Wellesley

ALDERSHOT

TRANSPORT ASSESSMENT

DECEMBER 2012

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Quality Management

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WELLESLEY, ALDERSHOT URBAN EXTENSION

Transport Assessment

12/12/2012

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Executive Summary

WSP has been commissioned by Grainger Plc to produce a Transport Assessment (TA) to support an application for the development of up to 3,850 dwellings, two primary schools, retail, employment and community uses within the planned Aldershot Urban Extension. The development will be known as Wellesley.

A consultative approach has been adopted throughout the production of this TA, including holding a series of meetings with Rushmoor Borough Coucnil (RBC), Hampshire County Council (HCC), Surrey County Council (SCC) and the Highways Agency (HA) to further development of the highways and transport proposals for Wellesley.

During the pre-application period for Wellesley WSP submitted a draft of the Transport Assessment including the additional supporting documents of the Work Place Travel Plan, Residential Travel Plan, Public Transport Strategy and a range technical notes. These reports were issued to RBC for consultation with the relevant authorities. Following the pre-application reviews a technical meeting was arranged to discuss the councils comments. In summary these lead to:

- Agreement in principle for the Trip Generation Methodology;
- Agreement in principle of Travel Plans;
- Agreement in principle to the proposed off-site highway infrastructure improvements;
- Revision of the Pedestrian and Cycle Strategy; and
- Agreement of our approach for the Public Transport Strategy.

Following the review meeting with the Counils all modelling work and assessments of the impacts of the proposed development have been reassessed and presented herein to robustly support the planning application for Wellesley. To this end the methodology and assumptions that underpin the TA have been encapsulated within a number of accompanying documents, including a suite of Technical Notes appended to this report.

The land to the north of Aldershot town centre was identified as being surplus to military requirements and available for redevelopment. The policy framework for the proposed development has been shaped by The Rushmoor Plan - the Core Strategy of Rushmoor's Local Development Framework (LDF). Rushmoor Borough Council (RBC) has also adopted a Supplementary Planning Document (SPD) for the Aldershot Urban Extension in March 2009, which outlines key principles that have been adhered to within this TA for delivering a sustainable, low carbon and accessible urban extension.

The proposals for Wellesley will focus on sustainability and the site location benefits from a strong relationship with the existing town of Aldershot. The development is sustainable from a transportation viewpoint, with excellent existing opportunities to promote walking, cycling and public transport for many journeys to and from the development. To maximise these opportunities, provision will be made to support the full range of transport choices, with the introduction of walking and cycle routes through Wellesley, junction improvements to support pedestrian movement, and a new bus route to give the development increased connectivity to the rest of Aldershot and Farnborough.

The local highway network surrounding Wellesley is formed of the A325 which borders the site to the west and the A323 Wellington Avenue and Ash Road located to the south. The A331 Blackwater Valley Relief Road is situated to the east of the development. Queen's Avenue and Alison's Road provide primary routes through the heart of the new development area, providing multi-modal access to the proposed new neighbourhood centre within Wellesley. The site is extremely well located to support journeys on foot, by bicycle and on public transport to local facilities.

The master plan for Wellesley has been designed in such a way that walkable neighbourhoods will reduce the need to travel by car, with a range of facilities within a short walking distance of residences. The transport strategy for the site includes, inter alia;

Public Transport

Existing and new bus services will provide highly accessible, high frequency connections to and from Wellesley by public transport. Spare capacity on the existing Stagecoach Gold Line 1, operating via Queen's Avenue, can provide a route to Aldershot town centre and Farnborough from the earliest phases of development. A new service will be introduced to ensure high levels of access across the development area. The buses will operate with a 10 minute frequency and the anticipated journey time from Wellesley to Aldershot town centre will be approximately 10 minutes.

Demand Management and Smarter Choices

Comprehensive Travel Plans covering residential, workplace and education land uses will deliver a range of integrated measures to:

- Provide travel information and raise awareness of sustainable transport options amongst residents, employees and visitors to Wellesley;
- Promote the use of public transport as a viable alternative to car-based travel;
- Encourage walking and cycling for local journeys; and
- Promote more efficient car use, such as car sharing and home working to reduce the overall number of car journeys.

Parking provision across the development will be provided as per Rushmoor Borough Councils cycle and car parking standards.

Highways Strategy

The Highway Strategy includes the provision of new and improved junctions to facilitate access to and from Wellesley and on and off-site improvements of benefit to the wider community, including:

- New A331 junction at Government Road (on-slip);
- New roundabout incorporating Government Road / Thornhill Road / Gallwey Road and Ordnance Road to provide capacity for traffic accessing the new on-slip;
- Revised signal junction incorporating improved pedestrian crossings at Queen's Avenue / Alison's Road;
- Reduced speed limit along the A325 Farnborough Road with the introduction of a new signal-controlled crossing for access to the sports pitches and SANGS;
- Safety improvement scheme with lane realignment on the A325 Farnborough Road;
- Revised signal junction incorporating improved pedestrian crossings at A323 Wellington Avenue / Hospital Hill in Aldershot town centre; and
- A range of pedestrian and cycle improvements which substantially improve the north/south connect between the development area and the town centre as well as providing significant improvement to existing facilities along Ash Road.

To inform the highways assessment process, a traffic model was developed for a robust understanding of the scale of traffic re-assignment resulting from the implementation of Wellesley and of the associated infrastructure being delivered. Detailed junction assessments have been undertaken to demonstrate that the proposed infrastructure and highway improvements put forward will support the proposed development and allow the delivery of housing to be phased in line with the capacity of the surrounding highway network.

Wellesley has thus responded to local and national transport and sustainability policy objectives by incorporating within the master plan the elements necessary for place-making, including through the application of design principles from 'Manual for Streets'. This TA promotes the aim of achieving 'sustainability by design' in its review of accessibility, road safety and development traffic impacts to ensure Wellesley can represent a truely accessible and sustainable urban extension for Aldershot, and demonstrate wider network benefits for the existing local community.

1 Introduction

1.1 Introduction

1.1.1 WSP has been commissioned by Grainger Plc to provide transportation advice in support of a proposed planning application for the redevelopment of surplus land at Aldershot Military Town, Hampshire. Grainger Plc is the development partner for the Defence Infrastructure Organisation (part of the Ministry of Defence) and Homes and Communities Agency, to deliver the Aldershot Urban Extension (AUE) site. Redevelopment of the site will be primarily residential, including the provision of up to 3,850 dwellings, two primary schools, retail, employment and community uses.

1.1.2 The development will be known as Wellesley and a location plan shown in **Figure 1**.

1.1.3 This Transport Assessment (TA) has been produced in accordance with national guidance set out in DfT/DCLG *'Guidance on Transport Assessment' (GTA)* March 2007, which is intended to assist stakeholders in determining whether an assessment may be required and, if so, what the level and scope of that assessment should be. The GTA provides guidance on the content and preparation of Transport Assessments, and Travel Plans.

1.1.4 This TA has been produced to address the feasibility of the proposed development in terms of traffic impact, access and sustainability credentials. Throughout the preparation of this document, consultation has been on-going between WSP, Grainger Plc, Hampshire County Council (HCC), Surrey County Council (SCC) (in their capacity as Highway Authorities), Rushmoor Borough Council (RBC) (Highways) and the Highways Agency (HA) to discuss and agree the highways and transportation elements of the proposed development.

1.1.5 The Scoping Note for this TA was submitted to and agreed with HCC, SCC, RBC and the HA in July 2011 and is attached at **Appendix A** for reference.

1.1.6 This Transport Assessment accompanies a 'Hybrid' planning application submitted by Grainger Plc (hereafter known as the 'Applicant') to RBC for the development of land within Aldershot known as the AUE, hereafter referred to as 'Wellesley'. The Applicant seeks outline planning permission for residential development of up to 3,850 dwellings with associated infrastructure including access, and Maida Zone - Phase 1 detail for 228 dwellings at Wellesley (the Hybrid Application). This Transport Assessment should be read in conjunction with the corresponding application forms and drawings, along with the suite of documents that support this Hybrid Application. For further details on the Hybrid Application please refer to the Planning Statement.

1.1.7 As part of the submission package some plans are for approval, whilst others are for information/illustrative purposes only. Plans that are not for approval are clearly labelled 'illustrative' or 'for information'. All other plans should be determined by the LPA as application drawings. The illustrative master plan is one way of interpreting the site against the opportunities and constraints identified and tested in the parameter plans. The parameter plans are for approval. Detailed proposals, following consent granted pursuant to the Hybrid Application, will be submitted to RBC in accordance with the Development Zones identified by the Applicant, as one or more Reserved Matter Application per Development Zone, which will include Listed Building Applications and Conservation Area Applications as appropriate.

1.2 Background

1.2.1 In 2001, development proposals were announced by the Ministry of Defence as part of the Strategic Defence Review for the large scale redevelopment of the Aldershot Military town. Known as Project Allenby/Connaught, the review identified approximately 150 hectares (370 acres) of land to the north of Aldershot town centre as surplus to military requirements available for redevelopment.

1.2.2 In 2002, a Supplementary Planning Guidance for the Aldershot Military Town was adopted by RBC. This provided guidance for development proposals affecting the entire military town. In December 2003, a week-long 'Enquiry by Design' (EbD) consultation workshop run by English Partnerships and the Prince's Foundation took place. The event explored several issues involving urban design, energy efficiency, transport links and sustainability which assisted in forming a draft master plan. After a six week public consultation period (8 Jan 2008 to 18 Feb 2008) RBC adopted a finalised Supplementary Planning Document, '*Aldershot Urban Extension (AUE) SPD'* in March 2009. The adopted SPD has the primary objective of establishing a set of objectives, principles and guidelines to inform the preparation of detailed development proposals. As such, the AUE SPD has been fully considered throughout the production of this TA. In addition, other related policy and guidance has also been interrogated during the production of this report, as detailed within Section 3.

1.2.3 The development proposals are primarily residential but look to provide a number of community uses and employment opportunities available to both the new and existing residents of the area. The development proposals consist of:

- 3,850 new homes (35% affordable homes);
- Refurbishment of six listed buildings including 4th Div Head Quarters and the Cambridge Military Hospital as well as a number of local listed buildings;
- Heritage trail;
- Two new primary schools;
- Day care facilities;
- A local neighbourhood centre, providing new offices, Public House and restaurant, and local shops;
- Household Waste Recycling Facility;
- Approx. 0.24Ha of employment area, equating to approximately 832 new jobs;
- 110Ha of SANGS (Suitable Alternative Natural Green Space);
- New play areas and a local park;
- Allotments; and
- Public access to sports fields.

1.3 Report Structure

1.3.1 This TA is set out in the following sections:

- **Section 2** provides an overview of national and local transport and planning policies relevant to the site and the development proposals;
- **Section 3** details the site location and existing conditions in the vicinity of the site, including the make-up of the highway and public transport networks and the prevailing transport conditions, together with an analysis of Personal Injury Accident data;
- **Section 4** considers the accessibility of the site to local facilities such as employment, education, shopping, leisure and health facilities, which account for the majority of reasons for making a journey. The distance and time in which these destinations can be accessed by non-motorised modes is also identified;
- **Section 5** details the Wellesley development proposals;
- **Section 6** details the overall Transportation Strategy for Wellesley, including both hard and soft measures, including Highway Strategy, Walking and Cycling Strategy, Public Transport Strategy and Travel Plan initiatives;
- **Section 7** summarises the trip generation of the proposed development;
- **Section 8** outlines the committed developments that have been considered in the determination of both future local infrastructure improvements and forecast traffic demand;
- **Section 9** summarises the methodology employed to distribute and assign trips across the network;
- **Section 10** outlines the modelling methodology employed for assessing the impact of the development traffic;
- **Section 11** outlines the impact and summarises the development impact assessment and capacity analysis;
- **Section 12** provides an impact assessment of Maida Zone - Phase 1 of the development; and
- **Section 13** summarises the findings and conclusions of the Transport Assessment.

2 National and Local Policy

2.1 Introduction

This section sets out an overview of transport policy to provide context for the assessment of the transport issues of the Wellesley development proposals. Relevant national and local policy and guidance has been examined and reviewed to ensure that the transport and access proposals for Wellesley meet all relevant standards.

National Policy

NATIONAL PLANNING POLICY FRAMEWORK, (DCLG,2012)

2.1.1 Adopted in March 2012, the National Planning Policy Framework (NPPF) seeks to reduce the complexity and improve the accessibility of the planning system, whilst protecting the environment and encouraging growth in a sustainable manner.

2.1.2 The NPPF replaces all previous Planning Policy Guidance Notes and Statements, becoming the definitive national planning guidance from which local planning authorities can, in collaboration with their communities, produce local plans appropriate to the character and needs of their area.

2.1.3 Key to the NPPF and its success is the following statement from Paragraph 14:

"At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking".

2.1.4 Transport forms one of the 12 core land use planning principles set out by the NPPF. This principle directs that locations which are sustainable or which can be made sustainable should become the focus for significant development. Opportunities to utilise sustainable modes to their fullest, such as public transport, walking and cycling should be actively taken and these considerations are discussed in this Transport Assessment. Paragraph 7 of the NPPF notes three 'dimensions' of sustainable development:

- Economic;
- Social; and
- Environmental.

2.1.5 Transport is able to contribute significantly to a development's adherence to these dimensions, through means such as providing infrastructure to support economic growth, enhancing accessibility to services and fulfilling the social needs of people and providing solutions which minimise pollution and environmental impact.

2.1.6 This Transport Assessment also shows how the proposed development at Wellesley accords with Paragraph 29 of the NPPF which details transport as having:

"*… an important role to play in facilitating sustainable development but also in contributing to wider sustainability and health objectives*."

2.1.7 As encouraged in the NPPF, within paragraph 29, the proposed development has been planned in such a way that gives people a "real choice" regarding their mode of travel. Wellesley's density and proximity to local facilities ensures that sustainable travel choices can be considered a favourable option for local journeys.

2.1.8 This Transport Assessment demonstrates how the proposed development fulfils the requirements set out in paragraph 32 of NPPF, to account for:

- The opportunities for sustainable transport modes to be used, reducing the need for major transport infrastructure;
- Provision of safe and suitable access to the site for all people; and
- Improvements which can be undertaken within the transport network to limit the significant impacts of the development.

2.1.9 WSP, on behalf of Grainger Plc, has maintained an on-going dialogue with HCC, SCC, RBC and HA regarding Wellesley, displaying a proactive approach to working with local and strategic authorities as desired by the NPPF.

2.1.10 This Transport Assessment demonstrates that the residual cumulative impacts of the proposed development are well assessed considering the addition of new dwellings compared to those already present. Section 4 outlines the developments accessibility to local forms of sustainable travel.

SOUTH EAST PLAN

2.1.11 Regional Spatial Strategies (RSS) have been subject to the Secretary of State's (SoS) decision to notify planning authorities of his intention to abolish Regional Spatial Strategies in the near future.

2.1.12 Until formal abolition, the South East Plan (SEP) is currently still considered relevant planning context for the Wellesley, Aldershot Urban Extension development. Even if abolished, the evidence used to develop it is still considered material until such time as an alternative system replaces it growth projection under the terms of the Localism Bill. Also, the requirement for HCC to allocate sites for future development to meet housing needs over the next 5 years remains applicable.

2.1.13 The final version of the South East Plan was published in May 2009. The South East Plan covers inter alia, housing needs, sustainable development, infrastructure, transport and communications. The overall vision for the South East, as set out within the SEP is:

"A socially and economically strong, healthy and just South East that respects the limits of the global environment. Achieving this will require the active involvement of all individuals to deliver a society where everyone, including the most deprived, benefits from and contributes to a better quality of life. At the same time the impact of current high levels of resource use will be reduced and the quality of the environment will be maintained and enhanced."

2.1.14 The Core Document is subdivided into sections, which deal with the plan's core values and overarching themes. Section B deals with policies in relation to various themes including transport, with section D8 forming the Regional Transport Strategy (RTS) for the South East until 2026. Key policies within Section D8 include:

- Policy T2: Mobility Management – outlines those policies in local development documents should seek to achieve improvements in the extent and quality of pedestrian cycle routes and measures that increase accessibility to rail stations.
- Policy T4: Parking – advocates that local development documents and local transport plans should adopt parking standards which are linked to an integrated programme of public transport and accessibility improvements.
- Policy T5: Travel Plans and Advice – states that all major trip generating developments should seek to provide a Travel Plan and implement it.

- Policy T6: Communication Technology – outlines that investment in communications technology which increases access to goods and services without increasing the need to travel should be encouraged.

2.1.15 Through the preparation of this TA and accompanying Travel Plan, the use of parking standards as guidance, the proposals for comprehensive pedestrian and cycle facilities and a Public Transport Strategy, Wellesley, Aldershot Urban Extension complies with these policy aspirations.

2.1.16 Section 'B7 Housing' highlights the importance of sustainable communities and posits that social needs, including employment, retail and other services are also important to sustainable communities and should be accessible to all.

2.1.17 Policy LF1 outlines that provisions will be made for development by focussing on employment related development to take place on land already in employment use or available for such use and providing development within urban areas and protecting the broad extent of the Metropolitan Green Belt across the sub-region.

2.1.18 Policy H1: Regional Housing Provision 2006 – 2026 – states that in total as a whole the south east region will require an additional 645,000 dwellings by 2026. As a part of this, the Western Corridor and Blackwater Valley District has been earmarked to provide 102,100 of those dwellings at a build rate of approximately 5,105 per annum. Locally, the Rushmoor Borough, as set out in Policy WCBV3 *Scale and Distribution of Housing Development,* indicates that Rushmoor would look to provide a total of 6,200 new dwellings at a build out rate of 310 per average annum, with this figure including a previously recorded number of 4,500 dwellings for the Aldershot Urban Extension.

2.1.19 'Policy H2: The Location of Housing' states that: "housing developments should generally be in locations that are, or can be, well served by a choice of transport modes". This is applicable to the proposed development.

MANUAL FOR STREETS (DfT/DCLG, 2007)

2.1.20 Manual for Streets (MfS) was published in March 2007 and supersedes Design Bulletin 32: Places, Streets and Movement. MfS provides guidance to a range of practitioners on effective residential street design.

2.1.21 MfS recognises that there is a need to transform the quality of residential streets, and this requires a new approach to their provision. MfS is aimed at any organisation or discipline with an interest in residential streets, ranging from highway engineers to the emergency services. As stated in section 1.3 of the document, the importance of joint working among practitioners is a key feature of MfS. Its scope is limited to residential and other lightly trafficked streets, although some of its principles may be applied to other road types where appropriate. Streets should not be designed just to accommodate the movement of motor vehicles; a prime consideration is that they meet the needs of pedestrians and cyclists.

2.1.22 HCC adopted a Companion Document to Manual for Streets in April 2010. The companion guide provides a response to MfS and sets out that HCC supports the design principles.

MANUAL FOR STREETS 2 – WIDER APPLICATION OF THE PRINCIPLES (CIHT, 2010)

2.1.23 The Chartered Institution of Highways and Transportation (CIHT) – produced Manual for Streets 2 - Wider Application of the Principles (September 2010). The CIHT worked with DfT and other members of the transportation industry.

2.1.24 CIHT has stated that "This new document does not supersede MfS1; rather it explains how the principles of MfS1 can be applied more widely." MfS2 forms a companion guide to MfS1.

2.1.25 MfS2 builds on the guidance contained in MfS1, exploring in greater detail how and where its key principles can be applied to busier streets and non-trunk roads, thus helping to fill the perceived gap in design guidance between MfS1 and the Design Manual for Roads and Bridges (DMRB)

2.1.26 The ethos and design principles of MfS1 and 2 will be instilled in the planning of development at Wellesley.

2.2 Local Policy

HAMPSHIRE COUNTY COUNCIL (HCC) LOCAL TRANSPORT PLAN 3 (LTP3)

2.2.1 HCC's LTP3 was formally approved in February 2011. LTP3 contains two main elements, a long-term strategy covering the period from April 2011 to 2031 and a short term three year implementation plan covering the period 2012 - 2015.

2.2.2 As outlined in Chapter 1, the overall vision for LTP3 is a transport strategy that will help HCC realise:

'safe, efficient and reliable ways to get around a prospering and sustainable Hampshire'.

2.2.3 The strategic transport priority is to make the most of the existing transport network in light of a current environment of restricted government expenditure. Therefore, over the next five years maintenance, safety and management have been prioritised. The three main priorities as stated in Chapter 2 of the report are listed below. A further 14 policy objectives have been identified for the period to 2031.

- Main Priority 1: To support economic growth by ensuring the safety, soundness and efficiency of the transport network in Hampshire
- Main Priority 2: Provide a safe, well-maintained, and more resilient road network in Hampshire as the basic transport infrastructure of the county on which all forms of transport directly or indirectly depend, and the key to continued casualty reduction.
- Main Priority 3: Manage traffic to maximise the efficiency of existing network capacity, improving journey time reliability and reducing emissions, thereby supporting the efficient and sustainable movement of people and goods.

2.2.4 Chapter 5 of LTP3, *Transport Strategy for North Hampshire* notes the principal challenges for North Hampshire, one being as follows:

'*Supporting the regeneration of Aldershot, including major development of the Aldershot Urban Extension (AUE) and planned growth in Basingstoke and Andover*'

2.2.5 Further in Chapter 5 LTP3, HCC identify a number of larger settlements that are likely to experience growth that will create additional demand for social and physical infrastructure, as well as transport. These areas are Andover, Basingstoke, Farnborough and Aldershot. Some of the potential options for the Farnborough and Aldershot areas include:

- Targeted measures to improve capacity at congestion bottlenecks and optimise management of the highway network;
- Delivery of the Aldershot and Farnborough Town Access Plans;
- Investment in developing walking and cycling routes;
- Enhancement of existing Quality Bus Partnerships and development of new ones;
- Mitigation of the travel impacts arising from new development, particularly the Aldershot Urban Extension;

- Measures to reduce peak time congestion, such as promotion of workplace travel planning and more flexible working arrangements;
- Continued development of Farnborough Main Rail station into a bus/rail interchange;
- Encouragement of greater use of smaller rail stations in the Blackwater Valley for local journeys;
- Investigation of car club development.

SURREY COUNTY COUNCIL (SCC) LOCAL TRANSPORT PLAN 3 (LTP3)

2.2.6 Surrey's third Local Transport Plan (LTP3) came into effect in April 2011.

2.2.7 The overall vision for Surrey's LTP3 is:

"*To help people to meet their transport and travel needs effectively, reliably, safely and sustainably within Surrey; in order to promote economic vibrancy, protect and enhance the environment and improve the quality of life*"

2.2.8 Based on this vision, SCC have determined four main objectives:

- Effective transport: To facilitate end-to-end journeys for residents, business and visitors by maintaining the road network, delivering public transport services and, where appropriate, providing enhancements
- Reliable transport: To improve the journey time reliability of travel in Surrey
- Safe transport: To improve road safety and the security of the travelling public in Surrey
- Sustainable transport: To provide an integrated transport system that protects the environment, keeps people healthy and provides for lower carbon transport choices

2.2.9 Whilst the Wellesley development is in Hampshire, it is also close to the Surrey county border with the potential to impact on the neighbouring local highway network. Therefore, consideration of Surrey County Council's LTP vision and objectives has been made in the preparation of this TA.

RUSHMOOR BOROUGH COUNCIL - THE RUSHMOOR PLAN

2.2.10 Rushmoor Borough Council has produced 'The Rushmoor Plan' a Local Development Framework that the council believes will successfully deliver sustainable development in the Borough up to 2027. At the heart of The Rushmoor Plan is the Rushmoor Core Strategy, adopted in October 2011. This document contains the main vision for the future of Rushmoor, and includes specific policies for the planned Aldershot Urban Extension. As part of the evidence based informing the Core Strategy, a Transport Assessment was undertaken to outline the highway impacts at a strategic level. The TA was subsequently found to be 'sound' as part of the Examination in Public (EIP) undertaken for the Core Strategy. The Core Strategy Transport Assessment has been summarised further, along with other relevant studies and background information in Section 2.4.

2.2.11 Within Section 5 of the Strategy. *Vision and Objectives*, the vision of the core strategy, under the title of Rushmoor Plan Vision – Rushmoor 2027 details:

"*An urban extension to Aldershot on surplus public sector land will be delivered, providing a sustainable mixed community of about 4,250 new homes of which a significant proportion will be affordable. This development will provide an exceptional living environment and provide opportunities for improved integration between the military and civilian communities*"

2.2.12 Specifically the Core Strategy also details the amount of housing, employment and retail expected to come forward over the time period. In paragraph 6.4 and the Table 1, the Core Strategy notes the Aldershot Urban Extension as providing 4,250 homes (with a capacity of 4,500), employment in the form of an enterprise centre and small scale retail and leisure as part of a new neighbourhood centre.

2.2.13 In order for RBC to deliver on the vision, it has listed a series of objectives in Section 5.2, including:

i) Objective A - To address the housing needs of residents by planning for a minimum of 6,350 new homes(27)of an appropriate mix and tenure between 2010 and 2027

ii) Objective B - To deliver a sustainable urban extension of about 4,250 new homes at Aldershot by 2027

iii) Objective C - To support the continued economic performance of the Borough by identifying and safeguarding an appropriate range of employment sites

iv) Objective D - To enhance the vitality and viability of Aldershot and Farnborough town centres through delivery of planned regeneration

v) Objective F - To ensure the provision of infrastructure, including green infrastructure, in line with levels of new development

vi) Objective G - To ensure high quality, well designed development is delivered in the Borough

vii) Objective I - To maintain and improve the built and natural environment, including areas of ecological and historical value

viii) Objective J - To minimise the impact of climate change on new and existing development in the Borough, to reduce the contribution of new and existing development in the Borough to the causes of climate change, and to ensure adaptation to forecast climate change impacts

ix) Objective K - To encourage sustainable solutions to movement in and out, and around the Borough

ALDERSHOT URBAN EXTENSION – SUPPLEMENTARY PLANNING DOCUMENT (SPD)

2.2.14 RBC has produced a Supplementary Planning Document (SPD) specifically for the Aldershot Urban Extension (AUE). The SPD was adopted in March 2009.

2.2.15 Section 7: *Transport and Access* details the objectives relevant to this TA and has split these into sections covering 17 principles. The main objective of Section 7: *Transport and Access* is as follows.

"*To deliver sustainable access and ease of movement, both to and within the urban extension, through the provision of excellent public transport services, and well designed and convenient walking and cycling routes*"

2.2.16 The 17 principles and their main aims and objectives featured in Section 7 have been summarised below.

- Managing Travel Demand

  Principle STA1: Manage the demand for travel, particularly by private car, and actively encourage the alternative use of sustainable transport options across the urban extension

- Connectivity and Permeability

  Principle STA2: Provide a well-connected and permeable network of streets and open spaces that enhance the attractiveness of walking, cycling and public transport journeys

- Inclusive Mobility

  Principle STA3: Ensure that all public, commercial and education uses within the urban extension are accessible for people with disabilities

- Walking and Cycling

  Principle STA4: Actively encourage walking and cycling journeys through the provision of safe, attractive and direct routes to key destinations

- Key Trip-Attractors

  Principle STA5: Ensure the provision of safe pedestrian and cycle routes to both new and existing primary and secondary schools that children from the urban extension will attend

- Public Transport

  Principle STA6: The provision of new and significantly improved public transport services and infrastructure to support the development of a sustainable community

- Parking Strategy

  Principle STA7: Establish a Parking Strategy for the urban extension in accordance with Rushmoor Borough Council's parking standards (as a maximum standard).

- Road Adoptions

  Principle STA8: Any proposed adoption of Ministry of Defence roads will need to be approved by Hampshire County Council, as the Local Highway Authority.

- Transport Assessment

  Principle STA9: A Transport Assessment for the Urban Extension will be required as part of any major planning application

- Travel Plans

  Principle STA10: An overarching Residential Travel Plan will be required as part of any planning application for development of the urban extension

  Principle STA11: An overarching Workplace Travel Plan will be required as part of any planning application for development of the urban extension

- Sustainable Travel Marketing

  Principle STA12: Maximise patronage of bus services as an alternative to private car-based travel for local journeys through marketing to local residents, schools and businesses

- Safe Routes to School

  Principle STA13: A School Travel Plan will be required for each school proposed on the urban extension as part of any planning application for development of the urban extension

  Principle STA14: A Construction Travel Plan for the Urban Extension will be required as part of any major planning application

- Highway Access to Urban Extension

  Principle STA15: Secure all necessary improvements to site access points to ensure sound linkages between the urban extension and the surrounding area

- External Highway Impacts

  Principle STA16: Provide the required highway improvements to reduce the impacts of additional traffic from the urban extension on the surrounding local and strategic highway networks

- Hollybush Lane

  Principle STA17: Hollybush Lane could be utilised as a primary route for construction traffic for any major development

2.2.17 These guiding principles have informed the development of this TA for Wellesley.

2.3 Car Parking Standards

RUSHMOOR BOROUGH COUNCIL CAR AND CYCLE PARKING STANDARDS – SPD (MARCH, 2012)

2.3.1 As part of The Rushmoor Plan, RBC has produced an SPD titled '*Car and Cycle Parking Standards Supplementary Planning Document – March 2012*'. Tables 2.1 and 2.2 below summarises the residential, commercial and retail parking standards contained in the SPD.

Table 2.1 Rushmoor Parking Standards: Residential

Development	Description	Number of car parking spaces	Cycle Standard
General Residential	1 bedroom unit	1 space per unit	1 space per unit
	2-3 bedroom units	2 spaces per unit	2 spaces per unit
	4 or more bedroom units	3 spaces per unit	3 spaces per unit

Table 2.2 Rushmoor Parking Standards: Non residential

Development	Description	Maximum number of car parking spaces	Cycle Standard
Housing for the Elderly	Active Elderly with warden control	1 space per unit	0.5 spaces per unit
	Nursing and rest homes	1 space per 4 residents and 1 space per staff	1 space per 6 staff
Health Establishments	Doctors Surgeries	3 spaces per consulting room	1 space per 6 staff or 1 per 2 consulting rooms.
Commercial	B1 (a) office	1 space per 30 sq.m	1 space per 150sqm
	B1(b)/(c) high tech/light industry	1 space per 45 sq.m	1 space per 250sqm
	B2 general industrial	1 space per 45 sq.m	1 space per 350sqm
	B8 warehouse	1 space per 90 sq.m.	1 space per 500sqm
Retail	Non-food retail and general retail (covered)	1 space per 20 sq.m. covered area	1 space per 6 staff or 1 space per 300 sqm.
	Non-food retail and general retail (uncovered)	1 space per 30 sq.m. covered area	
	Food Retail	1 space per 14sq.m covered area	
Other Uses	Eating and Drinking Establishments	1 space per 5sqm dining area	1 space per 6 staff or 1 space per 40 sqm.

2.3.2 Further to the standards summarised in Tables 2.1 and 2.2 above, it should be noted that motorcycle parking is required at one space for every 25 spaces in the overall development. Visitor spaces for residential land uses should be provided at 1 per 3 units for 1 bedroom dwellings and 1 per 5 units for 2-3 bedroom dwellings. In terms of provision for deliveries/servicing, standards state that developers are "*to demonstrate that lorry/van deliveries can be made without disruption or reduced*

safety to customers or other uses of the highway". Parking for commercial vehicles is required for retail and industrial/warehouse (B1c/B2/B8) uses.

2.3.3 The SPD outlines various notes on each of the land use groups at Wellesley, including providing parking standards for education, health and social care establishments, leisure establishments and sports facilities.

2.3.4 During the production stages of the SPD, research was undertaken which focused on research of car ownership in the borough area. The SPD notes that analysis of the data confirms there is no strong correlation between car ownership and car use, so there is no strong environmental reason to apply maximum standards.

2.3.5 Residential car parking standards are expressed as 'required standards' and the presumption that a lower provision would be acceptable is therefore removed, although there could still be justification to fall below these standards in sustainable town centre locations. RBC's research found that car parking was most problematic when there was less than one space per dwelling. Where certain areas, such as flats, have the ability to incorporate and utilise shared parking spaces, the parking strategy will encourage the use of sustainable modes and public transport. The non-residential car parking standards are expressed as 'maximum standards'.

2.4 Relevant Studies and Background Information

EAST OF ALDERSHOT STUDY, MAY 2011

2.4.1 The East of Aldershot Study (completed by consultants Parsons Brinckerhoff, who were commissioned by Hampshire County Council (HCC) and RBC) provides a high-level assessment of a number of potential and identified transport interventions to provide improved access to the east of Aldershot.

2.4.2 The report was used to inform the LTP3; its implementation plan for the North Area of Hampshire; the mitigation strategy of the RBC LDF; the detailed infrastructure requirements for planned major development in the borough; existing and developing transport contribution policies and processes; and other County Council policy development. Therefore the report has looked at several transport corridors to identify schemes that can accommodate the additional traffic expected from a development at AUE.

2.4.3 The Surrey County model (SINTRAM V4.1) was used to evaluate the development proposals for the Aldershot Urban Extension (AUE) that are expected to have a traffic impact.

2.4.4 The study therefore considers several transport corridors to identify schemes that could accommodate the additional traffic expected from the development at AUE. The study area considers the corridors of:

- New Access to the A331
- Lynchford Road
- Hollybush Lane
- North Lane

2.4.5 The study demonstrated that in principle the localised impacts of traffic arising from the development of the AUE can be appropriately mitigated. The report stated that "*It will be for the detailed Transport Assessment accompanying any planning application for the AUE to determine the exact configuration of that mitigation*".

2.4.6 The study has shown that some additional network capacity will be required to accommodate the development proposed in the Aldershot area in the future. The conclusions from the East of Aldershot Study have been used in the determination of the infrastructure proposals put forward by the Wellesley scheme.

RUSHMOOR 'TRANSPORT ASSESSMENT OF CORE STRATEGY' (JUNE, 2009),

2.4.7 WSP was commissioned to assist in the initial investigation of the transport related impacts of delivering the Local Development Framework housing target for Rushmoor Borough Council. WSP's commission included the preparation of a strategic level Transport Assessment of the Core Strategy, providing an initial stage of assessment for the cumulative impact of development locations across the Borough.

2.4.8 A strategic assessment of the traffic and transport impacts was undertaken and capacity assessments of key links and junctions in the study area were completed as part of the report. The assessments were undertaken for both existing base year and future years, and included both background traffic growth and planned development traffic flows for the assessment period.

2.4.9 The TA also provided commentary on potential measures in mitigation of any impacts. This helped inform future investment in the local and strategic highway network within Rushmoor to deliver the target level of development without adverse traffic and transport implications.

2.4.10 Within the report, a high level review of public transport accessibility across the study area was undertaken through a review of capacity on the primary public transport routes serving key destinations in the study area. Also in the document, a high level accessibility review of key walking and cycling links was undertaken to highlight their relationship with the proposed development locations within the study area. This focused on identifying specific desire lines where improvements may be required to overcome any barriers to movement.

2.4.11 The TA concluded that planned development traffic across Rushmoor during the LDF period has shown to have a particular impact on several key highway links and junctions across the borough during the forecast scenarios of 2016 and 2026. These impacts are reflected in additional pressure being placed on highway capacity at some locations, over and above that generated by background traffic growth and that arising from existing committed development.

2.4.12 The findings of this first phase assessment were based on assumptions that were current at time of writing about the known composition of planned development and the anticipated trip generation they will create. Trips generated from planned development have been assigned to the existing local and strategic highway network and no enhancements or upgrades to existing highway infrastructure have been included as part of the assessment.

2.4.13 The report goes on to suggest that following this first phase strategic assessment, a process of options testing will allow for an appropriate mix of highway mitigation measures to be considered to accommodate traffic without unacceptably adverse impacts on the surrounding highway network. In line with the philosophy of Hampshire County Council's Local Transport Plan it is anticipated that a package of measures will comprise those which reduce the demand for car-based journeys, manage traffic flows more appropriately, and invest in additional supporting infrastructure where necessary. Detailed Transport Assessments associated with specific planning applications for development sites would also need to address these.

2.4.14 The outcomes of the TA suggest that the key highway links and junctions surrounding and within the Aldershot area in particular should be considered a high priority for further detailed assessment and subsequent enhancements in light of forecast traffic flows.

HAMPSHIRE COUNTY COUNCIL – TRANSPORT CONTRIBUTIONS POLICY (SEPTEMBER, 2007),

2.4.15 Planning obligations are secured under Section 106 of the Town and Country Planning Act 1990. Section 106 provides for '*payments of money, either of a specific amount or by reference to a formula, and require periodical payments to be paid indefinitely or for a specified period*'.

2.4.16 Hampshire County Council's Transport Contributions Policy (TCP) was adopted in 2007 and sets out the level of contributions that will be required for each development, dependent on the size and nature of the proposals. The TCP adopts a formula based approach to calculate the level of contribution required based upon the net increase in multi-modal trips expected to be generated by a new development.

2.4.17 The table below, taken from Appendix 3 of the Contributions Policy, outlines the potential cost per dwelling based on the numbers of beds, multi-modal trips and cost.

Appendix 3 Table of Calculating Contributions

C3 – Residential	Cost Per Trip (£)	Household Occupancy	Multi-Modal Trips (per dwelling)	Cost per dwelling (£)
1 Bed Dwelling	535	1.3	3.7	1980
2-3 Bed Dwelling	535	2.42	7.0	3745
4+ Bed Dwelling	535	3.5	10.2	5457

2.4.18 It is intended that detailed S106 and S278 discussions and agreements will be undertaken between Grainger Plc, HCC and RBC in the determination of the required contributions for the development. It is envisaged that the HCC Transport Contributions Policy will form a basis for these discussions.

HAMPSHIRE COUNTY COUNCIL – GUIDANCE FOR DEVELOPMENT RELATED TRAVEL PLANS (JANUARY, 2009),

2.4.19 HCC have developed a guidance document in relation to Travel Plans for new developments. As outlined by HCC, the purpose of this guidance is to assist developers in preparing high quality travel plans in a consistent manner across the county.

2.4.20 As presented in the guidance, a travel plan will be required for residential applications of 100 or more households. Therefore the Wellesley development has developed a Residential Travel Plan as well as a framework Workplace Travel Plan strategies. Section 6.5 of this TA gives an overview of these Travel Plans, whilst **Appendix B** provides the full documents.

2.4.21 The guidance states that *Planning approval will not normally be given until an acceptable travel plan has been agreed*. HCC go on to state that all travel plans should follow the principles of the TRACES evaluation criteria, as summarised in the following table.

Transparent	Plans should clearly identify who is responsible for each element of the plan, how it is to be financed and how targets have been developed
Realistic	Plans should set realistic but stretching targets which reflect Local Development Framework and Local Transport Plan policies. Targets should take account of best practice and the likely make up of occupants.
Achievable	Plans should only include measures which developers and partners are capable of delivering and which are likely to have a positive impact on travel behaviour.
Committed	Plans need clear commitment from the developer and occupier. This can be demonstrated by, for example, the appointment of a travel plan coordinator and the identification of funding to take the plan forward.
Enforceable	The commitments established in the Plan need to be enforceable by the local authorities under the accompanying S106 agreement. This demands precision and clarity in the way measures are set out in the travel plan.
Sustainable	Plans need to demonstrate how they will be managed in the longer term. This includes specifying arrangements for the transition of responsibility from the developer to the occupiers, residents or other organisations and the continuing sources of funding for the plan.

Source: Guidance for Development Related Travel Plans

2.4.22 It is considered that the Travel Plans will be secured through S106 agreements with HCC. As highlighted in the guidance, the Section 106 Agreement could also include sanctions to ensure that failure to deliver agreed measures/outcomes (within the control of the developer) can be remedied.

2.4.23 It is noted that the inclusion of successful and well implemented travel planning principles at an early stage can not only allow for the shift away from private car use, but also for a more pedestrian and sustainable mode street hierarchy.

2.5 Summary

2.5.1 National, regional and local policies emphasise the need to reduce the amount of trips undertaken by car. The policies encourage developments to provide the opportunity to travel by public transport, cycle or walk for everyday trips. Residents living in an area with these alternative travel options will have less need to own and use a private car.

2.5.2 A number of studies and technical assessments have already been undertaken for the proposed AUE site, which have been used to inform and help steer the decisions and packages put forward in this Transport Assessment.

2.5.3 The development proposals at Wellesley accord with relevant policy objectives, locating development within a highly sustainable location, and providing excellent facilities for new residents. Wellesley also provides the opportunity for residents, employees and visitors to make sustainable travel choices, supported by high quality transport infrastructure and integrated public transport services.

3 Existing Conditions

3.1 Introduction

3.1.1 This Section sets out the existing conditions in the vicinity of the Wellesley site, including a summary of:

- Site location;
- Local highway network and traffic conditions;
- Pedestrian and cycle network;
- Public transport facilities; and
- Personal Injury Accident analysis.

3.2 Site Location

3.2.1 The site, which is currently owned by the Ministry of Defence (MoD), is located approximately 0.9km to the north of Aldershot town centre, as shown on **Figure 1**. Aldershot is a military town situated in the Borough of Rushmoor in north-east Hampshire. The site is located north of the A323 Wellington Avenue, which connects through Aldershot town centre. The site is bordered by the A325 Farnborough Road to the west. To the north, the site is bordered by the Basingstoke Canal and to the east by the A331 Blackwater Valley Relief Road.

3.3 Local Highway Network

3.3.1 **Figure 1** sets out the local highway network in the vicinity of the site. The highway network is comprised of roads of a variety of classifications. The highway network within the site is currently under control of the MoD and will be adopted in line with the development proposals. Local roads of significance are discussed below, including details of the pedestrian and cycle facilities.

A325 Farnborough Road

3.3.2 The site is located to the east of the A325 Farnborough Road which links the A31 to the south and the M3 to the north. Sections of the A325 are governed by the national speed limit, including the dual carriageway section between A323 Fleet Road and A3011 Lynchford Road. Further south on the A325, immediately north of Willems Avenue, the speed limit is reduced to 40mph.

3.3.3 Adjacent to the north west of the site, the A325 forms a junction with Alison's Road; a dual carriageway which runs directly through the site from the A325 in a west to east orientation. The A325 Farnborough Road / Alison's Road junction provides an on-slip and off-slip for traffic travelling southbound on the A325.

3.3.4 There are two pedestrian and cycle access points between the site and A325, at Knollys Road and Alison's Road. Each of these access points join into the existing shared-use path adjacent to the southbound carriageway of the A325, which links Aldershot and Farnborough town centre. There is an existing Pelican crossing opposite the end of Willems Avenue for users wishing to access the western side of Farnborough Road at the southern end of the site. An alternative crossing opportunity further north is provided at the A325 junction with Alison's Road, where grade separation allows users to pass safely beneath the A325 into Clubhouse Road. Further north, crossing facilities at Lynchford Road are available, either at Queen's Roundabout or approximately 150m to the east of the junction where a staggered Toucan crossing is located. North of Lynchford Road, a good

provision of footway / shared-use path continues to be provided adjacent to the A325, with numerous pedestrian refuge islands and signal crossing facilities towards Farnborough town centre and Farnborough Main Railway Station.

A323 Wellington Avenue

3.3.5 To the south of the site, the A323 Wellington Avenue/High Street provides an east to west connection between the A325 Farnborough Road and the A331. The A323 is predominantly a single carriageway road, providing access points to various local destinations, such as Tesco's to the west of the town centre, The Galleries shopping complex, the Westgate retail and entertainment complex (currently being developed), and to the east Aldershot Town Football Club. The A323 is subject to a 30mph speed limit and also provides access points to the site via Hospital Hill, Gun Hill and Middle Hill as well as links to the town centre itself via Barrack Road, Court Road, Upper Union Street and Station Road. Station Road provides access to Aldershot Rail and Bus stations. Gun Hill is currently closed to vehicular access by a gate and therefore provides a safe and direct pedestrian and cycle route. The A323 continues towards Guildford in the eastbound direction and Fleet in the westbound direction.

3.3.1 There is a good standard of footway and street lighting along the entire route from Aldershot town centre to the A331, but no on-road or off-road provision for cyclists between Hospital Hill and Lower Farnham Road. Signalised pedestrian crossings are located at or in close proximity to Hospital Hill, Middle Hill, Gun Hill, Aldershot Town FC, Church Hill, Herrett Street, Lower Newport / Lower Farnham Road and North Lane. Crossing Wellington Avenue at the junction with Hospital Hill provides access to the town centre in a walk time of approximately 20 minutes. In addition, there are several pedestrian refuge islands located between the railway bridge and Brighton Road to provide safe passage across the A323. Between just east of Lower Farnham Road and west of the junction with the A331 there are narrow on-road cycle lanes in both directions.

A3011 Lynchford Road

3.3.2 The A3011 Lynchford Road is located to the north of the site, linking the A331 to the A325 and is subject to a 30mph speed limit. The A3011 also provides a link with Queen's Avenue, which runs directly through the site in a north/south direction. Queen's Avenue forms a signalised junction with Alison's Road and is subject to a 30mph speed limit it also forms an access point with the A323 to the south of the site via Hospital Hill.

3.3.3 Lynchford Road has a mix of on-road and off-road cycle routes. Between Alexandra Road and west of Peabody Road the main through road (A3011) and retail parts of Lynchford Road are split on two parallel roads, with the retail part including a good footway provision and good conditions for cycling on-street. To the east of Peabody Street, Lynchford Road has a shared-use path running in front of the shops on the northern side of carriageway. At the Puffin crossing at the northern end of Artillery Road, Lynchford Road, where pedestrians and cyclists are directed along the quieter residential section and cycling is on-street. From the eastern end of Lynchford Road, access across the A331 flyover is provided via a dedicated pedestrian / cyclist bridge and a subway at the end of Lynchford Lane.

A331 Blackwater Valley Relief Road

3.3.4 To the east of the site runs the A331 in a north/south direction. The A331 dual carriageway is subject to the national speed limit and forms junctions with the A323 to the south and the A3011 Lynchford Road to the north. The A331 is a primary road linking to the M3 in the north and the A31 to the south and as such there are no facilities for pedestrians or cyclists.

Queen's Avenue

3.3.5 The Queen's Avenue / Alison's Road junction forms a signalised crossroads at the northern boundary of the site. The section of Queen's Avenue north of the Basingstoke canal bridge links to A3011 Lynchford Road. Queen's Avenue (N) provides a signalised crossing point close to the junction, whilst Alison's Road (E) provides a signalised crossing point which allows pedestrians to cross the dual carriageway. Alison's Road (E) also provides a zebra crossing on the left turn slip, to allow pedestrian crossing from vehicles turning into Queen's Avenue (S). Queen's Avenue (S) and Alison's Road (W) both have signalised crossing points situated at the junction.

3.3.6 Queen's Avenue currently has an excellent footway provision for the majority of its length, and there are on-road mandatory cycle lanes from the junction with the A323 to the junction with Blenheim Park. In addition to the Queen's Avenue / Alison's Road junction, there are signalised crossing facilities available at the junction with Pennefather's Road and stand-alone signalised crossings opposite the MOD sports centre and north of Blenheim Park. The latter of these crossing provides excellent facilities for those wishing to cross onto Lynchford Road. At the Hospital Hill / A323 junction there is a staggered signalised pedestrian crossing which links the site to Aldershot town centre in approximately 20 minutes' walk, via either Princes Way or Princes Park and Short Street.

Alison's Road

3.3.7 Alison's Road advances into Clubhouse Road to the west, which then links to the A325. A 40mph speed limit applies to Queen's Avenue. The eastern section of Alison's Road benefits from footways parallel to the carriageway and incorporates a grass verge. There are currently drop kerb crossing points where the on / off slips join Alison's Road, and a footway is currently provided along the southern side of Clubhouse Road which passes underneath the A325.

3.3.8 Alison's Road and Thornhill Road link Farnborough Road and Clubhouse Road to the west with Government Road and Ordnance Road to the east and have a good provision of footways along the majority of the route and street lighting. At the western end of Alison's Road is the grade-separated junction with the A325 Farnborough Road, with access to Farnborough Road via the shared-use paths adjacent to the on / off slip-roads.

3.3.9 Where the slip-roads meet Alison's Road there is an uncontrolled crossing for users wishing to continue along the A325 with tactile paving and central refuge islands. At the junction with Queen's Avenue there are signal crossing facilities and further stand-alone signal crossings east of Mandora Road roundabout and west of the junction with Government Road. At the junction with Government Road there is an informal crossing point, setback from the give-way line which allows pedestrians to cross away from the main point of conflict at this junction.

North Lane

3.3.10 North Lane provides the main route between the north eastern side of the masterplan site to Ash Road Industrial Estate, to the A323 Ash Road and onward to Connaught School on Tongham Road. Generally, the footway conditions and width are good on North Lane, varying between 2.5-3m on both sides of the road for the majority of the route. There are numerous pedestrian refuge islands situated along North Lane and a zebra crossing at the North Town shopping area.

3.3.11 At the southern end of North Lane there is a staggered signalised pedestrian crossing, which provides an excellent safe route across the A323 Ash Road and to Connaught School. North Lane itself does not have any on-road or off-road cycle facilities, and does not attract a high number of cyclists. However, to the east of North Lane is the Blackwater Valley Cycle Path, which offers a good route for cyclists wishing to travel to destinations between the Deadbrook Lane and the A323.

Ordnance Road

3.3.12 Ordnance Road serves the eastern side of the development, linking Thornhill Road and Government Road to the A323. For the majority of the route between Government Road and the Ordnance Road / North Lane roundabout there is only one footway, provided on the eastern side of Ordnance Road and south of the roundabout are only narrow footway to Louise Margaret Road. From these point southwards there are good quality footways to the junction with the A323. There is one signalised pedestrian crossing on this route, just north of the junction with San Carlos Approach. This route has no dedicated on or off-road provision for cyclists.

Government Road

3.3.13 Government Road is located to the north east of the main development site linking Ordnance Road and Thornhill Road to Lakeside Road. In the future this route will be used to access the Camp Farm Lake SANG and potentially provide an alternative route to North Camp railway station. Given that Government Road is currently under MOD ownership this route has no footway or cycle lanes and no street lighting to the north of the Basingstoke Canal Bridge. The existing bridge currently has no footways and pedestrians are directed off-road to cross at the canal lock to the north of Government Road.

3.4 Existing Junction Capacity

3.4.1 To understand the existing junction constraints on the highway network, and to inform the traffic model, traffic flow and queue surveys were undertaken on 24th November 2011. These queue surveys have been used to help determine which locations on highway network currently suffer from congestion and for how long. **Figure 8** shows the maximum queue lengths identified during the peak hours the survey.

3.4.2 WSP undertook a separate site visit (on the 2nd July 2012) to observe junction performance (queue lengths) in the morning and evening peak hours on a number of these key routes and their findings supported the previous survey results.

3.4.3 **Figure 8** shows that currently queuing does not back through junctions apart from Ordnance Road / A323 High Street junction in the evening peak hour and indicates that many of the key corridors contain spare capacity in the peak hours. Notwithstanding this, a number of the junctions do identify some delay identified by queuing.

3.4.4 The surveys indicate that Ordnance Road / A323 High Street contains queues in excess of 260m (45 vehicles) occurring in the evening peak hour along the A323 in an eastbound direction, as well as queues of 100m (17 vehicles) on Ordnance Road. However close inspection of the results show that these high queues only occur for minimal time with the 260m queue dispersing within 10 minutes to approximately 70m (12 vehicles) on the A323 High Street and a reduction from 100m on Ordnance Road to 50m (9 vehicles) in 5 minutes.

3.4.5 Wellington Roundabout incurs queues in excess of 175m (30+ vehicles) in the morning peak hour in a northbound direction, although this only takes place for approximately 25 minutes in the hour before dispersing. The remaining arms at the junction in both peak hours do not exceed 60m (10 vehicles). The remaining junctions along the A323 corridor do not indicate such capacity constraints that would limit additional traffic along this route.

3.4.6 To the north along the existing priority controlled T-junction between Ordnance Road and Government Road, queuing on the minor arm indicate some constraint on the network. In both the morning and evening peak hour, queuing between 20-70m (4-12 vehicles) is recorded for the majority of the peak hours. It is likely that any additional traffic along this route would impact upon the function of the current junction arrangement.

3.4.7 The junctions surveyed along Lynchford Road identify minimal queuing along this stretch in the peak hours with queues at Queens's roundabout never exceeding 60m (10 vehicles). Nonetheless, the site visit identified that whilst there is minimal static queuing on this route; Lynchford Road is subject to slow moving queuing due to the number of junctions and turning vehicles.

3.4.8 To the north along the A323 Farnborough Road, queuing has been observed at the junction with Jubilee Road and with Rectory Road. The queues identify a small capacity constraint in the northbound movement in the morning peak with queues reaching 100m (17 vehicles) although this only peaks for short 5 minute time period, with the rest of the peak hour producing queues between 40-60m (7-10 vehicles).

3.4.9 Further north as the A325 joins the A331 queues formed are no more than 110m (19 vehicles) although averaging between 40-60m (7-10 vehicles). This average is relatively low considering the type of junction arrangement, however it identifies that this queuing operates over a larger time period than other locations around the town, with junctions seeing this queuing for the full peak hour.

3.4.10 The final area of key consideration is access onto the M3 from J4 and J4a. Junction 4 incurs the larger queuing of the two with queues exceeding 100m (17 vehicles). The majority of this queuing occurs at the southern junction with the northern junction only experiencing the delay for small time periods in the peak hours. The southern junction (signalled controlled) queues for the majority of both peak hours with the A331 (northbound) being affected the most. This reaches the 100m+ (17+ vehicles) max for a 15 minute period in the morning from 7.30am dropping to between 30-60m (5-10 vehicles) afterwards. The evening peak appears to be constrained further from this arm with queues exceeding 100m (17+ vehicles) for approximately 1.5hrs and queues of 50-70m (9-12 vehicles) on a number of the remaining arms. Whilst the junction shows large queuing, the signal junction has been shown to accommodate the traffic and the majority of this queue passes through the junction in a single cycle.

3.4.11 J4a shows minimal queuing through the peak hours, never exceeding 25m (4 vehicles) in the morning peak hour and 50m (9 vehicles) in the evening.

3.5 Local Cycle Network

3.5.1 There is a number of on-road and off-road cycle routes within the vicinity of the development, as shown on **Figure 2**. These routes provide excellent links through the site and to Aldershot town centre, Farnborough town centre and Business Park. The Wavell and Connaught Schools and Ash Vale Railway Station. These are discussed in more detail below.

Queens Avenue

There is currently an on-road cycle lane in both directions on Queen's Avenue which links the A323 Wellington Avenue junction to the south and Blenheim Gardens to the north. This provides an excellent links between the development site, Aldershot town centre, Wavell School and Lynchford Road shops. For the benefit of cyclists using this route, there are Advanced Stop Lines at the traffic signal junction with Alison's Road and Wellington Avenue.

A325 Farnborough Road

On the A325 Farnborough Road there is a mainly off-road shared-use path between the junction with Cranmore Lane at the southern edge of Aldershot and Frimley railway station to the north. This provides an excellent link for users wishing to access The Wavell School, Farnborough town centre and Business Park and Lynchford Road shops. Where this route crosses Lynchford Road to the north of the development there is a Toucan crossing available for cyclists, before the route continues briefly on-road along Southampton Street. Once re-joining Farnborough Road, the route there is a good provision of shared-use path and numerous crossing points towards Farnborough town centre.

Queensgate

In addition to the link along the A325 Farnborough Road, a quieter route exists for cyclists wishing to travel between Aldershot, Farnborough Business Park and Farnborough town centre. This is provided as an on-road route between Government House Road and Farnborough town centre. Access to the southern end of this route can be taken from the A325 cycle route, or Shoe Lane, which links with the Basingstoke Canal towpath and northern boundary of the development site.

A323 Wellington Avenue / Ash Road

On Wellington Avenue an off-road shared-use path links Alexandra Road and Aldershot town centre and the A325 cycle path. At Alexandra Road this route is linked to Tesco via an underpass under Wellington Avenue and at the junction with A325 roundabout there uncontrolled crossing facilities.

Between just east of Lower Farnham Road and west of the junction with the A331 there are narrow on-road cycle lanes in both directions. This provides a link between the cycle path provision on Lower Farnham Road and the Blackwater Valley Cycle Path.

Willems Avenue

Willems Avenue has on off-road dedicated cycle lane which links the A325 Farnborough Road to Tesco and Aldershot town centre via an underpass under Wellington Avenue. This route provides an excellent link between the development site and these destinations.

Lower Farnham Road and Tongham Road

An off-road cycle lane currently runs along the eastern side of Lower Farnham Road, which links Connaught School and Park Primary School. In addition, a quieter on road cycle link is identified on Tongham Road, due to its link to Connaught School and Leisure Centre. These provide an attractive route for cyclists wishing to access such destinations.

Lynchford Road

Lynchford Road is located at the northern end of Queen's Avenue, providing an access route for cyclists wishing to access the railway station at North Camp, Lynchford Road also contains a number of shops which are likely to be used by residents of AUE. Between Alexandra Road and west of Peabody Road the main through road (A3011) and retail parts of Lynchford Road are split on two parallel road, where the cycle route is on-road.

To the east of Peabody Street and the existing puffin crossing, there is a shared-use path running in front of the shops on the northern side of carriageway. At the Puffin crossing at the northern end of Artillery Road, Lynchford Road splits again with cyclists directed along the quieter residential section and cycling is on-street

From the eastern end of Lynchford Road, access across the A331 flyover is provided via a dedicated pedestrian / cyclist bridge and a subway at the end of Lynchford Lane.

Basingstoke Canal Tow Path

Although generally used as a leisure route, the Basingstoke Canal towpath provides an off-road cycle provision along the northern boundary of the development site, joining Fleet to the west with Ash Vale to the east.

Blackwater Valley Cycle Path

The Blackwater Valley Cycle Path runs north to south to the east of the development site, linking Ash Vale railway station and Connaught School along a traffic free route. This route crosses the Basingstoke Canal towpath to the east of Deadbrook Lane and can be accessed at this point (through on-road links on Woodland Walk), from Government Road or where it crosses the A323.

3.6 Journeys by Bus

3.6.1 Aldershot benefits from a high quality and easily accessible local bus network. A number of bus services operated by Stagecoach South serve the vicinity of the site, providing a mix of local and inter-urban travel opportunities. Other operators in the Aldershot area also include Fleet Buzz and National Express.

3.6.2 Aldershot has a well-integrated bus network which allows users to travel to destinations including Bordon, Camberley, Farnborough, Farnham, Guildford, Haslemere, Reading and Yateley. A summary of local services from Aldershot Bus Station is provided in Table 3.1 below.

Table 3.1 Bus Services and Frequencies (Source: Operator's Timetables: June 2012)

Service	Route	Days of Operation	Frequency			First & Last Service
			AM Peak (mins)	Off Peak (mins)	PM Peak / Evening	
Gold Route 1 - Stagecoach	Aldershot – Farnborough Main - Camberley	Mon - Sun	Every 7-8 mins	Every 10 mins	Every 10 mins / 2 per hr	05:25 / 23:30 - Mon-Fri 06:30 / 23:30 - Sat 08:00 / 21:30 - Sun
3 - Stagecoach	Aldershot - Yateley – Aldershot	Mon - Sat	2 per hr	2 per hr	2 per hr	06:00 / 18:40 - Mon-Fri 07:55 / 18:10 - Sat
4 & 5 - Stagecoach	Northtown - Aldershot - Farnham	Mon - Sun (Sunday - Aldershot to Farnham only)	4 services	4 per hour	4 services / 1 per hr	06:54 / 23:17 - Mon-Fri 07:00 / 23:17 - Sat
15 - Stagecoach	Aldershot - Tice Meadow - Heron Wood	Mon - Sat	Every 15 mins	Every 15 mins	Every 30 mins	07:13 / 18:35- Mon-Fri 07:25 / 17:50 - Sat
17, 18 & 19 - Stagecoach	Aldershot / Farnham / Haslemere	Mon – Sun – 17	1 per hr	1 per hr	1 per hr / 1 per hr	08:30 / 18:40 - Mon-Fri
		Mon – Sat – 18	1 per hr	1 per hr	1 per hr	06:20 / 19:10 - Mon-Fri
		Mon – Fri – 19	1 service	1 per hr	1 per hr	06:30 / 17:50 Mon - Fri
20 - Stagecoach	Aldershot - Guildford	Mon – Sun	4 per hr	4 per hr	4 per hr / 1 per hr	06:15 / 23:03 Mon-Fri 07:00 / 23:03 - Sat 07:50 / 18:03 - Sun
41 – Countryliner	Farnborough - North Camp - Ash	Mon - Fri	1 service	1 per hr	1 per hr / None	07:37 / 17:09
65 Stagecoach	Aldershot - Guildford	Mon - Sat	3 services	1 per hr	2 services	07:25 / 16:50
56	Aldershot - Farnborough 6th Form College	Mon - Fri	1 service	n/a	1 service	07:50 / 17:10
70 - Fleet Buzz	Aldershot - Elvetham Heath	Mon - Fri	1 service	1 per hr	1 service	07:50 / 18:05

3.6.3 As shown in Table 3.1 above, Stagecoach's Gold Route 1 is the most frequent service operating every 10 minutes during the day and every 7 to 8 minutes during the AM peak along Queen's Avenue through the Wellesley development area. As this route serves Aldershot and Farnborough Main Railway Stations, it is an important commuter service providing excellent transport links to onward destinations served by mainline rail, including London Waterloo, Basingstoke, Alton and Guildford. London Waterloo can be reached by rail from Aldershot in less than one hour.

3.6.4 Route 1 is branded as a "Gold" services and forms part of a high investment Quality Bus Partnership between Stagecoach and the local authorities. Currently the vehicles used to operate the route have capacity for 41 seated and 7 standing passengers. They utilise low emissions engines and offer quality interiors, Wifi connections and gold livery.

3.6.5 Existing bus stops within the site include Steele's Road and Hospital Road bus stops on Queen's Avenue. The services running from Steele's Road bus stop have been summarised in Table 3.2 below.

Table 3.2 Bus Services and Frequencies from Steele's Road (Queen's Avenue)

Service	Route	Days of Operation	Frequency Weekday			First & Last Service
			AM Peak (mins)	Off Peak (mins)	PM Peak / Evenings	
Local Services						
1 - Stagecoach	Aldershot - Farnborough Main - Camberley	Mon - Sun	Every 10 mins	Every 10 mins	Every 10 mins / ½ hourly	05:29 / 23:34 – Mon-Fri 06:35 / 23:34 – Sat 08:03 / 21:33 - Sun
401 - Stagecoach	Weybournes All Hallows School – Camberley	Mon - Fri	0	0	1 service	15:33
414 - Stagecoach	Southwood - All Hallows School	Mon - Fri	1 service	0	0	08:28
415 - Stagecoach	Fox Lane - All Hallows School	Mon - Fri	1 service	0	0	08:33

3.6.6 The provision of high quality, high frequency bus routes through and near to the development site ensures there is a great deal of potential for supporting their use. These services can be actively promoted to residents and employees to consider sustainable travel choices from the very outset for many journey purposes.

3.7 Journeys by Train

3.7.1 The site is near to three rail stations on different lines enabling a variety of destinations to be directly reached. Table 3.3 below summarises the pertinent details for each in terms of accessibility and staffing. Further details such as frequency of service and destinations which can be reached are discussed in the following sections.

Table 3.3 Summary of Local Train Stations

Station	Distance			Cycle Parking	Staffing		
	Distance[1]	Cycle Time[2]	Walk Time[3]		Weekday	Sat	Sun
Aldershot	1.6km	6 minutes	20 minutes	six Lockers, and 24 uncovered racks	05:30 to 01:15	05:30 to 01:15	05:15 to 01:15
North Camp	3.5km	13 minutes	-	10 sheltered racks	06:30 to 13:00	07:00 to 13:00	Closed
Farnborough (Main)	5.0km	19 minutes	-	20 sheltered and 30 uncovered racks	06:00 to 21:40	06:00 to 21:40	07:40 to 21:10

[1] Taken from junction of Queen's Avenue / Hopes Grant Road;

[2] Based on average speed of 16kph

[3] Based on average speed of 4.8kph

Aldershot Rail Station

3.7.2 Aldershot Rail Station is operated by South West Trains with services to a number of local and national destinations including Alton, Guildford, Ascot and London Waterloo. Regular bus services, including Gold Route 1, link the site with the railway station as Aldershot bus station is situated adjacent to the rail station. Bus shelters are provided adjacent to the railway station building.

3.7.3 The ticket office opening hours are 06:20 to 21:18 Monday to Saturday and 07:35 to 18:55 on Sunday. Self-service ticket machines are available and the station has a covered waiting room, real time electronic display, payphone, taxi rank and toilet facilities.

3.7.4 For disabled users, the railway station has partial step free access. Platform 1 is fully accessible to wheelchair users. Platforms 2 and 3 are step free only when accompanied by a member of staff. The station also has two disabled parking spaces.

3.7.5 The average journey time to London Waterloo is 50 minutes from Aldershot Railway Station. A summary of average journey times and peak hour frequencies for direct services to and from Aldershot are shown in Table 3.4 below:

Table 3.4 Summary of Rail Services from Aldershot Rail Station

Route	Outbound (AM journey)		Inbound (PM return journey)	
	AM Peak Direct (0700-0800)	Journey Time (minutes)	PM Peak Direct (1700-1800)	Journey Time (minutes)
Aldershot – London Waterloo	2	47	2	44
Aldershot – Alton	2	20	2	20
Aldershot – Ascot	2	28	1	31
Aldershot – Guildford	2	17	2	17
Aldershot – Ash Vale	5	04	4	05
Aldershot – Farnham	2	05	2	06
Aldershot – Woking	3	17	2	19

*Source – www.nationalrail.co.uk June 2012

3.7.6 As can be seen from Table 3.4, Aldershot Rail Station has good connections with a mainline London station with two services per hour outbound in the morning peak hour and two inbound services in the evening peak hour, providing excellent access to a wider range of employment and leisure opportunities.

3.7.7 The direct rail service towards Woking also provides a link with Clapham Junction, Portsmouth, Weymouth and Basingstoke. Also with the direct line to Guildford, this provides access to Reading, Redhill and Gatwick Airport.

Farnborough (Main) Rail Station

3.7.8 At Farnborough (Main) Station, trains are operated by South West Trains with services to a number of local and national destinations including Fleet, Woking, Basingstoke, Surbiton and London Waterloo. Regular bus services, including Gold route 1, link the railway station with Old Dean, Camberley, Fleet and Aldershot, passing adjacent to the development site. Bus shelters are provided adjacent to the station entrance.

3.7.9 Self-service ticket machines are available and the station has a covered waiting room, toilets, payphone, coffee shop, a help point, real time electronic display, taxi rank and vending machine.

3.7.10 In terms of disabled accessibility, the railway station has full step free access throughout. Both platforms are fully accessible to wheelchair users, with lifts/ footbridge provided for access to Platform 1. The station also has six disabled parking spaces, for which parking charges apply.

3.7.11 Table 3.5 shows that Farnborough (Main) Railway Station has good connections with a mainline London station with four services per hour outbound in the morning peak hour, and four inbound services in the evening peak hour, providing excellent access to employment and leisure opportunities further afield. The average journey time to London Waterloo is 45 minutes from Farnborough (Main) Railway Station. A summary of average journey times and peak hour frequencies for direct services to and from Farnborough (Main) are shown in Table 3.5 below.

3.7.12 The direct rail service to Basingstoke also provides a link with Exeter and South Wales. Also with the direct line to Woking, this provides access to Heathrow Airport and Portsmouth.

Table 3.5 Summary of Rail Services from Farnborough Main

Route	Outbound (AM journey)		Inbound (PM return journey)	
	AM Peak Direct (0700-0800)	Journey Time (minutes)	PM Peak Direct (1700-1800)	Journey Time (minutes)
Farnborough – London Waterloo	4	38-43	4	34-53
Farnborough – Basingstoke	4	13-25	4	24-28
Farnborough – Woking	3	10-12	3	9-12
Farnborough – Brookwood	2	7	2	7
Farnborough – Fleet	3	5-6	4	5-6

*Source – www.nationalrail.co.uk June 2012

North Camp Rail Station

3.7.13 North Camp Station is operated by First Great Western with services to a number of local and national destinations including Ash, Farnborough North, Guildford, Reading and Gatwick Airport. Regular bus services link the railway station with Ash and Farnborough, however there are no direct services to the development site. Bus stops are located 40m west of the station entrance.

3.7.14 Self-service ticket machines are available and the station has a covered ticket office, sheltered waiting areas on both platforms, payphone, real time electronic display and vending machine.

3.7.15 For disabled users, the railway station has partial step free access. Platform 2 is fully accessible to wheelchair users. Platform 1 is accessed via the level crossing and a short ramp. The station also has disabled parking provision which is free of charge.

3.7.16 As can be seen from Table 3.6 North Camp Railway Station has good connections with one of London's largest airports with two services per hour outbound in the morning peak hour, and three inbound services in the evening peak hour, providing excellent access to a wider range of employment and leisure opportunities. The average journey time to Gatwick Airport is 63 minutes from North Camp Railway Station. A summary of average journey times and peak hour frequencies for direct services to and from North Camp are shown in Table 3.6 below.

3.7.17 The direct rail service to Reading also provides a link with, Oxford, Birmingham and London Waterloo. Also with the direct line to Guildford, this provides access to Alton, Portsmouth and Brighton.

Table 3.6 Summary of Rail Services from North Camp

Route	Outbound (AM journey)		Inbound (PM return journey)	
	AM Peak Direct (0700-0800)	Journey Time (minutes)	PM Peak Direct (1700-1800)	Journey Time (minutes)
North Camp – Gatwick Airport	2	55-79	2	56-58
North Camp – Reading	2	27-31	4	26-31
North Camp – Guildford	3	13	3	11-16
North Camp – Ash	3	4	2	4
North Camp – Farnborough North	1	4	3	4

*Source – www.nationalrail.co.uk (June 2012)

Route Utilisation Strategy (Network Rail)

3.7.18 Route Utilisation Strategies (RUS) are developed by Network Rail in order to outline National Rail's longer term vision for future improvements of the rail network . They seek to balance capacity, passenger and freight demand, operational performance and costs and subsequently provide recommendations as to how this should best be accommodated. The RUSs are route based (with an overarching Network RUS and Freight RUS) and use a systematic approach and strategic overview to form the basis for the development and delivery of timetables, infrastructure maintenance and renewals for the network. They will also underpin the development of the franchise specification and contribute to the Government's High Level Output Statement (HLOS) recommendations for enhancing and/or improving the rail network, working within the Government's Statement of Funds Available (SOFA).

3.7.19 The stations identified above are covered within the following RUSs:

- South West Main Line Route Utilisation Strategy (March 2006), Network Rail; and
- London and South East Route Utilisation Strategy (July 2011), Network Rail.

3.7.20 Table 3.7 summarises the improvements which would affect the trains serving Aldershot and Farnborough (Main) stations. It is also stated that on the Alton Line, some line speeds may be improved. There are no improvements recommended in the strategy for the full Guildford to Reading line which passes through the North Camp station although train and platform lengthening is identified between Reading and Wokingham.

Table 3.7 Route Utilisation Strategies Recommendations

RUS Reference	RUS Recommendation	Intervention Type	Proposed Funding Category
L&SE RUS 7.9 Option F1	Further consideration of 12-car SWML inner suburban operations	Train Lengthening	Network Rail ORR Determination
L&SE RUS 7.9 Option F5	Further consideration of running 32 trains per hour or more on the South West Main Line into London Waterloo with infrastructure enhancements at key pinch points and provision of five tracks between Hampton Court Junction and Clapham Junction	Infrastructure solutions	Network Rail ORR Determination

3.8 Personal Injury Accident Analysis

3.8.1 In line with DfT/DCLG Guidance on Transport Assessment, HCC, SCC and the HA require an analysis of the most recent three year personal injury accident record to be undertaken. The site is located in Hampshire, but the traffic generated by the development will also travel along Surrey's highways as the neighbouring county, therefore two separate accident data searches have been undertaken in agreement with these respective local highway authorities.

3.8.2 The most recently available Personal Injury Accident (PIA) records have been obtained from Surrey County Council (01/01/2009-31/07/2012) and Hampshire Constabulary (01/08/2009 to 31/07/2012) in order to undertake an assessment of the local highway network.

3.8.3 A plot showing the location and severity of accidents on the local highway network for the two searches is given in **Figures 3** (HCC) and **Figure 4** (SCC). For completeness, the tables include significant locations within the study area, even if no accidents were recorded. As part of the accident data analysis, the focus has been on the vulnerable users categories and any discernible trends.

3.8.4 Due to the size of search area and the number of recorded incidents, a summary of the two Counties information has been presented below. The full data and textual description of the individual junction and highway links has been included within **Appendix C**.

HAMPSHIRE CONSTABULARY ACCIDENT DATA

3.8.5 The latest three year accident data period was obtained from Hampshire Constabulary's accident analysis unit. Similar to the Surrey Council data above, the PIA information has been split into the key specific junctions as well as strategic link roads. Table 3.8 below, provides a summary of each junction, with numbers of accidents based on severity and the amount of vulnerable road users. Below the table, each junction has been looked at in more detail and summarised further.

3.8.6 **Figure 3** shows the full extent of the PIA analysis. Sub-figures (A-E) for particular junctions and links are shown on **Figures 3A to 3E**. In total, there were 459 PIA's recorded in the Hampshire accident analysis for the three year period. This number is made of 386 slight accidents, 68 serious and five fatal incidents. The tables below outline a summary of key junctions and links.

Table 3.8 Hampshire Accident Data – Key Junctions

Junction Location	Severity				Vulnerable Road Users			
	Fatal	Serious	Slight	Total	Pedestrian	Pedal Cycle	Motor Cycle	Total
M3 nr J4	0	2	4	6	0	0	3 (2Ser, 1Sli)	3
A325/A331/B3272 Hawley Lane Roundabout	0	2	24	26	0	4 (2Sli, 2Ser)	5 (Sli)	9
Union Street Gyratory	0	1	4	5	1 (Sli)	0	1 (Ser)	2
A325/B3014 Victoria Road Roundabout	0	3	15	18	2 (1Sli, 1Ser)	0	0	2
Pinehurst Roundabout	0	0	12	12	0	3 (3Sli)	2 (2Sli)	5
A325/B3043 Boundary Road	0	1	7	8	1 (Sli)	2 (2Sli)	3 (2Sli, 1Ser)	6
Queens Roundabout	0	0	10	10	0	3 (3Sli)	3 (3Sli)	6
St Alban's Roundabout / Lynchford Road	0	0	8	8	0	0	1 (Sli)	1
Queens Avenue/Princes Avenue Junction	0	0	3	3	0	0	0	0
Queens Avenue/Alison's Road Junction	0	2	11	13	1 (Sli)	3 (2Sli, 1Ser)	2 (1Sli, 1Ser)	6
A325/Alison's Road Junction	1	1	4	6	0	1 (Sli)	1 (Ser)	2
Wellington Roundabout	0	0	10	10	0	1 (Sli)	4 (4Sli)	5
A323 Wellington Avenue / Oberusel Way Roundabout / Tescos	0	0	2	2	0	0	1 (Sli)	1
A323 Wellington Avenue / Hospital Hill / Princes Way	0	2	5	7	1 (Ser)	2 (2Ser)	0	3
A323 / Gun Hill / Station Road Roundabout	0	0	4	4	0	1 (Sli)	1 (Sli)	2
A323 / Ordnance Road Roundabout	0	1	1	2	0	1 (Ser)	0	1
A323/Lower Farnham Road	0	0	2	2	1 (Sli)	0	0	1
Lower Farnham Road - South of A323	0	3	12	15	5 (5Sli)	1 (Sli)	3 (3Ser)	9
Princes Way / Queens Road Junction	0	0	4	4	1 (Sli)	0	2 (Sli)	3
Grosvenor Road / Church Lane Junction	0	2	8	10	3 (1Sli, 2Ser)	2 (Sli)	0	5
Ordnance Road / North Lane Junction	0	1	1	2	0	0	0	0
Ordnance Road / Thornhill Road/ Government Road Junction	0	0	3	3	1 (Sli)	1 (Sli)	0	2
Government Road / Camp Farm Road Junction	0	1	4	5	0	1 (Sli)	2 (1Sli, 1Ser)	3
A331/A3011 Junction	0	3	15	18	0	1 (Sli)	3 (1Sli, 2Ser)	4
A331/Frimley High Street Junction	0	1	7	8	0	0	0	0
Totals	1	26	180	207	17	27	37	81

Source: Hampshire Constabulary Accident Statistics

HAMPSHIRE CONSTABULARY – STRATEGIC LINKS

3.8.7 Due to the wide variation of accident location, those accidents which did not occur at the junctions outlined above, have been recorded as occurring on a strategic link road in the search area. As indicated previously, only key links have been interrogated therefore the total number of recorded PIAs may differ from the overall search totals. Table 3.9 below, summarises those accidents on the links.

Table 3.9 Summary of PIAs on strategic Links on the Local Highway Network - Hampshire

Link Location	Severity				Vulnerable Road Users			
	Fatal	Serious	Slight	Total	Pedestrians	Pedal Cycle	Motor Cycle	Total
B3272 North of M3	0	0	3	3	0	0	2 (Sli)	2
B3272 South of M3 Link to A325 Farnborough Road	0	3	7	10	1 (Ser)	3 (3Sli)	2 (Sli)	6
A325 Link to Prospect Avenue	0	1	11	12	2 (2Sli)	1 (Sli)	3 (3Sli)	6
A325 Link to Union Street Gyratory	0	0	2	2	0	0	1 (Sli)	1
A325 and Kingsmead Link to Pinehurst Roundabout	0	3	1	4	2 (1Sli, 1Ser)	1 (Ser)	0	3
A325 to Queens Roundsabout Link	0	0	6	6	1 (Sli)	1 (Sli)	0	2
B3043 Alexandra Road	0	2	8	10	1 (Sli)	2 (2Sli)	2 (1Sli, 1Ser)	5
A3011 Link to A331 junction	0	0	7	7	1 (Sli)	1 (Sli)	1 (Sli)	3
Queens Avenue Link to Princes Avenue	0	0	4	4	0	1 (Sli)	0	1
A325 – Queen's Roundabout to Alison's Road Link	1	1	2	4	0	0	2 (2Ser) - rider & pass	2
A325 –Alison's Road to Wellington Roundabout Link	0	0	1	1	0	0	0	0
Queens Avenue - Alison's Road to A323 Link	0	1	2	3	1 (Sli)	1 (Ser)	0	2
A325 - Wellington Roundabout to Cranmore Lane link	0	0	6	6	0	1 (Sli)	1 (Sli)	2
B3008 Cranmore Lane	0	1	3	4	0	0	0	0
A323 - Princes Way to Station Road Roundabout Link	0	0	1	1	0	0	0	0
A323 - Ordnance Road to Lower Farnham Road Link	0	3	12	15	6 (4Sli, 2Ser)	0	1 (Sli)	7
A323 - Lower Farnham Road to A331 Link	0	2	2	4	0	2 (1Sli, 1Ser)	1 (Ser)	3
Princes Way to Queens Road Link	0	1	3	4	2 (1Sli, 1Ser)	1 (Ser)	0	3
Grosvenor Road - Queens Road to Church Lane West	0	0	7	7	2 (Sli)	0	0	2
Victoria Road Link	0	1	8	9	6 (4Sli, 2Ser)	1 (Sli)	2 (1Sli, 1Ser)	9
North Lane	0	3	9	12	6 (5Sli, 1Ser)	1 (Sli)	1 (Ser)	8
Ordnance Road - A323 to North Lane	0	0	4	4	0	0	1 (Sli)	1
Alison's Road - Queens Avenue to Government Road	1	0	1	2	0	0	2 (1Sli, 1Fat)	2
A323 - Ively Road to A325	1	0	8	9	1 (Sli)	1 (Sli)	2 (1Sli, 1Fat)	4
Bourley Road - Link to Fleet	0	4	17	21	0	2 (Sli)	6 (4Sli, 2Ser)	8
A331 - A323 to A3011 Link	0	0	3	3	0	0	0	0
A331 - A3011 to Frimley High Street Link	1	1	12	14	1 (Sli)	0	4 (3Sli, 1Fat)	5
Total	4	27	150	181	33	20	34	87

Source: Hampshire Constabulary Accident Statistics

SURREY COUNTY COUNCIL ACCIDENT DATA

3.8.8 Due to the number of accidents recorded in the latest three year period, and in accordance with the TA Scoping Note (**Appendix A**), accident data has been considered with regards to the relevant local junctions and strategic highway links in the search area.

3.8.9 **Figure 4** shows the extent of the PIAs recorded from the Surrey data, as shown on that Figure, detailed closes ups of key areas have been marked. The data below summarises the local junctions within and around each area shown on **Figure 4**. The detailed areas (A to F) figures are referenced as Figure numbers 4A to 4F respectively.

3.8.10 Table 3.10 below summarises the data on local junctions in terms of accident severity highlighting vulnerable road users. In total, at the junctions listed in the table below, there were 445 PIAs recorded in the three year study period, comprised of 400 slight, 42 serious and three fatal injury accidents.

Table 3.10 Summary of Accidents at Junctions on the Local Highway Network – Surrey

Junction Location	Severity				Vulnerable Road Users Total (No. Slight, No.Serious, No. Fatal)			
	Fatal	Serious	Slight	Total	Pedestrian	Pedal Cycle	Motor Cycle	Total
M3 Junction 3	0	4	34	38	0	0	6 (5Sli,1Ser)	6
M3 / A331 Roundabout North	0	2	17	19	0	0	1(Sli)	1
M3 / A331 Roundabout South	0	0	18	18	0	0	1(Sli)	1
A331/Frimley High Street Junction	0	1	2	3	0	0	1 (ser)	1
A331/A3011 Junction	0	1	2	3	1 (Sli)	0	1 (Sli)	2
A331/A323 Junction	0	0	20	20	0	1 (Sli)	0	1
A331-A31 Junction	0	2	21	23	0	3 (3Sli)	3 (2Ser, 1Sli)	6
A31-A325 Junction	0	2	41	43	0	2 (1Ser,1Sli)	4 (4Sli)	6
Six Bells Roundabout	0	0	19	19	0	5 (5Sli)	5 (5Sli)	10
A325 Farnborough Road / Alma Lane Junction	0	2	4	6	1 (Ser)	3 (1Ser, 2 Sli)	0	4
A323 Aldershot Road / A323 Ash Street / B3206 Shawfield Road Roundabout	0	0	6	6	0	0	0	0
A325 Farnborough Road / B3411 Frimley Road Junction	0	2	19	21	1 (Sli)	5 (2Ser, 3Sli)	4 (4Sli)	10
A325 Farnborough Road / B3411 Grove Cross Road	0	1	3	4	1 (Ser)	2 (2Sli)	0	3
A325 Farnborough Road / Chobham Road	0	1	7	8	1 (Ser)	0	3 (3Sli)	4
Totals	0	18	213	231	5	21	29	55

Source: Surrey County Council Accidents Data

SURREY – LINK ROADS

3.8.11 Due to a number of accidents located on key highway links away from major junctions, a separate analysis has been undertaken highlighting any discernible trends that may have arisen.

3.8.12 Table 3.11 below highlights the accidents recorded on the following links, these can be seen on the full extent **Figure 4**.

Table 3.11 Summary of Accidents at Links on the Local Highway Network – Surrey

Junction Location	Severity				Vulnerable Road Users			
	Fatal	Serious	Slight	Total	Pedestrian	Pedal Cycle	Motor Cycle	Total
A331 to Frimley High Street Link	0	0	7	7	0	1 (Sli)	0	1
A331 to A3011 Link	0	0	7	7	0	0	0	1
A331 to A323 Link	0	2	17	19	0	2 (2Ser)	0	2
A331-A31 Link	0	1	3	4	0	0	0	0
A31 East	0	1	12	13	0	0	3 (2Ser, 1Sli)	3
A31-A325 Link	0	2	11	13	0	0	0	0
A31 West	1	1	15	17	4 (1Fat, 1Ser, 2Sli)	0	2 (2Sli)	6
A325 Farnborough Road Link to Alma Lane	1	0	5	6	1 (Fat)	1 (Sli)	1 (Sli)	3
A323 East	0	0	4	4	0	1 (Sli)	1 (Sli)	2
Totals	2	9	100	111	6	9	11	26

Source: Surrey County Council Accidents Data

SURREY – SECTIONS OF M3, SUMMARY

3.8.13 Due to the strategic importance of the M3, a detailed look at two sections has been undertaken to ascertain any highway impact on accidents recorded.

Table 3.12 Surrey Accident Data – M3 miscellaneous

Junction Location	Severity				Vulnerable Road Users			
	Fatal	Serious	Slight	Total	Pedestrian	Pedal Cycle	Motor Cycle	Total
M3 East	0	1	6	7	0	0	1 (Sli)	1
M3 Between J3 & J4	1	10	57	68	0	0	5 (4Sli, 1Ser)	5
Totals	1	11	63	75	0	0	6	6

Source: Surrey County Council Accidents Data

3.8.14 The latest three year accident data period was obtained from Surrey County Council and has been split into the key specific junctions as well as strategic link roads presented in the tables above. Through the analysis of the data recorded by the Surrey County Council accident officers, it has been shown that although clusters of accidents have occurred around junctions, these are predominantly due to driver error and misjudgement. Further analysis and the complete data sets have been contained within **Appendix C**. Therefore no trends were seen to be attributable to the local highway network.

PIA Summary

3.8.15 A review of Personal Injury Accident records for the most recently available three year period has found that certain junctions and links have recorded a number of PIAs in the surrounding network of the Wellesley development. Due to the size of the development and its potential to impact on the local highway network in Surrey as well as Hampshire, records from both counties have been sourced to assess the highway network that surrounds the Wellesley site.

3.8.16 The two county's data was analysed separately and key junctions and links were looked at in detail. Through interrogation of the data, suitable mitigation strategies have been proposed to aid in improving the safety aspects of the junctions and corridors. These schemes have been outlined in the Safety Improvements section, under the Traffic Impact section later in this report and include the following junctions and links;

- Queens Roundabout
- Queens Avenue/Alison's Road Junction
- A325/Alison's Road Junction
- Wellington Roundabout
- A323 Wellington Avenue / Hospital Hill
- A323 Wellington Avenue / Gun Hill
- Ordnance Road / Thornhill Road/ Government Road Junction
- A331/A3011 Junction
- A331 Corridor
- A323 East
- A325 Farnborough Road

4 Accessibility

4.1 Introduction

4.1.1 As well as the facilities that will be constructed as part of the development, the Wellesley site benefits from high levels of access to various key facilities and services located in and around Aldershot. The majority of facilities are within walking or cycling distance of the site. Such accessibility, in regards to travel distances and travel times between the site and key local facilities, supports the potential for sustainable travel patterns from the new development and this is detailed further in this Section.

4.1.2 The National Planning Policy Framework (NPPF) March 2012 states that planning should "make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable."

4.1.3 The proposals are in line with national guidance, with NPPF stating that developments should "give priority to pedestrian and cycle movements, and have access to high quality public transport facilities" and to "create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians."

4.1.4 In respect of the above, this Section considers the opportunities to access local facilities from the site including education, employment, leisure and retail, by means other than the private car. **Figures 5** (Walking Accessibility with Development and Facilities) and **6** (Cycling Accessibility with Development and Facilities) maps out the location of key land uses in context of Wellesley and the travel times to reach them by walking or cycling. To provide an idea of the accessibility of the site distances have been measured from the central point of the development, taken to be at the Hope Grant's Road / Maida Road junction.

4.1.5 Guidance given by the Institute of Highways and Transportation (IHT) in their publication 'Guidelines for Providing for Journeys on Foot (2000)' suggests that in terms of commuting, walking to school and recreational journeys, walk distances of up to 2,000 metres can be considered, with the desirable and acceptable distances being 500 and 1,000 metres respectively. For non-commuter journeys the guidance suggests that walk distance of up to 1,200 metres can be considered, with the desirable and acceptable distances being 400 metres and 800 metres respectively.

4.1.6 Assuming a 'typical' walking speed of approximately 4.8kph, Table 4.1 below summarises the broad walk journey times that can be 'considered'; are 'acceptable'; and those that are 'desirable'.

Table 4.1 Walk Journey Times

IHT Standards	Distance (m)		Walk Time (mins)	
	Commuting, Walking to School and Recreation	Other Non-Commuter Journeys	Commuting, Walking to School and Recreation	Other Non-Commuter Journeys
'Desirable'	500	400	6¼	5
'Acceptable'	1000	800	12½	10
'Considered'	2000	1200	25	15

Source: IHT 'Guidelines for Providing for Journeys on Foot'

4.1.7 The National Planning Policy Framework (NPPF) March 2012 states that planning should "…make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable."

4.1.8 The proposals are in line with national guidance, with NPPF stating that developments should "give priority to pedestrian and cycle movements, and have access to high quality public transport facilities" and to "create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians.."

4.2 Accessibility to Education

4.2.1 There are a number of nursery schools, primary schools and secondary schools located in close proximity to the site, as details in Table 4.2 below.

Table 4.2 Walking distances to Nursery Schools

Nursery School	Location	Distance (from centre of Wellesley)	Walk Time (minutes)
Queen Mary's Nursery	Middle Hill	1.2km	15
Knollys Nest Pre-School	Knollys Road	1.2km	15
Scamps Pre-School Nursery	Windsor Way	1.25km	16
Deuxchats Pre-School	Windsor Way	1.25km	16
Little Flowers Day Nursery	St Georges Rd East	1.6km	20

4.2.2 Queen Mary's Nursery and Knollys Nest Pre-School neighbour the boundary, therefore providing excellent accessibility from the centre of the development. Further afield there are two schools located on Windsor Way in Aldershot town centre and one on St Georges Road East, south of Aldershot town centre. Each of these schools can be accessed within 20 minutes walking time.

4.2.3 As shown in Table 4.2, there are primary schools within a 20 minute walk seven primary schools located within a 30 minute walk of the centre of the development, with the closest being Talavera County Infant School on Gun Hill. The school neighbours the site boundary and therefore has excellent accessibility and links from all parts of the development site.

4.2.4 In addition to the locations discussed above, two primary school sites will be constructed as part of the masterplan.

Table 4.3 Walking distances to Primary Schools

Primary School	Location	Distance (from centre of Wellesley)	Walk Time (minutes)
Talavera County Infant School	Gun Hill	1.4km	18
West End Infant School	York Road	2.0km	25

4.2.5 As shown in Table 4.4 the Wavell School is the closest secondary school to the site, located approximately 3km to the north of the site on Lynchford Road. Access to this can be gained from either Queen's Avenue, which has wide footways and on-road cycle lane, or Farnborough Road, which benefits from a shared-use path between the development site and school. Although the school is estimated to fall outside of the distance where walking is considered an acceptable mode of transport, site visits have shown that a number of pupils already walk similar distances between Aldershot and the school. Also, a 3km cycle distance falls well within the maximum 5km distance considered to be acceptable.

4.2.6 Connaught School is situated to the south-east of the site and can be accessed via either the A323 or North Lane providing routes through to Tongham Road. Each of these routes has good pedestrian infrastructure, with numerous pedestrian crossing facilities on both routes and wide footways along much of North Lane. Similarly to The Wavell School, although the site falls outside of the acceptable walking distance, on site observations indicate that pupils walk between the school and Aldershot town centre and the cycling time of 12 minutes falls well within the maximum acceptable.

4.2.7 For further education facilities the nearest college to the proposed development is the Farnborough College of Technology situated to the north approximately 3.8km away. This site can be reached within 15 minutes by cycle, or using Stagecoach south service 1, could be accessed in approximately 22 minutes. In addition, The University College for the Creative Arts, Farnham is situated in the south west, approximately 8.5km away from the site. The site can be reached in 30 minutes by bicycle or in 38-40 minutes by public transport using Stagecoach South services 1 and 46.

Table 4.4 Walking distances to Secondary Schools

Secondary School	Location	Distance (from centre of site)	Walk Time (minutes)	Cycle Time (minutes)
The Wavell School	Lynchford Road	3000m	38	11
Connaught School	Tongham Road	3300m	41	12

4.3 Accessibility to Employment

4.3.1 There are various employment opportunities within easy walking and cycling distance of the site. Aldershot town centre which can be reached within approximately 20 minutes on foot or six minutes by bicycle and provides an extensive array of retail and service areas. Further afield a number of additional employment opportunities as discussed in the following paragraphs.

4.3.2 To the north of the site there is a range of employment opportunities in Farnborough at the Airport, Farnborough Business Park or Farnborough town centre. All accessed via the A325 Farnborough Road or Alexandra Road by bicycle the following travel times would be expected:

- Farnborough Airport: 12 minutes (3.2km);
- Farnborough Business Park: 16 minutes (4.25km);
- Farnborough Town Centre: 18 minutes (4.7km); and
- Frimley Park hospital is approximately 8.2km from the site, and is accessible by public transport using Stagecoach south service 1, which has a travel time of approximately 40minutes.

4.3.3 To the south east of the Wellesley site there are opportunities for employment on the industrial estates off North Lane and Ash Road. These are easily accessible by cycle, with a journey time of approx. 10-15 minutes. Also by using Stagecoach South services 1 and 5, the site can be accessed by public transport in approximately 22 minutes.

4.3.4 In addition, there are a number of Co-Op convenience stores and a Tesco superstore that provide employment opportunities within walking and cycling distance of the development. Co-op stores located on North Lane and Queen's Road fall within a 2km walking distance and the store at North Camp Shops is also within a 5km cycling distance. In addition, the Tesco superstore on Wellington Avenue can be accessed in 20 minutes on foot or just over six minutes by bicycle.

4.4 Accessibility to Retail

4.4.1 There are a range of retail facilities available to the north, west and south of the site, with the major retail area being Aldershot town centre, located approximately 1.5km south along Hospital Hill, Gun Hill, Middle Hill or Ordnance Road; equivalent to a 15-20 minute walk or a 5-10 minute cycle ride. Aldershot town centre contains a wide range of shops, restaurants, the Wellington Shopping Centre and The Galleries shopping centre.

4.4.2 To the north of the site, North Camp Shops can be reached in approximately 12 minutes by bicycle and Farnborough town centre, which includes the Kingsmead shopping centre, is approximately 5.1km away; equivalent to approximately 20 minutes by bicycle or a 10minute bus journey using Route 1.

4.4.3 The nearest large supermarket is the Tesco situated to the south west of the proposed site on Wellington Avenue, which can be accessed in 20 minutes by foot just over six minutes by bicycle.

4.4.4 To the east of the development site, at North Town, there is also a small retail area, containing two convenience stores and other retail services. This is approximately 1.7km from the centre of the site and can be accessed in just over 20 minutes on foot or seven minutes by bicycle.

4.4.5 The Westgate retail and entertainment complex is currently being developed on Wellington Avenue. The complex will provide facilities within walking distance of Wellesley.

4.5 Accessibility to Health Facilities

4.5.1 Numerous health facilities are located within walking and cycling distance Wellesley, including Aldershot Health Centre and other doctors, dentists and pharmacies. The Health Centre provides the closest facilities to the site, situated on Hospital Hill less than 1km from the centre of the site. Access can therefore be achieved within 13 minutes on foot and less than five minutes by bicycle. The Health Centre contains a range of medical services including GPs, dental services, clinicians, counsellors, community nurses and a pharmacy so providing excellent and convenient facilities for residents of Wellesley.

4.5.2 Further afield there are a number of other health facilities close to the development, including:

- ADP Dental Surgery and Aldershot Dental Care in Aldershot town centre, and Station Dental Care on Lynchford Road;
- McGregor & Hull Eye Care Centre, Vision Express, Optisave and Specsavers in Aldershot town centre;
- Pharmacies and chemists available in Tesco superstore, at various locations in Aldershot town centre and on North Lane;
- North Camp Surgery and pharmacy on Queen's Road;

4.5.3 The nearest accident and emergency hospital is Frimley Park Hospital, 8km north of the site and accessible by public transport in 40 minutes.

4.6 Accessibility to Leisure and Community Facilities

4.6.1 There is a wide range of leisure and community facilities in close proximity to Wellesley, as would be expected given its location in close proximity to Aldershot town centre and Farnborough. Taking this into account, a brief summary of the main facilities likely to be used by residents of Wellesley is provided in the following paragraphs.

4.6.2 The nearest leisure facility to the site is Pavilion Health & Fitness Club, which forms part of Potters International Hotel situation on the corner of Farnborough Road / Fleet Road. Also, Aldershot Ski Centre is located on Gallwey Road and will remain in place after the development is complete, providing a dry ski-slope in easy walking distance from the centre of the site.

4.6.3 In terms of leisure centres, there are a number within walking or cycling distance of the development site, including:

- Connaught Leisure Centre, located approximately 4.3km to the south east of the site offers a range of leisure facilities including a gym and a wide range of indoor and outdoor sporting activities.
- Curves Woman's Gym in Aldershot town centre;
- Ash Manor Sports Centre on Manor Road, approximately 15 minutes cycle ride from the development;
- The Wavell-Cody Community Campus (gym, sports hall, dance studio, martial arts courses) on Lynchford Road;
- Farnborough Recreation Centre, located in Farnborough town centre; and
- Aldershot Pools, located on Guildford Road approximately 3km from the development site

4.6.4 In addition to sports and fitness facilities, the Aldershot Military Museum is located on Evelyn Woods Road to the north of the proposed development and is within a half an hour walk and Aldershot Town Football Club is situated to the south east on Wellington Avenue, which can be reached within 15 minutes on foot.

4.6.5 Further afield there are opportunities to use local golf club and centres. Oak Park golfing complex is situated approximately 8.2km to the south west of the site, and can be accessed by the local highway network using A325 and A3016 as well as public transport using services 1 and 76. Using public transport involves a walk to the golf club and in total would take approximately 50 minutes. Camberley Heath golf club is situated to the north of the site approximately 9.8km away, and is accessible using public transport bus services 1 and 3, taking approximately 48 minutes. Pine Ridge Golf club is situated near to Camberley Heath Golf Club, and by using bus services 1 and 2, can be reached in an hour.

4.6.6 It should be noted that as part of the development proposals a number of on-site facilities will be provided that will be highly accessible to new residents. These include community centre and areas, local shops, open spaces and woodland.

4.7 Summary

4.7.1 It is evident that the Wellesley site enjoys excellent levels of accessibility to many existing local facilities, services and employment opportunities, many of which can be easily accessed by sustainable travel options.

5 Development Proposals

5.1 Wellesley Proposals

5.1.1 The development proposals are primarily residential, but look to provide a number of community uses and employment opportunities available to both the new and existing residents of the area. The masterplan is attached at **Appendix D**. The development proposals consist of:

- 3,850 new homes (35% affordable homes);
- Refurbishment of six listed buildings including 4th Div Head Quarters and the Cambridge Military Hospital as well as a number of local listed buildings;
- Heritage trail;
- Two new primary schools;
- Day care facilities;
- A local neighbourhood centre, providing new offices, pub and restaurant, and local shops;
- Household Waste Recycling Facility;
- Approx. 0.24Ha of employment area, equating to approximately 832 new jobs;
- 110Ha of SANGS (Suitable Alternative Natural Green Space);
- New play areas and a local park;
- Allotments; and
- Public access to sports fields.

5.1.2 Through the provision of a mix of land uses on site, including primary school, retail, and employment there is clear potential for some trips associated with specific journey purposes to be made 'internal' to the Wellesley.

5.1.3 By allowing future residents access to local schools, services, amenities, employment and retail uses within the development area, the need to travel external to the development site by car is reduced. The land use proposals outlined above therefore have strong potential to support more sustainable, low carbon travel patterns.

5.2 Employment Provision

5.2.1 The planners Savills, who have been working as part of the Wellesley consultant team have undertaken a review of the development proposals and the potential employment generation, in terms of Full Time Equivalent (FTE) numbers of staff that could be expected from such a land use mix. As indicated by Savills, the project number of FTE has been calculated as 832 for the land uses associated with the site. The assumptions which have informed the employment provision calculations are detailed in the planning statement.

5.3 Development Phasing

5.3.1 An outline planning application will be submitted for Wellesley in its entirety; in addition, a detailed planning application will be submitted for Phase 1 of the development. The location of the Phase 1 parcel is illustrated on **Figure 1** and the application description is as follows:

"Full planning application for the development of Phase 1 comprising 228 dwellings, demolition of buildings, internal roads, garages, driveways, pathways, boundary treatment, pedestrian/ cycleways, associated parking spaces, SuDS, associated amenity space, hard and soft landscape works and full details of engineering operations associated with infrastructure requirements and service provision for this phase."

5.3.2 Construction and occupation of the development will take approximately 13 years, commencing in 2013 through to completion in 2025/2026. The anticipated annual build summary is provided in Table 5.2 below. Construction will generally take place in a west to east direction across the site.

Table 5.2 Development Phasing

Year	Annual Dwelling Number	Cumulative Total Dwelling Number at year end
2013/2014	175	175
2014	**250**	**425**
2015	250	675
2016	300	975
2017	350	1325
2018	350	1675
2019	350	2025
2020	350	2375
2021	350	2725
2022	**350**	**3075**
2023	300	3375
2024	300	3675
2025/2026	175	3850

5.4 Access

5.4.1 The Wellesley site is currently well connected and as such the proposed development will continue to utilise the existing highway network and, where necessary, provide additional connections via new junctions. Access to the site will be achievable from a number of locations surrounding the development. These include:

- A325 Farnborough Road / Alison's Road
- A325 Farnborough Road / Pennefather's Road (proposed)
- Queen's Avenue
- Queen's Avenue/Hospital Hill
- Ordnance Road
- Government Road

5.5 Summary

5.5.1 In line with the development proposals, a Transportation Strategy has been determined for the site and is summarised in Section 6.

6 Transportation Strategy

6.1 Introduction

6.1.1 As detailed in preceding sections of this TA, due to its strategic importance, the Transportation Strategy for Wellesley has been considered in a number of previous assessments and documentation, including the Rushmoor Core Strategy Transport Assessment, Aldershot Urban Extension SPD, and the 'East of Aldershot Study'.

6.1.2 This Transportation Strategy has been developed with due consideration paid to these prior studies and assessments, as well as on-going discussions with HCC, SCC, RBC and the HA.

6.1.3 The Strategy is considered fourfold:

- Highway Strategy, 6.2
- Walking and Cycling Strategy, 6.3
- Public Transport Strategy, 6.4
- Smarter Choices Strategy, 6.5
  - Residential Travel Plan
  - Workplace Travel Plan Framework

6.1.4 The Development Proposals and Transportation Strategy feed into a staged assessment process as detailed within Sections 7-12:

- 7. Development Trip Generation
- 8. Trip Distribution and Assignment
- 9. Committed Developments and Infrastructure
- 10. Impact Assessment Methodology
- 11. Traffic impact
- 12. Phase 1 Impact Assessment

6.2 Highway Strategy

6.2.1 The Highway Strategy for Wellesley draws upon the conclusions and recommendations of the AUE SPD, East of Aldershot Study and Rushmoor Core Strategy, as well as discussions with the HCC, SCC, RBC and the GA.

6.2.2 As a starting point in developing a robust strategy, WSP reviewed and implemented these previous proposed improvements to determine the most appropriate strategy for the proposed development. To progress further, a number of site visits were undertaken to understand the existing conditions, alongside reviews of traffic and queue survey data. Through multiple iterations of the traffic model, improvement measures have been promoted that can be accommodated within land controlled by the developer or highway authority that will not only reduce the impact of the development, but provide wider capacity and safety benefits to the existing network and users.

6.2.3 The proposed mitigation strategy considers the following locations in and around the site:

- New A331 on-slip;
- New roundabout incorporating Government Road / Thornhill Road / Gallwey Road and Ordnance Road to provide capacity for traffic accessing the new on-slip;
- Revised signal junction incorporating improved pedestrian crossings at Queens Avenue / Alison's Road;
- Reduced speed limit along the A325 Farnborough Road with the introduction of a new Toucan Crossing;
- Lane-drop improvement scheme on the A325 Farnborough Road; and
- Revised signal junction incorporating improved pedestrian crossings at A323 Wellington Avenue / Hospital Hill.

6.2.4 The full Highway Strategy has been assessed within the final modelling assessment and is discussed in further detail in Section 11. Any proposed improvements have been assessed in detail with the appropriate junction modelling software to establish either a nil-detriment improvement or a junction that operates within capacity.

6.3 Walking and Cycling Strategy

6.3.1 Based on the assessments of the existing pedestrian and cycle network discussed in Section 3 a strategy of improvements is proposed that removes barriers between the site and key trip attractors and encourages walking and cycling to these locations through the provision of safe and attractive routes. This strategy includes access routes between Wellesley and Suitable Alternative Natural Greenspace (SANGS) which are included as part of the master plan, and aims to provide a comprehensive pedestrian and cycle network both within the masterplan and to and from surrounding areas. Furthermore, pedestrian and cycle schemes discussed in the Aldershot Town Access Plan (TAP) that are relevant to the development have been identified.

6.3.2 A plan of the pedestrian and cycle network strategy is shown on **Figure 7**.

6.3.3 Throughout Wellesley, a series of primary and secondary pedestrian and cycle routes will be constructed as part of the proposed highway network to provide excellent links both within the site and to key trip attractors in the surrounding area. Queen's Avenue, Alison's Road and Thornhill Road will provide shared-use paths of adequate width to safely cater for pedestrian and cycle use. In addition to these routes provided adjacent to the highway, a shared-use path will be constructed along the existing Stanhope Lines between Farnborough Road to the west and Gallwey Road to the east.

6.3.4 The secondary network will consist of all other highway links within Wellesley, including footways of at least 2m wide and will be suitable for on-road cycling without dedicated cycle lanes. These will be designed using principles contained within Manual for Streets, providing attractive routes for walking and cycling with excellent permeability.

6.3.5 In addition to the provision of a primary and secondary pedestrian and cycle network a comprehensive wayfinding strategy will also be developed to direct users between various parts of Wellesley and destinations such as Aldershot town centre and railway station, Aldershot Health Centre, Tesco, Westgate, The Wavell School and Connaught School.

Key Routes

6.3.6 A number of key cycle routes have been identified to connect the development area to the surrounding facilities and local places. Where possible cycle routes have been provided off road. These routes include such roads as Queen's Avenue, Hospital Hill, Middle Hill, Gun Hill, Alison's Road, Ordnance Road and Government Road**. Figure 7** identifies all the routes where the development will provide improvements for safe cycle passage.

6.3.7 A set of drawings which provide the detail of the proposed improvements are included within the WSP Technical drawings section of the Appendices folder, these drawings are:

- **0364/GA/005 Rev B;**
- **0364/SK/030 Rev A or 0364/SK/043 Rev A**
- **0364/SK/032 Rev B;**
- **0364/SK/033 Rev A;**
- **0364/SK/034 Rev A;**
- **0364/SK/036 Rev A;**
- **0364/SK/039 Rev A;** and
- **0364/SK/041 Rev A.**

Access to Connaught School

6.3.8 Access to Connaught School has been considered in great detail. Following a site visit with representatives of HCC on the 03 October 2012 an agreed strategy of using Hospital Hill, Middle Hill and Gun Hill to provide access to and from the western sections of the development to the A323 Wellington Avenue/Ash Road was developed. Wellington Avenue/Ash Road will also be improved for cyclists where possible connecting Hospital Hill in the west to Lower Farnham Road in the east.

6.3.9 Improvements of Wellington Avenue/Ash Road include off-road cycleways and Toucan crossings at Croft Road, Station Road and Aldershot Manor Park.. An additional Toucan crossing has been promoted across Ash Road linking North Lane to Blackwater Way as shown in **WSP Drawing 0364/SK/030.** However, following discussions with HCC they have identified an existing safety risk at the junction with drivers running the existing red lights which could make a pedestrian crossing unsafe. It is understood that measures have been put forward by HCC that should improve the safety risk but at this time it is not possible to determine the effects. With this in mind, a second potential option has been promoted which utilises the existing crossing to the east of North Lane as shown in **WSP Drawing 0364/SK/043**. Both have been presented within this TA with the final approach to be determined by HCC.

6.3.10 These combined improvements provide significant enhancements to this corridor for sustainable travel and will benefit the development as well as the many existing residents of Aldershot.

6.3.11 Access to Connaught School from the eastern sections of the development will be via a new cycleway on Ordnance Road which continues into North Lane. At the railway bridge on North Lane the existing footway will be widened to improve pedestrian and cyclist safety, this route will join into the existing cycle route which connects to Woodlands Walk south of the railway.

6.3.12 North Lane will provide a cycle link down to Ash Road where a new cycleway will provided on the northern side of Ash Road to a proposed new Toucan crossing point adjacent to Blackwater Way. From Blackwater Way the residential roads will provide a safe and relatively quiet access to the school.

SANGS Access

6.3.13 As part of the master plan proposals six Suitable Alternative Natural Greenspace (SANGS) sites will be developed for leisure and recreational uses, and as part of routes to other destinations. To promote the use of these sites, the pedestrian and cycle strategy also offers key infrastructure improvements which will allow safe and convenient access to / from and between these sites for pedestrians and cyclists as discussed in the following paragraphs. The six sites to be provided are:

- Western Basingstoke Canal Loop 1: Located to the north west of the site and is bordered by the A323 Fleet Road and Clubhouse Road. Pedestrian and cycle access to this area would be taken from either Fleet Road, Clubhouse Road or along the Basingstoke Canal.
- Rushmoor Bottom: Located to the west of Farnborough Road and south of Clubhouse Road, where pedestrian and cycle access will be provided.
- Western Basingstoke Canal Loop 2: This area borders the northern side of the masterplan and incorporates Basingstoke Canal between Farnborough Road and where the Canal meets Camp Farm Road.
- Camp Farm Lake: Located between Camp Farm Road, Government Road and the A331, pedestrian and cycle access can be taken from any of these roads or Basingstoke Canal.
- Ski Slope Woods: This area will be part bounded by Gallwey Road and Alison's Road, where pedestrian and cycle access will be provided.
- Peaked Hill: Located between South Atlantic Drive, Gallwey Road, Louise Margaret Drive and the MOD cemetery. Pedestrian and cycle access will be provided at either end of South Atlantic Drive, Louise Margaret Drive and from Gallwey Road.

6.3.14 As shown on **Figure 7,** the master plan includes a number of pedestrian crossing facilities that provide direct and continuous links between each of the SANG sites. To ensure that safe and convenient access is provided to these areas it is proposed to implement these crossing facilities as each SANG becomes available. Specific proposals relating to pedestrian and cycle access to each SANG can be summarised as:

- Installation of a signal-controlled crossing on Farnborough Road located at the proposed junction with Pennefather's Road, delivering a safe and direct access to the sports pitches, Rushmoor Bottom SANG and an indirect access (via Rushmoor Bottom) to the Western Basingstoke Canal Loop 1.
- Provision of pedestrian refuge islands on Fleet Road and Clubhouse Road where the path between the Basingstoke Canal Loop 1 and Rushmoor Bottom crosses each road.
- Provision of a pedestrian crossing Queens Avenue to link the eastern and western side of the Stanhope Lines shared-use path (to be determined as Queen's Avenue improvement is developed).
- Provision of a pedestrian crossing at the eastern end of the Stanhope Lines Green Link to Thornhill Crescent.
- Provision of a pedestrian refuge island on Hurst Road to link Ski Slope Woods and Peaked Hill.
- Provision of a pedestrian crossings and footways along Government Road, providing access to Camp Farm Lake and proposed allotments located south of Government Road

6.4 Public Transport Strategy

6.4.1 The full Public Transport Strategy for Wellesley is attached at **Appendix E** and should be read in conjunction with this Transport Assessment for completeness.

Passenger Demand Forecasts

6.4.2 The likely levels of passenger demand for bus services from Wellesley through its phased delivery are presented within the Trip Generation Technical Note (**Appendix F**) and are utilised to establish the predicted level of annual passenger demand from which a suitable level of service can be established as part of the Public Transport Strategy.

6.4.3 Site construction is forecast to continue for 13 years with between 175 and 350 units coming on line annually. The scale and length of the construction phase require the level of service associated with bus provision to be tailored accordingly since provision of the end state service in early years would not only be unfeasible in physical routeing terms but also unsustainable. It should be noted that many of the earlier phases of development coming forward are located adjacent to Queen's Avenue and are therefore well served by Stagecoach Gold Route 1.

6.4.4 Table 6.1 presents the forecast public transport trips in the AM peak at full build out of the development site.

Table 6.1 AM Peak Public Transport Trips Forecast

Journey Purpose	Work	Shopping	Leisure / Visits	Personal Business	Others	Primary - Education	Tertiary - Education	Secondary - Education	**Total**
AM Peak	72	14	9	41	9	0	70	114	329

6.4.5 For the purposes of developing bus service proposals for Wellesley, it is considered necessary to disaggregate the Secondary Education trips, since these are assumed to be attending The Connaught School, with one return trip per weekday. This individual journey is therefore best catered for with specific provision.

6.4.6 All other trips are captured as part of developing bus service proposals to serve the development. This amounts to 215 single trips in the AM peak for both bus and rail. Based on Journey to Work Data from Census 2001 from surrounding local wards (Heron Wood, Manor Park, North Town, Wellington and Rowhill) bus trips account for 40% of public transport trips and 60% rail. This however is main mode and does not account for linkage trips. Based on the level of service that will be provided to rails stations it is assumed that 50% of rail trips will start with a journey by bus.

Core Bus Service Proposals

6.4.7 The following principles have been established for the Public Transport Strategy to help guide its production. These are as follows

- Provide for journeys to retail, employment education and leisure facilities internally within development;
- Provide for journeys to retail, employment , education and leisure facilities internally within the central Aldershot;
- Provide for journeys to retail, employment , education and leisure facilities internally within Farnborough;
- Provide for journeys to Aldershot, Farnborough (Main) and North Camp Rail Stations (indirect) for onward connections; and
- Integrate and support the existing public transport network.

6.4.8 To achieve the principles set out above, bus service options which utilise, amend or add to existing routes and supplement these routes with a new service are deemed most appropriate. So far as is possible it is considered pertinent to utilise any existing capacity within the current bus network which should build upon its stability, benefiting all residents Aldershot and Farnborough. However, due to the scale of the development, ultimately new bus services will likely be required to accommodate the level of demand generated by the development.

6.4.9 The core bus service to accommodate development trips to and from central Aldershot, (including the rail station) and Farnborough (including the rail station), is presented below:

- 2013/14 to 2017/18 - Utilisation of existing Gold Route 1;
- 2018/19 to 2019/20 - Utilisation of existing Gold Route 1 and provision of new 30 minute service via Queens Avenue to Aldershot, Farnborough (Main) Rail Station; and
- 2020/21 onwards - Utilisation of existing Gold Route 1 and provision of new 20 minute service via Wellesley development to Aldershot, Farnborough (Main) Rail Station

6.4.10 Table 6.2 below shows a matrix of how potential journeys can be undertaken utilising the bus services available from Phase 3 (2020-2021).

Table 6.2: Bus Journey Matrix for Phase 3 Bus Service Proposals

	Central Aldershot	Wellesley West	Wellesley Central	Wellesley East	North Camp Rail Station	Farnborough (Main) Rail Station	Camberley
Central Aldershot							
Wellesley West							
Wellesley Central							
Wellesley East							
North Camp Rail Station							
Farnborough (Main) Rail Station							
Camberley							

	Gold Route 1
	Gold Route 1 or Phase 3 Bus Service
	Phase 3 Service
	Interchange between services required

Secondary School Bus Service Proposals

6.4.11 Through pre-application discussions with RBC and HCC it has been suggested that consideration is given to a scenario where all secondary education trips from the full development are to The Connaught School, as opposed to being split between both this school and The Wavell School which is located to the north of the site, in closer proximity than The Connaught School.

6.4.12 The school bus service for the proposed development needs to accommodate for trips from the site to The Connaught School. The nature of Secondary Education school trips is tidal with trips generally needing to arrive and leave at specific school opening and closing times. For this reason dedicated services that respond this requirement are necessary. A phased Secondary Education bus service for Wellesley has been detailed in the accompanying Public Transport Strategy, demonstrating how this bus provision should be provided from early stages to full build out. In summary the service will be provided as follows

- 2013/14 to 2016/17 - Utilisation of existing Gold Route 1 and Service 15;
- 2017/18 to 2023/24 - Utilisation of existing Gold Route 1 and Service 15 combined with provision of a contracted double decker specifically for school journeys; and
- 2024/25 onwards - Utilisation of existing Gold Route 1 and Service 15 combined with a contracted double decker and a mini-bus specifically for school journeys.

Bus Stop Provision

6.4.13 The bus stops provided within the development will be in accordance with DfT 'Inclusive Mobility' guidance which will ensure a high standard of provision, consistent with the service level offered. Bus stops will consist of the following facilities:

- Kassel kerbing;
- Static timetable of all bus services serving the stop;
- Flag denoting bus services serving the stop;
- On road stop facility with road markings and appropriate parking restrictions;
- Bus shelter (both sides of the road); and
- Potential for RTPI displays consistent with existing RTPI scheme or 'QR' technology which when scanned would provide real time bus information.

6.4.14 The existing stops consist of flags and timetables on poles and Kassel kerbs to assist boarding and alighting and support inclusive mobility. Laybys are provided at the set of stops north of Alison's Road, with remaining demarked on road. To supplement the provision currently in place, bus shelters will be provided where possible within the existing alignment of the footway.

6.4.15 The bus interchange at the neighbourhood centre will consist of two layby bus stops with room to accommodate two buses on both sides of the highway. Since service levels are high in this location this will provide good scope for interchange between bus services and mitigate potential overlap of arriving bus services and subsequent waiting on the highway.

6.4.16 In close proximity and running directly south of each bus layby a zebra crossing on the alignment of a key shared footway/cycleway will provide for passengers routeing from one bus stop to the other and as a key link between bus stops and school facilities to the east and community facilities to the west.

6.5 Smarter Choices Strategy

6.5.1 The sustainability of new development has become of paramount importance and a significant amount of guidance has been produced on promoting lower carbon transport options such as walking, cycling and public transport, whilst advocating a reduction of the use of the private car.

6.5.2 The master plan for Wellesley has been developed with sustainability at its heart. Wellesley will deliver sustainable access and ease of movement, both to and within the urban extension, through the provision of excellent public transport services and well designed and convenient walking and cycling routes.

6.5.3 The Smarter Choices Strategy for Wellesley focusses on the delivery of Travel Plans. Travel Plans are a requirement of national and local development related policy and as such, each of the proposed land uses on the development site requires its own Travel Plan. These are:

- Residential;
- Workplace; and
- School (to be developed and monitored by HCC, with input from Grainger Plc / WSP).

6.5.4 This presents the opportunity to ensure a joined up approach to travel planning within Wellesley, to work towards common goals so that each of the different land uses can benefit from a management structure that encompasses all aspects of the site. As such, a site-wide Travel Plan Coordinator (Wellesley TPC) will be appointed to oversee all aspects of travel planning, including working with HCC and school head teachers in relation to the adopted School Travel Plans.

6.5.5 A summary of the Residential and Workplace Travel Plans is provided below, whilst the full documents are presented in **Appendix B**.

Residential Travel Plan

6.5.6 The Residential Travel Plan (RTP) primarily focuses on how residents and visitors to Wellesley can be encouraged to use sustainable means of transport to and from the site.

6.5.7 The measures proposed within this document will not only bring associated benefits to residents, but will also help to reduce any transport impacts of the development on the wider local community.

6.5.8 To deliver this effectively, Grainger Plc will appoint a TPC to lead the day-to-day delivery of the TP. This role will be appointed pre-occupation and funded until development completion. The TPC's duties will include preparing travel information materials for dissemination to residents on their immediate occupation of Wellesley, providing additional travel advice and incentives where necessary, actively monitoring progress and liaising regularly with HCC.

6.5.9 A range of measures have been identified to help support, promote and encourage sustainable journeys for residents and visitors to, from and within the site. These will be funded by Grainger Plc and implemented by the TPC.

6.5.10 The RTP also details a clearly defined target relating to the modal split for journeys arising from Wellesley. This is based on the agreed modal shift targets, detailed fully within the TP. To monitor progress against the targets, a detailed resident travel survey will be conducted on a biennial basis by the TPC, with the results submitted to HCC. Information gathered from these surveys will also support the on-going review of this RTP in order for it to remain relevant and effective.

Workplace Travel Plan Framework

6.5.11 The Workplace Travel Plan Framework (WTP) will act as a tool to embed sustainable travel practices into the heart of the new employment community and to promote increased commuting and business travel by sustainable forms of transport, such as walking, cycling and public transport. The WTP sets site wide aims, objectives and targets, to which all occupiers will commit to through their lease agreements. Furthermore, and where unit thresholds exceed the HCC Workplace Travel Plan trigger points for new development, the WTP will assist individual occupiers to produce their own workplace travel plans to address specific travel and transport needs related to their operation.

6.5.12 A site-wide TPC will assist occupiers of the employment uses to develop their own travel plans, as well as providing support for the implementation and on-going management of these Plans. The TPC will work closely with the local authority, employers and other key stakeholders, to ensure that measures are delivered on time, that effective monitoring is undertaken and that issues are reacted to appropriately.

6.5.13 Grainger Plc will fund all site-wide measures as detailed within the WTP, including site-wide management and monitoring processes to development completion. Individual occupiers will fund any additional measures which they wish to bring forward within their own units to tackle specific travel and transport issues, as well as any monitoring requirement. This obligation will be set out within specific lease clauses for all employer occupiers.

6.6 Summary

6.6.1 The Transportation Strategy for Wellesley has been developed to ensure that the development impact on the highway network is either mitigated or minimised through the promotion of sustainable travel choices such as walking, cycling and public transport. Taking forward the various measures detailed within the Transportation Strategy allows the traffic impact of the development traffic to be fully mitigated, whilst also offering significant benefits to the existing community.

6.6.2 The Transportation Strategy also ensures users of the development can access all necessary local services, schools, recreational and community facilities to support a good quality of life.

7 Development Trip Generation

7.1 Introduction

7.1.1 The Trip Generation Technical Note (TN1) sets out the methodology for deriving the multi-modal travel demand which is anticipated to be generated by the new development and is attached as **Appendix F** and should be read in conjunction with this Transport Assessment. HCC, SCC, RBC and the HA have provided comments on the trip generation methodology, which have been incorporated into the calculations accordingly. For ease of reference, a summary of the methodology employed within TN1 to determine the trip generation for Wellesley is set out below.

7.1.2 The DfT / DCLG Guidance on Transport Assessment (GTA) (March 2007) notes that a range of databases and tools are available for establishing land-use based estimates of trip-making. Whilst TRICS is cited as one of the standard approaches to establishing single-mode or multi-modal trip rates, its use is caveated on being able to replicate the characteristics of a particular development.

7.1.3 As a consequence, it is reasonable to note the limitations of TRICS for determining the specific local area and site travel demand characteristics for a large scale mixed-use development, particularly where TRICS outputs may not reflect the obvious potential to 'internalise' travel demand, thereby over-estimating the volume of external travel.

7.1.4 The GTA suggests that for a typical development, an alternative 'from first principles' approach could be used (Para 4.59), this approach has been adopted to determine the trip generation for Wellesley.

7.2 Bespoke Methodology

7.2.1 The methodology to determine the trip generation for Wellesley has utilised a bespoke method of trip generation that combines the use of National Travel Survey (NTS) data, as well as utilising the TRICS database to determine a broad outline of potential modal split. The method allows a more tailored and accurate approach to be applied to the development, to determine trips by journey purpose.

7.2.2 As part of this bespoke approach, the evidence base includes a mixture of national and regional criteria that will be used to outline the trip generation characteristics associated with the development.

7.2.3 Where possible, the existing travel demand characteristics of South East England, Rushmoor and Aldershot have been incorporated into the analysis to provide a local basis to the assessment. The use of site-specific statistics and data sets allow for the robust generation of trip rates, and in turn, trip generation. This methodology produces a more representative set of rates for a more robust calculation of expected levels of trip generation.

7.2.4 This methodology to determine the trip generation for Wellesley was set out in the TA scoping note, subsequently agreed to by HCC, SCC, RBC and the HA in July 2011.

7.3 TRICS: Approach to Validation

7.3.1 The TRICS database provides a valuable tool in the dissemination of trip rates for comparable land uses. However, TRICS alone is not deemed to provide sufficient detail in the determination of trip generation for the Wellesley site as a whole, as it would not be considered representative of the development's proposed mixed-use characteristics.

7.3.2 It is therefore considered appropriate that TRICS is used to determine the modal split to be used within the residential based trip generation methodology and therefore provide further evidence as to the robustness of the determined trip rates. The use of TRICS is also proposed for the non-residential elements of the proposals, which are made up of smaller individual units, which lend themselves better to be determined by a comparative TRICS rate.

7.4 Residential Trip Generation

7.4.1 The bespoke trip generation for the residential element of the development has been undertaken using a two stage approach which has outlined the following;

- Establish the total volume of daily trips by journey purpose and convert to AM and PM peak hour trips. The results summarise trips by purpose as well.
- Outline the internalisation of each travel purpose and determine modal split.

7.4.2 A third stage, which has been undertaken as part of Trip Distribution Technical Note (TN2) (a summary of which is shown in Section 9, with the full report attached at **Appendix G**), involves the assignment of the generated trips onto the network.

7.5 Stage 1 - Methodology

7.5.1 Table NTS9903 - Average number of trips (trip rates) by main mode, region and area type: Great Britain, from the National Travel Survey 2010 report, states that on average for Great Britain a total of 967 trips per year are made by each individual. For South East England, excluding London, the average annual trips per year are 1021 trips. This average for South East England is considered representative for Wellesley.

- 1021 annual trips / resident

7.5.2 Following correspondence between Savills and RBC in January 2012, a figure of 2.4 persons per household was agreed as applicable for Wellesley.

7.5.3 The average daily trips per household generated by residents can be calculated from the derived data.

- 1021 annual trips x 2.4 residents / HH = 2450 annual person trips per HH
- 2450 annual trips per HH / 365 days = 6.71 average daily person trips per HH

7.5.4 The average daily trips per household are adjusted to represent a weekday scenario. Table NTS0501 contained within National Travel Survey findings 2010 shows that the weekday average (all modes) is 8.22% higher than the weekly average.

- 6.71 average daily trips per HH x 108.22% = 7.266 weekday person trips per HH

7.5.5 The daily profile of person trips for each journey purpose will vary. Table NTS0502 Trip start time by trip purpose for the South East (2010), shows that in the AM peak hour, the number of person trips is 2.91 times greater than the hourly weekday average. In the PM peak hour the number of person trips is 1.92 times greater than the hourly average.

- 7.266 weekday trips per HH / 24 hours = 0.3027 hourly person trips per HH
- 0.3027 hourly trips per HH x 2.91 peak hour factor = 0.880 AM peak hour person trips per HH
- 0.3027 hourly trips per HH x 1.92 peak hour factor = 0.583 PM peak hour person trips per HH

7.5.6 The disaggregation of these person trips by journey purpose has been undertaken using bespoke data from National Travel Survey – Table NTS0502, analysed for South East England, the percentage by trip purpose has been summarised in Table 7.1 below.

Table 7.1 Breakdown of Peak Hour Person Trips by Purpose (%)

Trip Purpose	Proportions	
	AM Peak	PM Peak
Work	26.5%	38.8%
Shopping	5.1%	11.1%
Leisure/Visits	3.3%	18.7%
Personal Business	15.1%	22.1%
Education	46.6%	3.6%
Others	3.4%	5.7%
Total	100%	100%

Source: WSP Calculated

7.5.7 Using the NTS Table NTS0502, trip rates by journey purpose can be determined. Table 7.2 below outlines the person trip rates used and the resulting trips for 3,850 dwellings.

Table 7.2 Resultant trip generation of Person Trips by Purpose (All Modes)

Trip Purpose	Trip Rates		Trips (3,850 dwellings)	
	AM Peak	PM Peak	AM Peak	PM Peak
Work	0.233	0.226	898	871
Shopping	0.045	0.064	173	248
Leisure/Visits	0.029	0.109	113	420
Personal Business	0.133	0.129	512	496
Education	0.410	0.021	1577	81
Others	0.030	0.033	114	127
Total	0.880	0.583	3386	2243

Source: WSP Calculated, anomalies may occur due to rounding

7.6 Determination of Multi-Modal Trips

7.6.1 The above trip generation determines the total person trips for the development. To determine multi-modal trip rates further assessment has been undertaken, utilising the multi-modal TRICS rates for Mixed Private Residential.

7.6.2 The methodology applied to calculating Vehicle Occupancy in the TRICS reports is misleading, as this includes the drivers of Vehicles, OGVs and PSVs, and leads to an over estimation. Following this trip, rates have now been amended to account for the TRICS anomaly. The amended results are shown in Table 7.3 below and results in an exact comparison to the 'Total People' taken directly from the Mixed Private Residential TRICS output;

Table 7.3 Adjusted Trip Rates – Taking into account vehicle occupants

Mode	Time	Total	Percentage Split
Vehicles	AM	0.484	63%
	PM	0.453	65%
Taxis	AM	0.000	0%
	PM	0.000	0%
OGVs	AM	0.004	1%
	PM	0.000	0%
PSVs	AM	0.002	0%
	PM	0.000	0%
Cyclists	AM	0.018	2%
	PM	0.020	3%
Vehicle Occupants	AM	0.131	17%
	PM	0.148	21%
Pedestrians	AM	0.116	15%
	PM	0.066	9%
Public Transport Users	AM	0.019	2%
	PM	0.009	1%
Total People	AM	0.774*	100%
	PM	0.696	100%

Source: WSP Calculated, *small discrepancies due to rounding.

Note: These trip rates have been used to determine modal split and have not been used in the trip generation analysis

7.6.3 Due to the development proposals introduction of proposed bus routes, alongside the high frequency Route 1 already travelling through a portion of the site, the percentage of Public Transport Users presented is likely to be lower than could be achieved via the Wellesley development. In fact the NTS9903 table data suggests that on average for the South East a mode share of 8% is achieved for public transport users.

7.6.4 Coupled with the introduction of the 'smarter choices' initiatives planned for implementation at the development, this means that the modal split would change to that shown in the residential rates. The effect of the smarter choices initiatives will be to reduce car travel and encourage more use of public transport, car sharing and cycling activity. A reduction of 5% has been applied to vehicles, with this being re-proportioned across Public Transport, Vehicle Occupants and Cyclists.

7.6.5 The final modal share percentages have been adjusted manually to account for both smarter choices and higher public transport users. The modal split has been shown in Table 7.4 below.

Table 7.4 Adjusted Modal Split

Mode	AM	PM
	%age	%age
Vehicles	57.5%	60.1%
Taxis	0.0%	0.0%
OGVs	0.5%	0.0%
PSVs	0.3%	0.0%
Cyclists	4.0%	4.5%
Vehicle Occupants	15.8%	19.6%
Pedestrians	12.2%	6.1%
Public Transport Users	9.7%	9.7%
Total	100.0%	100.0%

Source: WSP Calculated

7.7 Education Trips and Modal Split

7.7.1 To allow for the breakdown of trips to each levels of education (Primary, Secondary and Tertiary), further analysis of this trip purpose has been undertaken below.

7.7.2 Table 7.5 below outlines the education proportion based on evidence obtained from Department for Education, looking at Hampshire statistics of pupils by age and school type. The percentages below have been taken forward in the education trips analysis.

Table 7.5 Percentage of education trips by school type

School Type	% Split
Primary	49.0%
Secondary	36.0%
Higher Education / Tertiary	15.0%

Source: Department for Education: Hampshire Statistics of number of pupils by age and school type - January 2010

7.7.3 Due to the provision of two primary schools being delivered as part of the Wellesley development, and the proximity to secondary schools in the local area the data from *NTS0614 – Trips to School by main mode, distance and age* (Primary and Secondary) a TRICS multi modal site (Tertiary) has been used to determine an accurate modal split based on the distance of school type. This was completed separately from the other journey purposes shown previously, as education trips will have a different modal split.

7.7.4 The detailed methodology has been outlined in the Trip Generation: Technical Note (TN1) in **Appendix F**, however in summary, the primary school modal split has utilised the NTS table 0614 and the category 'Under 1 Mile' was chosen as the majority of the development will serve the primary school provision. The secondary school trips utilised the same NTS table, however used the secondary school figures with adjustments made to account for the potential of increased public transport and cycle trips. The tertiary education trips used a TRICS multi-modal split (as the NTS table does not consider tertiary trips).

7.8 Consultation with HCC

7.8.1 After the initial Trip Generation Technical Note was presented to HCC in April 2012, detailed discussions were had between the involved parties outlining the county councils concerns that the methodology presented did not represent the full development trip generation. As such, alternative methodologies were put forward to reach a common ground between the two parties. This culminated with a methodology presented by HCC, which resulted in the final development trips. It should be noted that the total person trips had not changed, however that the associated modal splits had differed resulting from the influences of the education trips.

Multi-Modal Trips Methodology

7.8.2 The methodology put forward by HCC utilised the modal split outlined in Table 7.4 above, and applied this to the total person trips outlined in Table 7.2. Subsequently different modal splits were applied to the education land uses (primary, secondary and tertiary) that were based on multiple data sources including NTS, TRICs(Tertiary) and HCC/WSP's experience of similar sites. The resulting education trips were then taken away from the total person trips, thus enabling a split of the remaining trips to be associated across different travel purpose. The tables below show the resulting trips using this new methodology, and differ from those presented in the Trip Generation Technical Note. It should be noted that the correspondence between HCC and WSP, dated 09/10/2012, on the methodology applied are presented in full at the end of **Appendix F**.

7.9 Total Residential Trip Generation

7.9.1 Applying the mode shares outlined for the non-education trip purposes and the education trip purpose, the following Tables 7.6 and 7.7 below outline the total trip generation for the site.

Table 7.6 Home-Based Vehicular Trip Generation – Non-Education Trip Purposes

	Work		Shopping		Leisure / Visits		Personal Business		Others		Total exc education	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Vehicles	693	531	133	151	88	256	395	302	88	78	1397	1318
Taxis	0	0	0	0	0	0	0	0	0	0	0	0
OGVs	9	0	2	0	1	0	5	0	1	0	18	0
PSVs	3	0	1	0	0	0	2	0	0	0	7	0
Cyclists	30	40	6	11	4	19	17	23	4	6	60	99
Vehicle Occupants	90	171	17	49	11	83	52	98	11	25	182	425
Pedestrians	0	44	0	13	0	21	0	25	0	6	0	110
Public Transport Users	72	84	14	24	9	41	41	48	9	12	145	210
Total	898	871	173	248	113	420	512	496	114	127	1809	2161

Source: WSP Calculated

Table 7.7 Home-Based Vehicular Trip Generation – Education Trip Purposes

	Education - Primary		Education - Secondary		Education - Tertiary		Education Total	
	AM	PM	AM	PM	AM	PM	AM	PM
Vehicles	186	10	250	13	115	7	551	30
Taxis	43	2	23	1	0	0	66	3
OGVs	0	0	0	0	0	0	0	0
PSVs	0	0	0	0	2	0	2	0
Cyclists	0	0	68	4	8	1	76	4
Vehicle Occupants	114	6	57	3	0	0	171	9
Pedestrians	430	22	57	3	41	2	528	27
Public Transport Users	0	0	114	6	70	2	184	8
Total	773	40	568	29	237	12	1577	81

Source: WSP Calculated

7.9.2 It should be noted that the above final baseline trip generation for the education and non-education land uses are considered above, as these have not taken account of the level of trip generation resulting from the existing buildings on site. As shown in the analysis undertaken within Section 3 of the Trip Generation Technical Note, attached to this document as **Appendix F**, the resulting two way trips generated by the existing land uses are projected as 278 and 213 for the AM and PM peaks respectively. Effectively these trips could be taken off the proposed development trip generation as they are already on the network, however, this has not been done and presents a robust methodology to determine the development travel demand.

7.10 Trip Internalisation

7.10.1 Due to the size of development at Wellesley, and the ancillary land uses proposed, a level of internalised trips will occur where residents will travel to the facilities instead of external to the site. The internalisation assumptions applied are detailed in Technical Note TN1.

7.10.2 Tables 7.8 and 7.9 show the resulting internal trips of the development.

Table 7.8 Home-Based Vehicular Trip Generation – Non-Education Trip Purposes – Internal

	Work		Shopping		Leisure / Visits		Personal Business		Others		Total exc education	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Vehicles	69	53	0	0	18	51	40	30	18	16	144	150
Taxis	0	0	0	0	0	0	0	0	0	0	0	0
OGVs	2	0	0	0	0	0	1	0	0	0	3	0
PSVs	0	0	0	0	0	0	0	0	0	0	0	0
Cyclists	17	23	0	0	1	4	2	2	1	1	21	31
Vehicle Occupants	8	15	0	0	2	17	5	10	2	5	18	47
Pedestrians	0	20	0	0	0	4	0	3	0	1	0	29
Public Transport Users	5	6	0	0	2	8	4	5	2	2	13	21
Total	102	118	0	0	23	84	51	50	23	25	198	277

Source: WSP Calculated

Table 7.9 Home-Based Vehicular Trip Generation – Education Trip Purposes - Internal

	Education - Primary		Education - Secondary		Education - Tertiary		Education Total	
	AM	PM	AM	PM	AM	PM	AM	PM
Vehicles	186	10	0	0	0	0	186	10
Taxis	43	2	0	0	0	0	43	2
OGVs	0	0	0	0	0	0	0	0
PSVs	0	0	0	0	0	0	0	0
Cyclists	0	0	0	0	0	0	0	0
Vehicle Occupants	114	6	0	0	0	0	114	6
Pedestrians	430	22	0	0	0	0	430	22
Public Transport Users	0	0	0	0	0	0	0	0
Total	774	40	0	0	0	0	774	40

Source: WSP Calculated

7.10.3 Taking the remaining internalised trips from the total trip generation from the development, Tables 7.10 and 7.11 show the resulting external trips from Wellesley.

Table 7.10 Home-Based Vehicular Trip Generation – Non-Education Trip Purposes – External

	Work		Shopping		Leisure / Visits		Personal Business		Others		Total exc education	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Vehicles	624	478	133	151	70	205	356	272	70	62	1253	1168
Taxis	0	0	0	0	0	0	0	0	0	0	0	0
OGVs	7	0	2	0	1	0	5	0	1	0	15	0
PSVs	3	0	1	0	0	0	2	0	0	0	7	0
Cyclists	12	16	6	11	3	15	15	20	3	5	39	68
Vehicle Occupants	82	156	17	49	9	66	46	88	9	20	165	379
Pedestrians	0	24	0	13	0	17	0	23	0	5	0	82
Public Transport Users	67	79	14	24	7	33	37	43	7	10	132	188
Total	796	753	173	248	91	336	460	446	91	102	1611	1885

Source: WSP Calculated

Table 7.11 Home-Based Vehicular Trip Generation – Education Trip Purposes - External

	Education - Primary		Education - Secondary		Education - Tertiary		Education Total	
	AM	PM	AM	PM	AM	PM	AM	PM
Vehicles	0	0	250	13	115	7	365	20
Taxis	0	0	23	1	0	0	23	1
OGVs	0	0	0	0	0	0	0	0
PSVs	0	0	0	0	2	0	2	0
Cyclists	0	0	68	4	8	1	76	4
Vehicle Occupants	0	0	57	3	0	0	57	3
Pedestrians	0	0	57	3	41	2	98	5
Public Transport Users	0	0	114	6	70	2	184	8
Total	-1	0	568	29	237	12	804	41

Source: WSP Calculated

Total External Residential Trips

7.10.4 The total external trips by travel purpose have been summarised below, included the final trip rate that is forecasted for the development.

Table 7.12 Total External Trip Rates by Travel Purpose for Home Based Trips (Vehicles Only)

Trip Purpose	Vehicle Trip Rate	
	AM	PM
Work	0.1620	0.1241
Shopping	0.0346	0.0393
Leisure / Visits	0.0182	0.0532
Personal Business	0.0923	0.0706
Others	0.0183	0.0161
Primary - Education	0.0000	0.0000
Secondary - Education	0.0649	0.0033
Tertiary - Education	0.0300	0.0019
Total	0.4203	0.3086

Source: WSP Calculated

7.11 Non-Residential Trip Generation

7.11.1 As a mixed-use development, some of the non-residential trips will be generated by the residents of the development, with a degree of internalisation being associated with specific home-based trip purposes.

7.11.2 The home-based trips associated with these land-uses can be discounted from the non-residential trip generation in order to avoid double-counting. The resultant trip generation is shown in Tables 7.13 and 7.14 below. The non-residential land uses have been grouped into the same categories as the Home based trip purposes. The non-residential trip rates applied are shown in *Table 6.2* of the *Trip Generation Technical Note*, attached to this document within **Appendix F**.

Table 7.13 Non-Residential Land-Use Trip Generation (AM Peak) – Vehicles Only

Land Use	AM		HB Internal AM		Residual External Trips	
	Arr	Dep	Arr	Dep	Arr	Dep
Office / Employment	202	43	8	62	140	36
Retail	68	65	0	0	68	65
Leisure	11	17	11	7	4	6
Personal Business	45	36	16	24	21	21
Education	33	27	0	0	33	27
Others	17	15	8	9	8	7
Total	375	203	42	101	274	161

Source: WSP Calculated

Table 7.14 Non-Residential Land-Use Trip Generation (PM Peak) – Vehicles Only

Land Use	PM		HB Internal PM		Residual External Trips	
	Arr	Dep	Arr	Dep	Arr	Dep
Office / Employment	27	170	48	5	21	122
Retail	79	80	0	0	79	80
Leisure	55	36	20	32	23	16
Personal Business	30	34	13	17	13	20
Education	0	0	0	0	0	0
Others	3	12	12	3	0	0
Total	193	331	93	57	136	238

Source: WSP Calculated

7.11.3 The totals for the non-residential development are 435 and 374 two way trips for the AM and PM peaks respectively.

8 Trip Distribution and Assignment

8.1 Introduction

8.1.1 Trip Distribution Technical Note (TN2) sets out the methodology for deriving the trip distribution generated by travelling external to the new development. This is attached as **Appendix G** and should be read in conjunction with this Transport Assessment. For ease of reference, a summary of the TN2 is provided below.

8.1.2 The vehicular trips summarised previously have been distributed and assigned to the network using the methodology outlined below.

8.2 Bespoke Methodology

8.2.1 The methodology to determine the distribution of external trips from the development uses a range of sources to provide a bespoke hybrid distribution for the Wellesley development. The data sets used to inform the trip distribution for all trip purpose types are as follows:

- Rushmoor Core Strategy Transport Assessment, Rushmoor Borough Council (RBC) – 2009;
- Road Side Interview Data – Sky High Surveys September 2011; and
- Journey to Work Census Data – 2001.

8.2.2 The most appropriate dataset or combination of datasets are utilised to determine the distribution for each trip purpose. The methodology adopted allows for a tailor-made distribution reflective of the Wellesley development mix and considers the facilities available locally and further afield.

8.2.3 Trip distributions have been considered separately for residential and non-residential uses on site and are outlined below against specific journey purposes.

8.3 Residential Trip Distribution

8.3.1 A summary of the methodology used to compile the residential trip distribution for each journey purpose is provided below.

Work Trip Distribution

8.3.2 The Travel to Work bespoke distribution was created by adjusting the Rushmoor Core Strategy TA distribution data to account for internalised movements within Wellesley (10%), and to account for 20.2% of trips travelling within Aldershot as indicated by the RSI distribution and the 2001 Census Journey to Work distributions.

Shopping Trip Distribution

8.3.3 To establish the shopping trip distribution, facilities within the immediate vicinity of the site and the surrounding catchment were considered in terms of size and journey time to each establishment. This allowed the forecast attractiveness of each facility to be identified and informed the proportion of trips travelling to each destination.

Education Trip Distribution

8.3.4 The Primary School and Secondary school distributions were predetermined by all primary trips remaining internal to the development. As advised during pre-application discussions with RBC and HCC all secondary school trips are accommodated within Connaught School in Farnborough.

8.3.5 Higher education trips were distributed based on the locality and size of each facility within Aldershot, Farnborough and Farnham. These areas of assessment accord with those identified in the Rushmoor Core Strategy Transport Assessment (2009).

Personal Business, Leisure and Other Distributions

8.3.6 Personal Business, Leisure and other trip purposes have utilised RSI data to inform the distribution.

Summary of Residential Distributions

8.3.7 Table 8.1 below provides a summary of the residential distributions.

Table 8.1 Residential Distributions

Area	Destination		Work	Shopping	Leisure	Primary Education	Secondary Education	Higher Education	Personal Business	Other
A		Internalised	10.00%	0.00%	20.00%	100%	0%	0.00%	10.00%	20.00%
B		Aldershot (Rushmoor)	20.20%	54.00%	41.10%	0%	100.00%	15.00%	41.50%	17.80%
		Farnborough (Rushmoor)	8.10%	18.00%	8.60%	0%	0.00%	45.00%	3.50%	17.80%
C		Farnborough (Rushmoor)	8.10%	0.00%	8.60%	0.00%	0.00%	25.00%	3.50%	17.80%
	Hampshire	Basingstoke & Deane	1.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		East Hampshire	1.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Winchester	0.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Fleet (Hart)	1.20%	5.00%	2.16%	0.00%	0.00%	0.00%	0.00%	0.00%
		Rest of Hart	1.80%	0.00%		0.00%	0.00%	0.00%	0.00%	0.00%
		Rest of Hampshire	0.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	London	Inner London	3.80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Outer London	3.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Berkshire	Bracknell Forest	1.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Reading	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Slough	0.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		West Berkshire	0.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Windsor & Maidenhead	0.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Wokingham	0.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Surrey	Elmbridge	0.80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Epsom & Ewell	0.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Guildford	9.70%	0.00%	6.49%	0.00%	0.00%	0.00%	0.00%	26.70%
		Mole Valley	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Reigate & Banstead	0.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Runnymede	1.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Spelthorne	0.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Woking	1.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Camberley (Surrey Heath)	4.60%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Rest of Surrey Heath	5.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Farnham (Waverley)	7.50%	18.00%	12.97%	0.00%	0.00%	15.00%	41.50%	0.00%
		Rest of Waverley	1.50%	0.00%		0.00%	0.00%			0.00%
		Tandridge	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	West Sussex	West Sussex	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Rest of UK	Rest of UK	1.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Non UK	Non UK	0.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

8.4 Non-Residential Trip Distribution

8.4.1 Non-residential trips employ the same distribution as the residential trip distribution for all purposes, adjusted to remove internalised trips within the development. The exception to this is Primary School trips which consist of teachers travelling from home outside the development to work at each school, and therefore the transposed work purpose distribution has been used in this instance.

8.5 HGV Trip Distribution

8.5.1 The HGV trips associated with the residential and non-residential development have been assigned to the model using the non-residential travel to work distribution. This adds an additional 76 trips to the AM peak and 43 to the PM peak.

8.6 Sectored Development Trip Distribution

8.6.1 A sector system has been employed within the traffic model to provide an informative distribution of the development trips. The scoping system used to distribute the trips is detailed within TN2 and is summarised below in Tables 8.2 and 8.3 as follows:

Table 8.2 AM Development Trips Sectored

	Aldershot	Farnborough	Farnham	Ash & Ash Vale	Camberley, Frimley & Byfleet	Hart	Guildford, Horsham & SW London	South West England	Hampshire, Chichester & Worthing	Sandhurst, Crowthorne, South Wokingham, South Bracknell & Ascot	North Wales	Kent	Total
Aldershot	803.94	183.49	162.38	38.73	70.94	35.38	104.9	9.29	12.93	7.02	25.32	33.56	1487.88
Farnborough	133.93	0	0	0	0	0	0	0	0	0	0	0	133.93
Farnham	119.7	0	0	0	0	0	0	0	0	0	0	0	119.7
Ash & Ash Vale	29.71	0	0	0	0	0	0	0	0	0	0	0	29.71
Camberley, Frimley & Byfleet	41.46	0	0	0	0	0	0	0	0	0	0	0	41.46
Hart	24.38	0	0	0	0	0	0	0	0	0	0	0	24.38
Guildford, Horsham & SW London	64.03	0	0	0	0	0	0	0	0	0	0	0	64.03
South West England	5.08	0	0	0	0	0	0	0	0	0	0	0	5.08
Hampshire, Chichester & Worthing	6.97	0	0	0	0	0	0	0	0	0	0	0	6.97
Sandhurst, Crowthorne, South Wokingham, South Bracknell & Ascot	3.85	0	0	0	0	0	0	0	0	0	0	0	3.85
North Wales	13.91	0	0	0	0	0	0	0	0	0	0	0	13.91
Kent	18.4	0	0	0	0	0	0	0	0	0	0	0	18.4
Total	1265.36	183.49	162.38	38.73	70.94	35.38	104.9	9.29	12.93	7.02	25.32	33.56	1949.3

Table 8.3 PM Development Trips Sectored

	Aldershot	Farnborough	Farnham	Ash & Ash Vale	Camberley, Frimley & Byfleet	Hart	Guildford, Horsham & SW London	South West England	Hampshire, Chichester & Worthing	Sandhurst, Crowthorne, South Wokingham, South Bracknell & Ascot	North Wales	Kent	Total
Aldershot	668.32	106.59	145.52	44.08	32.33	25.93	49.91	3.46	4.74	2.66	9.61	12.77	1105.92
Farnborough	155.57	0	0	0	0	0	0	0	0	0	0	0	155.57
Farnham	144.30	0	0	0	0	0	0	0	0	0	0	0	144.30
Ash & Ash Vale	42.30	0	0	0	0	0	0	0	0	0	0	0	42.30
Camberley, Frimley & Byfleet	66.48	0	0	0	0	0	0	0	0	0	0	0	66.48
Hart	38.22	0	0	0	0	0	0	0	0	0	0	0	38.22
Guildford, Horsham & SW London	105.56	0	0	0	0	0	0	0	0	0	0	0	105.56
South West England	8.41	0	0	0	0	0	0	0	0	0	0	0	8.41
Hampshire, Chichester & Worthing	11.71	0	0	0	0	0	0	0	0	0	0	0	11.71
Sandhurst, Crowthorne, South Wokingham, South Bracknell & Ascot	6.29	0	0	0	0	0	0	0	0	0	0	0	6.29
North Wales	22.81	0	0	0	0	0	0	0	0	0	0	0	22.81
Kent	30.33	0	0	0	0	0	0	0	0	0	0	0	30.33
Total	1300.30	106.59	145.52	44.08	32.33	25.93	49.91	3.46	4.74	2.66	9.61	12.77	1737.90

8.6.2 Both the AM and PM peak development matrices show most movements from the development are contained within Aldershot (1) with Farnborough (2) and Farnham (3) being the most popular origins and destinations outside of Aldershot.

9 Committed Developments and Infrastructure

9.1.1 To provide a robust overall assessment of the future highway network it is necessary to consider committed developments in the locality of the site and incorporate these into the impact assessment accordingly. The scope of committed development used in this assessment has been agreed with HCC, SCC, RBC and the HA. WSP has obtained information regarding the proposed developments from submitted applications and their associated Transport Assessments. The full list of committed developments included in the impact assessment are summarised below.

- Cody Technology Park, Fleet

  This site is located to the east of Fleet towards Farnborough. Site access is gained from the A327 and Ively Road.

  The proposed development is for the erection of a business park consisting of 21,111sqm of B1(c), B2 and B8 High-Tech, Enterprise and Flexible Business units and two Data Centres with associated parking, road layout and landscaping. The traffic distribution is based on journey to work statistics

- Deepcut, Nr Camberley, Surrey

  Following the announcement of the MoD's intention to leave the Princess Royal Barracks in Deepcut the site has been identified as suitable for new residential led development. The site is identified to provide 1200 new homes as well as a primary school, community buildings, shops and public open space.

  The Deepcut area will accommodate a sustainable expanded settlement formed out of the former PRB site and the existing Deepcut village.

- Farnborough Business Park

  Farnborough Business Park is located adjacent to Farnborough airport. The proposals are for 478 dwellings, 120 bed hotel, leisure club, conference facilities, public house, restaurant, CostCo warehouse 13,006sqm B8, remaining capacity of 36,277sqm for B1 use for land not currently occupied. The exact details of this site are difficult to ascertain, as it is covered by a number of different planning applications and appeals, and some elements have already been completed. The assessment is therefore based on information provided by Rushmoor Borough Council.

- Pyestock North, Fleet

  The site is located to the east of Fleet. The development comprises 126,216sqm of additional B8 warehousing (1,530 staff) and 90 jobs with retained buildings

- Queen Elizabeth Barracks, Church Crookham

  The site is located approximately 4km to the south of Fleet town centre, It was formerly occupied by the Ministry of Defence Khukri Ghurka regiment. Proposals include 872 dwellings and ancillary uses.

- Queensgate, Farnborough

  The development is mixed-use, comprising 399 units, with outline permission for 8,064sqm B1a B1b B1c and 896sqm of B8 land uses. As of 2011, approximately 100 units at Queensgate have been completed and are now occupied and have therefore not been included within the model as they will be taken account of in the background traffic counts.

- Westgate, Aldershot

  The consented development comprises a retail and entertainment complex, including a food store with petrol filling station (7,205sqm GIA with associated 347sqm plant mezzanine), a cinema (1241 seats), budget hotel (91 rooms) and eight restaurant units (2,557sqm GIA) accompanied by a total car parking provision of 522 spaces.

  The development is located within Aldershot town centre. The site is bounded by three main roads, Wellington Avenue to the north and west (from which vehicular access to the proposed site will be taken), Alexandra Road to the south and Barrack Road/ Princes Way to the east.

- Whitehill Bordon Eco-Town

  Whitehill Bordon proposes a major new mixed-use town centre with around 30,000 square metres of retail area. The proposals will also include up to three new primary schools, early years centres and a new children's centre, and improved and larger facilities for the secondary school sites for commercial leisure facilities. Around 4,000 new homes 5,500 jobs will be created. The development will be supported through the creation of a central public transport hub and modern public transport system.

- East Street, Farnham

  Situated within the Borough of Waverley, the East Street development covers an area of approximately 3.95ha on the edge of Farnham's town centre. The development is bounded to the northwest by East Street and to the northeast by Dogflud Way. The site adjoins Farnham Sports Centre to the east and extends towards the River Wey to the southeast. To the southwest and west, Brightwells Road and South Street bound the site.

  The East Street development will see the provision of 239 homes, 25 new shops, restaurants and cafes, including the two restaurants in the restored Brightwell House, as well as the new state-of-the-art cinema.

- Farnborough Airport

  Increase of annual business aviation movements from 28,000 to 50,000.

9.1.2 For the purposes of assessing the traffic impact of the committed developments and associated infrastructure, it has been assumed that all committed developments will be fully completed in 2022 and 2026.

9.1.3 The inclusion of the committed developments within the traffic impact assessment is fully detailed within the Model Forecasting Report.

9.1.4 Where available, trip generation figures were obtained from the relevant Transport Assessment (TA) for each development. Where no TA was available, trip generations were calculated from a selection of representative sites in the TRICS trip generation database. The rates utilised for each of the 13 available land use categories for the committed developments are shown in Table 9.1 and Table 9.2 below and have been derived from the TRICS 2011 database.

Table 9.1 TRICS Trip Rates – AM Peak

Employment Type		0800 - 0900		
		In	Out	Total
Employment - Business Park	Number of Employees	0.323	0.052	0.375
	GFA (per 100sqm)	1.525	0.287	1.812
Residential - Privately Owned	Per Dwelling	0.148	0.37	0.518
Hotels	Per Bedroom	0.118	0.194	0.312
Primary School	GFA (per 100sqm)	5.002	3.553	8.555
Shopping Centre - Local Shops	GFA (per 100sqm)	4.105	3.886	7.991
Community Centre	GFA (per 100sqm)	0.516	0.344	0.86
Retail Park - Including Food	GFA (per 100sqm)	1.555	0.93	2.485
Multiplex Cinema	Per Seat	0	0	0
Sheltered Accommodation	Land Area (per 1 ha)	12.241	8.851	21.092
Leisure Centre	Land Area (per 1 ha)	14.527	11.818	26.345
Tennis Club	Land Area (per 1 ha)	3.084	0.441	3.525
Food Superstore	GFA (per 100sqm)	3.579	2.348	5.927
Warehouse	GFA (per 100sqm)	0.159	0.065	0.224

Table 9.2 TRICS Trip Rates – PM Peak

Employment Type		1700 - 1800		
		In	Out	Total
Employment - Business Park	Number of Employees	0.04	0.268	0.309
	GFA (per 100sqm)	0.201	1.231	1.432
Residential - Privately Owned	Per Dwelling	0.365	0.228	0.593
Hotels	Per Bedroom	0.161	0.094	0.255
Primary School	GFA (per 100sqm)	0.284	0.555	0.839
Shopping Centre - Local Shops	GFA (per 100sqm)	4.92	5.006	9.926
Community Centre	GFA (per 100sqm)	0.951	0.761	1.712
Retail Park - Including Food	GFA (per 100sqm)	2.092	2.696	4.788
Multiplex Cinema	Per Seat	0.043	0.04	0.083
Sheltered Accommodation	Land Area (per 1 ha)	6.591	6.591	13.182
Leisure Centre	Land Area (per 1 ha)	36.216	26.304	62.52
Tennis Club	Land Area (per 1 ha)	5.727	7.489	13.216
Food Superstore	GFA (per 100sqm)	5.689	6.252	11.941
Warehouse	GFA (per 100sqm)	0.059	0.155	0.214

9.1.5 The resultant trip generation associated with each development for both forecast years can be seen in Table 9.3 below.

Table 9.3 TRICS Trip Rates – PM Peak

Development	AM			PM		
	In	Out	Total	In	Out	Total
Deepcut	589	711	1301	723	624	1347
Farnborough Business Park	775	353	1128	519	836	1354
East Street Farnham	188	180	368	324	348	672
Westgate	324	227	551	632	640	1272
Queensgate	77	53	130	54	82	136
Queen Elizabeth Barracks	170	356	526	371	147	518
Pyestock North	287	118	405	102	268	370
Whitehill Bordon	605	883	1488	1003	824	1826
Cody Technology Park	100	42	142	29	96	125
Farnborough Airport	108	23	131	24	99	123

10 Impact Assessment Methodology

10.1 Introduction

10.1.1 WSP has developed an AUE Traffic Model (AUETM) of the Aldershot and Farnborough areas to ascertain the impact of the Wellesley development on the local transport network.

10.1.2 A SATURN based traffic simulation and assignment model has been developed The development and calibration of the 2011 base year model is set out in the AUETM Local Model Validation Report (March 2012).

10.1.3 The modelled assessment area covers all key highway links and junctions extending from the M3 (Junctions 4 and 4a) in the north to the A31 in the south and from B3013 / A323 in the west to B3411 in the east with a greater emphasis on the area immediately surrounding the proposed Wellesley development.

10.1.4 The simulation area includes all junctions that HCC, SCC and the HA require to be assessed as part of the Transport Assessment for AUE. These were agreed by all parties in their response to the TA Scoping Note (July 2011).

10.1.5 The model has been developed in accordance with the DfT web based Transport Analysis Guidance (WebTAG) on http://www.dft.gov.uk/webtag and the Highways Agency's Design Manual for Roads and Bridges (DMRB) Volume 12. These provide detailed guidance on the appraisal of transport projects and wider advice on scoping and carrying out transport studies.

10.2 Travel Demand

10.2.1 The process for determining travel demand in relation to Wellesley comprises two components as follows:

- Determination of a suitable assessment year
- Determining assessment year traffic generation

10.2.2 The approach to assessing each of these components is presented in detail below.

Assessment Years

10.2.3 Wellesley will be built over a 13 year period (2013-2026), with completion of the development in 2026. To inform this Transport Assessment and the Environmental Impact Assessment, Air Quality and Noise analyses the assessment has been undertaken based on the following years.

- Interim year (2022)
- The greatest level of construction traffic will be apparent in 2022, when the build out rate will be in the order of 350 dwellings and in combination, the greatest level of the development will be occupied (2,725 dwellings plus ancillary uses). Therefore full consideration of the traffic movements and routing is detailed in the following sections.
- Development completion (2026)

10.2.4 Phase 1 is anticipated to be completed in 2014 and a separate bespoke assessment is therefore detailed later in the document under the Phase 1 Impact assessment.

Assessment Year Traffic Generation

10.2.5 For each forecast year two scenarios have been assessed as follows:

- Do Minimum (DM) – without Wellesley development
- Do Something (DS) – with Wellesley development.

10.2.6 The Do Something models have been developed from the 2022 and 2026 DM models which are detailed below and include all the committed development and associated infrastructure for the area. It should be noted that background traffic volumes across the AUETM are the same in both the 2026 DM and 2026 DS models, the only difference being the inclusion of the proposed development in the DS model.

10.2.7 The development of the forecast matrices and highway network are detailed in the 'AUETM. Forecast Modelling Report (November 2012'). The forecast matrices were developed to include two elements:

- Background growth due to minor windfall developments and changes in population segmentation, average income and car ownership
- Expected trip generation associated with committed developments

10.2.8 The methodology applied in deriving the 2022 and 2026 forecast year traffic matrices is detailed in the AUETM. Forecast Modelling Report. (November 2012), but can be summarised as a combination of the following components:

- Base Year traffic (taken directly from the validated 2011 Base models)
- National Trip End Model (NTEM) data which provide growth factors for car and public transport trips using the Version 6.2 datasets within the TEMPRO Version 6.2 software
- Road Transport Forecasts 2009 (RTF09) which provide growth factors for LGV and HGV trips
- Information on significant developments already committed
- Impacts of fuel and income adjustments over time

10.2.9 The basic approach for the construction of the forecast matrices is that the significant developments are to be modelled explicitly but the overall level of growth in the model area is constrained to DfT's National Trip End Model (NTEM) forecasts. NTEM forecasts are based on the projections of growth in planning data, car ownership, and resultant growth in trip-making by different modes of transport.

10.2.10 Adoption of this methodology results in trips totals for each forecast year and peak periods as summarised in Table 10.1 below. The overall increase in the number of trips between 2011 and 2022 is forecast to be 20% in the AM peak and 22% in the PM peak. An average increase from 2011 to 2026 is 24% in the AM peak and 28% in the PM peak.

Table 10.1 2011-2022 and 2011-2026 AUETM

Time Period	User Class	2011	2022	2026	Forecast growth 2011 - 2022	Forecast growth 2011 - 2026
AM peak	Car	71,090	84,442	87,113	19%	23%
	LGV	5,035	6,988	7,633	39%	52%
	HGV	3,332	3,615	3,692	8%	11%
	Total	79,457	95,045	98,438	20%	24%
PM peak	Car	69,797	84,693	88,256	21%	26%
	LGV	4,527	6,284	6,863	39%	52%
	HGV	1,656	1,797	1,835	9%	11%
	Total	75,980	92,774	96,954	22%	28%

10.2.11 The impact of the forecast traffic levels on the strategic (AUETM) highway network are discussed in the AUETM. Forecast Modelling Report. (November 2012).

10.3 Wellesley Development Traffic

10.3.1 The 2026 Wellesley trip generation and distribution, including the internalisation of trips, have been detailed in previous sections. This trip generation and distributions were used to create the development matrices and combined with the Do Minimum 2026 matrices, to create the Do Something Scenario.

10.3.2 The 2022 Wellesley trip generation utilises the same methodology as set out in Section 8 to formulate the development demand, although 2725 dwellings will be built out, with the remaining phases under construction, resulting in a 1480 two-way trips in the AM Peak and 1337 two ways trips in the PM peak. The 2022 development trips were distributed using the same trip distribution as detailed previously in this report.

10.4 Development Infrastructure

Internal development

10.4.1 The internal development network has been coded to reflect the development masterplan. Additional zones are provided in the forecast Do Something scenarios based on the land parcels and land uses proposed. All primary routes internal to the development were coded with speeds of 30mph, with secondary routes set to 20mph speeds.

10.4.2 Individual junction analyses have also been carried out using LinSig signal modelling software, for the new and altered junctions within the model to optimise the junction performance for each of those listed below:

- Alison's Road / Queen's Avenue
- Hospital Hill / A325 Wellington Avenue

10.4.3 These two strands of modelling (strategic and junction modelling) provide a comprehensive approach to the assessment of Wellesley in terms of traffic impacts, the outputs from which can be used as input information for further analyses including environmental aspects.

10.4.4 Additional junction alterations have been introduced at the following locations:

Both the 2022 and 2026 Do Something Scenarios:

- Pennefather's Road / A325 Farnborough Road

The 2026 Do Something only

- Ordnance Road / Thornhill Way
- A331 northbound on slip from Government Road

10.5 Modelling Output

10.5.1 The impact of forecast traffic levels on the highway network, both with and without traffic from Wellesley, are discussed in Section 11.

11 Traffic Impact

11.1 Introduction

11.1.1 The Transportation Strategy, as outlined previously in this report sets out the overarching strategy for Wellesley, including the Highway Strategy. The proposed improvements set out in the Highway Strategy have been incorporated into the AUETM. The following Sections provide a summary of the capacity analysis and model outputs for the network with the introduction of these improvements.

11.2 Highway Strategy

11.2.1 The proposed Highway Strategy improvements adopt current design standards reflected in the Design Manual for Roads & Bridges (DMRB):

- Technical Advice (TA) 79/99 – Traffic Capacity of Urban Roads
- Technical Directive (TD) 16/07 – Geometric Design of Roundabouts
- TD 51/03 – Segregated Left Turns and Subsidiary Deflection Islands at Roundabouts
- TA 78/97 – Design of Roundabout Road Markings at Roundabouts
- TD 42/95 – Major/minor junctions

11.2.2 As noted in the Transportation Strategy section, the Highway Strategy is comprised of the following infrastructure measures:

- A331 north facing on-slip road from Government Road;
- New junction between Government Road and Thornhill Road, with associated new canal bridge;
- Improved Queen's Avenue / Alison's Road signalised junction;
- Re-introduce vehicular access at Pennefather's Road with speed reduction measure and new signal-controlled crossing;
- A325 Farnborough Road lane drop and extended on-slip merge;
- Improvement to Alison's Road on and off-slip junction with the A325 Farnborough Road; and
- Signalisation scheme at the A323 Wellington Avenue / Hospital Hill Junction.

11.2.3 The full infrastructure improvements set out within this section are contained within **WSP Drawing 0364/SK/025** the overview plan, and contained with all the WSP drawings within WSP Technical Drawings section located at the end of the appendices document All infrastructure proposals are deliverable within the extent of the public highway boundary or land controlled by Grainger plc. In addition to inclusion within the AUETM, the infrastructure measures have been subject to detailed independent assessments, utilising the appropriate modelling package (ARCADY, PICADY, LinSig) with full output files contained within **Appendix H**.

11.2.4 The introduction of the north facing A331 on slip road is a strategic improvement and results in fundamental alterations to the existing distribution of trips on the highway network. A greater number of trips are attracted to the A331, and in turn travel via the Government Road / Thornhill Road junction. Improvements to the Government Road / Thornhill Road junction are therefore proposed to accommodate the additional traffic.

11.2.5 The initial model runs indicate that no further significant infrastructure improvements are required to address capacity although small alterations in locations have been identified. Notwithstanding this, various additional measures are proposed, as cited above, with a focus on improving safety for pedestrians and cyclists.

11.3 Traffic Distribution

11.3.1 The AUETM distributes the development traffic onto the highway network based upon driver destinations. The AUETM distribution of inbound and outbound development traffic is illustrated on **Figures 9** and **10** for the AM and PM peaks respectively.

11.3.2 The Figures highlight that the predominant AM peak departure and PM peak arrival flows are distributed evenly across the main access corridors. In the AM peak hour 112 departures travel via the A331 on-slip, with the remainder utilising alternative routes across the network. Without an A331 off-slip, the arrivals in the PM peak hour distribute evenly across the network, with minimal impact.

11.4 AUETM Output Summary

2026 Do Minimum

11.4.1 **Figures 11** and **12** illustrate junction capacities across the network for the 2026 Do Minimum scenario for both the AM and PM peak hours. **Figures 11** - **12** identifies junctions that have a volume over capacity (V/C) greater than 85%, when considering the most constrained arm. Junctions operating at a V/C of between 85%-100% are denoted amber and junctions operating over 100% are denoted red. **Figures 11** - **12**, 2026 Do-Minimum provides a point of reference against **Figures 13** and **14** which illustrates the junction capacities for 2026 Do-Something.

2026 Do Something

11.4.2 The 2026 Do Something scenario includes the Wellesley development traffic and improvement measures as detailed above.

11.4.3 **Figures 13-14** illustrates junction capacities across the network for the 2026 Do Something scenario for both the AM and PM peak hours. Figure J2 identifies junctions that have a volume over capacity (V/C) greater than 85%, when considering the most constrained arm. Junctions operating at a V/C of between 85%-100% are denoted amber and junctions operating over 100% are denoted red. **Figures 13-14** identifies the change to junction capacity with the addition of development traffic and measures outlined in the Highway Strategy.

11.4.4 To provide greater detail to the information provided in **Figures 11-14**, a summary table has been produced (within **Appendix I**) which shows the V/C for all arms at any junction where a single arm has a V/C greater than 85%. In addition, the table is colour coded to show whether the junction is close to capacity, over capacity or whether the development has had a positive impact upon the junction.

11.4.5 Whilst a number of junctions are identified as being close or over capacity within the modelled area, only the junctions that the Wellesley development is considered to be having an impact upon are to be reviewed in greater detail.

11.4.6 The Wellesley development will make up the majority of the growth in the area for the forthcoming planning period, providing 3,850 residential homes and other uses up to 2026. Current policy dictates that new developments promote/provide sustainable modes of travel, utilising both public transport and slow modes of transport (walking / cycling). This policy has been driven to move away from the previous 'predict and provide' era whereby highway infrastructure was provided to accommodate any increase in traffic. To promote a well thought out sustainable travel strategy it is important to also consider the capacity on the existing highway network and where possible restrict the amount of infrastructure improvements which may reduce the impact of improved public transport provision. Therefore the following assessment assumes that any V/C below 100% on any junction is working below its theoretical capacity and is thus acceptable for a future year 2026 with full development. Notwithstanding this, if the demand does have a significant impact upon a junction taking it over 100% this will be reviewed in more detail.

11.4.7 A rule has been set to the results that any arm containing an increase in V/C of more than 5 over the Do Minimum will be analysed. The table has been colour coded to show the following:

- Amber – Arm has a V/C > 85%
- Red – Arm has a V/C > 100%
- Green – Arm has a V/C < than the Do Minimum
- Bold – Arm has a V/C increase ≥ 5

11.4.8 These resulting junctions for HCC are provided in Table 11.1.

Table 11.1 Surrey County Council V/C results

Junction	Junction Arm	DM – AM Peak	DS – AM Peak	DM – PM Peak	DS – PM Peak
A3016 Upper Hale Road / A325 Farnborough Road / A325 Hale Road	A3016 Upper Hale Road	86.79	**92.64**	69.8	72
	A325 Farnborough Road	63.09	61.27	69.39	71.26
	A325 Hale Road	85.56	90.52	67.6	70.59
A325 / Shepherd and Flock Roundabout (A31/A325)	A325 (north)	84.58	79.52	73.98	**85.1**
	Shepherd and Flock Roundabout	40.11	39.42	35.82	33.98
A323 Aldershot Road / A331 slip roads roundabout	A323 Aldershot Road (east)	105.72	104.23	60.6	**101.27**
	A331 slip roads roundabout	33.03	32.89	50.05	43.3
Oxenden Road / A331 slip roads roundabout	Oxenden Road	108.89	103.94	15.71	**100.88**
	A331 slip roads roundabout	18.27	24.99	18.18	19.7
Oxenden Road / A331 slip roads roundabout	Oxenden Road	100	100	88.73	**100**
	A331 slip roads roundabout	57.87	54.12	56.79	56.45
A331 northbound off-slip / A331 slip roads roundabout	A331 northbound off-slip	83.91	**95.97**	95.43	**101.96**
	A331 slip roads roundabout	50.13	49.65	57.19	58.66
B3411 Ash Hill Road / B3206 Shawfield Road / B3411 Vale Road / Wharf Road	B3411 Ash Hill Road	74.43	79.67	90.43	**98.7**
	B3411 Vale Road	46.15	52.08	43.13	51.47
	Wharf Road	36.2	40.1	30.69	35.09
	B3206 Shawfield Road	70.84	72.83	55.53	63.55
Vale Road / Lakeside Road	Vale Road (east)	91.47	**98.4**	92.98	**99.46**
	Lakeside Road	95.81	90.31	85.18	81.65
	Vale Road (north)	56.67	58.59	55.14	56.21
Lakeside Road / Old Farm Place	Lakeside Road (east)	92.48	**108.71**	94.92	**104.84**
	Lakeside Road (west)	42.19	71.23	90.39	**99.87**
	Old Farm Place	28.18	27.97	10	9.97
A31 Farnham by-pass / Weydon Lane	A31 Farnham by-pass (South)	107.23	105.87	105.73	103.06
	Weydon Lane	108.46	108.01	104.35	**113.35**
M3 Junction 4 / A331 southern roundabout	A331 southern roundabout Internal	80.36	81.45	82.9	85.57
	Frimley Business Park access roundabout	40.25	44.51	793.09	**1001.92**

11.4.9 A total of 11 junctions within SCC have identified an increase in V/C of 5 or greater and of these 7 have this increase greater than 100% and should be reviewed in greater detail.

11.4.10 Four of the junctions identified above are located on the existing A323 / A331 grade separated junction which would act as an important secondary link onto the wider network for the development. Further review of the traffic flows at this junction identified unequal lane usage, especially on the off-slips and from the A331 as well as traffic heading into Aldershot. Therefore, WSP have proposed a revised white line arrangement on the roundabout that would distribute the traffic across the lanes more evenly, reducing the potential for queuing.

11.4.11 The revised arrangement is shown within **WSP Drawing 0364/SK/037** and has been reassessed within the ARCADY assessment software. Considering the ARCADY assessment, RFC values of up to 0.90 are generally acceptable causing small amounts of delay and queuing. An RFC value of 1.0 demonstrates the junction or approach arm has reached the theoretical design capacity, with values greater than 1.0 causing significant levels of vehicular delay and queuing. The summary results are shown within Table 11.3.

Table 11.3 A323 / A331 Grade Separated Junction 2026 Do-Something Junction Assessment (ARCADY Results)

2026 Do-Something Assessment				
Arm	Weekday AM Peak		Weekday PM Peak	
	RFC	MMQ	RFC	MMQ
A331 SB Off-Slip	0.400	1	0.588	2
A323 Aldershot Road	0.521	2	0.652	2
Oxenden Road	0.472	1	0.537	2
A331 NB Off Slip	0.481	1	0.426	1
A323 Ash road	0.576	2	0.603	2

11.4.12 The results in Table 11.3 now show that with the traffic distributed across the entry lanes the junction works within its theoretical capacity following the introduction of the development.

11.4.13 The model has also identified the Frimley Business Park assess as a critical constraint. This is a site access located off the southern roundabout of the M3 Junction 4. It is a small site, and is only modelled to ensure that the model can replicate surveyed traffic flows at this junction correctly, and the base model closely replicates flows in and out of this site. However, flows using this link are low, and the high V/C ratio on this link is due to high circulating flow at the roundabout reducing the gap frequency. A slight increase in circulatory flow increases the calculated V/C on the access link, but this is not a significant flow, and detailed assessment of this approach is beyond the scope of the SATURN model. As such, this is not considered a significant constraint on the network.

11.4.14 The A31 Farnham by-pass / Weydon Lane junction is an existing signalised junction located more than 4km from the site south west of Farnham and as such is not expected to attract much development traffic. The results show that the development has a positive impact in the morning peak hour, with a slight negative impact in the evening peak. It is likely that this has occurred because the signal timings used in the Do something scenario is the same as the Do Minimum. Amending the signal timings here would address this issue.

11.4.15 The remaining key corridor that appears to be affected by the proposed development is Lakeside Road and a number of the existing junctions along this corridor. Lakeside Road has a number of traffic calming measures along it which have been taken into account in the SATURN model by applying speed-flow curves with low saturation flows and speeds as a proxy for the reduced capacity caused by the traffic calming. This works effectively, as the model closely replicates observed flows in this area. The reduced capacity applied to these links means that capacity at junctions will be similarly constrained, reporting a high V/C ratio. However, this does not mean that the junctions themselves are failing, and a detailed junction assessment will provide very different results.

11.4.16 It should be noted that a strategic traffic model is not capable of modelling the specific impact of particular measures, such as the wide range of speeds along a link with speed bumps, discomfort of travelling over the bumps, or the priority given to eastbound traffic at the railway bridge. Route choice is a function of distance and time, and Lakeside Road would be an attractive route without the restrictions, so restricted speed-flow curves are used as the best representation of the measures to deter traffic from this route.

11.4.17 To indicate this, WSP have undertaken 2 ARCADY assessments of Lakeside Road / Old Farm Place and Lakeside Road / Government Road / Hollybush Lane to show that whilst the model identifies a constraint, in reality the existing arrangement can in fact cope with the traffic. The model has been run assuming only single lane entries into the roundabout due to the unequal lane usage at the junction and therefore provides a robust test. These are provided within Table 11.4 and 11.5

Table 11.4 Lakeside Road / Old Farm Place 2026 Do-Something Junction Assessment (ARCADY Results)

2026 Do-Something Assessment				
Arm	Weekday AM Peak		Weekday PM Peak	
	RFC	MMQ	RFC	MMQ
Old Farm Place	0.429	1	0.154	1
Lakeside Road (E)	0.606	2	0.526	2
Lakeside Road (W)	0.311	1	0.454	1

Table 11.5 Lakeside Road / Government Road / Hollybush Lane 2026 Do-Something Junction Assessment (ARCADY Results)

2026 Do-Something Assessment				
Arm	Weekday AM Peak		Weekday PM Peak	
	RFC	MMQ	RFC	MMQ
Hollybush Lane	0.028	0	0.097	1
Lakeside Road	0.584	2	0.352	1
Government Road	0.401	1	0.442	1

11.4.18 As can be seen in both ARCADY assessments, the existing arrangement can in fact accommodate the proposed traffic generation.

11.4.19 The junction materially affected by the development however is the Lakeside Road / Vale Road which has seen an increase in traffic. The results have shown an increase in V/C on Vale Road (E) to close to capacity (99.5%), howbeit there has also been a decrease in both peak hours due to the development on Lakeside Road and the whole junction still works below its full theoretical capacity.

11.4.20 In reality due to the traffic calming in this area the traffic is expected to be lower than that shown in the modelling and considering the residential location of the junction and existing calming features there is no proposal to make any changes to the junction arrangement. Any improvements are likely to attract traffic through a location SCC have already undertaken works to reduce traffic.

11.4.21 Having analysed the SCC junctions, Table 11.6 identifies the junctions in Hampshire that require further review.

Table 11.6 Hampshire County Council V/C results

Junction	Junction Arm	DM – AM Peak	DS – AM Peak	DM – PM Peak	DS – PM Peak
A287 Odiham Road / B3013 Beacon Hill Road	B3013 Beacon Hill Road	108.15	107.24	105.6	104.89
	A287 Odiham Road (east)	83.21	95.03	101.5	101.18
	A287 Odiham Road (west)	108.64	111.4	112.35	112.25
A287 Odiham Road / Dora's Green Lane	A287 Odiham Road (east)	81.4	88.12	83.09	83.09
	A287 Odiham Road (west)	37.66	36.39	44.52	44.96
	Dora's Green Lane (south)	27.8	27.27	23.18	21.12
A323 High Street / Ordnance Road / Windsor Way	A323 High Street (east)	94.56	100.24	61.81	99.77
	A323 High Street (west)	64.69	96.39	98.33	103.64
	Ordnance Road	46.95	78.51	61.1	89.47
	Windsor Way	30.09	74.9	41.53	101.08
A323 Wellington Avenue / Hospital Hill / B3007 Princes Way	Hospital Hill	81.94	84.04	87.54	94.04
	B3007 Princes Way	34.51	9.48	82.6	44.84
	A323 Wellington Avenue (west)	71.81	84.16	80.96	97.72
	A323 Wellington Avenue (east)	64.21	41.25	64.69	48.35
A325 Farnborough Road / A323 Wellington Avenue / Wellesley Road	A325 Farnborough Road (north)	85.43	101.44	99.37	103.95
	A325 Farnborough Road (south)	80.09	87.62	50.29	64.64
	A323 Wellington Avenue	63.25	68.3	70.38	78.63
	Wellesley Road	96.13	100.78	72.28	87.76
Thornhill Road / Government Road / Ordnance Road	Thornhill Road	31.2	85.24	33.4	100.4
	Government Road	108.1	42.58	92.63	31.97
	Ordnance Road	55.43	91.32	74.19	78.44
	Gallwey Road	Not in DM	73.62	Not in DM	82.22
Lakeside Road / Government Road / Hollybush Lane	Lakeside Road	71.69	99.9	44.6	58.87
	Government Road	54.43	21.72	84.86	23.93
	Hollybush Lane	2.31	1.69	8.42	5.25
A323 Aldershot Road / Reading Road S	A323 Reading Road S (north)	96.17	93.98	94.57	87.46
	A323 Aldershot Road	84.93	77.36	94.49	99.58
	Reading Road S (south)	43.46	42.79	58.71	57.37
A323 Ash Road / Lower Newport Road / B3208 Lower Farnham Road	A323 Ash Road	97.35	89	81.42	86.84
	Lower Newport Road	97.4	91.49	77.49	85.51
	B3208 Lower Farnham Road	99.36	91.21	80.56	94.68
A3011 Lynchford Road / Queens Roundabout	A3011 Lynchford Road	86.43	92.41	54.99	52.31
	Queens Roundabout	29.96	31.63	31.52	33.82
A3011 Lynchford Road / A331 slip roads	A331 northbound off-slip	89.2	99.84	73.49	92.49
	A3011 Lynchford Road (east)	97.54	97.51	72.1	79.81
	A3011 Lynchford Road (west)	85.41	77.64	103.4	102.27

North Lane (mid link between Ordnance Road & Deadbrook Lane)	North Lane (west)	69.52	87.08	66.61	84.12
	North Lane (south)	71	87.87	66.2	88.22
North Lane / Lower Newport Road	North Lane (north)	77.09	92.14	96.22	88.84
	North Lane (south)	43.47	50.35	42.36	48.11
Park Road / Reading Road / Sycamore Road	Park Road	101.33	101.52	77.65	85.46
	Sycamore Road	13.14	12.6	8.18	8.11
	Reading Road	36.08	34.11	2.56	0.52
B3007 Grosvenor Road / Birchett Road	B3007 Grosvenor Road (south)	55.97	89.46	40.84	34.83
	B3007 Grosvenor Road (north)	38.25	42.25	33.32	41.93
B3208 Lower Farnham Road / Tongham Road	B3208 Lower Farnham Road (south)	78.27	86.85	52.59	57.4
	B3208 Lower Farnham Road (north)	72.24	94.2	102.82	100.47
	Tongham Road	41.06	62.59	75.48	75.59
A323 High Street / Windsor Way	A323 High Street (east)	67.06	**100.39**	49.8	63.67
	A323 High Street (west)	47.24	42.52	69.73	59.58
Windsor Way / A323 High Street	Windsor Way (south)	15.34	34.26	26.79	**100.77**
	Windsor Way (north)	5.85	10.67	2.23	2.82
	A323 High Street (east)	41.27	29.55	38.35	35.18
Ordnance Road / Louise Margaret Road	Louise Margaret Road	15.66	91.46	18.6	99.63
	Ordnance Road (west)	14.55	58.5	22.04	51.79
	Ordnance Road (east)	19.83	48.77	17.69	40.28
Louise Margaret Road / Gallwey Road / Hospital Road	Gallwey Road (south)	6.94	86.72	7.12	54.56
	Gallwey Road (east)	9.89	2.45	11.54	1.15
	Hospital Road	13.96	15.75	25.3	22.28

11.4.22 A total of 20 junctions within SCC have identified an increase in V/C of 5 or greater and of these 5 (2 of which are part of other junctions) have an increase greater than 100% and should be reviewed in greater detail. These include:

- A323 High Street / Ordnance Road / Windsor Way (A323 High Street / Windsor Way)
- A325 Farnborough Road / A323 Wellington Avenue / Wellesley Road
- Thornhill Road / Government Road / Ordnance Road

11.4.23 The junctions in question are a result of traffic redistributing along the A323 corridor which connects the A325 Farnborough Road to the A331 through Aldershot. As such, 2 of these junctions have been considered in more detail as part of the transport strategy which can be seen later in this report (A323 High Street / Ordnance Road / Windsor Way (A323 High Street / Windsor Way and Thornhill Road / Government Road / Ordnance Road).

11.4.24 The remaining junction identified is the existing Wellington Roundabout located to the south east of the development site. The addition of the A331 on-sip has an effect on traffic in this location, attracting traffic to use the A323. As such, the traffic passing the A325 southbound traffic has increased causing this arm to encounter additional delay. An inspection of the junction, especially the A325 (N) shows minor improvements are not available due to existing MoD monuments located around the junction and adoptable highway constraints. The modelling of the development has shown an improvement in delay across the network following the introduction of the other off-site infrastructure (as shown in Table 11.8 below) which is seen as a benefit to the town and as such mitigates the impact identified at this junction.

11.4.25 Due to the proximity of the junction to the site and its use for residential access, it was deemed prudent to review the existing Ordnance Road / Louise Margaret Road which was identified as a key constraint following the introduction of the development. The existing T-junction formation restricts development traffic from exiting due to the increase in trips heading towards the A331 on-slip. To remove this constraint WSP have proposed the use of a mini roundabout as shown in **WSP Drawing 0364/SK/038.**

11.4.26 The new arrangement has been assessed within ARCADY with the results shown in table 11.7.

Table 11.7 Ordnance Road / Louise Margaret Road 2026 Do-Something Junction Assessment (ARCADY Results)

2026 Do-Something Assessment				
Arm	Weekday AM Peak		Weekday PM Peak	
	RFC	MMQ	RFC	MMQ
Ordnance Road (S)	0.755	3	0.597	2
Louise Margaret Road	0.673	2	0.684	3
Ordnance Road (N)	0.559	2	0.494	1

11.4.27 The revised junction arrangement provides additional capacity to Louise Margaret Road without restricting the northbound movement in wither peak hours.

11.4.28 As identified in section 11.4.14, a number of the peripheral junctions contained within table 11.6 are signal junctions that minimal additional traffic is expected to pass through and that the Do Something scenario uses the same signal timings as the Do Minimum. Re-optimisation of these (or increase cycle time) are likely to improve the capacity of the junction.

11.4.29 The review of the results in Table 11.2 and 11.6 have identified constraints on the network that either the proposed development cannot provide significant improvements at due to land constraints or is not considered to be an impact of the development.

11.4.30 Notwithstanding this, the full network results have been provided showing the effect of the development and the introduction of the transport strategy (on-slip etc.) to provide greater certainty that the development can be accommodated, The full network results are summarised in Table 11.8 below.

Table 11.8 Overall Network Performance 2026 Do Minimum / Do Something

	2026 Do Minimum		2026 Do Something	
Parameter	AM	PM	AM	PM
Average Delay Time per Veh (min/sec)	1:41	1:53	1:30	1:54
Average Travel Time per Veh (min/sec)	28:13	27:38	27:51	27:33

Source: WSP AUETM

11.4.31 The results in Table 11.8 show that in the AM peak hour the average delay per vehicle decreased by approximately 11 seconds with the inclusion of Wellesley traffic with a reduction in travel time in the region of 22 seconds. The PM peak hour also shows an improvement across the network following the introduction of Wellesley's highway strategy improvements, with a reduction in travel time of 5 seconds, although there is a minimal increase in delay of 1 second.

11.4.32 The results show that whilst there are some locations on the network that will be affected by the proposed development as identified in Table 11.2 and 11.6, the transport strategy provides

improvements elsewhere on the network offsetting this impact. As such the results show that overall the highway network will not impact upon the existing driver time or delay.

11.4.33 The transport strategy which was included within the model was identified in Section 7 and is considered in more detail below.

11.5 A331 On-Slip

11.5.1 The A331 is a dual carriageway subject to a de-restricted speed limit (70mph) and provides access to the M3 to the north (Junction 4) and the A31 to the south. The primary highway infrastructure improvement associated with Wellesley is the north facing on slip on the A331. The 'East of Aldershot Study' promoted the introduction of north facing on and off slips. A scheme option incorporating on and off-slips has been subject to assessment and, as indicated in Table 11.9 below, minimal overall improvement is offered to the highway network. It is therefore considered that only the on-slip is required as part of the Wellesley Highway Strategy. **Figures 15** and **16** illustrate the capacities across the network with the introduction of the A331 slip scenario for both the AM and PM peak hours. The V/C plots show that the slip does not have a significant effect on the flow ratios recorded.

Table 11.9 Overall Network Performance 2026 Do-Something with Southbound Off-Slip

	2026 Do-Something		2026 Scenario 2 (with southbound off-slip)	
Parameter	AM	PM	AM	PM
Average Delay Time per Veh (sec)	1:30	1:54	1:28	1:51
Average Travel Time per Veh (min/sec)	27:51	27:33	27:47	27:29

Source: WSP Saturn Model

11.5.2 In addition to the negligible benefits afforded by the off-slip, the delivery of this scheme would not be wholly possible within the existing public highway or land within the control of Grainger plc.

11.5.3 The on-slip alone will provide a sufficient improvement to the network, offering a new route for traffic to access the A331 and travel north to the M3, and therefore the off-slip is not given further consideration within the Wellesley Highway Strategy.

11.5.4 The on-slip also makes provision for vehicles heading westbound along Government Road and turning right onto the on-slip. The on slip is anticipated to alleviate the pressures on other corridors reducing overall vehicle delay and travel times.

11.5.5 The proposed on-slip arrangement has been designed in accordance with DMRB TD 22/06 (Grade Separated Junctions) and is illustrated on **Drawing Number 0364/GA/001**.

11.5.6 Table 11.10 below identifies the predicted traffic flow that will utilise the on-slip following the introduction of the development whilst Figure 11.1 and 11.2 show select link analysis of the A331 on slip in both the AM and PM peak hours respectively which identifies where on the network the traffic originates.

Table 11.10 A331 Northbound On-Slip Traffic Flows

Link	2026 Do-Something	
	AM Peak	PM Peak
A331 (NB) On Slip	969	941

Source: WSP Saturn Model

Figure 11.1 – A331 Select Link Analysis AM Peak

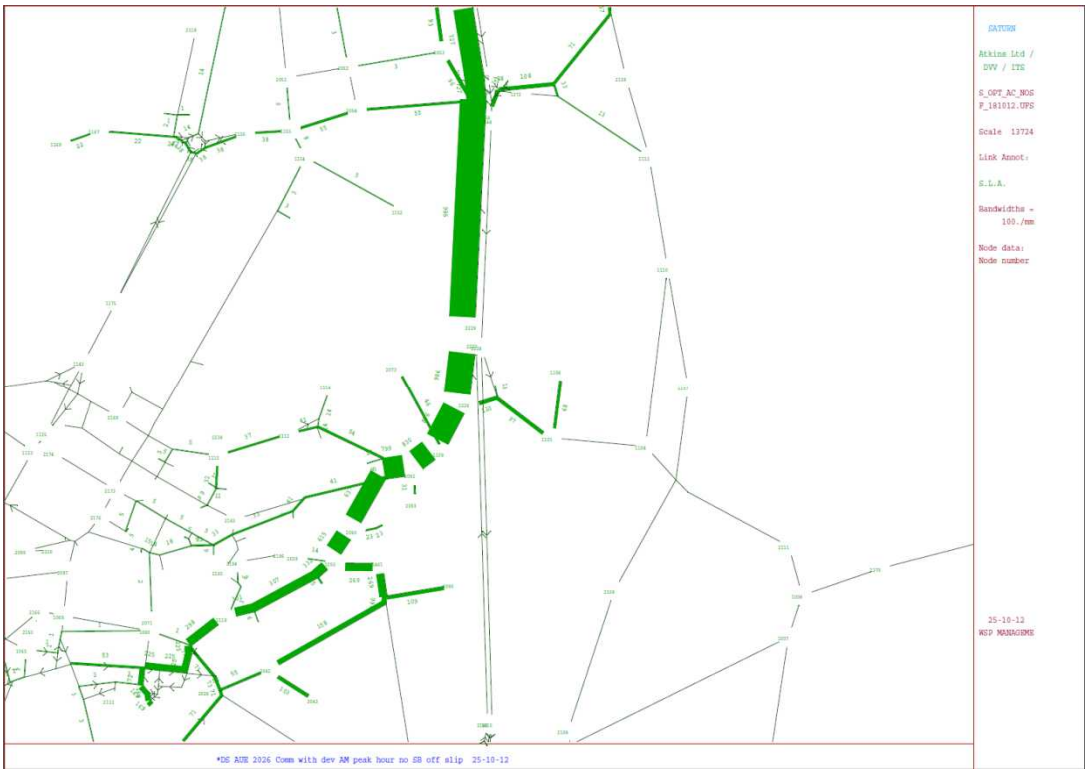
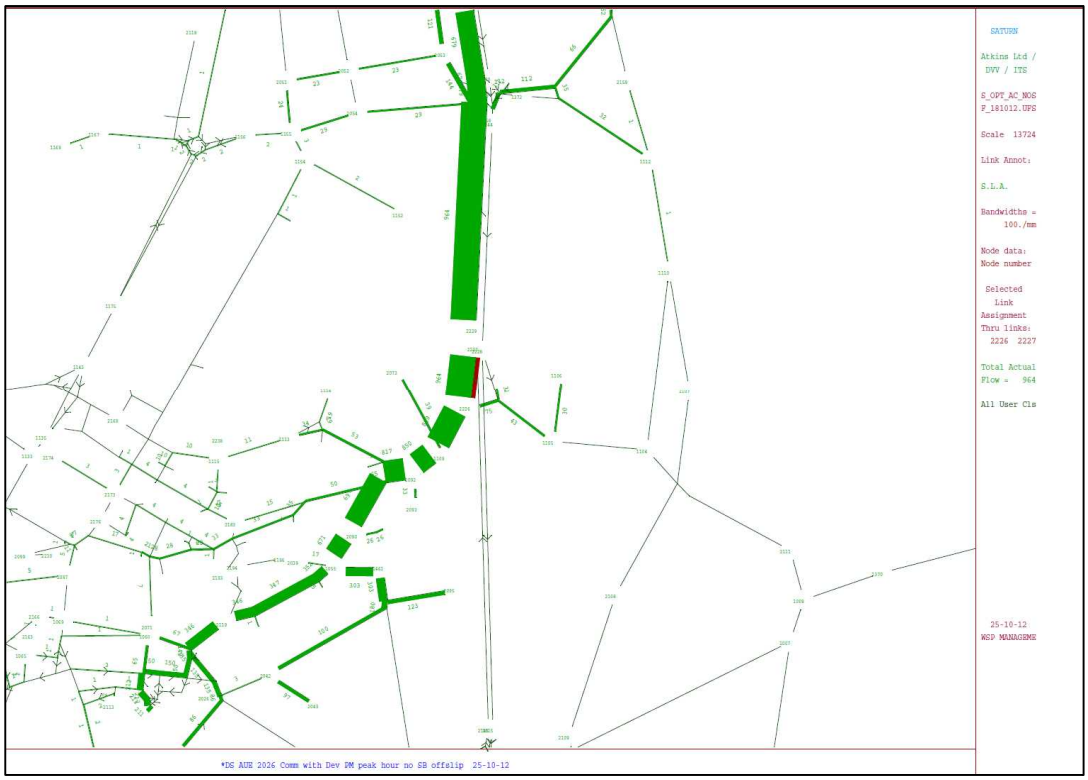


Figure 11.2 – A331 Select Link Analysis PM Peak



11.5.7 The select link analysis has shown that the majority of the traffic using the new A331 on-slip is existing trips from the Aldershot area and not specifically from the development. Of the 969 vehicles in the AM peak, 112 are associated with the development and 857 are background traffic. In the PM peak, of the 941 vehicles, 63 vehicles are associated with the development and 878 are background traffic. The background traffic is anticipated to reroute via the on slip to access the A331. The majority of this background traffic originates close to the town centre or from the residential and commercial areas located along North Lane.

11.5.8 Further review of the traffic flows highlighted that because of this new route, traffic from the town centre area that previously headed west onto Hospital Hill/Queen's Avenue to access Lynchford Road now use Ordnance Road towards the slip road which has an impact on traffic routing at the existing A323 Wellington Avenue / Hospital Hill Junction.

11.5.9 The transfer of traffic from other corridors on the network has been shown to provide an overall benefit. Specifically, benefit is realised on the Lynchford Road corridor which, with the addition of development traffic, and associated infrastructure, is impacted upon minimally.

11.5.10 Table 11.11 present the difference in journey times, with and without Wellesley traffic along Lynchford Road.

Table 11.11 Lynchford Road Journey Times between Queen's Roundabout and the A331 (seconds)

	Eastbound	Westbound	Eastbound	Westbound
	AM (s)	AM (s)	PM (s)	PM (s)
2026 DM	194	229	316	179
2026 DS	185	235	285	186
Difference	-9 (-4.6%)	6 (2.6%)	-31 (-9.8%)	7 (3.9%)

Source: WSP Saturn Model

11.5.11 Table 11.11 shows that the eastbound traffic flow in both the AM and PM peak hours has a combined journey time saving of 40 seconds. The westbound traffic flow has increased slightly due to traffic still utilising this route to access the site and wider areas, however on site observations undertaken by WSP in July 2012 highlighted that the westbound movement was the least restricted in both peak hours.

11.5.12 It is therefore concluded that the proposed on-slip offers an improvement for the Lynchford Road Corridor. Accordingly, no further improvements are being promoted along Lynchford Road.

11.6 Government Road / Thornhill Road

11.6.1 With the introduction of a new A331 on-slip providing a new strategic function in Aldershot, traffic flow along both Ordnance Road and Government Road is expected to increase. As such, the existing junctions and links along this route have been reviewed to determine whether improvements were required. The following existing constraints were identified and were subject to detailed review:

- Government Road / Thornhill Road Priority Junction;
- Government Road Canal Bridge; and
- Ordnance Road / High Street roundabout

Government Road / Thornhill Road / Ordnance Road

11.6.2 The existing T-Junction provides priority to Thornhill Road and Ordnance Road, with Government Road giving way. The existing arrangement currently offers spare capacity. However, following the introduction of the A331 north facing on-slip, background traffic and traffic from the development will be attracted to the A331 via this junction. As such, the predominant traffic flow at this junction will alter from Ordnance Road/Thornhill Road to Ordnance Road/Government Road. An appropriate alteration to the junction has been determined on this basis.

11.6.3 As illustrated on **WSP Drawing Number 0364/GA/002**, a new four arm roundabout is proposed to provide sufficient capacity for the level of anticipated traffic and retain access to the MoD land parcels.

11.6.4 The arrangement requires minor realignment of all four approach arms to provide a safe entry to the junction. Footways and footway/cycleways are proposed connecting the main routes south into the town and east towards both the Camp Farm Lake SANG and the Basingstoke Canal.

11.6.5 The arrangement has been subject to a swept path analysis, particularly to consider the use of the junction for MoD vehicles. The existing accesses into the MoD properties surrounding this junction have been retained with minor amendments.

11.6.6 The proposed arrangement has been included with the Do Something scenario of the modelling and assessed separately using the industry standard ARCADY V6 assessment tool for roundabout junctions. Table 11.12 below provides the summary capacity outputs for the 2026 Do-Something scenario.

Table 11.12 Government Road / Thornhill Road 2026 Do-Something Junction Assessment (ARCADY Results)

2026 Do-Something Assessment				
Arm	Weekday AM Peak		Weekday PM Peak	
	RFC	MMQ	RFC	MMQ
Gallwey Road	0.391	1	0.651	2
Thornhill Road	0.739	3	0.801	4
Government Road	0.417	1	0.310	1
Ordnance Road	0.898	9	0.776	4

11.6.7 The modelling results in Table 11.6 identified this junction as being close to capacity in the peak hours, however the full ARCADY results provided in Table 11.12 shows that the new improved junction arrangement will be capable of accommodating the increase in traffic along Government Road. The maximum observed queues in the peak hours are no greater than 9 vehicles.

Government Road Canal Bridge

11.6.8 Having established the increase in traffic along Government Road, the existing narrow canal bridge was identified by HCC as a constraint which could potentially affect the use of the A331 on-slip. The existing bridge is approximately 5.6m in width and is signed for one-way working only, although on site observations highlighted that the bridge is two-way working except when large vehicles are crossing.

11.6.9 With the increase in traffic along this route of approximately 1,000 vehicles in the peak hours, two-way working for all vehicles is required. It is therefore proposed to introduce a new bridge with a minimum width of 7m in line with the width of Government Road (circa 7.3m). The bridge will also include the provision of a 3m wide footway/cycleway linking the site to the Basingstoke Canal towpath. The proposal re-alignment of this section of road is shown on **Drawing Number 0364/GA/002**.

Ordnance Road / High Street

11.6.10 The proposed A331 on-slip is expected to attract high volumes of traffic from the south which includes a number of business areas and Aldershot town centre. Traffic is anticipated therefore to use Ordnance Road from the A323 High Street through the existing four arm roundabout.

11.6.11 The existing junction provides access south into the town centre, north into the existing MoD barracks and in an east west direction for the A323 which connects the A331/A31 to the A325 Farnborough Road. Traffic flow is consistent through the day and can reach high levels in the peak hours, despite this, the modelling indicates that the junction has some spare capacity in the peak hours.

11.6.12 Following the introduction of Wellesley and the A331 on-slip, this junction will be forced to accommodate a large majority of the diverted traffic which will have impacts upon the existing delay.

11.6.13 The existing junction has been assessed within the model and is able to accommodate enough of the diverted traffic for the on-slips, to provide the network wide improvements whilst being at full capacity and incurring some delay. Further analysis identifies this junction as a throttle in traffic using this

new corridor and that any increase in capacity at this location will attract additional traffic. Figures 11.3 and 11.4 below show the demand increase at the junction should there be sufficient capacity.

Figure 11.3 Traffic redistribution at A323 High Street / Ordnance Road AM Peak

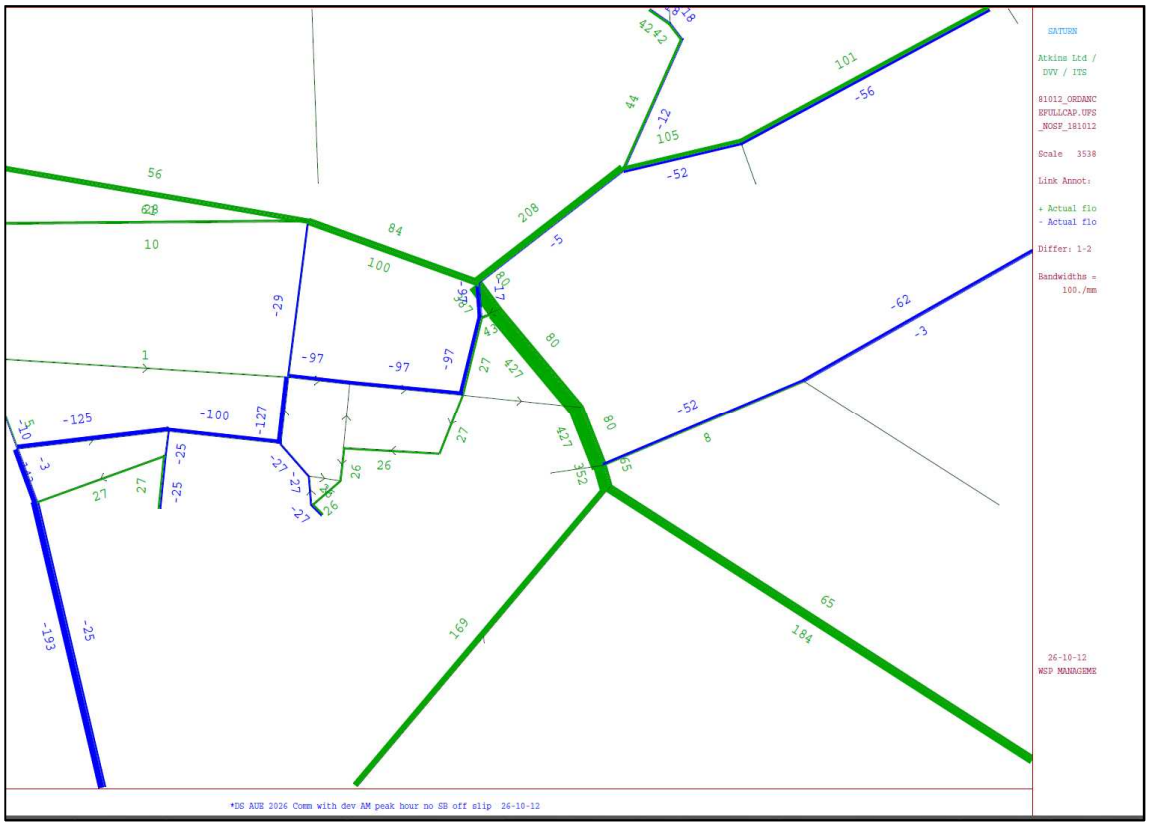
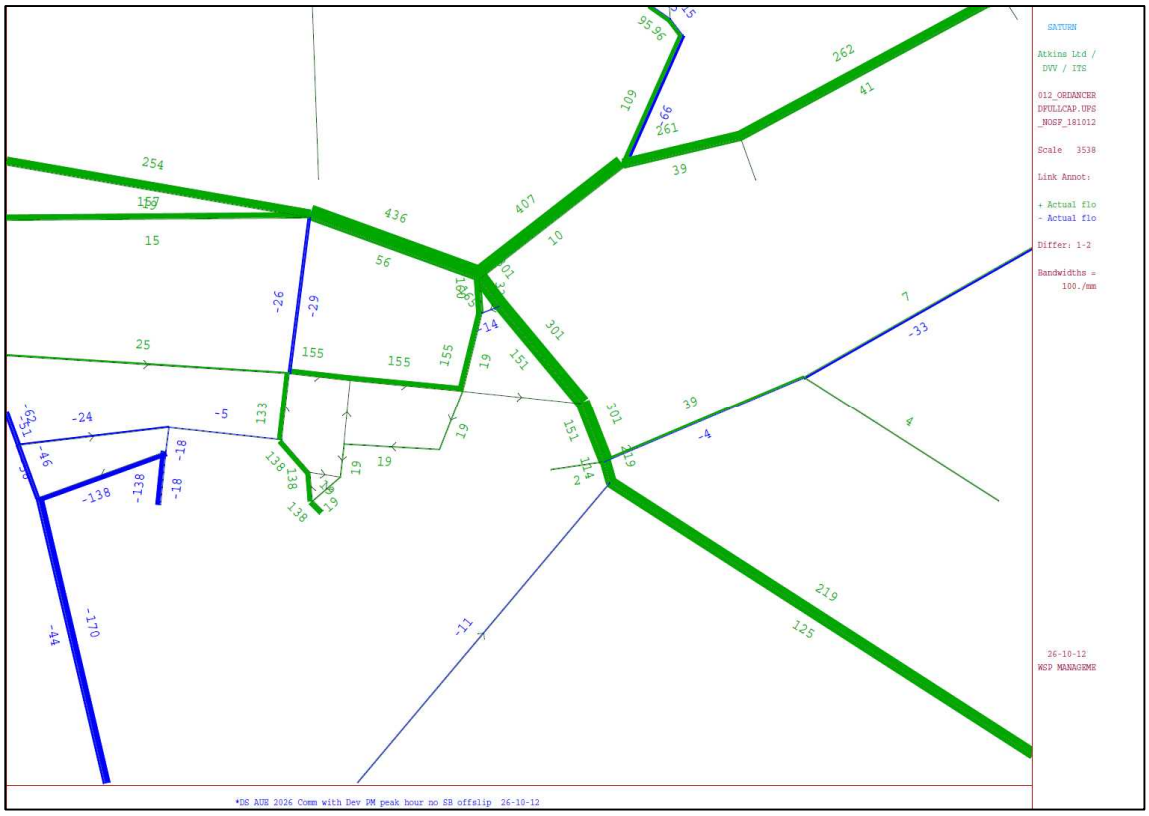


Figure 11.3 Traffic redistribution at A323 High Street / Ordnance Road PM Peak



11.6.14 This increase in traffic heading in a northbound direction on Ordnance Road (208 trips in the morning and 407 in the evening peak) could not be accommodated at this junction with limited land available to provide the required significant improvements. Any such smaller improvements, due to the attraction of additional traffic, would result in a junction that would still operate at capacity. In addition, the increase in traffic that would use this corridor would impact upon other existing junctions along the A323 corridor and along Ordnance Road.

11.6.15 The existing junction currently allows enough traffic onto Ordnance Road and then onto the on-slip to provide a well-balanced flow across all route to the A331 on-slip and other A331 access corridors reducing the potential impacts upon site wide junctions. With that in mind the most appropriate action is to retain the existing junction arrangement.

11.7 Alison's Road / Queen's Avenue

11.7.1 Alison's Road will form the main east to west movement corridor through Wellesley, providing vehicular access out of the site for the majority of the development. The main principles of the Alison's Road corridor strategy are summarised below. The final design of this corridor will be subject to a detailed design review as the Wellesley masterplan develops from outline to detailed stages.

11.7.2 Alison's Road is currently a dual carriageway running between the A325 Farnborough Road to St Omer Barracks at which point the road reduces to a single carriageway and becomes Thornhill Road. It is proposed to reduce this section from a dual to single carriageway, 6.5m wide road, providing a more urbanised corridor that is attractive to use for all modes of travel.

11.7.3 In tandem with reducing Alison's Road to single carriageway, a number of the existing junction arrangements will be revised. The arrangements will be subject to detailed consideration and design in due course,

11.7.4 Alison's Road / Queen's Avenue is an important junction improvement along this corridor, particularly as the junction will facilitate access to a primary school and the neighbourhood centre. The proposed junction arrangement incorporates single lane entries on all arms, flaring to two lanes on both Alison's Road approach and Queen's Avenue northern approach. In addition, it is proposed to improve the pedestrian connections as well as take account of the reduced carriageway width. A revised signal phasing strategy is promoted for the junction to enable an all red stage to be called for pedestrians/cyclists to use the crossing located on all four arms. The proposed improvement is shown on **Drawing Number 0364/GA/003**.

11.7.5 The proposed arrangement has been subject to a Linsig assessment. As detailed within the Linsig user guide, Degrees of Saturation (DoS) values of up to 0.90 are considered acceptable causing small amounts of delay and queuing. A DoS value of 1.0 demonstrates the junction or approach arm has reached the theoretical capacity of design with values greater than 1.0 causing significant levels of delay and queuing. Table 11.13 provides the results from the assessment.

Table 11.13 – Queen's Avenue / Alison's Road 2026 Do-Something Junction Assessment (LinSig Results)

2026 Do-Something Assessment				
Arm	Weekday AM Peak		Weekday PM Peak	
	DoS	MMQ	DoS	MMQ
Queen's Avenue (SB)	87.1	9	77.6	7
Alison's Road (WB)	87.1	24	82.5	15
Queen's Avenue (NB)	58.3	4	33.0	2
Alison's Road (EB)	67.2	16	78.8	15
Practical Reserve Capacity (PRC)	3.3%		9.1%	
Cycle Time	110s		90s	

11.7.6 Table 11.13 shows that the proposed junction arrangement and associated updated signal timings provide the necessary capacity for an all red signal stage with queues not exceeding 24 vehicles, which clears within the signal cycle. The assessment has also been run to include the pedestrian phase in every cycle, in reality pedestrian demand is such that the phase will not be called this frequently and the results therefore present a robust assessment.

11.8 A325 Farnborough Road Corridor

Background

11.8.1 The A325 Farnborough Road provides a strategic connection between Aldershot and Farnborough carrying in excess of 2,000 two-way vehicles in the peak hours running along the western edge of the development.

11.8.2 To the north of the site the road is currently dualled and subject to a derestricted speed limit. As the A325 Farnborough Road heads south passing over Alison's Road / Clubhouse Road, the road merges from two lanes to single carriageway in both directions. At this point, both Alison's Road and Clubhouse Road are connected to the A325 Farnborough Road via on / off slip roads. The road continues to be subject to a derestricted speed limit until approximately 100m north of Wellington Roundabout where it becomes subject to a 40mph speed limit.

Pennefather's Road Junction

11.8.3 The A325 Farnborough Road Corridor proposals include the re-establishment of a vehicular junction at Pennefather's Road to provide a secondary access for Wellesley onto the A325 Farnborough Road, with primary access retained via Alison's Road. The junction at Pennefather's Road had been closed up by the MoD to restrict access into the site. The proposals include re-opening this access with an improved left in-left out junction to provide an additional route to the south west including a new signalised crossing across the new central island providing a connection to the SANGS areas. The new access can be seen in **Drawing Number 0364/GA/006**.

11.8.4 The proposed junction arrangement has been subject to a PICADY assessment to determine the capacity.

Table 11.14 Pennefather's Road 2026 Do-Something Assessment (PICADY Results)

2026 Do-Something Assessment				
Arm	Weekday AM Peak		Weekday PM Peak	
	RFC	Queue	RFC	Queue
Pennefather's Road	0.432	1	0.363	1

11.8.5 As shown in Table 11.14, the proposed Pennefather's junction arrangement can accommodate the proposed traffic flow with minimal queuing.

Speed Limit Reduction / New Pedestrian Crossing

11.8.6 The proposed Rushmoor Bottom SANGS area, and existing sports pitches, is located to the west of the A325 Farnborough Road. The A325 Farnborough Road is currently subject to a derestricted speed limit and accommodates high volumes of traffic. To aid pedestrian connectivity across the SANGS, it is proposed to extend the existing 40mph speed limit approximately 700m further north on Farnborough Road to a point south of the Alison's Road over bridge at the junction with Fleet Road. The introduction of this amended speed limit will enable the new signal-controlled crossing to be promoted at the new Pennefather's junction located within the new centre island. Access across the remainder of the junction would be via uncontrolled dropped kerbed crossing facilities. This improvement is shown in **WSP Drawing 0364/GA/007**.

11.8.7 To determine the affect the speed limit change would have upon the existing capacity of this section of Farnborough Road a speed survey was undertaken of existing speeds along this corridor which is contained within **Appendix J**. The results of the speed surveys identified that whilst a speed limit of 60mph (de-restricted) is in place, the average speed of vehicles were in the region of 42mph with 85 percentile speeds of 48mph. It is evident that the proposed reduction in speed limit at this location would reflect the existing pattern of traffic and would therefore not significantly affect capacity.

A325 Improvement Scheme

11.8.8 The existing arrangement on the southbound A325 Farnborough Road carriageway requires traffic to merge from two lanes into one at the same location as the southbound on-slip merges with the main carriageway. Both merges are sub-standard in length. The accident analysis identified a number of accidents along this route with 2 fatalities, although these cannot be conclusively attributed to the substandard nature of the existing arrangement. With an increase in traffic using the on-slip with the introduction of the development, the potential for conflict will potentially increase. An improvement has therefore been developed to reduce the number of conflicts.

11.8.9 The existing merge on the main line is to be removed and replaced with a lane drop located further north to tie in with the southbound off-slip. Only one lane of traffic will therefore continue over Alison's Road (over bridge) with which the on-slip will merge into. In addition, the existing on-slip has been widened and increased in length to the required standards set out in TD 22/06 for grade separated merges. It is anticipated this improvement will aid drivers who use this junction and remove a number of the existing dangerous conflicts.

11.8.10 The improvement measures are illustrated on **Drawing Number 0364/GA/004.**

11.9 Wellington Avenue / Hospital Hill

11.9.1 The existing large signalised junction is located to the south of the site, on the northern fringes of Aldershot Town Centre. The junction currently carries high volumes of traffic; however the size of the junction and the number of lanes currently serving the junction is appropriate for this flow. Pedestrian crossings are also provided in a southbound direction, and the crossings are staggered and set back behind railings for safety.

11.9.2 With the introduction of Wellesley, there is potential for higher pedestrian flows wanting to access the town centre, with Hospital Hill and the existing junction being a critical links for these movements. To promote this route, it was evident that the existing route and crossing facilities could be improved to promote easier access to the south and improve the public realm at the junction.

11.9.3 To accomplish this, WSP has proposed an improvement scheme along Hospital Hill which reduces the current carriageway width (approx. 8m) which includes on-street cycleways down to 6.1m and providing off-street footway/cycleways on both sides of the road down to the existing signal junction. To the north, this narrowing of the carriageway will link into the proposed Queens Avenue scheme that will link into Alison's Road. With the relocation of cyclists from on-street to off-street, an improvement scheme has been promoted on the Wellington Avenue junction which removes some of the central islands to make the junction smaller, thereby removing the need for pedestrians to stagger their crossing and supporting desire lines for movement to the town centre.

11.9.4 The proposed scheme is shown in **Drawing Number 0364/GA/005**. The proposed junction has been assessed alongside the recently constructed Westgate development which includes a new 3 armed signal junction located approximately 100m to the west of the junction. This has been assessed within LinSig with the results shown in Table 11.15 below.

Table 11.15 Wellington Avenue / Hospital Hill 2026 Do-Something Junction Assessment (LINSIG Results)

2026 Do-Something Assessment				
Arm	AM Peak		PM Peak	
	DoS	MMQ	DoS	MMQ
Hospital Hill	82.3	9	83.5	15
Wellington Avenue (WB) Ahead/Right	52.9	10	74.0	15
Wellington Avenue (WB) Ahead/Left	18.5	3	14.6	2
Princes Way	0.0	0	30.1	2
Wellington Avenue (WB) Internal Left	12.5	1	13.9	2
Wellington Avenue (WB) Internal Ahead	36.0	17	87.7	18
Westgate Development Access	57.0	7	87.9	19
Wellington Avenue (EB)	56.2	9	89.7	20
Wellington Avenue (EB) Internal	88.1	27	81.1	22
Practical Reserve Capacity (PRC)	2.2%		0.3%	
Cycle Time	110s		115s	

11.9.5 The junction is shown to operate close to capacity with no Degree of Saturation above 89.7% and queues not exceeding 27 vehicles. It should be noted that the signal timings used within the assessment assumes a red pedestrian phase will be called every cycle, in reality, a crossing stage may not be required every stage improving the vehicle capacity of the junction.

11.10 M3 J4 & J4a

11.10.1 The proposed development is located approximately 6km south of the M3 which runs east to west between Southampton and London (M25) and as such is an important corridor that needs to be examined. Table 11.16 provides the forecasted traffic flows at both Junction 4 and Junction 4a onto the M3 with and without the proposed development.

Table 11.16 Do Minimum and Do Something Traffic Flows at M3 J4 and J4a

Junction	2026 AM Peak			2026 PM Peak		
	Do Minimum	Do something	Difference	Do Minimum	Do something	Difference
Junction 4a						
Eastbound Diverge	992	967	**-25**	536	530	**-6**
Eastbound Merge	1224	1226	**2**	1262	1268	**6**
Eastbound Mainline	4135	4121	**-14**	4190	4171	**-19**
Westbound Diverge	965	998	**33**	1439	1424	**-15**
Westbound Merge	426	411	**-15**	618	621	**3**
Westbound Mainline	4117	4054	**-63**	4037	4042	**5**
Junction 4						
Eastbound Diverge	1227	1238	**11**	1411	1386	**-25**
Eastbound Merge	1217	1298	**81**	1574	1673	**99**
Eastbound Mainline	4131	4109	**-22**	4041	4053	**12**
Westbound Diverge	1847	1895	**48**	1739	1756	**17**
Westbound Merge	1271	1247	**-24**	1275	1283	**8**
Westbound Mainline	3811	3805	**-6**	4201	4184	**-17**

11.10.2 Table 11.16 shows that the inclusion of the development onto the M3 has minimal impact upon the existing traffic flows at both junctions. Junction 4a traffic flows increase by no more than 33 vehicles in any one movement with an overall decrease in both directions in both peaks.

11.10.3 Junction 4 does however indicate some increases in traffic, primarily on the eastbound merge in both AM and PM peak hours, with an increase in 81 (6%) and 99 (6%) vehicles respectively. However, a review of the modelled 2026 Do minimum scenario (no Wellesley) shows that the existing Type A merge would need to be upgraded into a Type F - ghost island lane gain type arrangement of which the development would have minimal impact upon. The only other significant increase is an additional 48 vehicles on the westbound diverge. Again, the 2026 Do Minimum scenario indicates a requirement for an improvement from an existing Type A Taper Diverge to a Type D lane drop which the small increase (2.5%) will have no impact upon.

11.10.4 The review of existing M3 junctions indicate a need for merge/diverge improvements by the Highways Authority for the projected baseline flows in 2026 without any development coming forward at Wellesley. Furthermore, the proposed increase in traffic at both M3 junctions due to the development is minimal and will have no further requirements for improvements.

11.11 Safety Improvements

11.11.1 As set out previously in the existing conditions the accidents recorded in Aldershot / Farnborough for the previous 3 year period have been identified and locations where patterns may have arisen and may require further review have been detailed. The following section sets out some of the key junctions and corridors that have been reviewed in more detail.

QUEENS ROUNDABOUT

11.11.2 In the latest three year period 10 accidents were recorded at this junction, all of which were classed as slight in nature. In total six vulnerable users were involved, three pedal cycles and three motorcycles. The common causation factors are seen to be failure to notice stationary vehicles e.g.in a queue, failure to give way, or poor judgement, driver error.

11.11.3 Although the development is not proposing any significant upgrade or mitigation to this roundabout, new enhance footway/cycleway provision will be provided as shown in **WSP Drawing 0364/SK/039** which will reduce the likelihood of vulnerable road user conflicts. It may also be beneficial for additional signage and road surface improvements to be provided as drivers approach the junction to warn drivers of the upcoming junction which may help improve the existing situation.

QUEEN'S AVENUE/ALISON'S ROAD JUNCTION

11.11.4 Thirteen accidents were recorded at the junction of Queen's Avenue and Alison's road, 11 of which were classed as slight, with two as serious. One of the serious accidents involved a pedal cycle entering the junction and subsequently being hit by a car. The other serious accident involved a motorcyclist losing control on the approach. In total one accident involved a pedestrian, three involved cyclists and two involved motorcyclists. The causes cited for the accidents were recorded as failure to notice slowing or stationary vehicles, disobeying of signals or driver/rider error on the approach to the junction.

11.11.5 The development looks to provide a new signal junction at this location, with full cycle provision off street as shown in **WSP Drawing 0364/GA/003**. The improvement will look to alleviate the safety issues concerning vulnerable users, in particular cyclists, by providing a safe controlled crossing location. The new signals will potentially provide clear information to road users, which in turn should assist in the decrease of vehicles entering the junction at the incorrect times.

A325/ALISON'S ROAD JUNCTION

11.11.6 Six accidents were recorded at this location, with one being fatal, one serious and four slight. The fatal accident occurred when a driver for unknown reasons lost control and overturns his vehicle. The serious incident involved a motorcycle that was hit by a car that failed to give way coming off the off-slip. One incident involved a pedal cyclist that got hit by a car as the vehicle turned onto Alison's Road.

11.11.7 The improvements at this junction as shown in **WSP Drawing 0364/GA/004**, including the lane drop on the A325 will have a positive effect on the safety of this junction by allowing turning vehicles a specific lane to enter into the junction. Increased signage will further promote the clear lane discipline of this junction and should assist in improving safety.

WELLINGTON ROUNDABOUT

11.11.8 10 accidents were recorded at this location, all of which recorded as slight. In total five vulnerable users were involved, one pedal cycle and four motor cyclists.

11.11.9 No physical improvements are being proposed at this junction. However it can be seen that there are no trends of accidents, other than the common causes of failure to notice vehicles speed and shunt type accidents in slow moving traffic. Notwithstanding this, additional advanced warning signage / road markings / surface treatment could be provided on all entrances to the junction to warn drivers of the upcoming junction.

A323 WELLINGTON AVENUE / HOSPITAL HILL

11.11.10 Seven accidents were recorded at this location over the latest three year period, five of which recorded as slight with two recorded as serious. One of the serious accidents involved a pedestrian that was struck by a cyclist that failed to see them as they crossed. The other serious accident also involved a cyclist that was struck by a turning vehicle as it crossed Hospital Hill.

11.11.11 Although in most cases driver error or misjudgement was cited as the main causation factors, it has been shown that in a number of cases vulnerable users have been affected whilst crossing. The development proposals include a new signalised junction with full pedestrian and cyclist crossing facilities as shown in **WSP Drawing 0364/GA/005**. This should in turn provide safe crossing points for these two modes of travel, assisting in the potential decrease of accidents at this location.

A323 WELLINGTON AVENUE / GUN HILL

11.11.12 Gun Hill has had four accidents recorded over the latest three year period, all of which recorded as slight. One of the accidents involved a cyclist that was struck by a car that failed to see them as they performed a right turn. Another accident involved a motorcyclist that was hit by a car that failed to stop at the give way line. In the accidents recorded, driver error in terms of failing to notice slowing vehicles were cited as the main causes.

11.11.13 The proposals include an improved pedestrian / cycle crossing on the eastern arm of the roundabout as shown in **WSP Drawing 0364/SK/032**. This in turn will allow the safer crossing of pedestrians and cyclists in the north / south direction.

ORDNANCE ROAD / THORNHILL ROAD/ GOVERNMENT ROAD JUNCTION

11.11.14 Ordnance Road / Government Road has had three recorded accidents in the most recent period all of which were recorded as slight. One of these accidents involved a pedestrian that was hit by a van as they crossed Thornhill Road in an eastbound direction. One accident involved a pedal cyclist who was hit when a car overtook too closely.

11.11.15 The development proposals include the provision of a new roundabout that incorporates footway and cycleway facilities as shown in **WSP Drawing 0364/GA/002**. The introduction of facilities serving vulnerable users will allow for the safe crossing and use of the junction, as well as potentially reducing the level of interaction between pedestrians/cyclists with vehicles therefore assisting in the reduction of accidents.

A331/A3011 JUNCTION

11.11.16 In the latest three year period eighteen accidents were recorded at this location, fifteen of which classified as being slight with three being classed as serious. The serious accidents resulted in failure to slow for heavy traffic, driving at speed and therefore unable to negotiate a turn and failure to notice another vehicle whilst entering the roundabout.

11.11.17 The majority of the accidents recorded fall outside of the existing junction arrangement and are a result of drivers not failing to understand traffic conditions. No improvements are proposed at the existing junction, however advanced warning signs (such as 'queues ahead') and new road surfacing could be utilised on the approaches to the A331.

A331 CORRIDOR

11.11.18 As shown in the Surrey PIA analysis, the A331 link road (not linked with key junctions) has been split into a number of sections. As a brief overview, the following can be considered;

- A331 to A3011 Link
- A331 to A323 Link
- A331 to A31 Link

11.11.19 Totalling the three sections above, in total have had 30 accidents recorded, of which 27 were as slight, and three as serious. There were no fatal accidents recorded in the three year period. A number of the accidents were attributed to vehicles failing to notice stationary cars in queues or performing poor manoeuvres. The serious accidents recorded involved one pedal cycle that was struck by a car travelling in the same direction, two cars colliding after one has entered the A331 from the Ash Road slip and the final accident occurring as a parked car with hazards on that meant other vehicles collided moving away from it.

11.11.20 The development proposals include a new slip road onto the A331 in the northbound direction from Government Road as shown in **WSP Drawing 0364/GA/001**. This will take pressure off the existing slips by providing an alternative routing choice for those vehicles travelling from southerly directions. This therefore has the potential to alleviate congestion, which should help to reduce traffic accidents.

A323 EAST

11.11.21 A number of junctions on the A323 have been considered above, each of which have a number of development proposals that may aid in the promotion of safe crossing points and reductions in accidents. Within the Hampshire PIA analysis, it can be seen that the A323 East, (Ordnance Road to Lower Farnham Road) has had 15 accidents recorded on it, 12 of which were slight, with three being serious. A number of accidents included vulnerable users, with six involving pedestrians (four slight and two serious) and one accident involving a motorcyclist (slight).

11.11.22 A high number of the pedestrian linked accidents were recorded as occurring when the pedestrian has attempted to cross the carriageway and has been struck by a moving vehicle. The development proposals along this link, those not already highlighted in the A323 junction text above, including the upgrade of existing uncontrolled crossings to pedestrian / cycle crossings, narrowing of the carriageway improving pedestrian connections and reducing traffic speeds as shown in **WSP Drawing 0364/SK/033**. These improvements will promote the safe movement of travel across the carriageway and will have the potential to reduce vulnerable users involved in accidents. The introduction of crossings will also have the potential of slowing vehicles along the link, providing more time for manoeuvres to be carried out correctly.

A325 FARNBOROUGH ROAD

11.11.23 As shown on the Hampshire PIA data, the following links immediately adjacent to the development site have been considered on the A325 Farnborough Road;

- A325 - Queens Roundabout to Alison's Road Link
- A325 - Alison's Road to Wellington Roundabout Link

11.11.24 In total the two sections above were recorded as having five accidents, one of which was fatal, one serious and three slight. The fatal accident occurred as the driver lost control, skidded and then hit the crash barrier. The serious accident occurred as a car failed to give way coming from the off-slip and collides with a motorcycle.

11.11.25 The improvements along the A325 corridor include a lane drop at the Alison's Road / Clubhouse Road allowing the safe segregation of turning traffic (**WSP Drawing 0364/GA/004**), therefore potentially reducing the interaction between vehicles wishing to exit and those continuing along the carriageway.

11.12 Further along the A325 Farnborough Road, there is a proposed speed limit reduction from national (60mph) down to 40mph at approximately Fleet Road southwards. This has been introduced to allow the implementation of a new signalised crossing on the A325 (**WSP Drawing 0364/GA/006**), providing a safe crossing point for both pedestrians and cyclists. The reduction of speed will potentially have a positive impact on safety by allowing motorists more time to perform safe lane changes for example.

11.13 Summary and Conclusions

11.13.1 The impact assessment detailed above highlights that the introduction of Wellesley alongside the proposed strategic and local infrastructure improvements will have minimal impact upon the highway network. This is due to the increase in capacity the new A331 on-slip provides in accommodate both the additional trips and other background traffic. Where safety or capacity impacts have been highlighted or identified, further improvements have been proposed by WSP such as the A325 Farnborough Road corridor improvement scheme, Wellington Avenue – Hospital Hill Junction and the improved Government Road – Thornhill Road Signal Junction with a new canal bridge.

11.14 Construction Traffic Assessment

11.14.1 During the construction of the proposed development it will be necessary for various plant, equipment and material to be transported to the site.

11.14.2 A construction impact assessment has been provided to consider the volume, impact and routing of construction traffic on the local and strategic road network. The principles of a Construction Traffic Management Plan (CTMP) are set out within this section and we anticipate the details of the CTMP will form a condition of the planning application.

11.14.3 Due to the 13 year build out period (2013/14-2025/26) of Wellesley, the CTMP is intended as an evolving document and as construction of the various phases of the development become live, production of bespoke CTMPs for phases and / or phase parcels may be appropriate

Construction Development Phasing

11.14.4 Construction and occupation of the development will take approximately 13 years, commencing in 2013 through to completion in 2025. The full phasing schedule and the resultant annual build summary is provided indicatively in Table 11.17 below. In addition, as indicated on the phasing plan construction will generally take place in a west to east direction across the site.

Table 11.17 Development Phasing

Year	Annual Dwelling Number	Cumulative Total Dwelling Number at year end
2013	175	175
2014	**250**	**425**
2015	250	675
2016	300	975
2017	350	1325
2018	350	1675
2019	350	2025
2020	350	2375
2021	350	2725
2022	**350**	**3075**
2023	300	3375
2024	300	3675
2025	175	3850

11.14.5 For the purposes of the construction traffic impact assessment, two scenarios have been considered:

- 2014 (Maida Zone - Phase 1): subject to detailed planning application

Construction of Maida Zone - Phase 1 of the development will commence in 2013 and is anticipated to continue for two years. The greatest level of Maida Zone - Phase 1 construction and development traffic will be apparent in 2014 and this has therefore been subject to assessment. As Maida Zone - Phase 1 is subject to a detailed planning application, full consideration of the traffic movements and routing is detailed in the following sections.

- 2022: greatest combined level of construction traffic and development traffic

In addition, as indicated in Table 11.17, the greatest level of construction traffic will be apparent in 2022, when the build out rate will be in the order of 350 dwellings and in combination, the greatest level of the development will be occupied (2,725 dwellings plus ancillary uses). Therefore full consideration of the traffic movements and routing is detailed in the following sections.

11.14.6 The remaining phases will be considered on an individual basis and are likely to have bespoke CTMPs accordingly.

Construction Traffic Volume: HGVs and Employees

11.14.7 The number of HGV and construction worker traffic movements associated with the construction of Wellesley is based both on the composition of the proposed development and experience of similar sites elsewhere. However, it should be noted that the actual number of trips associated with construction can vary by method of construction; therefore the figures provided in this report are for indicative purposes only. Based on our experience of similar schemes, the average daily construction workforce and HGVs per dwelling is 0.927 and 0.391 trips per dwelling.

11.14.8 Table 11.18 below provides a summary of the development elements assumed to be under construction in 2014 (Phase 1) and 2022.

Table 11.18 Development Construction Schedule

Year	Development Schedule
2014 (Maida Zone - Phase 1)	228 residential units
2022	Up to 3850 residential units, plus ancillary uses

11.14.9 Based on the above elements, Tables 11.19 and 11.20 below provide a summary of the anticipated construction traffic associated with 2014 (Maida Zone - Phase 1) and 2022. Traffic flows are provided for the AM Peak, PM Peak and AADT. As a worst case scenario, and to ensure a robust assessment, it has been assumed that 10% and 20% of HGV and Construction Worker trips respectively would travel in the peak periods. Notwithstanding this, based on our experience of similar schemes, construction traffic does not have a tendency to travel in the peak periods. Construction sites are typically operational before the AM peak period and cease operation before the PM peak period. In tandem, Construction Workers and HGVs typically travel outside of the peak periods – the assumption of 10% and 20% is therefore deemed robust.

11.14.10 The arrival / departure profile is assumed as 100% / 100% across a full day, 90% / 10% in the AM peak period and 10% / 90% in the PM peak period.

Table 11.19 Construction Worker Trips

	Maida Zone - Phase 1 (2014)			Year 2022		
	Arr	Dep	Total	Arr	Dep	Total
AM	7	1	8	13	1	14
PM	1	7	8	1	13	14
AADT	19	19	38	35	35	70

Table 11.20 HGV Trips

	Maida Zone - Phase 1 (2014)			Year 2022		
	Arr	Dep	Total	Arr	Dep	Total
AM	1	1	2	2	1	3
PM	1	1	2	2	1	3
AADT	11	10	21	17	17	34

Assignment, Distribution and Routing

11.14.11 Construction Worker traffic has been assumed to distribute in the same manner as all employment trips associated with the site, as detailed within the Transport Assessment. The Construction Worker trips disperse onto the local and wider highway network and, as the level of trips is extremely low, the impact is not considered severe and has therefore not been considered in further detail.

11.14.12 Whilst the level of peak hour HGV trips is also anticipated to be extremely low, it is necessary to consider the assignment and distribution of trips to ensure that an appropriate Construction Traffic Route (CTR) is agreed.

11.14.13 With regards to the routing of HGV construction traffic, the Aldershot Urban Extension Supplementary Planning Document (AUE SPD), adopted in March 2009, posits the following principle:

Hollybush Lane

Principle STA17: Hollybush Lane could be utilised as a primary route for construction traffic for any major development.

Construction traffic should not approach the site through Aldershot town centre via the A325 Farnborough Road, or from Ash Road. Furthermore, construction traffic should not approach the site from the west through Church Crookham or from north through Farnborough.

Hollybush Lane has therefore been identified as a possible route for accommodating construction traffic to minimise amenity, environmental and highway consequences.

11.14.14 Subsequent to the adoption of the AUE SPD, Hollybush Lane has been privatised and is no longer under the jurisdiction of Surrey County Council in their role of highway authority. As such, the guidance set out in the AUE SPD relating to construction traffic routing via Hollybush Lane is rendered obsolete. Alternative routing options have been considered with the continued primary focus on minimising amenity, environmental and highway consequences. In addition, the phasing of the development has been considered to ensure access can be achieved in an appropriate manner.

11.14.15 The proposed CTR for HGVs is therefore:

- Arrivals:
  - M3 (50% / 50% directional split), A325, Alison's Road, Queen's Avenue, Internal Roads
  - A325 Farnborough Road (South), A325, Alison's Road, Queen's Avenue, Internal Roads
  - A331, A323 Ash Road, Hospital Hill, Internal Roads
- Departures:
  - Internal Roads, Queen's Avenue, Alison's Road, A325, M3 (50% / 50% directional split)
  - Internal Roads, Queen's Avenue, Alison's Road, A325, A325 Farnborough Road (South)
  - Internal Roads, Hospital Hill, A323 Ash Road, A331

11.14.16 In total there are three proposed construction routes serving the development. It is envisaged that the routes will have the following proportion of HGV and construction worker traffic;

- M3 Route – 70%
- A325 South Route – 20%
- A331, A323 Route – 10%

11.14.17 For ease of reference, the proposed routes have been shown on **Figure 17**, which highlights the three clear construction traffic routes which could serve the low numbers of vehicles per day.

11.14.18 The routes taken by HGV construction traffic on the local highway network would be the subject of discussions between the developer and the planning and highway authorities and would also be subject to the existing physical and legal restrictions on movements of large vehicles. It should be noted that the CTR will include routes that will not be used for construction, specifically North Lane, any further roads can be reviewed and agreed during the development of the CTMP.

11.15 Construction Traffic Impact

Assessment of traffic is based on the 2022 scenario, when the combination of construction and development traffic is anticipated to be at its peak for the full development. Table 11.21 below shows the number of construction traffic trips on the key links of the highway network during the AM and PM peaks.

Table 11.21 2022 Construction Traffic

Link		DM						DS					
		AM			PM			AM			PM		
		Total	HGV	%HGV	Total	HGV	%HGV	Total	HGV	%HGV	Total	HGV	%HGV
M3	E of Jct 4 EB	5291	208	4%	5426	553	10%	5308	210	4%	5444	558	10%
	E of Jct 4 WB	5441	347	6%	5770	234	4%	5476	351	6%	5762	237	4%
	W of jct 4 EB	5127	211	4%	5128	563	11%	5190	224	4%	5192	564	11%
	W of jct 4 WB	4839	283	6%	5228	222	4%	4849	286	6%	5247	224	4%
A325 (north of Alison's Road/ A325 Farnborough Road Junction)	NB	1484	10	1%	886	1	0%	1535	15	1%	958	6	1%
	SB	1195	18	2%	1488	5	0%	1317	28	2%	1529	10	1%
A325 (south of Alison's Road/ A325 Farnborough Road junction)	NB	1017	10	1%	747	1	0%	1113	11	1%	925	1	0%
	SB	1135	18	2%	1440	5	0%	1318	19	1%	1452	7	0%
Alison's Road (east of Alison Road/ Queens Avenue junction)	EB	775	19	2%	577	0	0%	760	33	4%	714	9	1%
	WB	797	0	0%	687	0	0%	1045	15	1%	767	16	2%
A31 (West of Shepherd and Flock roundabout)	EB	2113	92	4%	2175	15	1%	2029	91	4%	2139	15	1%
	WB	2102	17	1%	2130	6	0%	2031	17	1%	2227	9	0%
Queens Ave (south of Queen Ave/ Alison's road junction)	NB	505	3	1%	305	5	2%	340	2	1%	247	7	3%
	SB	360	0	0%	373	2	1%	258	1	0%	361	4	1%
A323 Ash Road (south of St Michael's Road)	NB	667	0	0%	552	0	0%	725	2	0%	681	1	0%
	SB	631	17	3%	888	0	0%	709	17	2%	902	1	0%
A31 (east of A331/ A31 junction)	EB	2929	81	3%	2424	12	0%	2903	82	3%	2472	14	1%
	WB	2436	37	2%	2327	19	1%	2467	37	1%	2417	13	1%

11.15.1 Comparing the existing level of HGV movements on the local road network adjacent to the site which will be affected by construction vehicles gives rise to the increases in daily HGV flows set out in Table 11.21 above.

11.15.2 The addition of an average of around 34 two-way HGV movements per hour over an eight hour working day would not have a discernible impact on the operational efficiency or safety of the highway network. The movements would equate to approximately one HGV every 15 minutes.

Signage

11.15.3 The CTR is the proposed route to be followed to and from the site by construction traffic vehicles. 'Construction traffic vehicles' refers to any heavy commercial vehicle within the meaning of the Road Traffic Regulation Act 1984 Section 138. The CTR will be clearly signed along the route primarily employing the use of the following signage:

- Temporary works sign to Diag. 7303 'Works Traffic'. Direction to be taken by road works or construction traffic at a junction or works entrance ahead.
- Temporary works sign to Diag. 7305 'Works Traffic'. Direction to be taken by road works or construction traffic at a junction or works entrance.
- Temporary works sign to Diag. 7301 'No Works Traffic'. Temporary access to a construction or road works site. Proposed to ensure that construction vehicles travel along CTR only.

Parking

11.15.4 Where possible the impact of construction worker traffic would be minimised by employing local labour, using local business to supply materials and encouraging car sharing to site. On-site parking will be provided to ensure that no impact on residential roads will result from construction workers parking their vehicles.

Logistics Plan

Introduction

11.15.5 The level of construction traffic detailed in Section 3 is deemed worst case and is concluded to have no discernible impact on the highway network. Notwithstanding this, various measures are outlined below to minimise the impact further.

Strategy

11.15.6 To minimise the amount of construction vehicles using the public highway, the following factors will be considered:

- Wherever possible, any excavator spoil will be used on site;
- Where possible demolition material to be recycled on site;
- Prefabrication of construction components off-site will reduce the volumes of material deliveries of smaller components; and
- Where possible, cast units will be used to reduce the requirement for concrete, reinforcement, pumps, formwork, scaffolding, deliveries etc.

11.15.7 To further minimise the impact of the development on the local highway, the following will be undertaken:

- All construction traffic entering and leaving the site will be controlled through monitoring and recording movements. Vehicles making deliveries to the site or removing spoil or demolition material etc., will travel via the designated CTR, which avoids sensitive locations;
- Construction traffic would be controlled as far as possible to times outside the peak traffic hours;
- Exceptional loads would be restricted to outside of peak hours;
- Any temporary road closures to be undertaken outside of peak hours / sensitive periods where possible; and

- The Demolition and Construction process will be 'environmentally aware', with focus upon housekeeping, good quality hoardings and landscaping, wheel washers and a clean work face.

11.15.8 The constructors will be required to follow the considerate constructor's scheme.

11.15.9 It would be expected that the working hours of the site would be subject to general Local Authority restrictions as indicated below:

"The hours of work for all contractors (and sub-contractors) for the duration of the site development shall, unless otherwise agreed in writing by the local planning authority, be limited to 07:00 AM to 19:00 PM on Monday to Fridays, 07:30 AM to 14:00 on Saturdays, and no work shall be carried out on Sundays or Bank Holidays."

Monitoring

11.15.10 A programme of monitoring and review will be implemented to generate information by which the success of the CLP can be evaluated. Monitoring and review of construction activity to the site will be the responsibility of the principal contractor.

11.15.11 The process will provide the opportunity for construction operations and procedures on the site to be reviewed and new management measures to be implemented (if necessary). Monitoring will be documented and available to the Local Authority upon request.

12 Maida Zone - Phase 1 Impact Assessment

12.1 Introduction

12.1.1 In parallel to the outline planning application supporting the full Wellesley development, a detailed planning application will be support the proposals of the Maida Zone - Phase 1 element of the scheme. A location plan for Maida Zone - Phase 1, in the context of the wider development area, is shown in Figure 1.

12.1.2 The Maida Zone - Phase 1 parcel seeks to deliver up to 228 dwellings and will be accessed via Queen's Avenue and Hope Grants Road. The development description for Maida Zone - Phase 1 is as follows:

'Full planning application for the development of Maida Zone - Phase 1 comprising 228 dwellings, demolition of buildings, internal roads, garages, driveways, pathways, boundary treatment, pedestrian/ cycleways, associated parking spaces, SuDS, associated amenity space, ,hard and soft landscape works and full details of engineering operations associated with infrastructure requirements and service provision for this phase'.

12.1.3 The historical listed buildings, Smith Dorrien House and Maida Gymnasium, are located immediately to the south west of the Maida Zone - Phase 1 parcel, just outside the red line boundary for the scheme. Although not directly linked with the Maida Zone - Phase 1 development, it is important to note that these buildings are not affected by the scheme.

12.2 Development Infrastructure

12.2.1 The Maida Zone - Phase 1 scheme looks to maximise the use of the existing highway network. The parcel will have a number of vehicular accesses:

- Scarlett's Road / Queen's Avenue;
- Hospital Road / Fire Station Road;
- Scarlett's Road / Hope Grant's Road; and
- Fire Station Road / Hope Grant's Road.

12.2.2 As shown in the illustrative layout drawing (**5510/SHPA** located within **Appendix K**) created by Adam Architecture, the internal road network shows a central link connecting Hope Grant's Road with Scarlett's Road. Hope Grant's Road will be reconnected with Queen's Avenue providing the primary point of access into the site via a new simple priority junction as shown on **WSP Drawing 0364/GA/008**. Scarlett's Road will provide a secondary access onto Queen's Avenue via a simple priority junction as set out on the master plan. Connecting with this central link are shared space and tertiary access roads allowing for the vehicular access to the differing residential parcels.

12.2.3 The layout drawing also highlights the foot and cycleway network intended on promoting the use of these sustainable modes of travel. By increasing connectivity with the existing footway provision, this allows for the greater potential for residents to use sustainable travel and provides better connections to the public transport in the area.

12.2.4 The internal layout of the Maida Zone - Phase 1 parcel has been designed with the ethos of Manual for Streets in mind. The layout incorporates traffic calmed streets, supporting safe and convenient pedestrian and cycle movement. Footway links are provided to Hospital Road and Queen's Avenue ensuring that the parcel is readily accessible and will tie into the wider masterplan in due course.

12.2.5 Throughout the development of Phase 1, WSP have undertaken master plan reviews to establish any highways issues to be addressed prior to submission. The following areas have been looked at in detail:

- **AutoTrack review** – Review of all streets to confirm they can accommodate refuse collection and access to car parks is adequate.
- **Pedestrian Provision** – Review of all footways and footway/cycleway links to confirm they follow desire lines and are provided to appropriate standards.
- **Highway Geometry** – Review of carriageway widths and access junction radii.
- **Car Parking Requirements** – The car parking provision has been delivered to Rushmoor Borough Councils requirements. However, the current standards set out that both private and affordable housing should contain the same number of spaces. Due to the proposed improvements to the public transport and links for slow modes into the town, a reduction has been applied to some affordable units. All affordable flats (1 and 2 bedroom) contain 1 parking space per unit and all 4 bedroom affordable houses contain 2 parking spaces, although the additional space could be provided either on plot or on street. The remainder of the site conforms to the appropriate standards set out in *Car and cycle parking standards - supplementary planning document*. Visitor parking spaces have been provided on site with indicative locations shown on the Phase 1 master plan.
- **Car Parking Geometry** – All parking spaces have been delivered to the relevant standards set out in '*Car and cycle parking standards - supplementary planning document'.*

12.3 Transport Accessibility

12.3.1 Maida Zone - Phase 1 is located at the southern end of the Wellesley masterplan area adjacent to Queens Avenue. Excellent pedestrian and cycle connections to shops, facilities and employment opportunities in Aldershot town centre are provided by Gun Hill, Middle Hill and Hospital Hill.

12.3.2 An existing on-road cycle route passes adjacent to Maida Zone - Phase 1, providing a near continuous route along Queens Avenue, serving Aldershot town centre via Hospital Hill and North Camp shops via connections with Lynchford Road.

12.3.3 To aid in the pedestrian connections south into the town centre, the proposed cycle improvements on the southern end of Middle Hill (**WSP Drawing 0364/SK/041**) will be delivered prior to completion of Phase 1.

12.3.4 The Talavera County Infant School is located in Gun Hill, just a five minute walk from Maida Zone - Phase 1.

12.3.5 The Aldershot Centre for Health is also located adjacent to Maida Zone - Phase 1, at the junction of Queens Avenue and Hospital Road.

12.3.6 The Stagecoach Gold Route 1 bus service also operates adjacent to Maida Zone - Phase 1. This service operates a 10 minute frequency between Aldershot and Farnborough, with onward connections to Camberley. Bus stops to access this service are located within 300m of all units within Maida Zone - Phase 1. This represents an excellent opportunity for residents of Maida Zone - Phase 1 to utilise public transport as an alternative to car-based travel for journeys across the Aldershot and Farnborough area.

12.3.7 Maida Zone - Phase 1 at Wellesley is a highly accessible location for development, and will afford residents the opportunity to access many everyday destinations without requiring access to a car.

12.4 Traffic Modelling

12.4.1 The AUETM model has two future forecast years, these being 2022 and 2026, enabling the assessment of the interim and fully built Wellesley development impacts on the local highway network. As such there is no model for the 2014 future year, which is when the Maida Zone - Phase 1 is expected to be completed. Therefore the 2011 base model has been growthed to assess the potential impact of this scheme, with development traffic determined separately.

12.5 Traffic Growth

12.5.1 The base traffic model has been validated to a year of 2011, in line with the Maida Zone - Phase 1 assessment year of 2014 a growth rate has been applied to the baseline flows.

12.5.2 The forecast model report outlines the growth assumptions applied for the two future year scenarios, 2022 and 2026. As such a separate growth factor methodology has been applied, which has been based on the following assumptions:

- TEMPRO 6.2, Dataset 6.2 used for the area Aldershot(Main) – base year 2011 to 2014
- Origin / Destination trip end type selected
- NTM Adjustments applied for the selection of Urban, All Roads

12.5.3 Table 12.1 below summarises the resultant growth rates.

Table 12.1 Maida Zone - Phase 1 TEMPRO 6.2, Dataset 6.2, adjusted 2011 to 2014 Growth Rates

	2011 to 2014	
	AM	PM
Growth Rate	1.0215	1.02043

Source: TEMPRO 6.2 Dataset 6.2 plus WebTAG fuel price and income forecast adjustments

12.6 Development Traffic

12.6.1 To determine the anticipated development traffic, the methodology employed for Wellesley in its entirety has been employed. However, the assumptions applied to the whole site regarding internalisation and benefits of a mixed use development, have not been applied to the Maida Zone - Phase 1 parcel.

12.6.2 The resulting vehicular trip generation is summarised in Table 12.2 below.

Table 12.2 Maida Zone - Phase 1 Vehicular Only Trip Generation (All Travel Purposes)

	AM			PM		
	Arr	Dep	Total	Arr	Dep	Total
Vehicles	38	77	115	51	29	80

Source: WSP Calculated

12.6.3 As shown, the vehicular trip generation from the Maida Zone - Phase 1 scheme is forecasted to be 115 and 80 two-way vehicles in the AM and PM peak respectively. These flows have been used in the capacity assessments of the local junctions in the immediate area of Wellesley.

12.7 Traffic Impact Assessment

Queen's Avenue / Hope Grant's Road

12.7.1 The existing junction arrangement provides priority to Queen's Avenue, with Hope Grant's Road giving way, however the minor arms are gated preventing any vehicular or pedestrian access.

12.7.2 In line with the Maida Zone - Phase 1 development parcel, it is proposed to form a priority T-junction to connect Hope Grant's Road with Queen's Avenue, as shown on the Maida Zone - Phase 1 Master Plan attached at **Appendix K**. The proposed junction arrangement incorporates connecting footways on both roads, increasing accessibility for pedestrians.

12.7.3 The proposed junction has been assessed using the industry standard PICADY V5.1 assessment tool for priority junctions. A junction assessment has been undertaken on this junction only as this would attract the majority of the development traffic. For robustness, the assessment has assumed all development traffic would utilise this junction.

12.7.4 The capacity analysis in the following assessments summarises the Ratio of Flow to Capacity (RFC). Table 12.3 below provides the capacity outputs for the 2014 Maida Zone - Phase 1 Do-something scenario with the full result shown within **Appendix H**.

Table 12.3 Queen's Avenue / Hope Grant's Road 2014 Maida Zone - *Phase 1 Do-Something Junction Assessment (PICADY Results)*

2014 Phase 1 Do-Something Assessment				
Arm	Weekday AM Peak		Weekday PM Peak	
	RFC	Queue	RFC	Queue
Hope Grant's Road	0.230	1	0.082	1
Queen's Avenue (S)	0.047	1	0.057	1

Source: WSP Calculated

12.7.5 Table 12.3 shows that the updated junction arrangement will accommodate all of the Maida Zone - Phase 1 development traffic. The junction is also forecasted to operate with significant residual capacity from the increased flows on Queen's Avenue. The maximum observed RFC value is reported as 0.230 with the maximum queues in the peak hours no greater than one vehicle.

12.8 Maida Zone – Phase 1 Summary

12.8.1 Through the analysis of trip generation and impact on the local highway network, it has been shown that the Maida Zone - Phase 1 element of Wellesley will have a minimal impact on traffic conditions. The Maida Zone - Phase 1 development parcel is located at the southern edge of the masterplan area, nearest to Aldershot town centre, with direct routes available via Gun Hill, Middle Hill and Hospital Hill. The high quality Stagecoach Gold Route 1 bus service also operates a 10 minute frequency bus service adjacent to Maida Zone - Phase 1 on Queens Avenue. Bus stops for Route 1 are located within 300m of the entire Maida Zone - Phase 1 development area. The links between Maida Zone - Phase 1, Aldershot Town Centre, North Camp and Farnborough will therefore enable many journeys to be undertaken on foot, by bicycle or on public transport.

12.8.2 The junctions serving the Maida Zone - Phase 1 development have been assessed with the modelling suggesting that these will work with residual capacity. Therefore in highway terms the impact of the Maida Zone - Phase 1 is negligible.

13 Conclusions

13.1.1 In summary, the comprehensive strategy detailed within this Transport Assessment will maximise the potential of Wellesley as a sustainable urban extension so that it can positively contribute towards sustainable economic and housing growth in Aldershot.

13.1.2 This TA has outlined the benefits arising from the locational characteristics of the site and the mixed-use nature of the proposed development. Wellesley has the ability to directly benefit the management of vehicular movements across the Aldershot and the wider area. An infrastructure package, in the form of a Transportation Strategy, has been included within the development proposals, which has been subject to significant robust modelling and detailed impact assessment, concluding that the schemes outlined are suitable in mitigating any effect from the Wellesley site.

13.2 Master Plan design and Layout

13.2.1 With the direct benefits brought about by overall infrastructure package associated with Wellesley, it is also important to understand the design benefits arising from the master plan and site layout.

13.2.2 The location of sustainable access points around the development will encourage the uptake of walking and cycling trips, alongside the promotion of the frequent public transport provision at the new bus stop and interchange.

13.2.3 In summary, the Masterplan for Wellesley will promote the following:

- A permeable pattern of streets which will foster the concept of a ‘walkable neighbourhood’ where vehicular use is minimised
- Good quality links with surrounding areas including Aldershot and Farnborough to benefit sustainable travel to/from surrounding areas
- A highway network which accommodates rather than facilitates car travel
- A hierarchy of primary and secondary routes to aid way-finding and to create a sense of place.

13.3 Sustainable Travel

13.3.1 Based on the assessments discussed previously a strategy of improvements have been proposed that removes barriers between the site and key trip attractors and encourages walking and cycling to these locations through the provision of safe and attractive routes.

13.3.2 Throughout Wellesley, a series of primary and secondary pedestrian and cycle routes will be constructed as part of the proposed highway network to provide excellent links. Queen’s Avenue, Alison’s Road and Thornhill Road will provide shared-use paths to safely cater for pedestrian and cycle use. In addition to these routes, a shared-use path will be constructed along the existing Stanhope Lines between Farnborough Road to the west and Gallwey Road to the east.

13.3.3 The secondary network will be designed using principles contained within Manual for Streets, providing attractive routes for walking and cycling with excellent permeability.

13.3.4 In addition to the provision of a primary and secondary pedestrian and cycle network a comprehensive wayfinding strategy will also be developed to direct users between various parts of Wellesley and destinations such as Aldershot town centre and railway station.

13.3.5 A number of key cycle routes were identified to connect the development area to the surrounding facilities and local places. Where possible the strategy has designed cycle routes to be provided off road. These routes include such roads as Hospital Hill, Middle Hill, Gun Hill, Alison's Road and Government Road and will provide improvements for safe cycle passage further encouraging the use of this sustainable mode of travel.

School Access

13.3.6 An agreed strategy of using Hospital Hill, Middle Hill and Gun Hill to provide access from the western sections of the development to the A323 Wellington Avenue/Ash Road has been described in the proposals previously. Additionally, improvements to Wellington Avenue/Ash Road, including off-road cycleways and Toucan crossings at Croft Road, Aldershot Manor Park and Blackwater Way or North Lane have been put forward as part of the access strategy. These proposed improvements provide enhancements to this corridor for sustainable travel and will benefit the development as well as the many existing residents of Aldershot.

13.3.7 North Lane will provide a cycle link down to Ash Road where two alternative options for crossing Ash Road have been submitted for review by the Highway Authority. From Blackwater Way the residential roads will provide a safe and relatively quiet access to the school.

13.4 Travel Plan

13.4.1 A Workplace and Residential Travel Plan (WTP and RTP) have been proposed to promote changes in travel behaviour as a mitigation tool for the development. The TPs not only sets out a series of measures to encourage modal shift but also denotes the institutional mechanisms considered necessary to manage the process. This includes the role of the Travel Plan Coordinators in brokering and marketing measures for use by employees and residents and following up their implementation through the a monitoring and remediation framework.

13.5 Public Transport

13.5.1 Existing and new bus services will provide highly accessible, high frequency connections to and from Wellesley by public transport.

13.5.2 The analysis underpinning the strategy suggests that there is spare capacity on the existing Stagecoach Gold Line 1, operating via Queen's Avenue, which can provide a route to Aldershot town centre and Farnborough from the earliest phases of development.

13.5.3 The strategy proposes that a new service will be introduced to ensure high levels of access across the development area. The buses will operate with a 10 minute frequency and the anticipated journey time from Wellesley to Aldershot town centre will be approximately 10 minutes.

13.6 Highway Proposals

13.6.1 In response to the changes in the future pattern of vehicular movements, detailed junction capacity assessments have been undertaken using the traffic flow outputs from the model. These tests have informed the proposed off-site infrastructure measures being considered as part of the Transport Strategy resulting from Wellesley.

13.6.2 The proposed mitigation strategy considers the following locations in and around the site:

- New A331 on-slip;
- New roundabout incorporating Government Road / Thornhill Road / Gallwey Road and Ordnance Road to provide capacity for traffic accessing the new on-slip;
- Revised signal junction incorporating improved pedestrian crossings at Queen's Avenue / Alison's Road;
- Reduced speed limit along the A325 Farnborough Road with the introduction of a new Toucan Crossing at Pennefather's Road;
- Lane-drop improvement scheme on the A325 Farnborough Road;
- Revised signal junction incorporating improved pedestrian crossings at A323 Wellington Avenue / Hospital Hill; and
- A range of pedestrian and cycle improvements which substantially improve the north/south connect between the development area and the town centre as well as providing significant improvement to existing facilities along Ash Road.

13.6.3 The highway infrastructure improvements proposed as part of the Highway Strategy include providing a north facing on-slip on the A331.

13.6.4 The on-slip has been forecasted to provide sufficient improvements to the network, offering a new route for traffic to access the A331 and travel north to the M3. This proposed strategic route (alongside the full transport strategy) will provide a benefit to the wider network for both new and existing trips in and around Aldershot with a reduction in overall delay per vehicle and travel times across the network during the morning and evening peak hours.

13.7 Summary

13.7.1 In summary, the comprehensive package of hard and soft measures which have been committed in the TA will, when taken together, maximise the sustainability of Wellesley so that it is able to positively contribute towards the growth of Aldershot in terms of housing but also in terms of the economic activity.

13.7.2 The holistic transport strategy presented in this Transport Assessment also ensures that the site and its supporting master plan delivers the necessary combination of hard and soft measures necessary to promote sustainable travel. Priority given to walking, cycling and public transport which have been re-enforced by a pragmatic approach to infrastructure delivery that accommodates the traffic impact from Wellesley. This ensures that local concerns on road safety, speed, network capacity, connectivity and parking are addressed.

Wellesley

ALDERSHOT

Investing in homes since 1912

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Wellesley

ALDERSHOT

Figures

Figures

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KEY

- Site Location
- Phase 1 Area
- Motorway
- Main Road
- Local Road
- Hampshire/Surrey Border
- Railway Station

A327 Minley Road
M3
B3272 Hawley Road
B3411 Guilford Road
A325 Farnborough Road
A327
A3013
A327 Summit Avenue
Kennels Lane
A327 Elles Road
Iveley Road
A331
B3411 Frimley Road
Government House Road
A3011 Lynchford Road
A323
A323 Fleet Road
Queen's Avenue
B3411 Vale Road
Alison's Road
Thornhill Road
Government Road
Lakeside Road
Hospital Hill
Ordnance Road
North Lane
Bourley Road
A323 Wellington Avenue
Shawfield Road
Ash Street
A323 Ash Road
A3016 Upper Hale Road
A31

0 500m 1Km

WSP

TITLE:

SITE LOCATION & LOCAL HIGHWAY NETWORK

FIGURE No:

1

N:\Aldershot Urban Extension Phase (2011)\DRAWINGS\COREL\50400143--SITE LOCATION & LOCAL HIGHWAY .cdr

KEY

- Site Location
- Key Local Facilities
- On-Road Cycle Route
- Off-Road Cycle Route
- On-Road Cycleway
- Suggested Route
- 1 Ped / Cycle Route to Aldershot Town Centre & Railway Station
- 2 Ped / Cycle Route to Wavell School
- 3 Ped / Cycle Route to Connaught School
- 4 Ped / Cycle Route to Lynford Road Shops & North Camop Railway Station
- Formal Crossing
- Informal Crossing
- No Crossing Facility
- Railway Station

0 500m 1Km

WSP

TITLE:

EXISTING PEDESTRIAN & CYCLE PROVISIONS

FIGURE No:

2

N:\Aldershot Urban Extension Phase 1\DRAWINGS\COREL\50400143-EXISTING PED & CYCLE.cdr

Date Modified: 31/10/2012

Drawn By: ukkxm021

Key

Severity

Fatal

Serious

Slight

Centre of AUE Site

Site Boundary

Area A

Area B

Area C

Area D

Area E

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0 0.75 1.5 Kilometres

WSP

TITLE:

Aldershot Urban Extension
Hampshire Constabulary
Accident Data

FIGURE No:

3
Hampshire Constabulary
(01/08/2009-31/07/2012)

File: Q:\WSP_UK\WSP_D\Basing\Aldershot Urban Extension 111XXXXX\Output\Accident Data\311012\PIA - Hampshire Constabulary.mxd

Date Modified: 31/10/2012

Drawn By: ukkxm021

File: Q:\WSP_UK\WSP_D\Basing\Aldershot Urban Extension 111XXXXX\Output\Accident Data\311012\PIA - Hampshire Constabulary.mxd

Key

Severity

- **Fatal**
- **Serious**
- **Slight**
- **Centre of AUE Site**
- **Site Boundary**

0 0.2 0.4 Kilometres

WSP

TITLE:

Aldershot Urban Extension
Hampshire Constabulary
Accident Data

FIGURE No:

3A
Hampshire Constabulary
(01/08/2009-31/07/2012)

Date Modified: 31/10/2012

Drawn By: ukkxm021

File: Q:\WSP_UK\WSP_D\Basing\Aldershot Urban Extension 111XXXXX\Output\Accident Data\311012\PIA - Hampshire Constabulary.mxd

Key

Severity

- **Fatal**
- **Serious**
- **Slight**
- **Centre of AUE Site**
- **Site Boundary**

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0 0.25 0.5 Kilometres

WSP

TITLE:

Aldershot Urban Extension
Hampshire Constabulary
Accident Data

FIGURE No:

3B
Hampshire Constabulary
(01/08/2009-31/07/2012)