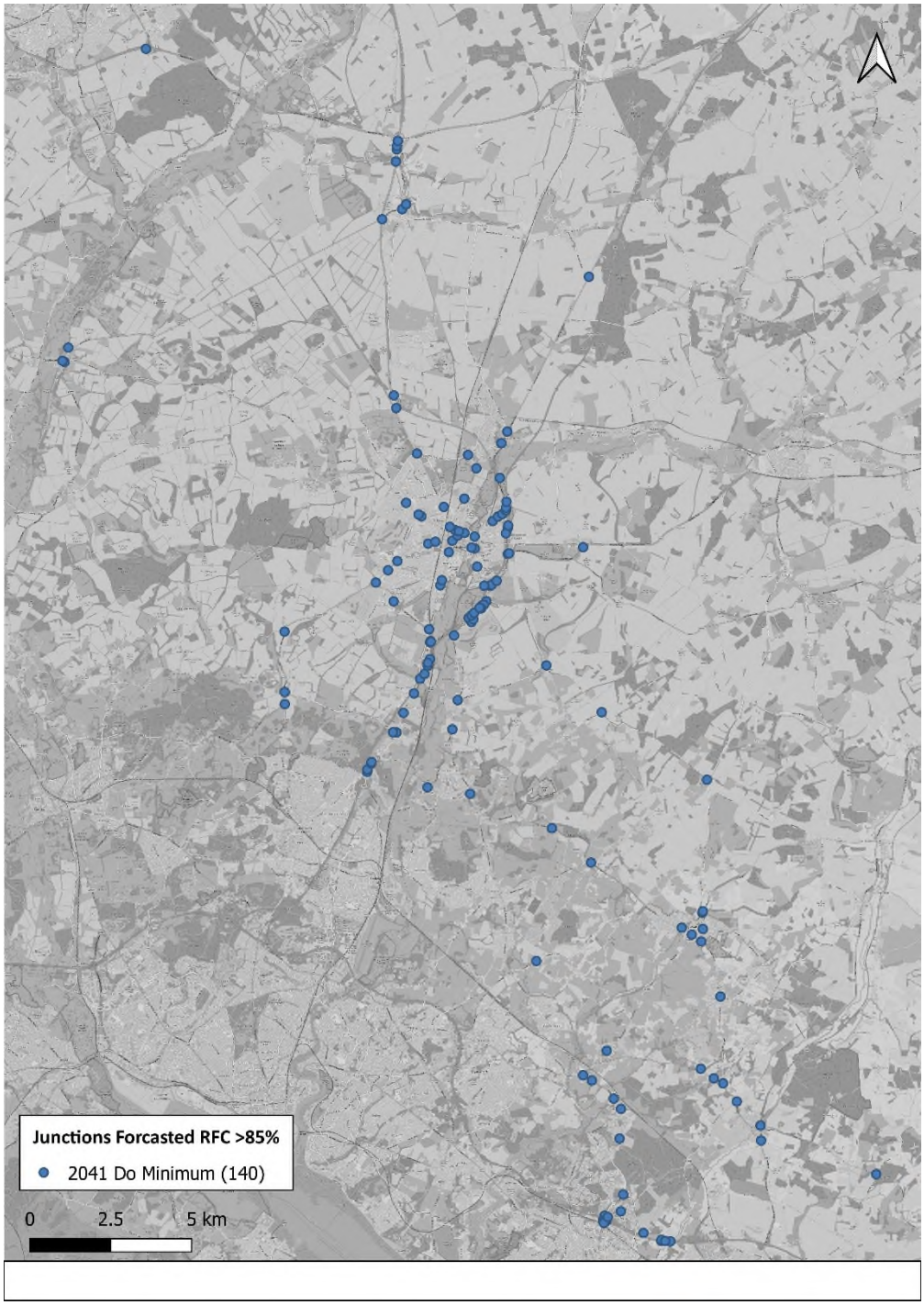


Figure 6-10 Junctions with V/C > 85 % in 2041 Do Minimum

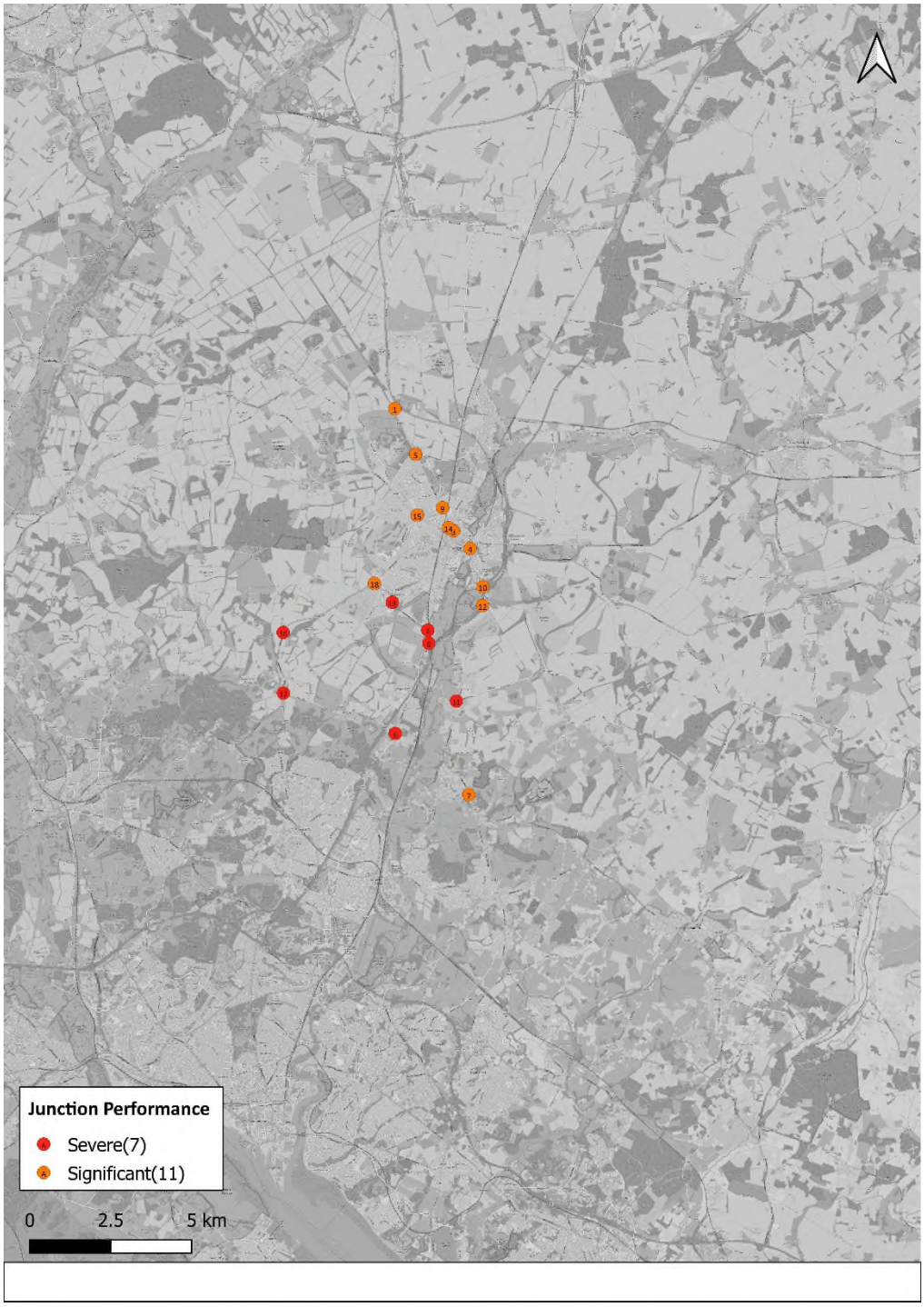


Figure 6-11 2041 Do Minimum Vs 2041 Baseline 'Significant' or 'Severe' Impacted Junction Location

Public Transport Passenger Flow Difference

6.2.28 The PT passenger flow difference plots show the change in passenger volumes on PT services (rail and bus). They follow a similar format to the highway flow difference plots with the value identified adjacent to the appropriate link. Blue lines identify a reduction against the comparative scenario and pink/red lines an increase in addition, the scale of the change is represented graphically with the coloured lines of varying width.

6.2.29 Figure 6-12 and Figure 6-13 identify the change in passenger volume in the AM and PM peak hours between the 2041 Do Minimum and 2041 Baseline scenarios, at an overall district level. Figure 6-14 and Figure 6-15 provide more detail of the PT passenger volume changes in Winchester City.

6.2.30 For rail, passenger flow increases are forecast on both the Southampton mainline and the line branching off at Eastleigh towards Fareham. Where the lines converge, the maximum AM increase is approximately 130 passengers on the northbound section between Eastleigh and Winchester. In the PM peak hour, there is approximately 110 passengers making the reverse journey (southbound) on this section of the line.

6.2.31 For bus, the focus of passenger flow changes is primarily on the park & ride routes for Winchester City. The new P&R facility at Kings Barton plus existing sites at Bar End have increased passenger volumes. The South Winchester and Pitt sites have small reduction which is most likely the result of forecast highway delay increases in the vicinity to these sites particularly at the junctions of A3090 Badger Farm Road/ Hockley Link roundabout and Pitt Roundabout (Badger Farm Road/ Romsey Road) plus the increased flows on Badger Farm Road itself. As buses on this route are for the most part mixed in with general traffic, the traffic congestion also increases the journey time for buses. Route E1, adjacent to the South Winchester P&R site, has a notable passenger increase of approximately 190 passengers in the AM towards the City centre along St Cross Road. Due to the increased congestion on the P&R route it appears passengers are using the parking facility at the South Winchester site but are then taking the E1 service towards the centre.

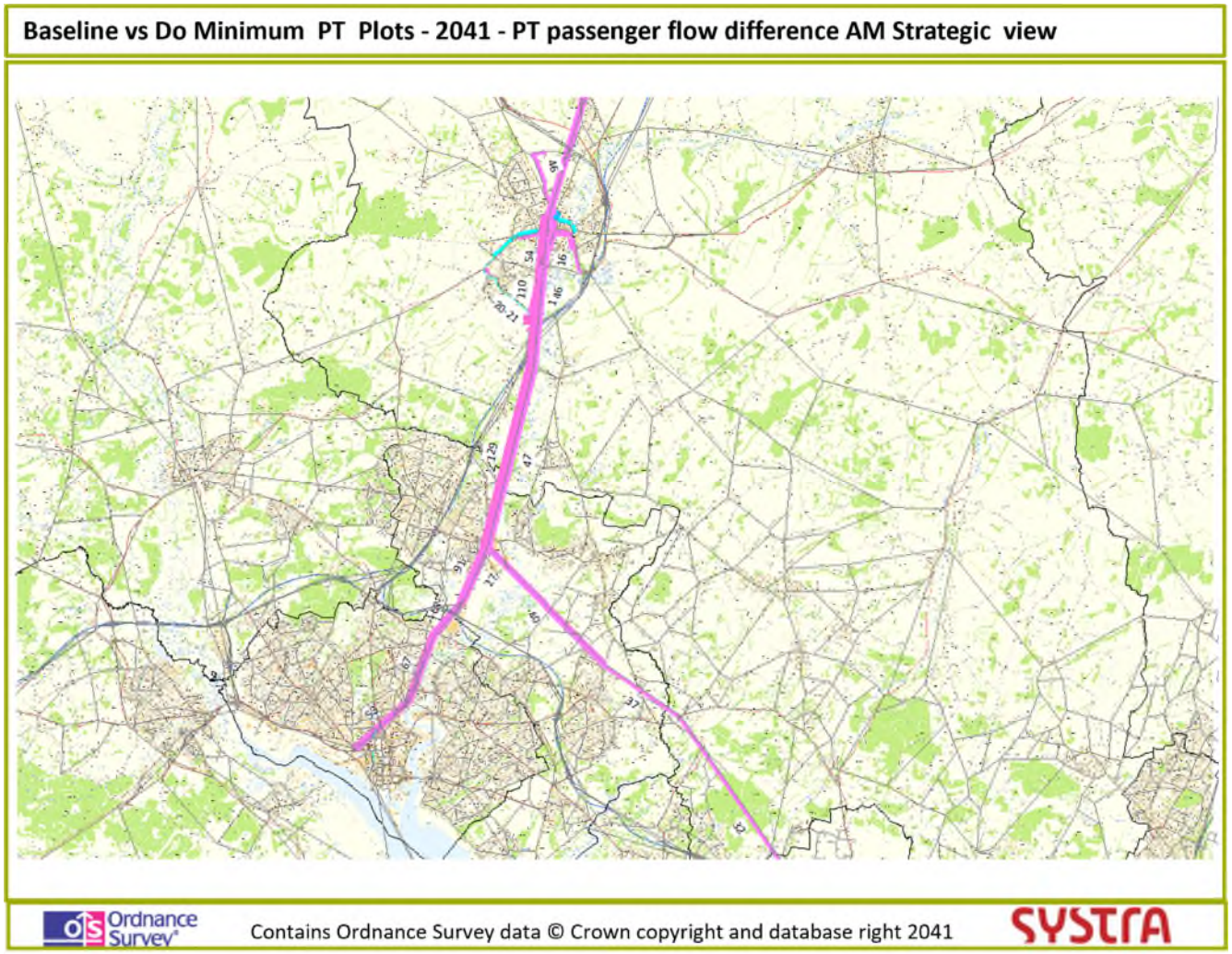


Figure 6-12 PT Passenger Difference – 2041 DM vs. 2041 Baseline (AM) – Strategic view

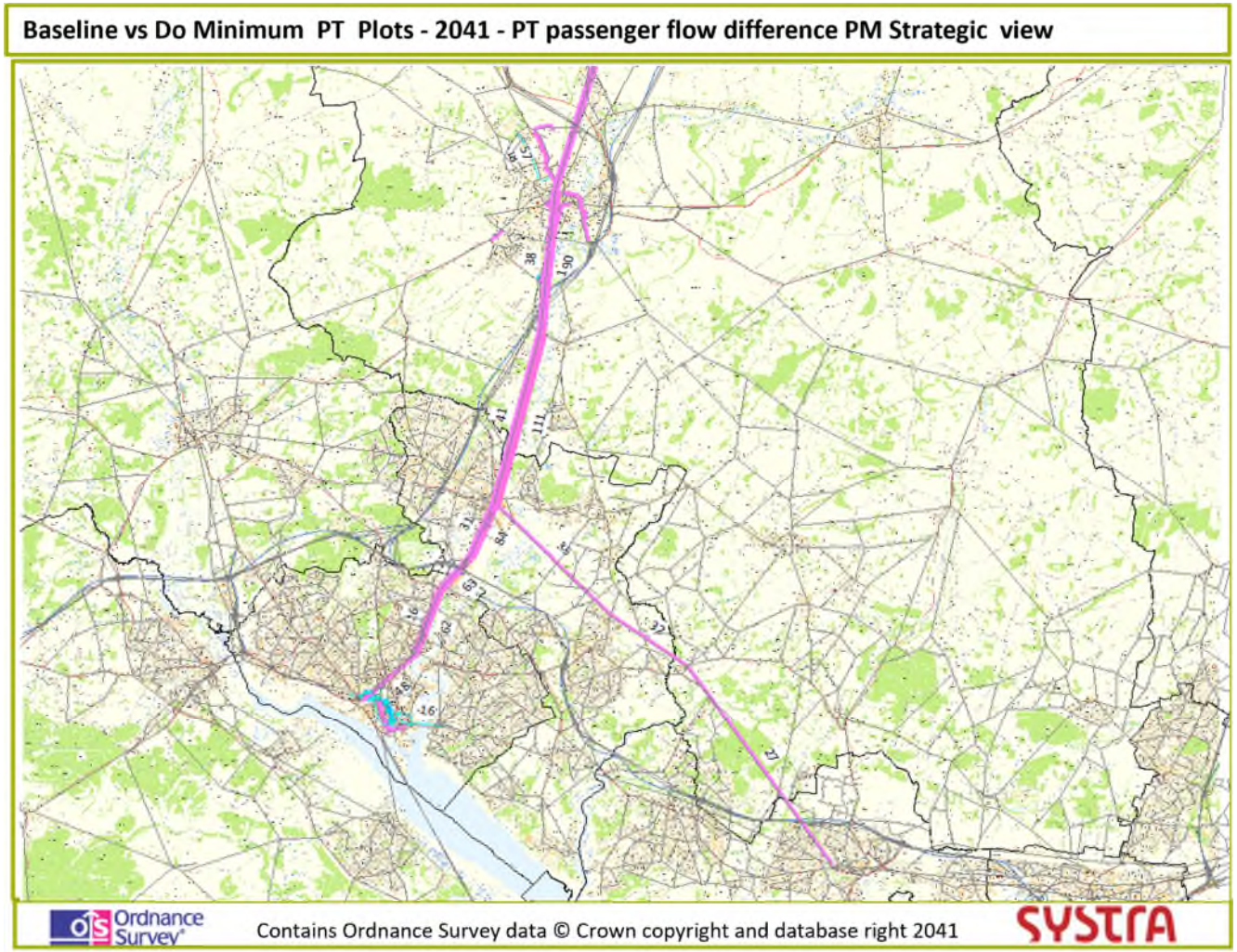


Figure 6-13 PT Passenger Difference – 2041 DM vs. 2041 Baseline (PM) – Strategic view

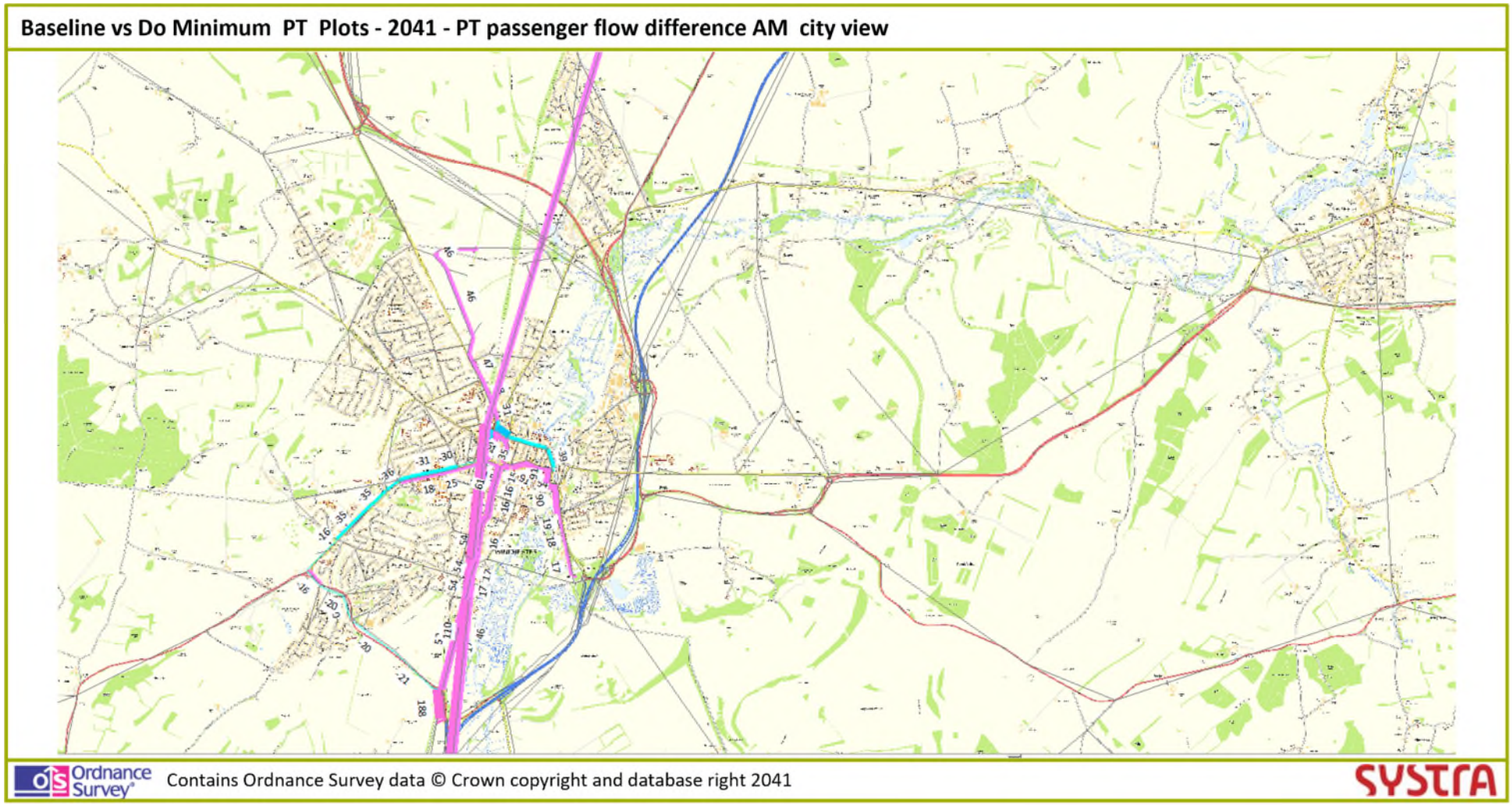


Figure 6-14 PT Passenger Difference – 2041 DM vs. 2041 Baseline (AM) – Winchester city centre

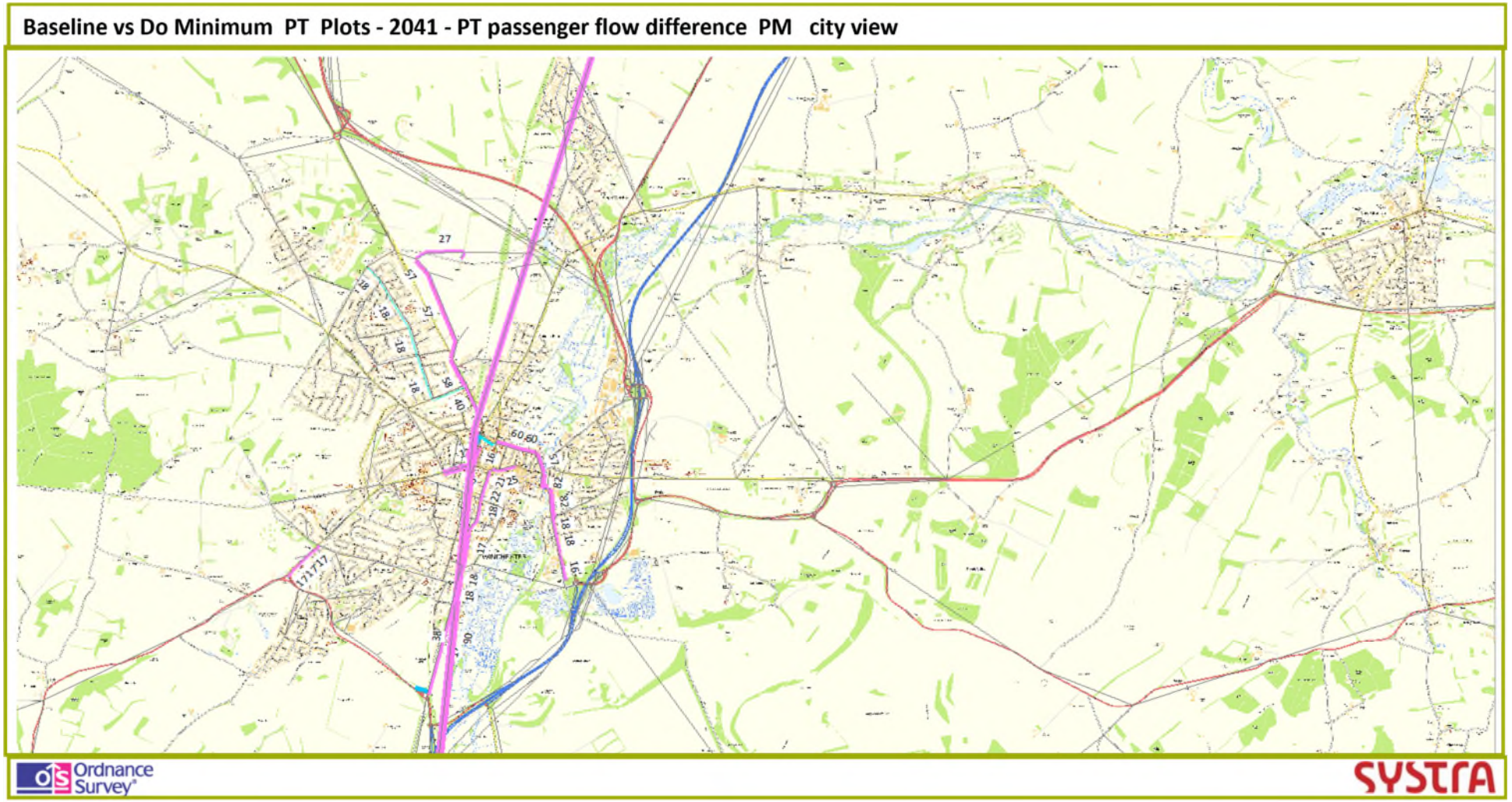


Figure 6-15 PT Passenger Difference – 2041 DM vs. 2041 Baseline (PM) – Winchester city centre

6.3 2041 Do Something vs. 2041 Baseline

Highway Network Performance Statistics

6.3.1 The key network statistics for Winchester District and the full SRTM core study area have been summarised, including total travel time on the network (vehicle hours), total travel distance on the network (vehicle kilometres), and average speed. For reference, Figure 2-2 in Chapter 2 identifies the core model area for the SRTM.

The performance of the highway network for the AM and PM periods for 2041 Baseline, and 2041 Do Something is shown in Table 6-4 and Table 6-5 respectively.

6.3.2 Table 6-5The highway traffic growth within Winchester from the Local Plan allocations generates a forecast increase in total vehicle hours driven in the AM peak hour of approximately 3% and 5% in the PM. Total vehicle kilometres driven in Winchester District are forecast to increase by approximately 1.5% in both the AM and PM peak hours. Average vehicle speed is forecast to decrease by approximately 1.5% and 3% in the AM and PM peaks respectively. The pattern of these changes is similar to the Do Minimum vs Baseline comparison but the scale of increase for vehicle hours and vehicle kilometres is slightly greater in the Do Something. This can be attributed to the highway mitigation facilitating/ attracting more highway trips.

6.3.3 The impact on the wider, full Core model area is again considered small/negligible.

Table 6-4 AM Highway Model Statistics, 2041 Do Something vs. 2041 Baseline

		BASELINE 2041	DO SOMETHING 2041	DIFFERENCE	% DIFFERENCE
Vehicle Hours	Core Model Area	175,821	176,998	1,177	0.7%
	Winchester	34,904	36,021	1,117	3.2%
Vehicle kms	Core Model Area	6,835,990	6,862,393	26,403	0.4%
	Winchester	1,716,267	1,746,211	29,944	1.7%
Average Speed (kph)	Core Model Area	38.9	38.8	-0.11	-0.3%
	Winchester	49.2	48.5	-0.69	-1.4%

Table 6-5 PM Highway Model Statistics, 2041 Do Something vs. 2041 Baseline

		BASELINE 2041	DO SOMETHING 2041	DIFFERENCE	% DIFFERENCE
Vehicle Hours	Core Model Area	184,500	185,889	1,389	0.8%
	Winchester	36,426	38,166	1,740	4.8%
Vehicle kms	Core Model Area	7,481,085	7,507,441	26,356	0.4%
	Winchester	1,824,431	1,855,476	31,045	1.7%
Average Speed (kph)	Core Model Area	40.5	40.4	-0.16	-0.4%
	Winchester	50.1	48.6	-1.47	-2.9%

Change in Highway Traffic Flow

6.3.4 For the flow difference plots the absolute difference traffic volume (in PCUs) is identified adjacent to the appropriate link. Blue lines identify a reduction against the comparative scenario and pink/red lines an increase in addition, the scale of the change is represented graphically with the coloured lines of varying width. Only flow differences of 30 PCUs or greater are displayed in the plots.

6.3.5 Figure 6-16 and Figure 6-17 identify the change in traffic flow in the AM and PM peak hours between the 2041 Do Something and 2041 Baseline scenarios, at an overall district level. Figure 6-18 and Figure 6-19 provide more detail of the flow changes in Winchester City.

6.3.6 The network in the immediate vicinity to the Bushfield site continues to show the highest flow increases. Following the inclusion of the mitigation measures, the improved performance of the St Cross roundabout in particular has reduced traffic using the back roads (particularly Poles Lane) to link between Otterbourne Road and A3090 with more traffic now using Badger Farm Road. Traffic on St Cross Road has also increased because of the improvements (for motor vehicles) at St Cross Roundabout. This includes traffic that has switched from M3 J10 to J11 to access Winchester in the AM and traffic that has switched from Romsey Road to St Cross Road in the PM. This increased traffic volume is now putting pressure on a number of junctions on St Cross Road itself.

6.3.7 The new P&R site at Sir John Moore Barracks is helping to mitigate the trip generation associated to the development and results in some small traffic flow reductions beyond the site towards the city centre (Andover Road North in AM, Harestock Road in PM) but it is also increasing traffic on the section of Andover Road North between the P&R site and the A34, as a result of traffic using this road to access the parking at the P&R site.

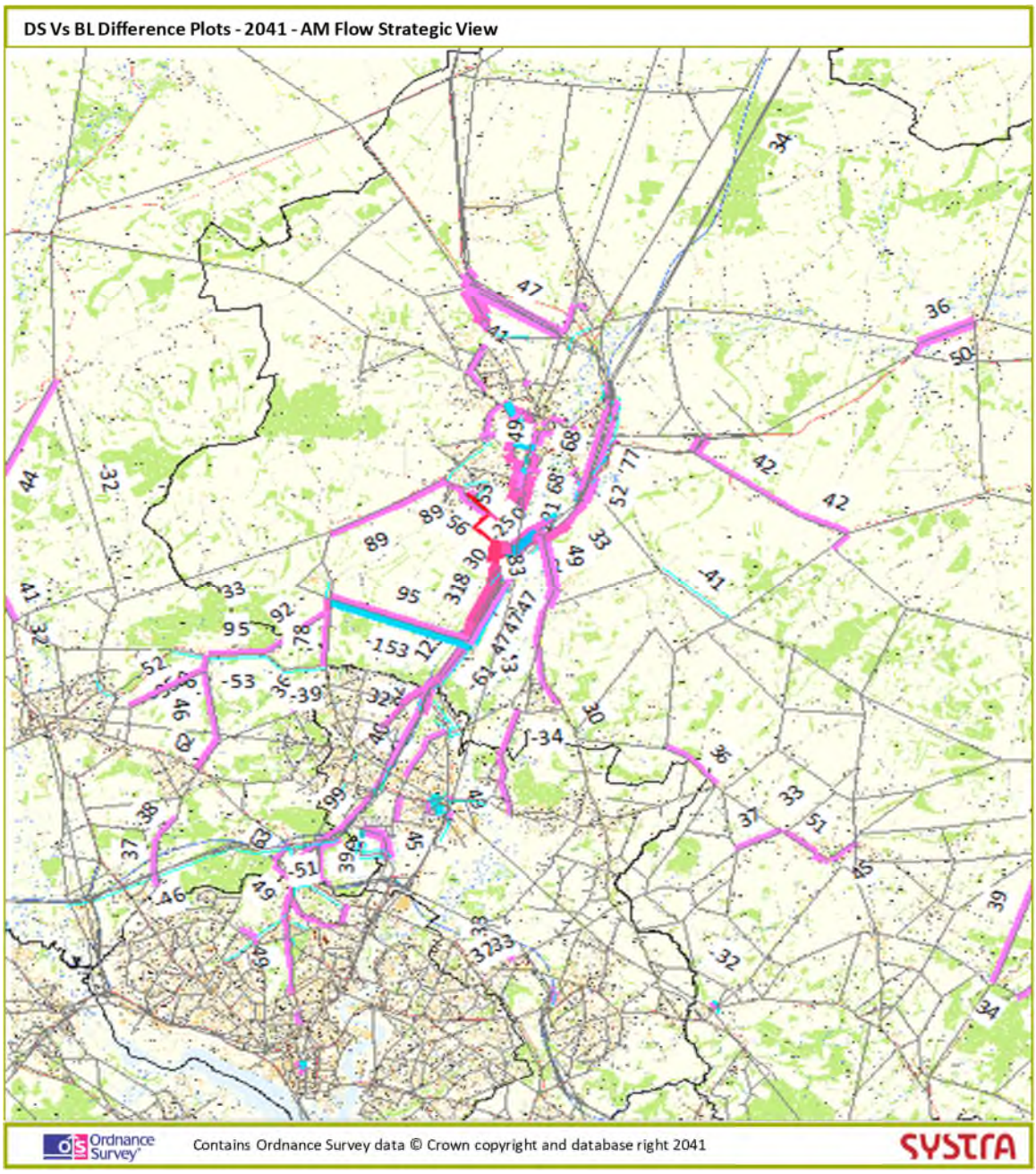


Figure 6-16 Highway Flow Difference – 2041 AM Do Something vs. 2041 Baseline – Strategic View

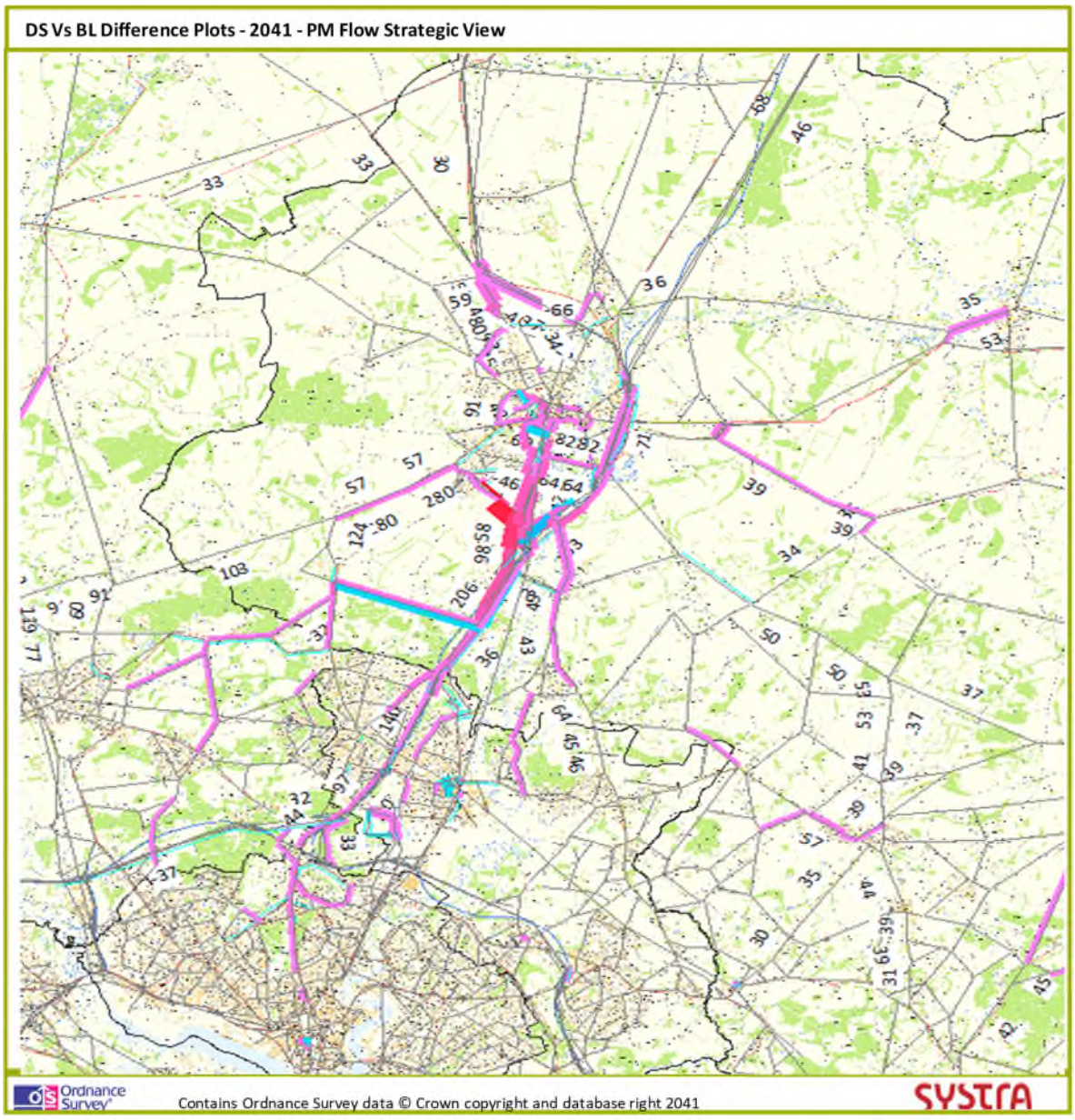


Figure 6-17 Highway Flow Difference – 2041 PM Do Something vs. 2041 Baseline – Strategic View

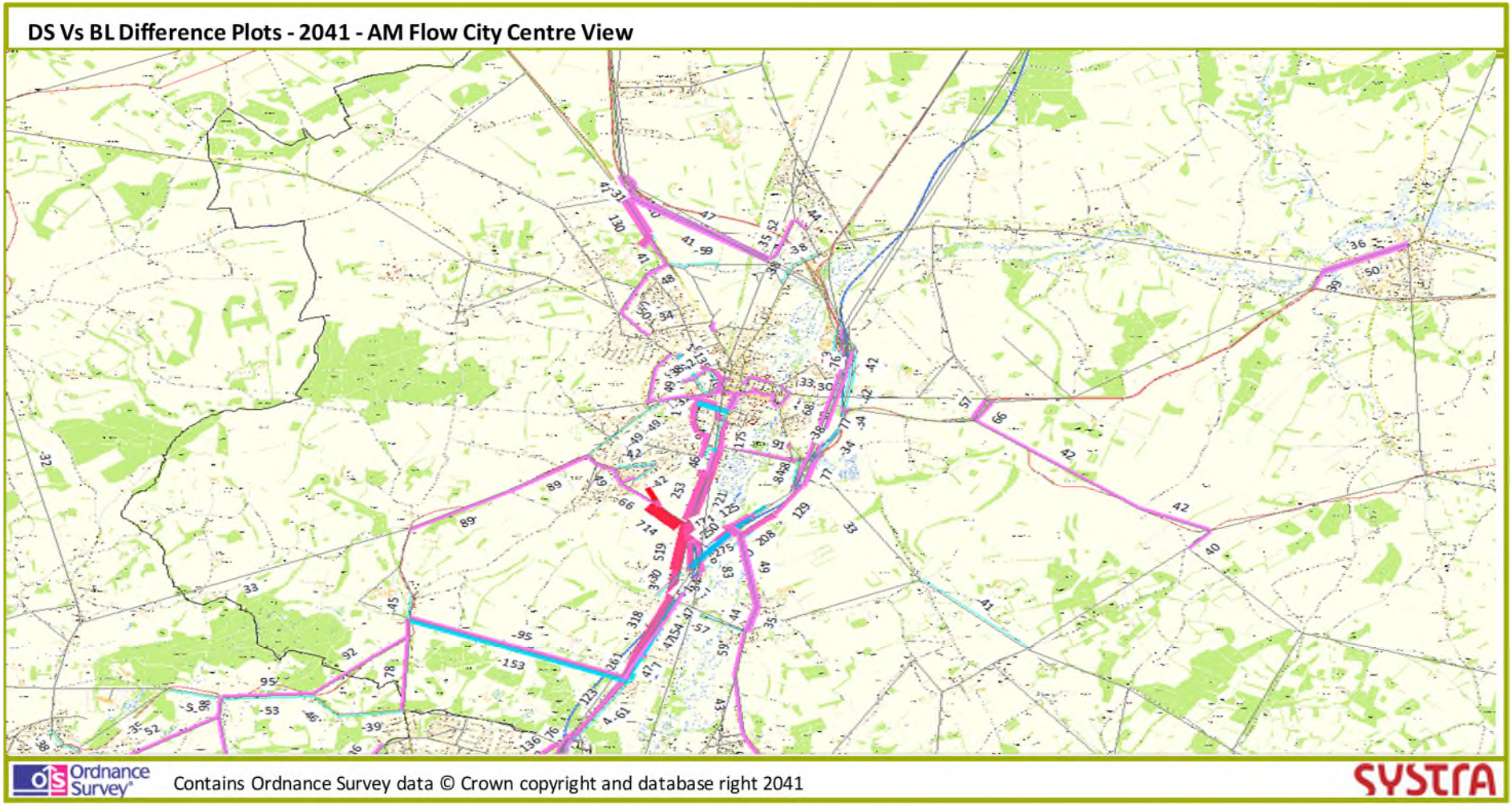


Figure 6-18 Highway Flow Difference – 2041 AM Do Something vs. 2041 Baseline – Winchester City Centre

Figure 6-19 Highway Flow Difference – 2041 PM Do Something vs. 2041 Baseline – Winchester City Centre

Highway Delays

6.3.8 The absolute difference in delay in seconds per PCU is identified adjacent to the appropriate link. Blue lines identify a reduction and pink/red lines an increase. In addition, the scale of the change is represented graphically with the coloured lines of varying width. Only delay differences in excess of 5 seconds are displayed in the plots.

6.3.9 Figure 6-20 and Figure 6-21 identify the change in vehicle delay in the AM and PM peak hours between the 2041 Do Something and 2041 Baseline scenarios, at an overall district level. Figure 6-22 and Figure 6-23 provide more detail of the delay changes in Winchester City centre for AM and PM peak hours respectively.

6.3.10 The highway mitigation schemes at St Cross roundabout, M3 J11 NB offslip/ Hockley Link and Badger Farm Road/ Meadow Way have reduced some of the larger delays that were present in the Do Minimum. However, the traffic that has reassigned as a result of mitigation is resulting in a high delay increase of 142s (AM peak) on B3335 at the signal junction with the M3 J11 S/B, and a further delay increase of 189s (AM peak) on Shawford Road at the junction with Otterbourne Road. In the PM peak, the Finch's Lane approach to the signal junction with B3335 has a delay increase of 207s.

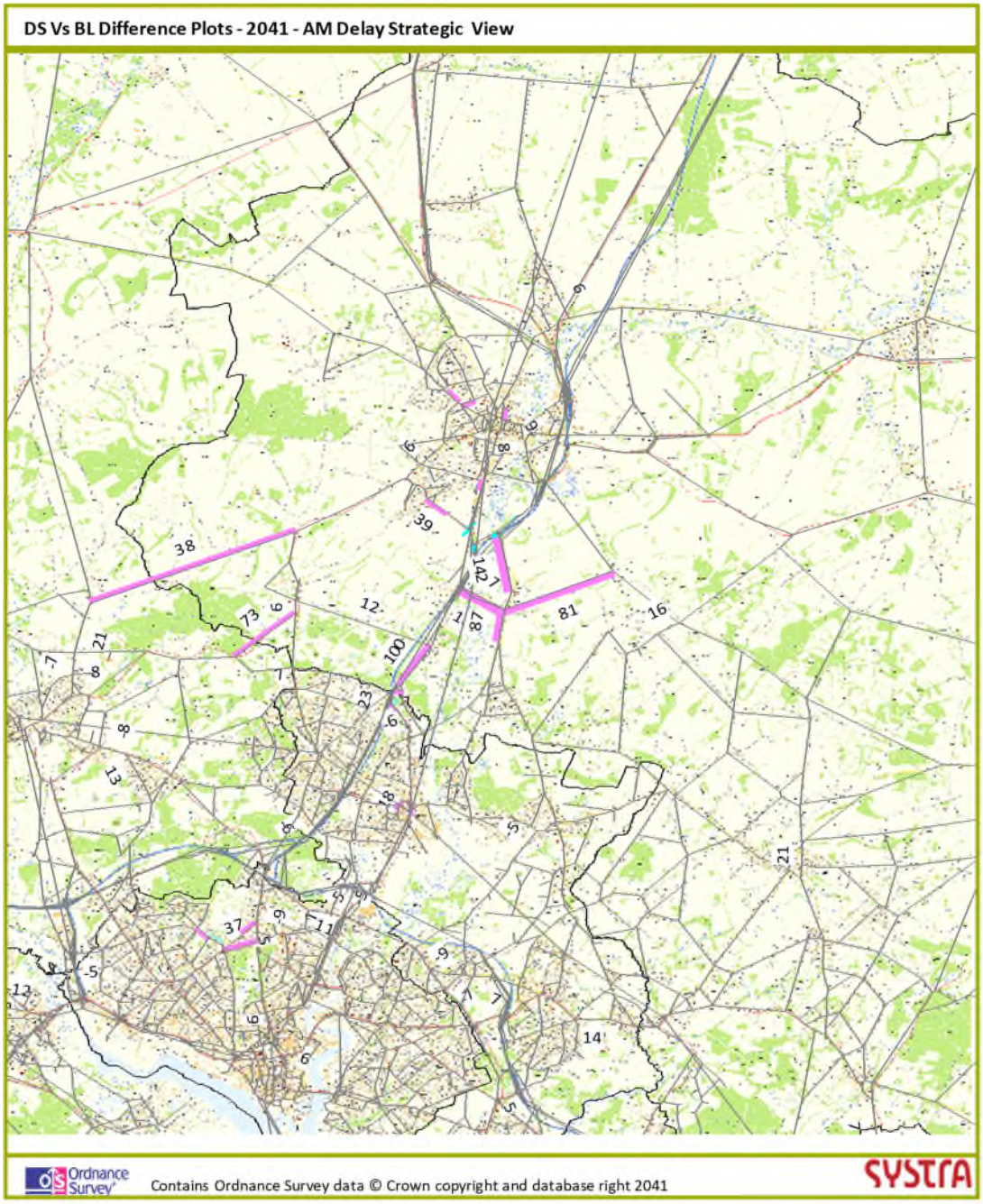


Figure 6-20 Delay Difference 2041 AM Do Something vs. 2041 Baseline – Strategic View

Figure 6-21 Delay Difference 2041 PM Do Something vs. 2041 Baseline – Strategic View

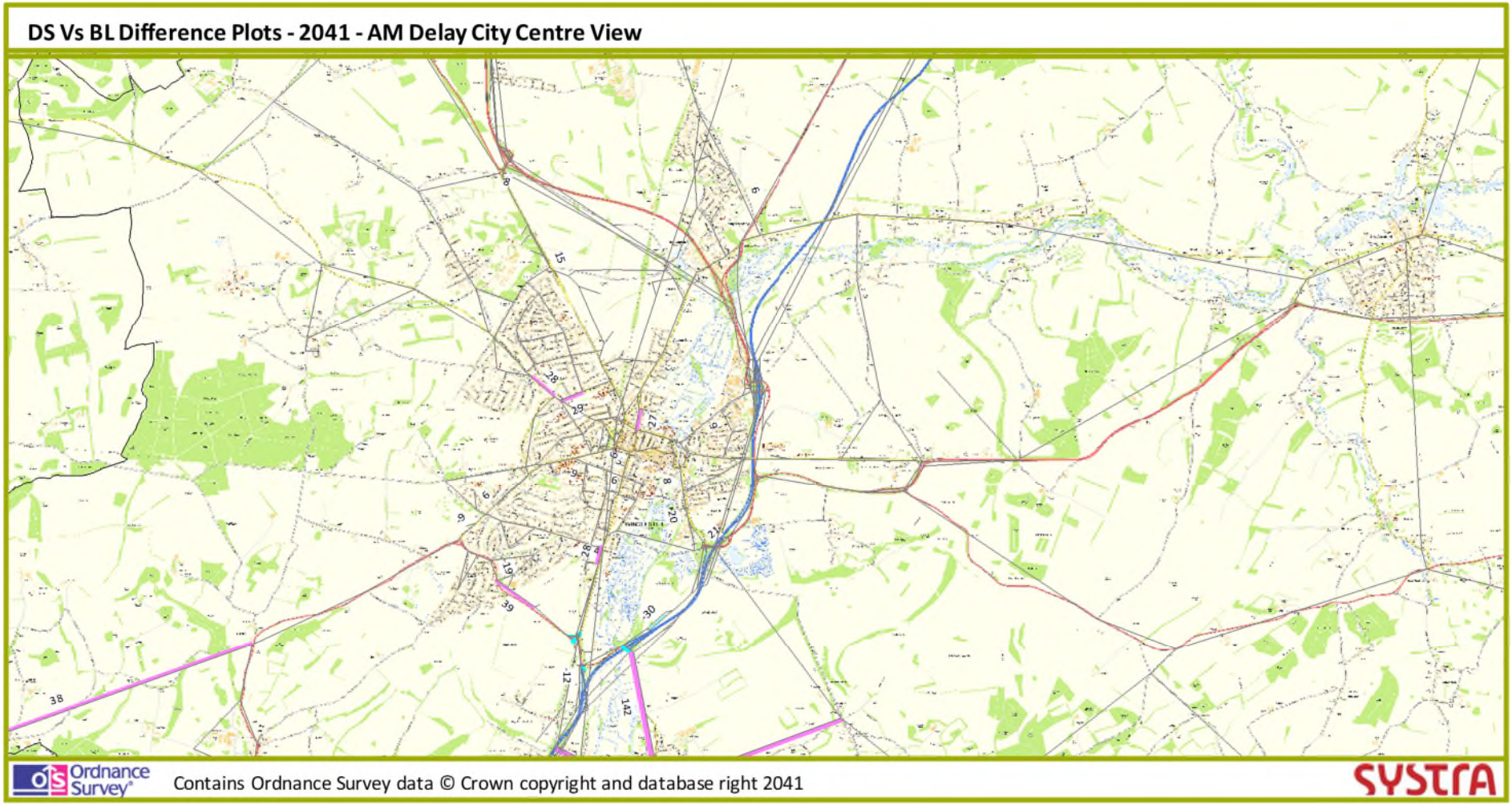


Figure 6-22 Delay Difference 2041 AM Do Something vs. 2041 Baseline – Winchester City Centre

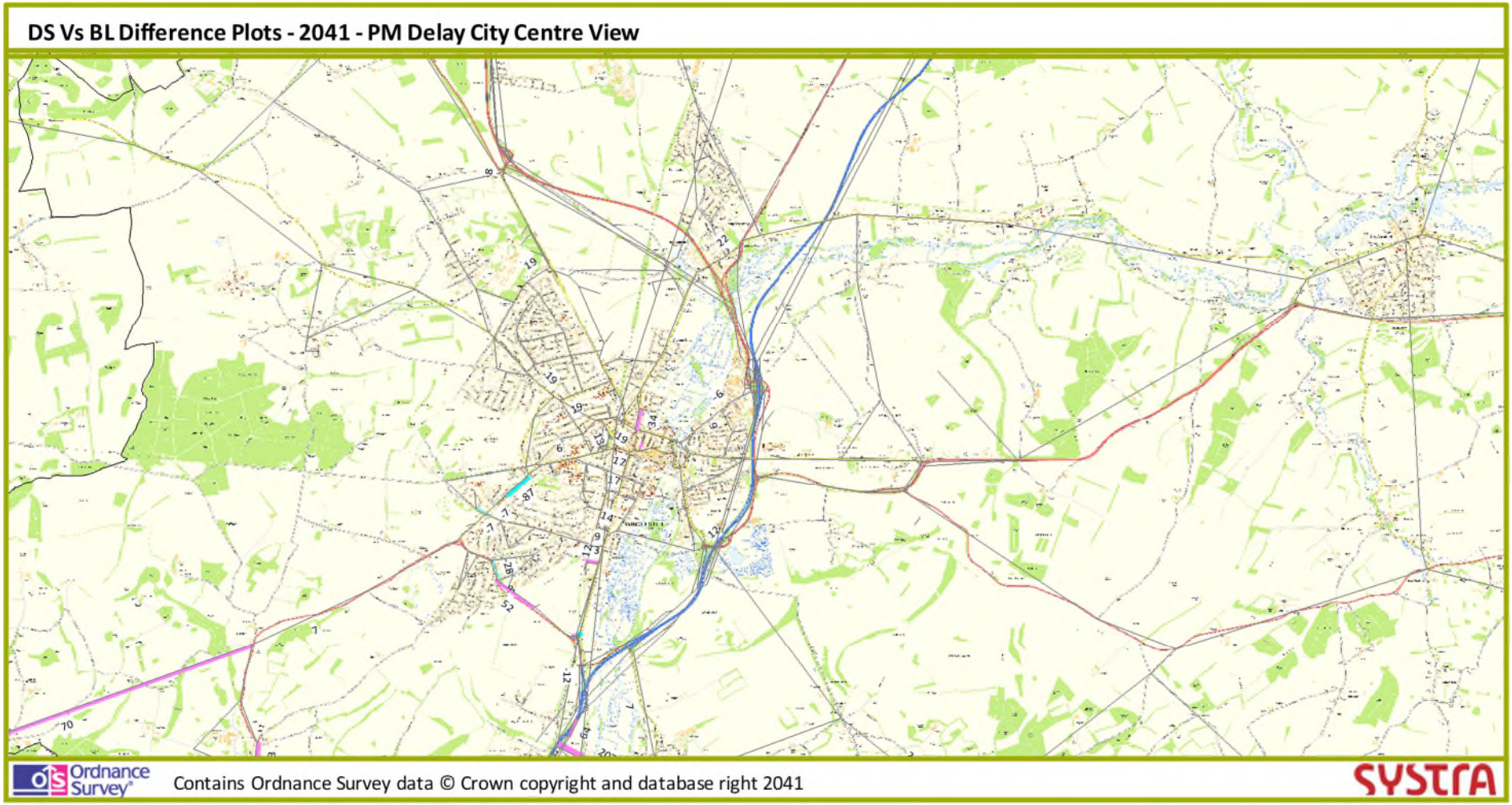


Figure 6-23 Delay Difference 2041 PM Do Something vs. 2041 Baseline – Winchester City Centre

Highway Junction Capacity Hotspots

6.3.11 The same approach to identifying highway junction hotspots for the Do Minimum in Sections 6.2.17 to 6.2.21 has been applied to the Do Something.

6.3.12 Based on the hotspot criteria there are a total of 8 junctions that meet the 'severe' change criteria and 13 that are classified as 'significant' in the Do Something scenario. The total of 21 junctions includes 8 junctions that were not previously flagged as a hotspot in the Do Minimum. 5 junctions that were previously flagged in the Do Minimum are no longer triggering either Significant or Severe threshold and this includes the St Cross roundabout and Pitt roundabout.

6.3.13 Table 6-6 and Figure 6-24 summarise all 21 sites identified with a Significant or Severe impact in the Do Something. In addition, the final column of Table 6-6 identifies the 5 locations no longer with a Significant or Severe impact. A detailed list of junction performance for comparison is provided in **Appendix E.**

6.3.14 7 out of the 8 junctions classified 'severe' are to the south of the City of Winchester. Due to its location, it is considered that the Bushfield Camp site and associated traffic is the likely primary cause of the majority of these severe impacts to the south of the city.

6.3.15 With regard to the impact of the Do Something highway mitigation schemes (Section 223.4.1), the proposed improvements at Badger Farm Road/ Meadow Way roundabout and the Hockley Link/ M3 J11 roundabout have resulted in improved performance but the additional traffic now using both junctions (resulting from the St Cross roundabout improvements) still means the junctions are triggering significant and severe thresholds respectively. At the Meadow Way roundabout, the northbound approach is now flagged as Significant (as opposed to the southbound approach that was flagged as severe in the DM). At Hockley Link/ M3 J11, the southbound approach of Hockley Link is still flagged as severe, but all other arms are below the thresholds.

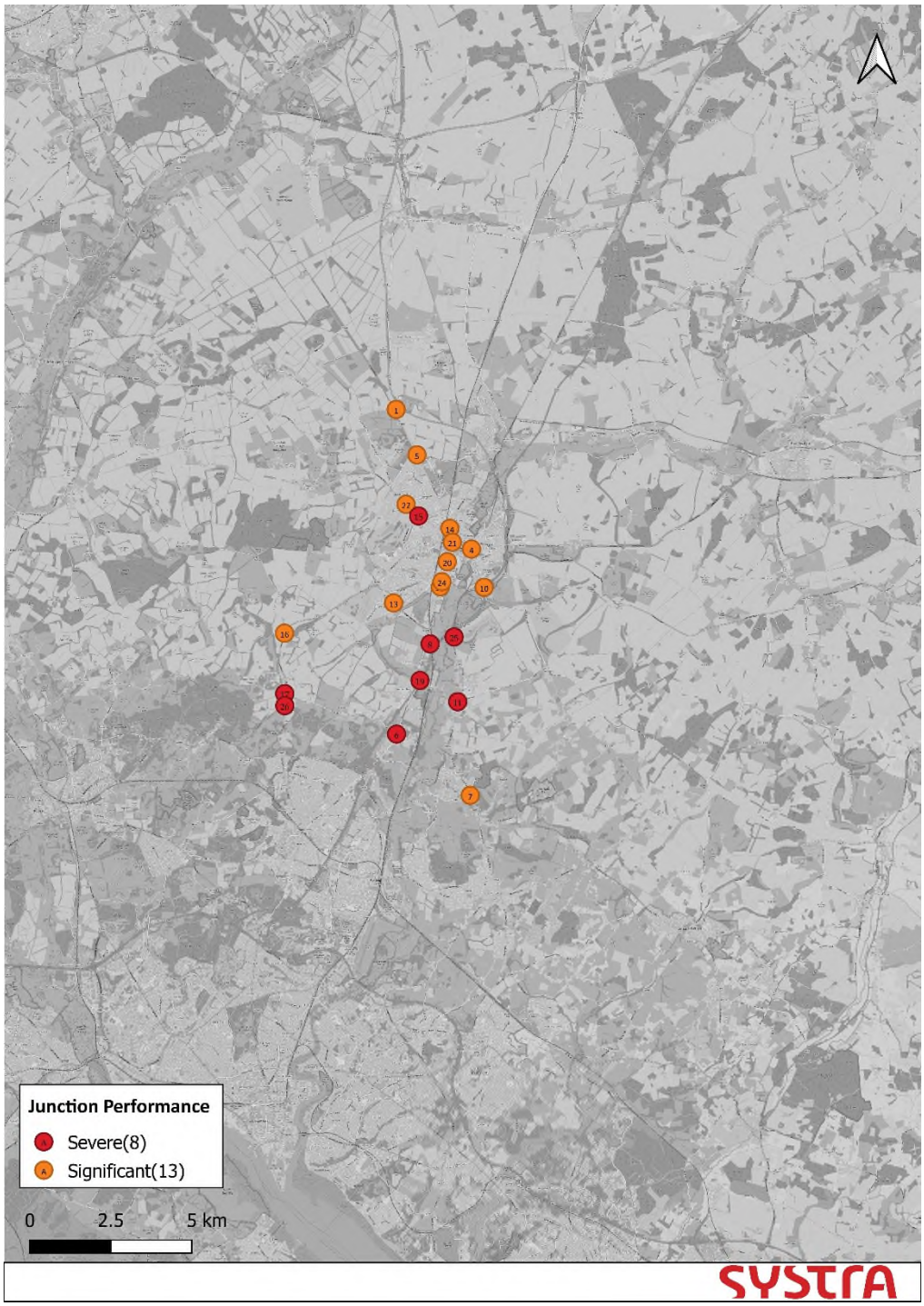
6.3.16 As noted earlier in this report, the capacity hotspot criteria used in this analysis are not the only measure by which junction/ network performance or scale of impact associated to transport growth can be classified. They are considered a starting point (consistent with other SRTM commissions) for comparison of network performance from which subsequent, more detailed, assessment may refine those locations considered most impacted.

Table 6-6 2041 Do Something vs 2041 Baseline Impacted Junction List

ID	JUNCTION NAME	'SIGNIFICANTLY' IMPACTED	'SEVERELY' IMPACTED	NO LONGER 'SIGNIFICANTLY' OR 'SEVERELY' IMPACTED
1	A272/B3420 Andover Road	Y		
2	A3090/Otterbourne Road/ B3335 St Cross Road			*Y*
3	B3047 Hyde Street/B3040 Jewry Street/B3330			*Y*

ID	JUNCTION NAME	'SIGNIFICANTLY' IMPACTED	'SEVERELY' IMPACTED	NO LONGER 'SIGNIFICANTLY' OR 'SEVERELY' IMPACTED
4	B3330/ The Broadway	Y		
5	B3420 Andover Road/ Harestock Road	Y		
6	Main Road/ Poles lane/ Otterbourne Road		Y	
7	B3354 Main Road/Church Lane	Y		
8	M3 J11 NB offslip/ Hockley Link		Y	
9	B3420 Andover Road / B3401 Bereweeke Road			Y
10	M3 J10 NB offslip	Y		
11	B3335/Hazeley Road/ Finch's Lane		Y	
12	M3 J10 SB onslip			Y
13	A3090/ Meadow Way	Y		
14	B3330/ B3420/ B3044	Y		
15	B3049 Stockbridge Road/ B3041 Chilbolton Avenue		Y	
16	A3090/ Merdon Castle Lane	Y		
17	A3090/ Poles Lane/ Hursley Park Road		Y	
18	Pitt Roundabout – A3090/ B3040			Y
19	Otterbourne Road/ Shawford Road		Y	
20	St Cross Road/ Beaufort Road	Y		
21	Southgate Street/ High Street	Y		
22	B3049 Stockbridge Road/ Stoney Lane	Y		
23	St Cross Road/ Lower Stanmore Lane	Y		
24	St Cross Road/ Kingsgate Road	Y		
25	M3 J11 SB offslip/ B3335		Y	
26	A3090/ B3043		Y	

Figure 6-24 2041 Do Something Vs 2041 Baseline 'Significant' or 'Severe' Impacted Junctions



Public Transport Passenger Flow Difference

6.3.17 The PT passenger flow difference plots show the change in passenger volumes on PT services (rail and bus). They follow a similar format to the highway flow difference plots with the value identified adjacent to the appropriate link. Blue lines identify a reduction against the comparative scenario and pink/red lines an increase in addition, the scale of the change is represented graphically with the coloured lines of varying width.

6.3.18 Figure 6-25 and Figure 6-26 identify the change in passenger volume in the AM and PM peak hours between the 2041 Do Something and 2041 Baseline scenarios, at an overall district level. Figure 6-27 and Figure 6-28 provide more detail of the PT passenger volume changes in Winchester City.

6.3.19 For rail, passenger flow increases are forecast on both the Southampton mainline and the line branching off at Eastleigh towards Fareham. Where the lines converge, the maximum AM increase is approximately 105 passengers on the northbound section between Eastleigh and Winchester. In the PM peak hour, there are also approximately 105 passengers making the reverse journey (southbound) on this section of the line. This rail demand is slightly lower than the comparable movements in the Do Minimum. This is most likely the result of the highway mitigation proposals at the St Cross roundabout and M3 J11 N/B offslip junction increasing the relative attractiveness of car trips approaching Winchester City from the south.

6.3.20 For bus, and similarly to the Do Minimum, the focus of passenger flow changes in the Do Something is primarily on the Park & Ride routes for Winchester City. The new P&R facility at Sir John Moore Barracks is increasing bus ridership on the northern side of the city. In combination with the Kings Barton P&R site there is an approximate 135 passenger increase towards the city in the AM peak hour and approximately 150 out of the city centre in the PM peak hour. Route E1, adjacent to the South Winchester P&R site, continues to have a notable passenger increase of approximately 125 passengers in the AM peak hour towards the city centre along St Cross Road and this includes approximately 20 passengers from the P&R bus route.

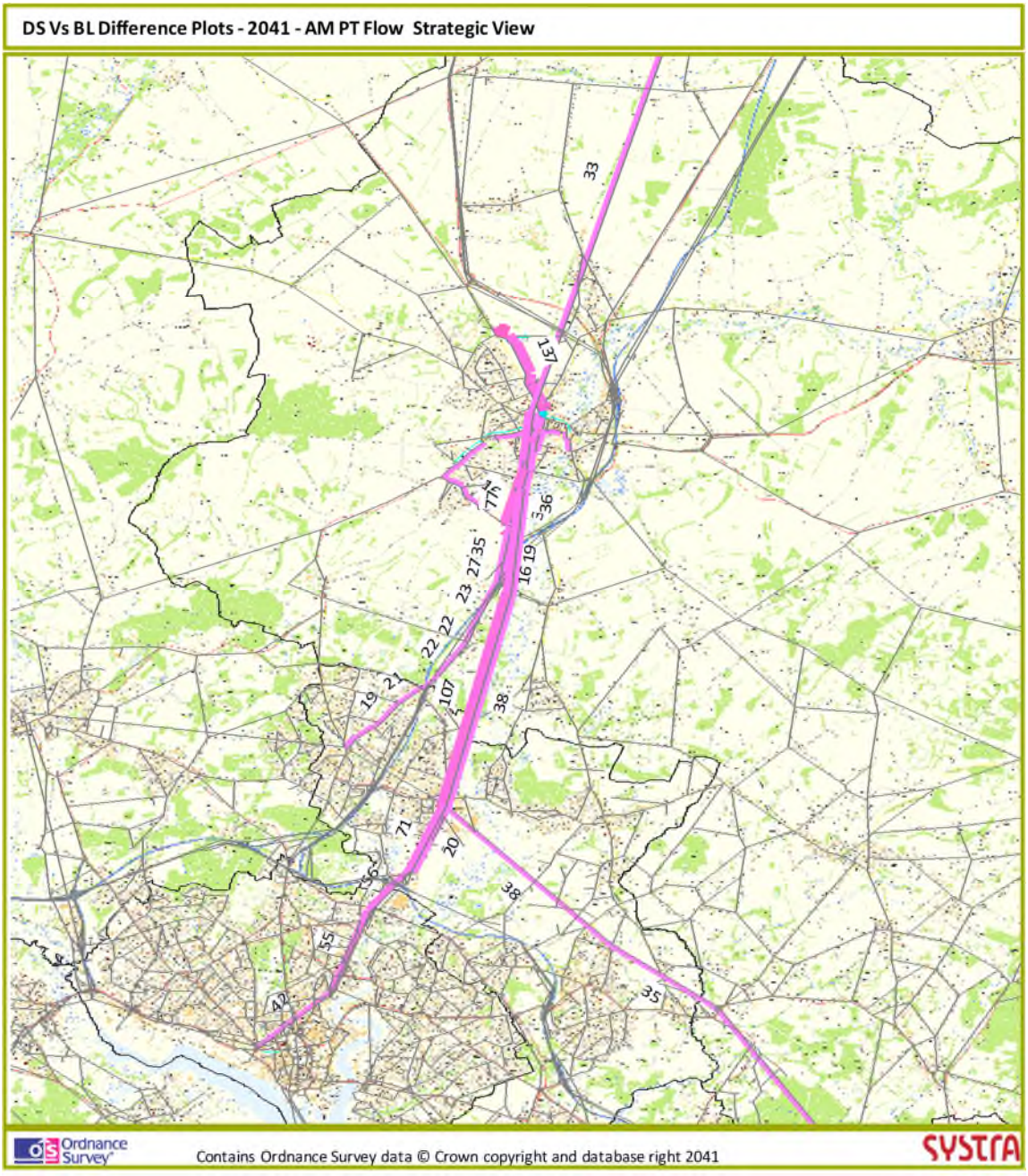


Figure 6-25 PT Passenger Difference – 2041 AM Do Something vs. 2041 Baseline – Strategic view

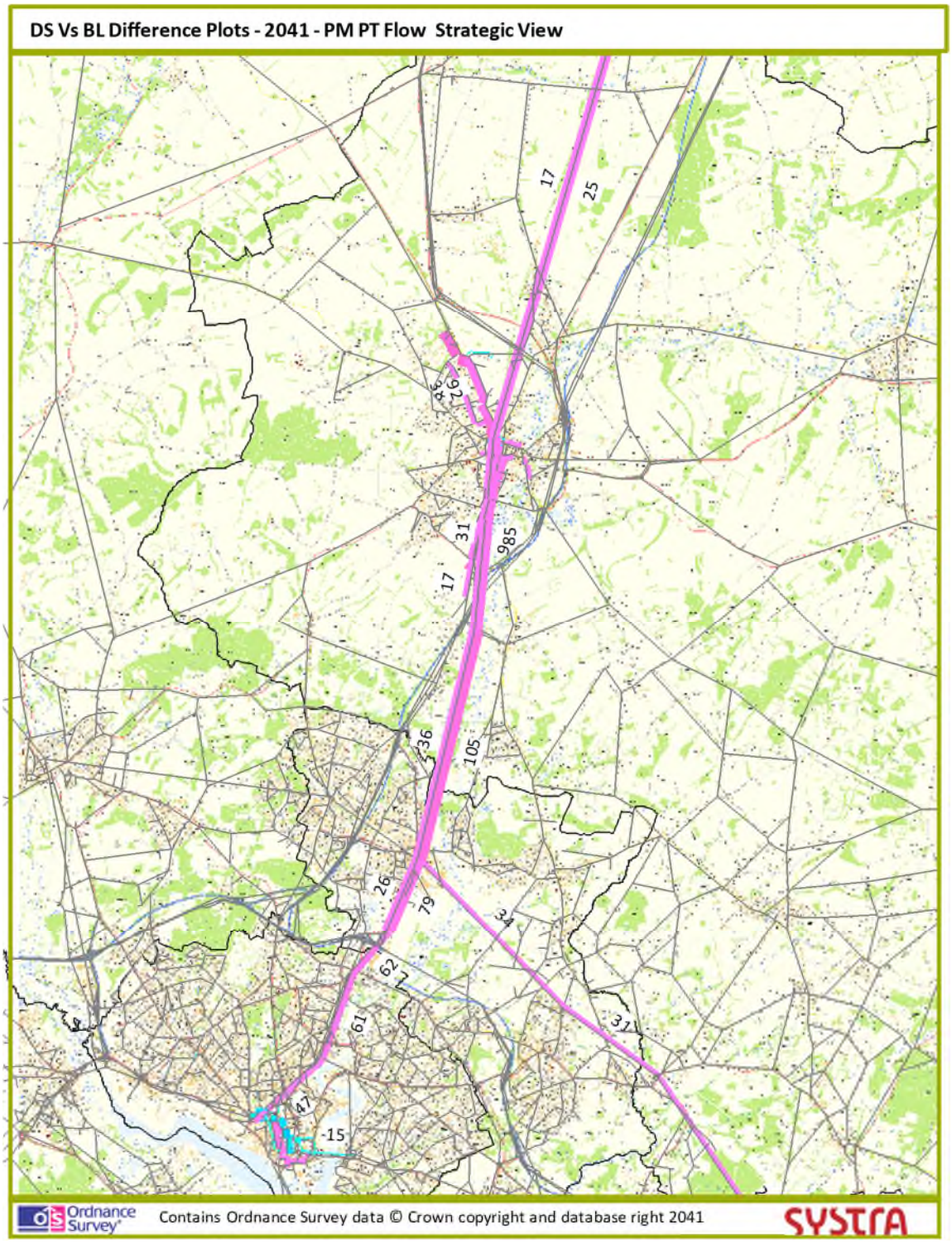


Figure 6-26 PT Passenger Difference – 2041 PM Do Something vs. 2041 Baseline – Strategic view

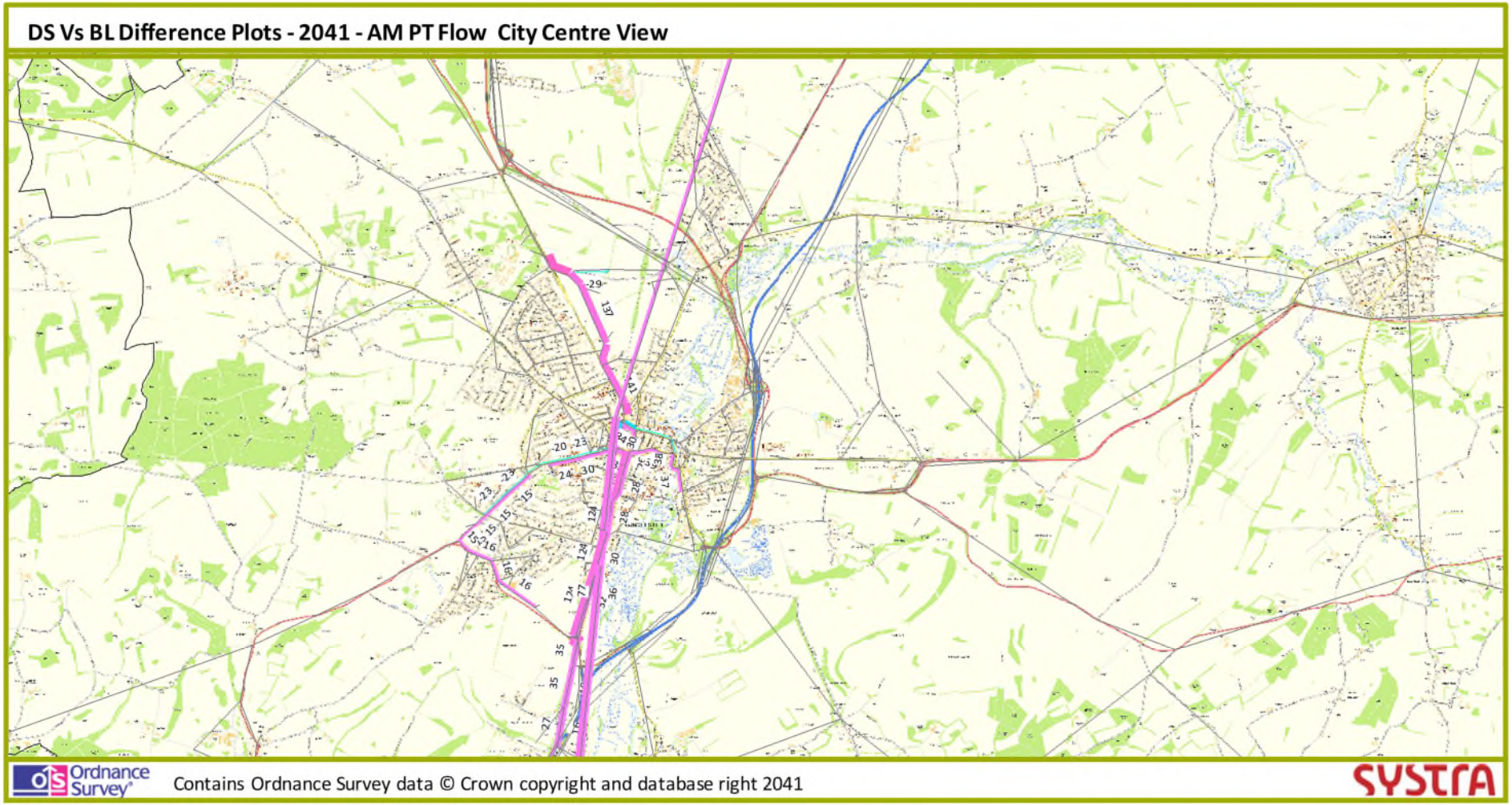


Figure 6-27 PT Passenger Difference – 2041 AM Do Something vs. 2041 Baseline – Winchester City Centre

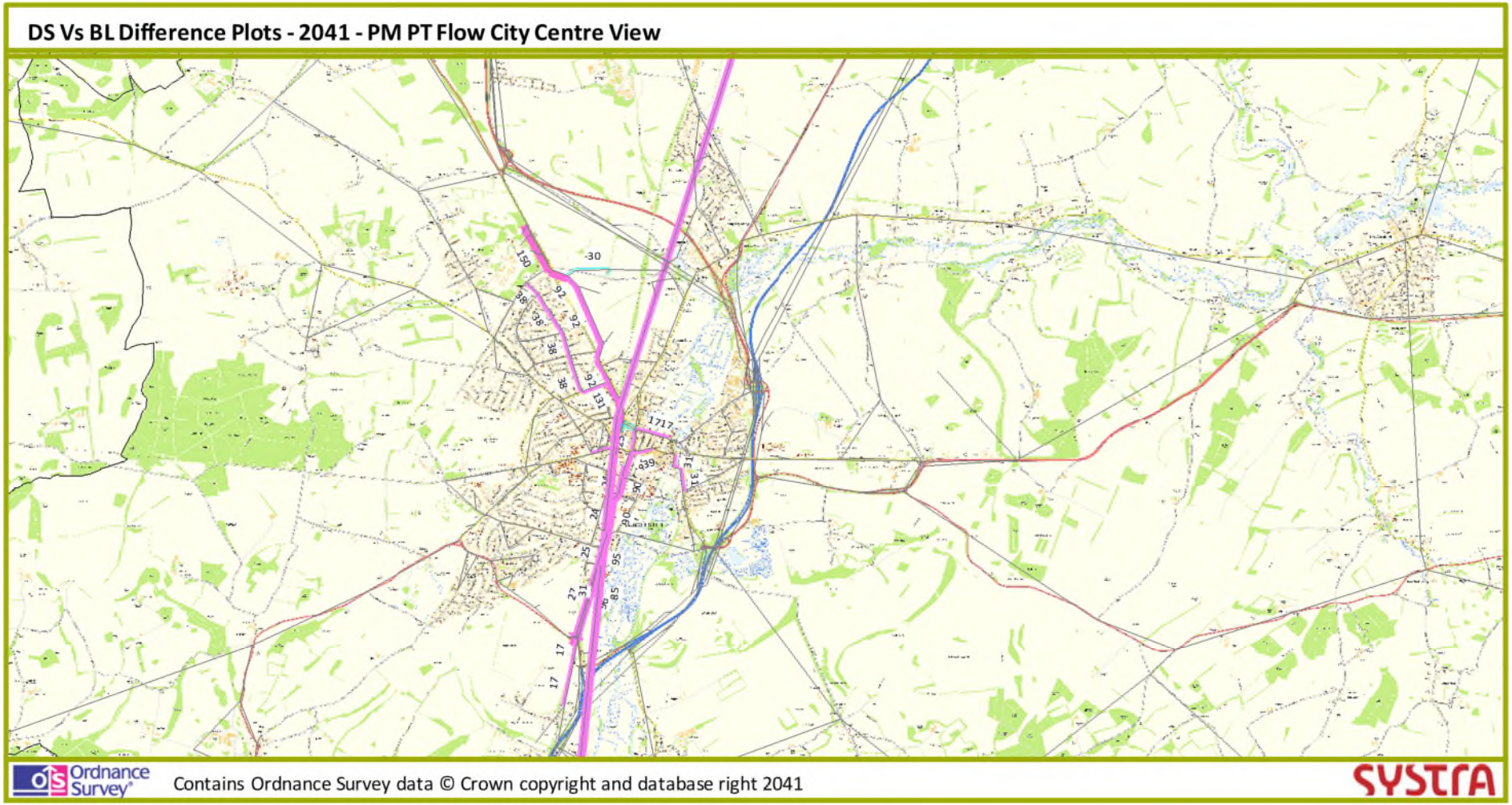


Figure 6-28 PT Passenger Difference – 2041 PM Do Something vs. 2041 Baseline – Winchester City centre

7. SUMMARY AND CONCLUSIONS

7.1.1 Solent Transport's SRTM has been used to test three scenarios to help inform the development and appraisal of the update to Winchester's Local Plan:

- Scenario 1 – 2041 Baseline, no Winchester Local Plan development except for committed sites.
- Scenario 2 – 2041 Do Minimum, full Winchester Local Plan development without transport mitigation.
- Scenario 3 – 2041 Do Something, full Winchester Local Plan development with transport mitigation/connectivity improvements.

7.2 2041 Scenario 1 Baseline

7.2.1 The Baseline scenario includes residential (approximately 9,500 dwellings) and employment growth based on committed sites within the Winchester District and committed highway infrastructure schemes up to a forecast year of 2041. Outside of Winchester, growth continues in accordance with adopted Local Plans as modelled in the SRTM reference case. This scenario confirms the forecast transport network performance without the proposed Winchester Local Plan allocation site growth.

7.2.2 Due to the general increase in traffic flows within the Winchester District through to 2041, a total of 136 junctions within Winchester District are forecast to operate with a V/C greater than 85% in the 2041 Baseline Scenario.

7.3 2041 Scenario 2 Do Minimum

7.3.1 The 2041 Do Minimum scenario builds off the Baseline, by including the proposed Winchester Local Plan allocations for residential and employment development. Growth outside of the district is unchanged from the Baseline. An additional approximate 4,600 dwellings have been included within the Do Minimum scenario over and above the Baseline. In addition to these residential sites, employment land uses increase by more than 200,000 square metres creating an additional approximately 10,400 jobs.

7.3.2 The highway network tested within the Baseline and Do Minimum scenario remains consistent to assess the impact of the Local Plan allocations without any new mitigation or connectivity improvements.

7.3.3 Based on the SRTM modelling the Bushfield Camp development site (approximately 100,000sqm of non-residential landuse) to the south of Winchester City has the biggest cumulative impact on traffic flows in the district with significant additional vehicle trips to and from the zone. The site is accessed from Badger Farm Road and there are additional delays and congestion particularly at the junctions on either end of this road (junctions with Romsey Road and Hockley Link) and the northbound off-slip of M3 J11. In addition, there is rerouting of trips away from the Bushfield Camp area using routes such as Poles Lane.

7.3.4 The Sir John Moore Barracks site to the north of the city also has an impact on highway flows with increases in flows of more than 100 PCUs in both directions in the AM and PM

peaks on Andover Road. There are also general increases in traffic through the centre (via the one-way system) of Winchester City.

7.3.5 A total of 140 junctions within Winchester district are forecast to operate with a V/C greater than 85%. This is an increase of 4 junctions across the district in comparison to the 2041 Baseline. Of those 140 junctions, it is forecast that 11 will experience 'significant' impact and 7 junctions a 'severe' impact in comparison to the 2041 Baseline. The 'severe' sites are all located to the south of the city, and it is considered the Bushfield Camp employment site is a main contributing factor to this.

7.3.6 The list of 18 junctions forecast with either 'significant' or 'severe' impact were recommended to form the starting point for more detailed review and development of potential mitigation measures in consultation with the Highway Authorities.

7.4 2041 Scenario 3 Do Something

7.4.1 The 2041 Do Something scenario builds off the Do Minimum and includes for 3 highway mitigation schemes at junctions in the vicinity to the Bushfield Camp site, and a Park & Ride facility at the Sir John Moore Barracks site. The landuse in the Do Something is identical to the Do Minimum and includes for full build out of the Winchester Local Plan allocations.

7.4.2 The mitigation schemes do help to address some of the junction capacity issues identified in the Do Minimum, most notably at St Cross roundabout. However, the traffic that has reassigned as a result of the mitigation or is no longer held up at previously over capacity junctions, has now created capacity issues at other or downstream locations, particularly St Cross Road.

7.4.3 Five of the junctions previously identified in the Do Minimum as experiencing a significant or severe impact are no longer forecast to have such issues. In their place 8 new junctions are now added to the list experiencing a significant or severe impact. In total, there are 21 junctions with either a significant (13) or severe (8) impact in the Do Something. The majority of the sites experiencing severe impact remain to the south of City of Winchester and based on the scale and location of the Bushfield Camp site it is considered that these impacts are primarily the result of traffic associated to this.

7.4.4 It is recommended that these junctions again form the basis of a review to determine if any further mitigation or connectivity measures should be considered as part of the Local Plan.

Appendix A – Reference Case Transport Schemes

SRTM REF CASE	Reference Case Schemes (Portsmouth and Southampton TCF Schemes on separate list)

Solent Transport

SYSTRA

District	Scheme	Description	2019	2026	2031	2036	2041
COMMITTED AND INCLUDED IN CURRENT REFERENCE CASE							
East Hampshire	Green Lane, Clanfield	Traffic calming	✓	✓	✓	✓	✓
Eastleigh	A335 Leigh Rd / Passfield Avenue	Junction capacity changes	✓	✓	✓	✓	✓
Eastleigh	Sundays Hill Bypass	New road alignment with 7.3m carriageway width and 30mph speed limit	✓	✓	✓	✓	✓
Eastleigh	St John's Link Road	6.5m carriageway width and 30mph speed limit		✓	✓	✓	✓
Eastleigh	Chestnut Avenue / Stoneham Lane Roundabout	Roundabout improvements	✓	✓	✓	✓	✓
Eastleigh	Chestnut Avenue / Passfield Avenue Roundabout	Roundabout improvements		✓	✓	✓	✓
Eastleigh	Burnett's Lane Link Road and roundabout	New road alignment between Burnetts Lane and Bubb Lane, extending to access road to Fir Tree Lane. 7.3m carriageway width and 30mph speed limit. Traffic calming or potential closure of Burnetts Lane south of access roundabout.		✓	✓	✓	✓
Eastleigh	Botley Road / Burnett's Lane	Signals		✓	✓	✓	✓
Eastleigh	Allington Lane / B3037 Fair Oak Road/ Sandy Lane	Signals/ additional lanes between junctions		✓	✓	✓	✓
Eastleigh	Botley Bypass	New road between Kings Corner (A3051/ A334 jucntion) and Woodhouse Lane (NE of		✓	✓	✓	✓
Eastleigh	Southampton Road / Chestnut Avenue	Addition of a right turn lane (4 pcus)		✓	✓	✓	✓
Eastleigh	North Stoneham Park development access & link road	Development spine road from Chestnut Avenue near junction with Nightingale Ave (new signalised junction), through development to Stoneham Lane (new roundabout opp		✓	✓	✓	✓
Eastleigh	B3037 Mortimers Lane/ B3354 Winchester Road junction, Fair Oak	Enlarged junction		✓	✓	✓	✓
Eastleigh	B3037 Eastleigh Rd/ B3354 Botley Rd / Stubbington Way junction, Fair Oak	Signalised junction improvements		✓	✓	✓	✓
Eastleigh	Boorley Green development access	New roundabout on B3354 Winchester Road giving access to site	✓	✓	✓	✓	✓
Eastleigh	Boorley Gardens development access	New roundabout on B3354 Winchester Road giving access to site (located south of Boorley Green development roundabout)		✓	✓	✓	✓
Eastleigh	Maypole Roundabout Hedge End	Enlargement of roundabout	✓	✓	✓	✓	✓
Eastleigh	M27 J7 technology improvements	MOVA/ SCOOT implementation		✓	✓	✓	✓
Eastleigh	A3024 Bursledon Rd access to west of Hamble Lane housing developments	New signalised junction on Bursledon Road		✓	✓	✓	✓
Eastleigh	Woodside Avenue/Judd Close, Eastleigh	Fourth arm added to signal junction; ped crossings added	✓	✓	✓	✓	✓
Eastleigh	Winchester Road/Eastleigh Road/Stubbington Way, Fair Oak	MOVA control introduced	✓	✓	✓	✓	✓
Fareham	St Margarets Rbt.	Improvement scheme	✓	✓	✓	✓	✓
Fareham	Peel Common Rbt.	Improvement scheme	✓	✓	✓	✓	✓
Fareham	Gudge Heath Lane	Additional lanes at signals Gudge Heath Lane / The Avenue	✓	✓	✓	✓	✓
Fareham	A27 Southampton Road, Fareham	Widening of carriageway (A27 dualling)	✓	✓	✓	✓	✓
Fareham	Newgate Lane South, Fareham		✓	✓	✓	✓	✓
Fareham	Station Roundabout (The Avenue approach)	Widening of The Avenue and around Station Roundabout	✓	✓	✓	✓	✓
Fareham	Stubbington Bypass	Bypass		✓	✓	✓	✓
Fareham	Peel Common Rbt.	Peel common roundabout Stubbington Bypass scheme		✓	✓	✓	✓
Fareham	A27 East St/Castle Trading Estate, Portchester	MOVA control introduced	✓	✓	✓	✓	✓
Fareham	A27 Downend Rd Portchester	Downend Road widened to 2 lane approach		✓	✓	✓	✓
Fareham	A32 Quay Street SCOOT	Implementation of SCOOT signal optimisation		✓	✓	✓	✓
Fareham	M27 J10 West facing slips	M27 J10 upgrade to all moves as part of Welborne development		✓	✓	✓	✓
Fareham	Internal Welborne Network	New road network and conections to exisiting network for Welborne major development.		✓	✓	✓	✓
Fareham, Gosport	Stubbington Bypass mitigation measures	Mitigation measures in Gosport as included in Stubbington Bypass Business Cases		✓	✓	✓	✓
Fareham, Winchester	M27 J9 and Parkway South roundabout	Capacity increases and signalisation		✓	✓	✓	✓
Gosport	BRT Eclipse Extension	Eclipse Busway extended 1km south to Rowner Road		✓	✓	✓	✓
Gosport	B3333 South Street / Dock Road, Gosport	Conversion of T junction to new 3 arm signal junction	✓	✓	✓	✓	✓
Gosport	Stubbington Lane/Daedalus Spine Road 'Ross House', Lee-on-the-Solent	New 3 arm signal junction	✓	✓	✓	✓	✓
Gosport	Privett Rd / Bury Rd, Gosport	MOVA control introduced	✓	✓	✓	✓	✓
Gosport	Heritage Way/Retail Park, Gosport	New 3 arm signal junction- access to new retail park at Fort Brockhurst	✓	✓	✓	✓	✓
Gosport	Rowner Road/Carisbrooke Road, Gosport	MOVA control introduced	✓	✓	✓	✓	✓
Gosport	A32 Brockhurst Gate retail park junction	Lining and lane changes on A32 Northbound (southern arm of junction)		✓	✓	✓	✓
Gosport	A32 Wych Lane	Junction Improvement- extension to right turn lane on southbound carriageway north of		✓	✓	✓	✓
Gosport	A3(M) J3	Signalisation of N/B off slip onto roundabout		✓	✓	✓	✓
Havant	Hulbert Rd / Purbook Way Junction (Dunsbury Hill)	Major redesign and partial signalisation of 'ASDA' rbt.	✓	✓	✓	✓	✓
Havant	Dunsbury Hill Farm Business Park	New site access roundabout on Hulbert Rd B2150	✓	✓	✓	✓	✓
Havant	Purbook Way / College Road	Signalisation of priority junction		✓	✓	✓	✓
Havant	Interbridges	New signal access (off B2148 between Emsworth rail bridge and A27)		✓	✓	✓	✓
Havant	Purbrook Way / Stakes Hill Road	Replacement of roundabout with traffic signals.		✓	✓	✓	✓
Havant	Purbrook Way from Stakes Hill Road to College Road	Dual carriageway to replace single carriageway.		✓	✓	✓	✓
Havant	Hulbert Rd / Frendstaple Rd / Tempest Ave	Enlarge and modify existing roundabout.		✓	✓	✓	✓
Havant	West of Waterlooville development access/ link road	Pedestrian walkway improvmenets along Isambard Brunel road, including widening			✓	✓	✓
Havant	Harts Farm Way / Southmoor Ln mini roundabout	Improved cycle crossing access and segregated cycle lanes with carriageway widening to accommodate, traffic calming/restricting measures for safer cycle routes.	✓	✓	✓	✓	✓
Havant	Barncroft Way/ New Road	Improved cycle crossing facilities and cycle corridors with priority access	✓	✓	✓	✓	✓
Havant	NCN22 improvments through Centenary Gardens and Havant Rail Staion Forecourt	Cycle & Pedestrian infractructure improvements through Centenary Gardens and Havant Rail Staion Forecourt	✓	✓	✓	✓	✓
Havant	Bartons Road right turn lane	Right turn lane (access to development)	✓	✓	✓	✓	✓
Havant	Bartons Rd/Petersfield Rd	Extended left turn lane from Bartons Rd into Petersfield Rd		✓	✓	✓	✓
Havant	Hambledon Road/Aston Road, Waterlooville	Cycle lanes on Lake road entiehr side of Church Street Roundabout	✓	✓	✓	✓	✓
Havant	Park Road South/Solent Road, Havant	SCOOT control peak times; MOVA control off peak introduced	✓	✓	✓	✓	✓
Havant	E2(BRT) - Welborne - Fareham BRT E2 extension	Changes to Welbourne BRT route, where it becomes an extension to route E2	✓	✓	✓	✓	✓

Havant	Route 2 - The Hard to Paulsgrove	Bus rerouting that no longer serves Cosham Int, Highbury Buildings, Donaldson Rd, St Agatha's		✓	✓	✓	✓
Havant/	Route 3 - Portsmouth - Portchester Precinct	Bus rerouting that no longer serves Cosham Int, Highbury Buildings, Donaldson Rd, St	✓	✓	✓	✓	✓
Isle of Wight	Ladybridge Roundabout	Ryde Transport Hub, Pier cycle & walkway corridor improvements		✓	✓	✓	✓
Isle of Wight	A259 Havant Road east of A27 Warblington Junction	New signalised junction for access to Land North of Havant Road development		✓	✓	✓	✓
Isle of Wight	A27/A259 Warblington Junction	Secured improvements at this junction linked to Land North of Havant Road development		✓	✓	✓	✓
Isle of Wight	Eagle Avenue Wecock Farm- mini roundabout	New mini roundabout for Woodcroft development site		✓	✓	✓	✓
Isle of Wight	Route 3 - Portsmouth - Fareham	Bus rerouting that no longer serves Cosham Int, Highbury Buildings, Donaldson Rd, St Agatha's	✓	✓	✓	✓	✓
Isle of Wight	Route E1 - Gosport - Fareham - Portsmouth (via Elson)	Extenion bus route E1 to Portsmouth (previusly stopped at Fareham)		✓	✓	✓	✓
Isle of Wight	Route 7 - Waterlooville-Portsmouth direct rapid transit service	Changes to bus routing and services for Route 7			✓	✓	✓
New Forest	Ringwood Rd/Calmore Road, Totton	New ped stage added; MOVA control introduced	✓	✓	✓	✓	✓
New Forest	Rollestone cross roads, Blackfield	MOVA control introduced	✓	✓	✓	✓	✓
New Forest	A326 roundabout/ junction improvements	Improvements to eight A326 junctions between Blackfield and Dibden		✓	✓	✓	✓
Portsmouth	Route 8 - Waterlooville-Portsmouth direct rapid transit service	Changes to bus routing and services for Route 8	✓	✓	✓	✓	✓
Portsmouth	Route 18 - Southsea - Paulsgrove	Bus route changes that not serve St Agatha's	✓	✓	✓	✓	✓
Portsmouth	Route 20 - Havant - The Hard	Bus route changes that do not serve St Agatha's	✓	✓	✓	✓	✓
Portsmouth	Route 23 - Leigh Park - The Hard	Bus route changes that do not serve Cosham Int, Highbury Buildings, Donaldson Rd, St Agatha's	✓	✓	✓	✓	✓
Portsmouth	Route 700 - Flansham Park - Portsmouth	Route change to serve City Shops North	✓	✓	✓	✓	✓
Portsmouth	PnR(Tipner) Route 1 - Tipner - The Hard	Route change to serve City Shops North	✓	✓	✓	✓	✓
Portsmouth	A27 Southampton Rd Port Way (Port Solent Access)	Signal timing update	✓	✓	✓	✓	✓
Portsmouth	Aldi Store Access, Southampton Road- Paulsgrove	Signal timing update	✓	✓	✓	✓	✓
Portsmouth	Anglesea Road Queens Street Alfred Road Bishop Crispian Way	Signal timing update	✓	✓	✓	✓	✓
Portsmouth	Eastney Rd Bransbury Rd Devonshire Ave	Signal timing update	✓	✓	✓	✓	✓
Portsmouth	Fratton Road Lake Road	Signal timing update	✓	✓	✓	✓	✓
Portsmouth	Goldsmith Avenue Milton Road Eastney Road	Signal timing update	✓	✓	✓	✓	✓
Portsmouth	Goldsmith Avenue Priory Crescent Winter Road	Signal timing update	✓	✓	✓	✓	✓
Portsmouth	Kingston Road Kingston Crescent - North End	Signal timing update	✓	✓	✓	✓	✓
Portsmouth	M275 A3 A27, Marriott Junction	Signal timing update	✓	✓	✓	✓	✓
Portsmouth	Market Way Alfred Road Unicorn Road	Signal timing update	✓	✓	✓	✓	✓
Portsmouth	Mile End Road Trafalgar Link Road	Signal timing update	✓	✓	✓	✓	✓
Portsmouth	Milton Road Velder Avenue	Signal timing update	✓	✓	✓	✓	✓
Portsmouth	Milton Rd/ Priory Crescent	Alterations to flares/ kerbing at junction		✓	✓	✓	✓
Portsmouth	Fratton Road/Arundel Street	Junction staging revised to provide indicative right-turn (into Arundel Street), MOVA	✓	✓	✓	✓	✓
Portsmouth	Copnor Road/Norway Road	MOVA installed and pedestrian phases added into junction (all arms - walk with traffic)	✓	✓	✓	✓	✓
Portsmouth	London Road/Southwick Hill Road	MOVA installed and new pedestrian phase across Southwick Hill Road	✓	✓	✓	✓	✓
Portsmouth	High Street(Cosham)/Spur Road	Junction refurbished with new all-round pedestrian phase and MOVA	✓	✓	✓	✓	✓
Portsmouth	Copnor Road / Burrfields Road / Stubbington Ave	MOVA for signals on key bus route		✓	✓	✓	✓
Portsmouth	Fratton Road / Lake Road / St Mary's Rd	MOVA for signals on key bus route		✓	✓	✓	✓
Portsmouth	Eastern Rd / Havant Rd / Farlington Ave	MOVA for signals on key bus route		✓	✓	✓	✓
Portsmouth	Portsmouth City Centre - Clean Air Zone	Government mandated CAZ to be rolled out to address NOx exceedances which will charge a fee for HGV, Bus/Coach & Taxis that fall below Euro 4/6 standards.		✓	✓	✓	✓
Portsmouth	Southsea Sea Defences	One-way traffic restriction applied to Clarence Esplanade between Serpentine Rd		✓	✓	✓	✓
Portsmouth	Western Road (A27) Speed limit reduction from NSL to 50mph	Reduced speed limit. Older scheme not previously captured.	✓	✓	✓	✓	✓
Portsmouth	A27 Southampton Road - new development access	New access to north of A27 between Port Solent and Portchester, includes altered lane		✓	✓	✓	✓
Portsmouth	Dundas Lane/Dundas spur roundabout- new 4th arm	New arm to provide access to Admiral Lord Nelson School		✓	✓	✓	✓
Portsmouth	Various pedestrian crossing schemes	Ped crossing schemes at: Tiger crossing Fawcett Road jct/w Fratton Bridge Roundabout - included loss of flared lane at Fawcett Rd entry to roundabout; Zebra Crossing		✓	✓	✓	✓
Portsmouth, Isle of Wight, Havant, Fareham	Portsmouth City Region TCF- Committed schemes package	Package of schemes of various types, including bus priority, interchange, highway / junction improvement, and active travel schemes **See separate list**		✓	✓	✓	✓
Smart Motorways	Smart Motorways - M27	Smart motorway M27 J4 to J11		✓	✓	✓	✓
Southampton	Route X4 - Southampton - Fareham	Installation of new roundabout. Signalisation of junction with Shide Road. Widening of approach to two lanes at St Georges approach roundabout	✓	✓	✓	✓	✓
Southampton	A33 Western Approach / Redbridge Rd / Millbrook Rd West	Reduction in speed limit from 50mph to 40mph	✓	✓	✓	✓	✓
Southampton	Woolston - Victoria Rd / Woodley Rd	Changes to Victoria Rd to one way southbound. This scheme also involved making Woodley Rd one way northbound and changes to Victoria Rd/Portsmouth Rd/ Bridge Rd crossroads	✓	✓	✓	✓	✓
Southampton	Swaythling A335 Junctions scheme	Improved signals at 4x junctions in Swaythling on A335/ A35	✓	✓	✓	✓	✓
Southampton	Woolston Itchen Riverside development	hanges to network in Woolston development area- in addition to Victoria Rd/ Woodley Rd	✓	✓	✓	✓	✓
Southampton	Wide Lane	New traffic signal controlled junction for Mountpark Access	✓	✓	✓	✓	✓
Southampton	Inner Avenue Southbound	Removal of nearside lane on Inner Avenue SB between Lodge Road and Dorset St to provide new segrargated cycle lane, also new segregated cycle lane on northbound side (no lane changes, but some kerbing/lane width alterations)	✓	✓	✓	✓	✓
Southampton	A33 Millbrook Roundabout	New signal timings/ MOVA following reconstruction scheme	✓	✓	✓	✓	✓
Southampton	A33 Millbrook Road West/Regents Park Road	Adjustments to traffic signal timings/ minor changes to junction layout	✓	✓	✓	✓	✓
Southampton	A3057 Shirley High Street/Park Street	Adjustments to bus lane and traffic signal timings	✓	✓	✓	✓	✓
Southampton	Brownhill Way/Frogmore Lane	Adjustmetnts to traffic signal timings and pedestrian crossing	✓	✓	✓	✓	✓
Southampton	Third Avenue	New two way segregated cycle route creating all traffic one way route eastbound	✓	✓	✓	✓	✓
Southampton	Northam Road/Union Street/Princes Street	Adjustments to layout & signal timings	✓	✓	✓	✓	✓
Southampton	Saltmarsh Lane/ Central Bridge/ Albert Rd North/ Itchen Brdge	Adjusted signal timings	✓	✓	✓	✓	✓
Southampton	A33 West Quay Road corridor	Adjustment to traffic signal timings from Southern Road to Grand Harbour Parade	✓	✓	✓	✓	✓
Southampton	The Avenue cycleway Alma Rd-Avenue Rd	Reduction to one lane southbound between Alma Rd and Avenue Rd		✓	✓	✓	✓
Southampton	Stoneham Way/ Wide Lane junction	Signal and cycle improvements		✓	✓	✓	✓

Southampton	Thornhill Park Road/Hinkler Road	New signals/MOVA following renovation		✔	✔	✔	✔
Southampton	A33 West Quay Road/Leisure World	Changes to access to Leisure World site including new signals, ped-cycle crossings, additional left turn lane into site, removal of ped crossing across West Quay Road		✔	✔	✔	✔
Southampton	A33 West Quay Road/Harbour Parade North	New signal controller and changes pedestrian crossing of West Quay Road (new 10m wide crossing no stagger straight across)		✔	✔	✔	✔
Southampton	Winchester Road/Dale Road	Changes to signals and lane redistribution to incorporate cycle lane		✔	✔	✔	✔
Southampton	St Mary's Road	Changes to St Mary's Road/Charlotte Place link road signals to incorporate cycle bypass lights		✔	✔	✔	✔
Southampton	Dorset Street	Infill of subway at Rockstone Lane to new at grade toucan crossing	✔	✔	✔	✔	✔
Southampton	Queensway	New entrance to Bargate Centre redevelopment, changes to The Strand (no long through route from Queensway roundabout), replacement of toucan crossing with parallel cycle-ped zebra.		✔	✔	✔	✔
Southampton	A3024 improvements	Upgrade to various junctions between Botley Road and A334 Bitterne Road East as proposed in HE's M27 Soton Junctions consultation by providing new traffic signal technology and pedestrian crossing facilities, along with a segregated cycle freeway along Bursledon Road and bus priority		✔	✔	✔	✔
Southampton	M27 J8	Capacity enhancement scheme		✔	✔	✔	✔
Southampton	Windhover Roundabout	Capacity enhancement scheme		✔	✔	✔	✔
Southampton	M271 Redbridge roundabout	South to east jet lane. Increased circulating capacity. Scheme completed December 2020	✔	✔	✔	✔	✔
Southampton. Eastleigh, New Forest	Southampton City Region TCF- Committed schemes package	Package of schemes of various types, including bus priority, interchange, highway / junction improvement, and active travel schemes **See separate list**		✔	✔	✔	✔
Test Valley	M27 J3	W/B off-slip and corresponding circulating lane flared to 3 lanes, M271 S/B approach flared to 3 lanes, M271 N/B flare lengthened	✔	✔	✔	✔	✔
Test Valley	Romsey Waitrose /Alma Rd mini roundabout	Additional lane on Waitrose entry arm		✔	✔	✔	✔
Test Valley	Romsey town centre shared space	Church Street, Bell Street, Market Place- public realm/shared space scheme	✔	✔	✔	✔	✔
Test Valley	Redbridge Lane/ Romsey Rd/ Bakers Drove improvement	Junction improvement		✔	✔	✔	✔
Test Valley	Winchester Road/Braishfield Road, Romsey	Conversion of T junction to new 3 arm signal junction	✔	✔	✔	✔	✔
Test Valley	M271 Junction 1 / Brownhill Way	Signalisation of M271 Junction 1, additional carriageway on Brownhill Way to Adanac rbt	✔	✔	✔	✔	✔
Test Valley	Abbotswood network changes	New road links serving Abbotswood development- changes to Braishfield Rd (site access rbt) and Braishfield Rd/ Jermyns Ln/ Sandy Ln roundabout (crossroads replaced with roundabout)	✔	✔	✔	✔	✔
Winchester	M3 Junction 9	Major junction upgrade to allow free-flow movement between M3 and A34			✔	✔	✔
Winchester	Whiteley Way extension	Northward extension of Whiteley Way from current terminus, via North Whiteley major development site, to A3051 Botley Road north of Curbridge		✔	✔	✔	✔
Winchester	North Whiteley bus network and speed limit changes	Developer funded bus network for North Whiteley development and alteration to speed limits on parts of existing network adjacent to development		✔	✔	✔	✔
Winchester	A334 Fareham Rd/ Hoads Hill/ A32 School Ln roundabout additional arm	New 4th arm added, together with changes (ped crossing islands and changes to location of		✔	✔	✔	✔
Winchester	Whiteley Way/ Parkway northern junction	Conversion of T junction to signalised T junction		✔	✔	✔	✔
Winchester	Whiteley Way/ retail park junction	Conversion of roundabout to signalised T junction		✔	✔	✔	✔
Winchester	Andover Road/Northern Access Road (Kings Barton development), Winchester	New 3 arm signal junction	✔	✔	✔	✔	✔
Winchester	Andover Road/Southern Access Road (Kings Barton development), Winchester	New 3 arm signal junction	✔	✔	✔	✔	✔
Winchester	Romsey Rd/Pitt Manor, Winchester	New 3 arm signal junction	✔	✔	✔	✔	✔
Winchester	Pitt Park & Ride site,Winchester	200 Space Park + Ride site	✔	✔	✔	✔	✔
WInchester	Vaultex Park & Ride site, Winchester	New multi-storey car park (P&R) with 287 spaces accessed off Barfield Close		✔	✔	✔	✔
Winchester	Kings Barton Park & Ride lite	200 Space Park & Ride		✔	✔	✔	✔
Winchester	Andover Road North closure	Closure of existing Andover Road North to through traffic with traffic being diverted through Kings Barton development spine road (Winchester Avenue). Requires new signal junction at Harestock Road/ Winchester Ave/ Andover Road North junction, and roundabout at Winchester Avenue/ Stoney Lane/ Andover Road junction.		✔	✔	✔	✔
Winchester	Bar End Road roundabout	Enlarged roundabout to provide access to new Leisure Centre		✔	✔	✔	✔

Appendix B - Winchester Local Plan Landuse Inputs

SRTM Zone	Residential (dwellings)				
	Completions	Permissions (2023-41) (excludes completions)	Allocations (2019-41)	Windfall/ Unspecified Location	Total
367	113	1	128	25	**267**
368	3	1	10	25	**39**
369	0	10			**10**
370	88	3	100		**191**
371	30	31	10	50	**121**
372	10	8			**18**
373	14	1	100	20	**135**
374	8	9		10	**27**
375	120	89		50	**259**
376	8	4	200		**212**
377	3	5	30		**38**
378	0	0			**0**
379	0	0			**0**
380	0	2			**2**
381	1	0			**1**
382	1	17			**18**
383	4	9			**13**
384	9	17	98	10	**134**
385	109	12	100	45	**266**
386	233	114	10	45	**402**
387	3	1			**4**
388	2	3	55	10	**70**
389	0	0		33	**33**
390	0	0		33	**33**
391	4	0		33	**37**
392	77	0		33	**110**
393	28	0		33	**61**
394	8	0		33	**41**
395	0	1		33	**34**
396	0	2		33	**35**
397	16	9		33	**58**
398	3	2			**5**
399	1	76		33	**110**
400	3	10		33	**46**
401	1	8		33	**42**
402	-1	4		33	**36**
403	11	2		33	**46**
404	194	50		33	**277**
405	15	6		33	**54**
406	12	25		33	**70**
407	15	2		33	**50**
408	1	6		33	**40**
409	1	3		34	**38**
410	-1	31		34	**64**
411	-2	20		34	**52**
412	8	3	75	34	**120**
413	18	20	320	34	**392**
414	1	0		34	**35**
415	1	1			**2**
416	3	0			**3**
417	5	1	100	17	**123**
418	11	0	70	17	**98**
419	57	43		16	**116**
420	4	0		20	**24**
421	4	67	36	20	**127**
422	0	1			**1**
423	2	1			**3**
424	2	8			**10**
425					**0**
426	4	12			**16**
427	7	2		34	**43**
428	1	1		34	**36**
429	1	0	30		**31**
430	23	8		**34**	**65**
431	53	7		**34**	**94**
432	1	5		**34**	**40**
433	0	0			**0**
434	24	9		10	**43**
435	10	1		**34**	**45**
436	3	9		20	**32**
802	0	0			**0**
803	0	0			**0**
804	0	0			**0**
805	1	1			**2**
806	84	343	100	90	**617**
897	402	843			**1245**
898	158	843	50		**1051**
899	410	844	95		**1349**
901	186	402	84		**672**
902	92	402	83		**577**
903	15	402	83		**500**
961	0	1	10	10	**21**
963	0	115			**115**
964		1			**1**
974	**222**	**1542**			**1764**
975			**900**		**900**
977					**0**
unspecified windfall area				190	**190**
Total	**2958**	**6532**	**2877**	**1735**	**14102**

SRTM Zone	Retail (sqm)			
	Completions	Permissions (2023-41) (excludes completions)	Allocations (2019-41)	Total
367				0
368				0
369				0
370				0
371				0
372				0
373				0
374		430		430
375				0
376				0
377	240	856		1096
378		1814		1814
379				0
380				0
381				0
382				0
383				0
384				0
385				0
386				0
387				0
388				0
389				0
390				0
391				0
392				0
393				0
394				0
395				0
396				0
397				0
398				0
399				0
400				0
401				0
402				0
403				0
404				0
405				0
406				0
407				0
408				0
409				0
410				0
411				0
412				0
413			8700	8700
414				0
415				0
416				0
417				0
418				0
419				0
420				0
421				0
422				0
423				0
424				0
425		3000		3000
426				0
427				0
428				0
429			278	278
430				0
431				0
432				0
433				0
434				0
435				0
436				0
802				0
803				0
804				0
805				0
806				0
897				0
898		1386		1386
899				0
901				0
902		5800		5800
903				0
961				0
963				0
964				0
974				0
975				0
977			6500	6500
Total	240	13286	8978	29004

SRTM Zone	Office (sqm)			
	Completions	Permissions (2023-41) (excludes completions)	Allocations (2019-41)	Total
367	564			**564**
368	1214			**1214**
369		235		**235**
370				**0**
371				**0**
372		526		**526**
373				**0**
374				**0**
375				**0**
376				**0**
377	6265	7307	1333	**14905**
378				**0**
379				**0**
380		95		**95**
381				**0**
382				**0**
383				**0**
384				**0**
385				**0**
386			7524	**7524**
387				**0**
389				**0**
390				**0**
391				**0**
392				**0**
393				**0**
394				**0**
395				**0**
396				**0**
397				**0**
398				**0**
399	1343	246		**1589**
400				**0**
401				**0**
402				**0**
403				**0**
404				**0**
405				**0**
406				**0**
407				**0**
408				**0**
409				**0**
410				**0**
411				**0**
412	1221		22654	**23875**
413				**0**
414				**0**
415				**0**
416				**0**
417		1991		**1991**
418				**0**
419				**0**
420				**0**
421				**0**
422				**0**
423		675		**675**
424				**0**
425		2000		**2000**
426		296		**296**
427				**0**
428				**0**
429				**0**
430				**0**
431				**0**
432				**0**
433				**0**
434				**0**
435				**0**
436				**0**
802				**0**
803				**0**
804				**0**
805				**0**
806			9180	**9180**
897				**0**
898				**0**
899				**0**
901	1881	23054		**24935**
902				**0**
903				**0**
961				**0**
963				**0**
964				**0**
974				**0**
975				**0**
977			59000	**59000**
Total	**12488**	**36425**	**99691**	**148604**

SRTM Zone	Industrial (sqm)			
	Completions	Permissions (2023-41) (excludes completions)	Allocations (2019-41)	Total
367				**0**
368				**0**
369	469			**469**
370		6845		**6845**
371				**0**
372	75			**75**
373				**0**
374				**0**
375				**0**
376				**0**
377	4873		1333	**6206**
378				**0**
379				**0**
380				**0**
381				**0**
382	362			**362**
383				**0**
384	1283			**1283**
385		1239		**1239**
386			5852	**5852**
387				**0**
388	340			**340**
389				**0**
390				**0**
391				**0**
392				**0**
393				**0**
394	1951			**1951**
395				**0**
396				**0**
397				**0**
398				**0**
399		191		**191**
400				**0**
401				**0**
402				**0**
403				**0**
404				**0**
405				**0**
406				**0**
407				**0**
408				**0**
409				**0**
410				**0**
411				**0**
412				**0**
413				**0**
414				**0**
415				**0**
416				**0**
417				**0**
418				**0**
419	3970			**3970**
420				**0**
421				**0**
422				**0**
423				**0**
424				**0**
425				**0**
426				**0**
427				**0**
428				**0**
429				**0**
430				**0**
431				**0**
432				**0**
433				**0**
434				**0**
435				**0**
436		312		**312**
802				**0**
803				**0**
804				**0**
805				**0**
806	484	11900		**12384**
897				**0**
898				**0**
899				**0**
901	1463	17697		**19160**
902				**0**
903				**0**
961				**0**
963				**0**
964				**0**
974				**0**
975				**0**
977				**0**
Total	**15270**	**38184**	**7185**	**60639**

SRTM Zone	Warehousing (sqm)			
	Completions	Permissions (2023-41) (excludes completions)	Allocations (2019-41)	Total
367				0
368				0
369	469			469
370				0
371				0
372	75	525		600
373				0
374				0
375				0
376				0
377	2785		1333	4118
378				0
379				0
380		380		380
381				0
382				0
383				0
384				0
385	625	958		1583
386			3344	3344
387				0
388				0
389				0
390				0
391				0
392				0
393				0
394				0
395				0
396				0
397				0
398				0
399	476	109		585
400				0
401				0
402				0
403				0
404				0
405				0
406				0
407				0
408				0
409				0
410				0
411				0
412				0
413				0
414				0
415				0
416				0
417				0
418				0
419				0
420				0
421				0
422				0
423				0
424		624		624
425				0
426				0
427				0
428				0
429				0
430				0
431				0
432				0
433				0
434				0
435				0
436	2931			2931
802				0
803				0
804				0
805				0
806		465	2720	3185
897		520		520
898				0
899				0
901	836	10113		10949
902				0
903				0
961		595		595
961				0
963				0
964				0
974				0
975				0
977				0
Total	8197	14289	7397	29883

SRTM Zone	Primary and Secondary Education (sqm)			
	Completions	Permissions (2023-41) (excludes completions)	Allocations (2019-41)	Total
367				0
368	271			271
369				0
370				0
371				0
372				0
373				0
374				0
375				0
376				0
377				0
378				0
379				0
380				0
381				0
382				0
383				0
384				0
385				0
386				0
387				0
388	164			164
389				0
390				0
391				0
392				0
393	273			273
394				0
395				0
396				0
397				0
398				0
399				0
400				0
401				0
402				0
403				0
404				0
405				0
406				0
407				0
408				0
409				0
410				0
411				0
412				0
413				0
414				0
415				0
416				0
417				0
418				0
419				0
420				0
421				0
422				0
423				0
424				0
425				0
426				0
427				0
428				0
429				0
430				0
431				0
432				0
433				0
434				0
435				0
436				0
802				0
803				0
804				0
805				0
806				0
897				0
898	3030			3030
899				0
901				0
902				0
903				0
961				0
963				0
964				0
974	2215			2215
975				0
977				0
Total	5953	0	0	5953

SRTM Zone	Adult Education (sqm)			
	Completions	Permissions (2023-41) (excludes completions)	Allocations (2019-41)	Total
367				0
368				0
369				0
370				0
371				0
372				0
373				0
374				0
375				0
376				0
377				0
378				0
379				0
380				0
381				0
382				0
383				0
384				0
385				0
386				0
387				0
388				0
389				0
390				0
391				0
392				0
393				0
394				0
395				0
396				0
397				0
398				0
399				0
400				0
401				0
402				0
403				0
404				0
405				0
406				0
407				0
408				0
409				0
410				0
411				0
412				0
413				0
414				0
415				0
416				0
417				0
418				0
419				0
420				0
421				0
422				0
423				0
424				0
425				0
426				0
427				0
428				0
429				0
430				0
431				0
432				0
433				0
434				0
435				0
436				0
802				0
803				0
804				0
805				0
806				0
897				0
898				0
899				0
901				0
902				0
903				0
961				0
963				0
964				0
974				0
975				0
977			19000	19000
Total	0	0	19000	19000

SRTM Zone	Hotel & Other Accomodation (sqm)			
	Completions	Permissions (2023-41) (excludes completions)	Allocations (2019-41)	Total
367				0
368				0
369				0
370				0
371				0
372				0
373				0
374		508		508
375				0
376				0
377		3024		3024
378				0
379				0
380				0
381				0
382				0
383				0
384				0
385				0
386				0
387				0
388				0
389				0
390				0
391				0
392				0
393				0
394				0
395				0
396				0
397				0
398				0
399				0
400				0
401				0
402			10360	10360
403				0
404				0
405			10360	10360
406				0
407				0
408				0
409				0
410				0
411				0
412				0
413				0
414				0
415				0
416				0
417				0
418				0
419				0
420				0
421				0
422				0
423				0
424				0
425				0
426				0
427				0
428				0
429				0
430				0
431				0
432				0
433				0
434				0
435				0
436				0
802				0
803				0
804				0
805				0
806				0
897				0
898				0
899				0
901				0
902				0
903				0
961				0
963				0
964				0
974				0
975				0
977			3000	3000
Total	0	3532	23720	27252

SRTM Zone	Healthcare (sqm)			
	Completions	Permissions (2023-41) (excludes completions)	Allocations (2019-41)	Total
367				0
368				0
369				0
370				0
371				0
372				0
373				0
374				0
375				0
376				0
377				0
378				0
379				0
380				0
381				0
382				0
383				0
384				0
385				0
386				0
387				0
388				0
389				0
390				0
391				0
392				0
393				0
394				0
395				0
396				0
397				0
398				0
399				0
400				0
401				0
402				0
403				0
404				0
405				0
406				0
407				0
408				0
409				0
410				0
411				0
412				0
413				0
414				0
415				0
416				0
417				0
418			3200	**3200**
419				0
420				0
421				0
422				0
423				0
424				0
425				0
426				0
427				0
428				0
429				0
430				0
431				0
432				0
433				0
434				0
435				0
436				0
802				0
803				0
804				0
805				0
806				0
897			4250	**4250**
898				0
899				0
901				0
902				0
903				0
961				0
963				0
964				0
974				0
975				0
977				0
Total	0	0	7450	7450

SRTM Zone	Leisure (sqm)			
	Completions	Permissions (2023-41) (excludes completions)	Allocations (2019-41)	Total
367				0
368				0
369				0
370				0
371				0
372				0
373				0
374		490		490
375				0
376				0
377	251	1605		1856
378		1151		1151
379				0
380				0
381				0
382				0
383				0
384				0
385				0
386				0
387				0
388				0
389				0
390				0
391				0
392				0
393				0
394				0
395				0
396				0
397				0
398				0
399				0
400				0
401				0
402				0
403				0
404				0
405				0
406				0
407				0
408				0
409				0
410				0
411				0
412				0
413			13000	13000
414				0
415				0
416				0
417				0
418				0
419				0
420				0
421				0
422				0
423				0
424				0
425				0
426				0
427				0
428				0
429	9937	540		10477
430				0
431				0
432				0
433				0
434				0
435				0
436				0
802				0
803				0
804				0
805				0
806	693	297		990
897				0
898		600		600
899				0
901				0
902		365		365
903				0
961				0
963				0
964				0
974				0
975				0
977			12500	12500
Total	10881	5048	25500	41429

Appendix C – Do Minimum Junction Hotspots Detailed Performance

	2041	2041		Significant:	V/C Sig	85	5	V/C above 85%, having increased by more than 5%
	GCJ	GCK		Severe:	V/C Sev	95	10	V/C above 95%, having increased by more than 10%
	Baseline	DM		Delay	DELAY	120	60	Delay above 120 secs, having increased by more than 60 secs

6 metres/pcu

SCENARIO Do Minimum vs. Baseline

Winchester Local Plan : Junction approach arm statistics for identified locations (Summary Sheet)

ID	Junction	Approach Arm	Junction Type	2041 Baseline AM Actual Flow (PCUs)	2041 DM AM Actual Flow (PCUs)	2041 Baseline AM RFC (%) (Act)	2041 DM AM RFC (%) (Act)	AM RFC Diff	AM	2041 Baseline AM Delay (s)	2041 DM AM Delay (s)	AM Delay Diff	AM	2041 Baseline AM Ave Queue (PCUs)	2041 DM AM Ave Queue (PCUs)	AM Ave Q Diff (pcu)	2041 Baseline AM Ave Queue (Metres)	2041 DM AM Ave Queue (Metres)	AM Ave Q Diff (M)	2041 Baseline PM Actual Flow (PCUs)	2041 DM PM Actual Flow (PCUs)	2041 Baseline PM RFC (%) (Act)	2041 DM PM RFC (%) (Act)	PM RFC Diff	PM	2041 Baseline PM Delay (s)	2041 DM PM Delay (s)	PM Delay Diff	PM	2041 Baseline PM Ave Queue (PCUs)	2041 DM PM Ave Queue (PCUs)	PM Ave Q Diff (pcu)	2041 Baseline PM Ave Queue (Metres)	2041 DM PM Ave Queue (Metres)	PM Ave Q Diff (M)
			Totals (Weighted Ave)->	32196	32940	78.8	80.9			40.2	44.9			255	299	44	1528	1792	264	34224	33212	80.0	86.1			36.2	56.4			227	407	181	1361	2444	1083
				100%	102%	100%	103%			100%	112%			100%	117%		100%	117%		100%	97%	100%	108%			100%	156%			100%	180%		100%	180%	
				GCJ_AM	GCK_AM	GCJ_AM	GCK_AM			GCJ_AM	GCK_AM			GCJ_AM	GCK_AM		GCJ_AM	GCK_AM		GCK_PM	GCJ_PM	GCJ_PM	GCK_PM			GCJ_PM	GCK_PM			GBI_PM	GBJ_PM		GBI_PM	GBJ_PM	
1	A272/B3420 Andover Road	A272 (N)	Roundabout	467	470	41	46	4		13	13	1		0	0	0	1	2	1	233	224	26	29	3		12	13	0		0	0	0	1	1	0
1		A272(W)		1352	1428	91	97	6	Sig	12	16	4		1	3	1	8	16	7	1594	1442	86	96	9	Sig	10	11	1		0	1	1	1	6	5
1		Down Farm Lane		251	275	28	31	3		15	15	0		0	0	0	1	1	0	828	876	95	101	6	Sig	31	72	40		3	14	10	20	83	63
1		B3420		589	722	42	52	10		11	11	0		0	0	0	1	1	0	755	665	69	77	8		15	16	1		1	1	1	4	8	4
1		Stud Lane		140	169	13	17	4		11	12	1		0	0	0	0	0	0	179	123	19	28	9		12	13	1		0	0	0	1	1	1
2	A3090/Otterbourne Road/ B3335 St Cross Road	A3090 (s)	Roundabout	1320	1488	83	93	10	Sig	14	14	1		0	1	0	2	4	2	1534	1453	90	99	10	Sig	13	22	9		1	3	2	6	16	10
2		Otterbourne Road		634	443	112	118	6	Sig	268	401	133	Sev	43	30	-14	260	178	-82	467	522	93	101	9	Sig	37	86	49		3	35	32	19	211	192
2		A3090 (N)		928	1057	101	92	-8		57	21	-36		20	33	13	121	200	79	1156	944	94	106	13	Sev	25	151	126	Sev	3	4	1	19	23	4
2		B3335 St Cross Road		882	807	104	107	2		112	161	49		27	34	8	159	206	47	861	874	109	108	-1		195	179	-16		34	32	-2	201	190	-11
3	B3047 Hyde Street/B3040 Jewry Street/B3330	B3047 Hyde Street	Signalised	236	250	95	100	5	Sig	115	154	39		2	3	0	15	16	1	236	232	100	103	2		165	203	38		2	5	2	15	28	13
3		B3040 Jewry Street		531	535	27	28	1		45	45	0		2	2	0	12	11	-1	871	862	41	42	1		50	55	5		3	3	0	20	20	1
3		B3330 City Road		990	1004	101	102	1		95	121	27		11	16	6	63	99	36	883	857	101	104	3		110	164	54		11	21	10	67	126	59
4	B3330/ The Broadway	B3330 High Street	Roundabout	798	867	91	99	8	Sig	16	16	0		0	0	0	0	0	0	665	623	71	76	5		16	16	0		0	0	0	0	0	0
4		B3330 Eastgate		245	228	28	26	-2		16	16	0		0	0	0	0	0	0	201	234	27	23	-4		16	16	0		0	0	0	0	0	0
5	B3420 Andover Road/ Harestock Road	Harestock Road	Priority	597	612	91	93	2		50	57	7		4	4	0	25	27	2	646	592	90	98	8	Sig	50	86	37		4	5	1	25	29	4
5		B3420 Andover Road (N)		1076	1196	70	78	8		36	51	15		6	8	1	39	45	6	962	947	63	64	1		59	58	-1		6	6	0	38	38	0
5		B3420 Andover Road (S)		183	195	67	72	5		53	55	2		2	2	0	12	13	1	237	224	71	91	20	Sig	58	95	38		2	3	0	13	16	2
6	Main Road/ Poles Lane/ Otterbourne Road	Main Road	Roundabout	768	661	93	80	-13		9	7	-2		1	18	17	3	107	104	468	466	55	55	0		6	6	0		0	0	0	0	0	0
6		Poles Lane		262	296	43	42	-1		9	7	-1		0	1	1	1	9	7	453	434	59	61	3		8	8	0		0	0	0	1	1	0
6		Otterbourne Road		734	772	88	93	4		7	7	1		0	0	0	2	2	0	806	781	104	110	6	Sig	102	207	105	Sev	27	84	56	165	502	338
7	B3354 Main Road/Church Lane	B3354 Main Road (S)	Roundabout	934	934	108	108	0		148	151	3		36	36	0	217	217	-1	836	788	90	96	6	Sig	4	4	0		0	0	0	0	0	0
7		Church Lane		559	534	92	92	0		17	19	2		2	2	1	10	13	3	648	658	103	103	1		82	95	13		14	17	4	83	105	22
7		B3354 Main Road (N)		520	549	72	75	3		7	7	0		0	0	0	2	3	1	632	625	105	106	1		130	140	10		20	23	4	119	141	22
8	M3 J11	M3 NB off Slip	Motorway	1047	1198	83	100	17	Sev	17	49	32		5	5	0	27	28	1	1170	1002	73	92	20	Sig	16	24	8		3	5	2	20	31	11
8		South Winchester Park and Ride exit		24	25	2	3	0		7	8	1		0	0	0	0	0	0	298	272	29	36	7		10	13	4		1	1	0	4	5	1
8		A3090 Hockley Link (N)		1637	1681	86	85	-1		4	3	0		0	0	0	1	0	-1	1570	1692	101	109	8	Sig	44	187	143	Sev	42	75	33	251	447	197
8		A3090 Hockley Link (E)		590	559	109	112	3		209	265	56		33	37	4	196	219	23	360	439	96	84	-12		40	23	-17		4	8	4	24	50	26
9	B3420 Andover Road / B3401 Berewweke Road	B3401 Bereweeke Road	Priority	472	463	85	85	0		11	12	0		1	1	0	6	7	1	522	447	81	87	6	Sig	11	12	1		1	1	0	6	8	2
9		B3420 Andover Road (N)		192	199	9	10	0		1	1	0		0	0	0	0	0	0	465	453	22	22	1		1	1	0		0	0	0	0	0	0
10	M3 J10	Bull Drove	Motorway Juncti	320	302	75	74	-1		18	19	1		1	1	0	7	9	2	520	417	76	92	16	Sig	13	23	10		1	2	1	8	13	5
10		B3330 Bar End Road		422	465	38	41	3		11	12	1		1	1	0	6	6	1	890	853	69	74	5		39	38	-1		8	9	0	50	53	3
10		A31 Circulating		23	35	8	12	4		28	28	0		0	0	0	1	1	0	286	236	26	32	6		11	11	1		0	1	0	3	4	1
10		A31 (E)		1063	1053	45	45	0		6	6	0		2	1	0	9	9	0	752	768	68	67	-1		22	21	-1		4	4	0	23	25	2
10		M3 NB off Slip Circulating right lane		673	625	47	44	-3		21	20	-1		4	3	0	21	20	-2	514	515	24	24	0		15	14	-2		2	2	0	12	13	0
10		M3 NB Off Slip Circulating left lane		414	463	57	64	7		19	21	2		2	2	0	10	10	1	524	489	46	49	3		9	10	0		1	1	0	5	6	1
10		M3 NB off Slip		1631	1670	77	79	2		33	32	-1		7	7	0	43	43	0	923	952	86	83	-3		68	66	-1		6	6	0	38	37	0
11	B3335/Hazeley Road/ Finch's Lane	B3335 High Street (S)	Signalised	1267	1269	105	105	0		154	159	6		33	37	4	197	221	24	737	703	85	88	3		30	33	4		3	4	0	19	22	3
11		Finch's Lane		186	180	79	88	9	Sig	82	108	25		3	3	0	15	16	1	324	246	74	100	26	Sev	66	156	90	Sev	4	21	17	23	128	105
11		B3335 High Street (N)		718	734	69	75	7		15	18	2		2	2	0	11	11	-1	1031	1066	101	97	-4		95	50	-45		7	7	0	41	40	-1
11		Hazeley Road		250	229	99	103	4		153	223	70	Sev	4	4	0	22	22	0	267	299	66	59	-7		55	52	-3		3	3	0	19	19	0
12	M3 J10 (b)	M3 SB Main carrigeway	Motorway	5431	5460	82	83	0		2	2	0		0	0	0	0	0	0	5839	5868	89	98	9	Sig	3	13	10		0	0	0	0	0	0
12		M3 SB on Slip Road		840	839	38	38	0		1	1	0		0	0	0	0	0	0	1080	1048	48	55	7		2	2	0		0	0	0	0	0	0
13	A3090/Meadow Way	A3090 Badger Farm Road (N)	Roundabout	822	877	100	106	5	Sig	32	123	91	Sev	10	4	-5	59	26	-33	487	835	101	59	-42		41	13	-28		6	2	-4	38	14	-23
13		Meadow Way		186	197	44	56	12		17	22	5		1	0	0	3	2	-1	180	196	49	25	-23		18	11	-7		0	0	0	3	2	-1
13		A3090 Badger Farm Road (S)		807	534	94	62	-32		10	9	-1		0	0	0	2	1	-1	867	861	101	102	1		26	50	24		7	5	-1	39	32	-8
14	B3330/B3420/B3044	B3044 (W) Stockbridge Road	Signalised	218	206	80	76	-4		75	69	-5		3	3	0	16	15	-1	189	189	79	78	0		78	78	0		2	2	0	14	14	0
14		B3420 (N) Andover Road		754	784	94	98	4		116	134	17		11	14	2	68	83	14	557	575	82	79	-2		102	109	7		7	9	2	41	52	11
14		B3330 (E) City Road		324	357	53	59	5		53	55	2		4	4	0	22	25	2	504	480	88	93	4		98	111	13		6	6	0	36	38	2
14		B3420 (S) Sussex Street		752	715	80	76	-4		52	50	-2		7	7	0	41	44	2	996	931	84	90	6	Sig	62	73	12		9	9	1	51	56	4
15	B3049 Stockbridge Road/B3041 Chilbolton Avenue	B3049 Stockbridge Road (W)	Roundabout	796	810	101	103	2		57	89	32		6	13	7	36	81	45	796	809	100	101	0		37	46	9		2	9	6	12	51	39
15		B3049 Stockbridge Road (E)		695	694	96	97	1		27	28	1		2	2	0	11	13	2	689	675	96	99	2		28	33	5		2	3	0	15	16	1
15		B3041 Chilbolton Avenue		752	743	99	96	-3		29	23	-6		2	2	0	14	13	-1	735	668	85	93	8	Sig	17	19	2		0	1	0	3	3	1
16	A3090/Merdon Castle Lane	A3090 (N)	Priority	587	624	46	53	7		4	5	1		0	0	0	1	1	0	1318	1051	73	92	19	Sig	5	11	6		0	0	0	1	2	1
16		A3090 (S)		648	875	31	41	10		1	1	0		0	0	0	0	0	0	406	402	20	20	0		1	1	0		0	0	0	0	0	0
16		Merdon Castle Lane		697	644	100	104	4		39	121	82	Sev	5	9	4	30	56	26	394	397	61	61	-1		6	6	0		0	0	0	2	3	1
17	A3090/Poles Lane/Hursley Park Road	A3090 (N)	Signalised	487	485	39	40	1		17	17	0		2	2	0	11	12	1	1447	1380	98	104	7	Sig	49	148	99	Sev	7	12	5	42	70	28
17		Poles Lane		308	357	49	57	8		59	72	13		3	2	-1	20	14	-6	156	165	56	52	-3		83	79	-4		2	2	0	12	12	0
17		A3090 (S)		1161	1369	62	90	28	Sig	22	33	11		6	8	2	36	45	9	392	403	26	25	-1		15	14	0		1	1	0	8	8	0
17		Hursley Park Road		0	0	0	0	0		64	64	0		0	0	0	0	0	0	0	0	0	0	0		64	64	0		0	0	0	0	0	0
18	Pitt Roundabout - A3090/B3040	B3040 Romsey Road	Roundabout	925	1021	57	66	9		11	11	1		0	0	0	1	1	0	1479	1565	93	87	-5		11	12	1		0	1	0	2	4	2
18		A3090 (E)		796	599	53	42	-12		13	13	0		0	0	0	1	1	0	718	670	53	64	11		13	14	1		0	0	0	2	2	0
18		A3090 (W)		1144	1356	84	94	10	Sig	12	14	2		1	1	0	6	5	0	652	602	40	44	4		9	9	0		0	0	0	0	1	0

Appendix D – Do Something Mitigation Scheme Details

NOTES

Scheme layout subject to ongoing design refinement, topographic survey, signal equipment design etc.

This drawing is to be read in conjunction with all relevant specifications; drawings; details and other design information.

Drawing to be read in conjunction with adjoining schemes indicated.

Signage shown is illustrative (and non-exhaustive) for the purpose of scheme/concept agreement and subject to design refinement.

Some lane destination markings and intervisibility zones omitted for clarity.

Areas internal to the Site shown indicatively and are subject to the detail of the Illustrative Masterplan.

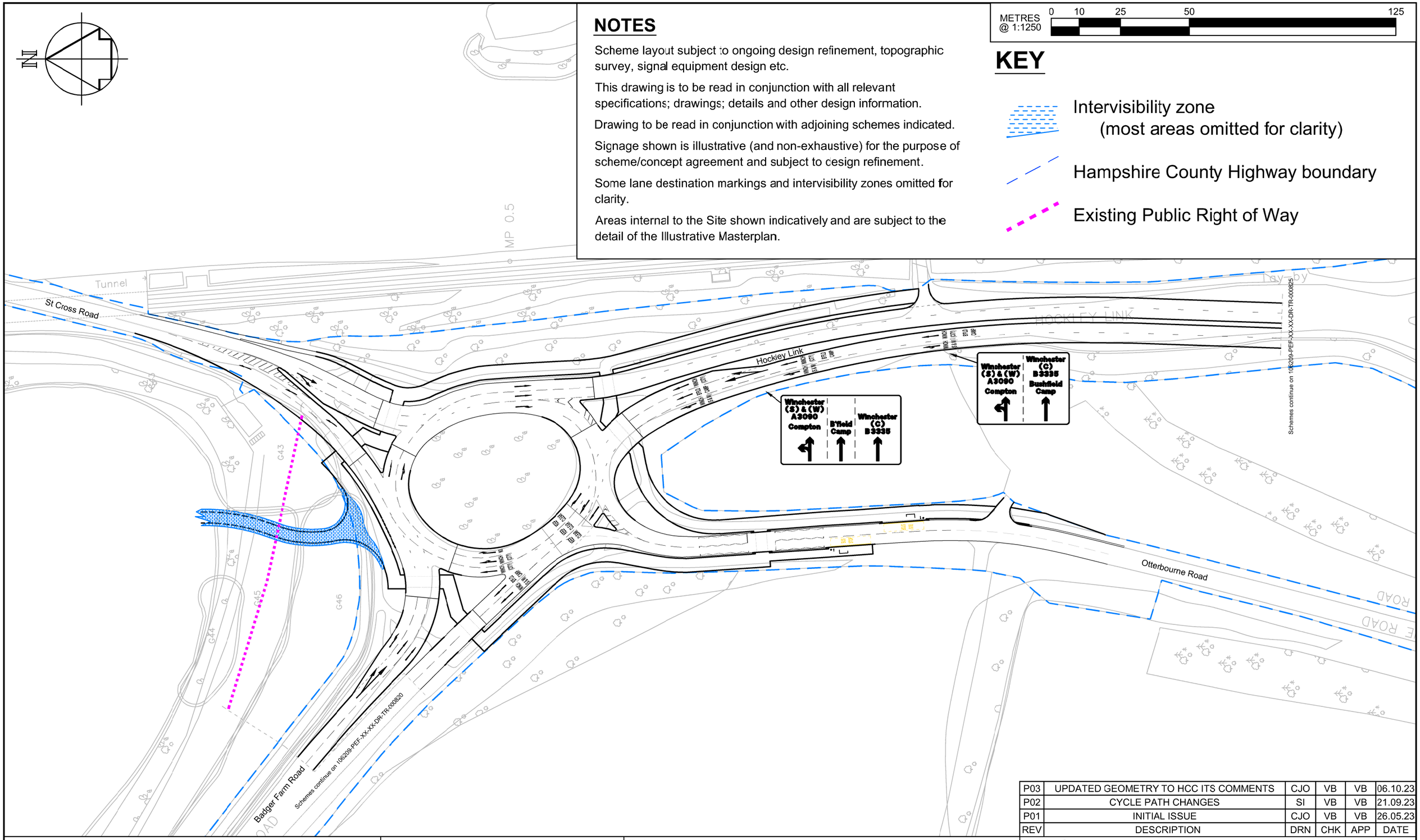
METRES @ 1:1250 — 0 10 25 50 125

KEY

Intervisibility zone (most areas omitted for clarity)

Hampshire County Highway boundary

Existing Public Right of Way



REV	DESCRIPTION	DRN	CHK	APP	DATE
P03	UPDATED GEOMETRY TO HCC ITS COMMENTS	CJO	VB	VB	06.10.23
P02	CYCLE PATH CHANGES	SI	VB	VB	21.09.23
P01	INITIAL ISSUE	CJO	VB	VB	26.05.23

Pell Frischmann

5 FLOOR, 85 STRAND, LONDON WC2R 0DW
Telephone +44 (0)207 486 3661
Email: pflondon@pellfrischmann.com
www.pellfrischmann.com

Project

BUSHFIELD CAMP, WINCHESTER

Drawing Title

BADGER FARM ROAD x
ST CROSS ROAD ROUNDABOUT
GENERAL ARRANGEMENT

Drawing Status

FOR DISCUSSION

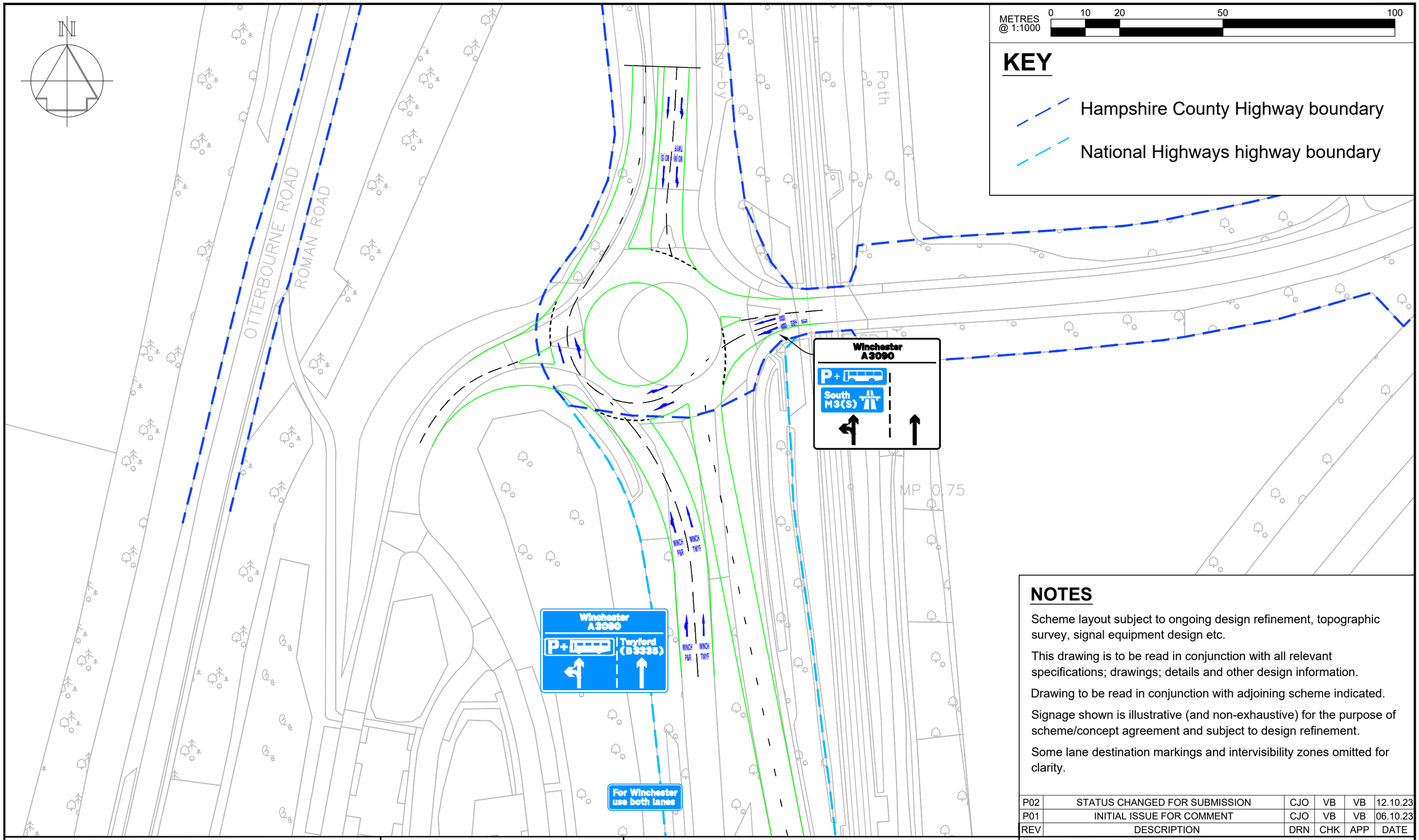
	Name	Date
Drawn	C OSOWSKI	26.05.2023
Designed	C OSOWSKI	26.05.2023
Eng Chk	V BALBOA	26.05.2023
Approved	V BALBOA	26.05.2023

Status Code

Scale 1:1250 @ A3

Revision P03

Drawing No. 106209 - PEF - XX - XX - DR - TR - 000822



NOTES

Scheme layout subject to ongoing design refinement, topographic survey, signal equipment design etc.

This drawing is to be read in conjunction with all relevant specifications; drawings; details and other design information.

Drawing to be read in conjunction with adjoining scheme indicated.

Signage shown is illustrative (and non-exhaustive) for the purpose of scheme/concept agreement and subject to design refinement.

Some lane destination markings and intervisibility zones omitted for clarity.

REV	DESCRIPTION	DRN	CHK	APP	DATE
P02	STATUS CHANGED FOR SUBMISSION	CJO	VB	VB	12.10.23
P01	INITIAL ISSUE FOR COMMENT	CJO	VB	VB	06.10.23

Pell Frischmann

5TH FLOOR, 85 STRAND, LONDON WC2R 0DW
Telephone +44 (0)207 486 3661
Email: pflondon@pellfrischmann.com
www.pellfrischmann.com

Project

BUSHFIELD CAMP, WINCHESTER

Drawing Title

M3 JUNCTION 11
SOUTH ROUNDABOUT MITIGATION SCHEME
GENERAL ARRANGEMENT

Drawing Status

FOR SUBMISSION

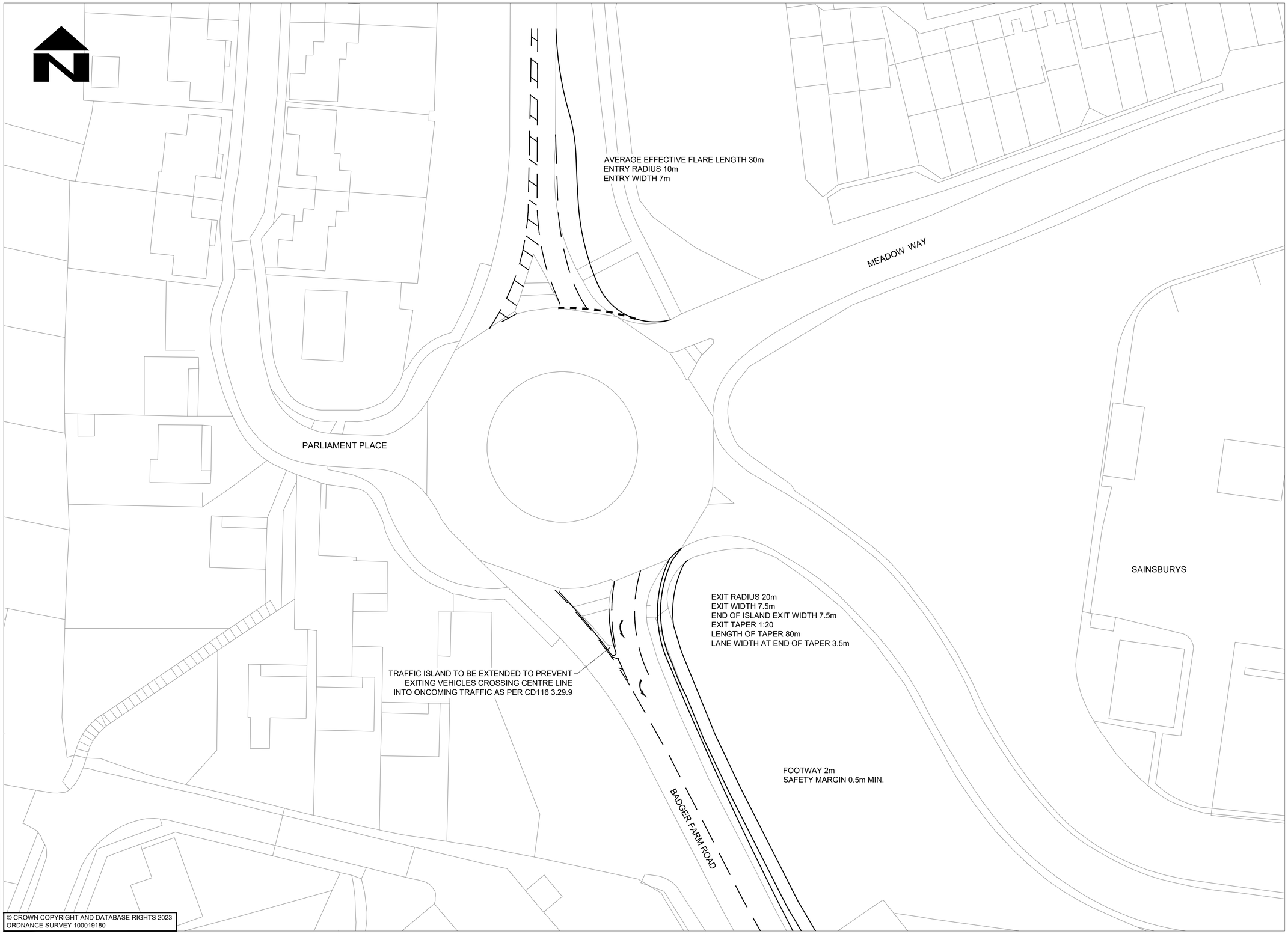
	Name	Date
Drawn	C OSOWSKI	06.10.2023
Designed	C OSOWSKI	06.10.2023
Eng Chk	V BALBOA	06.10.2023
Approved	V BALBOA	06.10.2023

Status Code

Scale
1:1000 @ A3

Revision
P02

Drawing No.
106209 - PEF - XX - XX - DR - TR - 000825



NOTES

1. DO NOT SCALE FROM THIS DRAWING
2. ALL DIMENSIONS IN METRES UNLESS OTHERWISE STATED

0 5 10 20 30 40 50 100

PARTS OF THIS DRAWING SHOULD BE SHOWN IN **COLOUR**. IF THIS NOTE IS NOT **RED** REPRINT A COLOURED COPY

SUIT	REV	AMENDMENTS	DATE	CAD	CHKD	APPD
S3	P02	DRAWING FOR INFORMATION	18.04.2024	RS	JS	GDC

CLIENT

HAMPSHIRE COUNTY COUNCIL
UNIVERSAL SERVICES DIRECTORATE
TRANSPORT IMPLEMENTATION

CONSULTANT

Hampshire County Council
Engineering Services

TIM LAWTON BENG CENG FICE FCIHT : ASSISTANT DIRECTOR OF UNIVERSAL SERVICES

DESIGNER: RS	SCALE @ A1: 1:500	SCHEME: MEADOW WAY ROUNDABOUT	DRAWING TITLE: INDICATIVE LAYOUT
CAD: RS	DATE: 18/04/2024		
CHECKED: JS	SHEET NUMBER: 1 OF 1	JOB No. R.J509243	HCC CAD PLOT: 18/4/2024 16:09:40
APPROVED: GDC	DRAWING NUMBER: R.J509243-HEH-GEN-44301227-DR-CH-0001		SUIT: S3 REV: P02

HCC CAD FILE: K:\Eng\Roads\Schemes\RJ509243 - Winchester Junctions\01-WIP\01-Lead Team\03-Drawings\02-General\R.J509243-HEH-GEN-44301337-DR-CH-0001 Meadow Way Roundabout.dwg

Winchester Park and Ride – Do Something Model Run

17/04/2024

Park and Ride	Spaces	Frequency	Stops	Pricing
East Winchester (Barfield St Catherines)	As in model	As in model	As in model	£3.50 all day, £3 after 1030 Mon-Fridays
South Winchester &Pitt	As in model	As in model	As in model	£3.50 all day, £3 after 1030 Mon-Fridays
SJM	850	every 10 mins during the peaks (c.0740-0900 & 1515-1745) then every 15 mins during the interpeak period peak. Start and finish times on attached 2024 timetable.	SJM PR site - Kings Barton PR Lite - (from a pair of stops directly on Winchester Avenue – in similar arrangement to the stops on Romsey Road at Pitt P&R – so buses wouldn't enter the P&R Lite site itself) Kings Barton District Centre, Jolly Farmer (for Peter Symonds), City Road (for station/County Council offices), then all existing P&R stops around the city centre loop – St Peters, The Broadway, Jewry St (by Old Gaolhouse).	£3.50 all day, £3 after 1030 Mon-Fridays
Kings Barton PR Lite	200 As in model	every 10 mins during the peaks (c.0740-0900 & 1515-1745) then every 15 mins during the interpeak period peak. Start and finish times on attached 2024 timetable.	Kings Barton PR Lite - (from a pair of stops directly on Winchester Avenue – in similar arrangement to the stops on Romsey Road at Pitt P&R – so buses wouldn't enter the P&R Lite site itself) Kings Barton District Centre, Jolly Farmer (for Peter Symonds), City Road (for station/County Council offices), then	£3.50 all day, £3 after 1030 Mon-Fridays

			all existing P&R stops around the city centre loop – St Peters, The Broadway, Jewry St (by Old Gaolhouse).	

Appendix E – Do Something Junction Hotspots Detailed Performance

				2041	2041			Significant:	V/C Sig	85		V/C above 85%, having increased by more than 5%																		6	metres/pcu
				GCJ	GDX			Severe:	V/C Sev	95	10	V/C above 95%, having increased by more than 10%																				
				Baseline	DS			Delay	DELAY	120	60	Delay above 120 secs, having increased by more than 60 secs																				
SCENARIO Do Something vs. Baseline			Totals (Weighted Ave)->	32196	34726	78.8	73.6			40.2	38.6		245	255	10	1468	1527	59	33212	35341	80.4	77.9		36.8	46.7		219	303	84	1311	1816	505
Winchester Local Plan : Junction approach arm statistics for identified locations (Summary Sheet)				100%	108%	100%	93%			100%	96%		100%	104%		100%	104%		100%	106%	100%	97%		100%	127%		100%	139%		100%	139%	
				2041 Baseline AM	2041 DS AM	2041 Baseline AM	2041 DS AM	AM	AM	2041 Baseline AM	2041 DS AM	AM	2041 Baseline AM	2041 DS AM	AM	2041 Baseline AM	2041 DS AM	AM	2041 Baseline PM	2041 DS PM	2041 Baseline PM	2041 DS PM	PM	PM	2041 Baseline PM	2041 DS PM	PM	PM	2041 Baseline PM	2041 DS PM	PM	PM
ID	Junction	Approach Arm	Junction Type	Actual Flow (PCUs)	Actual Flow (PCUs)	RFC (%) (Act)	RFC (%) (Act)	RFC Diff		Delay (s)	Delay (s)	Delay Diff	Ave Queue (PCUs)	Ave Queue (PCUs)	Ave Q Diff (pcu)	Ave Queue (Metres)	Ave Queue (Metres)	Ave Q Diff (M)	Actual Flow (PCUs)	Actual Flow (PCUs)	RFC (%) (Act)	RFC (%) (Act)	RFC Diff		Delay (s)	Delay (s)	Delay Diff		Ave Queue (PCUs)	Ave Queue (PCUs)	Ave Q Diff (pcu)	Ave Queue (Metres)	Ave Queue (Metres)	Ave Q Diff (M)
				GCJ_AM	GDX_AM	GCJ_AM	GDX_AM			GCJ_AM	GDX_AM		GCJ_AM	GDX_AM		GCJ_AM	GDX_AM		GDX_PM	GCJ_PM	GCJ_PM	GDX_PM			GCJ_PM	12 GDX_PM			GCJ_PM	GDX_PM		GCJ_PM	GDX_PM	
1	(Three Maids Hill Rndbt) B3420 Andover Rd North/ A272	A272 (N)	Roundabout	467	489	41	47	6		13	14	1	0	0	0	1	2	1	224	232	26	31	4			13	1		0	0	0	1	1	0
1		A272(W)		1352	1452	91	99	9	Sig	12	21	9	1	5	4	7	29	22	1442	1578	86	95	8	Sig	10	11	1		0	1	0	2	4	2
1		Down Farm Lane		251	292	28	35	7		15	16	1	0	0	0	1	2	0	876	830	95	100	5		31	54	23		5	10	5	27	57	30
1		B3420		589	719	42	52	10		11	11	0	0	0	0	1	1	0	665	883	69	92	23	Sig	15	23	8		1	3	2	5	19	13
1		Stud Lane		140	162	13	16	3		11	12	1	0	0	0	0	0	0	123	140	19	25	6		12	14	2		0	0	0	1	1	0
2	A3090/Otterbourne Road/ B3335 St Cross Road	A3090 (s)	Roundabout	1320	936	83	49	-34		14	19	5	0	4	4	2	25	23	1453	1174	90	71	-19		13	61	47		1	17	17	3	102	99
2		Otterbourne Road		634	1093	112	48	-64		268	16	-252	43	4	-39	256	24	-232	522	1296	93	76	-17		37	59	22		4	6	2	23	36	13
2		A3090 (N)		928	1694	101	46	-55		57	5	-52	12	2	-10	71	13	-59	944	1616	94	49	-44		25	8	-17		4	3	-1	22	19	-3
2		B3335 St Cross Road		882	1153	104	67	-37		112	6	-106	26	1	-25	154	6	-148	874	580	109	30	-78		195	4	-191		44	0	-44	264	1	-263
3	B3047 Hyde Street/B3040 Jewry Street/B3330	B3047 Hyde Street	Signalised	236	247	95	99	4		115	142	27	3	3	0	15	16	1	232	236	100	102	2		165	198	34		3	5	2	18	31	13
3		B3040 Jewry Street		531	534	27	28	1		45	44	-1	2	2	0	12	11	-1	862	867	41	42	1		50	55	5		3	3	0	20	20	0
3		B3330 City Road		990	996	101	102	1		95	106	11	10	13	3	59	77	18	857	878	101	104	2		110	153	43		11	21	10	66	127	61
4	B3330/ The Broadway	B3330 High Street	Roundabout	798	842	91	96	5	Sig	16	16	0	0	0	0	0	0	0	623	644	71	74	2		16	16	0		0	0	0	0	0	0
4		B3330 Eastgate		245	217	28	25	-3		16	16	0	0	0	0	0	0	0	234	218	27	25	-2		16	16	0		0	0	0	0	0	0
5	B3420 Andover Road/ Harestock Road	Harestock Road	Priority	597	608	91	93	2		50	55	5	4	4	0	26	27	1	592	628	90	96	5	Sig	50	69	19		4	5	0	26	28	3
5		B3420 Andover Road (N)		1076	1091	70	71	1		36	51	15	7	7	0	39	42	2	947	965	63	65	1		59	59	0		6	6	0	38	38	1
5		B3420 Andover Road (S)		183	200	67	76	9		53	67	14	2	2	0	12	13	1	224	231	71	86	14	Sig	58	72	14		2	3	0	14	15	1
6	Main Road/ Poles Lane/ Otterbourne Road	Main Road	Roundabout	768	891	93	105	12	Sev	9	108	100	1	25	25	4	152	149	466	471	55	55	0		6	6	0		0	0	0	0	0	0
6		Poles Lane		262	357	43	80	37		9	20	12	0	1	1	1	9	8	434	448	59	60	2		8	8	0		0	0	0	1	1	0
6		Otterbourne Road		734	607	88	73	-15		7	6	-1	0	0	0	2	1	-1	781	800	104	109	5	Sig	102	197	95	Sev	21	41	20	127	247	120
7	B3354 Main Road/Church Lane	B3354 Main Road (S)	Roundabout	934	940	108	108	0		148	153	5	37	38	1	220	228	8	788	852	90	97	7	Sig	4	4	0		0	0	0	0	0	0
7		Church Lane		559	556	92	94	2		17	21	4	2	3	1	12	16	4	658	637	103	103	0		82	93	11		14	16	1	86	95	8
7		B3354 Main Road (N)		520	532	72	74	2		7	7	0	0	0	0	3	3	0	625	640	105	106	1		130	139	9		22	24	2	131	143	12
8	M3 J11	M3 NB off Slip	Roundabout	1047	1297	83	56	-26		17	4	-12	4	1	-3	24	3	-21	1002	1223	73	45	-27		16	3	-13		3	0	-3	20	1	-19
8		South Winchester Park and Ride exit		24	28	2	3	0		7	8	1	0	0	0	0	0	0	272	342	29	33	4		10	11	2		0	1	0	3	5	2
8		A3090 Hockley Link (N)		1637	1865	86	104	19	Sev	4	92	89	0	44	44	2	267	265	1692	1910	101	108	6	Sig	44	155	112	Sev	19	75	56	113	450	337
8		A3090 Hockley Link (E)		590	866	109	59	-50		209	7	-202	31	1	-30	186	6	-180	439	376	96	33	-63		40	8	-33		4	0	-4	25	3	-22
9	B3420 Andover Road / B3401 Berewweke Road	B3401 Bereweeke Road	Priority	472	458	85	85	0		11	12	1	1	1	0	6	7	0	447	511	81	86	5		11	12	1		1	1	0	6	7	1
9		B3420 Andover Road (N)		192	199	9	10	0		1	1	0	0	0	0	0	0	0	453	474	22	23	1		1	1	0		0	0	0	0	0	0
10	M3 J10	Bull Drove	Roundabout	320	411	75	86	12	Sig	18	22	4	1	2	1	8	13	5	417	498	76	88	12	Sig	13	19	6		1	2	1	7	13	6
10		B3330 Bar End Road		422	450	38	40	2		11	11	0	1	1	0	6	6	1	853	889	69	73	4		39	38	-1		8	9	0	50	51	1
10		A31 Circulating		23	34	8	12	4		28	28	0	0	0	0	1	1	0	236	279	26	31	5		11	11	1		1	1	0	3	4	1
10		A31 (E)		1063	1029	45	44	-1		6	6	0	1	1	0	9	9	0	768	779	68	69	1		22	22	0		4	4	0	23	24	0
10		M3 NB off Slip Circulating right lane		673	668	47	47	0		21	21	0	4	4	0	21	21	0	515	511	24	24	0		15	15	0		2	2	0	13	12	0
10		M3 NB Off Slip Circulating left lane		414	395	57	55	-3		19	19	-1	2	1	0	9	9	-1	489	547	46	51	5		9	10	1		1	1	0	5	6	1
10		M3 NB off Slip		1631	1547	77	73	-4		33	31	-2	7	7	0	42	39	-3	952	940	86	85	-1		68	72	4		6	7	1	38	43	5
11	B3335/Hazeley Road/ Finch's Lane	B3335 High Street (S)	Signalised	1267	1326	105	110	5		154	241	87	Sev	34	64	29	206	382	176	703	753	85	93	8	Sig	30	43	13		3	4	1	20	23	3
11		Finch's Lane		186	159	79	71	-8		82	76	-7	3	2	0	16	13	-3	246	253	74	106	32	Sev	66	273	207	Sev	3	10	7	19	62	43
11		B3335 High Street (N)		718	753	69	63	-6		15	14	-2	2	2	0	12	12	0	1066	1076	101	102	1		95	114	19		12	17	6	70	104	34
11		Hazeley Road		250	232	99	103	5		153	234	81	Sev	4	7	4	21	43	21	299	304	66	67	1		55	55	0		4	4	0	21	22	0
12	M3 J10 (b)	M3 SB Main carrigeway	Motorway	5431	5507	82	83	1		2	2	0	0	0	0	0	0	0	5868	5797	89	93	4		3	5	1		0	0	0	0	0	0
12		M3 SB on Slip Road		840	892	38	41	2		1	1	0	0	0	0	0	0	0	1048	1034	48	50	2		2	2	0		0	0	0	0	0	0
13	A3090/Meadow Way	A3090 Badger Farm Road (N)	Roundabout	822	843	100	62	-39		32	13	-19	5	0	-4	27	1	-27	835	358	101	26	-75		41	12	-28		7	0	-7	40	0	-40
13		Meadow Way		186	192	44	32	-12		17	12	-4	0	0	0	2	1	-1	196	186	49	24	-25		18	11	-8		0	0	0	3	0	-3
13		A3090 Badger Farm Road (S)		807	872	94	102	8	Sig	10	49	39	0	10	10	2	60	59	861	883	101	103	3		26	78	52		4	17	13	26	104	78
14	B3330/B3420/B3044	B3044 (W) Stockbridge Road	Signalised	218	207	80	76	-4		75	70	-5	3	3	0	16	15	-1	189	189	79	79	0		78	78	0		2	2	0	14	14	0
14		B3420 (N) Andover Road		754	764	94	95	1		116	126	10	12	14	2	75	85	10	575	561	82	80	-2		102	113	11		8	9	1	49	56	7
14		B3330 (E) City Road		324	354	53	58	5		53	55	2	4	4	0	22	24	2	480	509	88	93	5	Sig	98	117	19		6	6	0	36	38	2
14		B3420 (S) Sussex Street		752	756	80	80	1		52	53	1	7	7	0	43	44	0	931	993	84	90	6	Sig	62	76	14		9	9	1	51	56	5
15	B3049 Stockbridge Road/B3041 Chilbolton Avenue	B3049 Stockbridge Road (W)	Roundabout	796	812	101	103	2		57	85	28	9	16	7	56	95	39	809	792	100	101	1		37	56	19		5	9	4	28	53	25
15		B3049 Stockbridge Road (E)		695	702	96	97	1		27	28	1	2	2	0	13	15	2	675	701	96	98	2		28	31	3		2	3	1	15	20	5
15		B3041 Chilbolton Avenue		752	754	99	98	-1		29	25	-4	3	2	-1	18	13	-4	668	755	85	95	11	Sev	17	20	4		0	1	1	3	7	5
16	A3090/Merdon Castle Lane	A3090 (N)	Priority	587	676	46	53	7		4	4	0	0	0	0	1	1	0	1051	1330	73	92	19	Sig	5	12	7		0	1	0	1	3	2
16		A3090 (S)		648	639	31	30	-1		1	1	0	0	0	0	0	0	0	402	403	20	19	0		1	1	0		0	0	0	0	0	0
16		Merdon Castle Lane		697	711	100	102	2		39	77	38	7	14	7	42	85	44	397	400	61	61	0		6	6	0		0	0	0	2	2	0
17	A3090/Poles Lane/Hursley Park Road	A3090 (N)	Signalised	487	510	39	41	2		17	17	0	2	2	0	12	12	1	1380	1449	98	105	7	Sig	49	152	103	Sev	7	40	33	43	240	196
17		Poles Lane		308	155	49	25	-24		59	46	-13	3	2	-2	20	10	-11	165	154	56	52	-4		83	80	-3		2	2	0	13	12	-1
17		A3090 (S)		1161	1329	62	82	20		22	28	6	6	8	2	38	48	11	403	377	26	24	-2		15	14	-1		1	1	0	9	8	-1
17		Hursley Park Road		0	0	0	0	0		64	64	0	0	0	0	0	0	0	0	0	0	0	0		64	64	0		0	0	0	0	0	0
18	Pitt Roundabout - A3090/B3040	B3040 Romsey Road	Roundabout	925	880	57	56	-2		11	11	0	0	0	0	1	1	0	1565	1302	93	77	-15		11	12	1		0	0	0	2	1	-2
18		A3090 (E)		796	865	53	58	5		13	13	0	0	0	0	1	1	0	670	704	53	61	9		13	13	1		0	1	0	2	3	1
18		A3090 (W)		1144	1167	84	85	2		12	13	0	1	1	0	6	6	1	602	659	40	43	3		9	9	0		0	0	0	1	1	0
19	Otterbourne Rd/shawfrord Rd	Otterbourn road (N)	Priority	158	124	8	6	-2		1	1	0	0	0	0	0	0	0	583	706	29	35	6		1	1	0		0	0	0	0	0	0
19		Shawford Rd		540	484	91	109	18	Sev	14	203	189	Sev	2	25	23	10	149	139	229	288	35	49	13		5	6	1		0	0	0	1	2	1
19		Otterbourn road (S)		741	1058	41	54	13		2	2	0	0	0	0	0	0	0	238	238	16	15	-1		2	2	0		0	0	0	0	0	0
20	St cross Rd/ Beaufort Rd	St cross RD (N)	Priority	510	537	24	25	1		1	1	0	0	0	0	0	0	0	609	604	28	28	0		1	1	0		0	0	0	0	0	0
20		Beaufort RD		108	231	29	64	35		10	16	6	0	1	1	1	5	4	213	326	59	90	30	Sig	15	31	17		1	3	2	4	15	11
20		St cross RD (south)		1056	978	48	45	-4		2	1	0	0	0	0	0	0	0	907	904	41	41	0		1	1	0		0	0	0	0	0	0
21	Southgate St/Highstreet	Highstreet (E)	Signalised	573	628	57	63	6		28	29	1	4	4	0	23	26	3	321	298	104	105	1		217	235	18		10	10	0	58	60	2
21		Southgate st		707	766	80	87	7	Sig	28	34	6	4	4	1	22	25	3	704	873	52	65	13		7	8	2		1	1	0	4	7	2
22	B3049 Stockbridge Rd/ Stoney Ln	B3049 Stockbridge Rd (W)	Roundabout	698	748	83	89	6	Sig	13	14	0	0	0	0	1	2	1	742	727	87	85	-2		13	13	0		0	0	0	1	1	0
22		Stoney Ln		59	66	10	11	2		12	13	1	0	0	0	0	0	0	167	178	29	31	1		14	14	0		0	0	0	1	1	0
22		B3049 Stockbridge Rd (E)		786	780	90	90	-1		9	10	0	0	0	0	0	0	0	654	658	76	77	1		9	9	0		0	0	0	0	0	0
23	St Cross Rd/ Lower Stanmore Ln	St Cross Rd (N)	Priority	665	875	56	73	18		11	14	4	1	2	1	8	13	5	752	1011	68	89	21	Sig	15	27	12		2	4	2	12	22	10
23		Lower Stanmore Ln		25	23	19	17	-2		55	55	0	0	0	0	2	1	0	6	84	3	44	41		45	54	9		0	1	1	0	5	5
23		St Cross Rd (S)		890	937	95	99	5		47	75	28	5	5	1	29	32	3	724	751	92	95	4		47	59	12		5	5	0	28	30	2
24	St Cross Rd/ Kingsgate Rd	St Cross Rd (N)	Priority	830	1011	41	48	7		2	2	0	0	0	0	0	0	0	997	1235	50	61	11		2	2	1		0	0	0	0	0	0
24		Kingsgate Rd		326	294	82	92	10	Sig	21	41	21	2	3	2	10	19	9	392	366	96	96	0		41	45	4		4	4	0	23	24	1
24		St Cross Rd (S)		910	954	52	72	20		3	6	3	0	0	0	0	2	1	724	752	43	53	10		2	4	1		0	0	0	0	1	0
25	M3 J11 SB offslip/ B3335	B3335 (N)	Signalised	249	298	24	28	5		8	9	0	0	1	0	3	3	1	237	279	46	54	8		24	26	2		1	1	0	7	9	2
25		M3 J11 SB offslip		656	864	76	100	24	Sev	124	128	4	11	12	2	64	74	10	1127	1094	59	58	-2		16	15	-1		3	3	0	18	17	-1
25		B335 (S)		1111	1195	105	113	8	Sig	157	299	142	Sev	30	71	42	179	428	250	514	516	100	100	0		100	107	7		3	4	1	19	23	4
26	A3090/ B3043	A3090 (W)	Signalised	452	544	75	100	26	Sev	34	107	73	3	4	2	17	26	10	199	183	15	14	-1		6	6	0		0	0	0	2	1	0
26		B3044		709	787	65	72	7		17	19	2	2	3	0	14	17	3	204	193	47	45	-2		33	33	0		1	1	0	9	8	-1
26		A3090 (E)		408	396	75	73	-2		34	33	-1	2	2	0	14	14	-1	1043	1018	88	85	-2		21	19	-2		3	3	0	16	15	-1

SYSTRA provides advice on transport, to central, regional and local government, agencies, developers, operators and financiers.

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For more information visit www.systra.co.uk

Abu Dhabi
AS Business Centre, First Floor, Suites 201-213,
Al Ain Road, Umm al Nar, P.O. Box 129865,
Abu Dhabi, UAE
T: +971 2 558 3809 F: +971 2 558 9961

Birmingham
Second Floor, 37a Waterloo Street
Birmingham B2 5TJ United Kingdom
T: +44 (0)121 233 7680 F: +44 (0)121 233 7681

Dublin
1st Floor, 12/13 Exchange Place,
Custom House Docks, IFSC, Dublin 1 Ireland
T: +353 (0)1 542 6000 F: +353 (0)1 542 6001

Edinburgh
Prospect House, 5 Thistle Street, Edinburgh EH2 1DF
United Kingdom
T: +44 (0)131 220 6966

Glasgow
Seventh Floor, 78 St Vincent Street
Glasgow G2 5UB United Kingdom
T: +44 (0)141 225 4400

Lille
86 Boulevard Carnot, 59000 Lille, France

T: +33 (0)3 74 07 00 F: +33 (0)1 53 17 36 01

London
Seventh Floor, 15 Old Bailey
London EC4M 7EF United Kingdom
T: +44 (0)20 7529 6500 F: +44 (0)20 3427 6274

Lyon
11, rue de la République, 69001 Lyon, France
T: +33 (0)4 72 10 29 29 F: +33 (0)4 72 10 29 28

Manchester
25th Floor, City Tower, Piccadilly Plaza
Manchester M1 4BT United Kingdom
T: +44 (0)161 236 0282 F: +44 (0)161 236 0095

Marseille
76, rue de la République, 13002 Marseille, France
T: +33 (0)4 91 37 35 15 F: +33 (0)4 91 91 90 14

Newcastle
PO Box 438, Newcastle upon Tyne, NE3 9BT
United Kingdom
T: +44 (0)191 2136157

Paris
72 rue Henry Farman, 75015 Paris, France
T: +33 (0)1 53 17 36 00 F: +33 (0)1 53 17 36 01

Woking
Dukes Court, Duke Street
Woking, Surrey GU21 5BH United Kingdom
T: +44 (0)1483 728051 F: +44 (0)1483 755207

Hong Kong
14th Floor West, Warwick House, TaiKoo Place,

979 King's Road, Island East, Hong Kong

T: +852 2529 7037 F: +852 2527 8490

Shenzhen
Room 905, Excellence Mansion, No.98, No.1 Fuhua Road,
Futian Central Zone, Shenzhen, PRC, Post Code：518048
T：+86 755 3336 1898 F：+86 755 3336 2060

Shenzhen - Beijing Branch Office
Room 1503, Block C, He Qiao Mansion, No. 8 Guanghua Road,
Chaoyang District, Beijing, PRC, Post Code：100026
T：+86 10 8557 0116 F：+86 10 8557 0126

Beijing Joint Venture
Room 1507, Main Building, No. 60, Nan Li Shi Road,
Xi Cheng District, Beijing, PRC, Post Code：100045
T：+86 10 8807 3718 F：+86 10 6804 3744

Mumbai
Antriksh, Unit no. 301, 3rd Floor, CTS Nos.
773, 773/1 to 7, Makwana Road, Marol, Andheri East ,
Mumbai 400069
T: +91 22 2647 3134

B 307, Great Eastern Summit Sector - 15, CBD Belapur Navi
Mumbai - 400 614
T: +91 22 2757 2745

New Delhi
5th Floor Guru Angad Bhawan, 71 Nehru Place, New Delhi
110019
T: +91 11 2641 3310

Noida
3/F, C-131, Sector 2, Noida-201301, U.P.
T: +91 120 432 6999

Singapore
25 Seah Street #04-01 Singapore 188381
T：+65 6227 3252 F：+65 6423 0178

Thailand
37th Floor, Unit F, Payatai Plaza Building,128/404-405 Payathai
Road, Rajthewee, Bangkok 10400, Thailand
T：+662 216 6652 F：+662 216 6651

Vietnam
5/F Perfect Building, Le Thi Hong Gam St, District 1,
Ho Chi Minh City, Vietnam

Appendix C – Bushfield Camp – Masterplan and SRTM Model Assumptions

Bushfield is an employment-led, mixed-use development on a 43-hectare site in Winchester, Hampshire. The site is adjacent to the South Downs National Park, Winchester Conservation Area and sites of special scientific interest. It incorporates the abandoned army camp – Bushfield, and eastern and Drovers fields. The Bushfield Camp site allocation was identified as Policy WT3 in the Joint Core Strategy (adopted in March 2013) and as Policy W5 in the emerging Winchester District Local Plan 2020-2040.

At their Cabinet meeting of June 2023, WCC considered the Bushfield Concept Masterplan and accompanying technical document prepared by developers for the Bushfield Camp site allocation. These were noted as a material consideration to inform the development management assessment of the planning application and the mixed-use proposals put forward were agreed as a realistic representation of Policy W5.

Although an outline planning application has recently been submitted by Lichfields for the site (Planning Ref. 23/02507/OUT), it remains undetermined and for the purpose of assessing Policy W5 of the emerging Winchester Local Plan, the following land use assumptions, based on the concept masterplan considered by WCC Cabinet in June 2023, have been used to derive the Do-Minimum scenario.

Bushfield Mixed-Use Development Assumptions for SRTM based on the Concept Masterplan that has been agreed by WCC's Cabinet

Land Use to be coded into SRTM model	% of site coded into the SRTM model as this use class	To reflect the following uses from the concept masterplan
A1-A5	6.5%	Retail and café/food and beverage
B1	59%	Office, R&D and ancillary uses to these
Adult education	19%	Academic
Leisure	12.5%	Gym, Sports centre, wellbeing hub, hall, event space, exhibition space
Hotel	3%	Hotel