

Dunsbury Hill Farm

Transport Assessment

March 2012

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1. Introduction

- 1.1 Atkins has been commissioned jointly by Portsmouth City Council (PCC), Havant Borough Council (HBC) and the Partnership for Urban South Hampshire (PUSH) to prepare a hybrid planning application for the development of land at Dunsbury Hill Farm (DHF), near Waterlooville in Hampshire. Atkins has prepared this Transport Assessment (TA) report in support of the planning application. The location of the site is shown in Figure 1.1.
- 1.2 The development proposal involves the construction of a business park in two phases with an associated hotel development. The development incorporates a public transport strategy through the realisation of the Havant Cross Borough Bus Service, which would route through the site connecting Waterlooville west of the A3(M) and Leigh Park to the east.
- 1.3 In the context of the hybrid planning application, outline consent is sought for the Masterplan area with detailed consent for the access and link road only.
- 1.4 This TA report has been prepared based on the content and methodology set out in a scoping note dated 12th April 2011 that was submitted to HBC, Hampshire County Council (HCC) and the Highways Agency (HA). Following this, the approach was agreed, and some comments were received from each authority that has been taken into account in this report. Pre-application discussions have also taken place with the HA on 5th April 2011.
- 1.5 The report has been developed in accordance with the Department for Transport (DfT) document 'Guidance on Transport Assessments' (March 2007). In addition the DHF base VISSIM model has been developed in accordance with the HA's micro-simulation guidance (dated July 2007).

Approach

- 1.6 As outlined above the approach to assessment was agreed at the scoping stage.
- 1.7 The highway impact has been assessed using Transport for South Hampshire's (TfSH) Sub-Regional Transport Model (SRTM) developed by MVA Consultancy that provides the evidence base for the South Hampshire transport strategy development process, and a VISSIM micro-simulation model.
- 1.8 The base VISSIM model was developed by Atkins using existing traffic count data collected in May 2011 to support this application. The traffic demand from the SRTM has been used in the VISSIM model for the future year assessments.
- 1.9 The SRTM is a model suite that was developed to forecast travel demand overtime to 2036 in response to forecast transport improvements and interventions, and changes in land-use and general economic conditions. The model suite consists of the road traffic model (RTM), the public transport model (PTM), and the main demand model (MDM). Further, a local economic impact model (LEIM) considers changes in population, employment, accessibility and development.
- 1.10 It is considered, and agreed with the stakeholders, that this model provides the best basis for analysis of the impact of the Dunsbury Hill Farm development. The model is based on Core Strategy quantum of development at Dunsbury Hill Farm which is consistent with the Indicative Masterplan. Given the level of information available without firm fixes of building locations, it is considered appropriate that the assessment focuses on the traffic impact of the scheme using the South Hants SRTM.
- 1.11 The model has been reviewed to ensure that the land use allocation is correct, and in addition, that the public transport strategy including the Cross Borough bus service is captured and appropriately modelled.
- 1.12 The SRTM has a base year of 2010 and forecast years of 2014, 2019, 2026 and 2036. For the Dunsbury Hill Farm application the model was projected to 2026 only.

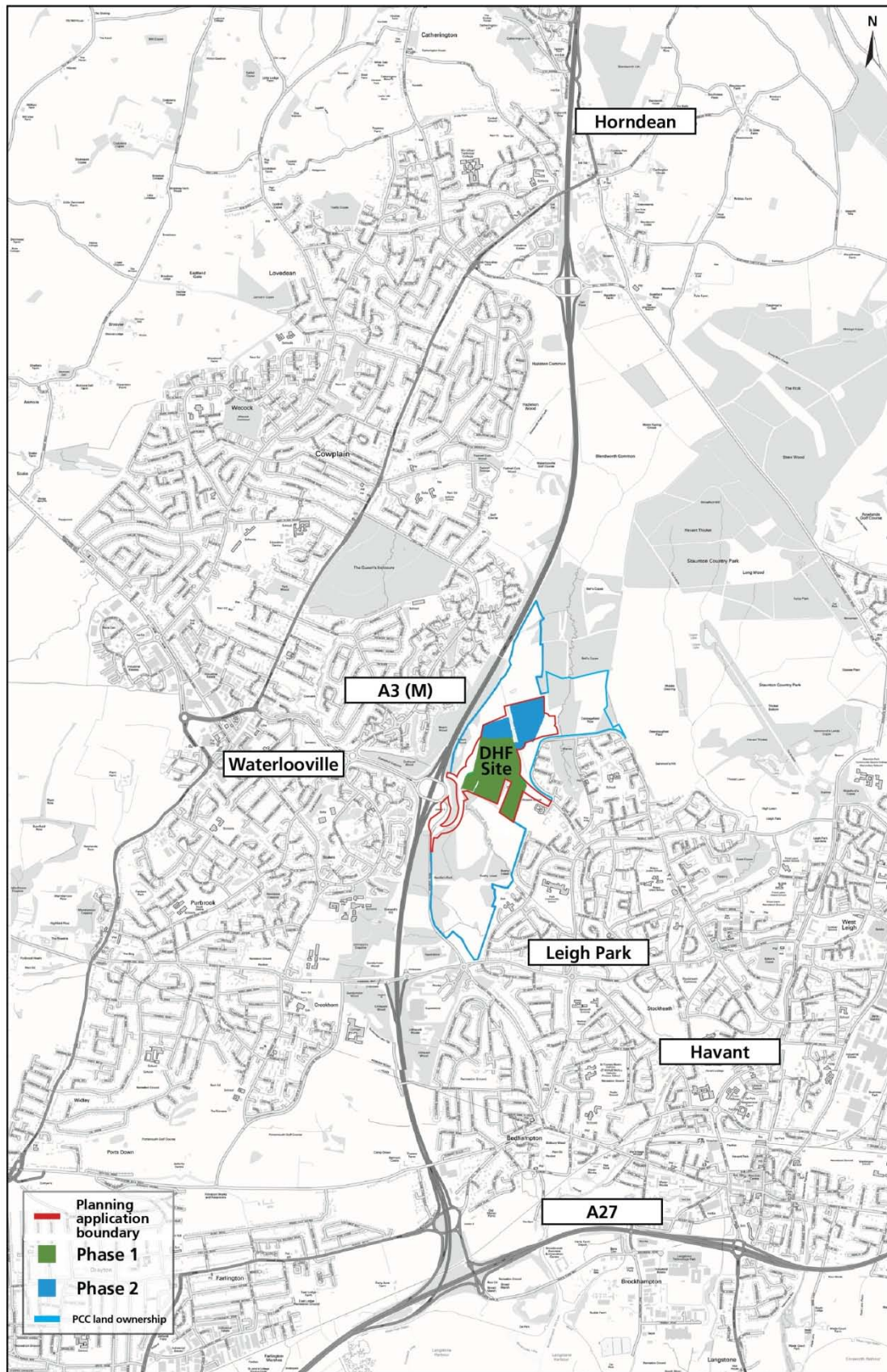
Background

- 1.13 Atkins was previously commissioned by PCC, HBC and PUSH to undertake a scoping study to assess the feasibility of implementing an access road to the proposed development site. The aim of the Stage 1 scoping study was to examine the options and feasibility of a new link road to serve the proposed development at Dunsbury Hill Farm, as well as the associated access arrangements with Hulbert Road. An important element of the study was consideration of the environmental and transport context of the site and the implications of the development.
- 1.14 The Stage 1 scoping study has informed the development of the Indicative Masterplan and established the initial design requirements for the link road now forming the subject of this planning application.

Report Structure

- 1.15 The remainder of this Transport Assessment is structured as follows:
- Section two outlines the planning context and policy associated with the development;
 - Section three describes the existing conditions around the site;
 - Section four outlines the development proposal;
 - Section five outlines the methodology used for the assessment of the traffic impact;
 - Section six assesses the transport impact of the development proposal;
 - Section seven discusses the measures to mitigate the impact of the development; and
 - Section eight provides a summary and conclusion to the report.

Figure 1.1 – Site Location Plan



2. Planning Policy and Context

- 2.1 The relevant transport and planning policy has been reviewed with a specific emphasis on the delivery of economic growth via the realisation of the Dunsbury Hill Farm site. A summary of the relevant policies is provided in this chapter under national, regional or local level policy.

National Level Policy

Planning Policy Guidance 13 'Transport' (2011)

- 2.2 Planning Policy Guidance 13 (PPG13) aims to integrate land use planning and transport at the national, regional and local level. By influencing the location, scale and type of development it is possible to reduce the need to travel, reduce the length of journeys and increase the use of public transport, walking and cycling. Application of the policies set out in PPG13 should enable people to make more sustainable transport choices, reduce congestion and improve air quality.
- 2.3 The objectives of PPG13 are as follows:
- Promote more sustainable transport choices for both people and for moving freight;
 - Promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling; and
 - Reduce the need to travel, especially by car.
- 2.4 In linking planning and transport, the guidance states that local authorities should:
- “Actively manage the pattern of urban growth and the location of major travel generating development to make the fullest use of public transport. This may require the phasing of sites being released for development, in order to co-ordinate with public transport improvements, and ensure it is well related to the existing pattern of development.”*
- 2.5 It states that in thinking about new development, the needs and safety of all in the community should be considered from the outset, and addressed in the transport assessment.
- 2.6 In terms of employment land use, businesses should make every effort, for instance by adopting travel plans.
- 2.7 It gives policy guidance for Local Authorities on parking control, traffic management and improving public transport, walking and cycling facilities, in particular integrating this with new development.
- 2.8 The proposed development at Dunsbury Hill Farm is in line with this national policy guidance, due to its location placing employment near to residential land use, thus promoting shorter trips via sustainable modes such as; foot and bicycle. In addition, the inclusion of the Cross Borough bus service shows a strong public transport strategy for the site.

Transport White Paper 'Future for Transport' (2004)

- 2.9 The UK government recognises that transport is vital to the economy and the way we live. Decisions that are made in regards to transport issues have an impact for decades to come and it is therefore essential that a long term view is taken. The DfT published the Transport White Paper in 2004 to cover their policy responsibilities for regulation of aviation and shipping, some aspects of road traffic regulation such as vehicle licensing, and rail services.
- 2.10 The paper aims to create a transport network that can meet the challenges of a growing economy and the increasing need for travel while also working towards the government's overriding environmental targets. The focus of the paper is to develop a coherent transport network with:

- A road network providing a more reliable and free-flowing service for both personal travel and freight, with people able to make informed choices about how and when they travel;
- A rail network providing a fast, reliable and efficient service, particularly for interurban journeys and commuting into large urban areas;
- Bus services that are reliable, flexible, convenient and tailored to local needs;
- Walking and cycling as a real alternative for local trips; and
- Ports and airports providing improved international and domestic links.

2.11 The strategy set out by the White Paper is dominated by the three key themes of sustained investment, improvements in transport management, and planning ahead.

2.12 The inclusion of the public transport strategy for the Dunsbury Hill Farm site would benefit the area in the longer term by providing connections for this and other routes that otherwise would not be feasible.

Delivering a Sustainable Transport System (2008)

2.13 Towards a Sustainable Transport System' (TaSTS) has been followed by the publication of 'Delivering a Sustainable Transport System' (DaSTS) in November 2008. DaSTS is shaping the future approach to transport in the DfT, with a new series of goals developed that will profoundly shape future strategy beyond 2014. These goals are:

- Tackle climate change;
- Support national competitiveness and growth;
- Promote greater equality of opportunity;
- Contribute to better safety, security and health; and
- Improve Quality of Life and promote a healthy natural environment.

2.14 DaSTS recognises that there are multiple challenges for transport, not only in terms of climate change and productivity and competitiveness, but also in terms of helping to tackle deep-seated deprivation, addressing poor health outcomes amongst many communities, improving transport safety and security, and protecting natural and urban environments.

2.15 The promotion of public transport on the Dunsbury Hill Farm site improves the sustainable travel options for the site and the area, and improves connectivity for the local communities in Waterloooville, Leigh Park and Havant.

Local Transport Act (2008)

2.16 The Local Transport Act, which received royal assent in November 2008, proposes a number of reforms that will give local authorities increased powers to drive forward transport improvements in their areas. This includes reforms to bus regulation, improved service delivery and new transport governance arrangements, with the potential to create new Integrated Transport Authorities (ITAs), and a range of tools to develop working arrangements to reflect the needs of city regions and localities.

Regional Level Policy

From Crisis to Cutting Edge: Regional Transport Strategy (2002)

- 2.17 From Crisis to Cutting Edge, the Regional Transport Strategy (RTS) for the South East of England identifies the strategic transport policy for the region up to 2016 and beyond. This describes policies in relation to public transport, management and maintenance of the road network, gateways into the region (including ports, airports and the channel tunnel), freight, parking, walking, cycling and priorities for regional investment.
- 2.18 The vision of the RTS is to act as the catalyst for further economic growth in the region, and to improve the quality of life for its residents by implementing a high quality transport system comparable to the high standards set by the rest of Europe. This is supported by the desire to build a system which can evolve in the future to reduce dependence on road transport, and provide high quality links not only to London, but to other regions within the UK, and to the continent through the region's role as an international gateway.
- 2.19 The RTS clearly identifies the biggest problem across the region as the over-reliance on road based transport for both travel and freight, compounded by a lack of investment in both the highway network and in public transport. With the exception of London, the region's transport system runs closer to capacity than anywhere else in the UK, with major congestion on the road network during peak times, and the highest level of overcrowding across the country on mainline trains into London. High levels of car ownership and dependency on private road journeys has seen many bus services withdrawn, while the tendency to travel longer distances has seen congestion increase.
- 2.20 The RTS identifies the important role that the region plays as a major international gateway into the country, through its ports, airports and rail network. The ports of Southampton and Portsmouth, and Southampton Airport act as valuable gateways in the region to the rest of the UK, accounting for over 36 million tonnes of freight and nearly five million passenger movements per year.
- 2.21 With regards to South Hampshire, the RTS earmarks the sub-region as an investment priority. Portsmouth and Southampton form the two largest cities within the region, and act as major centres of employment, thereby exerting a major economic influence within both the local and regional economy. The ports and airport act within the sub-region as a key focus for economic activity.
- 2.22 The Regional Transport Strategy identifies significant potential for economic growth in the region but highlights mismatch between affordable housing in city centre and decentralised employment. The RTS highlights the ports of Southampton and Portsmouth as valuable gateways in the region to the rest of the UK. The biggest problem across the region is the over-reliance on road based transport for both travel and freight, compounded by a lack of investment in the highway network and public transport.
- 2.23 The Dunsbury Hill Farm site allows for the realisation of investment in the Havant Cross Borough bus route. It also places a mix of employment land use close to residential communities.

PUSH South Hampshire Sub-Regional Strategy (2005)

- 2.24 Growth has occurred on a massive scale over the last forty years, creating a complex urban area focused on the two major cities of Southampton and Portsmouth, and a series of adjacent complementary settlements. These areas now form an almost continuous spread of loose-knit suburban development adjacent to the Solent coastline.

- 2.25 The goal for South Hampshire is to improve its economic performance to at least match the regional average. The target is an increase in Gross Value Added (GVA) of between 3.0 and 3.5 per cent per annum. To support this projected GVA growth rate the following transport related targets were suggested:
- Improve strategic accessibility in general;
 - Address bottlenecks;
 - Invest in public transport;
 - Improve links to London and Heathrow; and
 - Increase capacity of Southampton Airport.
- 2.26 Since there is insufficient scope within urban areas and current allocations to meet the long term needs of South Hampshire, further Greenfield housing development is required. PUSH's preferred approach is to concentrate on large proposals, termed 'Strategic Development Areas' (SDAs). These would be model sustainable communities, and would comprise a full range of services and facilities, as well as housing and employment opportunities. PUSH concluded that only two SDAs are required for South Hampshire to help deliver the required number of new homes between 2016 and 2026. Each SDA needs to be of a sufficient size and located within close proximity of one of the two cities, with scope to establish good public transport links to them. The two areas identified for SDAs are to the north and north east of Hedge End (around 6,000 new homes) and to the north of Fareham (around 10,000 new homes).
- 2.27 The PUSH's South Hampshire Sub-regional Strategy report states that the underlying growth in demand for travel on the existing road network will continue with increasing congestion and car journey times by 2026; this is based on modelling using the Solent Strategic Transport Model. The PUSH Strategy also relates to the housing and economic targets set out for South Hampshire as part of the South East Plan.

South East Plan (2009)

- 2.28 The South East Plan (SEP) provides a development framework for the region up to 2026, bringing together the strengths of the region and the challenges that it will face. It highlights cross cutting issues such as housing, transport, and the environment. There are ten sub-regional strategic areas across the region key to its improved prosperity. It also highlights challenges such as deprivation, social exclusion and demand for affordable housing, and the need to improve local environments and quality of life in the region as a whole.
- 2.29 In response to this, it presents the key principles for spatial planning in the region, including sub-regional strategy areas, regional hubs and growth areas, and primary town centres. There are nine Sub-regional Strategy Areas in the region, while a tenth area, the Isle of Wight, designated as a Special Policy Area. These Sub-regional Strategy Areas identify the potential to improve the economy through a variety of means which include addressing social exclusion and deprivation, regeneration of secondary town centres, new infrastructure and housing, and capitalising for future growth with existing facilities.
- 2.30 The Plan sets out, in a series of chapters, the principles to be adopted in supporting economic development (including employment development, retail and tourism), catering for the needs of the South East's residents (including housing and social infrastructure), and protecting and enhancing the environment and transport.
- 2.31 The SEP specifically sets out sub-regional policy of which South Hampshire is identified for large scale housing growth.
- 2.32 *"The aim for this sub-region is to improve economic performance up to 2026, which will allow for the provision of 80,000 net additional dwellings in this same time frame, whilst at the same time*

seeking to address areas of social deprivation and protect and enhance its environmental quality. South Hampshire is supported by the Government's designation in October 2006 of this sub-regional strategy as a New Growth Point, with an accompanying phased allocation of funds for key projects."

2.33 The particular challenges faced by the sub-region are how to:

- Realise the potential of the sub-region to improve its sustainable economic performance;
- Ensure the above benefits the areas of economic and social deprivation;
- Deliver sufficient decent homes and provide a well integrated mix to meet the needs of the area;
- Achieve all the above in the context of the constraints on land supply and respecting the sub-region's high environmental quality; and
- Ensure joint action to raise skills levels, development of appropriate business clusters and improving the scale of knowledge transfer from the sub-region's universities.

2.34 Development at Dunsbury Hill Farm would deliver economic development in a sustainable way consistent with the objectives of the South East Plan. It would help minimise social deprivation in the area, with the Cross Borough bus service allowing communities to be connected to jobs and services.

Regional Economic Strategy (2006-2016)

2.35 The Regional Economic Strategy (RES) has a vision for the South East to become a world class region achieving sustainable prosperity. The South East remains one of Europe's most successful regions, but must face a challenging environment in order to maintain success. In order for the region to maintain its position, it must face up to the global challenge, invest in smart growth, and finally aim for long-term sustainable economic prosperity.

2.36 The key concern for the South East's status as a world class region is that it has reached a junction, between remaining on course for excellence, and tipping in a downward spiral of decline. Unless the region meets its three main challenges head on, decline is expected within the region. These challenges are as follows:

- To identify and maximise the opportunities created in the global economy;
- The need for smart investment in education, skills, and infrastructure, as well as encouraging innovation, enterprise, and competition to generate growth; and
- To encourage sustainable prosperity through sustainable consumption and production, investing in sustainable energy production to mitigate climate change, enhancing the natural environment and protect natural resources, and encourage sustainable communities.

2.37 In particular to the South Hampshire sub-region, the RES makes reference to potential growth along the coastal areas of the South East region. Combining the performance of coastal areas within the region, if output could be equal to the average output across the UK, an extra £13billion would be generated in Gross Value Added (GVA). Within the RES, Portsmouth is specifically mentioned as a key port for growth, through long-term investment. The city is designated as a regional hub for economic activity and transport, and to play a leading role in developing economic vitality within its broader sub-region.

Regional Network Report for the South East (2008)

2.38 The HA's annual Regional Network Report (RNR) provides a regional outlook of the Strategic Road Network (SRN) within the South East of England. Beyond detailing the current state of the SRN within the region, the RNR also focuses on the HA's position with regard to national and

regional planning and transport policy. The report links directly with national policy with regard to reducing the need to travel, developing a transport system to benefit the economy, reducing carbon emissions, and delivering sustainable transport (DaSTS/TaSTS), as well as the SEP and the RES.

- 2.39 Data provided by the report shows the condition of the SRN with regard to travel patterns, vehicle flows, environmental issues, and vehicle delay. At a sub-regional level, South Hampshire and routes leading into the sub-region suffer from some of the slowest and least efficient parts of the SRN nationally. The A3, A27, M3 and M27 are all listed as suffering from consistent daily delays, congestion, and stress through operating over capacity. At the local level, this includes the M27 between Portsmouth and Southampton, the A3 between London and Portsmouth, and the A27 to Hastings. By 2026, the entire M3, M27 and A27 between Portsmouth and Chichester are expected to experience prolonged delays and congestion throughout the day extending beyond the AM and PM peak hours.
- 2.40 Development at Dunsbury Hill Farm would add additional trips onto the A3(M) at Junction 3 and 4 in particular. However the modelling assessment of these has been used to show this would not have a detrimental impact on capacity here. The development of the site would however allow the realisation of the Cross Borough bus route which is a long term strategy for the region.

Local Level Policy

Hampshire Local Transport Plan 3 (2011 - 31)

- 2.41 The new Local Transport Plan, LTP3, has been released which contains two elements: a long-term strategy covering the period from April 2011 to 2031 and a short term three-year implementation plan.
- 2.42 The main objectives of LTP3 are structured around the following themes:
- Supporting the economy through resilient highways;
 - Management of traffic;
 - The role of public transport;
 - Quality of life and place; and
 - Transport and growth areas.
- 2.43 The emphasis of the LTP over the next five years will not be on major capital projects, but on maximising the efficiency of the existing network to support the economy through the following priorities:
- To support economic growth by ensuring the safety, soundness, and efficiency of the transport network in Hampshire;
 - 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; and
 - 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.
- 2.44 The core philosophy of the LTP is that transport problems should be addressed using the principles of:
- **Reduce:** Wherever practicable and relevant, to reduce journey lengths and the need to travel;

- **Manage:** Where journeys cannot be avoided, to make the best use of existing infrastructure across all modes and introduce measures to influence travel choices; and
- **Invest:** If unavoidable travel demand cannot be met by the existing infrastructure then to provide additional infrastructure.

2.45 The Dunsbury Hill development is in line with these objectives by providing alternative travel choices and reducing the need to travel, with employment development located close to existing residential communities.

Solent Transport Sub-Regional Strategy (STSS) (2006 - 11)

2.46 The STSS sets out the broad strategy within which Hampshire County Council, Portsmouth City Council and Southampton City Council aim to manage the transportation challenges and opportunities that the South Hampshire Sub-Region will face over the next 20 years.

2.47 The Strategy incorporates the four shared priorities of the three authority's set out in LTP2; these shared priorities are:

- Accessibility;
- Congestion;
- Road Safety; and
- Air Quality.

2.48 This Strategy also represents a transport strategy for Solent Transport - a formalised partnership of local authorities, regional agencies, the Highways Agency and private sector transport operators such as rail authorities and port operators. It was launched in March 2003 and has become an effective delivery vehicle for transport innovation and improvements in the sub-region.

2.49 Whilst other successful areas in the south east depend upon linkages with the capital, the Solent area operates in a distinct and largely separate manner to London. However, the public transport network in the Solent area is limited, with less than 7% of journeys to work made by bus or train. Overall levels of car ownership are higher than the national average, with 84% of households owning one or more cars compared to the national average of 74%.

2.50 The fact that bus services are operated by so many operators, with different levels of frequencies and fares has meant that the total offering is rarely considered as a cohesive network. The establishment of the Solent Travelcard is a powerful tool in encouraging bus use across company boundaries and breaking down the reluctance of residents to use their bus services.

Transport for South Hampshire – Towards Delivery (2008)

2.51 The TfSH statement 'Towards Delivery' sets out the issues and priorities for the area in the context of planned growth. A strategy has been devised that considers how and when journeys are made and how they can be managed in the future with the increasing demand on the network from housing and employment growth. The strategy has three main strands: Reduce – Manage – Invest. The intention is that these work together to deliver the identified development sites.

2.52 The 'Reduce' element of the strategy includes initiatives to reduce the need to travel via planning policies, careful design of development sites, significant public transport improvements and supporting sustainable modes of walking and cycling as well as managing car parking. The 'Manage' element includes better managing the existing infrastructure including the motorways, trunk roads, bus services, trains and introducing park and ride sites. This aspect has considered the use of technology applications. The 'Invest' element can be delivered alongside the 'reduce and manage' aspects. This includes investment in infrastructure via transport schemes for road and rail with varied funding sources including limited funding available from the Regional Funding Allocation.

- 2.53 The Dunsbury Hill development is in line with these objectives by reducing the need to travel, with employment development located close to existing residential communities, and investing in transport infrastructure with the public transport strategy, with the aim of managing travel patterns.

Havant Borough District-Wide Local Plan (2005) & Saved Policies (2008)

- 2.54 The policies included in the Local Plan are fully integrated with Hampshire's Local Transport Plan's objectives in promoting sustainable development that minimises the demand to travel, particularly by car, and promotes the use of walking, cycling and public transport.
- 2.55 The Havant Borough District-Wide Local Plan (HBDWLP) has been replaced by the Local Development Framework and the Core Strategy. Some policies from the HBDWLP have been saved. The most relevant saved policy is as follows:

- **Policy T2 Safeguarding of Land for South Hampshire Rapid Transit System** - Development will not be permitted where this conflicts with the land safeguarding for public transport measures on the length of the A3 London Road corridor and adjoining side roads between the district boundary with Portsmouth City and East Hampshire District.

- 2.56 The development of Dunsbury Hill Farm, with provision of bus infrastructure on site, allows for the safeguarding of the Bus Rapid Transit System.

Havant Borough Council Local Development Framework Core Strategy (Adopted 2011)

- 2.57 The Core Strategy vision is to work towards a 'cleaner, safer and more prosperous borough' and aligns with the Sustainable Community Strategy.

- 2.58 Dunsbury Hill Farm is identified as Strategic Site No. 3 in the Core Strategy, and is seen as critical to the delivery of the Core Strategy vision. It will form a new business gateway to South Hampshire from the A3 (M) and is intended to deliver a high number of locally-based accessible jobs in close proximity to Leigh Park and promote regeneration for the area by 2026. Within the Core Strategy, the site profile outlines a number of site requirements, which includes:

- Park Lane will be enhanced as a leisure route and be provided with a metalled surface for use by cyclists and pedestrians;
- Green infrastructure links between Havant Thicket Reservoir and Dunsbury Hill Farm will be enhanced;
- The layout of the site will provide an accessible, safe and permeable environment fully integrated with its surroundings;
- Entrance to the site from the A3(M) should incorporate a dramatic gateway feature;
- Highway access and appropriate mitigation measures including demand management measures will be provided in accordance with the DfT Circular 02/2007;
- A dedicated public transport link is to be provided between residential areas to the east and west;
- A green travel plan will be required to demonstrate the measures undertaken to maximise the proportion of journeys to and from and within the site made by public transport, cycling and walking.

- 2.59 Although the site is an out-of-centre site the proposed cross-borough transport route will link it with other strategic sites and Havant Town Centre.

- 2.60 Strategic Policy CS20 and Development Management Policies DM11 to DM16 relate to transport as outlined below.

Strategic Policy CS20 Transport and Access Strategy

- 2.61 Strategic policy CS20 (Transport and Access Strategy) states that development will be permitted that:

- Is consistent with and contributes to the implementation of the 'Reduce, Manage and Invest' strategy;
- Does not increase congestion and promotes better use of existing transport networks;
- Improves accessibility to goods, services and employment and promotes equality in the transport system;
- Provides transport management measures to ensure the safe and efficient operation of the strategic and local road network;
- Ensures that highway design responds positively to the characteristics of the area and delivers a high quality public realm for all users;
- Maintains or improves the range of transport modes accessible to the users of the development site with specific emphasis on public transport, especially high quality/frequency buses and includes walking and cycling where appropriate; and
- Improves highway, cycling and pedestrian links between the western built up area of the borough (Waterlooville) and the eastern area of the borough (centred on Havant) to create a strong east/west communication axis that passes through Dunsbury Hill Farm/Leigh Park.

- 2.62 The Dunsbury Hill Farm development allows for the realisation of a Cross Borough bus service.

Development Management Policies

- 2.63 Development Management Policies, DM11 to DM16 are outlined below.

DM11 Planning for More Sustainable Travel

- 2.64 DM11 Planning for More Sustainable Travel states that the council will seek to ensure that every opportunity is taken to increase integration of sustainable travel modes and availability of non-motorised modes by appropriate measures including:

- Securing on-site and/or off-site interventions that promote integrated travel and access by non-motorised modes.
- Requiring safe and secure vehicular and cycle parking and turning facilities to adopted standards.
- Securing appropriate improvements to public and community transport (including infrastructure requirements) in accordance with the Hampshire Local Transport Plan and (where applicable) the relevant sub-regional transport strategy.
- Proposals for reducing opportunities for informal parking in the area surrounding the development where this would impact on the capacity, operation and safety of the local highway network and/or the amenity of the locality.
- Ensuring that new developments are located and designed at the outset to encourage lower vehicle speeds and safe, permeable, inclusive layouts that integrate with existing pedestrian, cycle and public transport routes. This will facilitate and encourage short distance trips by cycle and walking, including to public transport interchanges.

- 2.65 The proposed development, with provision of bus infrastructure on site, allows for the safeguarding of the Bus Rapid Transit System and therefore is consistent with these policies in promoting access to the site by public transport.

DM12 Mitigating the Impacts of Travel

- 2.66 New developments will be required to mitigate their travel impact, including the environmental impacts of travel (such as noise, air and visual pollution) and impacts on amenity, health and climate change by ensuring that, where relevant, the following criteria are met:

- Adequate provision is made for integrated and improved transport infrastructure or appropriate mitigation measures, through direct improvements and S106 contributions in accordance with the Hampshire County Council Transport Contributions Policy.
- The submission of a transport assessment and travel plan alongside any planning application on proposals for major development or where a proposal is likely to have significant transport implications.
- The submission of a transport statement must accompany planning applications to explain changes to travel demand.
- A bond is provided which will be used to mitigate negative travel impacts of the development, should the travel plan fail to achieve its targets. This bond will be held by the relevant local transport authority.
- In relation to outline planning applications, a framework for the preparation of travel assessments and travel plans will be submitted with the planning application proposals.

- 2.67 This transport assessment includes a Framework Travel Plan to affect the travel demand to the site and mitigate the impacts of the development.

DM13 Car and Cycle Parking on Residential Development

- 2.68 Residential development will only be permitted where it provides car parking and cycle storage in accordance with the standards set out in the Residential Car Parking and Cycle Provision Supplementary Planning Document.

DM14 Car and Cycle Parking on Development (excluding residential)

- 2.69 Development will only be permitted where it provides parking for cars, motor cycles and cycles in accordance with the relevant standards. Such parking provision must be appropriately located in relation to the development and be practical for its intended use.

DM15 Safeguarding Transport Infrastructure

- 2.70 Development will not be permitted where it is prejudicial to the future provision of strategic transport infrastructure. Land to be safeguarded will be identified in the Development Delivery (Allocations) Plan or other local development document as appropriate and agreed with the appropriate delivery body.

DM16 Freight Transport

- 2.71 Freight movements resulting from a development should not impact negatively on the environment or the quality of life of those who live and work nearby. Where such developments will have a negative impact on the capacity, operation and safety of transport networks, appropriate mitigation measures should form part of the application for consideration by the council.

- Proposals generating significant freight or goods movements should have good access to transport networks. Preferred sites for such development will be those which have the potential for rail access. The provision of rail freight will be encouraged wherever possible. Otherwise, such development should be located where there is ready access to roads which

are higher in the road hierarchy and where sensitive areas are less likely to be affected by heavy goods vehicles.

- Proposals should make reference to and be in accordance with, the Hampshire Freight Strategy.

Havant Borough Council Dunsbury Hill Farm Development Brief (2007)

2.72 The Dunsbury Hill Farm development brief outlines the Council's key planning requirements for the implementation of the Dunsbury Hill Farm development. In summary, this includes:

- A Transport Assessment will be required in support of the development which will *"outline the both the positive and negative consequences of the development on the existing and/or the proposed highway infrastructure, the measures proposed to influence travel to the site, and the implications for off-site highway works."* and
- Development of the site must *"demonstrate a sustainable transportation strategy and include a network of routes for public transport, cyclists and pedestrians within the site....and that financial contributions will be sought towards green transportation initiatives in accordance with Local Plan Policy T11 including, for example, the provision of peak hour bus services to the site, improved cycle links between the site and adjacent residential areas, Havant and Waterlooville Town Centres, and Havant station."*

Parking Standards

2.73 The HBC and HCC parking standards for employment and hotel land uses are shown in Table 2.1 below.

Table 2.1 – HBC Parking Standards

Land Use	Car Parking Standard Maximum Limit	Cycle Parking Standard (minimum)	
		Long Stay	Short Stay
B1 Office	1 space per 30 sqm	1 stand per 150 sqm	1 stand per 500 sqm
B2 General Industrial	1 space per 45 sqm	1 stand per 350 sqm	1 stand per 500 sqm
B8 Warehousing	1 space per 90 sqm	1 stand per 500 sqm	1 stand per 1000 sqm
C1 Hotel	1 space per bedroom	1 space per 6 staff or 1 space per 40 sqm	1 stand per 10 bedrooms

2.74 Within the Masterplan area the principle will be adopted that the proposed levels of parking provision will be in accordance with relevant HBC standards for employment land uses and hotel developments. Where possible the strategy will, commensurate with the public transport strategy, seek to reduce provision to strengthen the sustainability credential of the site. This can be implemented via a car park management plan as a core component of the Workplace Framework Travel Plan.

3. Existing Conditions

- 3.1 This chapter reviews the existing site in terms of its location, the local highway network, public transport provision, walking and cycling facilities, traffic flows and accident data. It also presents the results from the base VISSIM model.

The Site

The Dunsbury Hill Farm site predominantly comprises agricultural land that lies within an undeveloped strategic gap immediately east of the A3 (M) motorway Junction 3, between Waterlooville and the northern area of Havant. The land is owned by PCC, however is situated in HBC, who is the planning authority for the site. The slip road leading off the A3(M) is the B2150 known as Hulbert Road which leads southwards to Purbrook Way. It is intended that this road will be adjoined by the link road to provide access to the site.

- 3.2 The site is currently characterised by the following key features:

- A series of extensive open fields enclosed within established hedgerow, lying to the west of Leigh Park residential area;
- Park Lane which connects Waterlooville and Leigh Park estate (Havant) and dissects the site across the north east corner;
- Belts of woodland lying to the south and west of the site which are identified as Sites of Importance to Nature Conservation (SINCs);
- A number of trees located within and adjacent to the study area;
- The Hermitage Stream which runs to the south west of the site, and the adjoining area, which is located within Flood Zone 3;
- Two high voltage power lines and a mains gas pipeline running through the eastern part of the site parallel to the study area boundary;
- Further overhead power lines passing through the site along an east west axis at approximately the centre of the site; and
- Part of the site overlies a former landfill site containing inert construction waste from the A3 (M) motorway requiring appropriate risk assessments.

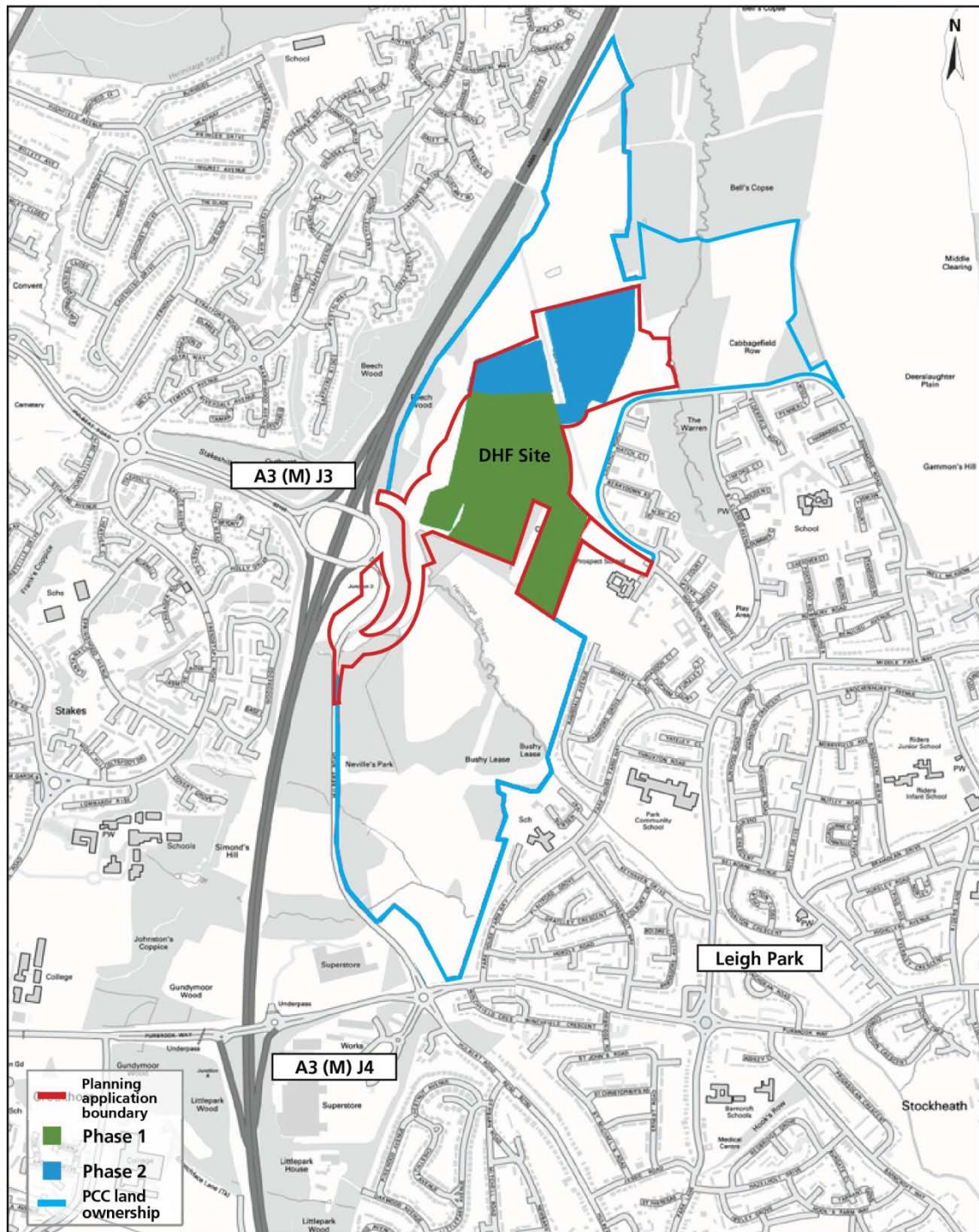
- 3.3 As the existing site is predominantly comprised of agricultural land, there are currently no vehicle trips generated by the site.

Local Area

- 3.4 A plan of the site and local area is shown in Figure 3.1.

- 3.5 The land to the west, east and further south of the site is predominantly characterised by residential land use. This includes Waterlooville to the west, the Leigh Park estate to the east and Havant further south. There are a number of educational establishments in the wider area including South Downs College, which is off Purbrook Way to the west of the A3(M). There is retail land use located to the south of the site, including an ASDA store and B&Q store off Purbrook Way. Havant town centre is located approximately 3km south east of the site.

Figure 3.1 – Local Site Area



Leigh Park

- 3.6 Leigh Park is a residential estate that lies to the east of the proposed development. It is a 20 mph zone. The roads in the estate are generally single carriageway with one lane in each direction, with street lighting and footways on both sides of the carriageway. There are parking restrictions around the road junctions and some parking lay-bys and driveways; otherwise, parking is not restricted.

- 3.7 There is a mini roundabout at the junction of Middle Park Way and Woolston Road. There is a roundabout at the junction of Woolston Road and Calshot Road, which also provides access to Bellway Homes and a fourth arm, which is provided to allow for the future bus access to Dunsbury Hill Farm.

B2150 Hulbert Road

- 3.8 The B2150 Hulbert Road links the A3 London Road in WaterlooVille to the B2149 Bedhampton Road, in Bedhampton, adjacent to Havant. Adjacent to the site, the B2150 Hulbert Road is a single carriageway road with one lane in each direction and a derestricted speed limit. The speed limit is derestricted through the A3 (M) Junction 3 roundabout and reduces to 30 mph north of the B2150/Purbrook Way roundabout. The carriageway width on this section is 3.2 metres in both directions. There are no footways or cycle routes along the B2150 Hulbert Road. Hulbert Road past the site is shown in Figure 3.2.
- 3.9 The section of Hulbert Road between the A3(M) Junction 3 and west to the Tempest Avenue / Frenstaple Road roundabout is dual carriageway with a derestricted speed limit.

Figure 3.2 – Hulbert Road



B2150 Hulbert Road / Purbrook Way / Asda roundabout

- 3.10 To the south of the proposed site, the B2150 Hulbert Road intersects with Purbrook Way at a five arm roundabout, comprised of the following arms:
- B2150 Hulbert Road north;
 - B2150 Hulbert Road south;
 - Purbrook Way west;
 - Purbrook Way east; and

- The Asda access road.

3.11 The roundabout has two circulatory lanes. The B2150 Hulbert Road south, Purbrook Way east and west arms all have two lanes on approach to the roundabout junction. Although not marked as such the Asda access also has two lanes on approach to the roundabout. The roundabout shown in Figure 3.3 currently experiences congestion and has been identified as a bus congestion location. Queues have been observed at this roundabout reaching 9 and 7 vehicles in the nearside /offside lanes on Hulbert Road North; 9 and 3 vehicles on Purbrook Way East; 7 in each lane on the ASDA exit and 9 and 3 vehicles in the nearside/offside lanes of Purbrook Way West (all PM Peak). These queues demonstrate the existing delay at the roundabout.

Figure 3.3 – Hulbert Road / Purbrook Way Roundabout



Purbrook Way

- 3.12 Purbrook Way on the section between the A3(M) Junction 4 and the Hulbert Road / Asda roundabout is one wide lane in each direction, other than the approaches to the junctions, which are two lanes. The speed limit changes half way along and is 30 mph nearer to Hulbert Road and 40 mph nearer to the A3(M). There is street lighting and pavement on the north side and a short section on the south side close to the Hulbert Road roundabout. This southern section of footway connects to a signalled pedestrian crossing of Purbrook Way close to the pedestrian access to the B&Q store.
- 3.13 The section of Purbrook Way east of the Hulbert Road / Asda roundabout has one lane in each direction with many right turn ghost islands and pedestrian refuges as well as parking bays. There is street lighting and footways on both sides of the road. The speed limit is 30 mph.
- 3.14 The section of Purbrook Way west of A3(M) Junction 4 has one wide lane in each direction, with a section of two lanes on the eastbound approach to the A3(M) junction (for approximately 200m). The speed limit is 40 mph, changing to 30 mph further west towards Waterlooville. There is street lighting and footways on both sides of the road to the west of College Road, and on the north side only east of College Road, which is shared with cyclists.

Strategic Highway Network

A3 (M) Junction 3 Roundabout

- 3.15 The A3 (M) Junction 3 roundabout is effectively a four arm un-signalised roundabout, with an additional two exit only arms as follows:
- B2150 Hulbert Road West;
 - B2150 Hulbert Road East;
 - A3 (M) Southbound off-slip;
 - A3 (M) Northbound off-slip;
 - A3 (M) Southbound on-slip (exit only); and
 - A3 (M) Northbound on-slip (exit only).
- 3.16 The B2150 Hulbert Road to the west of the junction is dual carriageway with two lanes entering and two lanes exiting the roundabout. To the east of the junction it is a single carriageway road with one lane in each direction, widening to two lanes at the entry point to the roundabout junction.
- 3.17 The A3 (M) on and off slips all have two lane entries to and exits from the roundabout junction (see Figure 3.4). The roundabout has two circulatory lanes.

Figure 3.4 – A3(M) Junction 3 – Southbound Off Slip



A3(M) Junction 4

- 3.18 The A3 (M) Junction 4 consists of two small roundabouts either side of the A3 (M). The western roundabout has the following arms:
- A3 (M) Northbound off-slip;
 - Purbrook Way West; and
 - Purbrook Way East.

- 3.19 The eastern roundabout consists of the following arms:
- Purbrook Way West;
 - Purbrook Way East;
 - B&Q Access; and
 - A3 (M) Southbound on-slip (exit only).
- 3.20 All approaches have two lanes except for the B&Q access, which is one lane in and one lane out. All exits at this junction have two lanes except Purbrook Way eastbound exit which is one lane. Purbrook Way west merges to one lane 50 m west of the junction. The Purbrook Way westbound approach is shown in Figure 3.5.

Figure 3.5 – A3(M) Junction 4 – Purbrook Way westbound approach



Public Transport

Buses

- 3.21 The nearest bus services are Route 23 at Calshot Road (Larkwhistle Walk), approximately 400m from the site, and Route 39 at Middle Park Way (Woolston Road), approximately 500m from the site. Route 37 runs west of the site in WaterlooVille. A summary of these and other nearby services is shown in Table 3.1 below. These services are operated by Stagecoach. The bus station in Havant town centre has recently been redeveloped and provides a good interchange facility between bus services, as well as bus to rail journeys, being located only 300m from Havant rail station.

Table 3.1 – Existing Bus Services near Dunsbury Hill Farm

Route number	Nearest stop	Origin	Destination	AM Peak Hour Frequency
23	Calshot Road (Larkwhistle Walk)	Southsea	Leigh Park	10 minutes
39	Middle Park Way (Woolston Road)	Havant	Wecock Farm	15 minutes
37	Hulbert Road Roundabout, Waterloo	Havant	Alton	30 – 60 minutes
20	Dunsbury Way (Leigh Park)	Havant	Portsmouth Harbour	30 minutes
21	Dunsbury Way (Leigh Park)	Havant	Portsmouth Harbour	20 – 30 minutes

Rail Services

3.22 The nearest railway station is Bedhampton, which is just over 2km from the site, although Havant Station (just over 2.5km from the site) on the main London to Portsmouth line offers more services. Both stations are within approximately 15 minutes cycling distance from the site. Rail services at Havant are operated by First Great Western, Southern and Southwest Trains. A summary of the services at Havant and Bedhampton stations are shown in Table 3.2 and Table 3.3 below.

Table 3.2 - Existing Rail Services at Havant Station

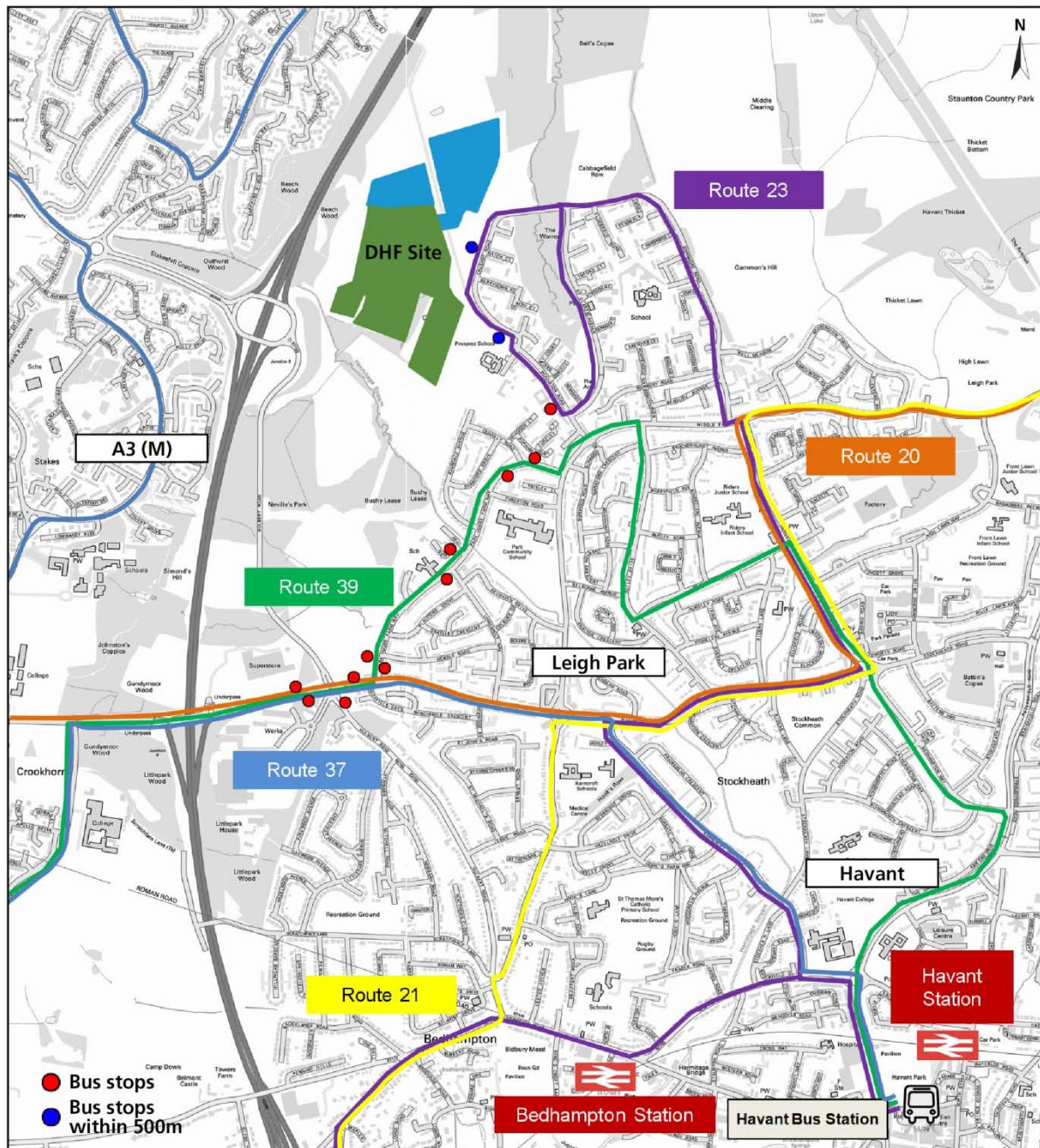
Train Operating Company	Origins	Destinations	AM Peak Hour Frequency
First Great Western	Bristol Temple Meads	Brighton	N/A (limited daytime service)
Southern	Barnham Brighton Ford Littlehampton London Victoria	Portsmouth & Southsea Portsmouth Harbour Southampton Central	5 trains / hour
Southwest Trains	Guildford London Waterloo	Havant Hilsea Portsmouth & Southsea Portsmouth Harbour	3 trains / hour

Table 3.3 – Existing Rail services at Bedhampton Station

Train Operating Company	Origins	Destinations	AM Peak Hour Frequency
Southern	Barnham Brighton Ford Littlehampton London Victoria	Portsmouth & Southsea Portsmouth Harbour Southampton Central	4 trains / hour
Southwest Trains	Guildford London Waterloo	Havant Hilsea Portsmouth & Southsea Portsmouth Harbour	2 trains / hour

3.23 Figure 3.6 shows the public transport links within the vicinity of the site, and includes the bus stops that are within close proximity to the site.

Figure 3.6 – Public Transport in the vicinity of Dunsbury Hill Farm



Walking and Cycling

- 3.25 There is an existing bridleway passing through the development site along Park Lane, which forms a cycle route linking Tempest Avenue, to the west of the A3 (M), to Middle Park Way and Dunsbury Way to the east of the A3 (M); this crosses the A3 (M) on a bridge to the north of Junction 3. There is an off-road cycle route southbound from Woolston Road roundabout along Middle Park Way. The route continues off-road along the Hermitage Stream path which heads south towards Havant town centre. There is also an off-road cycle route along Purbrook Way west of the Hulbert Road / ASDA Roundabout which heads to the west of the A3(M). All these routes are connected to the residential areas and Havant town centre, with a network of suggested link routes, some of which are signposted at present.

- 3.26 There is a circular footpath adjacent to the site between Park House Farm Way and Ramsdale Avenue and between Ramsdale Avenue and Park Lane, which connects with the Park Lane bridleway. An east-west bridleway connects with Park Lane leading from the north of the site eastwards to Stansted and Rowland's Castle. From this there is a bridleway leading south to Swanmore Road and Dunsbury Way.
- 3.27 The walking and cycling routes are shown in Figure 3.7. These were sourced from the Havant Borough Council Cycle Map 2011. In addition, walking and cycling isochrones have been measured around the site to illustrate the areas within reasonable walking and cycling distances. These are shown in Figure 3.8 and Figure 3.9. The 400m, 800m and 1600m distances for walking correspond to standard walk times of 5, 10 and 20 minutes. The 2km, 5km and 8km cycling distances correspond to average cycle times of approximately 5-10, 20 and 30 minutes.

Figure 3.7 – Walking and Cycling Routes near Dunsbury Hill Farm

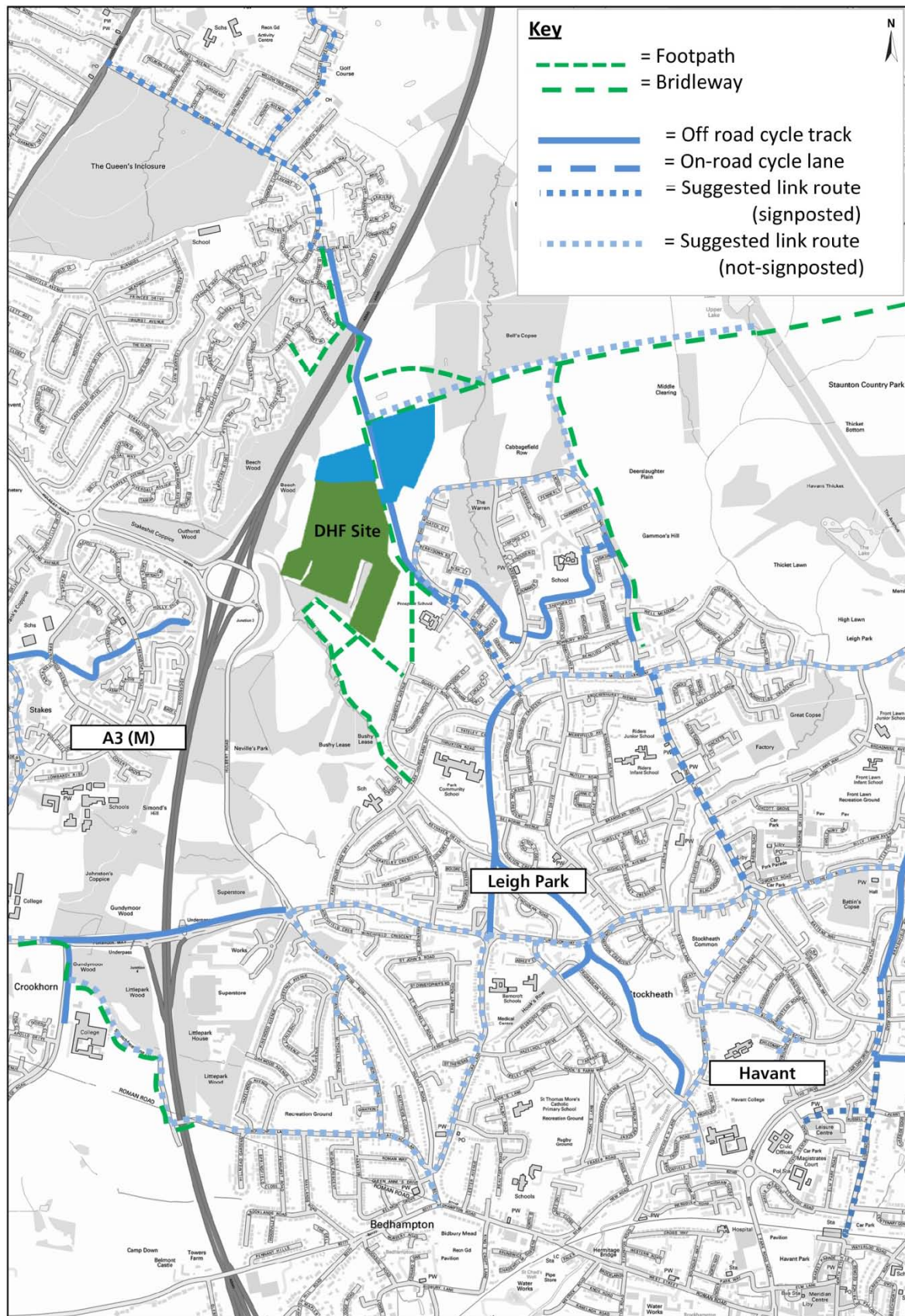
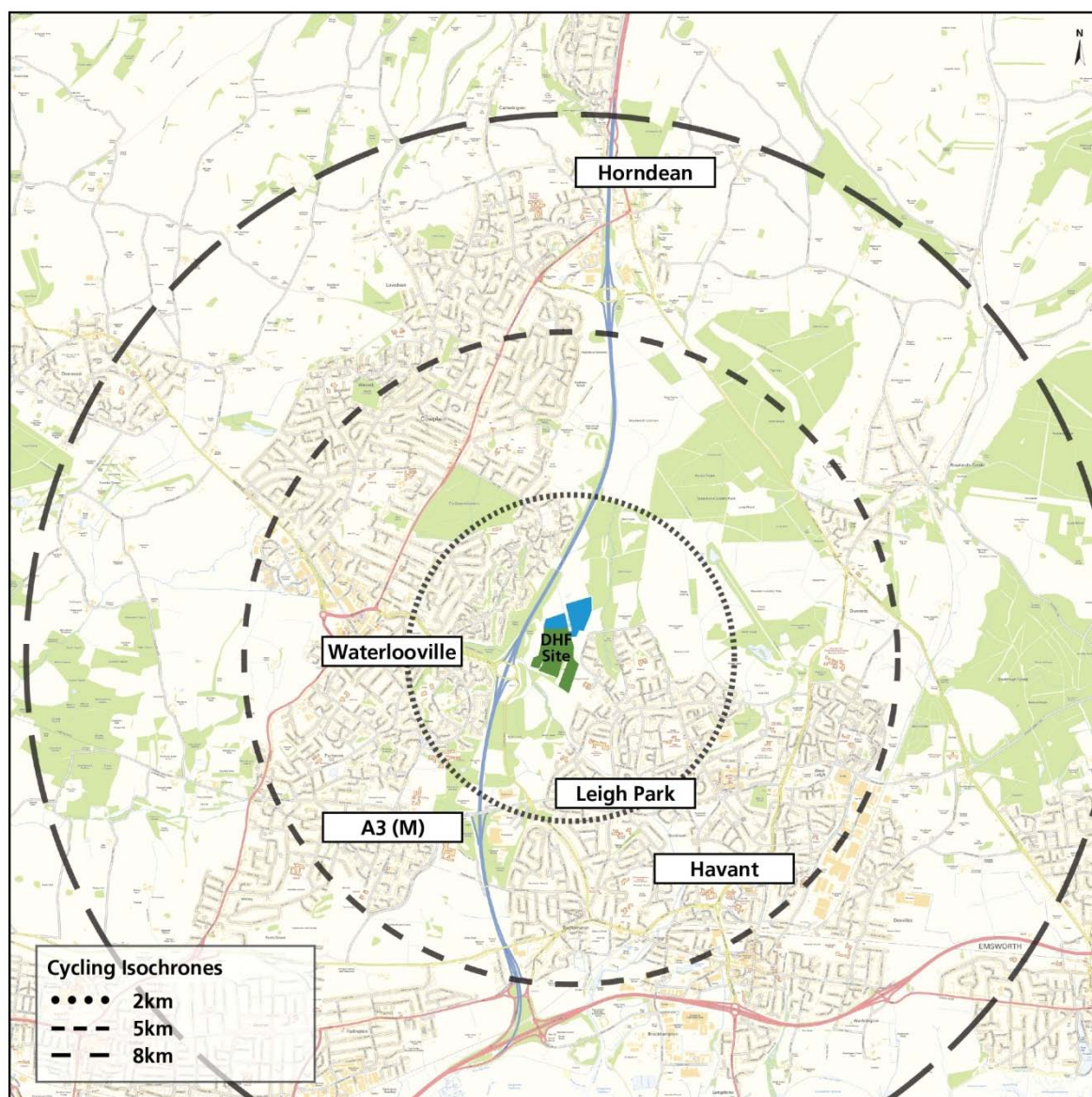


Figure 3.8 – Walking Isochrones from Dunsbury Hill Farm



Figure 3.9 – Cycling Isochrones from Dunsbury Hill Farm



Accident Analysis

Accident data has been obtained from Hampshire County Council for the last five years from June 2006 to May 2011 for the Study Area, as covered by the VISSIM model. A summary of the accidents recorded at each junction, or section of road, is shown in Table 3.4 below. A plot of the accidents is shown in Appendix B.

Table 3.4 – Summary of Accidents recorded in Study Area from 2006 to 2011

Location	Total No. of Accidents			Involve Ped	Involve Pedal Cyclist
	Slight	Serious	Fatal		
Hulbert Road (100m west of Frendstaple Road Roundabout)	2	0	0	1	0
Hulbert Road / Tempest Avenue / Frendstaple Road Roundabout	13	0	0	0	3
Hulbert Road (between Tempest Avenue Roundabout and A3(M))	2	2	0	0	0
A3(M) J3 Roundabout with Hulbert Road including slip roads	33	0	0	0	0
A3(M) North of J3	3	1	0	0	0
A3(M) between J3 and J4	5	0	0	0	0
A3(M) south of J4	3	0	0	0	0
Hulbert Road (between A3(M) J3 and Purbrook Way Roundabout)	4	0	0	0	0
Hulbert Road / Purbrook Way / ASDA Roundabout	9	0	0	1	1
Purbrook Way (between A3(M) and ASDA Roundabout)	3	2	0	3	1
A3(M) J4 Eastern Roundabout and B&Q Entrance	4	1	0	1	1
A3(M) J4 Western Roundabout	4	2	0	0	0
Purbrook Way (100m west of A3(M))	1	0	0	0	0

3.28 There have been a total of 8 serious accidents in the Study Area and 86 accidents of slight severity. The majority of accidents occurred at the A3(M) Junction 3 with Hulbert Road, including the slip roads, as well as the Hulbert Road / Tempest Avenue Roundabout.

3.29 These accidents have been compared against national average accident statistics established from the Road Casualties Great Britain Annual Report 2009 (Table 19 – Road Accident by Junction Type). Based on this, the national average proportions of accidents by severity and junction type are shown in Table 3.5.

Table 3.5 – National Average Road Accidents by Junction Type

Junction Type	Percentage of Accident by Severity		
	Slight	Serious	Fatal
Motorway Roundabout	96%	4%	0%
Built up roads Roundabout	92%	8%	0%

3.30 The above table when compared to Table 3.4 demonstrates that the proportion of serious accidents recorded in our Study Area at A3(M) Junction 3, the Hulbert Road / Purbrook Way roundabout and Hulbert Road / Tempest Avenue roundabout (all 0%) is lower than the national

average proportion for similar junctions. The number of serious accidents at A3(M) Junction 4 both the west and east roundabouts is significantly higher (33% and 30% respectively) than the national average. However it must be noted that the total number of accidents at these locations is very low at 6 and 5 over 5 years respectively.

- 3.31 At A3(M) Junction 3 many of the accidents were a result of collisions with the vehicle in front when giving way on the A3(M) northbound off-slip, the Hulbert Road westbound approach and the southbound off-slip. In addition, approximately 7 accidents were recorded on, or making the turn towards, the southbound on-slip and many a result of losing control, worsened by poor weather conditions. To the west of this roundabout on Hulbert Road four accidents occurred, two of which were serious, as a result of losing control particularly on the left hand bend leaving the roundabout travelling westbound, as well as one on the eastbound carriageway. These vehicles left the carriageway.
- 3.32 At the Hulbert Road / Tempest Avenue / Frenstaple Road Roundabout many of the accidents were a result of collisions with vehicles in front while waiting at the give way line. A few accidents occurred where vehicles collided with cyclists on the roundabout. To the west of this roundabout on Hulbert Road a couple of accidents were recorded at the pelican crossing.
- 3.33 On the section of Hulbert Road between the A3(M) and Purbrook Way, the four accidents were a result of losing control, failing to negotiate the bends in the road and failing to stop where there were stationary vehicles. Weather and driver behaviour were contributory factors.
- 3.34 At the Hulbert Road / Purbrook Way / ASDA Roundabout most accidents occurred on the ASDA arm or the Hulbert Road northbound arm approaching the roundabout and colliding with the vehicle in front. Two accidents were a result of conflicts on the roundabout. One accident occurred with a pedestrian as the vehicle approaching on Hulbert Road southbound failed to see the pedestrian crossing due to stationary vehicles westbound.
- 3.35 On Purbrook Way between the Hulbert Road Roundabout and A3(M) Junction 4 there were five accidents, three of which involved pedestrians crossing and failing to look properly, or looking one way but then being struck by vehicles the other way.
- 3.36 The five accidents at the eastern roundabout of A3(M) Junction 4 with B&Q were for varying reasons. At the western roundabout at Junction 4, the accidents were a result of collisions with the vehicle in front on the Purbrook Way eastbound approach and failure to stop at the roundabout on the A3(M) northbound off slip due to weather conditions or driver impairment. One vehicle took the wrong slip road and turned to stay on the A3(M) hitting the crash barrier and over turning.
- 3.37 On the A3(M) the accidents recorded were caused by vehicles losing control, sometimes due to poor weather conditions or obstacles in the road, both northbound and southbound, as well as collisions with vehicles in front due to braking in heavy traffic southbound.
- 3.38 In summary, it is clear that the majority of accidents that have occurred at the roundabout junctions in the study area are rear end vehicle shunts and are caused by driver behaviour and occasionally worsened by poor weather conditions. The majority of accidents recorded on the sections of road between junctions in the study area are caused by driver behaviour, again worsened by weather conditions and occasionally the geometry of the road. Where there are pedestrians wanting to cross the road (Purbrook Way near B&Q pedestrian access), these contribute to the volume of accidents. However there has been a signalled pedestrian crossing added recently at this location on Purbrook Way, which should reduce the incidence of these accidents. Furthermore, the proportion of serious accidents recorded at the A3(M) Junction 3, the Hulbert Road / Purbrook Way roundabout and Hulbert Road / Tempest Avenue roundabout (all 0%) is lower than the national average proportion for similar junctions.

Traffic Data

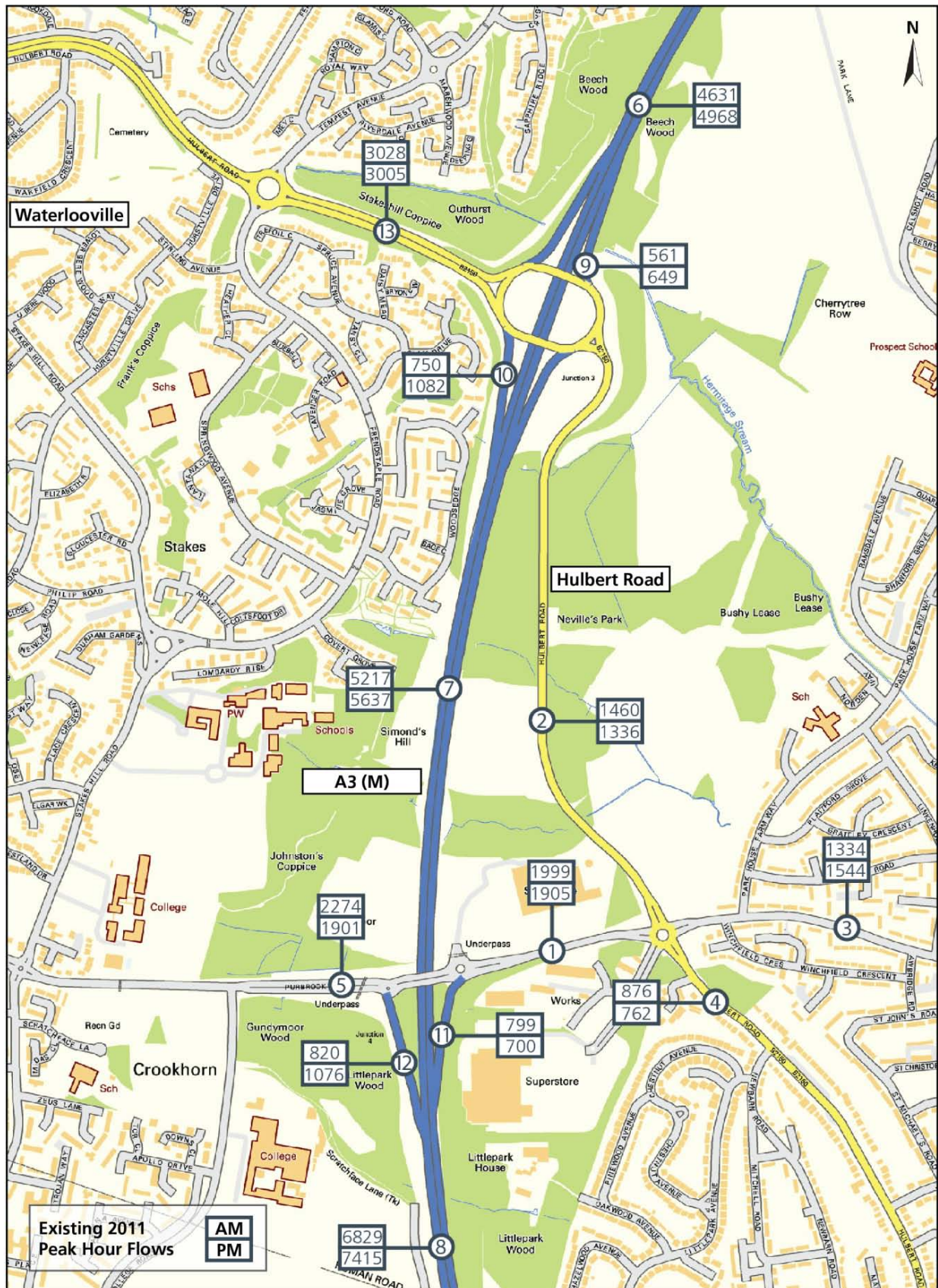
- 3.39 Atkins commissioned Manual Classified Counts (MCC), queue lengths and journey time surveys on Tuesday 24th May 2011 together with Automatic Traffic Counts (ATC) between 19th and 26th May 2011 for the base VISSIM model. The surveys took place at the following junctions:
- B2150 Hulbert Road/A3(M) Junction 3;
 - Purbrook Way/B2150 Hulbert Road Roundabout; and
 - Purbrook Way /A3(M) Junction 4.
- 3.40 The ATC surveys were undertaken at the following locations:
- B2150 Hulbert Road between A3(M) Junction 3 and Purbrook Way/B2150 Hulbert Road Roundabout;
 - Purbrook Way between A3(M) Junction 4 and Purbrook Way/B2150 Hulbert Road Roundabout;
 - Purbrook Way between College Road and A3(M) Junction 4 Northbound off-slip;
 - B2150 Hulbert Road between Tempest Avenue and A3(M) Junction 3;
 - Purbrook Way east of Park House Farm Way; and
 - Hulbert Road south of Willowdene Close.
- 3.41 Journey time surveys have also been carried out to aid with the validation of the VISSIM model for two routes covering the extent of the model. The traffic survey data is included in Appendix A.
- 3.42 The MCC traffic data has been collected for the AM (0700-1000 hours) and PM (1600-1900 hours) peak periods on Tuesday 24th May 2011. From this data, the network peak hours have been identified as:
- AM Peak Hour: 0745-0845 hours; and
 - PM Peak Hour: 1645-1745 hours.
- 3.43 Using the ATC data it has been identified that, on average, there is a two-way traffic flow of 1,336 and 1,460 vehicles on the B2150 Hulbert Road during morning and evening peak hours (0800-0900 hours and 1700-1800 hours) respectively. This equates to around 890 vehicles per hour in the busiest one-way direction from the A3 (M) Junction 3. Table 3.6 below shows the existing 2011 flows on other roads in the Study Area, including the A3(M) for which data was obtained from the Highways Agency TRADS database. These flows are also presented in Figure 3.10.

Table 3.6 – Existing 2011 Traffic Flows

Site Ref. no	Road	Direction	Base 2011 Peak Hour Traffic Flows (Average weekday)	
			AM Peak	PM Peak
1	Purbrook Way between Hulbert Road / ASDA Roundabout and A3(M) Junction 4	Westbound	1,018	896
		Eastbound	981	1,009
2	Hulbert Road east of A3(M) Junction 3	Northbound	569	677
		Southbound	891	659
3	Purbrook Way east of Hulbert Road / ASDA Roundabout	Westbound	621	793
		Eastbound	713	751
4	Hulbert Road south-east of Purbrook Way / ASDA Roundabout	Northbound	392	385
		Southbound	484	377
5	Purbrook Way west of A3(M) Junction 4	Westbound	1,164	1,089
		Eastbound	1,110	812
6	A3(M) North of Junction 3	Northbound	2,123	2,450
		Southbound	2,508	2,518
7	A3(M) Between Junction 3 and 4	Northbound	2,258	3,083
		Southbound	2,959	2,554
8	A3(M) South of Junction 4	Northbound	3,071	4,161
		Southbound	3,758	3,254
9	A3(M) Junction 3 Southbound off slip	Southbound	561	649
10	A3(M) Junction 3 Northbound off slip	Northbound	750	1,082
11	A3(M) Junction 4 Southbound on slip	Southbound	799	700
12	A3(M) Junction 4 Northbound off slip	Northbound	820	1,076
13	Hulbert Road west of A3(M) Junction 3	Westbound	1,283	1,775
		Eastbound	1,745	1,230

- 3.44 It should be noted that completion of the Hindhead tunnel further to the north along the A3, which opened in July 2011, could potentially have a slight effect on volumes of through traffic in the future.

Figure 3.10 – 2011 Existing Two-Way Traffic Flows



Sub-Regional Transport Model Base Traffic Flows

- 3.45 The collected traffic flows from May 2011 have been used in the base VISSIM model. Whilst the SRTM forecast flows have been used in the VISSIM forecasting assessment, it was agreed that the base VISSIM model would be based on the data collected in May 2011 to support this application rather than the SRTM 2010 base year data. This is due to it being the most recent data available, as well as concerns with the SRTM base data as outlined below.
- 3.46 The traffic counts informing the SRTM are relatively current with surveys having been conducted in 2009 and these included roadside interviews, MCCs, ATCs, junction turning counts, Automatic Number Plate Recognition (ANPR), saturation flow surveys and journey time surveys.
- 3.47 The data collected in May 2011 by Atkins has been used to review and validate those modelled in the SRTM 2010 base year.
- 3.48 As a result of this review, it was found that there were some significant discrepancies between the SRTM flows and Atkins' May 2011 data. These flow discrepancies were worse as a result of the Study Area falling between two cordons in the SRTM. It was only due to the local level assessment required, that these were considered to be a concern. The traffic counts undertaken in May 2011 were consequently fed back into the SRTM model to calibrate the model performance in this area of the network. This method of approach was agreed to enhance the base 2010 modelled representation of conditions for Dunsbury Hill Farm, and hence the future forecasting flows.

Base VISSIM Micro-Simulation Model

- 3.49 The base VISSIM model has been developed as the key indicator of traffic impact of the proposals covering the key junctions in the area, including the A3(M) Junction and 3 and 4 and B2150 Hulbert Road / Purbrook Road (un-signalised roundabouts). The VISSIM model extent is shown in Figure 3.11.
- 3.50 The development of the model was undertaken in accordance with the HA's document 'Guidelines for the Use of Micro Simulation Software' (July 2007).
- 3.51 The model is based on the traffic counts carried out in May 2011 as outlined in the Traffic Data section above.
- 3.52 The peak hours for the models were established from the traffic count data as follows:
- AM Peak Hour: 0745-0845 hours; and
 - PM Peak Hour: 1645-1745 hours.
- 3.53 Traffic has been assigned to the highway network based on static route patterns from points of origin to destination. The traffic assigned to each route has been derived from the observed turning movement proportions. The advantage of static assignment is that the assigned flows on the routes represent the realistic conditions on the ground, and is suitable when there is limited or no route choice.

Base Model Validation Results

- 3.54 The calibrated model was simulated for ten iterations for different random seeds to derive the suitable random seed to start the journey time and queue validation process. Validation was carried out for the turning movements, link flows, journey times and queue lengths.
- 3.55 Journey times were measured for the following routes:
- Route 1 – starts from the A3(M) Junction 4 to A3(M) Junction 3 (Northbound) to Hulbert Road (Southbound) to Purbrook (Westbound) to A3(M) Junction 4 on-slip; and

- Route 2 – starts from A3(M) Junction 4 Northbound off-slip to Purbrook Way (Eastbound) to Hulbert Road (Northbound) to A3(M) Junction 3 to A3(M) Junction 4 (Southbound).

- 3.56 A base model validation report has been produced by Atkins as a separate document (August 2011). This has shown that the model validates well against the turning count and link flow data with GEH values well within the recommended validation criteria for all movements. The HA has approved the base models on 3rd October 2011.
- 3.57 The modelled journey times provide a good match with the observed times, being within $\pm 15\%$ of the observed times. The modelled queue lengths were also found to provide a realistic representation of the existing situation for most of the key approaches in the model Study Area. As a result the base model has been deemed fit for purpose for the forecast assessment.
- 3.58 To summarise the base model results, the queue lengths and journey times are shown in Table 3.7 and Table 3.8 below for the AM and PM Peak Hours.

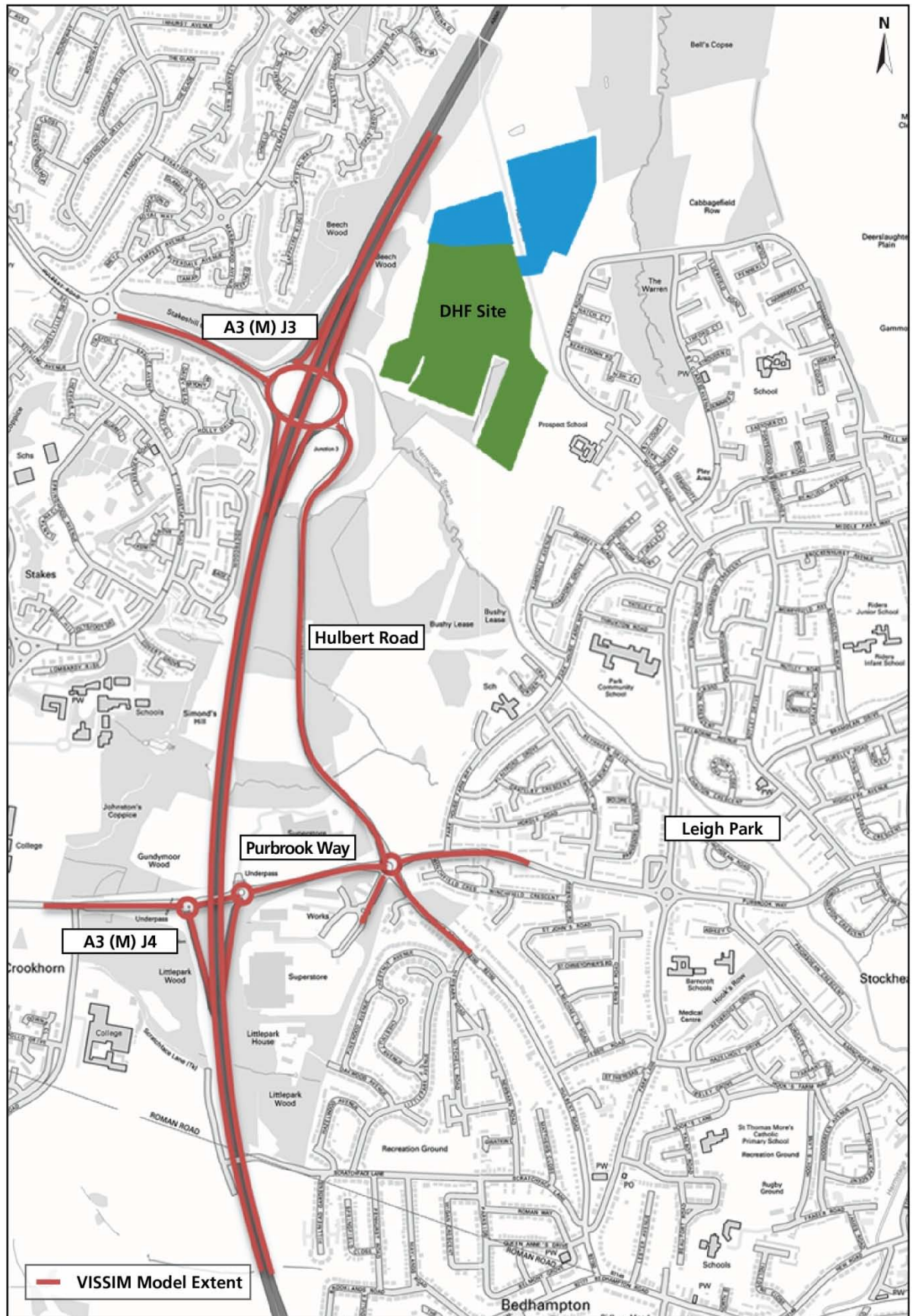
Table 3.7 – Modelled Queue Lengths – Base 2011

Queue Counter Location		Queue Length (m)	
Junction	Arm	AM	PM
A3(M) Junction 3 / B2150 Hulbert Road	A3(M) J3 (N)	31	23
	Hulbert Road (E)	26	16
	A3(M) J3 (S)	16	30
	Hulbert Road (W)	41	12
B2150 Hulbert Road / Purbrook Way Roundabout	Hulbert Road (N)	43	47
	Purbrook Way (E)	56	37
	Hulbert Road (S)	26	36
	Purbrook Way (W)	24	58
A3(M) Junction 4 / Purbrook Way (West Roundabout)	A3(M) J4 Northbound Off-slip	27	32
	Purbrook Way (W)	18	22
Purbrook Way (W) / B&Q Havant (East Roundabout)	B & Q Exit	9	17
	Purbrook Way (E)	19	27
	Purbrook Way (W)	8	15

Table 3.8 – Modelled Journey Times – Base 2011

Route	Journey Time Segment	Journey Time (sec)	
		AM	PM
Route 1	South of A3(M) J4 to north of J4	16.2	16.5
	North of A3(M) J4 to A3(M) J3 Roundabout with Hulbert Road	49.1	52.5
	A3(M) J3 Roundabout to Hulbert Road / Purbrook Way Roundabout	104.3	124.6
	Hulbert Road / Purbrook Way Roundabout to A3(M) south of J4	59.3	63.8
	TOTAL Route 1	229	257
Route 2	South of A3(M) J4 to Hulbert Road / Purbrook Way Roundabout	76.5	91.7
	Hulbert Road / Purbrook Way Roundabout to A3(M) J3 Roundabout with Hulbert Road	78.3	95.1
	A3(M) J3 Roundabout with Hulbert Road to north of A3(M) J4	46.7	44.6
	North of A3(M) J4 to south of A3(M) J4	17.8	17.4
	TOTAL Route 2	219	249

Figure 3.11 – VISSIM Model Extent



4. Development Proposals

- 4.1 Dunsbury Hill Farm is a Strategic Site in the Havant Borough Core Strategy which was adopted on the 1st March 2011.
- 4.2 The allocation covers an area of 13.2 hectares. As part of the South Hampshire growth agenda, a seven hectare extension to this allocation was proposed in the 2008 Site Allocations: Issues and Options document.
- 4.3 The entire 20.2 hectare site was marketed by PCC for development following publication of the Dunsbury Hill Development Brief in 2007 and the site remains key to delivering employment in the local and sub-regional areas and is seen as a potential new business gateway to South Hampshire via the A3(M) Corridor.
- 4.4 The aspirations are for a top end business park/campus and an exemplar construction and design to BREEAM Excellent standard. The Indicative Masterplan for the site is shown as Figure 4.1.
- 4.5 The delivery of Dunsbury Hill Farm is integral to achieving the vision of the Core Strategy and wider sub-region in terms of key economic, employment and regeneration objectives. The development proposals are therefore hybrid to achieve outline consent for the Core Strategy allocation and detailed to cover the access and link road to provide appropriate transport infrastructure to enable future development on the site in accordance with the agreed land uses.
- 4.6 Construction of road works forming the detailed element of the hybrid planning application, access and link road, is planned for 2013. It is then intended that the site will be constructed in two phases as follows:
- Phase 1 – employment land use (46,450 m² GFA) and a Hotel (5,574 m² GFA); and
 - Phase 2 – additional employment land use (15,329 m² GFA).
- 4.7 Phase 1 is currently planned to begin in 2014 with Phase 2 following in 2022. Both phases have an anticipated timescale of four years to full completion, and occupation will therefore be expected for 2018 and 2026 respectively.
- 4.8 The hotel is intended to be internal-facing and provide conferencing facilities and accommodation for visitors to the employment zone. Employment land uses will be assigned a mix of approximately 40% B1, 40% B2 and 20% B8. The associated quantum of development is summarised in Table 4.1 below:

Table 4.1 – Dunsbury Hill Farm Land Use Breakdown

Land Use	Phase 1 m ² GFA	Phase 2 m ² GFA	Total m ² GFA
B1 (Business)	18,580	6,132	24,712
B2 (General Industrial)	18,580	6,132	24,712
B8 (Storage and Distribution)	9,290	3,065	12,356
C1 (Hotel)	5,574	-	5,574
Total	52,024	15,329	67,354

New Site Access

- 4.9 In the context of the hybrid planning application, outline consent is sought for the Indicative Masterplan area with detailed consent for the access and link road only.
- 4.10 A new access will be provided via a link to the B2150 Hulbert Road. The proposed site access arrangement includes a roundabout adjoining the B2150 Hulbert Road to the west. From this traffic can distribute north to the A3(M) Junction 3 and south to Purbrook Way. The roundabout is proposed to include single lane approaches on the south and east arms, flaring to two lanes on the approach (approximately 20m before the give way lines). The north arm would include a single straight ahead lane and a dedicated left turn to the site approximately 80m north of the give way markings.
- 4.11 A further link will be provided through the site to the east into Leigh Park joining the existing Woolston Road three arm roundabout. This will operate as a bus only link enforced via a bus gate and will also serve to provide a second point of access in emergencies.
- 4.12 The access and link road design is shown in four drawings included in Figure 4.2 to Figure 4.5.

Public Transport Proposal

- 4.13 The existing public transport routes have been discussed in Chapter 3 and bus routes 39 and 23 serving Leigh Park pass immediately to the east of Phase 1 and Phase 2 of the site respectively. It is therefore important that for the sustainability of the site appropriate connections are made.
- 4.14 There are plans for a Havant Cross Borough Bus Service connecting Waterlooville to the west and Leigh Park to the east of the A3(M) corridor. It is envisaged that this bus route will use the Hulbert Road access and the Woolston Road bus-only link and cross the site. It is proposed that this bus service would operate with a frequency of 4 buses per hour, although the frequencies of the routes have not been finalised at present. This will substantially reduce the journey time between Leigh Park and Waterlooville. The proposed route for this service through the site is illustrated in Figure 4.6.
- 4.15 Portsmouth City Council is committed to the Cross Borough Bus Service being delivered as part of the development at Dunsbury Hill Farm. Discussions have been held with HCC, TfSH and local bus companies to ensure a linkage to the wider BRT network. A letter demonstrating this is provided in Appendix H. The timing of the development phases and the sections of BRT need to be linked and this will be managed through continuous discussions.
- 4.16 In addition these access points will enable the existing local bus routes to enter and leave the site from either the east or west of the A3(M) without needing to travel through the site. New bus infrastructure on the link road in the form of a bus turn round or bus interchange will ensure that the site can be served by the Cross Borough service and the existing local bus services. The development site thus provides the opportunity for a direct link to connect the existing bus routes 39 and 23 into and potentially to the west of the site.
- 4.17 It is proposed that a bus gate is placed on the far east of the Dunsbury Hill Farm Link Road so that the site is permeable to buses and an appropriate place for interchange introduced either east or west of the Link Road.

Walking and Cycling Proposals

- 4.18 The main pedestrian access route to the site will be from the east side where the bus gate connects to Woolston Road in Leigh Park. The main cycle access will also be from this location as well as to the west via the existing bridleway which crosses the A3(M).

- 4.19 Access for pedestrians and cyclists from the west via Hulbert Road leading across the A3(M) Junction 3 to Waterloo ville and south on Hulbert Road to the ASDA roundabout has been considered by Atkins as requested by Hampshire County Council. This is provided in Technical Note 'Dunsbury Hill Farm: Pedestrian and Cycle Access' in Appendix G. The assessment showed that these routes are not advisable based on safety and cost issues balanced against expected demand.
- 4.20 The existing bridleway which crosses the site will be maintained. Park Lane is a well used bridleway which would be upgraded as part of a site wide approach to footpaths and cycle ways; this would also extend connections to Havant Thicket Reservoir.
- 4.21 To the north of the link road it is proposed to implement a 3 metre wide shared footway / cycleway. To the south of the proposed link road it is proposed to implement a 2 metre wide footway. Crossing points for pedestrians and cyclists across the carriageway are proposed at the accesses to the development plots to the south and at either end of the proposed bus stops. A crossing point has been proposed across the link road between the easternmost plot access and the Woolston Road roundabout. This aligns with the existing footpath that links into the Park Lane bridleway.
- 4.22 Secondary routes and local access to the development plots will be developed more in the detailed design. These will include footways on the site roads with street lighting. Indicative access routes are shown on the Indicative Masterplan at this stage.
- 4.23 Future opportunity exists to make the connection with Staunton Country Park, whilst enhancing existing accessibility across the site for all modes and prioritising pedestrians and cyclists.

Figure 4.1 – Dunsbury Hill Farm Indicative Masterplan

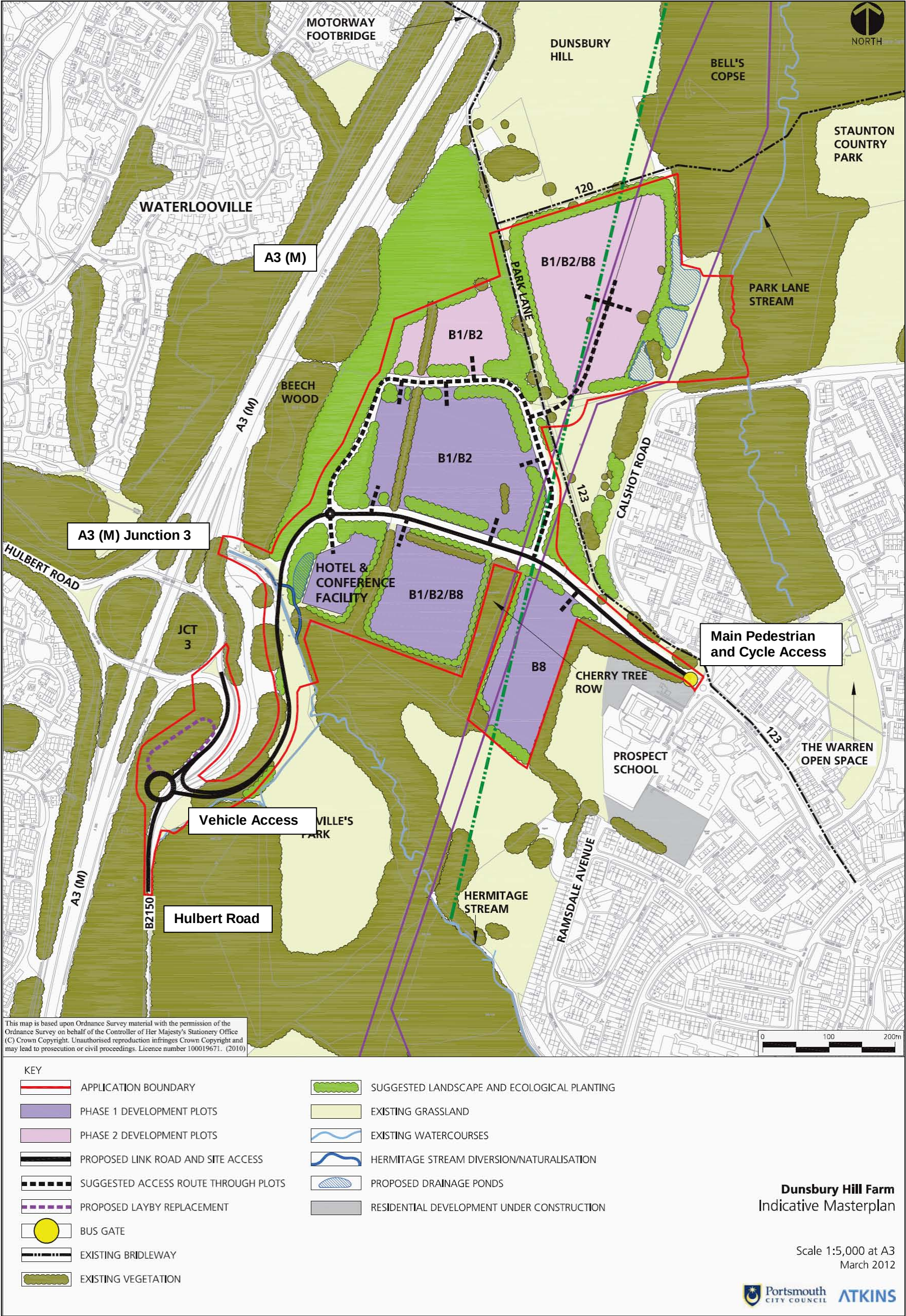
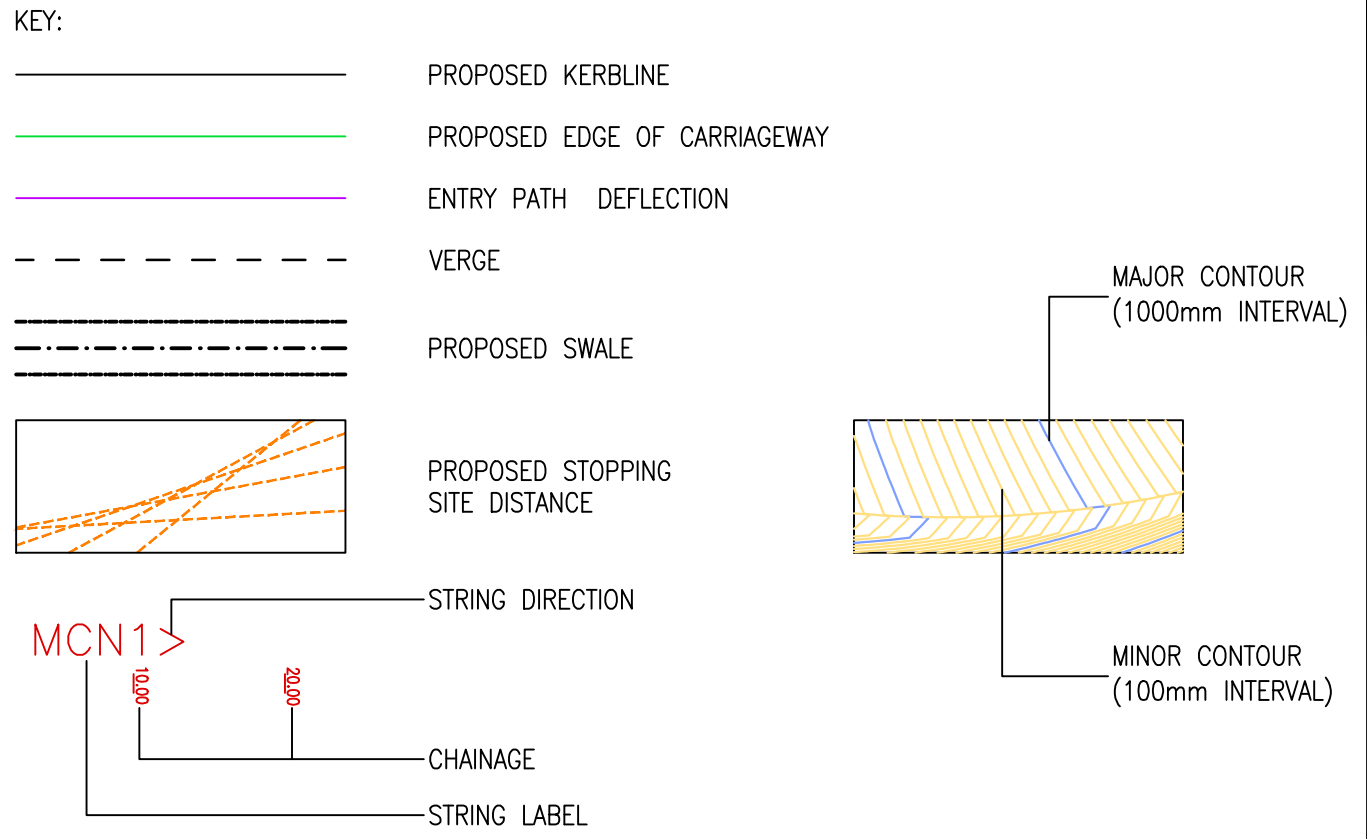


Figure 4.2 – Proposed Access and Link Road - Drawing 1



- NOTES:
- THIS DRAWING IS A GENERAL ARRANGEMENT DRAWING ONLY INTENDED AS A PRELIMINARY DESIGN FOR PLANNING APPROVAL, AND IS NOT FOR CONSTRUCTION PURPOSES.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH FOLLOWING DRAWINGS:
 - GENERAL ARRANGEMENT 5099849/TP/GA/101-104,
 - LAND OWNERSHIP PLANS 5099849/TP/LO/101-104,
 - CROSS SECTIONS 5099849/TP/XS/101-112, and
 - LONG SECTIONS 5099849/TP/LS/101-102.
 - ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.
 - HIGHWAY DRAINAGE AND SWALE OUTFLOWS TO BE DESIGNED DURING THE POST PLANNING DESIGN PHASES.
 - CARRIAGEWAY EARTHWORKS PROPOSED AT A 1:3 GRADIENT – GEOTECHNICAL INPUT WILL BE REQUIRED DURING THE POST PLANNING DESIGN PHASE TO ADVISE ON STRENGTHENING WORKS THAT MAY BE REQUIRED FOR PROPOSED EMBANKMENTS.
 - CARRIAGEWAY AND FOOTWAY CONSTRUCTION TO BE AGREED WITH KEY STAKEHOLDERS POST PLANNING.
 - DMRB STANDARDS HAVE BEEN APPLIED TO THE PROPOSED HIGHWAY ALIGNMENT FOR HULBERT ROAD AND THE PROPOSED HULBERT ROAD ROUNDABOUT PRIOR TO THE COMMENCEMENT OF THE PROPOSED DEVELOPMENT 30mph ZONE. MS2 STANDARDS HAVE BEEN APPLIED TO THE HIGHWAY ALIGNMENT WITHIN THE DEVELOPMENT AREA AFTER THE COMMENCEMENT OF THE DEVELOPMENT 30mph ZONE.

HULBERT ROAD RE-ALIGNED TO PROVIDE ALIGNMENT INTO THE PROPOSED ROUNDABOUT WHICH ALLOWS AN SSD OF 160m WITHIN THE NORTHBOUND TRAFFIC LANE (HCC REQUIREMENT)

EASTERN CHANNEL LINE AND VERGE DESIGNED TO TIE INTO EXISTING HULBERT ROAD LEVELS AND RE-ALIGNED CHANNEL TO INTERFACE WITH EXISTING LEVELS VIA A 1:3 EMBANKMENT

PROPOSED COMMENCEMENT OF DEVELOPMENT 30mph ZONE (SEE NOTE 7)

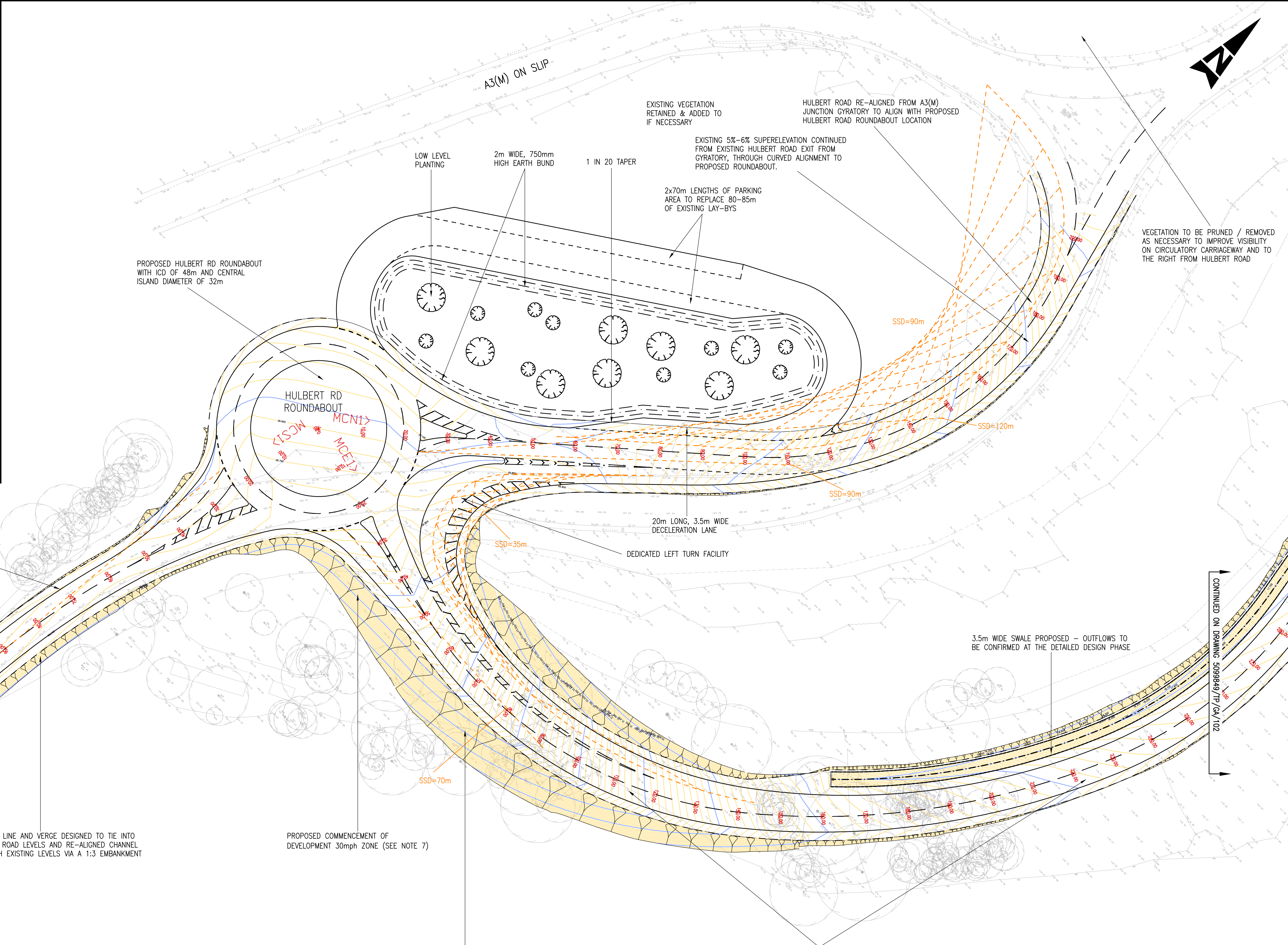
EARTHWORKS REQUIRED FOR VERTICAL ALIGNMENT BETWEEN THE PROPOSED DEVELOPMENT LINK ROAD AND THE LEVEL OF THE PROPOSED ROUNDABOUT, 1:3 EMBANKMENTS PROPOSED TO INTERFACE VERGE WITH EXISTING GROUND LEVELS.

2.5% SUPERELEVATION PROPOSED FOR CURVES

3.5m WIDE SWALE PROPOSED – OUTFLOWS TO BE CONFIRMED AT THE DETAILED DESIGN PHASE

VEGETATION TO BE PRUNED / REMOVED AS NECESSARY TO IMPROVE VISIBILITY ON CIRCULATORY CARRIAGEWAY AND TO THE RIGHT FROM HULBERT ROAD

CONTINUED ON DRAWING 5099849/TP/GA/102



Stat	Purpose of Issue	Date	Auth	Rev	Description	By	Date	Chk'd	Auth
P	FOR HCC APPROVAL	29.2.12	JA	B	EXIT FROM DEDICATED LEFT AMENDED	SD	29.2.12	ND	JA
P	FOR HCC APPROVAL	04.11.11	IPC	A	ORIGINAL ISSUE	MBW	04.11.11	SD	IPC

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Client

PORTSMOUTH CITY COUNCIL

Project

DUNSBURY HILL FARM
STAGE 2

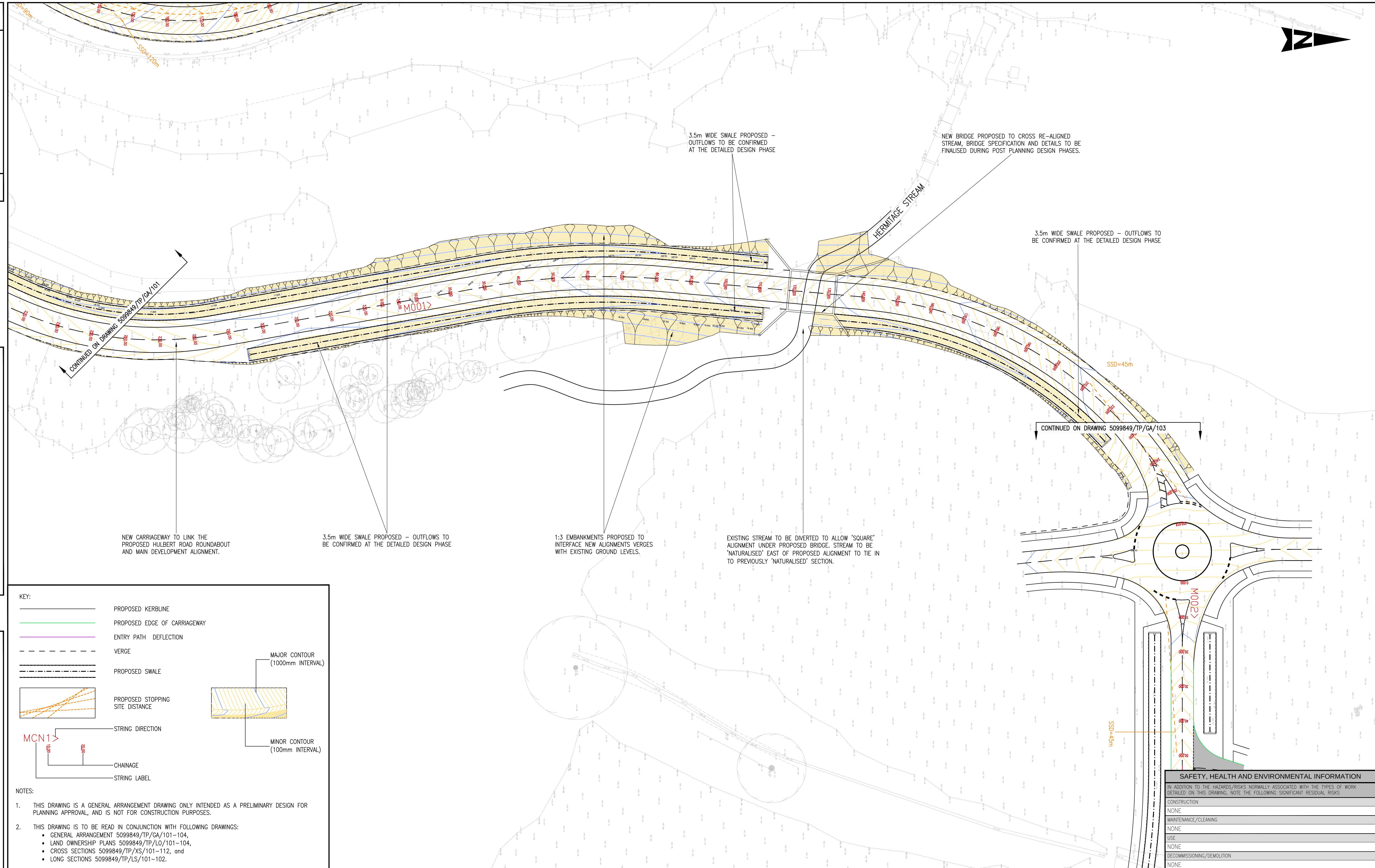
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IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS				
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MAINTENANCE/CLEANING				
NONE				
USE				
NONE				
DECOMMISSIONING/DEMOLITION				
NONE				
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Rev				B

Figure 4.3 – Proposed Access and Link Road – Drawing 2

DO NOT SCALE

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Date: Mar 01, 2012 - 4:06pm
Plotted by: dimm3215



P	FOR HCC APPROVAL	29.2.12	JA	B	FOOTWAY ADDED ON LINK ROAD	SD	29.2.12	ND	JA
P	FOR HCC APPROVAL	04.11.11	IPC	A	ORIGINAL ISSUE	MBW	04.11.11	SD	IPC
Stat	Purpose of Issue	Date	Auth	Rev	Description	By	Date	Chk'd	Auth

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The image shows the Portsmouth City Council logo. It consists of a shield with a blue background and a yellow crescent moon and star. Below the shield, the text 'PORTSMOUTH CITY COUNCIL' is written in a serif font, and 'Portsmouth CITY COUNCIL' is written in a smaller, sans-serif font.

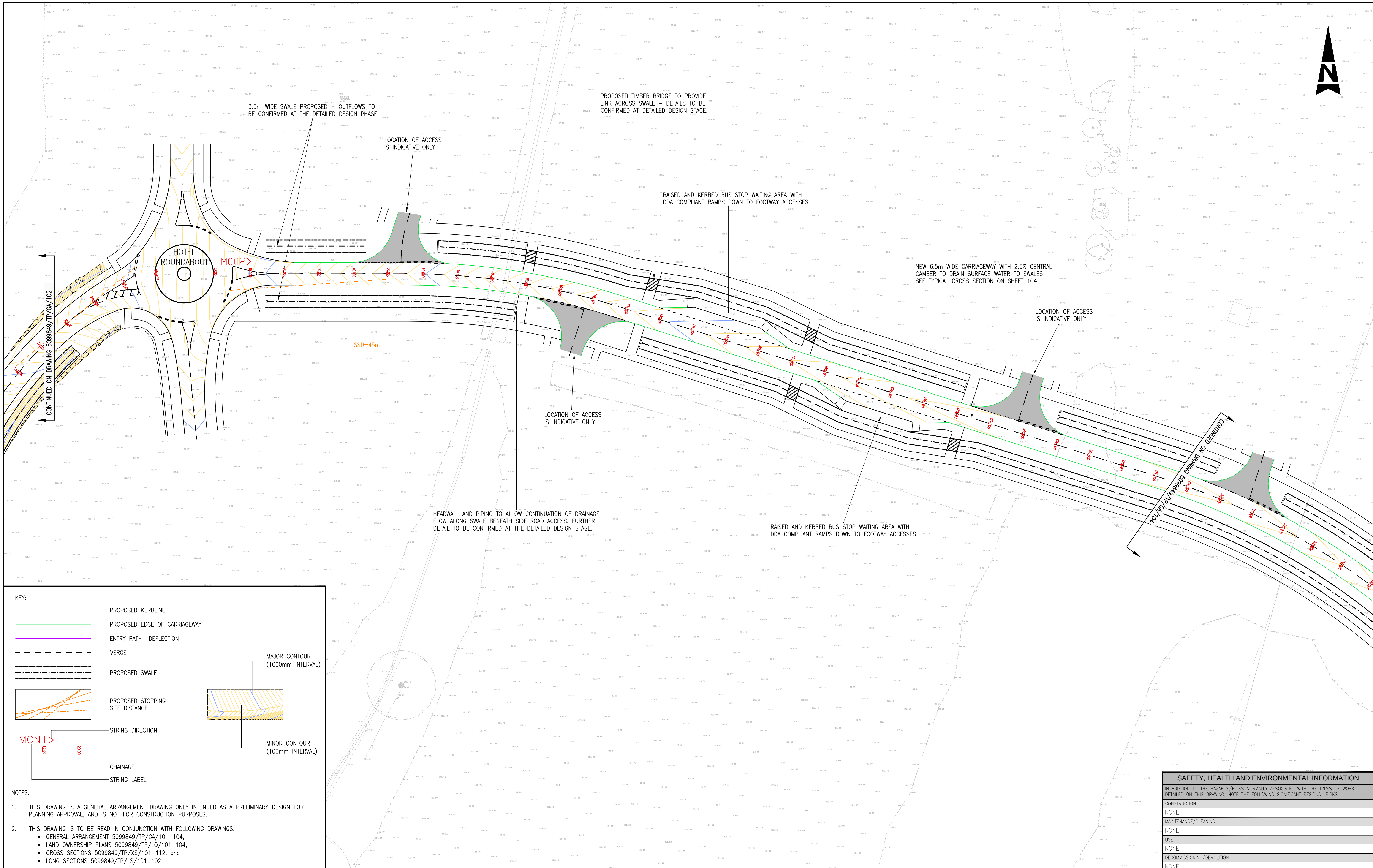
SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION				
IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS				
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USE				
NONE				
DECOMMISSIONING/DEMOLITION				
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P	5099849/TP/GA/102			B

Figure 4.4 – Proposed Access and Link Road – Drawing 3

DO NOT SCALE

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Date: Mar 01, 2012 - 4:05pm Plotted by: dimm3215



Project Information				Approval History				Status & Comments			
Project ID	Project Name	Location	Phase	Applicant	Reviewer	Date	Decision	By	Date	Comments	Next Steps
P	FOR HCC APPROVAL	29.2.12	JA	B	FOOTWAY ADDED TO LINK ROAD			SD	29.2.12	ND	JA
P	FOR HCC APPROVAL	04.11.11	IPC	A	ORIGINAL ISSUE			MBW	04.11.11	SD	IPC
Stat	Purpose of Issue	Date	Auth	Rev	Description			By	Date	Chk'd	Aut

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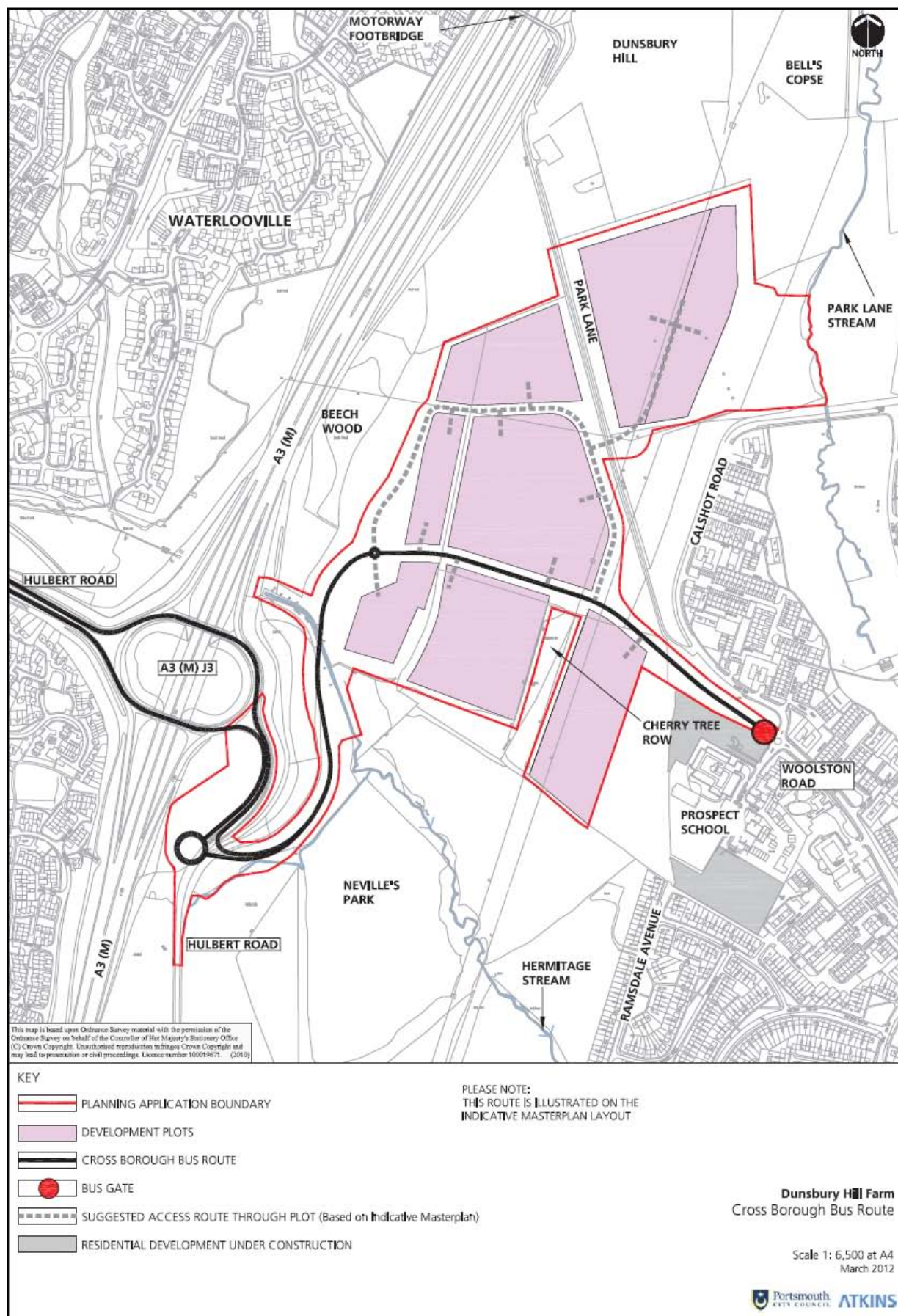
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The client logo for Portsmouth City Council is displayed, featuring a shield with a blue field containing a white crescent and star, and a yellow field containing a blue star. Below the shield, the text "PORTSMOUTH CITY COUNCIL" is written in blue. The project name, "DUNSBUURY HILL FARM STAGE 2", is written in large, bold, black capital letters.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION				
IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS				
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NONE				
MAINTENANCE/CLEANING				
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USE				
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Status	Drawing Number			Rev
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Figure 4.5 – Proposed Access and Link Road – Drawing 4

Figure 4.6 – Cross Borough Bus Service



Trip Generation

- 4.24 The SRTM, used to derive the forecast trip generation for the VISSIM assessment, has included development assumptions associated with the latest Dunsbury Hill Farm Indicative Masterplan concept. The level of development is determined by the Local Economic Impact Model (LEIM). The forecast number of jobs by land use, from the LEIM, is shown in Table 4.2 below.

Table 4.2 – LEIM Forecast Jobs for Dunsbury Hill Farm

Land Use	Jobs by Phase		
	Phase 1	Phase 2	Total
B1 (Business)	1,114	386	1,500
B2 (General Industry)	364	125	489
B8 (Storage / Distribution)	162	54	215
C1 (Hotel)	457	0	457
TOTAL	2,098	564	2,662

- 4.25 This increase in jobs is slightly offset by a reduction in jobs forecast elsewhere in the region as a result of the development.
- 4.26 The SRTM forecast daily two-way trips associated with the development are included in Table 4.3 by mode and the mode share is illustrated in Figure 4.7 for Phase 2 (2026).

Table 4.3 – LEIM Forecast Daily Trips by Mode for Dunsbury Hill Farm

Scenario	Dunsbury Hill Farm (two-way)			Percentage Mode Share		
	Car	PT	Walk/Cycle	Car	PT	Walk/Cycle
2019 Phase 1	8,000	204	2,284	76%	2%	22%
2026 Phase 1	8,072	200	2,571	74%	2%	24%
2026 Phase 2	9,388	258	2,961	74%	2%	24%

The public transport trips can be assumed to be trips by bus, as even if travelling by rail, a bus may be used to access the station. The table of daily trips shows that public transport, whilst only accounting for 2 percent of total predicted trips, still predicts a demand for 258 two-way or 129 one-way trips to the site by bus across the day. This supports the demand for a frequent bus service especially during the peak periods.

Figure 4.7 – Dunsbury Hill Farm Mode Share (LEIM Forecast)



- 4.27 The final peak hour vehicular trip generation within SRTM is presented in Table 4.4. The trip generation includes all employment land uses on site as well as the hotel and has incorporated staff as well as servicing, deliveries etc.

Table 4.4 – Dunsbury Hill Farm – Trip Generation based on SRTM

Phase	AM Peak Hour		PM Peak Hour	
	Arrivals	Departures	Arrivals	Departures
Phase 1	356	60	126	393
Phase 2	58	13	12	90
Total	414	73	138	483

Validation of Trip Generation

- 4.28 A stand alone trip generation exercise has been undertaken using the TRICS database system to compare against the SRTM trip generation for the site. This has involved an interrogation of weekday peak hour vehicular trip rates for the different land uses. The database search has concentrated on sites that are located in either suburban areas or at the edge of towns within England (excluding Central London).
- 4.29 The assessment has focused on trip rates for the individual land uses, namely B1 (business), B2 (general industrial) and B8 (storage and distribution). The proportional split of employment land use has been developed at this outline stage consistent with the Core Strategy at 40 percent B1, 40 percent B2 and 20 percent B8.

The trip rates calculated are detailed below in Table 4.5.

Table 4.5 – Peak Hour Vehicular Trip Rates per 100 sqm

Land Use	AM Peak Hour (0800-0900 hours)		PM Peak Hour (1700-1800 hours)	
	Arrivals	Departures	Arrivals	Departures
B1 (Business Park)	1.895	0.165	0.229	1.519
B2 (General Industrial)	0.679	0.315	0.168	0.526
B8 (Storage or distribution)	0.225	0.107	0.093	0.225
C1 Hotel	0.429	0.580	0.481	0.328

- 4.30 The resultant preliminary trip generation forecasts are presented by land use, phase and total in Table 4.6 to Table 4.8 below.

Table 4.6 – Dunsbury Hill Farm: Phase 1 Trip Generation (2019)

Land Use	AM Peak Hour (0800-0900 hours)		PM Peak Hour (1700-1800 hours)	
	Arrivals	Departures	Arrivals	Departures
B1 (Business Park)	352	31	43	282
B2 (General Industrial)	126	59	31	98
B8 (Storage or distribution)	21	10	9	21
C1 Hotel	24	32	27	18
Total	523	131	109	419

Table 4.7 – Dunsbury Hill Farm: Additional Phase 2 Trip Generation (2026)

Land Use	AM Peak Hour (0800-0900 hours)		PM Peak Hour (1700-1800 hours)	
	Arrivals	Departures	Arrivals	Departures
B1 (Business Park)	116	10	14	93
B2 (General Industrial)	42	19	10	32
B8 (Storage or distribution)	7	3	3	7
C1 Hotel	0	0	0	0
Total	165	33	27	132

Table 4.8 – Dunsbury Hill Farm: Total Trip Generation (2026)

Land Use	AM Peak Hour (0800-0900 hours)		PM Peak Hour (1700-1800 hours)	
	Arrivals	Departures	Arrivals	Departures
B1 (Business Park)	468	41	57	375
B2 (General Industrial)	168	78	42	130
B8 (Storage or distribution)	28	13	11	28
C1 Hotel	24	32	27	18
Total	688	164	136	551

- 4.31 These tables show in the worst-case AM Peak Hour a maximum of 654 two-way vehicular movements in Phase 1 (2019) and with an additional 198 in Phase 2, a total of 852 two-way vehicular movements upon completion of the development in 2026 at a bias of 80% inbound (688 vehicles) to 20% outbound (164 vehicles).
- 4.32 It is clear from the above tables that the development traffic predicted in TRICS is higher than that from SRTM. The highest deficit is in the AM Peak Hour with 365 trips lower in the SRTM compared to the TRICS assessment. However there are some reasons that justify the differences in trip rates between the SRTM and TRICS:
- The SRTM model applies a factor of 0.38 to the 3 hour AM modelled period (07:00-10:00) to obtain the peak hour flow and a factor of 0.36 in the PM (16:00-19:00) modelled period.

However the equivalent factors that the TRICS trip rates are based on are 0.46 for arrivals and 0.33 for departures for the AM peak hour (08:00-09:00). In the PM (17:00-18:00) it is 0.37 for arrivals and 0.46 for departures. Clearly these factors are higher and the SRTM is therefore based on a more even spread of arrivals / departures across the peak three hour periods.

- Differences arise from the geographic location of sites in TRICS and the age of the traffic count data. Selecting the range of sites to obtain an average smoothes the range in trip rates, but it is clear that a high variation between sites can exist in these broad categories.

4.33 Atkins has employed the SRTM trip predictions for the Dunsbury Hill Farm development assessment as the SRTM considered detailed planning and employment growth assumptions which form the evidence base. However a sensitivity test has been carried out to understand the impact of the higher trip rates as a worst case.

5. Forecasting Assessment Methodology

- 5.1 The highway impact has been assessed using TfSH's Sub-Regional Transport Model (SRTM) developed by MVA Consultancy that provides the evidence base for the South Hampshire transport strategy development process, and a VISSIM micro-simulation model. The traffic demand from the SRTM has been used in the VISSIM model for the future year assessments. These models are considered further below. A sensitivity test has also been carried out to assess the impact of the slightly higher trip generation established from TRICS.

Sub-Regional Transport Model (SRTM)

- 5.2 The SRTM is a model suite that provides the evidence base for the South Hampshire transport strategy development process and includes a demand. The model was developed to forecast travel demand overtime to 2036 in response to forecast transport improvements and interventions, and changes in land-use and general economic conditions. The model suite consists of the road traffic model (RTM), the public transport model (PTM), and the main demand model (MDM). Further, a local economic impact model (LEIM) considers changes in population, employment, accessibility and development.
- 5.3 It is considered that this model provides the best basis for analysis of the impact of the Dunsbury Hill Farm development. The model is based on Core Strategy quantum of development at Dunsbury Hill Farm which is consistent with the Indicative Masterplan.
- 5.4 The model has been reviewed to ensure that the land use allocation is correct, and in addition, that the public transport strategy including the Cross Borough Bus Route is captured and appropriately modelled.
- 5.5 The SRTM has a base year of 2010 and forecast years of 2014, 2019, 2026 and 2036. In addition the LEIM provides forecasts through to 2041. For the Dunsbury Hill Farm application the model was projected to 2026 only.
- 5.6 MVA has provided 'Transport for South Hampshire Evidence Base – Dunsbury Hill Farm Report' dated August 2011. This report includes the detailed planning assumptions, public transport network and service assumptions. Furthermore it presents results for with and without the Dunsbury Hill Farm development (Phase 1 and 2) scenario for the forecasting years. This report is included in Appendix C.

SRTM Forecast Year of Assessment

- 5.7 Of the SRTM horizon years, 2014 proceeds the commencements of the development and 2019 and 2026 are broadly aligned to completion and subsequent full occupancy of Phase 1 and Phase 2 therefore have formed the basis of future year assessment of the development.
- 5.8 It is also understood that 2036 is not seen as robust as given the 26 year horizon from the 2010 base year it is beyond reasonable planning years of assessment therefore is informed by a significant number of assumptions and variables. It is therefore not considered appropriate to apply these forecasts to a detailed VISSIM micro-simulation model to test the development impact of the Indicative Masterplan proposals and has therefore been omitted from the assessment.

Without Development

Background Growth

- 5.9 The rates of growth used in SRTM have been derived from the industry standard software for trip growth factors TEMPRO 5.4 and have been updated to reflect latest Web TAG upgrades. This provides projections of growth over time for use in local and regional transport models, by incorporating a forecast of developments in the region.

5.10 The LEIM population projections for the Havant zone are shown in Table 5.1 below.

Table 5.1 – LEIM Population Forecasts for Havant Zone

Zone	Population Growth			
	2010	2014	2019	2026
735 Havant	1.00	1.04	1.07	1.15

Committed and Proposed Developments

5.11 The SRTM captures all committed and proposed developments required for this assessment. The key developments in the area are:

- **West of Waterlooville Major Development Area including Land at Old Park Farm, South of Hambledon Road (05/40000/007) and Grainger Development Site West of London Road, Waterlooville (APP/10/00828)** – resolution has now been passed to grant planning permission for 3,000 residential dwellings overall. The application includes: employment (7.1ha including B1, B2 and B8 and a Household Waste Recycling Centre), a local centre (comprising retail, community building, land for health care, land for elderly care) public house, 2 primary schools, a nursery, mixed use including retail, food & drink, financial/professional & health, open space/recreational purposes with substantial green infrastructure, and the construction of two accesses from Hambledon Road, a new access from Ladybridge Roundabout, Milk Lane and completion of Maurepas Way access.
- **Hampshire Farm, Westbourne Road, Emsworth (10/74014/000)** - Outline application for demolition of existing dwelling and erection of 280 residential dwellings, doctor's surgery and pharmacy with associated parking and landscaping, improvements to roundabout, and realignment of southern section of Redlands Lane to provide access and provision of public open space with parking, landscaping and construction of balancing pond with some matters reserved.
- **Land south of Scratchface Lane, adjacent to A3M and West of Brooklands Road & Hillmead Gardens, Havant (APP/10/00497)** - Outline application for the erection of 92 open market and affordable dwellings comprising 4 one bed flats; 4 two bed flats; 31 two bed houses; 44 three bed houses; 9 four bed houses; new pumping station; new vehicular access from Brooklands Road including demolition of 2 dwellings; and new pedestrian and cycle accesses onto Scratchface Lane and Portsdown Hill Road.
- **Woodcroft Farm in the Wecock Farm area** – Strategic Site outlined in the Core Strategy, which would comprise residential development of approximately 340 homes, although the entire site could deliver 700 homes; access would be most viable through the Medowlands School Site.

Transport Schemes

- 5.12 It is understood that as a result of the Major Development Area (MDA) of 3,000 units in Waterlooville there are proposals to signalise the junction of the northbound off slip and circulatory carriageway at the A3(M) Junction 3. However as this is not a committed scheme, this has not been included in the future year SRTM assessment.
- 5.13 Other transport schemes further away from the Dunsbury Hill Study Area have been included in the forecasting model.
- 5.14 With regard to the impact of the opening of the Hindhead Tunnel scheme in July 2011, no data has been available to suggest it has a material significance, and therefore this has not been built into the SRTM model.
- 5.15 It is also understood that there are several safety studies proposed to look at the A3(M) Junctions 1 to 3 from 2011/2012. Potential improvements may include gap closures, signing and lining

improvements, speed restrictions, slip road improvements, hard shoulder running, VMS, road restraint improvements. The details associated with these have not emerged for the SRTM and resultantly the TA for Dunsbury Hill Farm.

With Development

Transport Schemes

- 5.16 The new highway link and access roundabout scheme connecting with Hulbert Road to enable the Dunsbury Hill Farm development were added to the network to model the 'with development' scenario. This includes the bus gate to the east and bus-only link.
- 5.17 It has also been necessary that the demand model reflects changes in public transport services including the bus routes serving the site. This includes the new bus route known as the Cross Borough Service, linking Havant, Leigh Park, Dunsbury Hill Farm and Waterloooville at a frequency of 4 buses per hour. This would be facilitated by the bus gate connecting to an existing roundabout at Leigh Park. In addition, the existing route 23 (Leigh Park to Southsea) would be extended from Leigh Park to Dunsbury Hill Farm.

Trip Generation

- 5.18 As discussed in Chapter 4, the trip generation for the Dunsbury Hill Farm development in SRTM is lower than Atkins' trip generation estimation using TRICS. However the SRTM forecasts has been the main focus of the assessment for Dunsbury Hill Farm as the SRTM has considered detailed planning and employment growth assumptions which form the evidence base for the South Hampshire transport strategy development process. A sensitivity test using the trip rates derived from TRICS has also been undertaken.

Trip Distribution and Assignment

- 5.19 The distribution of trips in the SRTM from zone to zone is based on the levels of population and employment and relative attraction of the zones. The assignment of trips in the SRTM is based on the SATURN model assignment which includes the calculated cost and delays of various routes following iterations of the model. The percentage distribution of trips to and from the development established from the SRTM is shown in Table 5.2.

Table 5.2 – Distribution of Trips to and from Dunsbury Hill Farm (Phase 2 2026)

Origin / Destination	AM Peak		PM Peak	
	Arrivals	Departures	Arrivals	Departures
A3 (M) North	7%	6%	5%	6%
A3 (M) South	44%	48%	39%	41%
Hulbert Road (West)	9%	8%	12%	10%
Purbrook Way (West)	10%	14%	10%	13%
Purbrook Way (East)	17%	13%	21%	18%
Hulbert Road (South)	12%	10%	11%	12%
B&Q / ASDA	1%	1%	2%	1%

VISSIM Micro-simulation Model

- 5.20 The development of the base VISSIM model has been discussed in Chapter 3.

VISSIM Forecast Models

- 5.21 The SRTM assessment years of 2019 and 2026 are broadly aligned to completion and subsequent full occupancy of Phase 1 and Phase 2 therefore have formed the basis of future year assessment of the development. Accordingly, the following forecast scenarios have been assessed in the VISSIM model:
- Forecast Year 2019 (with/without Phase 1 Development);
 - Forecast Year 2026 (with/without Phase 1 Development only); and
 - Forecast Year 2026 (with/without Phase 1 & 2 Development).
- 5.22 The SRTM for the AM and PM Peak Hours only were used for the VISSIM assessment, as consistent with the base VISSIM model.
- 5.23 The forecasting assumptions for the VISSIM model have been consistent with the SRTM model including growth, committed developments and the development trip generation for Dunsbury Hill Farm.
- 5.24 The peak hour development trips have been assigned to the model with a consistent 'flat' profile through the modelled period. The same volume of trips has been assigned to the 15 minute 'warm up' and 'cool down' periods either side of the modelled hour.
- 5.25 The only difference has been to the assignment of trips to and from the development site from the A3(M) South. The SRTM model included routing of 70 percent via Junction 4 and 30 percent via Junction 3 for access to the site from A3(M) South. When these proportions were used in the VISSIM model, it increased the existing congestion at the Hulbert Road / Purbrook Way roundabout and looked to be an unlikely route choice. The VISSIM model was then run with dynamic assignment using the same traffic flows to test which routes traffic would take to and from the site from the A3(M) South. This showed that 85 percent of vehicles used Junction 3 and only 15 percent routed via Junction 4 and Purbrook Way / Hulbert Road. These proportions, considered to be more realistic at the local level, were therefore applied to the static routing in the VISSIM models for both the AM and PM Peak Hours.
- 5.26 The results of this modelling are discussed in the next chapter.

6. Impact of Development

Sub-Regional Transport Model (SRTM)

- 6.1 The results from the SRTM are covered in MVA's report 'Transport for South Hampshire Evidence Base: Dunsbury Hill Farm Report' dated August 2011 (in Appendix C of this report). This concludes that delays on the A3(M) are largely unchanged. The greatest change in delay is in the immediate vicinity of the site on Purbrook Way eastbound between the A3(M) and Hulbert Road and on Hulbert Road eastbound approaching A3(M) Junction 3 in the AM Peak. As the report notes, this is consistent with increased traffic volumes and reduced spare capacity. In the PM Peak, Purbrook Way eastbound at the Hulbert Road roundabout sees a reduction in delay. This is most likely a result of changes in the distribution of trips at the roundabout affecting the gap times for vehicles entering the roundabout on this approach. For example there is a change in route choice westbound from Hulbert Road to Purbrook Way, as a result of congestion at the roundabout.

VISSIM Micro-simulation Model

Forecast VISSIM Models

- 6.2 The Forecast scenarios assessed in the VISSIM model are outlined in the preceding chapter and include:
- Forecast Year 2019 (with/without Phase 1 Development);
 - Forecast Year 2026 (with/without Phase 1 Development only); and
 - Forecast Year 2026 (with/without Phase 1 & 2 Development).
- 6.3 The calibrated and validated base models have been used to evaluate the Dunsbury Hill Farm development impact in the forecast years. This forecasting traffic has been derived from the SRTM model for the respective scenarios. Minor network changes were made to the VISSIM models to adjust to the higher demand in the models. These were made to all future year models. The amendments were as follows:
- Adjust priority behaviour to seek less gap times to reflect drivers becoming more aggressive;
 - Adjust lane change parameters by reducing safety distances and allow easier lane changing to reflect drivers becoming more aggressive;
 - Adjust lane change distances on some connectors to allow these movements to be made earlier in increased demand; and
 - Extend entry arms, in particular Purbrook Way (East), to allow the increased demand to be loaded onto the network.
- 6.4 The adjusted driving behaviour parameters are presented in Appendix D.
- 6.5 The results are presented in terms of queues on the approaches at all junctions in the Study Area and comparative journey times on two routes in the Study Area. Delays on the approaches, measured in terms of the average delay per vehicle in seconds, are included in Appendix E. The delays have not been discussed here as they show quite varying results, and these differ to the queue results quite often; the queue results are seen as a more intuitive prediction of capacity at the junctions.

2019 with and without Phase 1

- 6.6 The queue and journey time results are shown in Table 6.1 and Table 6.2 comparing with and without Phase 1 of the development for the forecast year of 2019, one year after the anticipated completion of Phase 1.

Table 6.1 – 2019 Queue Results – with and without Phase 1

Queue Counter Location		Queue Length (m)			
Junction	Arm	2019 Base		2019 Phase 1	
		AM	PM	AM	PM
A3(M) Junction 3 / B2150 Hulbert Road	A3(M) J3 (N)	35	17	20	19
	Hulbert Road (E)	144	33	118	38
	A3(M) J3 (S)	18	41	24	42
	Hulbert Road (W)	78	36	111	29
B2150 Hulbert Road / Purbrook Way Roundabout	Hulbert Road (N)	8	62	11	150
	Purbrook Way (E)	119	34	171	168
	Hulbert Road (S)	30	94	43	64
	Purbrook Way (W)	74	362	99	356
A3(M) Junction 4 / Purbrook Way (West Roundabout)	A3(M) J4 Off-slip	29	151	26	160
	Purbrook Way (W)	40	294	38	328
Purbrook Way (W) / B&Q Havant (East Roundabout)	B & Q Exit	9	19	10	21
	Purbrook Way (E)	23	33	26	28
	Purbrook Way (W)	28	155	34	149
DHF Access Roundabout Junction	DHF Access Road	N/A	N/A	0	7
	Hulbert Road (S)	N/A	N/A	79	11
	Hulbert Road (N)	N/A	N/A	5	21

- 6.7 The queue results generally show an increase in queues between the 2019 Base and with Phase 1 scenarios. The greatest increase at A3(M) Junction 3 is on the Hulbert Road (W) arm in the AM Peak as a result of more traffic on the circulatory roundabout travelling from the northbound off-slip to Hulbert Road (E). The queue on Hulbert Road (W) increases by approximately 33m which would not cause the queue to extend back to the next roundabout. At A3(M) Junction 4 the greatest increase in queues is on the Purbrook Way (W) arm in the PM Peak, again as a result of more traffic using the northbound off-slip. This increases the queue by 34m which would bring it very close to the next junction with College Road. At the Hulbert Road / Purbrook Way roundabout the most noticeable increase in queues is on Hulbert Road (N) and Purbrook Way (E). The queue on Hulbert Road (N) increases by 88m and on Purbrook Way (E) by 134m (PM Peak). However the total length of queue on these arms would not extend back beyond 200m and would not therefore cause long delays.
- 6.8 There are some approaches where the queues would be reduced in the 'with development' scenario. This is a result of the higher demand creating a slightly different arrival profile in VISSIM for vehicles at the junctions and hence different gap opportunities at the roundabouts. This can sometimes result in reduced queues and delays on some approaches.

- 6.9 The new access roundabout for the Dunsbury Hill Farm development produces most queues on the Hulbert Road (S) approach but these are predicted to not extend beyond 14 vehicles.
- 6.10 Overall the predicted increase in queues is greatest at the Hulbert Road / Purbrook Way roundabout; however on the approaches with the largest increase, these are not predicted to extend beyond 200m at peak times with Phase 1.

Table 6.2 – 2019 Journey Time Results – with and without Phase 1

Journey Time		Journey Time (sec)			
Route	Segment	2019 Base		2019 Phase 1	
		AM	PM	AM	PM
Route 1	South of A3(M) J4 to north of J4	16.6	16.5	16.7	16.6
	North of A3(M) J4 to A3(M) J3 Roundabout with Hulbert Road	50.4	58.5	52.4	58.1
	A3(M) J3 Roundabout to Hulbert Road / Purbrook Way Roundabout	112.0	123.7	128.7	170.2
	Hulbert Road / Purbrook Way Roundabout to A3(M) south of J4	59.0	61.2	58.8	60.1
	TOTAL Route 1	238	260	257	305
Route 2	South of A3(M) J4 to Hulbert Road / Purbrook Way Roundabout	92.0	237.3	99.1	239.0
	Hulbert Road / Purbrook Way Roundabout to A3(M) J3 Roundabout with Hulbert Road	150.2	99.7	149.3	111.1
	A3(M) J3 Roundabout with Hulbert Road to north of A3(M) J4	69.6	45.3	78.1	45.7
	North of A3(M) J4 to south of A3(M) J4	18.0	17.7	18.0	17.7
	TOTAL Route 2	330	400	345	414

- 6.11 The journey time results for 2019 show an increase in the overall journey times on both routes in both peak hours with the Phase 1 development. However these increases are not very large with the largest increase being a total of 45 seconds on Route 1 in the PM Peak and all other routes being under 20 seconds increase. Looking at the individual route segments, many see very little increase at all, for example on the A3(M) northbound and southbound as well as from the Hulbert Road / Purbrook Way roundabout to the A3(M) South. The greatest effect from development is on the section of route from A3(M) Junction 3 to the Hulbert Road / Purbrook Way roundabout in the PM Peak, which increases by 46 seconds.

2026 with and without Phase 1

- 6.12 The results for 2026 are shown in Table 6.3 to Table 6.4 comparing the scenarios with and without Phase 1 of the development.

Table 6.3 – 2026 Queue Length Results – with and without Phase 1

Queue Counter Location		Queue Length (m)			
Junction	Arm	2026 Base		2026 Phase 1	
		AM	PM	AM	PM
A3(M) Junction 3 / B2150 Hulbert Road	A3(M) J3 (N)	17	19	15	22
	Hulbert Road (E)	80	37	83	79
	A3(M) J3 (S)	18	31	29	34
	Hulbert Road (W)	54	44	100	40
B2150 Hulbert Road / Purbrook Way Roundabout	Hulbert Road (N)	9	99	9	189
	Purbrook Way (E)	268	37	177	221
	Hulbert Road (S)	83	410	335	103
	Purbrook Way (W)	215	368	260	352
A3(M) Junction 4 / Purbrook Way (West Roundabout)	A3(M) J4 Off-slip	37	129	36	170
	Purbrook Way (W)	133	377	150	366
Purbrook Way (W) / B&Q Havant (East Roundabout)	B & Q Exit	11	23	11	21
	Purbrook Way (E)	31	37	28	38
	Purbrook Way (W)	95	159	115	150
DHF Access Roundabout Junction	DHF Access Road	N/A	N/A	0	8
	Hulbert Road (S)	N/A	N/A	9	22
	Hulbert Road (N)	N/A	N/A	6	16

- 6.13 The results for 2026 generally show an increase in queues with Phase 1 of the development. The increases are most notable on Hulbert Road (W) at A3(M) Junction 3 in the AM Peak, the A3(M) northbound off-slip at Junction 4 in the PM Peak and Hulbert Road (N), Hulbert Road (S) and Purbrook Way (E) at the Hulbert Road / Purbrook Way roundabout.
- 6.14 The queue on Hulbert Road (W) at Junction 3 is predicted to increase by 46m, and there is capacity for this relatively small increase. The queue on the northbound off-slip at Junction 4 increases by 41m reaching a maximum length of 170m which only extends halfway along the slip road. The queues at the Hulbert Road / Purbrook Way roundabout in the AM Peak increase on two arms and decrease on one arm. The maximum increase with development is on Hulbert Road (S) by 252m totalling 335m which would not block back to any major junctions. The queue on Purbrook Way (E) reduces by 91m. In the PM Peak the queues are predicted to increase on two arms and reduce on the other two arms. The predicted increases are 90m on Hulbert Road (N) and 184m on Purbrook Way (E). These queues would not exceed 220m and there is available queuing space for these.
- 6.15 The decreases in queues on some arms is a result of the higher demand in VISSIM creating a slightly different arrival profile for vehicles at the junctions, resulting in different gap opportunities at roundabouts, and hence reduced queues and delays on some approaches.
- 6.16 The new access roundabout for the Dunsbury Hill Farm development produces minimum queuing in 2026 with Phase 1 with a maximum queue on Hulbert Road (S) of 4 vehicles.

Table 6.4 – 2026 Journey Time Results – with and without Phase 1

Journey Time		Journey Time (sec)			
Route	Segment	2026 Base		2026 Phase 1	
		AM	PM	AM	PM
Route 1	South of A3(M) J4 to north of J4	16.8	16.6	16.9	16.7
	North of A3(M) J4 to A3(M) J3 Roundabout with Hulbert Road	51.0	54.9	54.2	56.8
	A3(M) J3 Roundabout to Hulbert Road / Purbrook Way Roundabout	111.5	134.8	129.9	175.1
	Hulbert Road / Purbrook Way Roundabout to A3(M) south of J4	60.7	62.2	60.3	62.6
	TOTAL Route 1	240	268	261	311
Route 2	South of A3(M) J4 to Hulbert Road / Purbrook Way Roundabout	138.0	238.5	151.5	244.9
	Hulbert Road / Purbrook Way Roundabout to A3(M) J3 Roundabout with Hulbert Road	109.0	100.8	121.1	119.0
	A3(M) J3 Roundabout with Hulbert Road to north of A3(M) J4	65.8	46.3	48.3	48.4
	North of A3(M) J4 to south of A3(M) J4	18.1	17.8	18.0	17.9
	TOTAL Route 2	331	403	339	430

- 6.17 The results show that the total journey time would increase on both routes in the AM and PM Peak Hours, however the increases are not very large on any route, with a maximum increase of 43 seconds on Route 1 in the PM Peak Hour. Many segments within the routes would see a minimal increase including the A3(M) northbound and southbound and from the Hulbert Road / Purbrook Way roundabout to the A3(M) South of Junction 4. The segment with the greatest increase is from A3(M) Junction 3 to the Hulbert Road / Purbrook Way roundabout in the PM Peak, where the journey time would be 40 seconds longer with development.

2026 with and without Phase 1&2

- 6.18 The results for 2026 are shown in Table 6.5 to Table 6.6 for queue lengths and journey times, comparing with and without Phase 1 & 2 of the development.

Table 6.5 – 2026 Queue Length Results – with and without Phase 1&2

Queue Counter Location		Queue Length (m)			
Junction	Arm	2026 Base		2026 Phase 1&2	
		AM	PM	AM	PM
A3(M) Junction 3 / B2150 Hulbert Road	A3(M) J3 (N)	17	19	18	22
	Hulbert Road (E)	80	37	69	65
	A3(M) J3 (S)	18	31	31	38
	Hulbert Road (W)	54	44	122	50
B2150 Hulbert Road / Purbrook Way Roundabout	Hulbert Road (N)	9	99	11	315
	Purbrook Way (E)	268	37	254	165
	Hulbert Road (S)	83	410	192	91
	Purbrook Way (W)	215	368	274	340
A3(M) Junction 4 / Purbrook Way (West Roundabout)	A3(M) J4 Off-slip	37	129	37	188
	Purbrook Way (W)	133	377	131	350
Purbrook Way (W) / B&Q Havant (East Roundabout)	B & Q Exit	11	23	11	20
	Purbrook Way (E)	31	37	27	42
	Purbrook Way (W)	95	159	111	153
DHF Access Roundabout Junction	DHF Access Road	N/A	N/A	0	21
	Hulbert Road (S)	N/A	N/A	5	26
	Hulbert Road (N)	N/A	N/A	7	24

- 6.19 The queue results show that most approaches would see an increase in queues in 2026 with Phase 1 and 2 of the development. The most notable increases in queues are similar to Phase 1 and include Hulbert Road (W) at A3(M) Junction 3 in the AM Peak, the northbound off-slip at A3(M) Junction 4 and Hulbert Road (N), Hulbert Road (S) and Purbrook Way (E) at the Hulbert Road / Purbrook Way roundabout.
- 6.20 The queue on Hulbert Road (W) at Junction 3 increases by 68m reaching a maximum queue of 122m, for which there is available queuing space. The queue on the northbound off-slip at Junction 4 increases by 59m reaching just less than 200m, which does not block back to the main carriageway. The queues at Hulbert Road / Purbrook Way in the AM Peak increase on two arms and decrease, or stay the same, at the other arms. The increases are predicted on Hulbert Road (S) by 109m and Purbrook Way (W) by 59m. These are within the available stacking space. In the PM Peak the increases are on Hulbert Road (N) and Purbrook Way (E) by 216m and 128m respectively, with corresponding decreases predicted on the other arms. The increases appear large but the Purbrook Way (E) queue remains below 200m and is considered to not conflict with other junctions, and the Hulbert Road (N) queue would extend to 315m or 55 vehicles as a worst case.
- 6.21 The predicted reduction in queues on some approaches are a result of the higher demand in VISSIM creating a slightly different arrival profile for vehicles at the junctions, resulting in different gap opportunities at roundabouts, and hence reduced queues and delays on some approaches.

- 6.22 The new access roundabout for the Dunsbury Hill Farm development produces minimum queuing in 2026 with Phase 2, with a maximum of 5 vehicles queuing back on the Hulbert Road (S) approach.
- 6.23 Overall the predicted increase in queues is greatest at the Hulbert Road / Purbrook Way roundabout, where the queues are predicted to increase on some arms and reduce on others with Phase 2 of the development. However the queues remain within available stacking space without blocking any other main junctions. To improve operating conditions and reduce delays, some mitigation would be required at this junction.

Table 6.6 – 2026 Journey Time Results – with and without Phase 1&2

Journey Time		Journey Time (sec)			
Route	Segment	2026 Base		2026 Phase 1&2	
		AM	PM	AM	PM
Route 1	South of A3(M) J4 to north of J4	16.8	16.6	16.9	16.6
	North of A3(M) J4 to A3(M) J3 Roundabout with Hulbert Road	51.0	54.9	55.5	56.4
	A3(M) J3 Roundabout to Hulbert Road / Purbrook Way Roundabout	111.5	134.8	131.1	221.5
	Hulbert Road / Purbrook Way Roundabout to A3(M) south of J4	60.7	62.2	59.8	64.5
	TOTAL Route 1	240	268	263	359
Route 2	South of A3(M) J4 to Hulbert Road / Purbrook Way Roundabout	138.0	238.5	148.6	251.8
	Hulbert Road / Purbrook Way Roundabout to A3(M) J3 Roundabout with Hulbert Road	109.0	100.8	118.6	119.3
	A3(M) J3 Roundabout with Hulbert Road to north of A3(M) J4	65.8	46.3	64.3	49.3
	North of A3(M) J4 to south of A3(M) J4	18.1	17.8	18.0	17.9
	TOTAL Route 2	331	403	350	438

- 6.24 The journey time results show that the total journey times on both routes in both peak hours would increase and most notably on Route 1 northbound in the PM Peak by 91 seconds. However some of the journey times on the individual route segments would see only a minimal increase, for example the A3(M) northbound and southbound and Hulbert Road / Purbrook Way Roundabout to A3(M) Junction 4. Consistent with the other scenarios, the greatest journey time increase is on the section of route from A3(M) Junction 3 to the Hulbert Road / Purbrook Way roundabout, which would increase by 87 seconds. This is due to the longer queues on Hulbert Road southbound approaching the roundabout.

Sensitivity Test

- 6.25 As described in the Trip Generation section in Chapter 4, the SRTM trip generation is predicting lower trips associated with the development than the TRICS analysis. Whilst the SRTM forecast flows are based on detailed planning and employment growth assumptions which form the evidence base for the South Hampshire transport strategy development process and has been the focus of this assessment, a sensitivity test has also been carried out to test the impact on the highway network that the higher development trips could have. This sensitivity test has been run in VISSIM only. The results are presented below for the worst case scenario being 2026, with Phase 1 and 2.

2026 with and without Phase 1&2 – Sensitivity Test

- 6.26 The results for 2026 are shown in Table 6.7 to Table 6.8 for queue lengths and journey times, comparing with and without Phase 1 & 2 of the development.

Table 6.7 – 2026 Queue Length Results – with and without Phase 1&2 – Sensitivity Test

Queue Counter Location		Queue Length (m)			
Junction	Arm	2026 Base		2026 Phase 1&2	
		AM	PM	AM	PM
A3(M) Junction 3 / B2150 Hulbert Road	A3(M) J3 (N)	17	19	17	21
	Hulbert Road (E)	80	37	72	77
	A3(M) J3 (S)	18	31	35	39
	Hulbert Road (W)	54	44	176	34
B2150 Hulbert Road / Purbrook Way Roundabout	Hulbert Road (N)	9	99	13	317
	Purbrook Way (E)	268	37	329	434
	Hulbert Road (S)	83	410	301	117
	Purbrook Way (W)	215	368	307	343
A3(M) Junction 4 / Purbrook Way (West Roundabout)	A3(M) J4 Off-slip	37	129	46	155
	Purbrook Way (W)	133	377	306	387
Purbrook Way (W) / B&Q Havant (East Roundabout)	B & Q Exit	11	23	11	21
	Purbrook Way (E)	31	37	26	40
	Purbrook Way (W)	95	159	145	144
DHF Access Roundabout Junction	DHF Access Road	N/A	N/A	1	14
	Hulbert Road (S)	N/A	N/A	15	20
	Hulbert Road (N)	N/A	N/A	9	19

- 6.27 As consistent with the main assessment, the queue results show that most approaches would see an increase in queues in 2026 with Phase 1 and 2 of the development. The most notable increases in queues are similar to the main assessment and include Hulbert Road (W) at A3(M) Junction 3 in the AM Peak and at the Hulbert Road / Purbrook Way roundabout, Hulbert Road (N) and Purbrook Way (E) in the PM Peak and Hulbert Road (S) and Purbrook Way (W) in the AM Peak Hour. In addition, the queue on Hulbert Road (W) at A3(M) Junction 4 is predicted to increase more than in the main assessment, particularly in the AM Peak Hour.

- 6.28 The queue on Hulbert Road (W) at Junction 3 increases by 122m reaching a maximum queue of 176m, for which there is still available queuing space. The queues at Hulbert Road / Purbrook Way in the AM Peak increase on all arms with Phase 1 and 2, with the greatest increases predicted on Hulbert Road (S) by 218m and Purbrook Way (W) by 92m. These are greater than those predicted in the main assessment at just over 300m in length but are within the available stacking space. In the PM Peak the increases are on Hulbert Road (N) and Purbrook Way (E) by 218m and 397m respectively, with corresponding decreases predicted on the other arms. The increases appear large and greater than the main assessment, but the Purbrook Way (E) queue reaching 434m is considered to not conflict with other junctions, and the Hulbert Road (N) queue would extend to 317m or 55 vehicles as a worst case.
- 6.29 The queue on Hulbert Road (W) at A3(M) Junction 4 is predicted to increase by 173m in the AM Peak reaching a distance of 306m, which would bring it just back to the College Road junction at a worst case.
- 6.30 The predicted reduction in queues on some approaches are a result of the higher demand in VISSIM creating a slightly different arrival profile for vehicles at the junctions, resulting in different gap opportunities at roundabouts, and hence reduced queues and delays on some approaches.
- 6.31 The new access roundabout for the Dunsbury Hill Farm development produces minimum queuing in 2026 with Phase 2, with a maximum of 4 vehicles queuing back on both the Hulbert Road (S) and (N) approaches.
- 6.32 Overall the predicted increase in queues is greatest at the Hulbert Road / Purbrook Way roundabout, where the queues are predicted to increase on some arms and reduce on others with Phase 2 of the development. However the queues remain within available stacking space without blocking any other main junctions. Some mitigation would be required to reduce the delays at this junction.

Table 6.8 – 2026 Journey Time Results – with and without Phase 1&2 – Sensitivity Test

Journey Time		Journey Time (sec)			
Route	Segment	2026 Base		2026 Phase 1&2	
		AM	PM	AM	PM
Route 1	South of A3(M) J4 to north of J4	16.8	16.6	17.0	16.7
	North of A3(M) J4 to A3(M) J3 Roundabout with Hulbert Road	51.0	54.9	55.7	57.3
	A3(M) J3 Roundabout to Hulbert Road / Purbrook Way Roundabout	111.5	134.8	133.6	251.9
	Hulbert Road / Purbrook Way Roundabout to A3(M) south of J4	60.7	62.2	58.8	64.3
	TOTAL Route 1	240	268	265	390
Route 2	South of A3(M) J4 to Hulbert Road / Purbrook Way Roundabout	138.0	238.5	182.1	217.9
	Hulbert Road / Purbrook Way Roundabout to A3(M) J3 Roundabout with Hulbert Road	109.0	100.8	120.1	121.8
	A3(M) J3 Roundabout with Hulbert Road to north of A3(M) J4	65.8	46.3	63.7	48.5
	North of A3(M) J4 to south of A3(M) J4	18.1	17.8	18.0	17.9
	TOTAL Route 2	331	403	384	406

- 6.33 The journey time results show that the total journey times on both routes in both peak hours would increase and most notably on Route 1 northbound in the PM Peak by 122 seconds (compared to 91 seconds in the main assessment) and Route 2 in the AM Peak by 53 seconds (compared to 19 seconds in the main assessment). However the journey times on Route 1 in the AM Peak and Route 2 in the PM Peak are not predicted to increase by much in 2026 with Phase 1 and 2 of the development. On the most affected routes, some of the journey times on the individual route segments would see only a minimal increase, for example the A3(M) northbound and southbound and Hulbert Road / Purbrook Way Roundabout to A3(M) Junction 4. Consistent with the main assessment, the greatest journey time increase is on the section of route from A3(M) Junction 3 to the Hulbert Road / Purbrook Way roundabout, which would increase by 117 seconds. This is due to the longer queues on Hulbert Road southbound approaching the roundabout in the PM Peak Hour.

Sensitivity Test 2

- 6.34 A further sensitivity test has been carried out to include the committed improvement to the A3(M) Junction 3 as part of the West of Waterlooville MDA. This improvement is partial signalisation of the northbound off-slip only.
- 6.35 This sensitivity test has been run in VISSIM only. The results are presented below for the worst case scenario being 2026, with Phase 1 and 2.

2026 with and without Phase 1&2 – Sensitivity Test 2

- 6.36 The results for 2026 are shown in Table 6.9 and Table 6.10 for queue lengths and journey times, comparing with and without Phase 1 & 2 of the development.

Table 6.9 – 2026 Queue Length Results – with and without Phase 1&2 – Sensitivity Test 2

Queue Counter Location		Queue Length (m)			
Junction	Arm	2026 Base		2026 Phase 1&2	
		AM	PM	AM	PM
A3(M) Junction 3 / B2150 Hulbert Road	A3(M) J3 (N)	17	19	16	22
	Hulbert Road (E)	80	37	60	84
	A3(M) J3 (S)	18	31	41	49
	Hulbert Road (W)	54	44	76	35
B2150 Hulbert Road / Purbrook Way Roundabout	Hulbert Road (N)	9	99	11	327
	Purbrook Way (E)	268	37	211	163
	Hulbert Road (S)	83	410	165	73
	Purbrook Way (W)	215	368	276	356
A3(M) Junction 4 / Purbrook Way (West Roundabout)	A3(M) J4 Off-slip	37	129	35	167
	Purbrook Way (W)	133	377	105	379
Purbrook Way (W) / B&Q Havant (East Roundabout)	B & Q Exit	11	23	11	20
	Purbrook Way (E)	31	37	25	39
	Purbrook Way (W)	95	159	101	153
DHF Access Roundabout Junction	DHF Access Road	N/A	N/A	0	25
	Hulbert Road (S)	N/A	N/A	1	28
	Hulbert Road (N)	N/A	N/A	8	24

- 6.37 As consistent with the main assessment, the results show that there would be an increase in queues on most approaches in 2026 with Phase 1 and 2 of the development. The queues at A3(M) Junction 3 as a result of the partial signalisation scheme are only slightly greater than the main assessment on some approaches including the A3(M) northbound off-slip. However these are within the available space and would not block back to the main A3(M) carriageway.

Table 6.10 – 2026 Journey Time Results – with and without Phase 1&2 – Sensitivity Test 2

Journey Time		Journey Time (sec)			
Route	Segment	2026 Base		2026 Phase 1&2	
		AM	PM	AM	PM
Route 1	South of A3(M) J4 to north of J4	16.8	16.6	16.8	16.6
	North of A3(M) J4 to A3(M) J3 Roundabout with Hulbert Road	51.0	54.9	58.7	59.8
	A3(M) J3 Roundabout to Hulbert Road / Purbrook Way Roundabout	111.5	134.8	130.3	230.9
	Hulbert Road / Purbrook Way Roundabout to A3(M) south of J4	60.7	62.2	60.0	63.4
	TOTAL Route 1	240	268	266	371
Route 2	South of A3(M) J4 to Hulbert Road / Purbrook Way Roundabout	138.0	238.5	147.2	253.8
	Hulbert Road / Purbrook Way Roundabout to A3(M) J3 Roundabout with Hulbert Road	109.0	100.8	115.0	123.5
	A3(M) J3 Roundabout with Hulbert Road to north of A3(M) J4	65.8	46.3	60.3	47.3
	North of A3(M) J4 to south of A3(M) J4	18.1	17.8	18.1	18.0
	TOTAL Route 2	331	403	341	443

- 6.38 The journey time results show that the total journey times on both routes in both peak hours would increase with Phase 1 and 2 of the development and most notably on Route 1 northbound in the PM Peak by 103 seconds (compared to 91 seconds in the main assessment). The times are higher with the partial signalisation of A3(M) Junction 3 than for the main assessment, but this is not by a significant amount. It can therefore be concluded that the effect of the development on the highway network is broadly similar with and without the committed scheme at A3(M) Junction 3.

Merge Assessments

- 6.39 In addition to the VISSIM model assessment, merge assessments in accordance with DMRB TD 22/06 have been carried out for the slip roads to the main A3(M) carriageway at both Junction 3 and 4 for the AM and PM Peak Hours. The flows on the relevant slips roads, and sections of main carriageway, are provided in Table 6.11 and Table 6.12 for the AM and PM Peak Hours respectively.

Table 6.11 – Predicted Flows on Slip Roads for Merge/ Diverge Assessments – AM Peak Hour

Location	2011 Base	2019 Base	2019 Phase 1	2026 Base	2026 Phase 1	2026 P1&2
Junction 3						
SB off slip	552	290	299	304	320	328
SB flow at junction	2,088	2,474	2,471	2,522	2,511	2,503
SB on slip	1,080	1,169	1,185	1,102	1,106	1,106
NB off slip	751	673	780	704	805	842
NB flow at junction	1,643	2,281	2,261	2,431	2,411	2,415
NB on slip	571	783	787	836	831	822
Junction 4						
SB on slip	907	986	994	1055	1061	1067
SB flow before on slip	3,163	3,671	3,687	3,653	3,657	3,657
NB off slip	797	794	799	817	840	845
NB flow after off slip	2,394	2,964	3,041	3,134	3,161	3,184

Table 6.12 – Predicted Flows on Slip Roads for Merge/ Diverge Assessments – PM Peak Hour

Location	2011 Base	2019 Base	2019 Phase 1	2026 Base	2026 Phase 1	2026 P1&2
Junction 3						
SB off slip	709	584	586	613	621	625
SB flow at junction	2,035	2,588	2,588	2,712	2,712	2,712
SB on slip	667	605	731	686	837	860
NB off slip	1,142	952	1,025	704	1,007	1,023
NB flow at junction	2,004	2,058	2,072	2,464	2,204	2,196
NB on slip	381	613	637	613	637	641
Junction 4						
SB on slip	664	707	718	797	805	815
SB flow before on slip	2,684	3,209	3,328	3,414	3,552	3,580
NB off slip	1,181	1,262	1,270	1,231	1,239	1,247
NB flow after off slip	3,155	3,042	3,116	3,195	3,229	3,227

- 6.40 The tables above show that the traffic flows on the northbound slip roads off the motorway at Junction 3 and 4 are between 900 and 1350 vehicles / hour, which in Table 3/1b in DMRB TD 22/06 infer the diverging slip road requires two lanes with a hard strip. These slip roads have two lanes plus a hard shoulder and are therefore considered to remain within capacity and design safety requirements. All other off-slips are below 900 vehicles / hour and therefore only require one lane and a hard shoulder by design standards. They have two lanes plus a hard shoulder.

- 6.41 The traffic flows on the slip roads joining the motorway at Junction 3 and 4 are mostly below 900 vehicles / hour in the various scenarios, except the southbound on slips at both junctions, which have flows between 900 and 1350 vehicles / hour in the AM Peak. In accordance with TD 22/06 all these flows would require a single lane with hard shoulder for the merge. All of these on-slips have two lanes provided with a hard shoulder and are therefore considered to remain within design standards.

Summary

- 6.42 In summary, the VISSIM micro-simulation modelling has shown that the local highway network is predicted to experience an increase in queues between the future base and with development scenarios on most approaches. The impacts are most significant at the Hulbert Road / Purbrook Way roundabout as well as on the Hulbert Road (W) approach at A3(M) Junction 3 and the northbound off slip at A3(M) Junction 4. The Hulbert Road / Purbrook Way roundabout experiences an increase in congestion even without the development, between the 2011 Base, 2019 and 2026 future base scenarios, in particular on the Purbrook Way (E and W) arms, and Hulbert Road (S). The development, in line with what would be expected, increases queues on Hulbert Road (N) and Purbrook Way (E) in the PM Peak and Purbrook Way (W) in the AM Peak to maximum queues of 200 to 350m. These are considered to be within the available queuing space without blocking any other main junctions. To improve operating conditions, mitigation would be required in the future scenario.
- 6.43 However it is apparent that the queues and delays do not increase on all approaches; some approaches would see a decrease with development. This is a result of different flows on all arms, as a result of increased demand, affecting the priority and gap opportunities at the roundabouts, and hence different affects on queues and delays.
- 6.44 The VISSIM results have shown an increase in overall journey times, most notably on Route 1 northbound in the PM Peak with development. However the increase is confined to one section of the route from A3(M) Junction 3 to the Hulbert Road / Purbrook Way roundabout. This demonstrates there are only minimal or no delays predicted elsewhere in the VISSIM network.
- 6.45 A sensitivity test has been carried out in which the higher trip generation predicted with TRICS, compared to that in SRTM, has been run in the VISSIM model. This has shown that the network would operate with higher queues and journey times on the most critical approaches as mentioned above, including Purbrook Way (E) and Hubert Road (S) at the Purbrook Way / Hulbert Road roundabout. The queues are not predicted to extend through any critical junctions. Some mitigation would be required to reduce the delays at this junction.

7. Mitigation Measures

- 7.1 The new site access and link road proposed as part of the development would enable development at Dunsbury Hill Farm. Access for main traffic would be from the west where the new roundabout would connect to the B2150 Hulbert Road. From here traffic can either travel north to the A3(M) Junction 3 or south on Hulbert Road towards Purbrook Way. To the east, the link would be a bus-only link with a bus gate at Woolston Road in Leigh Park.

Cross-Borough Bus Service

- 7.2 A key mitigation measure proposed as part of the development is the public transport strategy which incorporates the Cross Borough Bus Service to route through the development site, providing a connection from WaterlooVille west of the A3(M) to Leigh Park east of the A3(M). It is proposed that this service would operate at a frequency of 4 buses per hour, thus dramatically reducing the journey times between WaterlooVille and Leigh Park.
- 7.3 It is envisaged that this bus route will use the Hulbert Road access and the Woolston Road bus-only link and cross the site.
- 7.4 In addition these access points will enable the existing local bus routes to enter and leave the site from either the east or west of the A3(M) without needing to travel through the site. New bus infrastructure on the link road in the form of a bus turn round or bus interchange will ensure that the site can be served by the Cross Borough Service and the existing local bus services. The development site thus provides the opportunity for a direct link to connect the existing bus routes 39 and 23 into the site.

Promoting Walking and Cycling

- 7.5 The main pedestrian and cycling access route to the site will be from the east side at Woolston Road, in Leigh Park. This will provide pedestrian and cycling connections between the site and Leigh Park and Havant. Measures to promote walking and cycling will be developed as part of the Travel Plan.

Framework Travel Plan

- 7.6 A Workplace Travel Plan will be central to the mitigation of the impact of Dunsbury Hill Farm. A Framework Travel Plan developed for the site, which will form the basis of the Site Travel Plan, is included in Appendix F.
- 7.7 The Framework Travel Plan includes a package of measures that have been identified for this site with the aim of promoting travel by sustainable modes. However it would be informed in detail upon occupation of the site, when a baseline travel survey would be undertaken. The aim of the Plan is to identify an effective strategy for managing travel behaviour of staff and visitors to the business park and associated hotel development. It also aims to manage the parking demand on site. The objectives of the Travel Plan are:
- To maximise opportunities for staff and visitors to travel to site by means other than single occupancy car;
 - To encourage new staff to commute to work by modes of travel other than the private car;
 - To reduce the carbon footprint of the site by minimising transport contributions; and
 - Improve access to the site for all.
- 7.8 These objectives have been aligned to the following specific and measurable targets for the site:

- Reduction in single occupancy trips to the site hence controlling car parking demand;
- Increase the number of staff using public transport, cycling and walking;
- Reduce the use of the car overall at the site; and
- Improve accessibility to the site by public transport, cycling and walking.

To achieve these targets various potential measures to be implemented at the site have been discussed in the Framework Travel Plan. These include:

- Development wide initiatives:
 - Flexible working policy
 - Cycle parking
 - Shower and locker facilities
 - Car sharing on-line scheme
 - Teleconferencing facilities
- Provision of on-site up-to-date transport information;
- Public transport strategy:
 - Interest free season ticket loans
- Walking, Cycling and Motorcycle Strategy
 - Discount on equipment
 - Cycle / motorcycle safety training
 - Cycle loan scheme
- Car Sharing Strategy
 - Publicity of scheme
 - Priority parking spaces for car sharers
 - Incentives for car sharing e.g. guaranteed ride home

7.9 In addition it is proposed that a Car Park Management Strategy would be implemented at the site to include a parking allocation system based on needs-based permit criteria. These criteria will include mobility impairment, accessibility, car sharing, working hours, operational needs etc.

7.10 The Travel Plan will be led by a dedicated Travel Plan Co-ordinator on site, supported by a Travel Plan steering group and strong marketing / communication. To ensure continuous effectiveness of the Travel Plan, it will be monitored through annual travel surveys for the first three years of occupation and periodically thereafter.

B2150 Hulbert Road / Purbrook Way Roundabout

7.11 Any necessary mitigation has been reviewed in the context of a review of the highway impact of the proposals. It is clear that the greatest impact of the development will be at the Purbrook Way / Hulbert Road roundabout. However this is a location where even in the future year without development scenario, capacity is predicted to be very restricted. However the queuing results are worse in the sensitivity test assessment with the slightly higher trip rates derived from TRICS for the development.

- 7.12 Therefore it is recommended that improvements would be required at this junction to improve capacity and reduce the queues and delays. It is suggested that possible mitigation measures at the junction are investigated with Hampshire County Council. It is likely that these could include local widening and changes to the lane markings or a signalised option to improve capacity and reduce the queues and delays.

8. Summary and Conclusion

- 8.1 This Transport Assessment (TA) has been prepared by Atkins for Portsmouth City Council (PCC), Havant Borough Council (HBC) and the Partnership for Urban South Hampshire (PUSH) to support the planning application for the development of land at Dunsbury Hill Farm, near Waterlooville in Hampshire.
- 8.2 In the context of the hybrid planning application, the Masterplan area itself is for outline consent only with detailed consent for the access and link road only.
- 8.3 The TA has been prepared based on the content and methodology set out in a scoping note dated 12th April 2011 that was submitted and agreed with Havant Borough Council (HBC), Hampshire County Council (HCC) and the Highways Agency (HA).
- 8.4 The development proposal involves the construction of a business park in two phases with an associated hotel development.
- 8.5 The 20.2 hectare site is a Strategic Site in the Havant Borough Core Strategy which was adopted on 1st March 2011. It was marketed by PCC for development following publication of the Dunsbury Hill Development Brief in 2007 and the site remains key to delivering employment in the local and sub-regional areas and is seen as a potential new business gateway to South Hampshire via the A3(M) Corridor. It is located in a strategic gap immediately east of the A3 (M) motorway Junction 3, between Waterlooville and the northern area of Havant
- 8.6 The aspirations are for a top end business park/campus and an exemplar construction and design to BREEAM Excellent standard.
- 8.7 A new access will be provided via a link to the B2150 Hulbert Road to the west and to the east into Leigh Park. The latter will operate as a bus only link enforced via a bus gate and will also serve to provide a second point of access in emergencies.
- 8.8 The public transport strategy for the site incorporates the plans for a Havant Cross Borough Bus Service connecting Waterlooville to the west and Leigh Park to the east of the A3(M) corridor. It is envisaged that this bus route will use the Hulbert Road access and the Woolston Road bus-only link and cross the site. In addition these access points will enable the existing local bus routes to enter and leave the site from either the east or west of the A3(M) without needing to travel through the site.
- 8.9 Construction of road works forming the detailed element of the hybrid planning application, access and link road, is planned for 2013. It is then intended that the site will be constructed in two phases as follows:
- Phase 1 – employment land use (46,450 m² GFA) and a Hotel (5,574 m² GFA); and
 - Phase 2 – additional employment land use (15,329 m² GFA).
- 8.10 The employment land uses will be assigned a mix of approximately 40 percent B1, 40 percent B2 and 20 percent B8.
- 8.11 Phase 1 is currently planned to begin in 2014 with Phase 2 following in 2022. Both phases have an anticipated timescale of four years to full completion, and occupation will therefore be expected for 2018 and 2026 respectively.
- 8.12 The local highway network consists of the following key junctions, at which Manual Classified Counts were undertaken in May 2011:
- B2150 Hulbert Road/A3(M) Junction 3;
 - Purbrook Way/B2150 Hulbert Road Roundabout; and
 - Purbrook Way /A3(M) Junction 4.

- 8.13 The existing public transport services and walking and cycling routes have been reviewed.
- 8.14 Accident data has been obtained and reviewed for the Study Area in the last five years. This showed that the majority of accidents were due to driver error or behaviour.

Impact Assessment

- 8.15 A VISSIM micro-simulation model has been developed to assess the impact of the development at Dunsbury Hill Farm. The base model was developed using the traffic survey data collected in May 2011. This model was validated and approved by the Highways Agency. The VISSIM model covers the AM and PM Peak Hours of 0745 to 0845 and 1645 to 1745 hours.
- 8.16 Transport for South Hampshire's (TfSH) Sub-Regional Transport Model (SRTM) provides the evidence base for the South Hampshire transport strategy development process. This has been used for this assessment to inform the traffic demand for the forecast year VISSIM models.
- 8.17 The SRTM assessment years of 2019 and 2026 are broadly aligned to completion and subsequent full occupancy of Phase 1 and Phase 2 therefore have formed the basis of future year assessment of the development. Accordingly, the following forecast scenarios have been assessed in the VISSIM model:
- Forecast Year 2019 (with/without Phase 1 Development);
 - Forecast Year 2026 (with/without Phase 1 Development only); and
 - Forecast Year 2026 (with/without Phase 1 & 2 Development).
- 8.18 The results from the VISSIM micro-simulation modelling have shown that the local highway network is predicted to experience an increase in queues, delays and journey times between the future base and with development scenarios on most approaches. The impacts are most significant at the Hulbert Road / Purbrook Way roundabout as well as on the Hulbert Road (W) approach at A3(M) Junction 3 and the northbound off slip at A3(M) Junction 4. All queues were predicted to be within available queuing space. The Hulbert Road / Purbrook Way roundabout experiences an increase in congestion with queues and increased journey times. However, between the 2011 Base and 2019 and 2026 future base scenarios, these impacts were also apparent in particular on the Purbrook Way (E and W) arms, and Hulbert Road (S).
- 8.19 It is also apparent from the results that the queues and delays do not increase on all approaches; some approaches would see a decrease with development. This is a result of different flows on all arms, as a result of increased demand, affecting the priority and gap opportunities at the roundabouts, and hence different affects on queues and delays.
- 8.20 A sensitivity test has been carried out in which the slightly higher trip generation predicted with TRICS, compared to that in SRTM, has been run in the VISSIM model. This has shown that the network would operate with higher queues and journey times on the most critical approaches as mentioned above, including Purbrook Way (E) and Hubert Road (S) at the Purbrook Way / Hulbert Road roundabout. However the queues are not predicted to extend through any critical junctions.
- 8.21 Merge assessments were also carried out for the slip roads at Junctions 3 and 4 and these were shown to remain within design standards with the forecast traffic flows.

Mitigation

- 8.22 Together with the public transport strategy for the site, including the Cross Borough Bus Service, the site would incorporate a Workplace Travel Plan to encourage travel to the site by modes other than the private car. This would be integral to the sustainability of the site.
- 8.23 It is clear that capacity is constrained at the Hulbert Road / Purbrook Way roundabout in the future years of assessment even without development. Therefore it is recommended that improvements

would be required at this junction to improve capacity and reduce the queues and delays. It is suggested that possible mitigation measures at the junction are investigated with Hampshire County Council as there are existing issues at this junction without development.

Appendix A - Traffic Survey Results

Intelligent Data Collection Limited

Client Atkins
Project Number ID00836
Route Number 1
Survey Date 24/05/2011



AM Journey Time Data						
Journey No.	1	2	3	4	5	Journey Time
1	07:04:25	07:04:43	07:05:28	07:07:01	07:07:52	00:03:27
2	07:10:07	07:10:22	07:11:01	07:12:34	07:13:28	00:03:21
3	07:15:49	07:16:07	07:16:58	07:18:25	07:19:17	00:03:28
4	07:21:25	07:21:40	07:22:25	07:24:19	07:25:13	00:03:48
5	07:28:10	07:28:28	07:29:16	07:30:58	07:31:52	00:03:42
6	07:36:10	07:36:28	07:37:16	07:38:52	07:39:43	00:03:33
7	08:14:31	08:14:49	08:15:43	08:17:37	08:18:37	00:04:06
8	08:29:54	08:30:12	08:30:57	08:32:36	08:33:30	00:03:36
9	08:38:18	08:38:33	08:39:30	08:41:15	08:42:03	00:03:45
10	08:47:18	08:47:33	08:48:12	08:50:27	08:51:19	00:04:01
11	08:56:34	08:56:49	08:57:34	08:59:10	09:00:01	00:03:27
12	09:04:34	09:04:49	09:05:34	09:07:40	09:08:25	00:03:51

AM Time Between Points					
Journey No.	1-2	2-3	3-4	4-5	Total
1	00:00:18	00:00:45	00:01:33	00:00:51	00:03:27
2	00:00:15	00:00:39	00:01:33	00:00:54	00:03:21
3	00:00:18	00:00:51	00:01:27	00:00:52	00:03:28
4	00:00:15	00:00:45	00:01:54	00:00:54	00:03:48
5	00:00:18	00:00:48	00:01:42	00:00:54	00:03:42
6	00:00:18	00:00:48	00:01:36	00:00:51	00:03:33
7	00:00:18	00:00:54	00:01:54	00:01:00	00:04:06
8	00:00:18	00:00:45	00:01:39	00:00:54	00:03:36
9	00:00:15	00:00:57	00:01:45	00:00:48	00:03:45
10	00:00:15	00:00:39	00:02:15	00:00:52	00:04:01
11	00:00:15	00:00:45	00:01:36	00:00:51	00:03:27
12	00:00:15	00:00:45	00:02:06	00:00:45	00:03:51

AM Speeds (Mph)				
Journey No.	1-2	2-3	3-4	4-5
1	62	57	39	34
2	74	66	39	32
3	62	50	42	33
4	74	57	32	32
5	62	53	35	32
6	62	53	38	34
7	62	47	32	29
8	62	57	37	32
9	75	45	34	36
10	75	65	27	33
11	75	57	38	34
12	74	57	29	38

Max	75	66	42	38
Min	62	45	27	29
Median	68	57	36	33
St Dev	7	6	4	2

PM Journey Time Data						
Journey No.	1	2	3	4	5	Journey Time
1	16:23:32	16:23:47	16:24:44	16:26:56	16:27:59	00:04:27
2	16:30:35	16:30:53	16:31:41	16:34:20	16:35:20	00:04:45
3	16:37:38	16:37:53	16:38:38	16:39:59	16:40:56	00:03:18
4	16:43:20	16:43:35	16:44:38	16:46:38	16:47:41	00:04:21
5	16:50:02	16:50:20	16:51:17	16:53:11	16:54:11	00:04:09
6	16:56:32	16:56:47	16:57:41	16:59:38	17:00:35	00:04:03
7	17:03:02	17:03:20	17:04:14	17:06:11	17:07:17	00:04:15
8	17:23:45	17:24:03	17:25:27	17:27:37	17:28:35	00:04:50
9	17:40:43	17:40:58	17:41:49	17:43:37	17:44:49	00:04:06
10	17:47:34	17:47:52	17:48:55	17:50:49	17:52:04	00:04:30

PM Time Between Points					
Journey No.	1-2	2-3	3-4	4-5	Total
1	00:00:15	00:00:57	00:02:12	00:01:03	00:04:27
2	00:00:18	00:00:48	00:02:39	00:01:00	00:04:45
3	00:00:15	00:00:45	00:01:21	00:00:57	00:03:18
4	00:00:15	00:01:03	00:02:00	00:01:03	00:04:21
5	00:00:18	00:00:57	00:01:54	00:01:00	00:04:09
6	00:00:15	00:00:54	00:01:57	00:00:57	00:04:03
7	00:00:18	00:00:54	00:01:57	00:01:06	00:04:15
8	00:00:18	00:01:24	00:02:10	00:00:58	00:04:50
9	00:00:15	00:00:51	00:01:48	00:01:12	00:04:06
10	00:00:18	00:01:03	00:01:54	00:01:15	00:04:30

PM Speeds (Mph)				
Journey No.	1-2	2-3	3-4	4-5
1	74	45	27	27
2	62	53	23	29
3	74	57	45	30
4	74	41	30	27
5	62	45	32	29
6	74	47	31	30
7	62	47	31	26
8	62	30	28	30
9	75	50	33	24
10	62	41	32	23

Max	75	57	45	30
Min	62	30	23	23
Median	68	46	31	28
St Dev	6	7	6	3

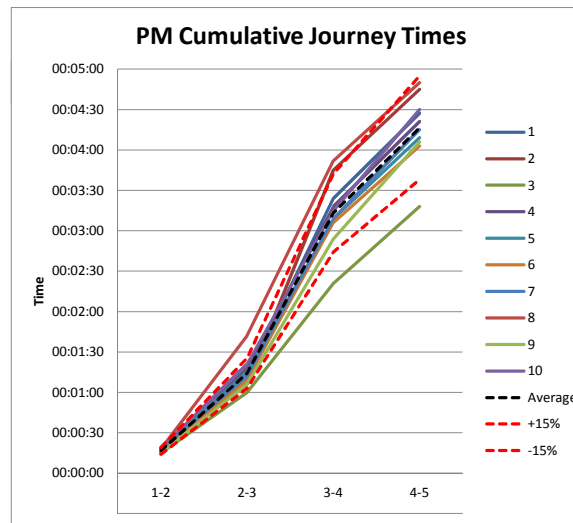
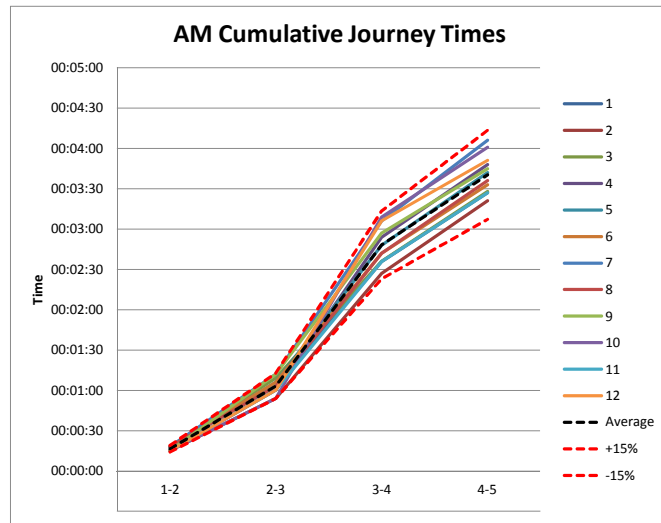
Intelligent Data Collection Limited

Client Atkins
Project Number ID00836
Route Number 1
Survey Date 24/05/2011



AM Cumulative Journey Times				
Journey No.	1-2	2-3	3-4	4-5
1	00:00:18	00:01:03	00:02:36	00:03:27
2	00:00:15	00:00:54	00:02:27	00:03:21
3	00:00:18	00:01:09	00:02:36	00:03:28
4	00:00:15	00:01:00	00:02:54	00:03:48
5	00:00:18	00:01:06	00:02:48	00:03:42
6	00:00:18	00:01:06	00:02:42	00:03:33
7	00:00:18	00:01:12	00:03:06	00:04:06
8	00:00:18	00:01:03	00:02:42	00:03:36
9	00:00:15	00:01:12	00:02:57	00:03:45
10	00:00:15	00:00:54	00:03:09	00:04:01
11	00:00:15	00:01:00	00:02:36	00:03:27
12	00:00:15	00:01:00	00:03:06	00:03:51
Average	00:00:17	00:01:03	00:02:48	00:03:40
+15%	00:00:19	00:01:13	00:03:13	00:04:13
-15%	00:00:14	00:00:54	00:02:23	00:03:07

PM Cumulative Journey Times				
Journey No.	1-2	2-3	3-4	4-5
1	00:00:15	00:01:12	00:03:24	00:04:27
2	00:00:18	00:01:06	00:03:45	00:04:45
3	00:00:15	00:01:00	00:02:21	00:03:18
4	00:00:15	00:01:18	00:03:18	00:04:21
5	00:00:18	00:01:15	00:03:09	00:04:09
6	00:00:15	00:01:09	00:03:06	00:04:03
7	00:00:18	00:01:12	00:03:09	00:04:15
8	00:00:18	00:01:42	00:03:52	00:04:50
9	00:00:15	00:01:06	00:02:54	00:04:06
10	00:00:18	00:01:21	00:03:15	00:04:30
Average	00:00:17	00:01:14	00:03:13	00:04:16
+15%	00:00:19	00:01:25	00:03:42	00:04:55
-15%	00:00:14	00:01:03	00:02:44	00:03:38



Intelligent Data Collection Limited

Client Atkins
Project Number ID00836
Route Number 2
Survey Date 24/05/2011



AM Journey Time Data						
Journey No.	1	2	3	4	5	Journey Time
1	07:25:16	07:26:28	07:27:40	07:28:31	07:28:46	00:03:30
2	07:32:40	07:33:46	07:35:01	07:36:01	07:36:25	00:03:45
3	07:46:00	07:47:04	07:48:22	07:49:13	07:49:31	00:03:31
4	08:01:01	08:02:10	08:03:28	08:04:16	08:04:34	00:03:33
5	08:28:43	08:29:49	08:31:16	08:32:04	08:32:25	00:03:42
6	08:37:55	08:39:07	08:40:42	08:41:48	08:42:06	00:04:11
7	08:57:22	08:58:37	08:59:58	09:00:52	09:01:10	00:03:48
8	09:24:52	09:26:11	09:27:44	09:28:32	09:28:47	00:03:55

PM Journey Time Data						
Journey No.	1	2	3	4	5	Journey Time
1	16:47:52	16:49:35	16:51:14	16:52:02	16:52:20	00:04:28
2	16:54:41	16:56:11	16:57:23	16:58:14	16:58:32	00:03:51
3	17:01:05	17:02:05	17:03:34	17:04:22	17:04:40	00:03:35
4	17:06:58	17:08:46	17:10:07	17:11:00	17:11:16	00:04:18
5	17:13:34	17:15:13	17:16:49	17:17:31	17:17:49	00:04:15
6	17:30:40	17:32:17	17:33:41	17:34:38	17:34:54	00:04:14
7	17:44:16	17:45:46	17:47:52	17:48:43	17:49:04	00:04:48
8	18:30:38	18:32:34	18:34:25	18:35:07	18:35:25	00:04:47

AM Time Between Points					
Journey No.	1-2	2-3	3-4	4-5	Total
1	00:01:12	00:01:12	00:00:51	00:00:15	00:03:30
2	00:01:06	00:01:15	00:01:00	00:00:24	00:03:45
3	00:01:04	00:01:18	00:00:51	00:00:18	00:03:31
4	00:01:09	00:01:18	00:00:48	00:00:18	00:03:33
5	00:01:06	00:01:27	00:00:48	00:00:21	00:03:42
6	00:01:12	00:01:35	00:01:06	00:00:18	00:04:11
7	00:01:15	00:01:21	00:00:54	00:00:18	00:03:48
8	00:01:19	00:01:33	00:00:48	00:00:15	00:03:55

PM Time Between Points					
Journey No.	1-2	2-3	3-4	4-5	Total
1	00:01:43	00:01:39	00:00:48	00:00:18	00:04:28
2	00:01:30	00:01:12	00:00:51	00:00:18	00:03:51
3	00:01:00	00:01:29	00:00:48	00:00:18	00:03:35
4	00:01:48	00:01:21	00:00:53	00:00:16	00:04:18
5	00:01:39	00:01:36	00:00:42	00:00:18	00:04:15
6	00:01:37	00:01:24	00:00:57	00:00:16	00:04:14
7	00:01:30	00:02:06	00:00:51	00:00:21	00:04:48
8	00:01:56	00:01:51	00:00:42	00:00:18	00:04:47

AM Speeds (Mph)				
Journey No.	1-2	2-3	3-4	4-5
1	30	39	50	73
2	32	38	43	46
3	33	36	50	61
4	31	36	53	61
5	32	33	53	52
6	30	30	39	61
7	28	35	47	61
8	27	30	53	74

Max	33	39	53	74
Min	27	30	39	46
Median	30	36	50	61
St Dev	2	3	5	9

PM Speeds (Mph)				
Journey No.	1-2	2-3	3-4	4-5
1	21	29	53	61
2	24	39	50	61
3	36	32	53	61
4	20	35	48	69
5	22	29	61	61
6	22	34	45	69
7	24	22	50	52
8	18	26	61	61

Max	36	39	61	69
Min	18	22	45	52
Median	22	31	52	61
St Dev	5	5	6	5

Intelligent Data Collection Limited

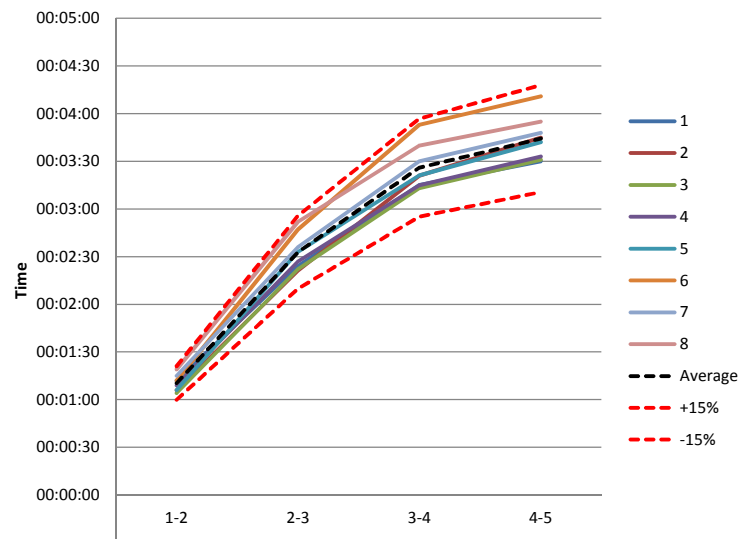
Client Atkins
 Project Number ID00836
 Route Number 2
 Survey Date 24/05/2011



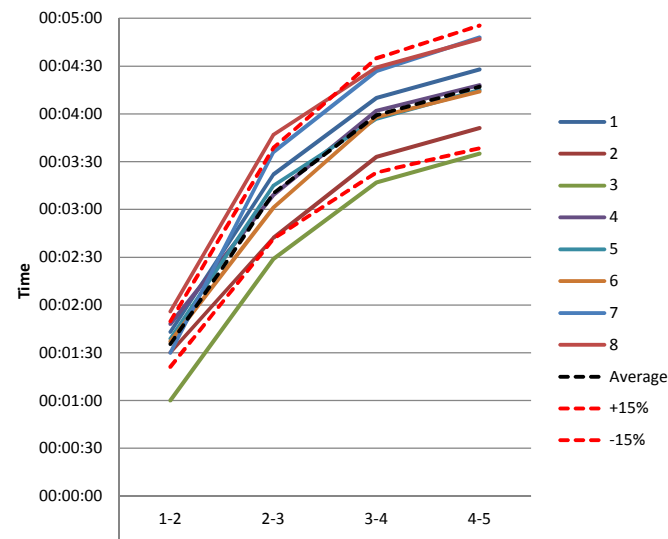
AM Cumulative Journey Times				
Journey No.	1-2	2-3	3-4	4-5
1	00:01:12	00:02:24	00:03:15	00:03:30
2	00:01:06	00:02:21	00:03:21	00:03:45
3	00:01:04	00:02:22	00:03:13	00:03:31
4	00:01:09	00:02:27	00:03:15	00:03:33
5	00:01:06	00:02:33	00:03:21	00:03:42
6	00:01:12	00:02:47	00:03:53	00:04:11
7	00:01:15	00:02:36	00:03:30	00:03:48
8	00:01:19	00:02:52	00:03:40	00:03:55
Average	00:01:10	00:02:33	00:03:26	00:03:44
+15%	00:01:21	00:02:56	00:03:57	00:04:18
-15%	00:01:00	00:02:10	00:02:55	00:03:11

PM Cumulative Journey Times				
Journey No.	1-2	2-3	3-4	4-5
1	00:01:43	00:03:22	00:04:10	00:04:28
2	00:01:30	00:02:42	00:03:33	00:03:51
3	00:01:00	00:02:29	00:03:17	00:03:35
4	00:01:48	00:03:09	00:04:02	00:04:18
5	00:01:39	00:03:15	00:03:57	00:04:15
6	00:01:37	00:03:01	00:03:58	00:04:14
7	00:01:30	00:03:36	00:04:27	00:04:48
8	00:01:56	00:03:47	00:04:29	00:04:47
Average	00:01:35	00:03:10	00:03:59	00:04:17
+15%	00:01:50	00:03:39	00:04:35	00:04:56
-15%	00:01:21	00:02:42	00:03:23	00:03:38

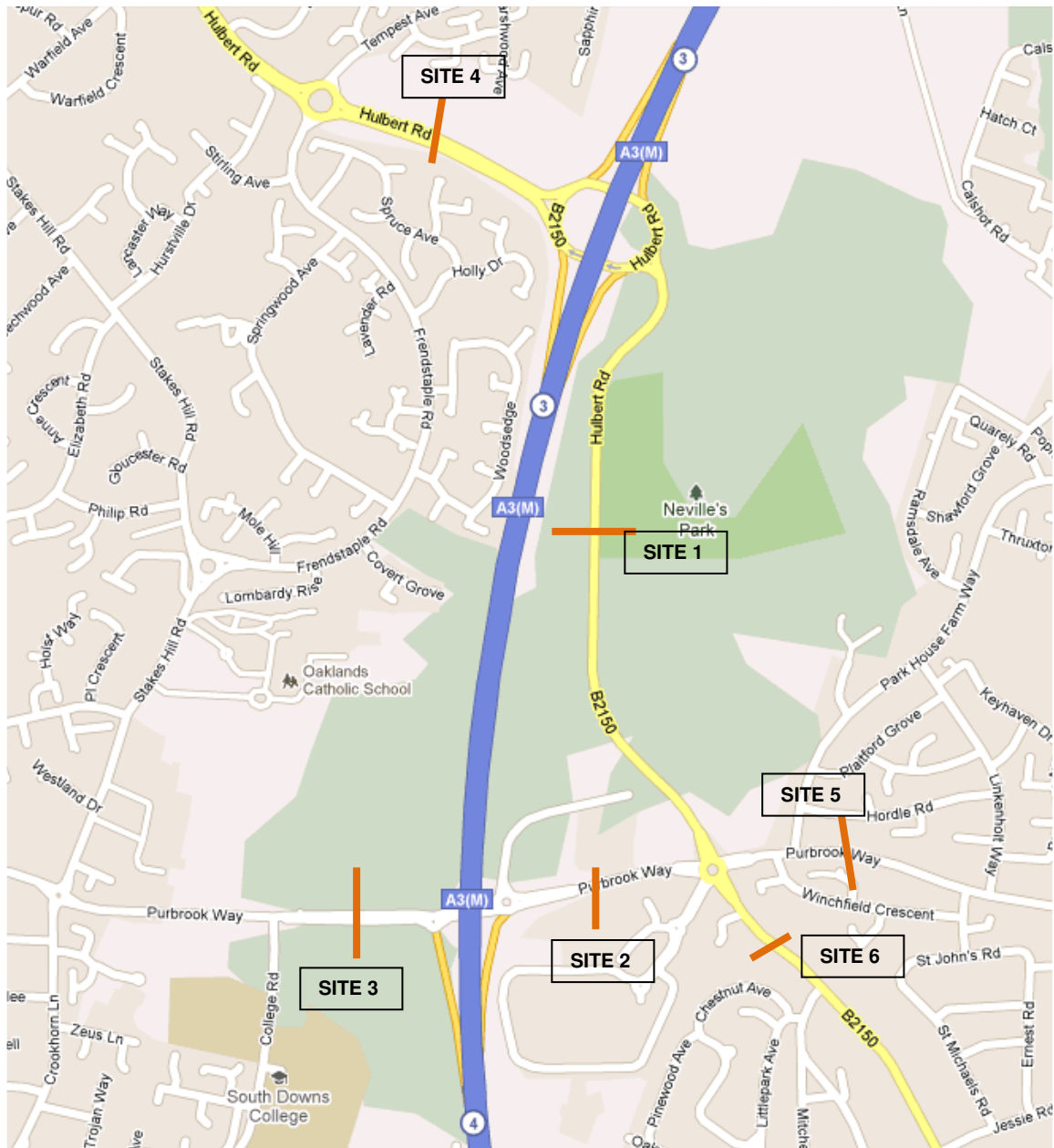
AM Cumulative Journey Times



PM Cumulative Journey Times



Dunsbury Hill Farm Proposed Automatic Traffic Count Survey Locations



Intelligent Data - Automatic Traffic Count Output

Road Name B2150 Hulbert Road
Flow from A3(M) (N)
Date From 16/05/2011
Vehicle Classification All Vehicles

to: Purbrook Way (S)
to: 29/05/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Hour Ending	Monday 16/05/2011	Tuesday 17/05/2011	Wednesday 18/05/2011	Thursday 19/05/2011	Friday 20/05/2011	Saturday 21/05/2011	Sunday 22/05/2011	Monday 23/05/2011	Tuesday 24/05/2011	Wednesday 25/05/2011	Thursday 26/05/2011	Friday 27/05/2011	Saturday 28/05/2011	Sunday 29/05/2011	Average Week Day (5 Days)	Average Week (7 Day)
01:00	*	*	*	*	19	58	65	12	18	16	22	*	*	*	17	30
02:00	*	*	*	*	19	34	42	9	15	16	13	*	*	*	14	21
03:00	*	*	*	*	15	13	23	10	9	14	11	*	*	*	12	14
04:00	*	*	*	*	10	20	15	15	13	14	13	*	*	*	13	14
05:00	*	*	*	*	22	20	16	11	16	19	23	*	*	*	18	18
06:00	*	*	*	*	50	39	18	54	70	51	55	*	*	*	56	48
07:00	*	*	*	*	171	78	31	144	182	183	181	*	*	*	172	139
08:00	*	*	*	*	598	184	61	626	646	606	586	*	*	*	612	473
09:00	*	*	*	*	856	352	99	844	910	909	937	*	*	*	891	701
10:00	*	*	*	*	510	466	332	502	568	542	494	*	*	*	523	488
11:00	*	*	*	*	505	554	543	477	453	497	451	*	*	*	477	497
12:00	*	*	*	*	490	558	557	474	490	481	532	*	*	*	493	512
13:00	*	*	*	*	531	566	602	457	444	479	447	*	*	*	472	504
14:00	*	*	*	*	552	603	510	500	437	505	467	*	*	*	492	511
15:00	*	*	*	*	559	602	490	494	527	513	522	*	*	*	523	530
16:00	*	*	*	*	618	499	440	534	501	561	555	*	*	*	554	530
17:00	*	*	*	589	655	459	258	583	621	581	587	*	*	*	603	542
18:00	*	*	*	633	649	456	264	661	693	642	674	*	*	*	659	584
19:00	*	*	*	556	524	382	293	486	571	531	526	*	*	*	532	484
20:00	*	*	*	390	385	296	196	358	372	436	379	*	*	*	387	351
21:00	*	*	*	266	293	183	157	184	241	227	238	*	*	*	242	224
22:00	*	*	*	180	199	150	139	135	165	189	196	*	*	*	177	169
23:00	*	*	*	140	127	111	85	114	122	124	130	*	*	*	126	119
00:00	*	*	*	101	116	104	26	68	63	68	83	*	*	*	83	79
Summary data																
0700-1900	0	0	0	1778	7047	5681	4449	6638	6861	6847	6778	0	0	0	6831	6355
0600-2200	0	0	0	2614	8095	6388	4972	7459	7821	7882	7772	0	0	0	7809	7238
0600-0000	0	0	0	2855	8338	6603	5083	7641	8006	8074	7985	0	0	0	8018	7436
0000-0000	0	0	0	2855	8473	6787	5262	7752	8147	8204	8122	0	0	0	8149	7581
0700-1000	0	0	0	0	1964	1002	492	1972	2124	2057	2017	0	0	0	2027	1662
1600-1900	0	0	0	1778	1828	1297	815	1730	1885	1754	1787	0	0	0	1794	1609
Peak Hour Analysis																
07:00-10:00	0	0	0	0	856	466	332	844	910	909	937	0	0	0	891	701
11:00-16:00	0	0	0	0	618	603	602	534	527	561	555	0	0	0	554	530
17:00-19:00	0	0	0	633	655	459	293	661	693	642	674	0	0	0	659	584

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed.

Intelligent Data - Automatic Traffic Count Output

Road Name B2150 Hulbert Road
 Flow From A3(M) (N)
 Date From 16/05/2011
 to: Purbrook Way (S)
 to: 29/05/2011

Prepared by Andy Cook
 Checked by Paul O'Neill
 Issued by Paul O'Neill



Speed From	Speed to	Cycle	Motorcycle	Car	LGV	Rigid 2 Axle	Rigid 3 Axle	Rigid 4 Axle	Artic 3	Artic 4	Artic 5+	Bus	Other	Totals	Percentage	Cum %
0	-	5	-	-	-	-	-	-	-	-	-	-	3	3	0.01%	0.01%
5	-	10	12	94	3	2	1	1	-	-	-	-	23	136	0.24%	0.25%
10	-	15	73	196	5	3	-	-	2	-	-	-	11	290	0.51%	0.76%
15	-	20	24	5	255	8	1	-	1	1	-	-	4	300	0.53%	1.29%
20	-	25	-	10	296	16	5	2	7	-	5	-	6	347	0.62%	1.91%
25	-	30	-	26	1402	96	2	2	23	-	12	-	35	1607	2.85%	4.76%
30	-	35	-	111	11139	790	27	20	164	4	41	3	142	12516	22.20%	26.96%
35	-	40	-	181	22185	1598	121	15	148	2	30	3	112	24423	43.32%	70.28%
40	-	45	-	106	11489	985	64	5	22	2	6	1	30	12717	22.56%	92.83%
45	-	50	-	43	2712	294	12	-	1	-	-	-	4	3067	5.44%	98.27%
50	-	55	-	25	628	71	5	-	-	-	-	-	1	730	1.29%	99.57%
55	-	60	-	15	141	19	2	-	-	-	-	-	-	177	0.31%	99.88%
60	-	65	-	2	44	2	-	-	-	-	-	-	-	48	0.09%	99.96%
65	-	70	-	5	10	-	-	-	-	-	-	-	-	15	0.03%	99.99%
70	-	75	-	1	1	-	-	-	-	-	-	-	-	2	0.00%	99.99%
75	-	80	-	-	2	-	-	-	-	-	-	-	-	2	0.00%	100.00%
80	-	85	-	1	-	-	-	-	-	-	-	-	-	1	0.00%	100.00%
85	-	90	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
90	-	95	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
95	-	100	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%

Speed to	Cum %	85th %ile
5	0.01%	0.85
10	0.25%	0.85
15	0.76%	0.85
20	1.29%	0.85
25	1.91%	0.85
30	4.76%	0.85
35	26.96%	0.85
40	70.28%	0.85
45	92.83%	0.85
50	98.27%	0.85
55	99.57%	0.85
60	99.88%	0.85
65	99.96%	0.85
70	99.99%	0.85
75	99.99%	0.85
80	100.00%	0.85
85	100.00%	0.85
90	100.00%	0.85
95	100.00%	0.85
100	100.00%	0.85

Intelligent Data - Automatic Traffic Count Output

Road Name B2150 Hulbert Road
Flow from Purbrook Way (S)
Date From 16/05/2011
Vehicle Classification All Vehicles

to: A3(M) (N)
to: 29/05/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Hour Ending	Monday 16/05/2011	Tuesday 17/05/2011	Wednesday 18/05/2011	Thursday 19/05/2011	Friday 20/05/2011	Saturday 21/05/2011	Sunday 22/05/2011	Monday 23/05/2011	Tuesday 24/05/2011	Wednesday 25/05/2011	Thursday 26/05/2011	Friday 27/05/2011	Saturday 28/05/2011	Sunday 29/05/2011	Average Week Day (5 Days)	Average Week (7 Day)
01:00	*	*	*	*	29	65	60	19	18	25	33	*	*	*	25	34
02:00	*	*	*	*	21	31	39	8	20	5	15	*	*	*	14	19
03:00	*	*	*	*	19	28	14	14	13	15	12	*	*	*	15	16
04:00	*	*	*	*	31	18	14	11	12	15	13	*	*	*	16	16
05:00	*	*	*	*	23	18	18	27	23	21	27	*	*	*	24	23
06:00	*	*	*	*	127	57	30	152	155	151	153	*	*	*	148	122
07:00	*	*	*	*	286	106	69	320	301	330	330	*	*	*	313	257
08:00	*	*	*	*	442	205	98	409	459	434	451	*	*	*	439	367
09:00	*	*	*	*	571	333	115	548	546	617	564	*	*	*	569	483
10:00	*	*	*	*	455	441	229	360	443	457	444	*	*	*	432	408
11:00	*	*	*	*	477	530	467	408	431	448	474	*	*	*	448	460
12:00	*	*	*	*	521	585	574	480	494	510	518	*	*	*	505	523
13:00	*	*	*	*	511	564	582	540	516	551	559	*	*	*	535	545
14:00	*	*	*	*	575	605	535	476	512	553	513	*	*	*	526	537
15:00	*	*	*	*	614	532	491	531	527	577	571	*	*	*	564	551
16:00	*	*	*	*	645	575	568	574	602	618	686	*	*	*	625	612
17:00	*	*	*	576	673	525	387	655	624	668	677	*	*	*	646	603
18:00	*	*	*	656	629	471	256	708	667	734	669	*	*	*	677	607
19:00	*	*	*	511	522	436	257	494	543	527	566	*	*	*	527	487
20:00	*	*	*	437	415	351	188	381	407	425	428	*	*	*	416	383
21:00	*	*	*	303	290	219	142	247	304	344	309	*	*	*	300	273
22:00	*	*	*	245	225	171	141	196	224	248	246	*	*	*	231	214
23:00	*	*	*	160	150	139	85	139	139	159	187	*	*	*	156	146
00:00	*	*	*	70	127	100	43	49	66	67	74	*	*	*	76	75
Summary data																
0700-1900	0	0	0	1743	6635	5802	4559	6183	6364	6694	6692	0	0	0	6492	6183
0600-2200	0	0	0	2728	7851	6649	5099	7327	7600	8041	8005	0	0	0	7751	7310
0600-0000	0	0	0	2958	8128	6888	5227	7515	7805	8267	8266	0	0	0	7982	7531
0000-0000	0	0	0	2958	8378	7105	5402	7746	8046	8499	8519	0	0	0	8224	7761
0700-1000	0	0	0	0	1468	979	442	1317	1448	1508	1459	0	0	0	1440	1258
1600-1900	0	0	0	1743	1824	1432	900	1857	1834	1929	1912	0	0	0	1850	1698
Peak Hour Analysis																
07:00-10:00	0	0	0	0	571	441	229	548	546	617	564	0	0	0	569	483
11:00-16:00	0	0	0	0	645	605	582	574	602	618	686	0	0	0	625	612
17:00-19:00	0	0	0	656	673	525	387	708	667	734	677	0	0	0	677	607

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed.

Intelligent Data - Automatic Traffic Count Output

Road Name B2150 Hulbert Road
 Flow From Purbrook Way (S) to: A3(M) (N)
 Date From 16/05/2011 to: 29/05/2011

Prepared by Andy Cook
 Checked by Paul O'Neill
 Issued by Paul O'Neill



Speed From	Speed to	Cycle	Motorcycle	Car	LGV	Rigid 2 Axle	Rigid 3 Axle	Rigid 4 Axle	Artic 3	Artic 4	Artic 5+	Bus	Other	Totals	Percentage	Cum %
0	5	2	2	20	.	.	.	.	.	.	.	.	.	2	0.00%	0.00%
5	10	8	8	33	.	.	.	.	.	.	.	.	1	31	0.05%	0.06%
10	15	59	3	115	1	.	.	.	.	.	.	1	2	99	0.17%	0.23%
15	20	23	2	236	5	1	1	.	.	.	1	.	2	150	0.26%	0.49%
20	25	.	3	2975	16	2	3	1	4	.	5	.	8	278	0.48%	0.97%
25	30	.	24	135	22	8	7	46	2	33	.	.	84	3336	5.80%	6.77%
30	35	.	113	18669	730	61	31	25	149	19	25	.	222	20044	34.83%	41.60%
35	40	.	140	21834	866	43	18	4	44	22	12	.	60	23043	40.04%	81.63%
40	45	.	63	7974	341	9	1	.	3	5	2	.	9	8407	14.61%	96.24%
45	50	.	37	1644	83	2	.	.	1	.	.	.	1	1768	3.07%	99.31%
50	55	.	16	283	5	.	.	.	.	.	.	.	1	305	0.53%	99.84%
55	60	.	6	52	.	.	.	.	.	.	.	.	.	58	0.10%	99.94%
60	65	.	5	16	.	.	.	.	.	.	.	.	.	21	0.04%	99.98%
65	70	.	.	11	.	.	.	.	.	.	.	.	.	11	0.02%	100.00%
70	75	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
75	80	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
80	85	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
85	90	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
90	95	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
95	100	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%

Speed to	Cum %	85th %ile
5	0.00%	0.85
10	0.06%	0.85
15	0.23%	0.85
20	0.49%	0.85
25	0.97%	0.85
30	6.77%	0.85
35	41.60%	0.85
40	81.63%	0.85
45	96.24%	0.85
50	99.31%	0.85
55	99.84%	0.85
60	99.94%	0.85
65	99.98%	0.85
70	100.00%	0.85
75	100.00%	0.85
80	100.00%	0.85
85	100.00%	0.85
90	100.00%	0.85
95	100.00%	0.85
100	100.00%	0.85

Intelligent Data - Automatic Traffic Count Output

Road Name Purbrook Way
Flow from B2150 (E)
Date From 16/05/2011
Vehicle Classification All Vehicles

to: A3(M) (W)
to: 29/05/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Hour Ending	Monday 16/05/2011	Tuesday 17/05/2011	Wednesday 18/05/2011	Thursday 19/05/2011	Friday 20/05/2011	Saturday 21/05/2011	Sunday 22/05/2011	Monday 23/05/2011	Tuesday 24/05/2011	Wednesday 25/05/2011	Thursday 26/05/2011	Friday 27/05/2011	Saturday 28/05/2011	Sunday 29/05/2011	Average Week Day (5 Days)	Average Week (7 Day)
01:00	*	*	*	*	51	90	118	25	37	45	43	*	*	*	40	58
02:00	*	*	*	*	34	56	101	12	30	14	19	*	*	*	22	38
03:00	*	*	*	*	20	32	55	14	16	11	19	*	*	*	16	24
04:00	*	*	*	*	13	25	21	17	14	8	24	*	*	*	15	17
05:00	*	*	*	*	47	34	22	42	47	41	46	*	*	*	45	40
06:00	*	*	*	*	168	84	52	183	170	174	182	*	*	*	175	145
07:00	*	*	*	*	436	176	112	448	493	452	475	*	*	*	461	371
08:00	*	*	*	*	784	340	139	744	825	798	758	*	*	*	782	627
09:00	*	*	*	*	1000	573	213	957	1080	1055	999	*	*	*	1018	840
10:00	*	*	*	*	770	750	411	643	701	794	705	*	*	*	723	682
11:00	*	*	*	*	806	852	871	716	714	812	725	*	*	*	755	785
12:00	*	*	*	*	865	916	934	801	754	817	838	*	*	*	815	847
13:00	*	*	*	*	914	903	930	763	742	855	797	*	*	*	814	844
14:00	*	*	*	*	827	890	877	795	798	838	814	*	*	*	814	835
15:00	*	*	*	*	904	871	742	806	857	865	850	*	*	*	856	843
16:00	*	*	*	*	902	861	809	902	847	895	881	*	*	*	892	878
17:00	*	*	*	*	928	901	807	513	855	869	913	*	*	*	891	834
18:00	*	*	*	*	932	841	796	425	854	935	903	*	*	*	896	825
19:00	*	*	*	*	864	854	684	434	794	808	894	*	*	*	844	773
20:00	*	*	*	*	606	657	589	345	549	590	631	*	*	*	621	582
21:00	*	*	*	*	492	474	360	226	349	444	480	*	*	*	450	411
22:00	*	*	*	*	335	397	290	184	273	289	332	*	*	*	332	308
23:00	*	*	*	*	206	249	201	105	175	205	216	*	*	*	210	196
00:00	*	*	*	*	124	180	144	62	103	80	94	*	*	*	116	113
Summary data																
0700-1900	0	0	0	3626	10388	9243	7298	9630	9930	10394	10049	0	0	0	10099	9613
0600-2200	0	0	0	5059	12352	10658	8165	11249	11746	12364	11967	0	0	0	11963	11285
0600-0000	0	0	0	5389	12781	11003	8332	11527	12031	12668	12298	0	0	0	12289	11594
0000-0000	0	0	0	5389	13114	11324	8701	11820	12345	12961	12631	0	0	0	12602	11916
0700-1000	0	0	0	0	2554	1663	763	2344	2606	2647	2462	0	0	0	2523	2150
1600-1900	0	0	0	2724	2596	2287	1372	2503	2612	2665	2682	0	0	0	2630	2431
Peak Hour Analysis																
07:00-10:00	0	0	0	0	1000	750	411	957	1080	1055	999	0	0	0	1018	840
11:00-16:00	0	0	0	902	922	916	934	902	857	895	881	0	0	0	892	878
17:00-19:00	0	0	0	932	901	807	513	855	935	913	909	0	0	0	896	834

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed.

Intelligent Data - Automatic Traffic Count Output

Road Name Purbrook Way
Flow From B2150 (E)
Date From 16/05/2011

to: A3(M) (W)
to: 29/05/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Speed From		Speed to	Cycle	Motorcycle	Car	LGV	Rigid 2 Axle	Rigid 3 Axle	Rigid 4 Axle	Artic 3	Artic 4	Artic 5+	Bus	Other	Totals	Percentage	Cum %
0	-	5	2	1	19	6	2	2	-	-	-	-	2	3	37	0.04%	0.04%
5	-	10	24	11	506	79	14	2	-	5	-	3	12	16	672	0.75%	0.79%
10	-	15	22	10	1631	224	30	3	-	5	-	4	4	7	1940	2.16%	2.95%
15	-	20	1	57	4688	749	151	15	8	11	4	12	3	24	5723	6.36%	9.31%
20	-	25	5	224	18175	2637	579	74	28	89	36	52	9	116	22024	24.49%	33.80%
25	-	30	-	339	33998	4609	629	40	23	97	82	36	13	171	40037	44.52%	78.32%
30	-	35	-	185	13880	1899	151	7	2	19	35	5	2	64	16249	18.07%	96.39%
35	-	40	-	109	2280	325	25	-	2	5	3	-	-	5	2754	3.06%	99.45%
40	-	45	-	41	315	36	1	-	-	-	-	-	-	-	393	0.44%	99.89%
45	-	50	-	10	69	4	-	-	-	-	-	-	-	-	83	0.09%	99.98%
50	-	55	-	2	13	1	-	-	-	-	-	-	-	-	16	0.02%	100.00%
55	-	60	-	-	1	-	-	-	-	-	-	-	-	-	1	0.00%	100.00%
60	-	65	-	-	1	-	-	-	-	-	-	-	-	-	1	0.00%	100.00%
65	-	70	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
70	-	75	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
75	-	80	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
80	-	85	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
85	-	90	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
90	-	95	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
95	-	100	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%

Speed to	Cum %	85th %ile
5	0.04%	0.85
10	0.79%	0.85
15	2.95%	0.85
20	9.31%	0.85
25	33.80%	0.85
30	78.32%	0.85
35	96.39%	0.85
40	99.45%	0.85
45	99.89%	0.85
50	99.98%	0.85
55	100.00%	0.85
60	100.00%	0.85
65	100.00%	0.85
70	100.00%	0.85
75	100.00%	0.85
80	100.00%	0.85
85	100.00%	0.85
90	100.00%	0.85
95	100.00%	0.85
100	100.00%	0.85

Intelligent Data - Automatic Traffic Count Output

Road Name Purbrook Way
Flow from A3(M) (W)
Date From 16/05/2011
Vehicle Classification All Vehicles

to: B2150 (E)
to: 29/05/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Hour Ending	Monday 16/05/2011	Tuesday 17/05/2011	Wednesday 18/05/2011	Thursday 19/05/2011	Friday 20/05/2011	Saturday 21/05/2011	Sunday 22/05/2011	Monday 23/05/2011	Tuesday 24/05/2011	Wednesday 25/05/2011	Thursday 26/05/2011	Friday 27/05/2011	Saturday 28/05/2011	Sunday 29/05/2011	Average Week Day (5 Days)	Average Week (7 Day)
01:00	*	*	*	*	73	113	134	30	31	37	49	*	*	*	44	64
02:00	*	*	*	*	33	91	81	18	34	20	32	*	*	*	27	42
03:00	*	*	*	*	30	51	55	19	26	19	22	*	*	*	23	31
04:00	*	*	*	*	26	27	29	8	17	23	26	*	*	*	20	22
05:00	*	*	*	*	19	34	25	28	23	22	24	*	*	*	23	25
06:00	*	*	*	*	139	66	48	117	125	131	139	*	*	*	130	112
07:00	*	*	*	*	283	139	61	267	301	294	299	*	*	*	289	242
08:00	*	*	*	*	679	290	103	664	623	686	652	*	*	*	661	545
09:00	*	*	*	*	1007	489	138	986	933	989	992	*	*	*	981	814
10:00	*	*	*	*	821	730	462	733	784	828	759	*	*	*	785	738
11:00	*	*	*	*	799	880	806	663	727	778	700	*	*	*	733	761
12:00	*	*	*	*	864	955	996	821	793	842	841	*	*	*	832	868
13:00	*	*	*	*	875	939	948	786	724	836	807	*	*	*	806	840
14:00	*	*	*	*	879	925	883	837	804	897	829	*	*	*	849	863
15:00	*	*	*	*	928	971	788	784	839	897	889	*	*	*	867	870
16:00	*	*	*	*	983	1092	919	754	986	901	1003	1027	*	*	999	963
17:00	*	*	*	*	1114	1071	888	489	1024	1002	1118	1041	*	*	1062	979
18:00	*	*	*	*	1073	1007	813	372	946	1029	1034	*	*	*	1009	916
19:00	*	*	*	*	803	828	637	410	696	890	867	*	*	*	815	750
20:00	*	*	*	*	642	659	549	348	621	679	613	*	*	*	629	589
21:00	*	*	*	*	512	450	356	247	406	457	525	*	*	*	481	441
22:00	*	*	*	*	376	345	258	159	306	355	386	*	*	*	343	313
23:00	*	*	*	*	210	253	212	117	209	260	235	*	*	*	226	212
00:00	*	*	*	*	109	168	178	68	87	106	115	138	*	*	121	121
Summary data																
0700-1900	0	0	0	3973	10850	9436	7149	9943	9882	10793	10438	0	0	0	10399	9907
0600-2200	0	0	0	5503	12587	10738	7964	11466	11567	12657	12261	0	0	0	12141	11492
0600-0000	0	0	0	5822	13008	11128	8149	11740	11882	13032	12634	0	0	0	12487	11825
0000-0000	0	0	0	5822	13328	11510	8521	11960	12138	13284	12926	0	0	0	12755	12120
0700-1000	0	0	0	0	2507	1509	703	2383	2340	2503	2403	0	0	0	2427	2097
1600-1900	0	0	0	2990	2906	2338	1271	2683	2754	3037	2942	0	0	0	2885	2645
Peak Hour Analysis																
07:00-10:00	0	0	0	0	1007	730	462	986	933	989	992	0	0	0	981	814
11:00-16:00	0	0	0	983	1092	971	996	986	901	1003	1027	0	0	0	999	963
17:00-19:00	0	0	0	1114	1071	888	489	1024	1002	1118	1041	0	0	0	1062	979

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed.

Intelligent Data - Automatic Traffic Count Output

Road Name Purbrook Way
Flow From A3(M) (W)
Date From 16/05/2011

to: B2150 (E)
to: 29/05/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Speed From		Speed to	Cycle	Motorcycle	Car	LGV	Rigid 2 Axle	Rigid 3 Axle	Rigid 4 Axle	Artic 3	Artic 4	Artic 5+	Bus	Other	Totals	Percentage	Cum %
0	-	5	2	.	23	2	.	.	.	.	.	.	1	.	28	0.03%	0.03%
5	-	10	2	1	197	18	3	.	.	.	.	.	1	.	222	0.24%	0.27%
10	-	15	30	4	376	30	8	1	1	.	.	.	.	1	451	0.50%	0.77%
15	-	20	.	19	1081	116	22	4	1	7	.	8	1	9	1268	1.39%	2.17%
20	-	25	.	162	18116	1690	403	34	22	79	.	55	2	26	20589	22.64%	24.81%
25	-	30	.	411	49421	3776	653	51	36	162	.	15	2	40	54567	60.02%	84.83%
30	-	35	.	175	11381	1025	56	3	5	32	.	1	.	5	12683	13.95%	98.77%
35	-	40	.	71	830	65	1	.	.	2	.	.	.	.	969	1.07%	99.84%
40	-	45	.	21	90	5	.	.	.	.	.	.	.	.	116	0.13%	99.97%
45	-	50	.	8	14	.	.	.	.	.	.	.	.	.	22	0.02%	99.99%
50	-	55	.	4	1	.	.	.	.	.	.	.	.	.	5	0.01%	100.00%
55	-	60	.	1	.	.	.	.	.	.	.	.	.	.	1	0.00%	100.00%
60	-	65	.	1	.	.	.	.	.	.	.	.	.	.	1	0.00%	100.00%
65	-	70	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
70	-	75	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
75	-	80	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
80	-	85	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
85	-	90	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
90	-	95	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
95	-	100	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%

Speed to	Cum %	85th %ile
5	0.03%	0.85
10	0.27%	0.85
15	0.77%	0.85
20	2.17%	0.85
25	24.81%	0.85
30	84.83%	0.85
35	98.77%	0.85
40	99.84%	0.85
45	99.97%	0.85
50	99.99%	0.85
55	100.00%	0.85
60	100.00%	0.85
65	100.00%	0.85
70	100.00%	0.85
75	100.00%	0.85
80	100.00%	0.85
85	100.00%	0.85
90	100.00%	0.85
95	100.00%	0.85
100	100.00%	0.85

Intelligent Data - Automatic Traffic Count Output

Road Name Purbrook Way
Flow from A3(M) (E)
Date From 16/05/2011
Vehicle Classification All Vehicles

to: College Road (W)
to: 29/05/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Hour Ending	Monday 16/05/2011	Tuesday 17/05/2011	Wednesday 18/05/2011	Thursday 19/05/2011	Friday 20/05/2011	Saturday 21/05/2011	Sunday 22/05/2011	Monday 23/05/2011	Tuesday 24/05/2011	Wednesday 25/05/2011	Thursday 26/05/2011	Friday 27/05/2011	Saturday 28/05/2011	Sunday 29/05/2011	Average Week Day (5 Days)	Average Week (7 Day)
01:00	*	*	*	*	59	79	127	33	34	39	41	*	*	*	41	59
02:00	*	*	*	*	35	44	75	5	28	17	27	*	*	*	22	33
03:00	*	*	*	*	21	29	47	14	16	7	12	*	*	*	14	21
04:00	*	*	*	*	8	19	19	4	8	7	8	*	*	*	7	10
05:00	*	*	*	*	17	13	14	11	11	11	14	*	*	*	13	13
06:00	*	*	*	*	70	33	17	56	67	60	62	*	*	*	63	52
07:00	*	*	*	*	191	72	52	179	198	185	195	*	*	*	190	153
08:00	*	*	*	*	522	183	75	526	483	542	513	*	*	*	517	407
09:00	*	*	*	*	1189	370	144	1132	1105	1224	1168	*	*	*	1164	905
10:00	*	*	*	*	652	520	215	655	616	655	650	*	*	*	646	567
11:00	*	*	*	*	692	633	568	641	644	682	584	*	*	*	649	635
12:00	*	*	*	*	766	708	660	726	689	719	739	*	*	*	728	716
13:00	*	*	*	*	781	781	682	688	694	784	784	*	*	*	746	742
14:00	*	*	*	*	821	686	648	690	730	766	739	*	*	*	749	726
15:00	*	*	*	*	884	717	656	768	825	873	803	*	*	*	831	790
16:00	*	*	*	*	1017	687	679	923	909	962	898	*	*	*	942	869
17:00	*	*	*	1120	1036	712	508	1043	1028	1064	1035	*	*	*	1054	944
18:00	*	*	*	1157	963	678	420	1051	1083	1144	1134	*	*	*	1089	954
19:00	*	*	*	870	786	561	426	804	859	880	901	*	*	*	850	761
20:00	*	*	*	544	555	453	320	499	565	604	566	*	*	*	556	513
21:00	*	*	*	452	402	311	226	338	425	457	437	*	*	*	419	381
22:00	*	*	*	304	342	248	161	246	303	351	330	*	*	*	313	286
23:00	*	*	*	217	234	219	102	174	226	254	251	*	*	*	226	210
00:00	*	*	*	142	190	169	80	99	89	101	110	*	*	*	122	123
Summary data																
0700-1900	0	0	0	3147	10109	7236	5681	9647	9665	10295	9948	0	0	0	9964	9017
0600-2200	0	0	0	4447	11599	8320	6440	10909	11156	11892	11476	0	0	0	11440	10350
0600-0000	0	0	0	4806	12023	8708	6622	11182	11471	12247	11837	0	0	0	11788	10682
0000-0000	0	0	0	4806	12233	8925	6921	11305	11635	12388	12001	0	0	0	11948	10870
0700-1000	0	0	0	0	2363	1073	434	2313	2204	2421	2331	0	0	0	2326	1879
1600-1900	0	0	0	3147	2785	1951	1354	2898	2970	3088	3070	0	0	0	2993	2659
Peak Hour Analysis																
07:00-10:00	0	0	0	0	1189	520	215	1132	1105	1224	1168	0	0	0	1164	905
11:00-16:00	0	0	0	0	1017	781	682	923	909	962	898	0	0	0	942	869
17:00-19:00	0	0	0	1157	1036	712	508	1051	1083	1144	1134	0	0	0	1089	954

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed.

Intelligent Data - Automatic Traffic Count Output

Road Name Purbrook Way
 Flow From A3(M) (E)
 Date From 16/05/2011

to: College Road (W)
 to: 29/05/2011

Prepared by Andy Cook
 Checked by Paul O'Neill
 Issued by Paul O'Neill



Speed From	Speed to	Cycle	Motorcycle	Car	LGV	Rigid 2 Axle	Rigid 3 Axle	Rigid 4 Axle	Artic 3	Artic 4	Artic 5+	Bus	Other	Totals	Percentage	Cum %
0	-	5	-	6	-	-	-	-	-	-	-	-	-	6	0.01%	0.01%
5	-	10	4	164	6	3	-	1	-	-	-	2	1	181	0.22%	0.23%
10	-	15	74	585	39	10	1	-	4	-	-	-	3	720	0.88%	1.11%
15	-	20	62	1224	102	24	1	1	7	-	-	1	5	1434	1.75%	2.86%
20	-	25	8	5443	479	123	12	22	31	-	14	-	7	6226	7.60%	10.46%
25	-	30	-	23900	1962	511	94	144	72	-	13	2	19	27019	32.98%	43.44%
30	-	35	-	29737	2573	355	56	66	63	-	5	6	6	33176	40.50%	83.94%
35	-	40	-	9863	920	68	1	5	5	-	2	2	2	11024	13.46%	97.40%
40	-	45	-	1552	173	10	-	-	1	-	-	-	1	1802	2.20%	99.59%
45	-	50	-	233	14	2	-	-	-	-	-	-	-	259	0.32%	99.91%
50	-	55	-	44	1	-	-	-	-	-	-	-	-	57	0.07%	99.98%
55	-	60	-	11	-	-	-	-	-	-	-	-	-	13	0.02%	100.00%
60	-	65	-	3	-	-	-	-	-	-	-	-	-	3	0.00%	100.00%
65	-	70	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
70	-	75	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
75	-	80	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
80	-	85	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
85	-	90	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
90	-	95	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
95	-	100	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%

Speed to	Cum %	85th %ile
5	0.01%	0.85
10	0.23%	0.85
15	1.11%	0.85
20	2.86%	0.85
25	10.46%	0.85
30	43.44%	0.85
35	83.94%	0.85
40	97.40%	0.85
45	99.59%	0.85
50	99.91%	0.85
55	99.98%	0.85
60	100.00%	0.85
65	100.00%	0.85
70	100.00%	0.85
75	100.00%	0.85
80	100.00%	0.85
85	100.00%	0.85
90	100.00%	0.85
95	100.00%	0.85
100	100.00%	0.85

Intelligent Data - Automatic Traffic Count Output

Road Name Purbrook Way
Flow from College Road (W)
Date From 16/05/2011
Vehicle Classification All Vehicles

to: A3(M) (E)
to: 29/05/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Hour Ending	Monday 16/05/2011	Tuesday 17/05/2011	Wednesday 18/05/2011	Thursday 19/05/2011	Friday 20/05/2011	Saturday 21/05/2011	Sunday 22/05/2011	Monday 23/05/2011	Tuesday 24/05/2011	Wednesday 25/05/2011	Thursday 26/05/2011	Friday 27/05/2011	Saturday 28/05/2011	Sunday 29/05/2011	Average Week Day (5 Days)	Average Week (7 Day)
01:00	*	*	*	*	51	74	85	19	12	21	26	*	*	*	26	39
02:00	*	*	*	*	19	44	49	11	16	11	19	*	*	*	15	23
03:00	*	*	*	*	11	31	35	9	12	11	11	*	*	*	11	16
04:00	*	*	*	*	18	16	13	8	11	15	15	*	*	*	13	14
05:00	*	*	*	*	29	26	19	35	27	33	29	*	*	*	31	29
06:00	*	*	*	*	167	73	43	172	171	166	170	*	*	*	169	141
07:00	*	*	*	*	375	154	88	406	420	402	426	*	*	*	406	335
08:00	*	*	*	*	833	306	130	839	821	846	821	*	*	*	832	679
09:00	*	*	*	*	1093	523	168	1109	1084	1170	1096	*	*	*	1110	919
10:00	*	*	*	*	792	693	470	693	714	776	696	*	*	*	734	696
11:00	*	*	*	*	677	763	666	581	605	688	599	*	*	*	630	651
12:00	*	*	*	*	709	752	737	690	683	630	699	*	*	*	682	698
13:00	*	*	*	*	658	714	639	656	625	674	672	*	*	*	657	662
14:00	*	*	*	*	734	676	599	662	708	772	695	*	*	*	714	695
15:00	*	*	*	*	691	651	561	595	671	739	664	*	*	*	672	656
16:00	*	*	*	*	1012	639	482	869	834	897	911	*	*	*	905	819
17:00	*	*	*	872	890	582	351	820	726	848	800	*	*	*	826	746
18:00	*	*	*	909	810	546	297	779	715	836	821	*	*	*	812	725
19:00	*	*	*	699	702	470	365	611	670	725	711	*	*	*	686	627
20:00	*	*	*	496	546	410	305	449	497	588	537	*	*	*	519	483
21:00	*	*	*	429	313	257	204	337	427	425	413	*	*	*	391	355
22:00	*	*	*	311	238	181	123	232	280	284	320	*	*	*	278	250
23:00	*	*	*	142	168	156	86	128	148	204	166	*	*	*	159	151
00:00	*	*	*	91	108	115	44	62	70	72	80	*	*	*	81	80
Summary data																
0700-1900	0	0	0	2480	9601	7315	5465	8904	8856	9601	9185	0	0	0	9261	8571
0600-2200	0	0	0	3716	11073	8317	6185	10328	10480	11300	10881	0	0	0	10853	9994
0600-0000	0	0	0	3949	11349	8588	6315	10518	10698	11576	11127	0	0	0	11093	10225
0000-0000	0	0	0	3949	11644	8852	6559	10772	10947	11833	11397	0	0	0	11358	10487
0700-1000	0	0	0	0	2718	1522	768	2641	2619	2792	2613	0	0	0	2677	2294
1600-1900	0	0	0	2480	2402	1598	1013	2210	2111	2409	2332	0	0	0	2324	2098
Peak Hour Analysis																
07:00-10:00	0	0	0	0	1093	693	470	1109	1084	1170	1096	0	0	0	1110	919
11:00-16:00	0	0	0	0	1012	763	737	869	834	897	911	0	0	0	905	819
17:00-19:00	0	0	0	909	890	582	365	820	726	848	821	0	0	0	826	746

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed.

Intelligent Data - Automatic Traffic Count Output

Road Name Purbrook Way
Flow From College Road (W)
Date From 16/05/2011

to: A3(M) (E)
to: 29/05/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Speed From	Speed to	Cycle	Motorcycle	Car	LGV	Rigid 2 Axle	Rigid 3 Axle	Rigid 4 Axle	Artic 3	Artic 4	Artic 5+	Bus	Other	Totals	Percentage	Cum %
0	-	5	1	-	-	-	-	-	-	-	-	-	-	1	0.00%	0.00%
5	-	10	12	2	1	-	-	-	-	-	-	-	-	15	0.02%	0.02%
10	-	15	100	9	-	1	-	-	-	-	-	-	4	115	0.15%	0.17%
15	-	20	177	2	73	11	78	2	-	-	2	-	2	348	0.45%	0.62%
20	-	25	-	40	598	43	70	65	3	-	12	-	10	854	1.10%	1.71%
25	-	30	-	125	8120	520	430	65	62	8	5	-	84	9479	12.18%	13.90%
30	-	35	-	220	32415	1778	259	45	169	23	8	2	151	35127	45.15%	59.04%
35	-	40	-	201	22396	1447	110	27	52	7	3	-	58	24315	31.25%	90.29%
40	-	45	-	125	5470	418	20	7	8	1	3	-	5	6066	7.80%	98.09%
45	-	50	-	46	1015	80	4	-	-	-	-	-	1	1149	1.48%	99.57%
50	-	55	-	15	209	17	-	-	-	-	-	-	-	241	0.31%	99.88%
55	-	60	-	6	53	4	-	-	-	-	-	-	-	63	0.08%	99.96%
60	-	65	-	3	13	2	-	-	-	-	-	-	-	18	0.02%	99.98%
65	-	70	-	3	9	-	-	-	-	-	-	-	-	12	0.02%	99.99%
70	-	75	-	2	-	-	-	-	-	-	-	-	-	4	0.01%	100.00%
75	-	80	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
80	-	85	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
85	-	90	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
90	-	95	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
95	-	100	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%

Speed to	Cum %	85th %ile
5	0.00%	0.85
10	0.02%	0.85
15	0.17%	0.85
20	0.62%	0.85
25	1.71%	0.85
30	13.90%	0.85
35	59.04%	0.85
40	90.29%	0.85
45	98.09%	0.85
50	99.57%	0.85
55	99.88%	0.85
60	99.96%	0.85
65	99.98%	0.85
70	99.99%	0.85
75	100.00%	0.85
80	100.00%	0.85
85	100.00%	0.85
90	100.00%	0.85
95	100.00%	0.85
100	100.00%	0.85

Intelligent Data - Automatic Traffic Count Output

Road Name Hulbert Road
 Flow from Tempest Road (W)
 Date From 06/06/2011
 Vehicle Classification All Vehicles

to: A3(M) (E)
 to: 19/06/2011

Prepared by Andy Cook
 Checked by Paul O'Neill
 Issued by Paul O'Neill



Hour Ending	Monday 06/06/2011	Tuesday 07/06/2011	Wednesday 08/06/2011	Thursday 09/06/2011	Friday 10/06/2011	Saturday 11/06/2011	Sunday 12/06/2011	Monday 13/06/2011	Tuesday 14/06/2011	Wednesday 15/06/2011	Thursday 16/06/2011	Friday 17/06/2011	Saturday 18/06/2011	Sunday 19/06/2011	Average Week Day (5 Days)	Average Week (7 Day)
01:00	*	*	41	34	47	127	130	31	43	42	42	*	*	*	40	60
02:00	*	*	20	32	25	42	81	13	17	18	18	*	*	*	20	30
03:00	*	*	19	24	26	34	48	19	17	18	15	*	*	*	20	24
04:00	*	*	23	17	17	32	38	26	32	34	22	*	*	*	24	27
05:00	*	*	68	62	63	54	33	60	68	68	70	*	*	*	66	61
06:00	*	*	350	326	297	140	78	309	337	363	309	*	*	*	327	279
07:00	*	*	912	905	829	233	156	841	858	856	818	*	*	*	860	713
08:00	*	*	1840	1774	1680	537	244	1754	1810	1879	1783	*	*	*	1789	1479
09:00	*	*	1835	1879	1782	918	305	1792	1232	1877	1819	*	*	*	1745	1494
10:00	*	*	1111	1128	1166	1088	630	992	1097	1050	730	*	*	*	1039	1000
11:00	*	*	973	950	955	1187	864	953	994	1028	1003	*	*	*	979	990
12:00	*	*	944	971	957	1165	1025	919	826	946	932	*	*	*	928	966
13:00	*	*	959	962	1022	1171	1024	822	951	1017	972	*	*	*	958	989
14:00	*	*	987	932	1038	1105	951	881	929	942	966	*	*	*	954	971
15:00	*	*	966	981	1013	1003	875	1001	955	871	935	*	*	*	960	956
16:00	*	*	1101	1025	1194	982	773	1105	1025	1088	1064	*	*	*	1086	1041
17:00	*	*	1174	1150	1164	1036	621	1113	806	1134	1108	*	*	*	1093	1035
18:00	*	*	1312	1237	1178	813	528	1211	1218	1218	1239	*	*	*	1230	1106
19:00	*	*	1009	1001	974	743	273	896	785	968	1028	*	*	*	952	853
20:00	*	*	790	671	694	628	256	608	706	693	699	*	*	*	694	638
21:00	*	*	503	502	453	426	189	432	393	460	474	*	*	*	460	426
22:00	*	*	341	336	268	252	142	281	308	310	359	*	*	*	315	289
23:00	*	*	249	239	219	236	99	192	257	228	245	*	*	*	233	218
00:00	*	*	137	132	137	207	54	108	137	113	130	*	*	*	128	128
Summary data																
0700-1900	0	0	14211	13990	14123	11748	8113	13439	12628	14018	13579	0	0	0	13713	12880
0600-2200	0	0	16757	16404	16367	13287	8856	15601	14893	16337	15929	0	0	0	16041	14945
0600-0000	0	0	17143	16775	16723	13730	9009	15901	15287	16678	16304	0	0	0	16402	15292
0000-0000	0	0	17664	17270	17198	14159	9417	16359	15801	17221	16780	0	0	0	16899	15772
0700-1000	0	0	4786	4781	4628	2543	1179	4538	4139	4806	4332	0	0	0	4573	3973
1600-1900	0	0	3495	3388	3316	2592	1422	3220	2809	3320	3375	0	0	0	3275	2994
Peak Hour Analysis																
07:00-10:00	0	0	1840	1879	1782	1088	630	1792	1810	1879	1819	0	0	0	1789	1494
11:00-16:00	0	0	1101	1025	1194	1187	1025	1105	1025	1088	1064	0	0	0	1086	1041
17:00-19:00	0	0	1312	1237	1178	1036	621	1211	1218	1218	1239	0	0	0	1230	1106

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed.

Intelligent Data - Automatic Traffic Count Output

Road Name Hulbert Road
 Flow From Tempest Road (W)
 Date From 06/06/2011
 to: A3(M) (E)
 to: 19/06/2011

Prepared by Andy Cook
 Checked by Paul O'Neill
 Issued by Paul O'Neill



Speed From		Speed to	Cycle	Motorcycle	Car	LGV	Rigid 2 Axle	Rigid 3 Axle	Rigid 4 Axle	Artic 3	Artic 4	Artic 5+	Bus	Other	Totals	Percentage	Cum %
0	-	5	5	-	-	-	-	-	-	-	-	-	-	1	6	0.00%	0.00%
5	-	10	14	3	15	-	1	-	-	-	-	-	-	4	37	0.02%	0.03%
10	-	15	57	5	92	27	3	-	-	-	-	1	2	11	198	0.13%	0.16%
15	-	20	25	2	142	63	16	3	2	-	-	4	1	5	263	0.17%	0.33%
20	-	25	2	29	561	178	57	39	18	18	1	55	11	22	991	0.66%	0.99%
25	-	30	4	67	6975	1914	493	84	35	139	21	129	68	140	10069	6.66%	7.65%
30	-	35	-	120	43286	10918	1274	105	31	201	241	118	78	493	56865	37.61%	45.25%
35	-	40	-	143	44145	14615	806	65	13	71	189	31	7	383	60468	39.99%	85.24%
40	-	45	-	130	11797	5627	142	17	-	12	44	2	-	75	17846	11.80%	97.04%
45	-	50	-	96	2129	1279	9	3	-	3	8	-	-	7	3534	2.34%	99.38%
50	-	55	-	57	375	263	3	1	-	1	-	-	-	2	702	0.46%	99.85%
55	-	60	-	37	72	65	3	-	-	-	-	-	-	-	177	0.12%	99.96%
60	-	65	-	10	14	12	1	-	-	-	-	-	-	-	37	0.02%	99.99%
65	-	70	-	11	2	2	-	-	-	-	-	-	-	-	15	0.01%	100.00%
70	-	75	-	4	1	-	-	-	-	-	-	-	-	-	5	0.00%	100.00%
75	-	80	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
80	-	85	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
85	-	90	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
90	-	95	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
95	-	100	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%

Speed to	Cum %	85th %ile
5	0.00%	0.85
10	0.03%	0.85
15	0.16%	0.85
20	0.33%	0.85
25	0.99%	0.85
30	7.65%	0.85
35	45.25%	0.85
40	85.24%	0.85
45	97.04%	0.85
50	99.38%	0.85
55	99.85%	0.85
60	99.96%	0.85
65	99.99%	0.85
70	100.00%	0.85
75	100.00%	0.85
80	100.00%	0.85
85	100.00%	0.85
90	100.00%	0.85
95	100.00%	0.85
100	100.00%	0.85

Intelligent Data - Automatic Traffic Count Output

Road Name Hulbert Road
Flow from A3(M) (E)
Date From 06/06/2011
Vehicle Classification All Vehicles

to: Tempest Road (W)
to: 19/06/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Hour Ending	Monday 06/06/2011	Tuesday 07/06/2011	Wednesday 08/06/2011	Thursday 09/06/2011	Friday 10/06/2011	Saturday 11/06/2011	Sunday 12/06/2011	Monday 13/06/2011	Tuesday 14/06/2011	Wednesday 15/06/2011	Thursday 16/06/2011	Friday 17/06/2011	Saturday 18/06/2011	Sunday 19/06/2011	Average Week Day (5 Days)	Average Week (7 Day)
01:00	*	*	79	87	99	144	195	59	80	82	83	*	*	*	81	99
02:00	*	*	32	37	56	83	120	29	40	35	41	*	*	*	39	51
03:00	*	*	19	23	37	49	77	28	25	32	31	*	*	*	28	35
04:00	*	*	19	20	19	39	56	19	23	22	27	*	*	*	21	27
05:00	*	*	31	27	31	38	22	25	24	34	26	*	*	*	28	29
06:00	*	*	142	138	146	93	35	127	162	155	146	*	*	*	145	129
07:00	*	*	368	366	342	150	103	332	343	335	320	*	*	*	344	300
08:00	*	*	900	928	880	320	181	872	892	886	906	*	*	*	895	766
09:00	*	*	1286	1248	1321	637	230	1292	1295	1269	1273	*	*	*	1283	1113
10:00	*	*	911	956	900	809	402	873	892	927	912	*	*	*	910	849
11:00	*	*	904	877	915	1043	685	855	835	863	879	*	*	*	875	873
12:00	*	*	982	909	1025	1252	915	902	917	946	958	*	*	*	948	975
13:00	*	*	1013	1023	1183	1186	1111	980	1028	1024	1057	*	*	*	1044	1065
14:00	*	*	1039	1005	1196	1195	1003	998	990	1068	1041	*	*	*	1048	1058
15:00	*	*	1114	1168	1299	1075	1029	1108	1165	1143	1158	*	*	*	1165	1142
16:00	*	*	1363	1291	1431	1104	912	1312	1257	1359	1307	*	*	*	1331	1267
17:00	*	*	1744	1640	1577	1128	802	1690	1675	1665	1606	*	*	*	1657	1518
18:00	*	*	1845	1760	1539	1104	610	1860	1855	1746	1818	*	*	*	1775	1591
19:00	*	*	1319	1269	1138	836	502	1177	1237	1287	1279	*	*	*	1244	1129
20:00	*	*	875	825	798	649	369	763	864	805	884	*	*	*	831	766
21:00	*	*	718	633	552	383	346	493	632	610	609	*	*	*	607	558
22:00	*	*	471	486	442	347	267	404	489	479	483	*	*	*	465	433
23:00	*	*	386	381	372	363	195	311	316	384	401	*	*	*	364	347
00:00	*	*	220	199	286	291	139	174	183	209	215	*	*	*	212	213
Summary data																
0700-1900	0	0	14420	14074	14404	11689	8382	13919	14038	14183	14194	0	0	0	14176	13348
0600-2200	0	0	16852	16384	16538	13218	9467	15911	16366	16412	16490	0	0	0	16422	15406
0600-0000	0	0	17458	16964	17196	13872	9801	16396	16865	17005	17106	0	0	0	16999	15966
0000-0000	0	0	17780	17296	17584	14318	10306	16683	17219	17365	17460	0	0	0	17341	16335
0700-1000	0	0	3097	3132	3101	1766	813	3037	3079	3082	3091	0	0	0	3088	2729
1600-1900	0	0	4908	4669	4254	3068	1914	4727	4767	4698	4703	0	0	0	4675	4238
Peak Hour Analysis																
07:00-10:00	0	0	1286	1248	1321	809	402	1292	1295	1269	1273	0	0	0	1283	1113
11:00-16:00	0	0	1363	1291	1431	1252	1111	1312	1257	1359	1307	0	0	0	1331	1267
17:00-19:00	0	0	1845	1760	1577	1128	802	1860	1855	1746	1818	0	0	0	1775	1591

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed.

Intelligent Data - Automatic Traffic Count Output

Road Name Hulbert Road
Flow From A3(M) (E)
Date From 06/06/2011

to: Tempest Road (W)
to: 19/06/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Speed From	Speed to	Cycle	Motorcycle	Car	LGV	Rigid 2 Axle	Rigid 3 Axle	Rigid 4 Axle	Artic 3	Artic 4	Artic 5+	Bus	Other	Totals	Percentage	Cum %
0	5	1	.	.	.	.	.	.	.	.	.	.	.	1	0.00%	0.00%
5	10	.	.	45	6	.	1	.	.	.	.	.	1	53	0.03%	0.03%
10	15	27	15	89	40	1	.	.	.	.	.	.	3	175	0.11%	0.15%
15	20	43	30	354	121	10	.	1	1	.	2	1	11	574	0.37%	0.52%
20	25	25	25	1591	411	34	11	1	12	11	8	2	36	2167	1.40%	1.92%
25	30	.	110	9967	2319	208	71	17	107	98	64	17	317	13295	8.60%	10.52%
30	35	.	302	39775	9442	873	224	51	290	394	160	120	1003	52634	34.06%	44.58%
35	40	.	254	43716	12692	1056	202	49	214	361	135	142	698	59519	38.51%	83.09%
40	45	.	137	14955	5091	349	42	8	44	75	10	21	113	20845	13.49%	96.58%
45	50	.	74	2876	1210	83	4	.	1	10	1	4	5	4268	2.76%	99.34%
50	55	.	29	527	235	11	.	.	.	2	.	.	.	804	0.52%	99.86%
55	60	.	19	106	38	.	.	.	.	.	.	.	.	163	0.11%	99.97%
60	65	.	6	27	13	.	.	.	.	.	.	.	.	46	0.03%	100.00%
65	70	.	.	1	4	.	.	.	.	.	.	.	.	5	0.00%	100.00%
70	75	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
75	80	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
80	85	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
85	90	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
90	95	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
95	100	.	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%

Speed to	Cum %	85th %ile
5	0.00%	0.85
10	0.03%	0.85
15	0.15%	0.85
20	0.52%	0.85
25	1.92%	0.85
30	10.52%	0.85
35	44.58%	0.85
40	83.09%	0.85
45	96.58%	0.85
50	99.34%	0.85
55	99.86%	0.85
60	99.97%	0.85
65	100.00%	0.85
70	100.00%	0.85
75	100.00%	0.85
80	100.00%	0.85
85	100.00%	0.85
90	100.00%	0.85
95	100.00%	0.85
100	100.00%	0.85

Intelligent Data - Automatic Traffic Count Output

Road Name Purbrook Way
Flow from Linkenholt Way (E)
Date From 16/05/2011
Vehicle Classification All Vehicles

to: B2150 (W)
to: 29/05/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Hour Ending	Monday 16/05/2011	Tuesday 17/05/2011	Wednesday 18/05/2011	Thursday 19/05/2011	Friday 20/05/2011	Saturday 21/05/2011	Sunday 22/05/2011	Monday 23/05/2011	Tuesday 24/05/2011	Wednesday 25/05/2011	Thursday 26/05/2011	Friday 27/05/2011	Saturday 28/05/2011	Sunday 29/05/2011	Average Week Day (5 Days)	Average Week (7 Day)
01:00	*	*	*	*	41	77	108	22	20	29	29	*	*	*	28	47
02:00	*	*	*	*	27	38	74	14	16	13	11	*	*	*	16	28
03:00	*	*	*	*	24	30	32	16	21	11	18	*	*	*	18	22
04:00	*	*	*	*	25	25	29	26	18	13	24	*	*	*	21	23
05:00	*	*	*	*	43	37	23	42	44	42	40	*	*	*	42	39
06:00	*	*	*	*	173	97	52	194	188	184	202	*	*	*	188	156
07:00	*	*	*	*	432	188	91	472	509	490	502	*	*	*	481	384
08:00	*	*	*	*	683	326	141	682	693	698	708	*	*	*	693	562
09:00	*	*	*	*	642	499	201	630	661	552	620	*	*	*	621	544
10:00	*	*	*	*	691	638	479	518	603	637	563	*	*	*	602	590
11:00	*	*	*	*	636	667	610	595	557	577	619	*	*	*	597	609
12:00	*	*	*	*	716	716	649	585	625	628	632	*	*	*	637	651
13:00	*	*	*	*	689	701	637	636	587	662	687	*	*	*	652	657
14:00	*	*	*	*	707	656	639	620	633	644	629	*	*	*	647	647
15:00	*	*	*	*	726	604	536	665	651	660	625	*	*	*	665	639
16:00	*	*	*	*	839	681	528	704	696	723	751	*	*	*	743	704
17:00	*	*	*	757	745	601	499	777	758	795	814	*	*	*	774	719
18:00	*	*	*	809	800	615	399	785	772	795	798	*	*	*	793	722
19:00	*	*	*	676	707	604	448	623	664	686	699	*	*	*	676	639
20:00	*	*	*	564	562	521	323	436	469	506	563	*	*	*	517	493
21:00	*	*	*	395	369	290	223	293	354	389	355	*	*	*	359	334
22:00	*	*	*	317	330	264	194	255	286	366	298	*	*	*	309	289
23:00	*	*	*	172	185	163	109	155	159	165	176	*	*	*	169	160
00:00	*	*	*	92	150	139	68	71	71	90	81	*	*	*	93	95
Summary data																
0700-1900	0	0	0	2242	8581	7308	5766	7820	7900	8057	8145	0	0	0	8100	7683
0600-2200	0	0	0	3518	10274	8571	6597	9276	9518	9808	9863	0	0	0	9766	9182
0600-0000	0	0	0	3782	10609	8873	6774	9502	9748	10063	10120	0	0	0	10027	9438
0000-0000	0	0	0	3782	10942	9177	7092	9816	10055	10355	10444	0	0	0	10341	9751
0700-1000	0	0	0	0	2016	1463	821	1830	1957	1887	1891	0	0	0	1916	1697
1600-1900	0	0	0	2242	2252	1820	1346	2185	2194	2276	2311	0	0	0	2243	2079
Peak Hour Analysis																
07:00-10:00	0	0	0	0	691	638	479	682	693	698	708	0	0	0	693	590
11:00-16:00	0	0	0	0	839	716	649	704	696	723	751	0	0	0	743	704
17:00-19:00	0	0	0	809	800	615	499	785	772	795	814	0	0	0	793	722

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed.

Intelligent Data - Automatic Traffic Count Output

Road Name Purbrook Way
 Flow From Linkenholt Way (E)
 Date From 16/05/2011

to: B2150 (W)
 to: 29/05/2011

Prepared by Andy Cook
 Checked by Paul O'Neill
 Issued by Paul O'Neill



Speed From		Speed to	Cycle	Motorcycle	Car	LGV	Rigid 2 Axle	Rigid 3 Axle	Rigid 4 Axle	Artic 3	Artic 4	Artic 5+	Bus	Other	Totals	Percentage	Cum %
0	-	5	1	-	39	1	2	2	-	-	-	-	-	4	49	0.07%	0.07%
5	-	10	38	6	636	53	10	6	1	-	-	3	5	31	789	1.07%	1.14%
10	-	15	60	17	1045	158	9	1	4	10	-	5	1	22	1332	1.81%	2.94%
15	-	20	11	8	1388	278	32	9	1	27	-	5	1	63	1823	2.47%	5.42%
20	-	25	2	63	7411	1525	219	14	8	122	1	17	10	148	9540	12.94%	18.36%
25	-	30	2	257	28256	5933	607	34	7	129	2	22	27	103	35379	48.00%	66.36%
30	-	35	-	165	15669	3900	313	13	2	33	2	7	8	8	20120	27.30%	93.65%
35	-	40	-	70	2751	957	102	-	-	2	-	3	4	1	3890	5.28%	98.93%
40	-	45	-	26	388	205	11	-	-	1	-	-	-	-	631	0.86%	99.79%
45	-	50	-	7	77	31	3	-	-	-	-	-	-	-	118	0.16%	99.95%
50	-	55	-	3	12	7	1	-	-	-	-	-	-	-	23	0.03%	99.98%
55	-	60	-	2	9	5	-	-	-	-	-	-	-	-	16	0.02%	100.00%
60	-	65	-	-	-	1	-	-	-	-	-	-	-	-	1	0.00%	100.00%
65	-	70	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
70	-	75	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
75	-	80	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
80	-	85	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
85	-	90	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
90	-	95	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
95	-	100	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%

Speed to	Cum %	85th %ile
5	0.07%	0.85
10	1.14%	0.85
15	2.94%	0.85
20	5.42%	0.85
25	18.36%	0.85
30	66.36%	0.85
35	93.65%	0.85
40	98.93%	0.85
45	99.79%	0.85
50	99.95%	0.85
55	99.98%	0.85
60	100.00%	0.85
65	100.00%	0.85
70	100.00%	0.85
75	100.00%	0.85
80	100.00%	0.85
85	100.00%	0.85
90	100.00%	0.85
95	100.00%	0.85
100	100.00%	0.85

Intelligent Data - Automatic Traffic Count Output

Road Name Purbrook Way
Flow from B2150 (W)
Date From 16/05/2011
Vehicle Classification All Vehicles

to: Linkenholt Way (E)
to: 29/05/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Hour Ending	Monday 16/05/2011	Tuesday 17/05/2011	Wednesday 18/05/2011	Thursday 19/05/2011	Friday 20/05/2011	Saturday 21/05/2011	Sunday 22/05/2011	Monday 23/05/2011	Tuesday 24/05/2011	Wednesday 25/05/2011	Thursday 26/05/2011	Friday 27/05/2011	Saturday 28/05/2011	Sunday 29/05/2011	Average Week Day (5 Days)	Average Week (7 Day)
01:00	*	*	*	*	42	96	116	23	31	28	35	*	*	*	32	50
02:00	*	*	*	*	25	61	60	21	22	30	34	*	*	*	26	35
03:00	*	*	*	*	25	36	46	17	20	16	15	*	*	*	19	24
04:00	*	*	*	*	21	28	22	16	19	20	19	*	*	*	19	21
05:00	*	*	*	*	16	24	19	17	15	19	25	*	*	*	18	19
06:00	*	*	*	*	108	44	32	80	98	93	101	*	*	*	96	82
07:00	*	*	*	*	265	99	59	224	264	265	249	*	*	*	253	210
08:00	*	*	*	*	568	179	92	572	621	587	631	*	*	*	596	481
09:00	*	*	*	*	735	342	125	761	749	632	686	*	*	*	713	593
10:00	*	*	*	*	590	516	265	573	610	546	583	*	*	*	580	533
11:00	*	*	*	*	582	623	504	515	573	548	589	*	*	*	561	562
12:00	*	*	*	*	606	633	619	555	594	582	631	*	*	*	594	602
13:00	*	*	*	*	673	698	661	585	517	561	617	*	*	*	591	613
14:00	*	*	*	*	679	631	570	622	598	648	590	*	*	*	627	621
15:00	*	*	*	*	717	648	543	609	637	633	650	*	*	*	649	636
16:00	*	*	*	*	695	632	548	678	651	661	682	*	*	*	673	653
17:00	*	*	*	774	770	599	423	748	751	737	749	*	*	*	755	701
18:00	*	*	*	791	795	639	349	725	737	718	742	*	*	*	751	694
19:00	*	*	*	635	650	520	384	600	675	690	644	*	*	*	649	605
20:00	*	*	*	516	543	436	305	454	458	517	514	*	*	*	500	471
21:00	*	*	*	409	392	312	223	310	335	384	371	*	*	*	367	345
22:00	*	*	*	300	281	254	157	212	265	312	291	*	*	*	277	261
23:00	*	*	*	206	216	183	128	155	164	216	195	*	*	*	192	184
00:00	*	*	*	108	128	143	50	80	91	93	101	*	*	*	100	99
Summary data																
0700-1900	0	0	0	2200	8060	6660	5083	7543	7713	7543	7794	0	0	0	7740	7292
0600-2200	0	0	0	3425	9541	7761	5827	8743	9035	9021	9219	0	0	0	9137	8579
0600-0000	0	0	0	3739	9885	8087	6005	8978	9290	9330	9515	0	0	0	9429	8862
0000-0000	0	0	0	3739	10122	8376	6300	9152	9495	9536	9744	0	0	0	9639	9093
0700-1000	0	0	0	0	1893	1037	482	1906	1980	1765	1900	0	0	0	1889	1606
1600-1900	0	0	0	2200	2215	1758	1156	2073	2163	2145	2135	0	0	0	2155	2000
Peak Hour Analysis																
07:00-10:00	0	0	0	0	735	516	265	761	749	632	686	0	0	0	713	593
11:00-16:00	0	0	0	0	717	698	661	678	651	661	682	0	0	0	673	653
17:00-19:00	0	0	0	791	795	639	423	748	751	737	749	0	0	0	755	701

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed.

Intelligent Data - Automatic Traffic Count Output

Road Name Purbrook Way
Flow From B2150 (W) to: Linkenholt Way (E)
Date From 16/05/2011 to: 29/05/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Speed From	Speed to	Cycle	Motorcycle	Car	LGV	Rigid 2 Axle	Rigid 3 Axle	Rigid 4 Axle	Artic 3	Artic 4	Artic 5+	Bus	Other	Totals	Percentage	Cum %
0	-	5	20	3	10	3	.	.	.	.	.	.	.	36	0.05%	0.05%
5	-	10	46	6	113	18	.	1	.	.	.	1	3	188	0.28%	0.33%
10	-	15	83	8	316	74	2	2	1	.	.	1	8	497	0.73%	1.06%
15	-	20	114	16	758	208	20	5	3	1	2	3	39	1176	1.72%	2.78%
20	-	25	35	69	4889	1273	151	11	5	5	8	2	99	6574	9.62%	12.40%
25	-	30	.	273	26328	6147	623	24	17	100	13	15	91	33661	49.26%	61.65%
30	-	35	.	174	16957	4207	369	5	4	34	2	7	14	21779	31.87%	93.52%
35	-	40	.	60	2721	922	51	.	1	.	.	.	.	3755	5.49%	99.02%
40	-	45	.	16	340	173	8	.	.	.	.	.	.	537	0.79%	99.80%
45	-	50	.	11	45	41	3	.	.	.	.	.	.	100	0.15%	99.95%
50	-	55	.	2	6	12	1	.	.	.	.	.	.	21	0.03%	99.98%
55	-	60	.	2	5	5	.	.	.	.	.	.	.	12	0.02%	100.00%
60	-	65	.	.	1	2	.	.	.	.	.	.	.	3	0.00%	100.00%
65	-	70	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
70	-	75	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
75	-	80	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
80	-	85	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
85	-	90	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
90	-	95	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%
95	-	100	.	.	.	.	.	.	.	.	.	.	.	0	0.00%	100.00%

Speed to	Cum %	85th %ile
5	0.05%	0.85
10	0.33%	0.85
15	1.06%	0.85
20	2.78%	0.85
25	12.40%	0.85
30	61.65%	0.85
35	93.52%	0.85
40	99.02%	0.85
45	99.80%	0.85
50	99.95%	0.85
55	99.98%	0.85
60	100.00%	0.85
65	100.00%	0.85
70	100.00%	0.85
75	100.00%	0.85
80	100.00%	0.85
85	100.00%	0.85
90	100.00%	0.85
95	100.00%	0.85
100	100.00%	0.85

Intelligent Data - Automatic Traffic Count Output

Road Name B2150 Hulbert Road
Flow from Newbarn Road (S)
Date From 06/06/2011
Vehicle Classification All Vehicles

to: Willowdene Close (N)
to: 19/06/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Hour Ending	Monday 06/06/2011	Tuesday 07/06/2011	Wednesday 08/06/2011	Thursday 09/06/2011	Friday 10/06/2011	Saturday 11/06/2011	Sunday 12/06/2011	Monday 13/06/2011	Tuesday 14/06/2011	Wednesday 15/06/2011	Thursday 16/06/2011	Friday 17/06/2011	Saturday 18/06/2011	Sunday 19/06/2011	Average Week Day (5 Days)	Average Week (7 Day)
01:00	*	*	12	12	22	31	30	2	9	16	15	*	*	*	13	17
02:00	*	*	5	4	7	14	13	3	8	7	13	*	*	*	7	8
03:00	*	*	3	10	5	6	13	7	9	4	4	*	*	*	6	7
04:00	*	*	13	6	8	10	7	8	7	5	9	*	*	*	8	8
05:00	*	*	13	17	15	11	2	19	18	18	17	*	*	*	17	14
06:00	*	*	34	43	41	26	8	51	36	45	40	*	*	*	41	36
07:00	*	*	121	110	122	55	20	103	127	122	125	*	*	*	119	101
08:00	*	*	252	250	240	132	48	215	251	253	234	*	*	*	242	208
09:00	*	*	372	398	401	204	76	390	422	356	402	*	*	*	392	336
10:00	*	*	296	294	332	263	168	258	300	308	284	*	*	*	296	278
11:00	*	*	290	308	303	317	276	287	265	323	312	*	*	*	298	298
12:00	*	*	333	151	313	332	299	318	282	332	313	*	*	*	292	297
13:00	*	*	264	277	334	338	322	294	289	293	305	*	*	*	294	302
14:00	*	*	295	271	291	337	286	288	273	287	289	*	*	*	285	291
15:00	*	*	329	337	327	315	279	308	324	307	302	*	*	*	319	314
16:00	*	*	332	347	372	300	261	358	307	328	324	*	*	*	338	326
17:00	*	*	370	358	383	302	155	367	337	356	345	*	*	*	359	330
18:00	*	*	394	359	365	262	119	370	399	400	405	*	*	*	385	342
19:00	*	*	312	306	282	285	125	293	296	305	328	*	*	*	303	281
20:00	*	*	235	271	229	187	88	216	253	243	259	*	*	*	244	220
21:00	*	*	204	152	159	123	70	143	147	154	171	*	*	*	161	147
22:00	*	*	137	109	115	75	48	91	117	121	125	*	*	*	116	104
23:00	*	*	68	82	86	58	38	88	68	79	67	*	*	*	77	70
00:00	*	*	37	28	63	57	13	38	24	43	39	*	*	*	39	38
Summary data																
0700-1900	0	0	3839	3656	3943	3387	2414	3746	3745	3848	3843	0	0	0	3803	3604
0600-2200	0	0	4536	4298	4568	3827	2640	4299	4389	4488	4523	0	0	0	4443	4176
0600-0000	0	0	4641	4408	4717	3942	2691	4425	4481	4610	4629	0	0	0	4559	4284
0000-0000	0	0	4721	4500	4815	4040	2764	4515	4568	4705	4727	0	0	0	4650	4374
0700-1000	0	0	920	942	973	599	292	863	973	917	920	0	0	0	930	823
1600-1900	0	0	1076	1023	1030	849	399	1030	1032	1061	1078	0	0	0	1047	953
Peak Hour Analysis																
07:00-10:00	0	0	372	398	401	263	168	390	422	356	402	0	0	0	392	336
11:00-16:00	0	0	333	347	372	338	322	358	324	332	324	0	0	0	338	326
17:00-19:00	0	0	394	359	383	302	155	370	399	400	405	0	0	0	385	342

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed.

Intelligent Data - Automatic Traffic Count Output

Road Name B2150 Hulbert Road
 Flow From Newbarn Road (S)
 Date From 06/06/2011
 to: Willowdene Close (N)
 to: 19/06/2011

Prepared by Andy Cook
 Checked by Paul O'Neill
 Issued by Paul O'Neill



Speed From		Speed to	Cycle	Motorcycle	Car	LGV	Rigid 2 Axle	Rigid 3 Axle	Rigid 4 Axle	Artic 3	Artic 4	Artic 5+	Bus	Other	Totals	Percentage	Cum %
0	-	5	-	-	-	-	1	-	-	-	-	-	-	1	2	0.00%	0.00%
5	-	10	4	4	146	16	1	-	-	2	-	-	1	3	177	0.42%	0.43%
10	-	15	31	5	394	34	5	1	1	-	-	-	-	7	478	1.15%	1.58%
15	-	20	7	16	1429	188	29	2	3	22	-	2	3	40	1741	4.18%	5.76%
20	-	25	13	113	7544	1059	169	23	15	77	-	4	5	79	9101	21.85%	27.61%
25	-	30	-	144	17609	2255	236	27	8	48	-	4	17	46	20394	48.96%	76.57%
30	-	35	-	82	6971	1159	80	1	2	11	-	1	1	6	8314	19.96%	96.53%
35	-	40	-	24	1035	202	12	-	-	-	-	-	-	-	1273	3.06%	99.59%
40	-	45	-	6	99	32	4	-	-	-	-	-	-	1	142	0.34%	99.93%
45	-	50	-	2	18	4	-	-	-	-	-	-	-	-	24	0.06%	99.99%
50	-	55	-	-	1	2	-	-	-	-	-	-	-	-	3	0.01%	100.00%
55	-	60	-	-	1	1	-	-	-	-	-	-	-	-	2	0.00%	100.00%
60	-	65	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
65	-	70	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
70	-	75	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
75	-	80	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
80	-	85	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
85	-	90	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
90	-	95	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
95	-	100	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%

Speed to	Cum %	85th %ile
5	0.00%	0.85
10	0.43%	0.85
15	1.58%	0.85
20	5.76%	0.85
25	27.61%	0.85
30	76.57%	0.85
35	96.53%	0.85
40	99.59%	0.85
45	99.93%	0.85
50	99.99%	0.85
55	100.00%	0.85
60	100.00%	0.85
65	100.00%	0.85
70	100.00%	0.85
75	100.00%	0.85
80	100.00%	0.85
85	100.00%	0.85
90	100.00%	0.85
95	100.00%	0.85
100	100.00%	0.85

Intelligent Data - Automatic Traffic Count Output

Road Name B2150 Hulbert Road
Flow from Willowdene Close (N)
Date From 06/06/2011
Vehicle Classification All Vehicles

to: Newbarn Road (S)
to: 19/06/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Hour Ending	Monday 06/06/2011	Tuesday 07/06/2011	Wednesday 08/06/2011	Thursday 09/06/2011	Friday 10/06/2011	Saturday 11/06/2011	Sunday 12/06/2011	Monday 13/06/2011	Tuesday 14/06/2011	Wednesday 15/06/2011	Thursday 16/06/2011	Friday 17/06/2011	Saturday 18/06/2011	Sunday 19/06/2011	Average Week Day (5 Days)	Average Week (7 Day)
01:00	*	*	9	12	14	33	23	7	7	20	15	*	*	*	12	15
02:00	*	*	6	7	7	15	20	8	8	9	5	*	*	*	7	9
03:00	*	*	3	7	4	7	7	4	9	5	3	*	*	*	5	5
04:00	*	*	4	2	1	4	4	5	4	3	3	*	*	*	3	3
05:00	*	*	11	3	8	6	1	11	7	9	4	*	*	*	8	7
06:00	*	*	34	33	27	16	10	32	36	30	31	*	*	*	32	28
07:00	*	*	87	84	83	29	12	70	85	92	88	*	*	*	84	71
08:00	*	*	389	363	341	90	34	366	368	351	372	*	*	*	364	304
09:00	*	*	494	482	469	186	53	455	473	498	517	*	*	*	484	411
10:00	*	*	282	277	257	272	100	251	272	286	282	*	*	*	272	255
11:00	*	*	251	238	271	290	227	252	258	266	275	*	*	*	259	259
12:00	*	*	274	219	304	316	293	270	261	315	269	*	*	*	273	279
13:00	*	*	276	271	334	328	283	274	259	284	311	*	*	*	287	291
14:00	*	*	295	267	303	309	267	262	286	298	276	*	*	*	284	285
15:00	*	*	277	270	262	305	249	318	268	274	308	*	*	*	282	281
16:00	*	*	367	320	389	260	280	307	318	353	342	*	*	*	342	328
17:00	*	*	368	322	368	312	162	326	313	334	325	*	*	*	337	317
18:00	*	*	391	408	362	286	128	342	356	404	378	*	*	*	377	343
19:00	*	*	340	298	319	235	122	277	258	340	336	*	*	*	310	283
20:00	*	*	277	225	248	186	87	204	232	214	239	*	*	*	234	215
21:00	*	*	182	151	141	118	57	161	139	128	169	*	*	*	153	140
22:00	*	*	130	107	110	72	49	111	109	110	127	*	*	*	115	104
23:00	*	*	75	71	70	54	35	50	84	68	63	*	*	*	69	64
00:00	*	*	36	40	44	50	20	36	27	38	46	*	*	*	38	38
Summary data																
0700-1900	0	0	4004	3735	3979	3189	2198	3700	3690	4003	3991	0	0	0	3872	3636
0600-2200	0	0	4680	4302	4561	3594	2403	4246	4255	4547	4614	0	0	0	4458	4166
0600-0000	0	0	4791	4413	4675	3698	2458	4332	4366	4653	4723	0	0	0	4565	4267
0000-0000	0	0	4858	4477	4736	3779	2523	4399	4437	4729	4784	0	0	0	4631	4335
0700-1000	0	0	1165	1122	1067	548	187	1072	1113	1135	1171	0	0	0	1121	970
1600-1900	0	0	1099	1028	1049	833	412	945	927	1078	1039	0	0	0	1024	943
Peak Hour Analysis																
07:00-10:00	0	0	494	482	469	272	100	455	473	498	517	0	0	0	484	411
11:00-16:00	0	0	367	320	389	328	293	318	318	353	342	0	0	0	342	328
17:00-19:00	0	0	391	408	368	312	162	342	356	404	378	0	0	0	377	343

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed.

Intelligent Data - Automatic Traffic Count Output

Road Name B2150 Hulbert Road
Flow From Willowdene Close (N)
Date From 06/06/2011

to: Newbarn Road (S)
to: 19/06/2011

Prepared by Andy Cook
Checked by Paul O'Neill
Issued by Paul O'Neill



Speed From	Speed to	Cycle	Motorcycle	Car	LGV	Rigid 2 Axle	Rigid 3 Axle	Rigid 4 Axle	Artic 3	Artic 4	Artic 5+	Bus	Other	Totals	Percentage	Cum %
0	-	5	10	9	8	1	-	-	-	-	-	-	1	29	0.07%	0.07%
5	-	10	17	6	35	1	-	-	-	-	-	1	47	114	0.28%	0.34%
10	-	15	26	62	98	33	5	3	-	-	1	-	109	337	0.81%	1.16%
15	-	20	70	81	166	78	55	4	3	-	1	1	19	482	1.16%	2.32%
20	-	25	45	79	1184	599	72	11	8	2	5	3	16	2025	4.89%	7.21%
25	-	30	-	123	9411	5245	309	21	34	3	8	25	24	15212	36.70%	43.91%
30	-	35	-	129	11315	6800	248	4	24	3	1	8	7	18542	44.73%	88.64%
35	-	40	-	58	2320	1699	52	-	-	-	-	-	-	4129	9.96%	98.60%
40	-	45	-	26	295	172	5	-	-	-	-	-	-	498	1.20%	99.80%
45	-	50	-	5	49	14	-	-	-	-	-	-	-	68	0.16%	99.97%
50	-	55	-	5	3	3	-	-	-	-	-	-	-	11	0.03%	99.99%
55	-	60	-	-	2	1	-	-	-	-	-	-	-	3	0.01%	100.00%
60	-	65	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
65	-	70	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
70	-	75	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
75	-	80	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
80	-	85	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
85	-	90	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
90	-	95	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%
95	-	100	-	-	-	-	-	-	-	-	-	-	-	0	0.00%	100.00%

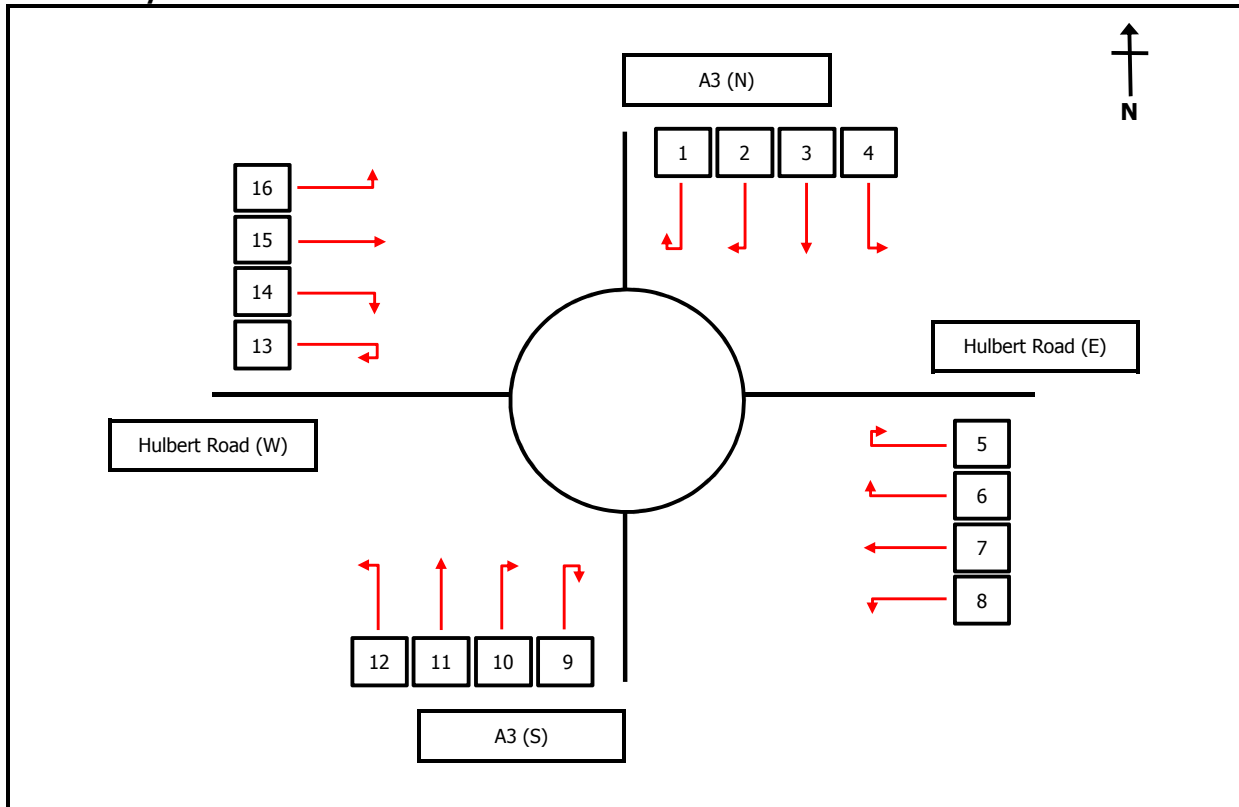
Speed to	Cum %	85th %ile
5	0.07%	0.85
10	0.34%	0.85
15	1.16%	0.85
20	2.32%	0.85
25	7.21%	0.85
30	43.91%	0.85
35	88.64%	0.85
40	98.60%	0.85
45	99.80%	0.85
50	99.97%	0.85
55	99.99%	0.85
60	100.00%	0.85
65	100.00%	0.85
70	100.00%	0.85
75	100.00%	0.85
80	100.00%	0.85
85	100.00%	0.85
90	100.00%	0.85
95	100.00%	0.85
100	100.00%	0.85

Intelligent Data Collection Limited



Client Atkins Transport Planning
Project Number: ID00836
Junction Number: Site 1
Date of Survey: 24.05.2011
Junction Name: A3 (N) / A3 (S) / Hulbert Road (W) / Hulbert Road (E)
Junction Type: 4 Arm Roundabout

Junction Layout



Site Observations

Weather Conditions:

AM Peak:

PM Peak:

Additional Notes (Factors which may impact on survey results such as accidents, roadworks, special events):

Intelligent Data Collection Limited

Client Atkins Transport Planning
 Date 24.05.2011
 Project Number ID00836
 Junction Name A3 (N) / A3 (S) / Hulbert Road (W) / Hulbert Road (E)

Input by #REF!
 Checked by #REF!



	Movement 1								Movement 2								Movement 3										
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total			
07:00	0	0	0	0	0	0	0	0	20	0	3	0	0	0	0	23	2	0	0	0	0	0	0	2			
07:15	0	0	0	0	0	0	0	0	18	0	7	1	0	0	0	26	0	0	0	0	0	0	0	0			
07:30	1	0	0	0	0	0	0	1	23	0	6	2	0	0	0	31	2	0	0	0	0	0	0	2			
07:45	0	0	0	0	0	0	0	0	42	0	5	1	1	0	1	50	1	0	0	0	0	0	0	1			
08:00	0	0	0	0	0	0	0	0	46	0	9	6	2	0	0	63	0	0	0	0	0	0	0	0			
08:15	0	0	0	0	0	0	0	0	72	0	6	1	0	0	2	81	0	0	0	0	0	0	0	0			
08:30	1	0	0	0	0	0	0	1	55	0	7	3	0	0	0	65	0	0	0	0	0	0	0	0			
08:45	0	0	0	0	0	0	0	0	58	0	12	2	0	0	0	72	0	0	0	0	0	0	0	0			
09:00	0	0	0	0	0	0	0	0	39	0	7	3	0	0	1	50	0	0	0	0	0	0	0	0			
09:15	0	0	0	0	0	0	0	0	30	0	4	0	0	0	1	35	0	0	0	0	0	0	0	0			
09:30	0	0	0	0	0	0	0	0	28	0	3	3	1	0	0	35	0	0	0	0	0	0	0	0			
09:45	0	0	0	0	0	0	0	0	31	0	4	1	1	0	0	37	0	0	0	0	0	0	0	0			
Start Time	Rolling Hour								Total	Rolling Hour								Total	Rolling Hour								Total
07:00	1	0	0	0	0	0	0	1	103	0	21	4	1	0	1	130	5	0	0	0	0	0	0	5			
07:15	1	0	0	0	0	0	0	1	129	0	27	10	3	0	1	170	3	0	0	0	0	0	0	3			
07:30	1	0	0	0	0	0	0	1	183	0	26	10	3	0	3	225	3	0	0	0	0	0	0	3			
07:45	1	0	0	0	0	0	0	1	215	0	27	11	3	0	3	259	1	0	0	0	0	0	0	1			
08:00	1	0	0	0	0	0	0	1	231	0	34	12	2	0	2	281	0	0	0	0	0	0	0	0			
08:15	1	0	0	0	0	0	0	1	224	0	32	9	0	0	3	268	0	0	0	0	0	0	0	0			
08:30	1	0	0	0	0	0	0	1	182	0	30	8	0	0	2	222	0	0	0	0	0	0	0	0			
08:45	0	0	0	0	0	0	0	0	155	0	26	8	1	0	2	192	0	0	0	0	0	0	0	0			
09:00	0	0	0	0	0	0	0	0	128	0	18	7	2	0	2	157	0	0	0	0	0	0	0	0			

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	Movement 4								Movement 5								Movement 6							
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total
07:00	22	0	6	2	0	1	0	31	0	0	0	0	0	0	0	0	39	0	24	0	0	0	0	63
07:15	24	0	5	0	1	0	0	30	1	0	0	0	0	0	0	1	40	0	12	2	0	1	1	56
07:30	42	0	5	1	0	0	0	48	1	0	0	0	0	0	0	1	36	0	15	2	0	0	0	53
07:45	55	0	7	0	0	0	0	62	0	0	0	0	0	0	0	0	37	0	13	0	0	1	1	52
08:00	62	0	4	2	0	0	0	68	0	0	0	0	0	0	0	0	30	0	26	0	1	0	0	57
08:15	73	0	8	0	0	0	1	82	0	0	0	0	0	0	0	0	49	0	7	0	0	1	1	58
08:30	81	0	4	2	0	1	0	88	0	0	0	0	0	0	0	0	33	0	11	0	0	0	0	44
08:45	74	0	2	1	2	1	1	81	0	0	0	0	0	0	0	0	21	0	6	1	1	0	0	29
09:00	48	0	5	4	0	1	0	58	1	0	0	0	0	0	0	1	25	0	4	0	1	0	2	32
09:15	44	0	5	0	0	0	0	49	0	0	0	0	0	0	0	0	21	0	6	2	0	1	0	30
09:30	28	0	4	0	1	0	0	33	0	0	0	0	0	0	0	0	36	0	7	1	0	0	0	44
09:45	43	0	2	2	1	0	0	48	0	0	0	0	0	0	0	0	25	0	4	2	0	1	0	32
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	143	0	23	3	1	1	0	171	1	0	0	0	0	0	0	1	152	0	64	4	0	2	2	224
07:15	183	0	21	3	1	0	0	208	1	0	0	0	0	0	0	1	143	0	66	4	1	2	2	218
07:30	232	0	24	3	0	0	1	260	1	0	0	0	0	0	0	1	152	0	61	2	1	2	2	220
07:45	271	0	23	4	0	1	1	300	0	0	0	0	0	0	0	0	149	0	57	0	1	2	2	211
08:00	290	0	18	5	2	2	2	319	0	0	0	0	0	0	0	0	133	0	50	1	2	1	1	188
08:15	276	0	19	7	2	3	2	309	1	0	0	0	0	0	0	1	128	0	28	1	2	1	3	163
08:30	247	0	16	7	2	3	1	276	1	0	0	0	0	0	0	1	100	0	27	3	2	1	2	135
08:45	194	0	16	5	3	2	1	221	1	0	0	0	0	0	0	1	103	0	23	4	2	1	2	135
09:00	163	0	16	6	2	1	0	188	1	0	0	0	0	0	0	1	107	0	21	5	1	2	2	138

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Movement 7									Movement 8								Movement 9							
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total
07:00	34	0	18	0	1	0	1	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	32	0	15	0	0	0	1	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	51	0	8	0	0	1	2	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	65	0	13	1	0	0	2	81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	69	0	3	1	0	0	1	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	82	0	16	0	0	0	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	72	0	13	2	0	0	0	87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	87	0	14	1	0	1	0	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	80	0	17	1	0	0	1	99	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
09:15	67	0	4	2	0	0	1	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	58	0	6	0	0	1	2	67	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
09:45	64	0	7	0	0	0	0	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	182	0	54	1	1	1	6	245	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	217	0	39	2	0	1	6	265	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	267	0	40	2	0	1	5	315	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	288	0	45	4	0	0	3	340	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	310	0	46	4	0	1	1	362	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	321	0	60	4	0	1	1	387	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
08:30	306	0	48	6	0	1	2	363	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
08:45	292	0	41	4	0	2	4	343	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
09:00	269	0	34	3	0	1	4	311	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0

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Movement 10									Movement 11								Movement 12							
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total
07:00	0	0	0	0	0	0	1	1	0	0	3	0	0	0	0	3	58	0	31	7	0	1	0	97
07:15	1	0	2	1	0	0	0	4	0	0	0	0	0	0	0	0	109	0	31	3	1	1	2	147
07:30	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	101	0	30	2	0	4	0	137
07:45	4	0	1	0	0	0	0	5	4	0	0	0	0	0	0	4	150	0	32	3	0	2	0	187
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	149	0	28	6	0	0	0	183
08:15	5	0	1	0	0	0	0	6	0	0	1	0	0	0	0	1	141	0	25	6	1	1	1	175
08:30	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	130	0	28	3	0	1	0	162
08:45	1	0	2	0	0	0	1	4	3	0	0	0	0	0	0	3	115	0	37	5	2	0	1	160
09:00	8	0	0	0	0	0	0	8	0	0	0	1	0	0	0	1	115	0	25	5	2	0	0	147
09:15	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	1	74	0	43	4	2	0	0	123
09:30	3	0	4	0	0	0	0	7	0	0	0	0	0	0	0	0	61	0	23	6	3	1	0	94
09:45	3	0	0	0	0	0	0	3	1	0	0	0	0	0	0	1	101	0	24	5	1	0	0	131
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	5	0	3	1	0	0	4	13	4	0	3	0	0	0	0	7	418	0	124	15	1	8	2	568
07:15	5	0	3	1	0	0	3	12	4	0	0	0	0	0	0	4	509	0	121	14	1	7	2	654
07:30	9	0	2	0	0	0	3	14	4	0	1	0	0	0	0	5	541	0	115	17	1	7	1	682
07:45	9	0	2	1	0	0	0	12	4	0	1	0	0	0	0	5	570	0	113	18	1	4	1	707
08:00	6	0	3	1	0	0	1	11	3	0	1	0	0	0	0	4	535	0	118	20	3	2	2	680
08:15	14	0	3	1	0	0	1	19	3	0	1	1	0	0	0	5	501	0	115	19	5	2	2	644
08:30	9	0	2	2	0	0	1	14	3	0	1	1	0	0	0	5	434	0	133	17	6	1	1	592
08:45	12	0	6	1	0	0	1	20	3	0	1	1	0	0	0	5	365	0	128	20	9	1	1	524
09:00	14	0	4	1	0	0	0	19	1	0	1	1	0	0	0	3	351	0	115	20	8	1	0	495

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Movement 13									Movement 14								Movement 15							
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total
07:00	0	0	0	0	0	0	0	0	210	0	43	1	1	0	3	258	50	0	15	0	0	0	0	65
07:15	1	0	0	0	0	0	0	1	223	0	39	3	0	0	6	271	87	0	10	1	0	0	3	101
07:30	1	0	0	0	0	0	0	1	285	0	44	2	1	0	3	335	115	0	20	1	0	0	2	138
07:45	1	0	1	0	0	0	0	2	232	0	38	1	1	0	3	275	143	0	24	0	0	1	1	169
08:00	0	0	0	0	0	0	0	0	239	0	52	3	1	0	2	297	140	0	8	0	0	1	2	151
08:15	0	0	0	0	0	0	0	0	215	0	37	5	1	0	3	261	136	0	16	3	0	1	2	158
08:30	0	0	0	0	0	0	0	0	220	0	18	2	0	1	1	242	152	0	10	0	0	0	1	163
08:45	1	0	0	0	0	0	0	1	159	0	43	2	0	1	1	206	105	0	14	0	1	0	0	120
09:00	0	0	0	0	0	0	0	0	164	0	27	3	3	1	0	198	86	0	15	0	0	0	1	102
09:15	1	0	0	0	0	0	0	1	132	0	21	5	1	0	0	159	67	0	8	0	0	1	0	76
09:30	1	0	0	0	0	0	0	1	137	0	33	6	1	0	1	178	68	0	13	1	0	0	0	82
09:45	3	0	0	0	0	0	0	3	75	0	16	5	1	0	1	98	87	0	15	1	0	0	1	104
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	3	0	1	0	0	0	0	4	950	0	164	7	3	0	15	1139	395	0	69	2	0	1	6	473
07:15	3	0	1	0	0	0	0	4	979	0	173	9	3	0	14	1178	485	0	62	2	0	2	8	559
07:30	2	0	1	0	0	0	0	3	971	0	171	11	4	0	11	1168	534	0	68	4	0	3	7	616
07:45	1	0	1	0	0	0	0	2	906	0	145	11	3	1	9	1075	571	0	58	3	0	3	6	641
08:00	1	0	0	0	0	0	0	1	833	0	150	12	2	2	7	1006	533	0	48	3	1	2	5	592
08:15	1	0	0	0	0	0	0	1	758	0	125	12	4	3	5	907	479	0	55	3	1	1	4	543
08:30	2	0	0	0	0	0	0	2	675	0	109	12	4	3	2	805	410	0	47	0	1	1	2	461
08:45	3	0	0	0	0	0	0	3	592	0	124	16	5	2	2	741	326	0	50	1	1	1	1	380
09:00	5	0	0	0	0	0	0	5	508	0	97	19	6	1	2	633	308	0	51	2	0	1	2	364

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Movement 16								
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total
07:00	60	0	21	2	0	0	1	84
07:15	73	0	21	1	0	0	0	95
07:30	86	0	23	0	1	0	2	112
07:45	74	0	21	0	1	0	0	96
08:00	83	0	7	1	1	0	1	93
08:15	84	0	11	1	2	0	0	98
08:30	76	0	12	0	0	0	0	88
08:45	57	0	10	1	1	1	0	70
09:00	52	0	9	2	0	0	0	63
09:15	37	0	7	2	0	0	0	46
09:30	37	0	7	1	0	0	0	45
09:45	39	0	5	0	0	0	0	44
Start Time	Rolling Hour							Total
07:00	293	0	86	3	2	0	3	387
07:15	316	0	72	2	3	0	3	396
07:30	327	0	62	2	5	0	3	399
07:45	317	0	51	2	4	0	1	375
08:00	300	0	40	3	4	1	1	349
08:15	269	0	42	4	3	1	0	319
08:30	222	0	38	5	1	1	0	267
08:45	183	0	33	6	1	1	0	224
09:00	165	0	28	5	0	0	0	198

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	Movement 1								Movement 2							Movement 3									
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	
16:00	0	0	0	0	0	0	0	0	62	0	15	0	0	0	1	78	2	0	0	0	0	0	0	0	2
16:15	0	0	0	0	0	0	0	0	47	0	23	0	1	1	1	73	2	0	1	0	0	0	0	0	3
16:30	0	0	0	0	0	0	0	0	48	0	16	1	0	0	1	66	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	62	0	19	1	0	0	0	82	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	82	0	20	0	0	0	0	102	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	102	0	32	0	0	0	0	134	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	78	0	19	0	0	0	2	99	1	0	0	0	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0	91	0	9	1	0	1	2	104	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	73	0	14	1	1	0	1	90	2	0	0	0	0	0	0	0	2
18:15	0	0	0	0	0	0	0	0	58	0	11	0	0	0	0	69	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	51	0	9	1	0	0	1	62	1	0	0	0	0	0	0	0	1
18:45	0	0	0	0	0	0	0	0	47	0	8	0	0	0	0	55	0	0	0	0	0	0	0	0	0
Start Time	Rolling Hour								Total	Rolling Hour							Total	Rolling Hour							Total
16:00	0	0	0	0	0	0	0	0	219	0	73	2	1	1	3	299	4	0	0	1	0	0	0	0	5
16:15	0	0	0	0	0	0	0	0	239	0	78	2	1	1	2	323	2	0	1	0	0	0	0	0	3
16:30	0	0	0	0	0	0	0	0	294	0	87	2	0	0	1	384	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	324	0	90	1	0	0	2	417	1	0	0	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0	0	353	0	80	1	0	1	4	439	1	0	0	0	0	0	0	0	1
17:15	0	0	0	0	0	0	0	0	344	0	74	2	1	1	5	427	3	0	0	0	0	0	0	0	3
17:30	0	0	0	0	0	0	0	0	300	0	53	2	1	1	5	362	3	0	0	0	0	0	0	0	3
17:45	0	0	0	0	0	0	0	0	273	0	43	3	1	1	4	325	3	0	0	0	0	0	0	0	3
18:00	0	0	0	0	0	0	0	0	229	0	42	2	1	0	2	276	3	0	0	0	0	0	0	0	3

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Client Atkins Transport Planning
Date 24.05.2011
Project Number ID00836
Junction Name A3 (N) / A3 (S) / Hulbert Road (W) / Hulbert Road (E)

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	Movement 4								Movement 5								Movement 6										
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total			
16:00	47	0	22	2	0	1	0	72	0	0	0	0	0	0	0	0	28	0	7	0	0	0	0	35			
16:15	41	0	18	0	0	0	0	59	0	0	0	0	0	0	0	0	39	0	5	0	0	0	0	44			
16:30	43	0	16	0	0	0	0	59	0	0	0	0	0	0	0	0	38	0	5	0	0	0	1	44			
16:45	53	0	21	0	0	0	1	75	0	0	1	0	0	0	0	1	42	0	8	0	0	0	1	51			
17:00	56	0	17	0	0	0	3	76	0	0	0	0	0	0	0	0	37	0	2	0	0	0	1	40			
17:15	72	0	9	0	0	0	0	81	0	0	0	0	0	0	0	0	35	0	8	1	0	0	0	44			
17:30	59	0	6	0	1	0	1	67	0	0	0	0	0	0	0	0	32	0	3	1	0	1	0	37			
17:45	48	0	7	1	0	0	1	57	0	0	0	0	0	0	0	0	26	0	4	0	0	0	0	30			
18:00	56	0	1	2	0	0	1	60	0	0	0	1	0	0	0	1	33	0	5	0	0	0	0	38			
18:15	52	0	6	1	0	0	0	59	0	0	0	0	0	0	0	0	27	0	3	0	0	0	0	30			
18:30	49	0	2	0	0	0	0	51	0	0	0	0	0	0	0	0	26	0	1	0	0	0	0	27			
18:45	48	0	1	0	0	0	0	49	0	0	0	0	0	0	0	0	28	0	0	0	0	0	0	28			
Start Time	Rolling Hour								Total	Rolling Hour								Total	Rolling Hour								Total
16:00	184	0	77	2	0	1	1	265	0	0	1	0	0	0	0	1	147	0	25	0	0	0	2	174			
16:15	193	0	72	0	0	0	4	269	0	0	1	0	0	0	0	1	156	0	20	0	0	0	3	179			
16:30	224	0	63	0	0	0	4	291	0	0	1	0	0	0	0	1	152	0	23	1	0	0	3	179			
16:45	240	0	53	0	1	0	5	299	0	0	1	0	0	0	0	1	146	0	21	2	0	1	2	172			
17:00	235	0	39	1	1	0	5	281	0	0	0	0	0	0	0	0	130	0	17	2	0	1	1	151			
17:15	235	0	23	3	1	0	3	265	0	0	0	1	0	0	0	1	126	0	20	2	0	1	0	149			
17:30	215	0	20	4	1	0	3	243	0	0	0	1	0	0	0	1	118	0	15	1	0	1	0	135			
17:45	205	0	16	4	0	0	2	227	0	0	0	1	0	0	0	1	112	0	13	0	0	0	0	125			
18:00	205	0	10	3	0	0	1	219	0	0	0	1	0	0	0	1	114	0	9	0	0	0	0	123			

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Movement 7									Movement 8								Movement 9							
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total
16:00	95	0	10	1	0	0	0	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	90	0	15	0	0	2	0	107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	102	0	16	0	0	0	3	121	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
16:45	106	0	14	0	0	0	2	122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	118	0	11	0	0	0	3	132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	118	0	14	0	0	0	0	132	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
17:30	126	0	25	0	0	0	2	153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	96	0	9	0	0	0	2	107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	109	0	16	0	0	2	2	129	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
18:15	93	0	6	0	1	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	91	0	6	0	0	0	1	98	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
18:45	85	0	10	0	0	0	1	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
16:00	393	0	55	1	0	2	5	456	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
16:15	416	0	56	0	0	2	8	482	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
16:30	444	0	55	0	0	0	8	507	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
16:45	468	0	64	0	0	0	7	539	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
17:00	458	0	59	0	0	0	7	524	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
17:15	449	0	64	0	0	2	6	521	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
17:30	424	0	56	0	1	2	6	489	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
17:45	389	0	37	0	1	2	5	434	1	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0
18:00	378	0	38	0	1	2	4	423	1	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0

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Client Atkins Transport Planning
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 Project Number ID00836
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Movement 10									Movement 11								Movement 12							
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total
16:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	195	0	16	4	0	1	0	216
16:15	5	0	0	0	0	0	1	6	1	0	0	0	0	0	0	1	216	0	26	1	0	0	0	243
16:30	18	0	0	0	0	0	0	18	0	0	1	0	0	0	0	1	180	0	26	2	0	0	0	208
16:45	0	0	1	0	0	1	2	4	2	0	0	0	0	0	0	2	241	0	20	1	0	0	0	262
17:00	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	208	0	31	0	2	0	0	241
17:15	0	0	10	0	0	0	0	10	2	0	0	0	0	0	0	2	174	0	49	1	0	0	0	224
17:30	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0	165	0	38	2	0	1	0	206
17:45	15	0	0	0	0	0	1	16	1	0	0	0	0	0	0	1	109	0	34	2	0	0	0	145
18:00	0	0	4	0	0	0	0	4	1	0	0	0	0	0	0	1	75	0	12	0	2	0	0	89
18:15	7	0	5	0	0	1	0	13	0	0	0	0	0	0	0	0	150	0	56	1	0	0	0	207
18:30	0	0	8	1	0	0	2	11	0	0	1	0	0	0	0	1	188	0	61	0	0	0	0	249
18:45	0	0	15	0	0	1	0	16	0	0	1	0	0	0	0	1	139	0	27	2	0	1	0	169
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
16:00	23	0	1	0	0	1	3	28	4	0	1	0	0	0	0	5	832	0	88	8	0	1	0	929
16:15	23	0	4	0	0	1	3	31	3	0	1	0	0	0	0	4	845	0	103	4	2	0	0	954
16:30	18	0	14	0	0	1	2	35	4	0	1	0	0	0	0	5	803	0	126	4	2	0	0	935
16:45	0	0	22	0	0	1	2	25	4	0	0	0	0	0	0	4	788	0	138	4	2	1	0	933
17:00	15	0	21	0	0	0	1	37	3	0	0	0	0	0	0	3	656	0	152	5	2	1	0	816
17:15	15	0	22	0	0	0	1	38	4	0	0	0	0	0	0	4	523	0	133	5	2	1	0	664
17:30	22	0	17	0	0	1	1	41	2	0	0	0	0	0	0	2	499	0	140	5	2	1	0	647
17:45	22	0	17	1	0	1	3	44	2	0	1	0	0	0	0	3	522	0	163	3	2	0	0	690
18:00	7	0	32	1	0	2	2	44	1	0	2	0	0	0	0	3	552	0	156	3	2	1	0	714

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 Junction Name A3 (N) / A3 (S) / Hulbert Road (W) / Hulbert Road (E)

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Movement 13									Movement 14								Movement 15							
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total
16:00	0	0	0	0	0	0	0	0	114	0	23	6	0	1	3	147	65	0	19	0	0	0	2	86
16:15	1	0	0	0	0	0	0	1	124	0	32	3	1	0	0	160	54	0	16	0	0	0	1	71
16:30	0	0	0	0	0	0	0	0	150	0	28	1	1	1	2	183	60	0	17	0	0	0	2	79
16:45	1	0	0	0	0	0	0	1	93	0	36	3	0	0	2	134	86	0	16	0	0	0	1	103
17:00	0	0	0	0	0	0	0	0	170	0	26	0	0	0	1	197	86	0	14	0	0	0	4	104
17:15	4	0	0	0	0	0	0	4	156	0	18	0	0	1	0	175	88	0	11	0	0	0	1	100
17:30	1	0	0	0	0	0	0	1	150	0	22	0	1	0	2	175	94	0	14	0	0	0	1	109
17:45	2	0	0	0	0	0	0	2	149	0	12	0	0	0	0	161	64	0	10	0	0	0	1	75
18:00	0	0	0	0	0	0	0	0	122	0	15	3	0	0	5	145	89	0	6	0	0	0	1	96
18:15	0	0	0	0	0	0	0	0	128	0	16	0	1	0	0	145	72	0	5	0	0	0	0	77
18:30	0	0	0	0	0	0	0	0	122	0	18	0	0	0	0	140	69	0	8	0	0	0	0	77
18:45	0	0	0	0	0	0	0	0	118	0	23	0	0	0	0	141	59	0	4	0	0	0	0	63
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
16:00	2	0	0	0	0	0	0	2	481	0	119	13	2	2	7	624	265	0	68	0	0	0	6	339
16:15	2	0	0	0	0	0	0	2	537	0	122	7	2	1	5	674	286	0	63	0	0	0	8	357
16:30	5	0	0	0	0	0	0	5	569	0	108	4	1	2	5	689	320	0	58	0	0	0	8	386
16:45	6	0	0	0	0	0	0	6	569	0	102	3	1	1	5	681	354	0	55	0	0	0	7	416
17:00	7	0	0	0	0	0	0	7	625	0	78	0	1	1	3	708	332	0	49	0	0	0	7	388
17:15	7	0	0	0	0	0	0	7	577	0	67	3	1	1	7	656	335	0	41	0	0	0	4	380
17:30	3	0	0	0	0	0	0	3	549	0	65	3	2	0	7	626	319	0	35	0	0	0	3	357
17:45	2	0	0	0	0	0	0	2	521	0	61	3	1	0	5	591	294	0	29	0	0	0	2	325
18:00	0	0	0	0	0	0	0	0	490	0	72	3	1	0	5	571	289	0	23	0	0	0	1	313

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Client Atkins Transport Planning
 Date 24.05.2011
 Project Number ID00836
 Junction Name A3 (N) / A3 (S) / Hulbert Road (W) / Hulbert Road (E)

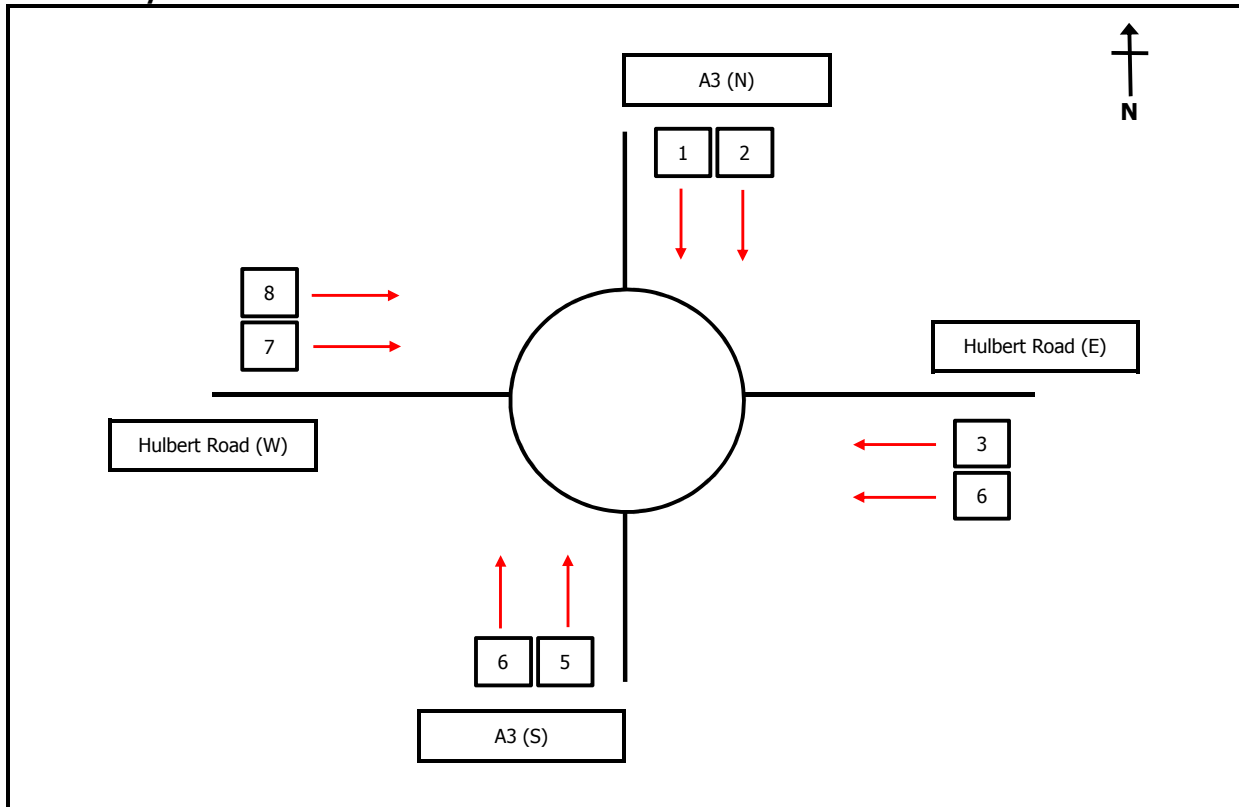
Input by #REF!
 Checked by #REF!



Movement 16								
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total
16:00	41	0	16	1	0	0	1	59
16:15	48	0	10	1	1	0	0	60
16:30	60	0	8	0	0	1	1	70
16:45	49	0	6	1	0	0	1	57
17:00	47	0	7	1	0	0	1	56
17:15	53	0	6	0	0	0	0	59
17:30	47	0	8	0	0	0	0	55
17:45	42	0	5	0	0	0	0	47
18:00	43	0	5	0	0	0	0	48
18:15	39	0	4	0	0	0	0	43
18:30	42	0	4	0	0	0	0	46
18:45	40	0	5	0	0	0	0	45
Start Time	Rolling Hour							Total
16:00	198	0	40	3	1	1	3	246
16:15	204	0	31	3	1	1	3	243
16:30	209	0	27	2	0	1	3	242
16:45	196	0	27	2	0	0	2	227
17:00	189	0	26	1	0	0	1	217
17:15	185	0	24	0	0	0	0	209
17:30	171	0	22	0	0	0	0	193
17:45	166	0	18	0	0	0	0	184
18:00	164	0	18	0	0	0	0	182

Client Atkins Transport Planning
Project Number: ID00836
Junction Number: Site 1
Date of Survey: 24.05.2011
Junction Name: A3 (N) / A3 (S) / Hulbert Road (W) / Hulbert Road (E)
Junction Type: 4 Arm Roundabout

Junction Layout



Site Observations

Weather Conditions:

AM Peak:

PM Peak:

Additional Notes (Factors which may impact on survey results such as accidents, roadworks, special events):

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Client Atkins Transport Planning
 Date 24.05.2011
 Project Number ID00836
 Junction Name A3 (N) / A3 (S) / Hulbert Road (W) / Hulbert Road (E)

Input by Stefan Niedzwiedzki
 Checked by Paul O'Neill



	Movement 1			Movement 2			Movement 3			Movement 4			Movement 5			Movement 6			Movement 7			Movement 8		
Time	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total
07:00	1	0	1	1	0	1	2	0	2	2	0	2	3	0	3	4	0	4	0	0	0	0	0	0
07:05	3	0	3	1	0	1	2	0	2	4	1	5	4	0	4	8	1	9	1	0	1	0	0	0
07:10	1	1	2	1	0	1	3	0	3	2	0	2	3	0	3	3	0	3	1	0	1	0	0	0
07:15	2	0	2	1	0	1	5	0	5	1	0	1	8	1	9	3	0	3	2	0	2	1	0	1
07:20	2	0	2	1	0	1	3	0	3	2	0	2	5	1	6	4	0	4	3	0	3	0	0	0
07:25	3	0	3	2	0	2	2	0	2	1	0	1	3	0	3	6	0	6	1	0	1	0	0	0
07:30	2	1	3	2	0	2	3	0	3	1	1	2	6	0	6	3	0	3	0	0	0	0	0	0
07:35	2	1	3	2	0	2	7	1	8	2	0	2	8	0	8	5	0	5	0	0	0	0	0	0
07:40	2	0	2	3	0	3	4	0	4	6	0	6	3	1	4	7	1	8	2	0	2	2	0	2
07:45	3	1	4	3	0	3	5	0	5	5	0	5	3	0	3	3	0	3	3	0	3	2	0	2
07:50	3	0	3	1	0	1	2	0	2	3	0	3	4	0	4	3	0	3	5	1	6	3	0	3
07:55	3	0	3	6	0	6	5	0	5	5	0	5	4	0	4	3	0	3	3	0	3	1	0	1
08:00	2	1	3	3	0	3	3	0	3	4	0	4	2	0	2	5	0	5	1	0	1	0	0	0
08:05	2	0	2	2	1	3	6	0	6	6	0	6	3	0	3	5	0	5	2	0	2	2	0	2
08:10	3	1	4	2	0	2	4	0	4	4	0	4	2	1	3	4	0	4	4	0	4	2	0	2
08:15	4	0	4	3	0	3	3	0	3	5	0	5	5	0	5	3	0	3	2	0	2	2	0	2
08:20	3	0	3	3	0	3	9	0	9	5	0	5	3	0	3	2	1	3	2	0	2	3	0	3
08:25	2	1	3	3	0	3	4	0	4	9	0	9	3	0	3	2	0	2	2	0	2	2	0	2
08:30	2	0	2	2	0	2	6	0	6	7	0	7	3	0	3	3	0	3	1	0	1	2	0	2
08:35	4	0	4	4	1	5	3	0	3	4	0	4	3	0	3	3	0	3	3	0	3	3	0	3
08:40	3	1	4	3	0	3	3	0	3	5	0	5	2	0	2	4	0	4	2	0	2	3	0	3
08:45	3	0	3	2	0	2	5	1	6	4	0	4	3	0	3	5	0	5	3	0	3	3	1	4
08:50	3	0	3	3	0	3	5	0	5	3	0	3	6	0	6	7	0	7	3	0	3	2	0	2
08:55	4	0	4	5	0	5	4	0	4	7	0	7	3	0	3	3	1	4	2	0	2	3	0	3
09:00	3	0	3	4	0	4	2	0	2	5	0	5	6	0	6	7	0	7	2	0	2	0	0	0
09:05	3	0	3	4	0	4	1	0	1	2	0	2	6	0	6	8	0	8	2	0	2	0	0	0
09:10	2	1	3	2	0	2	2	0	2	3	0	3	4	0	4	6	0	6	4	0	4	3	0	3
09:15	3	0	3	2	0	2	2	0	2	1	1	2	7	0	7	8	0	8	2	0	2	2	0	2
09:20	2	0	2	2	0	2	1	1	2	2	0	2	4	0	4	8	0	8	3	0	3	1	0	1
09:25	1	0	1	2	0	2	1	0	1	2	0	2	7	0	7	5	0	5	0	0	0	0	0	0
09:30	1	0	1	2	0	2	3	0	3	2	0	2	8	0	8	6	0	6	1	0	1	1	0	1
09:35	1	0	1	1	0	1	1	0	1	1	0	1	7	0	7	3	0	3	4	0	4	0	0	0
09:40	1	0	1	2	0	2	2	0	2	3	0	3	5	1	6	5	1	6	2	0	2	1	0	1
09:45	1	0	1	1	0	1	2	0	2	3	0	3	5	0	5	6	0	6	3	0	3	2	0	2
09:50	2	1	3	2	0	2	3	0	3	4	0	4	3	0	3	3	0	3	1	0	1	1	0	1
09:55	3	0	3	2	0	2	1	0	1	3	0	3	3	0	3	8	0	8	1	0	1	1	0	1

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Client Atkins Transport Planning
Date 24.05.2011
Project Number ID00836
Junction Name A3 (N) / A3 (S) / Hulbert Road (W) / Hulbert Road (E)

Input by
Checked by

Stefan Niedzwiedzki
 Paul O'Neill



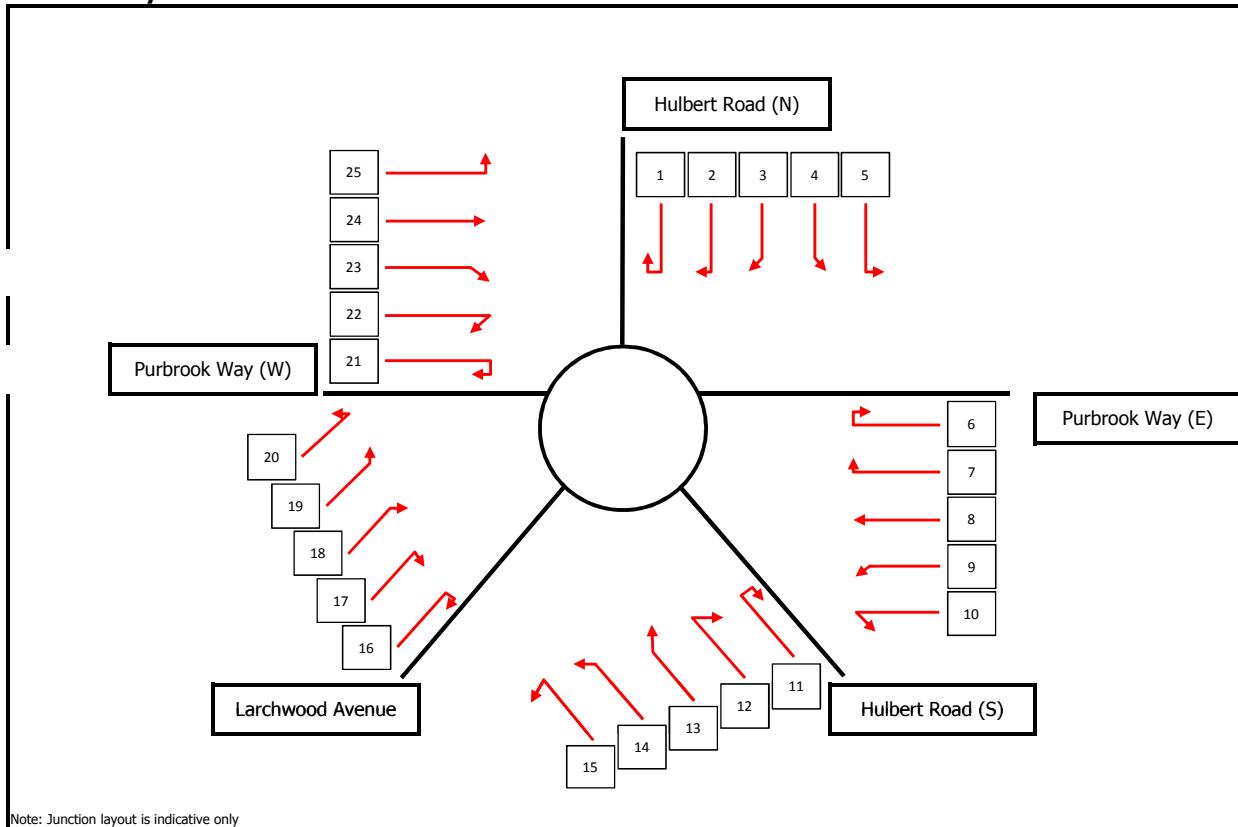
Time	Movement 1			Movement 2			Movement 3			Movement 4			Movement 5			Movement 6			Movement 7			Movement 8		
	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total
16:00	2	0	2	2	0	2	3	0	3	3	0	3	3	0	3	5	0	5	2	0	2	0	0	0
16:05	3	0	3	2	0	2	1	0	1	3	0	3	4	0	4	3	0	3	1	0	1	3	0	3
16:10	3	0	3	2	0	2	3	0	3	2	0	2	5	0	5	3	0	3	2	0	2	1	0	1
16:15	3	0	3	4	0	4	2	0	2	2	1	3	4	1	5	3	0	3	1	0	1	0	0	0
16:20	3	0	3	1	0	1	3	0	3	5	0	5	6	1	7	6	0	6	1	1	2	3	0	3
16:25	3	0	3	1	0	1	3	0	3	2	0	2	4	0	4	5	0	5	2	0	2	0	0	0
16:30	3	0	3	2	0	2	2	0	2	2	0	2	3	0	3	6	1	7	2	0	2	2	0	2
16:35	4	0	4	2	0	2	2	0	2	4	0	4	6	0	6	3	1	4	2	0	2	3	0	3
16:40	2	0	2	2	0	2	2	0	2	3	0	3	5	0	5	3	1	4	2	0	2	1	0	1
16:45	3	0	3	1	0	1	3	0	3	4	0	4	5	0	5	5	0	5	3	0	3	2	0	2
16:50	2	0	2	3	0	3	3	0	3	4	0	4	5	0	5	3	0	3	1	1	2	0	0	0
16:55	2	1	3	2	0	2	5	0	5	3	0	3	5	0	5	4	0	4	2	0	2	0	0	0
17:00	3	0	3	2	0	2	2	0	2	2	0	2	4	1	5	5	0	5	2	0	2	1	0	1
17:05	3	0	3	3	0	3	2	0	2	4	0	4	5	0	5	3	0	3	2	0	2	1	0	1
17:10	4	0	4	3	0	3	2	0	2	2	0	2	5	0	5	5	0	5	1	0	1	0	0	0
17:15	3	0	3	2	0	2	3	0	3	3	0	3	7	0	7	5	0	5	2	0	2	1	0	1
17:20	4	0	4	3	0	3	5	0	5	5	0	5	3	0	3	4	0	4	2	0	2	3	0	3
17:25	3	0	3	3	0	3	2	0	2	3	0	3	4	0	4	5	0	5	2	0	2	1	0	1
17:30	3	0	3	2	1	3	2	0	2	3	0	3	5	0	5	3	0	3	2	0	2	0	0	0
17:35	2	0	2	1	0	1	5	0	5	4	0	4	4	0	4	4	0	4	1	0	1	0	0	0
17:40	3	0	3	3	0	3	1	1	2	3	0	3	5	1	6	5	1	6	2	0	2	3	0	3
17:45	2	1	3	2	0	2	5	0	5	5	0	5	7	0	7	7	0	7	4	0	4	0	0	0
17:50	2	1	3	3	0	3	2	0	2	3	0	3	4	0	4	4	1	5	2	0	2	0	0	0
17:55	3	0	3	2	0	2	2	0	2	2	0	2	3	0	3	3	0	3	1	0	1	0	0	0
18:00	3	0	3	2	0	2	2	0	2	4	0	4	3	0	3	5	0	5	2	0	2	1	0	1
18:05	4	0	4	2	0	2	3	0	3	5	0	5	4	0	4	3	0	3	1	0	1	1	0	1
18:10	3	1	4	3	0	3	2	0	2	2	0	2	3	0	3	5	0	5	2	0	2	0	0	0
18:15	3	0	3	3	0	3	2	0	2	2	0	2	5	1	6	5	0	5	2	1	3	2	0	2
18:20	4	0	4	3	0	3	3	0	3	2	0	2	4	0	4	4	1	5	0	0	0	0	0	0
18:25	1	0	1	2	0	2	3	0	3	3	0	3	3	0	3	5	0	5	1	0	1	2	0	2
18:30	3	0	3	2	0	2	2	0	2	3	0	3	6	0	6	5	0	5	2	0	2	1	0	1
18:35	3	1	4	3	0	3	2	0	2	3	0	3	4	0	4	4	0	4	1	0	1	1	0	1
18:40	4	0	4	2	1	3	3	0	3	2	0	2	6	0	6	4	1	5	2	0	2	1	0	1
18:45	2	0	2	2	0	2	2	0	2	2	0	2	4	0	4	4	0	4	2	0	2	1	0	1
18:50	4	0	4	1	0	1	2	0	2	2	0	2	5	0	5	5	0	5	1	0	1	2	0	2
18:55	3	0	3	2	0	2	2	0	2	2	0	2	3	0	3	4	0	4	1	0	1	1	0	1

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Client Atkins Transport Planning
Project Number: ID00836
Junction Number: Site 2
Date of Survey: 24.05.2011
Junction Name: Hulbert Road (N) / Purbrook Way (E) / Hulbert Road (S) / Larchwood Avenue / Purbrook Way (W)
Junction Type: Five Arm Roundabout

Junction Layout



Site Observations

Weather Conditions:

AM Peak:

PM Peak:

Additional Notes (Factors which may impact on survey results such as accidents, roadworks, special events):

None

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Client Atkins Transport Planning
 Date 24.05.2011
 Project Number ID00836
 Junction Name Hulbert Road (N) / Purbrook Way (E) / Hulbert Road (S) / Larchwood Avenue / Purbrook Way (W)

Input by Stefan Niedzwiedzki
 Checked by Paul O'Neill



	Movement 1								Movement 2								Movement 3							
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total
07:00	0	0	0	0	0	0	0	0	3	0	2	0	0	0	0	5	17	0	1	0	0	0	0	18
07:15	0	0	0	0	0	0	0	0	8	0	2	1	0	0	0	11	14	0	0	0	0	0	0	14
07:30	0	0	0	0	0	0	0	0	11	0	8	1	0	0	0	20	8	0	2	0	0	0	2	12
07:45	0	0	0	0	0	0	0	0	26	0	3	0	0	0	0	29	23	0	3	0	0	0	0	26
08:00	0	0	0	0	0	0	0	0	30	0	2	1	0	0	0	33	21	0	0	0	0	1	0	22
08:15	0	0	0	0	0	0	0	0	41	0	7	0	0	0	1	49	21	0	3	0	0	0	0	24
08:30	0	0	0	0	0	0	0	0	57	0	1	1	0	0	0	59	22	0	0	0	0	0	0	22
08:45	0	0	0	0	0	0	0	0	68	0	5	1	1	2	1	78	30	0	0	0	0	0	0	30
09:00	0	0	0	0	0	0	0	0	40	0	2	2	0	0	1	45	15	0	2	0	0	0	0	17
09:15	0	0	0	0	0	0	0	0	20	0	0	1	0	0	0	21	26	0	1	0	0	0	0	27
09:30	0	0	0	0	0	0	0	0	15	0	4	0	0	0	0	19	27	0	3	0	0	0	0	30
09:45	0	0	0	0	0	0	0	0	18	0	3	0	3	0	0	24	29	0	3	0	0	0	0	32
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	0	0	0	0	0	0	0	0	48	0	15	2	0	0	0	65	62	0	6	0	0	0	2	70
07:15	0	0	0	0	0	0	0	0	75	0	15	3	0	0	0	93	66	0	5	0	0	1	2	74
07:30	0	0	0	0	0	0	0	0	108	0	20	2	0	0	1	131	73	0	8	0	0	1	2	84
07:45	0	0	0	0	0	0	0	0	154	0	13	2	0	0	1	170	87	0	6	0	0	1	0	94
08:00	0	0	0	0	0	0	0	0	196	0	15	3	1	2	2	219	94	0	3	0	0	1	0	98
08:15	0	0	0	0	0	0	0	0	206	0	15	4	1	2	3	231	88	0	5	0	0	0	0	93
08:30	0	0	0	0	0	0	0	0	185	0	8	5	1	2	2	203	93	0	3	0	0	0	0	96
08:45	0	0	0	0	0	0	0	0	143	0	11	4	1	2	2	163	98	0	6	0	0	0	0	104
09:00	0	0	0	0	0	0	0	0	93	0	9	3	3	0	1	109	97	0	9	0	0	0	0	106

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Client Atkins Transport Planning
 Date 24.05.2011
 Project Number ID00836
 Junction Name Hulbert Road (N) / Purbrook Way (E) / Hulbert Road (S) / Larchwood Avenue / Purbrook Way (W)

Input by Stefan Niedzwiedzki
 Checked by Paul O'Neill



	Movement 4								Movement 5							Movement 6								
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total
07:00	10	0	4	0	0	0	1	15	31	0	12	1	0	0	0	44	0	0	0	0	0	0	0	0
07:15	35	0	5	1	0	0	1	42	52	0	10	0	0	0	0	62	0	0	0	0	0	0	0	0
07:30	68	0	8	1	0	0	1	78	52	0	6	0	0	0	2	60	1	0	0	0	0	0	0	1
07:45	76	0	12	0	0	0	0	88	72	0	14	0	0	0	1	87	0	0	0	0	0	0	0	0
08:00	72	0	4	1	0	0	0	77	75	0	4	1	0	0	0	80	1	0	0	0	0	0	0	1
08:15	64	0	4	1	0	0	0	69	85	0	13	1	0	1	1	101	0	0	0	0	0	0	0	0
08:30	66	0	3		0	0	0	69	67	0	6	2	0	0	0	76	0	0	0	0	0	0	0	0
08:45	40	0	5	0	1	0	1	47	57	0	9	0	1	0	0	67	1	0	0	0	0	0	0	1
09:00	31	0	5	1	0	0	0	37	64	0	12	0	0	2	0	78	1	0	0	0	0	0	0	1
09:15	21	0	4	0	0	0	0	25	42	0	6	0	0	1	0	49	0	0	1	0	0	0	0	1
09:30	14	0	6	1	0	0	0	21	44	0	10	0	1	0	0	55	0	0	0	0	0	0	0	0
09:45	28	0	4	0	0	0	0	32	52	0	5	1	0	1	1	60	0	0	0	0	0	0	0	0
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	189	0	29	2	0	0	3	223	207	0	42	1	0	0	3	253	1	0	0	0	0	0	0	1
07:15	251	0	29	3	0	0	2	285	251	0	34	1	0	0	3	289	2	0	0	0	0	0	0	2
07:30	280	0	28	3	0	0	1	312	284	0	37	2	0	1	4	328	2	0	0	0	0	0	0	2
07:45	278	0	23	2	0	0	0	303	299	0	37	4	0	1	3	344	1	0	0	0	0	0	0	1
08:00	242	0	16	2	1	0	1	262	284	0	32	4	1	1	2	324	2	0	0	0	0	0	0	2
08:15	201	0	17	2	1	0	1	222	273	0	40	3	1	3	2	322	2	0	0	0	0	0	0	2
08:30	158	0	17	1	1	0	1	178	230	0	33	2	1	3	1	270	2	0	1	0	0	0	0	3
08:45	106	0	20	2	1	0	1	130	207	0	37	0	2	3	0	249	2	0	1	0	0	0	0	3
09:00	94	0	19	2	0	0	0	115	202	0	33	1	1	4	1	242	1	0	1	0	0	0	0	2

Intelligent Data Collection Limited

Client Atkins Transport Planning
Date 24.05.2011
Project Number ID00836
Junction Name Hulbert Road (N) / Purbrook Way (E) / Hulbert Road (S) / Larchwood Avenue / Purbrook Way (W)

Input by Stefan Niedzwiedzki
Checked by Paul O'Neill



Movement 7									Movement 8								Movement 9							
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total
07:00	30	0	21	0	0	0	0	51	76	0	38	0	0	1	3	118	19	0	1	0	0	0	0	20
07:15	44	0	21	0	0	1	3	69	76	0	44	0	0	3	3	126	19	0	4	0	0	0	0	23
07:30	59	0	13	1	0	0	1	74	121	0	31	0	0	2	2	156	14	0	3	0	0	0	1	18
07:45	58	0	10	0	1	0	1	70	96	0	22	1	0	4	2	125	19	0	3	0	0	0	0	22
08:00	54	0	13	0	0	0	1	68	112	0	15	1	0	1	2	131	21	0	1	0	0	0	0	22
08:15	50	0	9	0	0	1	0	60	128	0	18	0	0	4	1	151	27	0	3	0	0	0	0	30
08:30	39	0	10	1	0	0	0	50	92	0	11	0	0	2	5	110	25	0	1	0	0	0	1	27
08:45	49	0	12	1	1	1	0	64	88	0	17	1	0	7	2	115	34	0	1	0	0	0	2	37
09:00	50	0	8	0	0	0	0	58	83	0	14	0	0	0	3	100	50	0	3	0	0	2	0	55
09:15	40	0	6	3	0	2	1	52	69	0	15	1	0	0	2	87	28	0	1	0	0	2	2	33
09:30	41	0	7	1	0	1	1	51	70	0	14	1	1	1	4	91	39	0	2	0	0	1	1	43
09:45	32	0	6	0	0	0	0	38	64	0	10	0	1	2	1	78	36	0	6	0	0	2	1	45
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	191	0	65	1	1	1	5	264	369	0	135	1	0	10	10	525	71	0	11	0	0	0	1	83
07:15	215	0	57	1	1	1	6	281	405	0	112	2	0	10	9	538	73	0	11	0	0	0	1	85
07:30	221	0	45	1	1	1	3	272	457	0	86	2	0	11	7	563	81	0	10	0	0	0	1	92
07:45	201	0	42	1	1	1	2	248	428	0	66	2	0	11	10	517	92	0	8	0	0	0	1	101
08:00	192	0	44	2	1	2	1	242	420	0	61	2	0	14	10	507	107	0	6	0	0	0	3	116
08:15	188	0	39	2	1	2	0	232	391	0	60	1	0	13	11	476	136	0	8	0	0	2	3	149
08:30	178	0	36	5	1	3	1	224	332	0	57	2	0	9	12	412	137	0	6	0	0	4	5	152
08:45	180	0	33	5	1	4	2	225	310	0	60	3	1	8	11	393	151	0	7	0	0	5	5	168
09:00	163	0	27	4	0	3	2	199	286	0	53	2	2	3	10	356	153	0	12	0	0	7	4	176

Intelligent Data Collection Limited

Client Atkins Transport Planning
Date 24.05.2011
Project Number ID00836
Junction Name Hulbert Road (N) / Purbrook Way (E) / Hulbert Road (S) / Larchwood Avenue / Purbrook Way (W)

Input by Stefan Niedzwiedzki
Checked by Paul O'Neill



Movement 10									Movement 11								Movement 12							
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total
07:00	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	5	0	1	0	0	1	0	7
07:15	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	5	0	0	1	0	0	0	6
07:30	1	0	4	0	0	1	0	6	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0	5
07:45	4	0	2	0	0	0	0	6	1	0	0	0	0	0	0	1	5	0	1	0	0	0	0	6
08:00	4	0	1	0	0	0	0	5	0	0	0	0	0	0	0	0	5	0	1	0	0	0	0	6
08:15	4	0	0	1	0	0	0	5	0	0	0	0	0	0	0	0	3	0	2	0	0	0	0	5
08:30	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	8	0	1	0	0	0	0	9
08:45	4	0	1	0	0	0	0	5	0	0	0	0	0	0	0	0	4	0	1	0	0	0	0	5
09:00	5	0	1	0	0	0	0	6	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8
09:15	3	0	2	0	0	0	0	5	0	0	0	0	0	0	0	0	11	0	3	0	0	1	0	15
09:30	4	0	0	1	0	0	0	5	2	0	0	0	0	0	0	2	8	0	2	0	0	0	0	10
09:45	2	0	3	0	0	1	0	6	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	10	0	6	0	0	1	0	17	1	0	0	0	0	0	0	1	16	1	5	1	0	1	0	24
07:15	13	0	7	0	0	1	0	21	1	0	0	0	0	0	0	1	16	1	5	1	0	0	0	23
07:30	13	0	7	1	0	1	0	22	1	0	0	0	0	0	0	1	14	1	7	0	0	0	0	22
07:45	15	0	3	1	0	0	0	19	1	0	0	0	0	0	0	1	21	0	5	0	0	0	0	26
08:00	15	0	2	1	0	0	0	18	0	0	0	0	0	0	0	0	20	0	5	0	0	0	0	25
08:15	16	0	2	1	0	0	0	19	0	0	0	0	0	0	0	0	23	0	4	0	0	0	0	27
08:30	15	0	4	0	0	0	0	19	0	0	0	0	0	0	0	0	31	0	5	0	0	1	0	37
08:45	16	0	4	1	0	0	0	21	2	0	0	0	0	0	0	2	31	0	6	0	0	1	0	38
09:00	14	0	6	1	0	1	0	22	2	0	0	0	0	0	0	2	35	0	5	0	0	1	0	41

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Client Atkins Transport Planning
 Date 24.05.2011
 Project Number ID00836
 Junction Name Hulbert Road (N) / Purbrook Way (E) / Hulbert Road (S) / Larchwood Avenue / Purbrook Way (W)

Input by Stefan Niedzwiedzki
 Checked by Paul O'Neill



Movement 13									Movement 14								Movement 15							
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total
07:00	13	0	4	0	1	0	1	19	8	0	2	0	0	0	0	10	6	0	0	0	0	0	0	6
07:15	10	0	4	0	0	0	0	14	20	0	6	0	0	0	0	26	11	0	1	0	0	0	1	13
07:30	16	0	7	0	0	1	0	24	30	0	10	0	0	0	0	40	6	0	1	0	0	0	0	7
07:45	27	0	4	0	0	1	2	34	40	0	5	1	0	0	0	46	11	0	0	0	0	0	0	11
08:00	29	0	5	1	0	0	0	35	54	0	6	0	0	0	1	61	13	0	1	0	0	0	0	14
08:15	32	0	4	0	0	0	1	37	72	0	4	0	1	0	2	79	17	0	4	0	0	0	0	21
08:30	24	0	5	0	0	0	0	29	45	0	4	0	0	0	2	51	23	0	0	0	0	0	0	23
08:45	27	0	4	0	0	1	0	32	29	0	4	0	0	0	0	33	22	0	3	0	0	0	0	25
09:00	21	0	3	0	0	0	2	26	20	0	6	0	0	0	2	28	24	0	1	0	0	0	0	25
09:15	15	0	1	0	0	0	1	17	12	0	1	1	0	0	0	14	24	0	2	0	0	0	0	26
09:30	13	0	3	0	0	0	0	16	16	0	3	0	1	0	1	21	17	0	0	0	0	0	0	17
09:45	13	0	2	0	0	0	0	15	12	0	3	0	0	0	0	15	27	0	1	0	0	1	0	29
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	66	0	19	0	1	2	3	91	98	0	23	1	0	0	0	122	34	0	2	0	0	0	1	37
07:15	82	0	20	1	0	2	2	107	144	0	27	1	0	0	1	173	41	0	3	0	0	0	1	45
07:30	104	0	20	1	0	2	3	130	196	0	25	1	1	0	3	226	47	0	6	0	0	0	0	53
07:45	112	0	18	1	0	1	3	135	211	0	19	1	1	0	5	237	64	0	5	0	0	0	0	69
08:00	112	0	18	1	0	1	1	133	200	0	18	0	1	0	5	224	75	0	8	0	0	0	0	83
08:15	104	0	16	0	0	1	3	124	166	0	18	0	1	0	6	191	86	0	8	0	0	0	0	94
08:30	87	0	13	0	0	1	3	104	106	0	15	1	0	0	4	126	93	0	6	0	0	0	0	99
08:45	76	0	11	0	0	1	3	91	77	0	14	1	1	0	3	96	87	0	6	0	0	0	0	93
09:00	62	0	9	0	0	0	3	74	60	0	13	1	1	0	3	78	92	0	4	0	0	1	0	97

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Input by Stefan Niedzwiedzki
 Checked by Paul O'Neill



Movement 16									Movement 17								Movement 18							
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total
07:00	1	0	0	0	0	0	0	1	4	0	0	0	0	0	0	4	16	0	1	0	0	0	0	17
07:15	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	4	10	0	2	0	0	0	0	12
07:30	1	0	0	0	0	0	0	1	7	0	0	0	0	0	0	7	15	0	1	0	0	0	0	16
07:45	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	6	0	4	0	0	0	0	10
08:00	1	0	0	0	0	0	0	1	10	0	0	0	0	0	0	10	12	0	3	0	0	0	1	16
08:15	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9	13	0	1	0	0	0	0	14
08:30	1	0	0	0	0	0	0	1	10	0	0	0	0	0	0	10	16	0	2	0	0	1	0	19
08:45	0	0	0	0	0	0	0	0	7	0	1	0	0	0	0	8	16	0	0	0	0	1	1	18
09:00	0	0	0	0	0	0	0	0	13	0	2	1	0	0	0	16	20	0	2	0	0	2	1	25
09:15	2	0	0	0	0	0	0	2	14	0	2	0	0	0	0	16	26	0	3	0	0	2	0	31
09:30	1	0	0	0	0	0	0	1	10	0	3	0	0	0	0	13	29	0	2	0	0	2	2	35
09:45	0	0	0	0	0	0	0	0	14	0	2	0	0	0	0	16	35	0	4	0	0	1	0	40
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	2	0	0	0	0	0	0	2	17	0	1	0	0	0	0	18	47	0	8	0	0	0	0	55
07:15	2	0	0	0	0	0	0	2	23	0	1	0	0	0	0	24	43	0	10	0	0	0	1	54
07:30	2	0	0	0	0	0	0	2	29	0	0	0	0	0	0	29	46	0	9	0	0	0	1	56
07:45	2	0	0	0	0	0	0	2	32	0	0	0	0	0	0	32	47	0	10	0	0	1	1	59
08:00	2	0	0	0	0	0	0	2	36	0	1	0	0	0	0	37	57	0	6	0	0	2	2	67
08:15	1	0	0	0	0	0	0	1	39	0	3	1	0	0	0	43	65	0	5	0	0	4	2	76
08:30	3	0	0	0	0	0	0	3	44	0	5	1	0	0	0	50	78	0	7	0	0	6	2	93
08:45	3	0	0	0	0	0	0	3	44	0	8	1	0	0	0	53	91	0	7	0	0	7	4	109
09:00	3	0	0	0	0	0	0	3	51	0	9	1	0	0	0	61	110	0	11	0	0	7	3	131

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Input by Stefan Niedzwiedzki
Checked by Paul O'Neill



	Movement 19								Movement 20								Movement 21							
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total
07:00	13	0	1	0	0	0	0	14	29	0	2	0	0	0	0	31	0	0	0	0	0	0	0	0
07:15	13	0	2	0	0	0	1	16	21	0	3	0	0	0	0	24	0	0	0	0	0	0	0	0
07:30	4	0	1	0	0	0	0	5	26	0	6	1	0	0	0	33	0	0	0	0	0	0	0	0
07:45	10	0	4	0	0	0	0	14	23	0	5	1	0	1	1	31	1	0	0	0	0	0	0	1
08:00	10	0	4	0	0	0	0	14	28	0	4	0	0	0	0	32	0	0	0	0	0	0	0	0
08:15	10	0	3	0	0	0	0	13	29	0	9	0	0	0	3	41	0	0	0	0	0	0	0	0
08:30	10	0	1	0	0	0	0	11	40	0	5	0	0	0	0	45	0	0	1	0	0	0	0	1
08:45	18	0	4	0	0	0	0	22	33	0	3	0	0	0	0	36	0	0	0	0	0	0	0	0
09:00	11	0	2	0	0	0	0	13	43	0	1	0	0	1	0	45	0	0	0	0	0	0	0	0
09:15	15	0	1	0	0	0	0	16	45	0	1	0	0	2	0	48	1	0	0	0	0	0	0	1
09:30	19	0	0	0	0	0	0	19	32	0	1	0	0	1	0	34	0	0	0	0	0	0	0	0
09:45	21	0	2	0	0	1	0	24	48	0	5	0	0	2	1	56	0	0	0	0	0	0	0	0
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	40	0	8	0	0	0	1	49	99	0	16	2	0	1	1	119	1	0	0	0	0	0	0	1
07:15	37	0	11	0	0	0	1	49	98	0	18	2	0	1	1	120	1	0	0	0	0	0	0	1
07:30	34	0	12	0	0	0	0	46	106	0	24	2	0	1	4	137	1	0	0	0	0	0	0	1
07:45	40	0	12	0	0	0	0	52	120	0	23	1	0	1	4	149	1	0	1	0	0	0	0	2
08:00	48	0	12	0	0	0	0	60	130	0	21	0	0	0	3	154	0	0	1	0	0	0	0	1
08:15	49	0	10	0	0	0	0	59	145	0	18	0	0	1	3	167	0	0	1	0	0	0	0	1
08:30	54	0	8	0	0	0	0	62	161	0	10	0	0	3	0	174	1	0	1	0	0	0	0	2
08:45	63	0	7	0	0	0	0	70	153	0	6	0	0	4	0	163	1	0	0	0	0	0	0	1
09:00	66	0	5	0	0	1	0	72	168	0	8	0	0	6	1	183	1	0	0	0	0	0	0	1

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Input by Stefan Niedzwiedzki
Checked by Paul O'Neill



Movement 22									Movement 23									Movement 24								
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total		
07:00	28	0	3	0	0	0	0	31	9	0	7	1	0	0	1	18	49	0	22	1	0	4	1	77		
07:15	26	0	2	0	0	0	0	28	8	0	3	0	0	0	2	13	53	0	10	0	0	0	1	64		
07:30	27	0	6	0	0	0	1	34	18	0	6	0	0	0	0	24	79	0	21	0	0	4	2	106		
07:45	30	0	6	0	0	0	5	41	28	0	6	0	0	0	1	35	101	0	27	1	0	2	0	131		
08:00	28	0	5	0	0	0	0	33	31	0	5	0	0	0	0	36	97	0	19	0	0	2	1	119		
08:15	37	0	3	0	0	0	0	40	29	0	4	0	0	1	0	34	99	0	13	0	1	1	0	114		
08:30	51	0	4	1	0	0	0	56	50	0	3	0	0	0	0	53	107	0	23	2	1	5	0	138		
08:45	52	0	4	0	0	0	0	56	41	0	2	0	0	1	0	44	90	0	22	1	0	2	0	115		
09:00	60	0	4	0	0	2	0	66	24	0	4	2	0	2	0	32	77	0	18	0	0	4	0	99		
09:15	62	0	4	0	0	2	0	68	14	0	2	0	0	1	0	17	71	0	22	0	0	3	0	96		
09:30	53	0	5	0	0	2	0	60	10	0	4	0	0	0	0	14	67	0	15	4	0	1	0	87		
09:45	44	0	4	0	0	1	0	49	13	0	2	1	0	1	0	17	67	0	13	3	1	0	0	84		
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total		
07:00	111	0	17	0	0	0	6	134	63	0	22	1	0	0	4	90	282	0	80	2	0	10	4	378		
07:15	111	0	19	0	0	0	6	136	85	0	20	0	0	0	3	108	330	0	77	1	0	8	4	420		
07:30	122	0	20	0	0	0	6	148	106	0	21	0	0	1	1	129	376	0	80	1	1	9	3	470		
07:45	146	0	18	1	0	0	5	170	138	0	18	0	0	1	1	158	404	0	82	3	2	10	1	502		
08:00	168	0	16	1	0	0	0	185	151	0	14	0	0	2	0	167	393	0	77	3	2	10	1	486		
08:15	200	0	15	1	0	2	0	218	144	0	13	2	0	4	0	163	373	0	76	3	2	12	0	466		
08:30	225	0	16	1	0	4	0	246	129	0	11	2	0	4	0	146	345	0	85	3	1	14	0	448		
08:45	227	0	17	0	0	6	0	250	89	0	12	2	0	4	0	107	305	0	77	5	0	10	0	397		
09:00	219	0	17	0	0	7	0	243	61	0	12	3	0	4	0	80	282	0	68	7	1	8	0	366		

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Input by
Checked by

Stefan Niedzwiedzki
 Paul O'Neill



Movement 25								
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total
07:00	8	0	6	1	0	0	0	15
07:15	11	0	7	1	0	0	0	19
07:30	12	0	4	1	0	0	0	17
07:45	13	0	7	1	0	0	0	21
08:00	8	0	8	0	1	0	0	17
08:15	25	0	9	0	0	0	0	34
08:30	27	0	6	1	0	0	0	34
08:45	18	0	4	0	0	1	1	24
09:00	16	0	6	2	0	0	0	24
09:15	12	0	1	1	0	0	0	14
09:30	14	0	6	1	0	0	0	21
09:45	24	0	4	0	0	0	0	28
Start Time	Rolling Hour							Total
07:00	44	0	24	4	0	0	0	72
07:15	44	0	26	3	1	0	0	74
07:30	58	0	28	2	1	0	0	89
07:45	73	0	30	2	1	0	0	106
08:00	78	0	27	1	1	1	1	109
08:15	86	0	25	3	0	1	1	116
08:30	73	0	17	4	0	1	1	96
08:45	60	0	17	4	0	1	1	83
09:00	66	0	17	4	0	0	0	87

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Input by Stefan Niedzwiedzki
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Time	Movement 1								Movement 2								Movement 3										
	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total			
07:00	0	0	0	0	0	0	0	0	21	0	4	2	0	0	0	27	15	0	3	0	0	0	0	18			
07:15	0	0	0	0	0	0	0	0	19	0	7	0	0	0	0	26	21	0	2	0	0	0	0	23			
07:30	0	0	0	0	0	0	0	0	16	0	8	0	0	0	0	24	24	0	2	0	0	0	1	27			
07:45	0	0	0	0	0	0	0	0	17	0	7	0	0	0	0	24	22	0	3	0	0	0	0	25			
08:00	1	0	0	0	0	0	0	1	22	0	9	0	0	0	0	31	12	0	2	0	0	0	0	14			
08:15	0	0	0	0	0	0	0	0	29	0	4	0	0	0	0	33	20	0	3	0	0	0	0	23			
08:30	0	0	0	0	0	0	0	0	19	0	10	0	0	0	0	29	36	0	0	0	0	0	0	36			
08:45	0	0	0	0	0	0	0	0	24	0	3	0	0	0	1	28	24	0	2	0	0	0	1	27			
09:00	1	0	0	0	0	0	0	1	22	0	3	0	0	0	1	26	24	0	0	0	0	0	0	24			
09:15	1	0	0	0	0	0	0	1	19	0	4	0	0	0	0	23	25	0	1	0	0	0	0	26			
09:30	0	0	0	0	0	0	0	0	18	0	1	0	0	1	0	20	19	0	2	0	0	0	0	21			
09:45	0	0	0	0	0	0	0	0	17	0	5	0	0	0	0	22	18	0	2	0	0	0	0	20			
Start Time	Rolling Hour								Total	Rolling Hour								Total	Rolling Hour								Total
07:00	0	0	0	0	0	0	0	0	73	0	26	2	0	0	0	101	82	0	10	0	0	0	1	93			
07:15	1	0	0	0	0	0	0	1	74	0	31	0	0	0	0	105	79	0	9	0	0	0	1	89			
07:30	1	0	0	0	0	0	0	1	84	0	28	0	0	0	0	112	78	0	10	0	0	0	1	89			
07:45	1	0	0	0	0	0	0	1	87	0	30	0	0	0	0	117	90	0	8	0	0	0	0	98			
08:00	1	0	0	0	0	0	0	1	94	0	26	0	0	0	1	121	92	0	7	0	0	0	1	100			
08:15	1	0	0	0	0	0	0	1	94	0	20	0	0	0	2	116	104	0	5	0	0	0	1	110			
08:30	2	0	0	0	0	0	0	2	84	0	20	0	0	0	2	106	109	0	3	0	0	0	1	113			
08:45	2	0	0	0	0	0	0	2	83	0	11	0	0	1	2	97	92	0	5	0	0	0	1	98			
09:00	2	0	0	0	0	0	0	2	76	0	13	0	0	1	1	91	86	0	5	0	0	0	0	91			

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Input by Stefan Niedzwiedzki
 Checked by Paul O'Neill



	Movement 4								Movement 5								Movement 6							
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total
07:00	24	0	7	0	0	0	0	31	45	0	20	0	0	0	1	66	0	0	0	0	0	0	0	0
07:15	26	0	5	0	0	1	0	32	35	0	19	0	0	0	2	56	0	0	0	0	0	0	0	0
07:30	21	0	4	0	0	0	1	26	59	0	18	0	0	0	1	78	0	0	0	0	0	0	0	0
07:45	27	0	9	0	0	0	1	37	48	0	18	0	0	1	1	68	0	0	0	0	0	0	0	0
08:00	28	0	5	0	0	0	3	36	62	0	19	0	0	0	2	83	1	0	0	0	0	0	0	1
08:15	34	0	6	0	0	0	0	40	71	0	16	1	0	0	1	89	0	0	0	0	0	0	0	0
08:30	23	0	3	0	0	0	1	27	64	0	15	0	1	0	0	80	0	0	0	0	0	0	0	0
08:45	22	0	3	0	0	0	0	25	52	0	9	0	0	0	1	62	1	0	0	0	0	0	0	1
09:00	33	0	1	0	0	0	0	34	62	0	5	0	0	0	1	68	5	0	1	0	0	0	0	6
09:15	20	0	5	0	0	0	0	25	61	0	6	1	0	0	0	68	2	0	1	0	0	0	0	3
09:30	22	0	3	0	0	0	0	25	46	0	7	1	0	0	1	55	2	0	0	0	0	0	0	2
09:45	22	0	2	0	0	0	0	24	50	0	10	0	0	0	0	60	0	0	0	0	0	0	0	0
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	98	0	25	0	0	1	2	126	187	0	75	0	0	1	5	268	0	0	0	0	0	0	0	0
07:15	102	0	23	0	0	1	5	131	204	0	74	0	0	1	6	285	1	0	0	0	0	0	0	1
07:30	110	0	24	0	0	0	5	139	240	0	71	1	0	1	5	318	1	0	0	0	0	0	0	1
07:45	112	0	23	0	0	0	5	140	245	0	68	1	1	1	4	320	1	0	0	0	0	0	0	1
08:00	107	0	17	0	0	0	4	128	249	0	59	1	1	0	4	314	2	0	0	0	0	0	0	2
08:15	112	0	13	0	0	0	1	126	249	0	45	1	1	0	3	299	6	0	1	0	0	0	0	7
08:30	98	0	12	0	0	0	1	111	239	0	35	1	1	0	2	278	8	0	2	0	0	0	0	10
08:45	97	0	12	0	0	0	0	109	221	0	27	2	0	0	3	253	10	0	2	0	0	0	0	12
09:00	97	0	11	0	0	0	0	108	219	0	28	2	0	0	2	251	9	0	2	0	0	0	0	11

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Input by Stefan Niedzwiedzki
 Checked by Paul O'Neill



	Movement 7								Movement 8								Movement 9										
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total			
07:00	50	0	5	1	0	1	0	57	92	0	13	1	0	1	1	108	29	0	1	0	0	0	0	30			
07:15	42	0	10	0	0	1	1	54	70	0	21	1	1	3	1	97	44	0	6	0	0	1	2	53			
07:30	56	0	15	0	0	0	1	72	86	0	23	0	0	1	1	111	37	0	5	1	0	1	0	44			
07:45	65	0	12	0	0	0	1	78	84	0	18	0	0	2	0	104	35	0	2	0	0	0	1	38			
08:00	74	0	6	0	0	0	2	82	88	0	22	0	0	2	2	114	31	0	0	0	0	0	1	32			
08:15	72	0	12	0	0	0	1	85	87	0	18	1	0	3	3	112	33	0	2	0	0	0	0	35			
08:30	75	0	12	1	0	0	0	88	82	0	11	1	0	1	0	95	24	0	3	0	0	0	2	29			
08:45	52	0	7	0	0	0	2	61	93	0	13	0	0	3	2	111	38	0	3	0	0	0	1	42			
09:00	62	0	13	1	0	1	1	78	106	0	15	0	0	2	2	125	34	0	3	0	0	0	0	37			
09:15	33	0	2	0	1	0	0	36	89	0	13	0	0	3	1	106	39	0	3	0	0	0	0	42			
09:30	41	0	2	0	0	0	0	43	87	0	5	0	0	2	2	96	30	0	4	0	0	0	2	36			
09:45	41	0	2	0	0	0	0	43	63	0	5	0	0	3	2	73	30	0	4	0	0	0	0	34			
Start Time	Rolling Hour								Total	Rolling Hour								Total	Rolling Hour								Total
07:00	213	0	42	1	0	2	3	261	332	0	75	2	1	7	3	420	145	0	14	1	0	2	3	165			
07:15	237	0	43	0	0	1	5	286	328	0	84	1	1	8	4	426	147	0	13	1	0	2	4	167			
07:30	267	0	45	0	0	0	5	317	345	0	81	1	0	8	6	441	136	0	9	1	0	1	2	149			
07:45	286	0	42	1	0	0	4	333	341	0	69	2	0	8	5	425	123	0	7	0	0	0	4	134			
08:00	273	0	37	1	0	0	5	316	350	0	64	2	0	9	7	432	126	0	8	0	0	0	4	138			
08:15	261	0	44	2	0	1	4	312	368	0	57	2	0	9	7	443	129	0	11	0	0	0	3	143			
08:30	222	0	34	2	1	1	3	263	370	0	52	1	0	9	5	437	135	0	12	0	0	0	3	150			
08:45	188	0	24	1	1	1	3	218	375	0	46	0	0	10	7	438	141	0	13	0	0	0	3	157			
09:00	177	0	19	1	1	1	1	200	345	0	38	0	0	10	7	400	133	0	14	0	0	0	2	149			

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Input by Stefan Niedzwiedzki
 Checked by Paul O'Neill



	Movement 10								Movement 11								Movement 12							
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total
07:00	12	0	3	0	0	0	0	15	0	0	0	0	0	0	0	0	5	0	3	0	0	0	0	8
07:15	7	0	2	0	0	1	0	10	0	0	0	0	0	0	0	0	7	0	3	0	0	0	0	10
07:30	5	0	1	0	0	0	0	6	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	6
07:45	4	0	2	0	0	0	0	6	0	0	0	0	0	0	0	0	7	0	1	0	0	0	0	8
08:00	5	0	1	0	0	0	0	6	0	0	0	0	0	0	0	0	3	0	2	0	0	0	0	5
08:15	8	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	10	0	1	0	0	0	0	11
08:30	8	0	1	0	0	0	0	9	0	0	0	0	0	0	0	0	7	0	1	0	0	0	1	9
08:45	5	0	1	0	0	0	0	6	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
09:00	7	0	2	0	0	0	0	9	0	0	0	0	0	0	0	0	4	0	0	0	0	1	0	5
09:15	6	0	1	0	0	1	0	8	0	0	0	0	0	0	0	0	10	0	4	0	0	0	0	14
09:30	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	5	0	2	0	0	0	0	7
09:45	10	0	1	0	0	0	0	11	0	0	0	0	0	0	0	0	4	0	0	0	0	0	1	5
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	28	0	8	0	0	1	0	37	0	0	0	0	0	0	0	0	25	0	7	0	0	0	0	32
07:15	21	0	6	0	0	1	0	28	0	0	0	0	0	0	0	0	23	0	6	0	0	0	0	29
07:30	22	0	4	0	0	0	0	26	0	0	0	0	0	0	0	0	26	0	4	0	0	0	0	30
07:45	25	0	4	0	0	0	0	29	0	0	0	0	0	0	0	0	27	0	5	0	0	0	0	33
08:00	26	0	3	0	0	0	0	29	0	0	0	0	0	0	0	0	23	0	4	0	0	0	1	28
08:15	28	0	4	0	0	0	0	32	0	0	0	0	0	0	0	0	24	0	2	0	0	1	1	28
08:30	26	0	5	0	0	1	0	32	0	0	0	0	0	0	0	0	24	0	5	0	0	1	1	31
08:45	23	0	4	0	0	1	0	28	0	0	0	0	0	0	0	0	22	0	6	0	0	1	0	29
09:00	28	0	4	0	0	1	0	33	0	0	0	0	0	0	0	0	23	0	6	0	0	1	1	31

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Input by Stefan Niedzwiedzki
 Checked by Paul O'Neill



	Movement 13								Movement 14								Movement 15							
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total
07:00	22	0	6	0	0	0	0	28	19	0	4	1	0	0	1	25	18	0	2	0	0	0	0	20
07:15	32	0	1	0	0	0	0	33	22	0	5	0	0	1	1	29	19	0	3	1	0	0	1	24
07:30	20	0	6	0	0	0	1	27	13	0	4	0	0	0	2	19	32	0	7	0	0	0	0	39
07:45	35	0	4	0	0	0	0	39	27	0	1	0	0	2	0	30	20	0	2	0	0	0	0	22
08:00	39	0	3	0	0	0	0	42	25	0	7	0	0	0	0	32	23	0	1	0	0	0	0	24
08:15	32	0	5	0	0	0	0	37	22	0	6	0	0	0	0	28	18	0	4	0	0	0	0	22
08:30	40	0	3	0	0	0	1	44	22	0	4	0	0	0	0	26	28	0	6	0	0	0	1	35
08:45	26	0	1	0	0	0	1	28	21	0	3	0	0	0	0	24	26	0	1	0	0	0	1	28
09:00	29	0	5	0	0	0	0	34	20	0	2	0	0	0	2	24	28	0	3	0	0	0	0	31
09:15	27	0	1	0	0	0	1	29	20	0	1	0	0	0	2	23	27	0	4	0	0	0	1	32
09:30	23	0	3	0	0	0	0	26	19	0	4	0	0	0	1	24	19	0	1	0	0	0	0	20
09:45	19	0	1	0	0	0	0	20	14	0	1	0	0	0	0	15	14	0	0	0	0	0	0	14
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	109	0	17	0	0	0	1	127	81	0	14	1	0	3	4	103	89	0	14	1	0	0	1	105
07:15	126	0	14	0	0	0	1	141	87	0	17	0	0	3	3	110	94	0	13	1	0	0	1	109
07:30	126	0	18	0	0	0	1	145	87	0	18	0	0	2	2	109	93	0	14	0	0	0	0	107
07:45	146	0	15	0	0	0	1	162	96	0	18	0	0	2	0	116	89	0	13	0	0	0	1	103
08:00	137	0	12	0	0	0	2	151	90	0	20	0	0	0	0	110	95	0	12	0	0	0	2	109
08:15	127	0	14	0	0	0	2	143	85	0	15	0	0	0	2	102	100	0	14	0	0	0	2	116
08:30	122	0	10	0	0	0	3	135	83	0	10	0	0	0	4	97	109	0	14	0	0	0	3	126
08:45	105	0	10	0	0	0	2	117	80	0	10	0	0	0	5	95	100	0	9	0	0	0	2	111
09:00	98	0	10	0	0	0	1	109	73	0	8	0	0	0	5	86	88	0	8	0	0	0	1	97

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 Checked by Paul O'Neill



	Movement 16								Movement 17							Movement 18								
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total
07:00	0	0	0	0	0	0	0	0	17	0	1	1	0	0	0	19	47	0	5	0	0	2	0	54
07:15	0	0	0	0	0	0	0	0	14	0	1	0	0	0	0	15	39	0	4	1	0	0	1	45
07:30	2	0	0	0	0	0	0	2	18	0	1	0	0	0	2	21	46	0	5	0	0	0	2	53
07:45	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	15	42	0	4	0	0	0	1	47
08:00	0	0	0	0	0	0	0	0	16	0	1	0	0	0	1	18	46	0	3	0	0	0	2	51
08:15	1	0	0	0	0	0	0	1	12	0	1	0	0	0	1	14	37	0	7	0	0	0	0	41
08:30	0	0	0	0	0	0	0	0	20	0	5	0	0	0	0	25	50	0	3	0	0	0	0	53
08:45	0	0	0	0	0	0	0	0	20	0	5	0	0	0	0	25	38	0	3	0	0	0	0	41
09:00	1	0	0	0	0	0	0	1	26	0	1	0	0	0	0	27	40	0	4	0	0	0	1	45
09:15	0	0	0	0	0	0	0	0	18	0	1	0	0	0	1	20	43	0	1	0	0	0	2	46
09:30	2	0	0	0	0	0	0	2	15	0	1	0	0	0	1	17	30	0	5	0	0	0	1	36
09:45	2	0	0	0	0	0	0	2	15	0	2	0	0	0	1	18	42	0	5	0	0	0	1	48
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	2	0	0	0	0	0	0	2	64	0	3	1	0	0	2	70	174	0	18	1	0	2	4	199
07:15	2	0	0	0	0	0	0	2	63	0	3	0	0	0	3	69	173	0	16	1	0	0	6	196
07:30	3	0	0	0	0	0	0	3	66	0	3	0	0	0	4	73	168	0	19	0	0	0	5	192
07:45	1	0	0	0	0	0	0	1	60	0	3	0	0	0	3	66	172	0	17	0	0	0	3	192
08:00	1	0	0	0	0	0	0	1	65	0	8	0	0	0	3	76	168	0	16	0	0	0	2	186
08:15	2	0	0	0	0	0	0	2	75	0	8	0	0	0	2	85	162	0	17	0	0	0	1	180
08:30	1	0	0	0	0	0	0	1	76	0	8	0	0	0	2	86	171	0	11	0	0	0	3	185
08:45	3	0	0	0	0	0	0	3	79	0	8	0	0	0	2	89	151	0	13	0	0	0	4	168
09:00	5	0	0	0	0	0	0	5	74	0	5	0	0	0	3	82	155	0	15	0	0	0	5	175

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	Movement 19								Movement 20								Movement 21							
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total
07:00	31	0	1	0	0	0	0	32	72	0	4	0	0	0	0	76	1	0	0	0	0	0	0	1
07:15	35	0	2	0	0	0	0	37	58	0	1	0	0	1	0	60	0	0	0	0	0	0	0	0
07:30	38	0	2	0	0	0	0	41	44	0	10	0	0	1	0	55	0	0	0	0	0	0	0	0
07:45	29	0	4	0	0	0	1	34	53	0	5	0	0	0	0	58	0	0	2	0	0	0	0	2
08:00	33	0	2	0	0	0	2	37	49	0	6	0	0	0	3	58	0	0	1	0	0	0	0	1
08:15	22	0	4	0	0	0	0	26	54	0	7	0	0	0	1	62	0	0	0	0	0	0	0	0
08:30	31	0	3	0	0	0	0	34	70	0	1	0	0	0	0	71	0	0	0	0	0	0	0	0
08:45	31	0	2	0	0	0	0	33	64	0	4	0	0	0	1	69	0	0	0	0	0	0	0	0
09:00	33	0	3	0	0	1	0	37	52	0	3	0	0	0	0	55	1	0	0	0	0	0	0	1
09:15	30	0	1	0	0	0	0	31	61	0	7	0	0	0	2	70	0	0	0	0	0	0	0	0
09:30	26	0	2	0	0	0	0	28	60	0	11	0	0	0	1	72	0	0	0	0	0	0	0	0
09:45	38	0	1	0	0	0	1	40	51	0	5	0	0	0	1	57	1	0	0	0	0	0	0	1
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	133	0	9	0	0	0	2	144	227	0	20	0	0	2	0	249	1	0	2	0	0	0	0	3
07:15	135	0	10	0	0	0	4	149	204	0	22	0	0	2	3	231	0	0	3	0	0	0	0	3
07:30	122	0	12	0	0	0	4	138	200	0	28	0	0	1	4	233	0	0	3	0	0	0	0	3
07:45	115	0	13	0	0	0	3	131	226	0	19	0	0	0	4	249	0	0	3	0	0	0	0	3
08:00	117	0	11	0	0	0	2	130	237	0	18	0	0	0	5	260	0	0	1	0	0	0	0	1
08:15	117	0	12	0	0	1	0	130	240	0	15	0	0	0	2	257	1	0	0	0	0	0	0	1
08:30	125	0	9	0	0	1	0	135	247	0	15	0	0	0	3	265	1	0	0	0	0	0	0	1
08:45	120	0	8	0	0	1	0	129	237	0	25	0	0	0	4	266	1	0	0	0	0	0	0	1
09:00	127	0	7	0	0	1	1	136	224	0	26	0	0	0	4	254	2	0	0	0	0	0	0	2

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Input by Stefan Niedzwiedzki
 Checked by Paul O'Neill



Movement 22									Movement 23									Movement 24								
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total		
07:00	43	0	2	0	0	3	3	51	22	0	2	1	0	0	0	25	106	0	26	0	0	0	3	135		
07:15	59	0	5	0	0	2	1	67	23	0	5	1	0	0	0	29	118	0	26	0	0	1	2	147		
07:30	59	0	10	1	0	2	1	73	21	0	2	0	0	0	1	24	105	0	32	0	0	3	2	142		
07:45	49	0	12	0	0	0	1	62	26	0	4	1	0	1	1	33	118	0	22	0	1	1	3	145		
08:00	48	0	7	0	0	0	2	57	28	0	2	0	0	0	0	30	98	0	32	0	0	2	0	132		
08:15	67	0	8	0	0	0	1	76	28	0	4	0	0	0	0	32	105	0	17	2	0	1	1	126		
08:30	46	0	7	0	0	0	0	53	27	0	4	0	0	0	0	31	98	0	21	0	0	4	6	129		
08:45	53	0	5	0	0	0	0	58	22	0	4	0	0	0	0	26	102	0	22	0	0	1	6	131		
09:00	57	0	4	0	0	1	0	62	15	0	4	0	0	0	0	20	100	0	22	0	0	2	2	126		
09:15	57	0	7	0	1	0	1	66	7	0	0	0	0	0	0	7	97	0	7	14	0	2	1	114		
09:30	60	0	5	0	0	0	1	66	19	0	3	0	0	0	0	22	91	0	15	0	0	2	0	108		
09:45	49	0	2	0	0	0	0	51	19	0	2	0	0	0	0	21	78	0	20	1	0	1	1	101		
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total		
07:00	210	0	29	1	0	7	6	253	92	0	13	3	0	1	2	111	447	0	106	0	1	5	10	569		
07:15	215	0	34	1	0	4	5	259	98	0	13	2	0	1	2	116	439	0	112	0	1	7	7	566		
07:30	223	0	37	1	0	2	5	268	103	0	12	1	0	1	2	119	426	0	103	2	1	7	6	545		
07:45	210	0	34	0	0	0	4	248	109	0	14	1	0	1	1	126	419	0	92	2	1	8	10	532		
08:00	214	0	27	0	0	0	3	244	105	0	14	0	0	0	0	119	403	0	92	2	0	8	13	518		
08:15	223	0	24	0	0	1	1	249	92	0	16	0	0	0	1	109	405	0	82	2	0	8	15	512		
08:30	213	0	23	0	1	1	1	239	71	0	12	0	0	0	1	84	397	0	79	0	0	9	15	500		
08:45	227	0	21	0	1	1	2	252	63	0	11	0	0	0	1	75	390	0	73	0	0	7	9	479		
09:00	223	0	18	0	1	1	2	245	60	0	9	0	0	0	1	70	366	0	71	1	0	7	4	449		

Intelligent Data Collection Limited

Client Atkins Transport Planning
Date 24.05.2011
Project Number ID00836
Junction Name Hulbert Road (N) / Purbrook Way (E) / Hulbert Road (S) / Larchwood Avenue / Purbrook Way (W)

Input by
Checked by



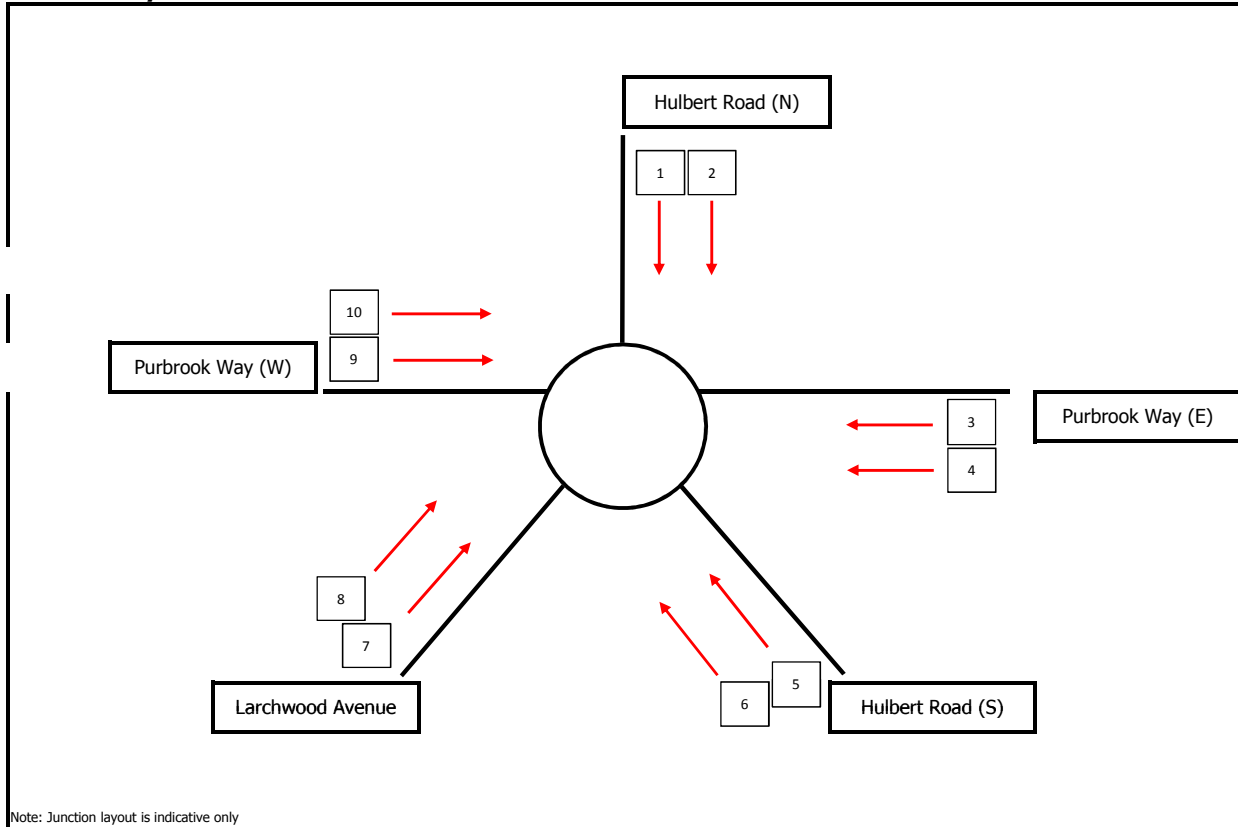
Movement 25								
Time	Cars	Taxi	LGV	OGV1	OGV2	PSV	M/C	Total
07:00	12	0	3	0	0	0	0	15
07:15	22	0	6	0	0	0	0	28
07:30	23	0	3	0	0	0	0	26
07:45	15	0	4	0	0	0	0	19
08:00	19	0	1	0	0	0	0	20
08:15	22	0	3	1	0	0	0	26
08:30	18	0	5	0	0	1	0	24
08:45	11	0	2	0	0	0	0	13
09:00	18	0	6	0	0	0	0	24
09:15	21	0	0	0	0	0	0	21
09:30	12	0	1	0	0	0	0	13
09:45	17	0	2	0	0	0	0	19
Start Time	Rolling Hour							Total
07:00	72	0	16	0	0	0	0	88
07:15	79	0	14	0	0	0	0	93
07:30	79	0	11	1	0	0	0	91
07:45	74	0	13	1	0	1	0	89
08:00	70	0	11	1	0	1	0	83
08:15	69	0	16	1	0	1	0	87
08:30	68	0	13	0	0	1	0	82
08:45	62	0	9	0	0	0	0	71
09:00	68	0	9	0	0	0	0	77

Intelligent Data Collection Limited



Client Atkins Transport Planning
Project Number: ID00836
Junction Number: Site 2
Date of Survey: 24.05.2011
Junction Name: Hulbert Road (N) / Purbrook Way (E) / Hulbert Road (S) / Larchwood Avenue / Purbrook Way (W)
Junction Type: Five Arm Roundabout

Junction Layout



Site Observations

Weather Conditions:

AM Peak:

PM Peak:

Additional Notes (Factors which may impact on survey results such as accidents, roadworks, special events):

None

Intelligent Data Collection Limited

Client Atkins Transport Planning
 Date 24.05.2011
 Project Number ID00836
 Junction Name Hulbert Road (N) / Purbrook Way (E) / Hulbert Road (S) / Larchwood Avenue / Purbrook Way (W)

Input by
 Checked by

Stefan Niedzwiedzki
 Paul O'Neill



Time	Movement 1			Movement 2			Movement 3			Movement 4			Movement 5		
	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total
07:00	0	0	0	2	0	2	1	0	1	3	0	3	0	0	0
07:05	0	0	0	3	1	4	2	0	2	3	0	3	1	0	1
07:10	0	0	0	2	0	2	1	0	1	5	0	5	1	0	1
07:15	1	0	1	4	0	4	1	0	1	4	0	4	0	0	0
07:20	1	0	1	2	1	3	1	0	1	3	0	3	0	0	0
07:25	1	0	1	3	0	3	1	0	1	4	0	4	1	0	1
07:30	1	1	2	5	0	5	3	0	3	3	0	3	1	0	1
07:35	1	0	1	5	0	5	3	0	3	9	0	9	0	0	0
07:40	1	0	1	5	0	5	1	1	2	4	0	4	0	0	0
07:45	4	0	4	5	0	5	4	0	4	7	0	7	0	0	0
07:50	4	0	4	6	0	6	6	0	6	7	1	8	1	0	1
07:55	5	0	5	6	0	6	2	0	2	6	0	6	1	0	1
08:00	2	0	2	5	0	5	3	0	3	8	0	8	1	0	1
08:05	3	0	3	5	0	5	3	0	3	3	0	3	1	0	1
08:10	2	0	2	5	1	6	2	0	2	5	0	5	2	0	2
08:15	4	0	4	6	0	6	1	0	1	4	0	4	1	0	1
08:20	4	0	4	4	0	4	1	0	1	3	1	4	1	0	1
08:25	2	0	2	5	0	5	1	0	1	3	0	3	2	0	2
08:30	5	0	5	6	0	6	4	0	4	4	1	5	1	0	1
08:35	5	0	5	6	0	6	3	0	3	3	0	3	1	0	1
08:40	5	0	5	6	0	6	1	0	1	2	0	2	1	0	1
08:45	5	0	5	5	0	5	2	0	2	2	1	3	1	0	1
08:50	4	0	4	5	0	5	2	0	2	3	0	3	2	0	2
08:55	5	0	5	5	0	5	4	0	4	5	0	5	1	0	1
09:00	6	0	6	6	0	6	2	0	2	4	0	4	2	0	2
09:05	2	1	3	6	0	6	1	0	1	4	0	4	1	0	1
09:10	3	0	3	5	0	5	1	0	1	5	0	5	1	0	1
09:15	4	1	5	5	0	5	3	0	3	3	0	3	2	0	2
09:20	2	0	2	5	0	5	1	0	1	2	0	2	1	0	1
09:25	4	0	4	6	0	6	1	0	1	2	0	2	0	0	0
09:30	4	0	4	5	0	5	2	0	2	5	0	5	1	0	1
09:35	6	0	6	7	0	7	1	0	1	1	0	1	0	0	0
09:40	3	0	3	5	0	5	1	0	1	2	0	2	1	0	1
09:45	4	0	4	3	0	3	3	0	3	4	0	4	1	0	1
09:50	7	0	7	5	0	5	1	0	1	2	0	2	1	0	1
09:55	3	1	4	5	0	5	1	0	1	2	0	2	2	0	2

Time	Movement 6			Movement 7			Movement 8			Movement 9			Movement 10		
	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total
07:00	1	0	1	2	0	2	5	0	5	2	0	2	2	1	3
07:05	1	0	1	2	0	2	4	0	4	3	0	3	2	0	2
07:10	1	0	1	2	0	2	1	0	1	3	0	3	2	0	2
07:15	2	0	2	1	0	1	2	0	2	3	0	3	3	0	3
07:20	2	0	2	1	0	1	4	0	4	1	0	1	3	0	3
07:25	1	0	1	2	0	2	1	0	1	2	0	2	2	0	2
07:30	1	0	1	2	0	2	6	0	6	2	0	2	2	0	2
07:35	2	1	3	1	0	1	4	0	4	2	0	2	3	0	3
07:40	1	0	1	4	0	4	1	0	1	2	0	2	3	0	3
07:45	1	0	1	2	0	2	1	0	1	1	0	1	2	0	2
07:50	2	0	2	1	0	1	2	0	2	2	0	2	2	0	2
07:55	2	0	2	1	0	1	5	1	6	2	0	2	2	0	2
08:00	2	0	2	1	0	1	3	0	3	2	0	2	2	0	2
08:05	2	0	2	2	0	2	4	0	4	2	0	2	2	0	2
08:10	3	0	3	2	0	2	4	0	4	2	0	2	2	0	2
08:15	2	0	2	2	0	2	3	0	3	2	0	2	2	0	2
08:20	3	0	3	2	0	2	3	0	3	2	0	2	2	0	2
08:25	2	1	3	2	0	2	6	0	6	2	0	2	2	0	2
08:30	3	0	3	1	0	1	6	0	6	2	0	2	2	0	2
08:35	3	0	3	3	0	3	3	0	3	3	0	3	2	1	3
08:40	2	0	2	1	0	1	3	0	3	2	0	2	2	0	2
08:45	2	0	2	1	0	1	3	0	3	3	0	3	3	0	3
08:50	2	0	2	2	0	2	4	0	4	3	0	3	4	0	4
08:55	1	0	1	4	0	4	6	0	6	1	0	1	2	0	2
09:00	3	0	3	2	0	2	1	0	1	2	0	2	2	0	2
09:05	3	0	3	2	1	3	3	0	3	3	0	3	3	0	3
09:10	3	0	3	3	0	3	4	0	4	1	1	2	1	1	2
09:15	2	0	2	1	0	1	2	0	2	2	0	2	3	0	3
09:20	2	0	2	3	0	3	2	1	3	2	0	2	2	0	2
09:25	2	0	2	5	0	5	6	0	6	3	0	3	2	0	2
09:30	3	0	3	0	0	0	0	0	0	2	0	2	2	0	2
09:35	2	0	2	2	0	2	2	0	2	3	0	3	2	0	2
09:40	3	0	3	2	0	2	3	1	4	1	0	1	2	0	2
09:45	2	0	2	3	0	3	2	0	2	1	0	1	2	0	2
09:50	2	1	3	2	1	3	4	1	5	2	1	3	2	0	2
09:55	3	0	3	1	0	1	3	0	3	1	0	1	2	1	3

Intelligent Data Collection Limited

Client Atkins Transport Planning
 Date 24.05.2011
 Project Number ID00836
 Junction Name Hulbert Road (N) / Purbrook Way (E) / Hulbert Road (S) / Larchwood Avenue / Purbrook Way (W)

Input by
 Checked by

Stefan Niedzwiedzki
 Paul O'Neill



Time	Movement 1			Movement 2			Movement 3			Movement 4			Movement 5		
	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total
16:00	3	0	3	3	0	3	1	0	1	4	0	4	1	0	1
16:05	2	1	3	5	0	5	2	0	2	4	0	4	1	0	1
16:10	3	0	3	5	0	5	1	0	1	2	0	2	0	0	0
16:15	2	0	2	4	0	4	1	1	2	4	1	5	1	0	1
16:20	4	0	4	5	0	5	2	0	2	4	0	4	1	0	1
16:25	2	0	2	6	0	6	3	0	3	4	0	4	2	0	2
16:30	3	0	3	2	0	2	2	0	2	3	0	3	1	0	1
16:35	2	0	2	3	0	3	3	0	3	5	0	5	1	0	1
16:40	5	0	5	6	0	6	2	0	2	4	0	4	1	0	1
16:45	2	0	2	5	0	5	2	0	2	5	0	5	0	0	0
16:50	3	0	3	6	0	6	2	0	2	4	0	4	1	0	1
16:55	5	0	5	6	0	6	1	0	1	3	0	3	1	0	1
17:00	1	0	1	4	0	4	2	0	2	4	0	4	1	0	1
17:05	3	0	3	5	0	5	2	0	2	4	0	4	1	0	1
17:10	3	0	3	6	0	6	2	0	2	3	0	3	0	0	0
17:15	2	0	2	2	0	2	2	0	2	1	2	3	0	0	0
17:20	2	0	2	8	0	8	2	0	2	3	0	3	1	0	1
17:25	6	0	6	9	0	9	3	0	3	3	0	3	2	0	2
17:30	4	0	4	6	0	6	1	0	1	3	0	3	0	0	0
17:35	6	0	6	7	0	7	2	0	2	6	1	7	0	0	0
17:40	6	0	6	3	0	3	2	0	2	9	0	9	2	0	2
17:45	5	0	5	5	0	5	2	0	2	5	0	5	1	0	1
17:50	5	0	5	6	0	6	2	0	2	4	1	5	1	0	1
17:55	6	0	6	6	0	6	1	0	1	5	0	5	1	0	1
18:00	2	0	2	8	0	8	1	0	1	4	0	4	1	0	1
18:05	2	0	2	7	0	7	3	0	3	7	1	8	0	0	0
18:10	5	0	5	5	0	5	2	0	2	5	0	5	2	0	2
18:15	3	0	3	6	0	6	2	0	2	7	0	7	1	0	1
18:20	5	0	5	3	0	3	1	0	1	7	0	7	1	0	1
18:25	2	0	2	4	0	4	2	0	2	4	0	4	1	0	1
18:30	2	0	2	3	0	3	2	0	2	6	0	6	0	0	0
18:35	2	0	2	3	0	3	1	0	1	4	0	4	1	0	1
18:40	1	1	2	4	0	4	1	0	1	3	0	3	1	0	1
18:45	2	0	2	4	0	4	1	0	1	4	0	4	2	0	2
18:50	2	0	2	5	0	5	1	0	1	2	0	2	0	0	0
18:55	1	0	1	4	0	4	2	0	2	3	0	3	0	0	0

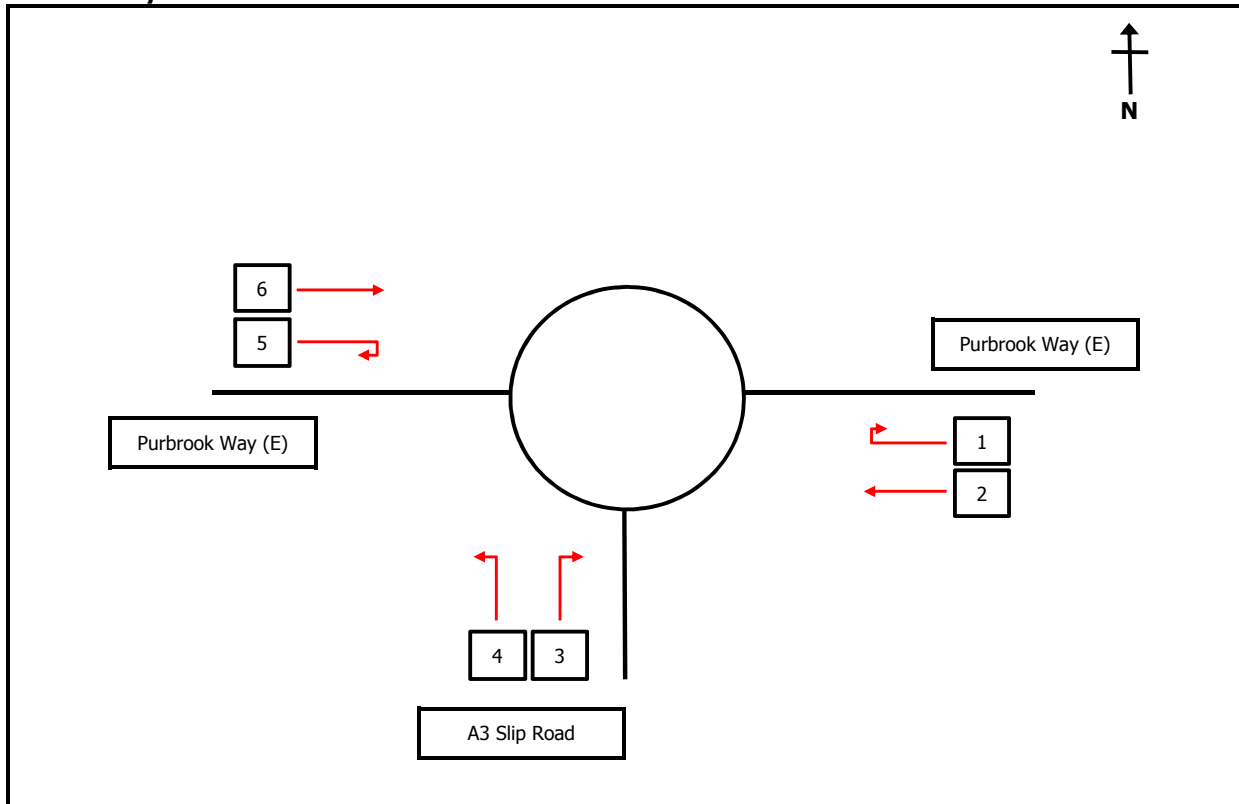
Time	Movement 6			Movement 7			Movement 8			Movement 9			Movement 10		
	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total
16:00	2	1	3	2	0	2	6	0	6	2	0	2	3	0	3
16:05	3	0	3	3	1	4	5	0	5	3	0	3	2	0	2
16:10	1	0	1	3	0	3	5	0	5	1	1	2	2	0	2
16:15	2	0	2	4	0	4	5	0	5	4	0	4	2	0	2
16:20	2	0	2	4	0	4	6	0	6	1	0	1	2	0	2
16:25	3	0	3	2	0	2	5	0	5	2	0	2	2	0	2
16:30	2	0	2	4	0	4	5	0	5	2	0	2	1	0	1
16:35	2	0	2	2	1	3	5	0	5	2	0	2	2	0	2
16:40	1	0	1	4	0	4	5	0	5	1	0	1	2	0	2
16:45	2	0	2	4	0	4	6	0	6	2	0	2	2	0	2
16:50	1	0	1	5	0	5	6	0	6	2	0	2	2	0	2
16:55	0	0	0	3	0	3	3	0	3	3	0	3	2	0	2
17:00	1	0	1	2	0	2	5	0	5	3	0	3	2	0	2
17:05	2	0	2	4	0	4	6	0	6	2	0	2	2	0	2
17:10	1	0	1	5	0	5	4	0	4	2	0	2	3	0	3
17:15	1	0	1	6	0	6	6	0	6	2	0	2	2	0	2
17:20	1	0	1	4	0	4	4	0	4	2	0	2	2	0	2
17:25	1	0	1	3	0	3	4	0	4	2	0	2	3	0	3
17:30	1	0	1	7	0	7	6	0	6	2	0	2	2	0	2
17:35	6	0	6	2	0	2	7	0	7	3	0	3	7	2	9
17:40	2	0	2	3	0	3	6	0	6	2	0	2	2	0	2
17:45	2	0	2	4	0	4	6	0	6	1	0	1	4	0	4
17:50	1	0	1	2	0	2	6	0	6	2	0	2	2	0	2
17:55	1	0	1	2	0	2	3	0	3	1	0	1	2	0	2
18:00	1	0	1	3	0	3	5	0	5	1	0	1	2	0	2
18:05	1	0	1	3	0	3	4	0	4	2	0	2	1	1	2
18:10	2	0	2	6	1	7	6	0	6	1	0	1	2	0	2
18:15	1	0	1	2	0	2	5	0	5	3	0	3	0	0	0
18:20	1	0	1	3	0	3	6	0	6	2	0	2	3	0	3
18:25	2	0	2	2	0	2	6	0	6	1	0	1	2	0	2
18:30	1	0	1	4	0	4	5	0	5	2	0	2	2	0	2
18:35	1	0	1	2	0	2	5	0	5	4	0	4	2	0	2
18:40	0	0	0	2	0	2	2	0	2	2	0	2	3	0	3
18:45	1	0	1	3	0	3	5	0	5	2	0	2	3	0	3
18:50	1	0	1	3	0	3	6	0	6	1	0	1	2	0	2
18:55	2	0	2	3	0	3	7	0	7	2	0	2	2	0	2

Intelligent Data Collection Limited



Client Atkins Transport Planning
Project Number: ID00836
Junction Number: Site 3 (A)
Date of Survey: 24.05.2011
Junction Name: Purbrook Way (E) / Purbrook Way (W) / A3 Slip Road
Junction Type: 3 Arm Roundabout

Junction Layout



Site Observations

Weather Conditions:

AM Peak:

PM Peak:

Additional Notes (Factors which may impact on survey results such as accidents, roadworks, special events):

Intelligent Data Collection Limited

Client Atkins Transport Planning
Date 24.05.2011
Project Number ID00836
Junction Name Putbrook Way (E) / Putbrook Way (W) / A3 Slip Road

Input by Stefan Niestowiedzki
Checked by Paul O'Neill



Movement 1									Movement 2									Movement 3									
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total			
07:00	0	0	0	0	0	0	0	0	27	0	13	1	0	1	2	44	32	0	22	0	1	1	0	56			
07:15	0	0	0	0	0	0	0	0	41	0	7	0	2	4	2	56	44	0	11	0	1	0	0	56			
07:30	0	0	0	0	0	0	0	0	60	0	13	0	0	1	2	76	44	0	17	0	0	0	0	61			
07:45	1	0	1	0	0	0	0	2	81	0	23	2	0	3	0	109	56	0	16	0	0	0	2	74			
08:00	0	0	0	0	0	0	0	0	122	0	19	1	1	1	0	144	66	0	16	1	1	0	0	84			
08:15	0	0	0	0	0	0	0	0	142	0	27	2	0	5	2	180	60	0	12	1	0	0	0	73			
08:30	0	0	0	0	0	0	0	0	174	0	10	1	0	4	1	190	49	0	17	1	1	0	0	68			
08:45	0	0	0	0	0	0	0	0	198	0	13	3	0	8	5	217	45	0	17	0	0	0	0	62			
09:00	0	0	0	0	0	0	0	0	189	0	11	1	0	1	5	197	63	0	12	2	0	1	0	78			
09:15	0	0	0	0	0	0	0	0	89	0	7	0	0	3	5	104	60	0	17	1	1	1	0	80			
09:30	1	0	0	0	0	0	0	1	68	0	8	2	1	2	1	82	65	0	14	2	0	1	0	82			
09:45	0	0	0	0	0	0	0	0	79	0	10	0	0	4	3	96	63	0	26	2	0	0	0	91			
Start Time	Rolling Hour								Total	Rolling Hour								Total	Rolling Hour								Total
07:00	1	0	1	0	0	0	0	2	209	0	56	3	2	9	6	285	176	0	66	0	2	1	2	217			
07:15	1	0	1	0	0	0	0	2	304	0	62	3	3	9	4	385	210	0	60	1	2	0	2	275			
07:30	1	0	1	0	0	0	0	2	405	0	72	5	1	10	4	497	236	0	61	2	1	0	2	292			
07:45	1	0	1	0	0	0	0	2	519	0	69	6	1	13	3	611	231	0	61	3	2	0	2	299			
08:00	0	0	0	0	0	0	0	0	576	0	59	7	1	18	8	669	220	0	62	3	2	0	0	287			
08:15	0	0	0	0	0	0	0	0	563	0	51	7	0	18	13	652	217	0	58	4	1	1	0	281			
08:30	0	0	0	0	0	0	0	0	510	0	41	5	0	16	16	588	217	0	63	4	2	2	0	288			
08:45	1	0	0	0	0	0	0	1	496	0	39	6	1	14	16	490	233	0	60	5	1	3	0	302			
09:00	1	0	0	0	0	0	0	1	345	0	36	3	1	10	14	409	251	0	69	7	1	3	0	331			

Intelligent Data Collection Limited

Client Atkins Transport Planning
Date 24.05.2011
Project Number ID00836
Junction Name Putbrook Way (E) / Putbrook Way (W) / A3 Slip Road

Input by Stefan Niedzwiedzki
Checked by Paul O'Neill



Movement 4									Movement 5									Movement 6								
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total		
07:00	24	0	9	2	1	0	0	36	9	0	0	0	0	0	0	9	134	0	46	3	1	3	1	197		
07:15	28	0	5	0	0	0	0	33	0	0	0	0	0	0	0	0	158	0	39	4	2	3	2	207		
07:30	50	0	13	0	0	1	0	64	0	0	0	0	0	0	0	0	153	0	49	2	0	2	0	205		
07:45	71	0	10	2	0	0	1	83	0	0	0	0	0	0	0	0	193	0	37	0	1	4	1	235		
08:00	93	0	16	5	1	0	1	116	1	0	0	0	0	0	0	1	236	0	28	1	2	4	2	273		
08:15	120	0	19	2	0	0	0	142	1	0	0	0	0	0	0	1	234	0	35	2	0	4	1	276		
08:30	105	0	14	0	0	0	0	119	0	0	0	0	0	0	0	0	261	0	21	4	1	6	2	295		
08:45	85	0	8	1	0	0	0	94	0	0	0	0	0	0	0	0	236	0	18	1	0	12	0	265		
09:00	57	0	8	1	1	1	0	68	0	0	0	0	0	0	0	0	219	0	18	1	1	8	0	247		
09:15	51	0	7	3	2	0	0	63	0	0	0	0	0	0	0	0	147	0	23	3	1	5	0	179		
09:30	59	0	9	0	1	0	0	69	0	0	0	0	0	0	0	0	118	0	17	2	1	3	0	141		
09:45	43	0	4	2	1	0	0	50	0	0	0	0	0	0	0	0	140	0	21	1	1	4	0	167		
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total		
07:00	172	0	36	4	1	1	0	214	0	0	0	0	0	0	0	0	638	0	170	3	12	11	0	841		
07:15	242	0	44	7	1	1	1	296	1	0	0	0	0	0	0	1	740	0	152	7	4	13	5	921		
07:30	334	0	49	9	1	1	1	395	2	0	0	0	0	0	0	2	815	0	148	5	3	14	4	986		
07:45	389	0	50	9	1	0	1	450	2	0	0	0	0	0	0	2	924	0	121	7	4	18	6	1080		
08:00	463	0	48	8	1	0	1	560	2	0	0	0	0	0	0	2	969	0	102	8	2	26	5	1113		
08:15	367	0	40	4	1	1	0	413	1	0	0	0	0	0	0	1	952	0	92	8	2	30	3	1087		
08:30	298	0	37	7	3	1	0	346	0	0	0	0	0	0	0	0	865	0	80	9	3	31	2	990		
08:45	232	0	32	7	4	1	0	276	0	0	0	0	0	0	0	0	722	0	76	7	3	28	0	836		
09:00	190	0	28	8	5	1	0	232	0	0	0	0	0	0	0	0	624	0	79	7	4	20	0	734		

Intelligent Data Collection Limited

Client Atkins Transport Planning
Date 24.05.2011
Project Number ID00836
Junction Name Putbrook Way (E) / Putbrook Way (W) / A3 Slip Road

Input by Stefan Nietowiedzi
Checked by Paul O'Neill



Movement 1									Movement 2									Movement 3									
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total			
16:00	0	0	0	0	0	0	0	0	111	0	19	1	0	1	3	139	89	0	32	0	2	0	0	121			
16:15	0	0	1	0	0	0	0	1	94	0	24	0	0	4	3	125	95	0	23	1	0	0	1	120			
16:30	0	0	0	0	0	0	0	0	110	0	17	1	0	2	5	135	96	0	26	1	1	2	0	126			
16:45	0	0	0	0	0	0	0	0	111	0	19	0	0	3	1	134	119	0	27	0	0	0	3	149			
17:00	0	0	0	0	0	0	0	0	114	0	12	1	0	2	2	131	115	0	24	0	0	0	0	139			
17:15	1	0	0	0	0	0	0	1	120	0	20	0	1	3	1	145	110	0	23	1	0	0	2	137			
17:30	1	0	0	0	0	0	0	1	122	0	22	0	0	1	4	149	109	0	16	0	1	0	2	128			
17:45	0	0	0	0	0	0	0	0	119	0	7	0	0	3	4	133	97	0	12	0	0	0	1	110			
18:00	0	0	0	0	0	0	0	0	123	0	15	1	0	1	2	142	98	0	18	0	1	0	4	121			
18:15	0	0	0	0	0	0	0	0	109	0	16	0	0	2	3	130	73	0	6	0	0	0	1	80			
18:30	0	0	0	0	0	0	0	0	110	0	13	0	0	2	0	126	68	0	12	0	0	1	0	81			
18:45	1	0	0	0	0	0	0	1	102	0	13	0	0	2	1	118	65	0	15	0	0	0	0	81			
Start Time	Rolling Hour								Total	Rolling Hour								Total	Rolling Hour								Total
16:00	0	0	1	0	0	0	0	1	430	0	79	2	0	10	12	513	399	0	108	2	3	2	4	516			
16:15	0	0	1	0	0	0	0	1	429	0	72	2	0	11	11	525	425	0	100	2	1	2	4	534			
16:30	1	0	0	0	0	0	0	1	455	0	68	2	1	10	9	545	440	0	100	2	1	2	0	551			
16:45	2	0	0	0	0	0	0	2	467	0	73	1	1	9	8	559	453	0	90	1	1	0	8	553			
17:00	2	0	0	0	0	0	0	2	475	0	61	1	1	9	11	568	411	0	75	1	1	0	6	514			
17:15	2	0	0	0	0	0	0	2	484	0	64	1	1	8	11	569	414	0	69	1	2	0	10	496			
17:30	1	0	0	0	0	0	0	1	473	0	60	1	0	7	13	554	377	0	52	0	2	0	8	439			
17:45	0	0	0	0	0	0	0	0	461	0	51	1	0	7	9	529	336	0	48	0	1	1	0	392			
18:00	1	0	0	0	0	0	0	1	444	0	57	1	0	6	6	514	304	0	51	0	1	1	6	363			

Intelligent Data Collection Limited

Client Atkins Transport Planning
Date 24.05.2011
Project Number ID00836
Junction Name Putbrook Way (E) / Putbrook Way (W) / A3 Slip Road

Input by Stefan Niedzwiedzki
Checked by Paul O'Neill



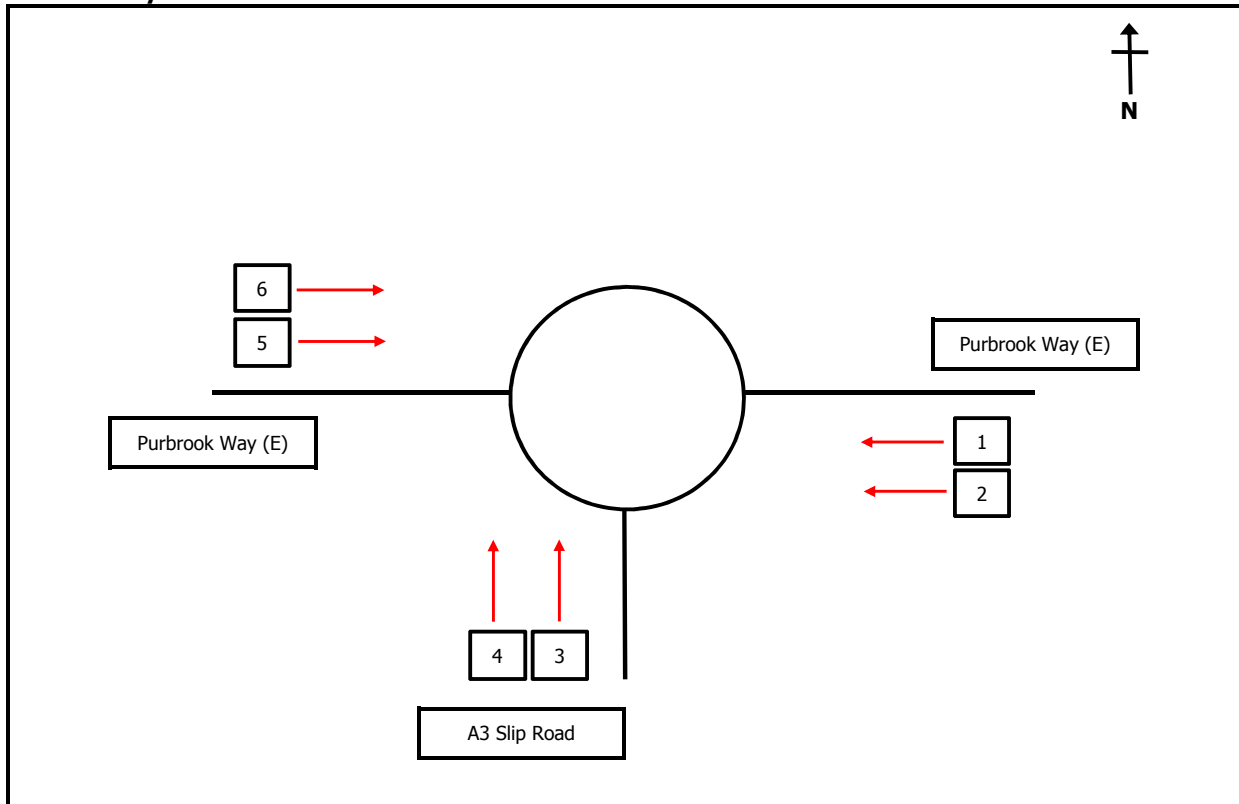
Movement 4									Movement 5									Movement 6								
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total		
16:00	95	0	16	1	2	1	2	118	0	0	0	0	0	0	0	155	15	1	11	0	0	0	0	27		
16:15	115	0	12	0	0	1	3	131	0	0	0	0	0	0	0	154	0	19	1	0	0	2	2	177		
16:30	108	0	20	2	0	1	1	132	0	0	0	0	0	0	0	155	0	15	1	0	0	0	3	179		
16:45	118	0	25	2	0	0	2	146	1	0	0	0	0	0	0	154	0	16	1	0	0	1	4	176		
17:00	109	0	19	0	1	2	2	133	1	0	0	0	0	0	0	1	178	0	15	0	0	0	2	1	196	
17:15	112	0	16	0	0	0	1	129	0	0	0	0	0	0	0	0	162	0	18	0	0	0	3	2	185	
17:30	140	0	17	1	0	1	1	160	0	0	0	0	0	0	0	0	133	0	19	1	0	0	2	3	158	
17:45	199	0	20	0	0	1	1	221	0	0	0	0	0	0	0	0	165	0	23	0	0	0	1	0	189	
18:00	104	0	12	0	0	0	0	116	0	0	0	0	0	0	0	0	162	0	14	1	0	0	3	3	183	
18:15	102	0	7	0	0	0	0	109	0	0	0	0	0	0	0	0	132	0	17	0	0	0	2	0	151	
18:30	61	0	6	0	0	0	2	69	0	0	0	0	0	0	0	0	141	0	25	0	0	0	3	6	176	
18:45	56	0	9	0	0	0	0	65	0	0	0	0	0	0	0	0	162	0	15	0	0	0	1	2	180	
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total		
16:00	436	0	73	4	3	3	2	526	1	0	0	0	0	0	1	658	0	62	5	0	8	16	0	749		
16:15	450	0	76	3	1	4	7	541	2	0	0	0	0	0	2	671	0	65	3	0	8	13	0	760		
16:30	447	0	80	3	1	3	5	539	2	0	0	0	0	0	2	679	0	64	2	0	9	13	0	767		
16:45	479	0	77	3	1	3	5	568	2	0	0	0	0	0	2	627	0	68	2	0	8	10	0	715		
17:00	470	0	72	1	1	4	5	553	1	0	0	0	0	0	1	638	0	75	1	0	8	0	0	724		
17:15	465	0	65	1	0	2	3	536	0	0	0	0	0	0	0	622	0	74	2	0	9	8	0	715		
17:30	455	0	36	1	0	2	2	516	0	0	0	0	0	0	0	592	0	73	2	0	8	6	0	681		
17:45	376	0	45	0	0	1	2	424	0	0	0	0	0	0	0	600	0	80	1	0	9	9	0	699		
18:00	323	0	34	0	0	0	2	359	0	0	0	0	0	0	0	597	0	72	1	0	9	11	0	686		

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Client Atkins Transport Planning
Project Number: ID00836
Junction Number: Site 3 (A)
Date of Survey: 24.05.2011
Junction Name: Purbrook Way (E) / Purbrook Way (W) / A3 Slip Road
Junction Type: 3 Arm Roundabout

Junction Layout



Site Observations

Weather Conditions:

AM Peak:

PM Peak:

Additional Notes (Factors which may impact on survey results such as accidents, roadworks, special events):

Intelligent Data Collection Limited

Client Atkins Transport Planning
Date 24.05.2011
Project Number ID00836
Junction Name Putbrook Way (E) / Putbrook Way (W) / A3 Slip Road

Input by Stefan Nietowiedzi
Checked by Paul O'Neill



Time	Movement 1			Movement 2			Movement 3			Movement 4			Movement 5			Movement 6		
	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total
07:50	0	0	0	0	0	0	0	0	0	2	0	2	1	0	1	1	0	1
07:55	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	1
07:58	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	0	2
07:15	0	0	0	0	0	0	1	0	1	1	1	0	1	0	0	0	0	0
07:20	0	0	0	0	0	0	1	0	1	1	0	1	2	1	3	1	0	1
07:25	0	0	0	0	0	0	2	0	2	0	0	0	1	0	1	1	1	2
07:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	2
07:35	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	0	0	0
07:40	0	0	0	0	0	0	1	0	1	0	0	0	4	0	4	2	0	2
07:45	0	0	0	0	0	0	0	0	0	3	0	3	3	0	3	3	0	3
07:50	0	0	0	0	0	0	2	0	2	2	0	2	3	0	3	3	0	3
07:55	0	0	0	0	0	0	2	0	2	3	0	3	1	0	1	5	0	5
08:00	0	0	0	0	0	0	2	0	2	3	0	3	4	0	4	4	0	4
08:05	0	0	0	0	0	0	1	0	1	2	0	2	3	0	3	2	0	2
08:10	0	0	0	0	0	0	3	0	3	2	0	2	2	0	2	3	0	3
08:15	0	0	0	0	0	0	2	0	2	7	1	8	2	0	2	3	0	3
08:20	0	0	0	0	0	0	3	0	3	6	0	6	2	0	2	3	0	3
08:25	0	0	0	0	0	0	1	1	2	2	0	2	3	0	3	3	0	3
08:30	0	0	0	0	0	0	3	0	3	5	0	5	1	0	1	3	0	3
08:35	0	0	0	0	0	0	2	0	2	3	0	3	2	0	2	4	0	4
08:40	0	0	0	0	0	0	5	0	5	4	0	4	1	0	1	4	0	4
08:45	0	0	0	0	0	0	2	0	2	2	0	2	2	0	2	2	0	2
08:50	0	0	0	0	0	0	5	0	5	4	0	4	0	1	1	3	0	3
08:55	0	0	0	0	0	0	2	0	2	3	0	3	1	0	1	3	0	3
09:00	0	0	0	0	0	0	6	1	6	4	1	5	3	0	3	3	0	3
09:05	0	0	0	0	0	0	4	0	4	3	0	3	2	0	2	3	0	3
09:10	0	0	0	0	0	0	3	0	3	2	0	2	2	0	2	1	1	2
09:15	0	0	0	0	0	0	2	0	2	2	0	2	1	0	1	3	0	3
09:20	0	0	0	0	0	0	3	0	3	2	0	2	2	0	2	3	0	3
09:25	0	0	0	0	0	0	1	0	1	1	0	1	1	0	1	2	0	2
09:30	0	0	0	0	0	0	0	0	0	1	0	1	3	0	3	3	0	3
09:35	0	0	0	0	0	0	1	1	2	1	0	1	2	0	2	2	0	2
09:40	0	0	0	0	0	0	1	0	1	1	0	1	1	0	1	3	0	3
09:45	0	0	0	0	0	0	2	0	2	2	0	2	3	0	3	3	0	3
09:50	0	0	0	0	0	0	1	0	1	1	0	2	1	0	1	2	0	2
09:55	0	0	0	0	0	0	2	0	2	1	1	2	1	0	1	2	0	2

Intelligent Data Collection Limited

Client Atkins Transport Planning
Date 24.05.2011
Project Number ID00836
Junction Name Putbrook Way (E) / Putbrook Way (W) / A3 Slip Road

Input by Stefan Nietowiedzi
Checked by Paul O'Neill



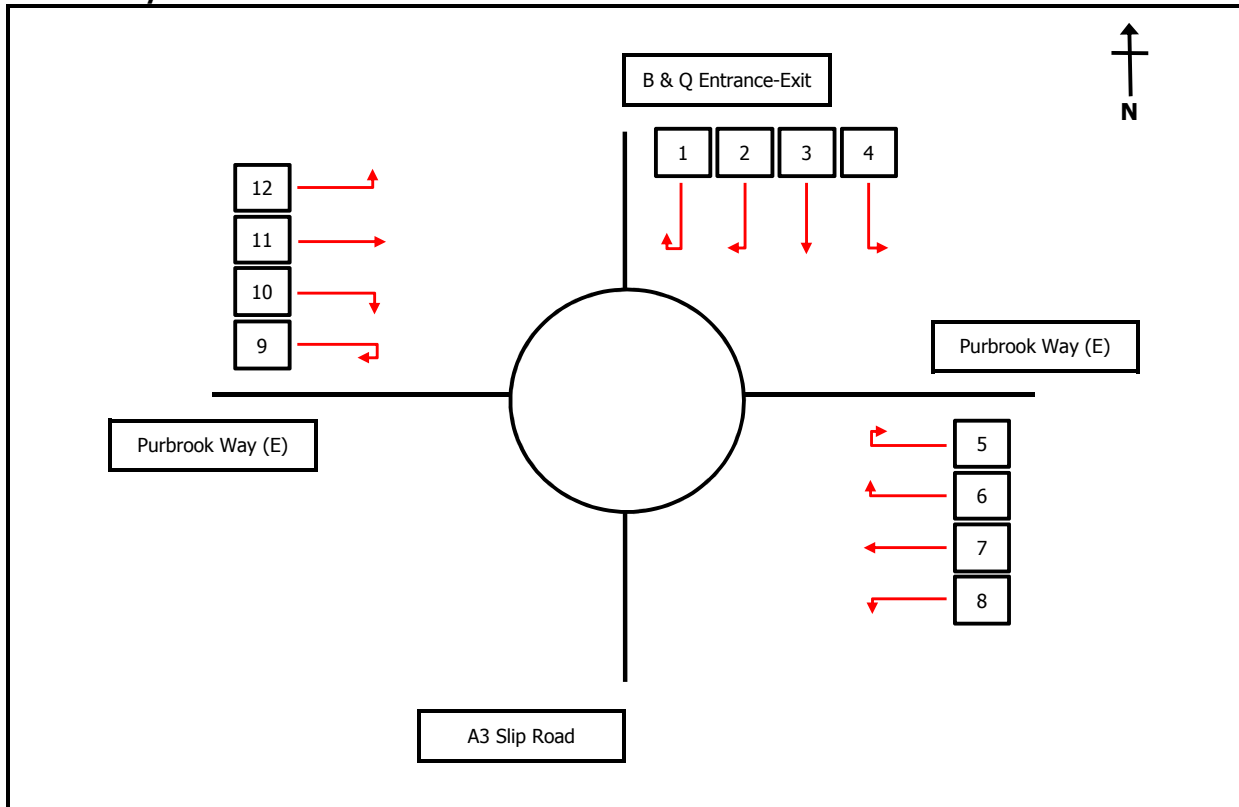
Time	Movement 1			Movement 2			Movement 3			Movement 4			Movement 5			Movement 6		
	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total
16:50	0	0	0	0	0	0	2	1	3	2	0	2	1	0	3	0	0	0
16:55	0	0	0	0	0	0	7	1	8	3	0	3	3	0	3	5	0	5
16:58	0	0	0	0	0	0	7	0	7	6	0	6	2	0	2	2	0	2
16:55	0	0	0	0	0	0	3	0	3	2	0	2	2	0	2	4	0	4
16:20	0	0	0	0	0	0	2	0	2	3	0	3	2	0	2	2	0	2
16:25	0	0	0	0	0	0	6	0	6	4	0	4	1	0	1	2	0	2
16:30	0	0	0	0	0	0	5	0	5	6	0	6	1	0	1	4	1	5
16:35	0	0	0	0	0	0	6	1	7	4	0	4	4	0	4	4	0	4
16:40	0	0	0	0	0	0	7	1	8	3	0	3	1	0	1	4	0	4
16:45	0	0	0	0	0	0	4	0	4	5	1	6	2	0	2	2	0	2
16:50	0	0	0	0	0	0	4	0	4	6	0	6	3	0	3	2	0	2
16:55	0	0	0	0	0	0	5	0	5	4	0	4	3	0	3	6	0	6
17:00	0	0	0	0	0	0	3	0	3	3	0	3	2	0	2	3	0	3
17:05	0	0	0	0	0	0	2	0	2	3	0	3	2	0	2	6	0	6
17:10	0	0	0	0	0	0	3	0	3	2	1	3	2	0	2	2	0	2
17:15	0	0	0	0	0	0	3	0	3	3	0	3	2	0	2	4	0	4
17:20	0	0	0	0	0	0	5	0	5	4	0	4	1	0	1	2	0	2
17:25	0	0	0	0	0	0	6	0	6	3	0	3	3	0	3	1	1	2
17:30	0	0	0	0	0	0	2	0	2	3	0	3	2	0	2	2	1	3
17:35	0	0	0	0	0	0	2	1	3	3	0	3	4	0	4	3	0	3
17:40	0	0	0	0	0	0	2	0	2	2	0	2	3	0	3	3	0	3
17:45	0	0	0	0	0	0	2	0	2	3	0	3	3	0	3	3	0	3
17:50	0	0	0	0	0	0	3	0	3	3	0	3	4	0	4	7	0	7
17:55	0	0	0	0	0	0	3	0	3	2	0	2	3	0	3	2	0	2
18:00	0	0	0	0	0	0	2	0	2	2	0	2	1	0	1	4	1	5
18:05	0	0	0	0	0	0	3	0	3	3	0	3	2	0	2	5	0	5
18:10	0	0	0	0	0	0	3	0	3	3	0	3	4	0	4	2	0	2
18:15	0	0	0	0	0	0	2	0	2	2	0	2	3	0	3	3	0	3
18:20	0	0	0	0	0	0	2	0	2	2	0	2	0	0	0	2	0	2
18:25	0	0	0	0	0	0	2	0	2	3	0	3	1	0	1	2	0	2
18:30	0	0	0	0	0	0	2	0	2	1	0	1	1	0	1	4	0	4
18:35	0	0	0	0	0	0	2	0	2	2	0	2	2	0	2	3	0	3
18:40	0	0	0	0	0	0	3	0	3	2	0	2	1	0	1	2	0	2
18:45	0	0	0	0	0	0	2	0	2	1	0	1	1	0	1	4	0	4
18:50	0	0	0	0	0	0	2	0	2	2	0	2	2	0	2	2	0	2
18:55	0	0	0	0	0	0	2	0	2	2	0	2	1	0	1	1	0	1

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Client Atkins Transport Planning
Project Number: ID00836
Junction Number: Site 3 (B)
Date of Survey: 24.05.2011
Junction Name: Purbrook Way (E) / Purbrook Way (W) / B & Q Entrance-Exit / A3 Slip Road
Junction Type: 4 Arm Roundabout

Junction Layout



Site Observations

Weather Conditions:

AM Peak:

PM Peak:

Additional Notes (Factors which may impact on survey results such as accidents, roadworks, special events):

Intelligent Data Collection Limited

Client Atkins Transport Planning
 Date 24.05.2011
 Project Number ID00836
 Junction Name Purbrook Way (E) / Purbrook Way (W) / B & Q Entrance-Exit / A3 Slip Road

Input by Stefan Niedzwiedzki
 Checked by Paul O'Neill



	Movement 1								Movement 2								Movement 3										
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total			
07:00	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	1	0	1	0	0	0	0	2			
07:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1			
07:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	2	0	0	0	0	4			
07:45	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	1	0	3	0	0	0	0	4			
08:00	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	3	1	0	2	0	0	0	0	3			
08:15	0	0	0	0	0	0	0	0	3	0	5	0	0	0	0	8	1	0	3	0	0	0	0	4			
08:30	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	4	8	0	2	0	0	0	0	10			
08:45	0	0	0	0	0	0	0	0	5	0	5	0	0	0	0	10	1	0	3	0	0	0	0	4			
09:00	0	0	0	0	0	0	0	0	4	0	2	0	0	0	0	6	8	0	1	0	0	0	1	10			
09:15	0	0	0	0	0	0	0	0	7	0	2	0	0	0	0	9	4	0	4	0	1	0	0	9			
09:30	0	0	0	0	0	0	0	0	7	0	1	0	0	1	0	9	7	0	6	1	0	0	0	14			
09:45	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	8	6	0	1	0	0	0	0	7			
Start Time	Rolling Hour								Total	Rolling Hour								Total	Rolling Hour								Total
07:00	0	0	0	0	0	0	0	0	2	0	9	1	0	0	0	12	4	0	7	0	0	0	0	11			
07:15	0	0	0	0	0	0	0	0	2	0	10	1	0	0	0	13	4	0	8	0	0	0	0	12			
07:30	0	0	0	0	0	0	0	0	4	0	15	1	0	0	0	20	5	0	10	0	0	0	0	15			
07:45	0	0	0	0	0	0	0	0	7	0	14	1	0	0	0	22	11	0	10	0	0	0	0	21			
08:00	0	0	0	0	0	0	0	0	12	0	13	0	0	0	0	25	11	0	10	0	0	0	0	21			
08:15	0	0	0	0	0	0	0	0	15	0	13	0	0	0	0	28	18	0	9	0	0	0	1	28			
08:30	0	0	0	0	0	0	0	0	19	0	10	0	0	0	0	29	21	0	10	0	1	0	1	33			
08:45	0	0	0	0	0	0	0	0	23	0	10	0	0	1	0	34	20	0	14	1	1	0	1	37			
09:00	0	0	0	0	0	0	0	0	22	0	9	0	0	1	0	32	25	0	12	1	1	0	1	40			

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Input by Stefan Niedzwiedzki
 Checked by Paul O'Neill



Movement 4									Movement 5								Movement 6										
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total			
07:00	1	0	3	0	0	0	0	4	0	0	0	0	0	0	0	0	3	0	4	0	0	0	0	7			
07:15	3	0	6	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4			
07:30	1	0	6	0	0	0	0	7	0	0	0	0	0	0	0	0	3	0	7	0	1	0	0	11			
07:45	4	0	4	0	0	0	0	8	1	0	0	0	0	0	0	1	2	0	7	0	0	0	0	9			
08:00	6	0	5	0	0	0	0	11	1	0	0	0	0	0	0	1	5	0	6	0	0	0	0	11			
08:15	5	0	6	0	0	0	0	11	0	0	0	0	0	0	0	0	7	0	2	0	0	0	0	9			
08:30	9	0	2	0	0	0	0	11	0	0	0	0	0	0	0	0	20	0	7	0	0	0	0	27			
08:45	11	0	6	0	1	0	0	18	1	0	0	0	0	0	0	1	13	0	5	0	0	0	1	19			
09:00	9	0	7	0	0	0	0	16	3	0	0	0	0	0	0	3	16	0	8	0	0	0	0	24			
09:15	11	0	10	1	0	0	0	22	0	0	0	0	0	0	0	0	11	0	6	1	0	0	0	18			
09:30	13	0	5	0	0	0	0	18	0	0	0	0	0	0	0	0	17	0	4	0	0	0	0	21			
09:45	15	0	5	1	0	0	0	21	1	0	0	0	0	0	0	1	20	0	10	0	0	0	0	30			
Start Time	Rolling Hour								Total	Rolling Hour								Total	Rolling Hour								Total
07:00	9	0	19	0	0	0	0	28	1	0	0	0	0	0	0	1	8	0	22	0	1	0	0	31			
07:15	14	0	21	0	0	0	0	35	2	0	0	0	0	0	0	2	10	0	24	0	1	0	0	35			
07:30	16	0	21	0	0	0	0	37	2	0	0	0	0	0	0	2	17	0	22	0	1	0	0	40			
07:45	24	0	17	0	0	0	0	41	2	0	0	0	0	0	0	2	34	0	22	0	0	0	0	56			
08:00	31	0	19	0	1	0	0	51	2	0	0	0	0	0	0	2	45	0	20	0	0	0	1	66			
08:15	34	0	21	0	1	0	0	56	4	0	0	0	0	0	0	4	56	0	22	0	0	0	1	79			
08:30	40	0	25	1	1	0	0	67	4	0	0	0	0	0	0	4	60	0	26	1	0	0	1	88			
08:45	44	0	28	1	1	0	0	74	4	0	0	0	0	0	0	4	57	0	23	1	0	0	1	82			
09:00	48	0	27	2	0	0	0	77	4	0	0	0	0	0	0	4	64	0	28	1	0	0	0	93			

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Input by Stefan Niedzwiedzki
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	Movement 7								Movement 8								Movement 9							
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total
07:00	28	0	11	1	0	1	2	43	80	0	40	1	1	0	2	124	0	0	0	0	0	0	0	0
07:15	39	0	9	0	2	2	2	54	98	0	37	0	1	1	0	137	0	0	0	0	0	0	0	0
07:30	58	0	10	0	0	1	2	71	114	0	24	2	0	0	4	144	0	0	0	0	0	0	0	0
07:45	89	0	15	1	0	2	0	107	105	0	25	1	1	0	2	134	0	0	0	0	0	0	0	0
08:00	120	0	14	1	1	1	0	137	86	0	12	0	1	1	1	101	0	0	0	0	0	0	0	0
08:15	150	0	15	1	1	5	2	174	97	0	18	0	1	0	2	118	0	0	0	0	0	0	0	0
08:30	162	0	9	1	0	5	1	178	72	0	13	3	0	0	0	88	0	0	0	0	0	0	0	0
08:45	141	0	9	3	0	7	5	165	69	0	12	1	0	0	0	82	0	0	0	0	0	0	0	0
09:00	103	0	8	1	0	1	5	118	45	0	11	1	1	0	0	58	0	0	0	0	0	0	0	0
09:15	84	0	6	0	0	3	5	98	57	0	8	1	0	0	0	66	0	0	0	0	0	0	0	0
09:30	61	0	6	1	1	2	1	72	59	0	9	2	2	1	0	73	0	0	0	0	0	0	0	0
09:45	73	0	8	0	0	2	3	86	49	0	7	0	0	1	0	57	0	0	0	0	0	0	0	0
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	214	0	45	2	2	6	6	275	397	0	126	4	3	1	8	539	0	0	0	0	0	0	0	0
07:15	306	0	48	2	3	6	4	369	403	0	98	3	3	2	7	516	0	0	0	0	0	0	0	0
07:30	417	0	54	3	2	9	4	489	402	0	79	3	3	1	9	497	0	0	0	0	0	0	0	0
07:45	521	0	53	4	2	13	3	596	360	0	68	4	3	1	5	441	0	0	0	0	0	0	0	0
08:00	573	0	47	6	2	18	8	654	324	0	55	4	2	1	3	389	0	0	0	0	0	0	0	0
08:15	556	0	41	6	1	18	13	635	283	0	54	5	2	0	2	346	0	0	0	0	0	0	0	0
08:30	490	0	32	5	0	16	16	559	243	0	44	6	1	0	0	294	0	0	0	0	0	0	0	0
08:45	389	0	29	5	1	13	16	453	230	0	40	5	3	1	0	279	0	0	0	0	0	0	0	0
09:00	321	0	28	2	1	8	14	374	210	0	35	4	3	2	0	254	0	0	0	0	0	0	0	0

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Input by Stefan Niedzwiedzki
Checked by Paul O'Neill



	Movement 10								Movement 11							Movement 12									
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	
07:00	87	0	29	2	1	0	4	123	84	0	34	0	1	4	3	126	4	0	3	0	0	0	0	7	
07:15	96	0	20	2	2	1	0	121	97	0	26	2	2	1	2	130	2	0	3	0	0	0	0	5	
07:30	73	0	26	1	0	0	0	100	125	0	30	1	0	2	0	158	6	0	5	0	0	0	0	11	
07:45	87	0	15	0	0	1	0	103	157	0	34	0	1	3	3	198	4	0	3	0	0	0	0	7	
08:00	114	0	15	2	1	2	1	135	188	0	20	1	0	2	1	212	10	0	3	0	0	0	0	13	
08:15	92	0	15	2	0	0	0	109	187	0	24	1	1	3	1	217	10	0	6	0	0	0	0	16	
08:30	87	0	6	1	0	2	1	97	218	0	23	3	1	4	1	250	8	0	10	0	1	0	0	19	
08:45	85	0	2	1	0	7	0	95	189	0	24	0	0	5	0	218	13	0	7	0	0	0	0	20	
09:00	80	0	4	1	1	2	0	88	185	0	21	2	0	6	0	214	10	0	4	1	0	0	0	15	
09:15	62	0	8	1	1	0	0	72	133	0	26	2	1	5	0	167	16	0	7	1	0	0	0	24	
09:30	34	0	11	1	1	2	0	49	128	0	17	2	1	2	0	150	18	0	3	0	0	0	0	21	
09:45	36	0	8	1	1	0	0	46	152	0	31	2	0	3	0	188	14	0	8	0	0	0	0	22	
Start Time	Rolling Hour								Total	Rolling Hour							Total	Rolling Hour							Total
07:00	343	0	90	5	3	2	4	447	463	0	124	3	4	10	8	612	16	0	14	0	0	0	0	30	
07:15	370	0	76	5	3	4	1	459	567	0	110	4	3	8	6	698	22	0	14	0	0	0	0	36	
07:30	366	0	71	5	1	3	1	447	657	0	108	3	2	10	5	785	30	0	17	0	0	0	0	47	
07:45	380	0	51	5	1	5	2	444	750	0	101	5	3	12	6	877	32	0	22	0	1	0	0	55	
08:00	378	0	38	6	1	11	2	436	782	0	91	5	2	14	3	897	41	0	26	0	1	0	0	68	
08:15	344	0	27	5	1	11	1	389	779	0	92	6	2	18	2	899	41	0	27	1	1	0	0	70	
08:30	314	0	20	4	2	11	1	352	725	0	94	7	2	20	1	849	47	0	28	2	1	0	0	78	
08:45	261	0	25	4	3	11	0	304	635	0	88	6	2	18	0	749	57	0	21	2	0	0	0	80	
09:00	212	0	31	4	4	4	0	255	598	0	95	8	2	16	0	719	58	0	22	2	0	0	0	82	

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	Movement 1								Movement 2								Movement 3							
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total
16:00	0	0	0	0	0	0	0	0	9	0	3	0	0	0	0	12	9	0	1	0	0	0	0	10
16:15	0	0	0	0	0	0	0	0	8	0	6	0	0	0	0	14	12	0	2	0	0	0	0	14
16:30	0	0	0	0	0	0	0	0	11	0	3	0	0	0	0	14	7	0	2	0	0	0	0	9
16:45	0	0	0	0	0	0	0	0	8	0	3	0	0	0	0	11	11	0	6	0	0	0	0	17
17:00	0	0	0	0	0	0	0	0	16	0	3	0	0	0	0	19	9	0	4	0	0	0	0	13
17:15	0	0	0	0	0	0	0	0	4	0	2	0	0	0	0	6	9	0	6	0	0	0	0	15
17:30	0	0	0	0	0	0	0	0	7	0	6	0	0	0	2	15	12	0	4	0	0	0	0	16
17:45	0	0	0	0	0	0	0	0	14	0	3	0	0	0	0	17	13	0	5	0	0	0	0	18
18:00	0	0	0	0	0	0	0	0	6	0	2	0	0	0	0	8	17	0	1	0	0	0	0	18
18:15	0	0	0	0	0	0	0	0	10	0	4	0	0	0	0	14	13	0	0	0	0	0	0	13
18:30	0	0	0	0	0	0	0	0	12	0	3	0	0	0	1	16	9	0	3	0	0	0	0	12
18:45	0	0	0	0	0	0	0	0	15	0	4	0	0	0	0	19	5	0	2	0	0	0	0	7
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
16:00	0	0	0	0	0	0	0	0	36	0	15	0	0	0	0	51	39	0	11	0	0	0	0	50
16:15	0	0	0	0	0	0	0	0	43	0	15	0	0	0	0	58	39	0	14	0	0	0	0	53
16:30	0	0	0	0	0	0	0	0	39	0	11	0	0	0	0	50	36	0	18	0	0	0	0	54
16:45	0	0	0	0	0	0	0	0	35	0	14	0	0	0	2	51	41	0	20	0	0	0	0	61
17:00	0	0	0	0	0	0	0	0	41	0	14	0	0	0	2	57	43	0	19	0	0	0	0	62
17:15	0	0	0	0	0	0	0	0	31	0	13	0	0	0	2	46	51	0	16	0	0	0	0	67
17:30	0	0	0	0	0	0	0	0	37	0	15	0	0	0	2	54	55	0	10	0	0	0	0	65
17:45	0	0	0	0	0	0	0	0	42	0	12	0	0	0	1	55	52	0	9	0	0	0	0	61
18:00	0	0	0	0	0	0	0	0	43	0	13	0	0	0	1	57	44	0	6	0	0	0	0	50

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	Movement 4								Movement 5								Movement 6							
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total
16:00	27	0	5	0	0	0	0	32	1	0	1	0	0	0	0	2	16	0	3	0	0	0	0	20
16:15	19	0	4	1	0	0	0	24	1	0	0	0	0	0	0	1	16	0	4	0	0	0	0	20
16:30	20	0	6	0	0	0	1	27	1	0	1	0	0	0	0	2	17	0	6	0	0	0	0	23
16:45	19	0	4	0	0	0	0	23	2	0	0	0	0	0	0	2	14	0	6	1	0	0	0	21
17:00	22	0	4	0	0	0	0	26	0	0	0	0	0	0	0	0	17	0	8	0	0	0	1	26
17:15	20	0	4	0	0	0	0	24	0	0	0	0	0	0	0	0	15	0	7	0	0	0	1	23
17:30	13	0	3	0	0	0	0	16	1	0	0	0	0	0	0	1	21	0	4	0	0	0	0	25
17:45	17	0	5	0	0	0	0	22	1	0	0	0	0	0	0	2	19	0	2	0	0	0	0	23
18:00	17	0	2	0	0	0	1	20	2	0	0	0	0	0	0	2	19	0	4	0	0	0	0	23
18:15	31	0	4	0	0	0	0	35	1	0	0	0	0	0	0	1	13	0	5	0	0	0	0	18
18:30	22	0	9	0	0	0	0	31	1	0	2	0	0	0	0	3	14	0	2	0	0	0	0	16
18:45	17	0	4	0	0	0	0	21	0	0	0	0	0	0	0	0	12	0	8	0	0	0	0	20
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
16:00	85	0	19	1	0	0	1	106	5	0	2	0	0	0	0	7	63	0	19	1	0	0	1	84
16:15	80	0	18	1	0	0	1	100	4	0	1	0	0	0	0	5	64	0	24	1	0	0	1	90
16:30	81	0	18	0	0	0	1	100	3	0	1	0	0	0	0	4	63	0	27	1	0	0	2	93
16:45	74	0	15	0	0	0	0	89	3	0	0	0	0	0	0	3	67	0	25	1	0	0	2	95
17:00	72	0	16	0	0	0	0	88	2	0	0	0	0	0	0	2	74	0	21	0	0	0	2	97
17:15	67	0	14	0	0	0	1	82	4	0	0	0	0	0	0	4	76	0	17	0	0	0	1	94
17:30	78	0	14	0	0	0	1	93	5	0	0	0	0	0	0	5	74	0	15	0	0	0	0	89
17:45	87	0	20	0	0	0	1	108	5	0	2	0	0	0	0	7	67	0	13	0	0	0	0	80
18:00	87	0	19	0	0	0	1	107	4	0	2	0	0	0	0	6	58	0	19	0	0	0	0	77

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Movement 7									Movement 8								Movement 9							
Time	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total	Cars	Taxi	LGV	OGV1	OGV2	Buses	M/C	Total
16:00	97	0	14	1	2	0	2	116	70	1	14	2	0	0	1	88	0	0	0	0	0	0	0	0
16:15	102	0	12	0	0	6	2	122	63	0	11	0	0	0	0	74	0	0	0	0	0	0	0	0
16:30	97	0	14	1	0	3	1	116	65	0	20	1	1	0	0	87	0	0	0	0	0	0	0	0
16:45	96	0	19	0	0	3	2	120	63	0	12	2	0	0	1	78	0	0	0	0	0	0	0	0
17:00	100	0	18	0	0	2	3	123	72	0	12	0	1	0	0	85	0	0	0	0	0	0	0	0
17:15	112	0	13	0	0	3	3	131	76	0	11	0	0	0	0	87	0	0	0	0	0	0	0	0
17:30	115	0	17	1	0	1	4	138	70	0	13	1	0	0	0	84	0	0	0	0	0	0	0	0
17:45	109	0	14	0	0	5	1	129	71	0	11	1	0	0	2	85	0	0	0	0	0	0	0	0
18:00	108	0	12	0	0	1	3	124	70	0	10	0	0	1	1	82	0	0	0	0	0	0	0	0
18:15	99	0	9	0	0	2	3	113	64	0	10	0	0	0	1	75	0	0	0	0	0	0	0	0
18:30	97	0	9	0	0	1	3	110	65	0	12	0	0	2	0	79	0	0	0	0	0	0	0	0
18:45	81	0	9	0	0	2	0	92	62	0	8	0	0	1	0	71	0	0	0	0	0	0	0	0
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
16:00	392	0	59	2	2	12	7	474	261	1	57	5	1	0	2	327	0	0	0	0	0	0	0	0
16:15	395	0	63	1	0	14	8	481	263	0	55	3	2	0	1	324	0	0	0	0	0	0	0	0
16:30	405	0	64	1	0	11	9	490	276	0	55	3	2	0	1	337	0	0	0	0	0	0	0	0
16:45	423	0	67	1	0	9	12	512	281	0	48	3	1	0	1	334	0	0	0	0	0	0	0	0
17:00	436	0	62	1	0	11	11	521	289	0	47	2	1	0	2	341	0	0	0	0	0	0	0	0
17:15	444	0	56	1	0	10	11	522	287	0	45	2	0	1	3	338	0	0	0	0	0	0	0	0
17:30	431	0	52	1	0	9	11	504	275	0	44	2	0	1	4	326	0	0	0	0	0	0	0	0
17:45	413	0	44	0	0	9	10	476	270	0	43	1	0	3	4	321	0	0	0	0	0	0	0	0
18:00	385	0	39	0	0	6	9	439	261	0	40	0	0	4	2	307	0	0	0	0	0	0	0	0

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 Date 24.05.2011
 Project Number ID00836
 Junction Name Purbrook Way (E) / Purbrook Way (W) / B & Q Entrance-Exit / A3 Slip Road

Input by Stefan Niedzwiedzki
 Checked by Paul O'Neill



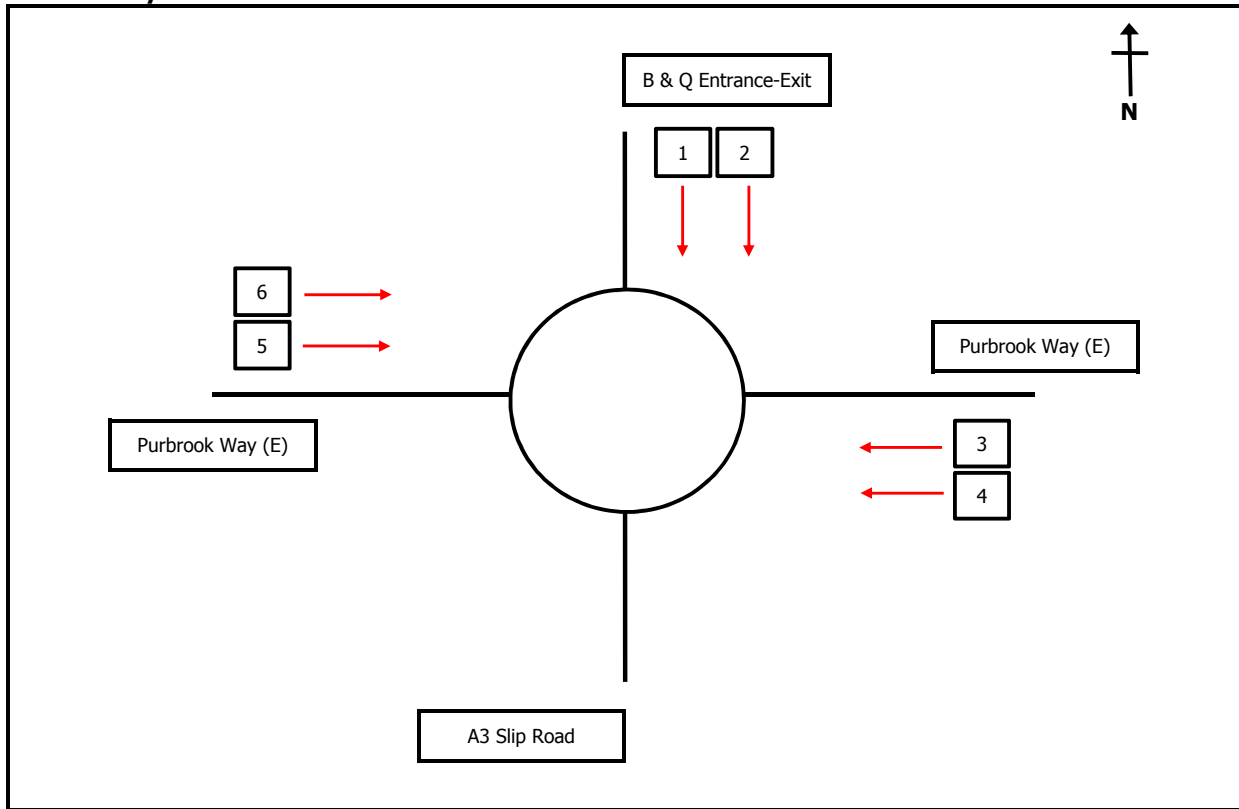
Movement 10									Movement 11								Movement 12							
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16:00	65	0	11	0	0	2	0	78	170	0	38	0	0	2	4	214	12	0	5	1	0	0	0	18
16:15	57	0	6	0	0	0	0	63	186	0	28	0	1	3	3	221	22	0	6	0	0	0	0	28
16:30	61	0	6	1	1	0	0	69	197	0	39	0	0	3	4	243	20	0	9	0	0	0	0	29
16:45	62	0	3	0	2	0	1	68	190	0	41	0	0	1	6	238	20	0	6	0	0	0	0	26
17:00	67	0	5	0	0	0	0	72	195	0	35	1	0	2	1	234	16	0	4	0	0	0	0	20
17:15	76	0	6	0	0	0	0	82	170	0	33	2	0	2	3	210	18	0	7	0	0	0	1	26
17:30	54	0	9	0	0	0	0	63	186	0	33	0	1	2	2	224	17	0	5	0	0	0	0	22
17:45	50	0	7	1	0	0	0	58	175	0	25	0	0	1	2	203	18	0	3	0	0	0	0	21
18:00	47	0	6	0	0	0	0	53	169	0	25	0	1	2	2	199	25	0	8	0	0	0	0	33
18:15	38	0	11	0	0	0	0	49	154	0	18	0	0	2	4	178	27	0	6	0	0	0	0	33
18:30	56	0	5	0	0	2	1	64	151	0	15	0	0	3	2	171	20	0	5	0	0	0	0	25
18:45	38	0	3	0	0	0	0	41	146	0	15	0	0	1	2	164	11	0	5	0	0	0	0	16
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16:00	245	0	26	1	3	2	1	278	743	0	146	0	1	9	17	916	74	0	26	1	0	0	0	101
16:15	247	0	20	1	3	0	1	272	768	0	143	1	1	9	14	936	78	0	25	0	0	0	0	103
16:30	266	0	20	1	3	0	1	291	752	0	148	3	0	8	14	925	74	0	26	0	0	0	1	101
16:45	259	0	23	0	2	0	1	285	741	0	142	3	1	7	12	906	71	0	22	0	0	0	1	94
17:00	247	0	27	1	0	0	0	275	726	0	126	3	1	7	8	871	69	0	19	0	0	0	1	89
17:15	227	0	28	1	0	0	0	256	700	0	116	2	2	7	9	836	78	0	23	0	0	0	1	102
17:30	189	0	33	1	0	0	0	223	684	0	101	0	2	7	10	804	87	0	22	0	0	0	0	109
17:45	191	0	29	1	0	2	1	224	649	0	83	0	1	8	10	751	90	0	22	0	0	0	0	112
18:00	179	0	25	0	0	2	1	207	620	0	73	0	1	8	10	712	83	0	24	0	0	0	0	107

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Project Number: ID00836
Junction Number: Site 3 (B)
Date of Survey: 24.05.2011
Junction Name: Purbrook Way (E) / Purbrook Way (W) / B & Q Entrance-Exit / A3 Slip Road
Junction Type: 4 Arm Roundabout

Junction Layout



Site Observations

Weather Conditions:

AM Peak:

PM Peak:

Additional Notes (Factors which may impact on survey results such as accidents, roadworks, special events):

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Client Atkins Transport Planning
Date 24.05.2011
Project Number ID00836
Junction Name Purbrook Way (E) / Purbrook Way (W) / B & Q Entrance-Exit / A3 Slip Road

Input by Stefan Niedzwiedzki
Checked by Paul O'Neill



	Movement 1			Movement 2			Movement 3			Movement 4			Movement 5			Movement 6		
Time	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total
07:00	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0
07:05	0	0	0	1	0	1	1	0	1	5	0	5	0	0	0	0	0	0
07:10	1	0	1	2	0	2	0	0	0	5	0	5	0	0	0	0	0	0
07:15	0	0	0	1	0	1	1	0	1	5	0	5	0	0	0	0	0	0
07:20	0	0	0	2	0	2	1	0	1	2	0	2	0	0	0	0	0	0
07:25	0	0	0	1	0	1	0	0	0	6	0	6	0	0	0	0	0	0
07:30	0	0	0	1	0	1	0	0	0	6	0	6	0	0	0	0	0	0
07:35	0	0	0	1	0	1	1	0	1	3	0	3	0	0	0	1	0	1
07:40	0	0	0	2	0	2	1	0	1	4	0	4	0	0	0	0	0	0
07:45	0	0	0	2	0	2	0	0	0	5	0	5	0	0	0	1	1	2
07:50	0	0	0	1	0	1	0	0	0	2	0	2	0	0	0	0	0	0
07:55	0	0	0	2	0	2	0	0	0	2	0	2	1	0	1	0	0	0
08:00	0	0	0	2	0	2	3	0	3	3	0	3	0	0	0	0	0	0
08:05	0	0	0	2	0	2	2	0	2	3	1	4	1	0	1	2	0	2
08:10	0	0	0	2	0	2	1	0	1	5	0	5	0	0	0	0	0	0
08:15	1	0	1	2	0	2	0	0	0	5	0	5	0	0	0	0	0	0
08:20	1	0	1	2	0	2	2	0	2	4	0	4	0	0	0	0	0	0
08:25	0	0	0	1	0	1	2	0	2	5	0	5	0	0	0	0	0	0
08:30	1	0	1	2	0	2	0	0	0	4	0	4	0	0	0	1	0	1
08:35	0	0	0	1	0	1	0	0	0	4	0	4	1	0	1	6	0	6
08:40	0	0	0	2	0	2	1	0	1	0	1	1	0	0	0	2	0	2
08:45	2	0	2	2	0	2	2	0	2	3	0	3	0	0	0	0	0	0
08:50	1	1	2	2	0	2	1	0	1	1	1	2	3	0	3	3	0	3
08:55	0	0	0	2	0	2	1	0	1	3	0	3	0	0	0	0	0	0
09:00	0	0	0	2	0	2	1	0	1	7	0	7	0	0	0	0	0	0
09:05	2	0	2	2	0	2	1	0	1	4	1	5	0	0	0	2	0	2
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09:25	1	0	1	3	1	4	1	0	1	3	0	3	0	0	0	0	0	0
09:30	2	0	2	1	0	1	0	0	0	6	1	7	0	0	0	0	0	0
09:35	1	0	1	2	0	2	0	0	0	3	1	4	0	0	0	0	0	0
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09:45	1	0	1	0	0	0	1	0	1	3	0	3	0	0	0	2	0	2
09:50	1	0	1	2	0	2	1	0	1	2	0	2	0	0	0	0	0	0
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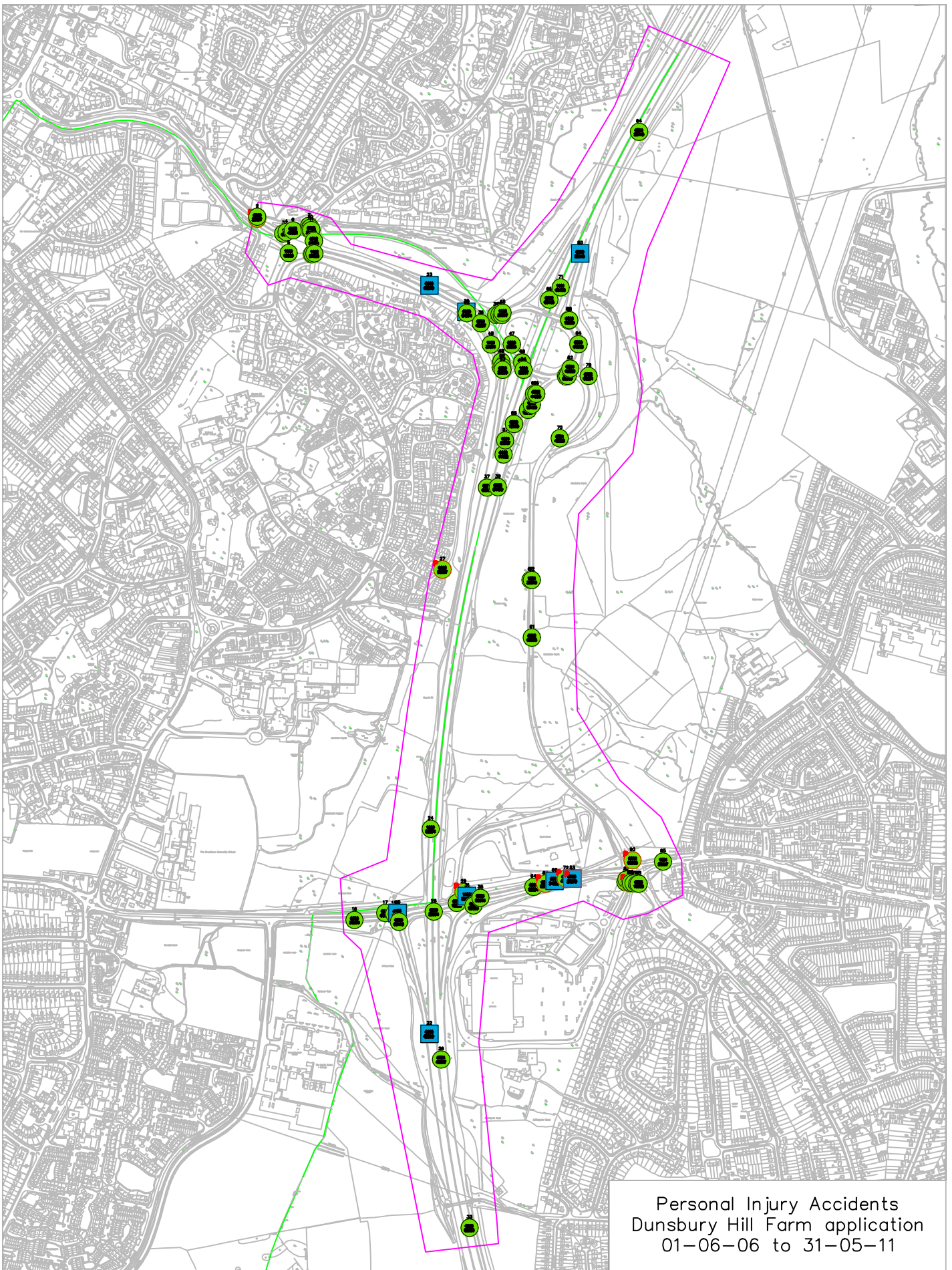
Client Atkins Transport Planning
Date 24.05.2011
Project Number ID00836
Junction Name Purbrook Way (E) / Purbrook Way (W) / B & Q Entrance-Exit / A3 Slip Road

Input by Stefan Niedzwiedzki
Checked by Paul O'Neill



	Movement 1			Movement 2			Movement 3			Movement 4			Movement 5			Movement 6		
Time	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total	LGV	HGV	Total
16:00	2	0	2	2	0	2	1	0	1	4	0	4	0	0	0	0	0	0
16:05	3	0	3	2	0	2	1	0	1	4	0	4	0	0	0	2	0	2
16:10	1	0	1	2	0	2	0	0	0	5	0	5	0	0	0	1	0	1
16:15	2	0	2	2	0	2	3	0	3	4	0	4	0	1	1	2	0	2
16:20	1	0	1	2	1	3	1	0	1	4	0	4	1	0	1	3	0	3
16:25	2	0	2	3	0	3	1	0	1	6	0	6	1	0	1	2	0	2
16:30	2	0	2	1	0	1	0	0	0	4	0	4	0	0	0	2	0	2
16:35	1	0	1	3	0	3	0	0	0	4	0	4	1	0	1	3	0	3
16:40	1	0	1	3	0	3	1	0	1	4	0	4	1	0	1	1	0	1
16:45	1	0	1	2	0	2	1	0	1	3	0	3	1	0	1	3	0	3
16:50	1	0	1	2	0	2	0	0	0	4	0	4	1	0	1	1	0	1
16:55	1	0	1	2	0	2	1	0	1	8	0	8	1	0	1	3	0	3
17:00	1	0	1	2	0	2	1	0	1	4	0	4	0	0	0	2	0	2
17:05	2	0	2	2	0	2	1	0	1	3	0	3	1	0	1	0	0	0
17:10	2	0	2	4	0	4	1	0	1	4	0	4	2	0	2	2	0	2
17:15	1	0	1	3	0	3	1	0	1	4	0	4	1	0	1	2	0	2
17:20	1	0	1	2	0	2	2	0	2	6	0	6	0	0	0	0	0	0
17:25	1	0	1	2	0	2	1	0	1	4	0	4	2	0	2	3	1	4
17:30	1	0	1	1	0	1	1	0	1	5	0	5	1	0	1	3	0	3
17:35	2	0	2	2	0	2	2	0	2	5	0	5	3	0	3	2	0	2
17:40	1	0	1	2	0	2	1	0	1	4	0	4	3	0	3	3	0	3
17:45	1	0	1	3	0	3	2	0	2	6	0	6	0	0	0	1	0	1
17:50	3	0	3	2	0	2	2	0	2	4	0	4	1	0	1	3	0	3
17:55	1	0	1	2	0	2	0	0	0	3	0	3	1	0	1	2	0	2
18:00	1	0	1	2	0	2	1	0	1	2	0	2	0	0	0	3	0	3
18:05	0	0	0	1	0	1	0	0	0	3	0	3	1	0	1	2	0	2
18:10	1	0	1	1	0	1	1	0	1	2	0	2	1	0	1	4	0	4
18:15	1	0	1	2	0	2	0	0	0	4	0	4	0	0	0	1	0	1
18:20	1	0	1	3	0	3	1	0	1	3	0	3	1	0	1	1	0	1
18:25	1	0	1	2	0	2	1	0	1	3	0	3	1	0	1	2	0	2
18:30	1	0	1	1	0	1	0	0	0	2	0	2	2	0	2	1	1	2
18:35	1	0	1	2	0	2	1	0	1	2	0	2	0	0	0	0	0	0
18:40	1	0	1	2	0	2	0	0	0	3	0	3	0	0	0	2	0	2
18:45	2	0	2	1	0	1	2	0	2	3	0	3	0	0	0	3	0	3
18:50	1	0	1	1	0	1	1	0	1	1	1	2	0	0	0	2	0	2
18:55	1	0	1	2	0	2	0	0	0	0	0	0	0	0	0	2	0	2

Appendix B - Personal Injury Accident Plot for last 5 Years



Personal Injury Accidents
Dunsbury Hill Farm application
01-06-06 to 31-05-11



Hampshire
County Council

STUART JARVIS BSc DipTP FCIHT MRTPI, DIRECTOR OF ENVIRONMENT,
THE CASTLE, WINCHESTER.



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Appendix C - Transport for South Hampshire Evidence Base - Dunsbury Hill Farm Report

Transport for South Hampshire Evidence Base

Dunsbury Hill Farm Report

Report for Transport for South Hampshire

August 2011



mvaconsultancy

Document Control

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Distribution

Issue	Date	Distribution	Comments
1	30/08/11	TfSH, PCC, Atkins	Draft for comment

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1 Introduction

1.1 Background

- 1.1.1 MVA Consultancy was commissioned, as part of a wider team, to support Transport for South Hampshire (TfSH) with the development and application of a Sub-Regional Transport Model Suite (SRTM) for this nationally important area.
- 1.1.2 The SRTM has been developed to support a wide-ranging set of interventions across the TfSH sub-region, and is specifically required to be capable of:
- forecasting changes in travel demand, road traffic, public transport patronage and active mode use over time as a result of changing economic conditions, land-use policies and development, and transport improvement and interventions;
 - testing the impacts of land-use and transport policies and strategies within a relatively short model run time; and
 - testing the impacts of individual transport interventions in the increased detail necessary for preparing submissions for inclusion in funding programmes.

1.2 Dunsbury Hill Farm

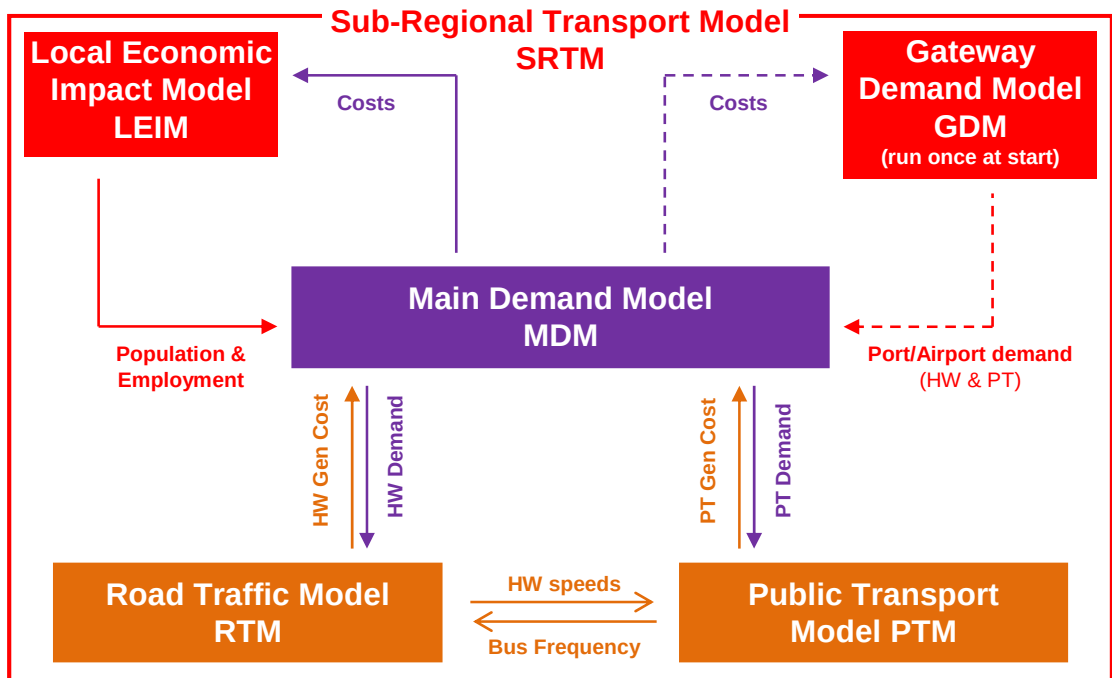
- 1.2.1 The SRTM has been used to assess the impact of development at the Dunsbury Hill Farm site, with Phase 1 planned to begin in 2014, and Phase 2 following in 2022. Dunsbury Hill Farm lies near Waterlooville in Hampshire. The development involves the construction of a business park with an associated hotel development.
- 1.2.2 The Dunsbury Hill Farm development 20.2 hectare site lies within an undeveloped strategic gap immediately east of the A3(M) motorway Junction 3, between Waterlooville and the northern area of Havant. As the existing site is predominantly comprised of agricultural land, there are currently no vehicle trips generated by the site.
- 1.2.3 As part of preparation for a Transport Assessment for the Dunsbury Hill Farm site, Portsmouth City Council commissioned use of the TfSH SRTM via their framework consultants Atkins. MVA were required to isolate the impacts of the phased implementation of the development, and provide outputs from the model to inform more detailed junction analysis planned for late summer and autumn 2011. Use of the SRTM in a fully forecasting mode (whereby the amount of development taken up is projected) was not required. Instead the development would be tested fully developed or not and the impacts between these identified.
- 1.2.4 Discussions with both Atkins and Hampshire County Council provided the best assumptions at the time of associated changes to the highway and public transport systems. In addition local traffic flow data collected surrounding the proposed site was assessed and were appropriately used to enhance the base 2010 modelled representation of conditions in the SRTM prior to application in future year forecast mode.

1.3 Sub Regional Transport Model Context and Scope

1.3.1 The SRTM is a suite of linked models comprising the following components as shown in Figure 1.1:

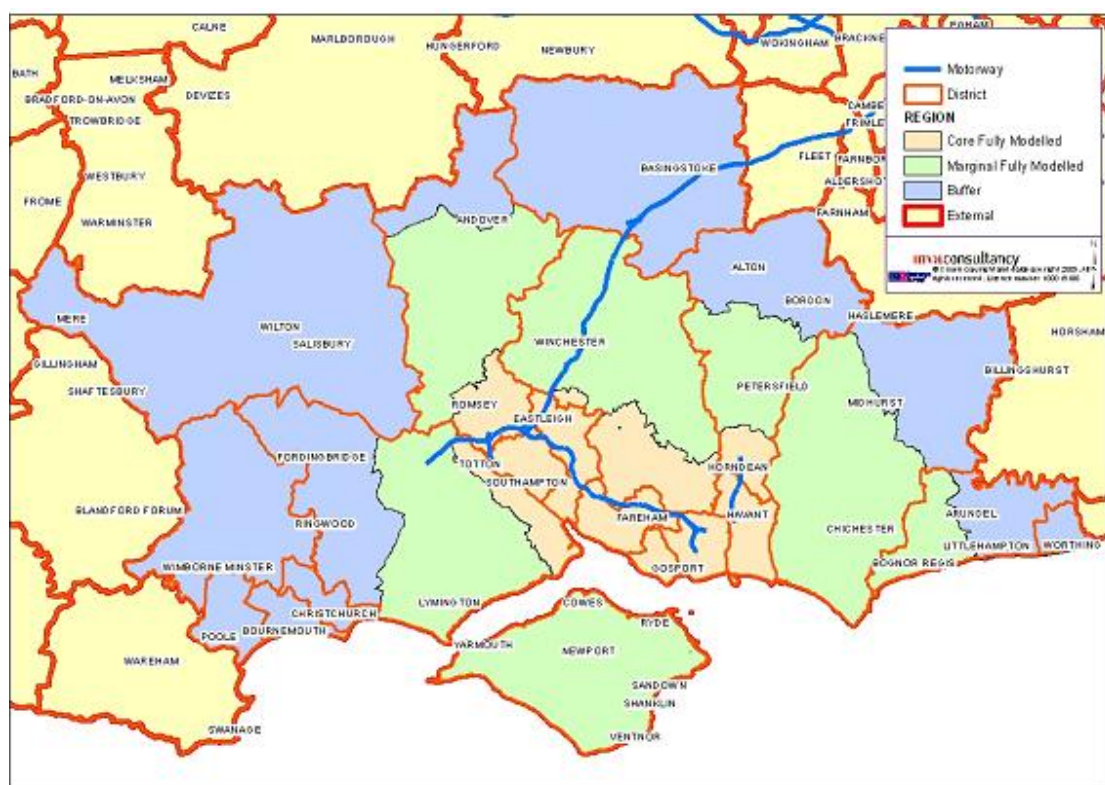
- the Main Demand Model (MDM) which predicts when (time of day), where (destination choice) and how (choice of mode) journeys are made;
- the Gateway Demand Model (GDM) which predicts demand for travel from ports and airports;
- the Road Traffic Model (RTM) which determines the routes taken by vehicles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

Figure 1.1 TfSH Sub-Regional Transport Model



1.3.2 The modelled area of the SRTM is divided into four regions, shown in Figure 1.2, which differ by zone aggregation and modelling detail. The Dunsbury Hill Farm site lies within the Core Fully Modelled Area.

Figure 1.2 Study Area of the SRTM



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

- AM peak: busiest hour between 0700 and 1000, (defined as 38.2% of the three hours for Highway and 40% for Public Transport);
- Inter peak: average of 1000 to 1600 (ie 16.7% of the six hours for both modes); and
- PM peak: busiest hour between 1600 and 1900, (defined as 35.8% of the three hours for Highway and 40% for Public Transport).

1.3.4 The SRTM has a base year of 2010, and forecast years of 2014, 2019, 2026 and 2036. In addition LEIM provides forecasts through to 2041. For the Dunsbury Hill Farm application the model was projected forward only up to 2026.

2 Dunsbury Hill Farm Planning Assumptions

2.1 Introduction

- 2.1.1 This chapter describes the planning assumptions for the Dunsbury Hill Farm development.

2.2 Planning Assumptions

- 2.2.1 The development proposal involves the construction of a business park in two phases with an associated hotel development. The site predominantly comprises agricultural land that lies within an undeveloped strategic gap immediately east of the A3 (M) motorway Junction 3, between Waterlooville and the northern area of Havant. As the existing site is predominantly comprised of agricultural land, there are currently no vehicle trips generated by the site.
- 2.2.2 Dunsbury Hill Farm is allocated for employment uses under saved Local Plan policy EMP1.4. The allocation covers an area of 13.2 hectares. As part of the South Hampshire growth agenda, a seven hectare extension to this allocation was proposed in the 2008 Site Allocations: Issues and Options document.
- 2.2.3 The entire 20.2 hectare site has been put forward as a Strategic Site in the Submission Core Strategy and was marketed by PCC for development following publication of the Dunsbury Hill Development Brief in 2007 and the site remains key to delivering employment in the local and sub-regional areas and is seen as a potential new business gateway to South Hampshire via the A3(M) Corridor. The aspirations are for a top end business park/campus and an exemplar construction and design to BREEAM Excellent standard.
- 2.2.4 Construction of roadworks forming the detailed element of the hybrid planning application, access and link road, is planned for 2013. It is then intended that the site will be constructed in two phases as follows:
- Phase 1 – employment land use (46,450 m² GFA) and a Hotel (5,574 m² GFA); and
 - Phase 2 – additional employment land use (15,329 m² GFA).
- 2.2.5 Phase 1 is currently planned to begin in 2014 with Phase 2 following in 2022. Both phases have an anticipated timescale of four years to full completion and occupation therefore will be expected for 2018 and 2026 respectively.
- 2.2.6 The hotel is intended to be internal-facing and provide conferencing facilities and accommodation for visitors to the employment zone. Employment land uses will be assigned a mix of approximately 40% B1, 40% B2 and 20% B8. The associated quantum of development is summarised in Table 2.1 below.

Table 2.1 Dunsbury Hill Farm Planning Assumptions

Land Use	Phase 1 m ² GFA *	Phase 2 m ² GFA	Total m ² GAF
B1 (Business)	18,580	6,132	24,712
B2 (General Industry)	18,580	6,132	24,712
B3 (Storage / Distribution)	9,290	3,065	12,356
C1 (Hotel)	5,574	-	5,574
Total	52,024	15,329	67,354

* Gross Floor Area

2.2.7 A plan of the development from the First Draft Masterplan is provided in Appendix A.

3 Modelling Dunsbury Hill Farm in the SRTM

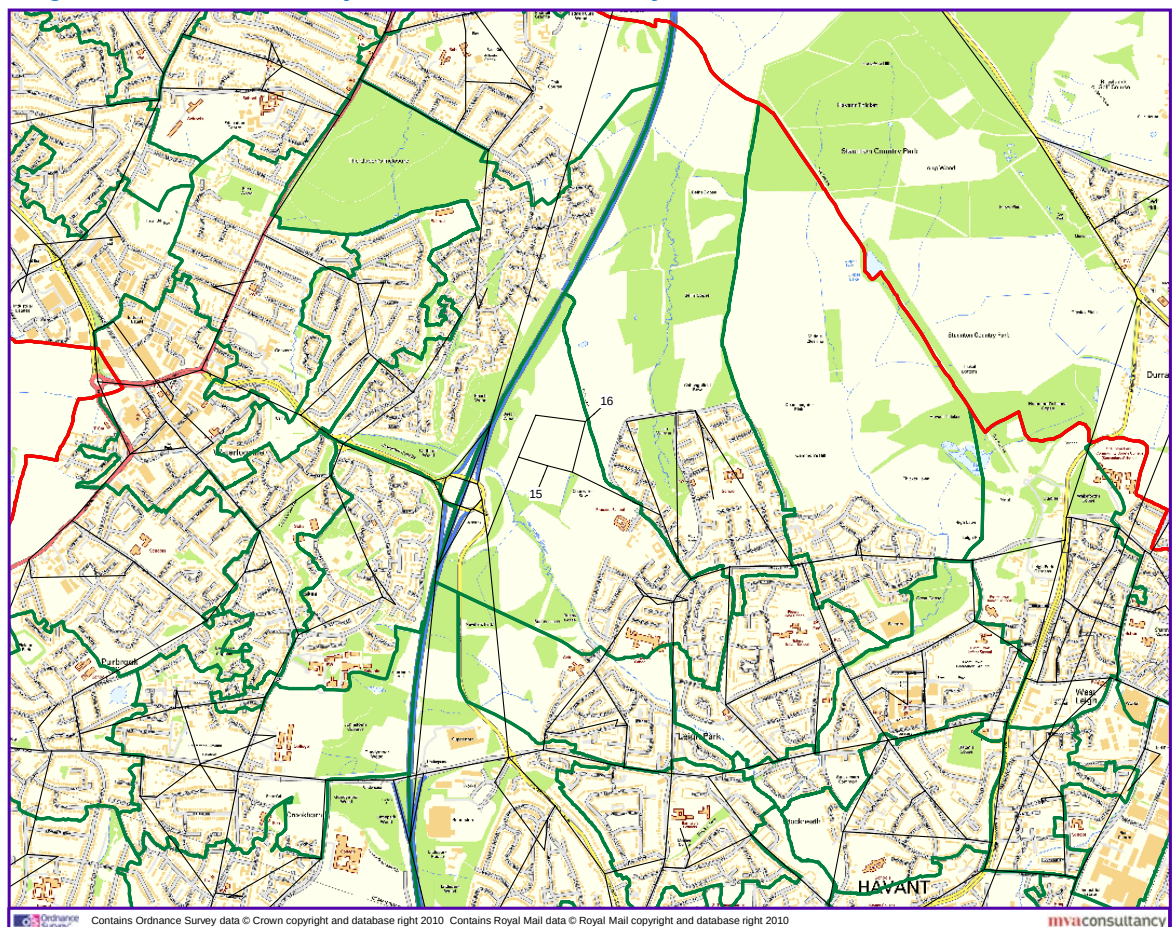
3.1 Introduction

- 3.1.1 This chapter describes how the SRTM has been amended and used to model the Dunsbury Hill Farm development. Further details of how the road and PT network have been modified are provided in Chapters 4 and 5.

3.2 Zoning

- 3.2.1 Travel in the model is aggregated into zones which therefore determine the spatial detail available. The definition of zones takes account of barriers (rivers, railways, motorways) as well as administrative and planning data boundaries (TfSH zones are aggregations of Census Output Areas in the fully modelled area and wards elsewhere). In addition zones accounted for land use types, access points onto the road network as well as respecting screenlines for trip matrix validation. For public transport catchment areas for rail stations and bus stops and fare boundaries were also considered and additional zones are included for the ports and airports.
- 3.2.2 In order to model the development at Dunsbury Hill Farm, two new zones have been added to the network. Figure 3.1 shows the zone system around the study area; the two new zones are hierarchically numbered 15 and 16 for phases one and two respectively. Sequential numbers used within components of SRTM are 725 & 726 respectively.

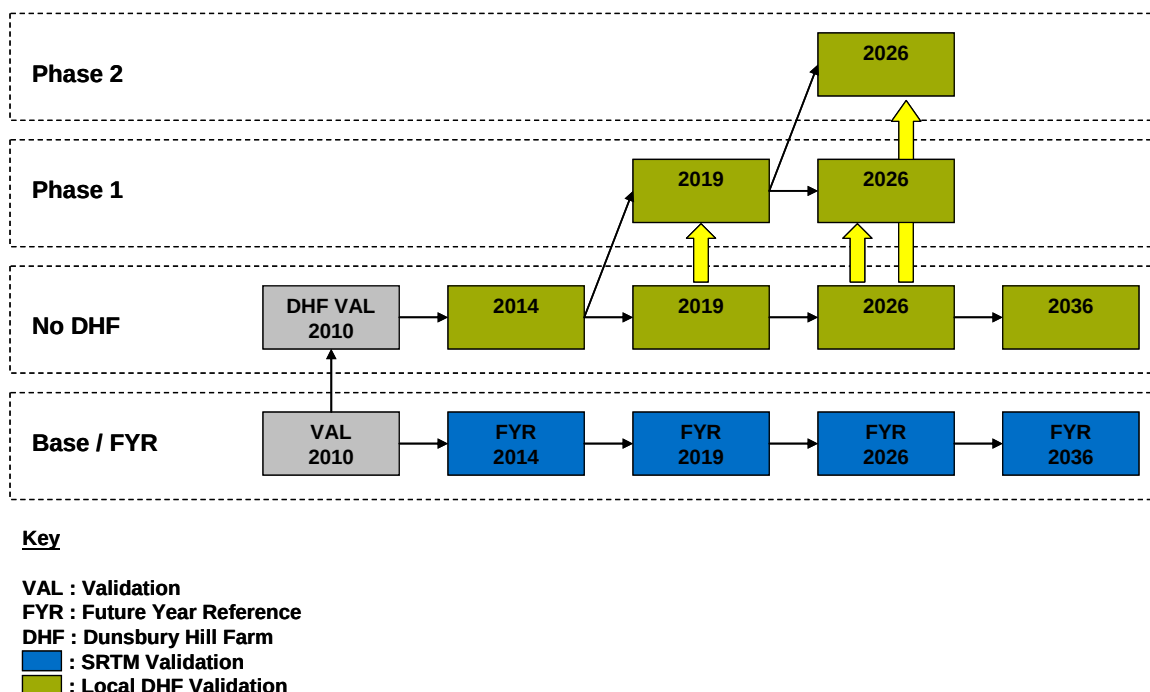
Figure 3.1 SRTM Zone System around the Study Area



3.3 Scenarios

3.3.1 Figure 3.2 shows the various scenarios that have been modelled in order to assess the impact of the development.

Figure 3.2 Scenarios Modelled to Assess the Impact of Dunsbury Hill Farm



3.3.2 The scenarios at the lowest level (Base / FYR) are the standard set of SRTM scenarios; 2010 base year validation and 2014, 2019, 2026 and 2036 Future Year Reference (FYR) Cases. In the FYR cases development is permissible at Dunsbury Hill Farm; the level of development is determined by the LEIM.

3.3.3 In the second level of scenarios (No DHF) development is not allowed at Dunsbury Hill Farm. This is to provide a set of scenarios against which to measure the impact of the development. In addition the base year calibration in the study area has been improved in the immediate vicinity of the development, using observed data from the local roads.

3.3.4 In the third level of scenarios Phase 1 of the development is included; Phase 2 is included in the top level.

3.3.5 The three yellow arrows show the scenarios that were compared to establish the impact of the development for:

- 2019 Phase1;
- 2026 Phase 1; and
- 2026 Phases 1 & 2.

4 RTM Local Calibration Data and Network Refinements

4.1 Introduction

- 4.1.1 This chapter describes the local calibration of the RTM using observed count data from roads around Dunsbury Hill. It also describes how the road network of the development is modelled.
- 4.1.2 Further information regarding the RTM is given in Report 4 and Working Paper 9.

4.2 Local Calibration

- 4.2.1 The main RTM summary report recommends that additional local validation checks may be beneficial for model application for specific interventions at a local level. As such a set of ATC counts taken on roads around the development site during May and June 2011 were compared to the base year model flows.
- 4.2.2 The observed flows were compared to the modelled flows using enclosure screenlines defined in the original base year calibration of the RTM. The Havant and Waterlooville enclosure screenlines and the locations of the ATC count sites are shown in Figure 4.1.
- 4.2.3 The calibration followed an iterative procedure whereby network characteristics were adjusted, the effect on the enclosure screenline comparison analysed, and so on until the quality of the validation could not be further improved. Adjustments were made to the following areas of the network:
 - Speed along Hulbert Road;
 - Speed along Purbrook Way;
 - Capacities at roundabouts along Purbrook Way and at the A3M J3;
 - Signal timings in the AM peak on Portsdown Hill Road; and
 - Speed on Bedhampton Hill.
- 4.2.4 The results of the local network calibration are shown in Tables 4.1 to 4.3. A comparison with the original RTM validation along the enclosure screenlines is also provided in the columns headed 'Local GEH' (updated following Dunsbury Hill Farm calibration) and 'Original GEH' (the original RTM calibration).

Figure 4.1 ATC Count Sites and Enclosures

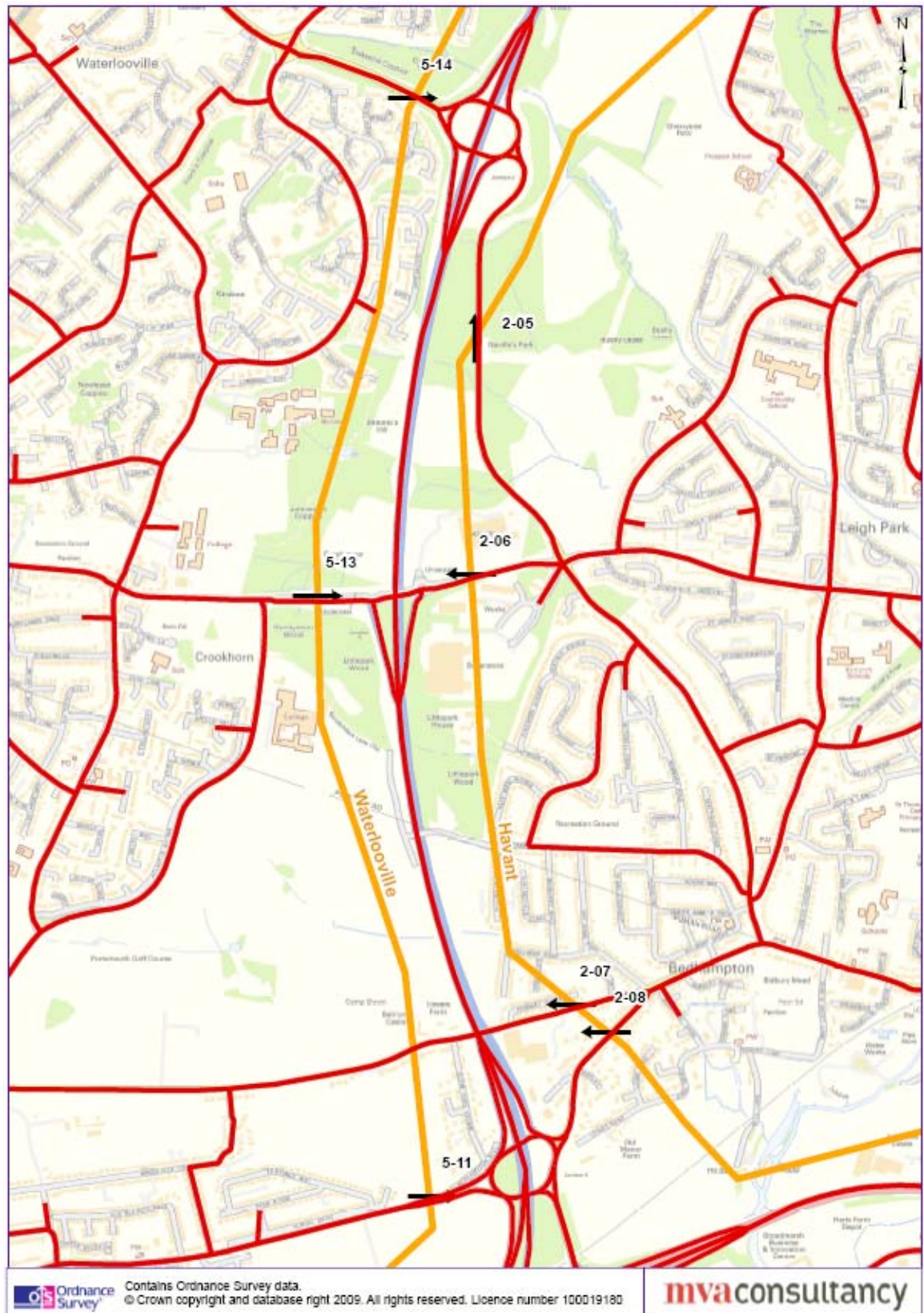


Table 4.1 Results of AM Peak Local Network Calibration

	Obs	Model	% Diff	Local GEH	Original GEH
Havant Enclosure – Outbound					
B2149 Bedhampton Hill Rd near M3	601.7	491.0	-18%	4.7	8.7
Portsdown Hill Rd at A3(M)	674.3	453.9	-33%	9.3	13.7
Purbrook Way east of A3(M)	978.1	1041.2	6%	2.0	3.8
B2150 Hulbert Rd east of A3(M)	520.8	717.3	38%	7.9	10.9
Havant Enclosure – Inbound					
B2149 Bedhampton Hill Rd near M3	541.3	795.9	47%	9.8	9.7
Portsdown Hill Rd at A3(M)	544.8	433.5	-20%	5.0	19.2
Purbrook Way east of A3(M)	893.9	967.0	8%	2.4	7.4
B2150 Hulbert Rd east of A3(M)	755.1	627.5	-17%	4.9	4.0
Waterlooville Enclosure - Out					
Purbrook Way west of A3(M)	1003.4	1029.0	3%	0.8	5.5
Portsdown Hill Rd at A3(M)	544.8	433.5	-20%	5.0	19.2
A2030 Havant Rd near A3(M)	757.3	714.4	-6%	1.6	2.4
Waterlooville Enclosure - In					
Purbrook Way west of A3(M)	851.0	912.9	7%	2.1	3.9
Portsdown Hill Rd at A3(M)	674.3	453.9	-33%	9.3	13.7
A2030 Havant Rd near A3(M)	544.8	550.4	1%	0.2	0.4

Table 4.2 Results of Interpeak Local Network Calibration

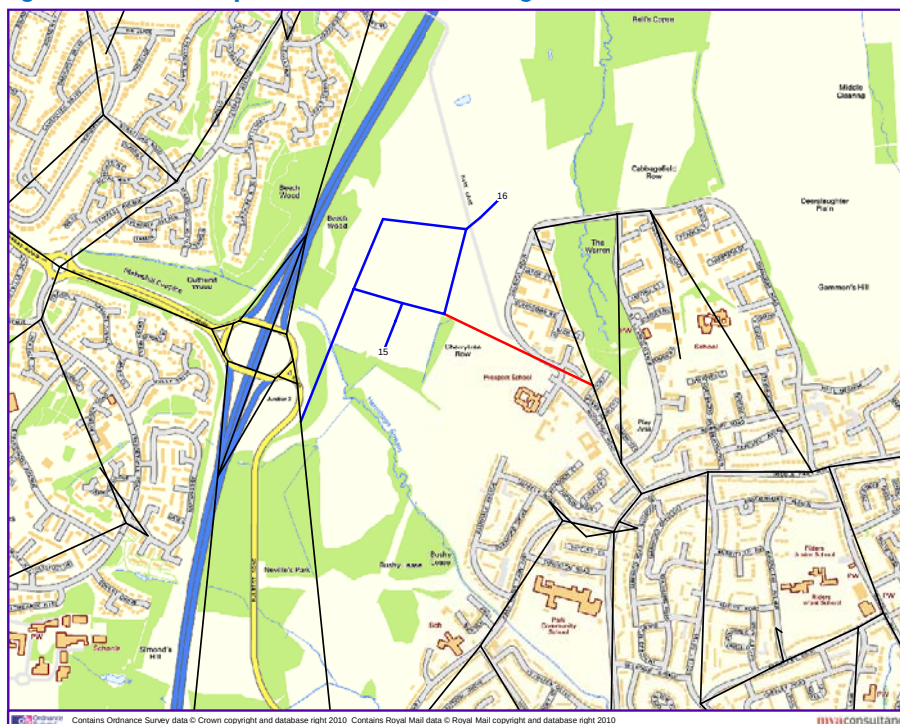
	Obs	Model	% Diff	Local GEH	Original GEH
Havant Enclosure - Outbound					
B2149 Bedhampton Hill Rd near M3	499.2	440.5	-12%	2.7	4.3
Portsdown Hill Rd at A3(M)	483.4	323.1	-33%	8.0	10.8
Purbrook Way east of A3(M)	849.1	950.6	12%	3.4	3.7
B2150 Hulbert Rd east of A3(M)	525.4	633.5	21%	4.5	6.9
Havant Enclosure - Inbound					
B2149 Bedhampton Hill Rd near M3	560.5	547.2	-2%	0.6	1.3
Portsdown Hill Rd at A3(M)	406.3	194.3	-52%	12.2	15.3
Purbrook Way east of A3(M)	854.9	894.6	5%	1.3	4.0
B2150 Hulbert Rd east of A3(M)	526.1	647.5	23%	5.0	7.4
Waterlooville Enclosure - Out					
Purbrook Way west of A3(M)	699.3	765.0	9%	2.4	4.1
Portsdown Hill Rd at A3(M)	406.3	194.3	-52%	12.2	15.3
A2030 Havant Rd near A3(M)	574.8	548.8	-5%	1.1	0.4
Waterlooville Enclosure - In					
Purbrook Way west of A3(M)	756.9	994.2	31%	8.0	6.9
Portsdown Hill Rd at A3(M)	483.4	323.1	-33%	8.0	10.8
A2030 Havant Rd near A3(M)	536.1	437.9	-18%	4.4	4.0

Table 4.3 Results of PM Peak Local Network Calibration

	Obs	Model	% Diff	Local GEH	Original GEH
Havant Enclosure - Outbound					
B2149 Bedhampton Hill Rd near M3	585.6	443.8	-24%	6.2	8.3
Portsmouth Hill Rd at A3(M)	663.3	561.1	-15%	4.1	9.9
Purbrook Way east of A3(M)	926.7	915.4	-1%	0.4	1.8
B2150 Hulbert Rd east of A3(M)	667.8	724.7	9%	2.2	4.8
Havant Enclosure - Inbound					
B2149 Bedhampton Hill Rd near M3	795.1	800.9	1%	0.2	2.9
Portsmouth Hill Rd at A3(M)	683.4	370.7	-46%	13.6	22.5
Purbrook Way east of A3(M)	1033.5	1194.5	16%	4.8	6.5
B2150 Hulbert Rd east of A3(M)	698.4	845.3	21%	5.3	8.3
Waterlooville Enclosure - Out					
Purbrook Way west of A3(M)	831.2	719.6	-13%	4.0	0.8
Portsmouth Hill Rd at A3(M)	683.4	370.7	-46%	13.6	22.5
A2030 Havant Rd near A3(M)	771.4	1160.5	50%	12.5	14.7
Waterlooville Enclosure - In					
Purbrook Way west of A3(M)	1113.1	1052.3	-5%	1.8	0.1
Portsmouth Hill Rd at A3(M)	663.3	561.1	-15%	4.1	9.9
A2030 Havant Rd near A3(M)	699.2	682.0	-2%	0.7	0.4

4.3 Development Network Changes

- 4.3.1 Figure 4.2 shows the links added to the network in order to model the Dunsbury Hill Farm development. Existing roads are shown in black, new highway links in blue, and an additional bus only link (described further in Chapter 5) is shown in red.

Figure 4.2 Development Network Changes

- 4.3.2 All of the new highway links were coded as standard 30 mph links. The new road link on the west side of the development is connected to the existing road system with a roundabout. The Bus Gate link at Leigh Park joins onto an existing roundabout.

5 PTM Network and Service Assumptions

5.1 Introduction

- 5.1.1 This chapter describes how public transport provision related to the development is modelled. Further information regarding the PTM is given in Report 5 and Working Paper 10.

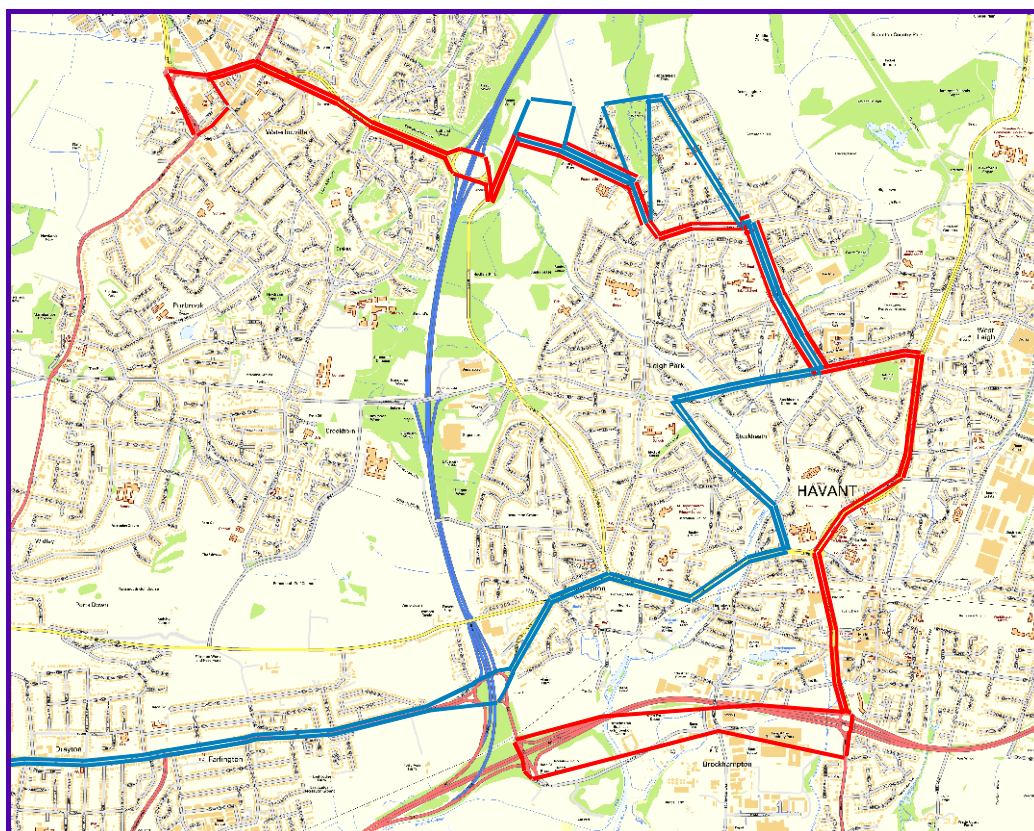
5.2 Bus Gate

- 5.2.1 The development includes the introduction of a Bus Gate between Leigh Park and Dunsbury Hill Farm. This is shown as the red link in Figure 4.3 in the previous chapter. This is a new section of road which is bus only. It provides a new opportunity for travel from Leigh Park to both Dunsbury Hill Farm and Waterlooville, which was previously only accessible via Havant.

5.3 Service Provision

- 5.3.1 With the development of the Bus Gate will be the introduction of a new bus route (known as the Cross Borough Service), linking Havant, Leigh Park, Dunsbury Hill Farm and Waterlooville, at a frequency of 4 bph. This will substantially reduce the journey time from Leigh Park to Waterlooville. In addition the existing Route 23 (Leigh Park to Southsea) will be extended from Leigh Park to Dunsbury Hill Farm. These changes to the existing public transport service provision are shown in Figure 5.1.

Figure 5.1 Changes to Public Transport Service Provision



- 5.3.2 Figures 5.2 and 5.3 show the number of buses per hour around the study area, both with and without the changes related to the development and the introduction of the Cross Borough Service. Figure 5.4 shows the changes to the bus service.

Figure 5.2 Buses per Hour - No DHF nor Cross Borough Service

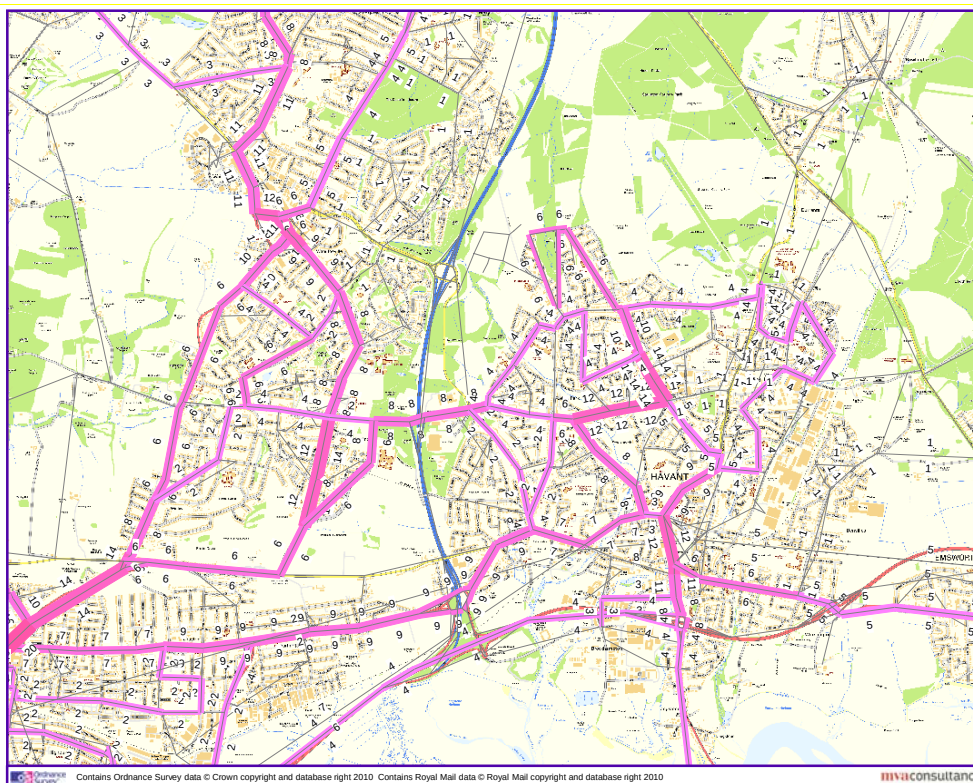


Figure 5.3 Buses per Hour - with DHF & Cross Borough Service

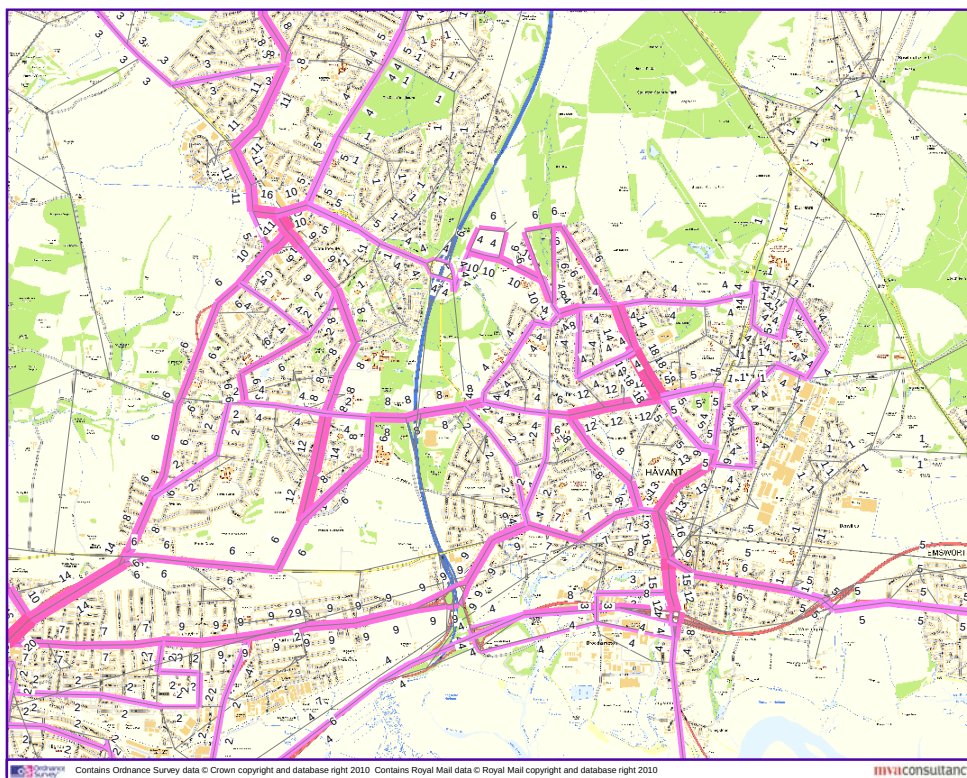
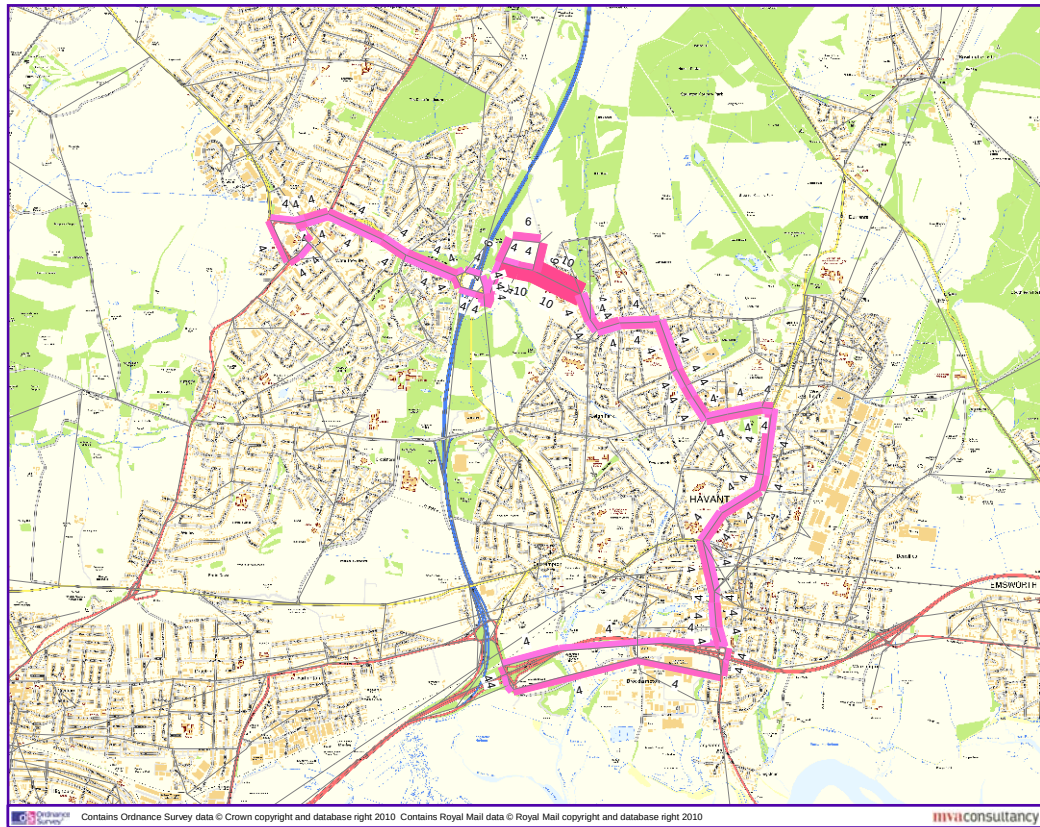


Figure 5.4 Changes to Bus Services (buses per hour)



6 Results – Main Demand Model & LEIM

6.1 Introduction

- 6.1.1 This section describes forecasts produced by the MDM and the LEIM for Phase 1 and 2 of the Dunsbury Hill Farm development, including forecast jobs, trips and mode share.

6.2 Results

- 6.2.1 Table 6.1 shows the forecast number of jobs by type of land use from LEIM.

Table 6.1 LEIM Forecast Jobs by Land Use Type

Land Use	Phase 1	Phase 2	Total
B1 (Business)	1114	386	1500
B2 (General Industry)	364	125	489
B3 (Storage / Distribution)	162	54	215
C1 (Hotel)	457	0	457
Total	2098	564	2662

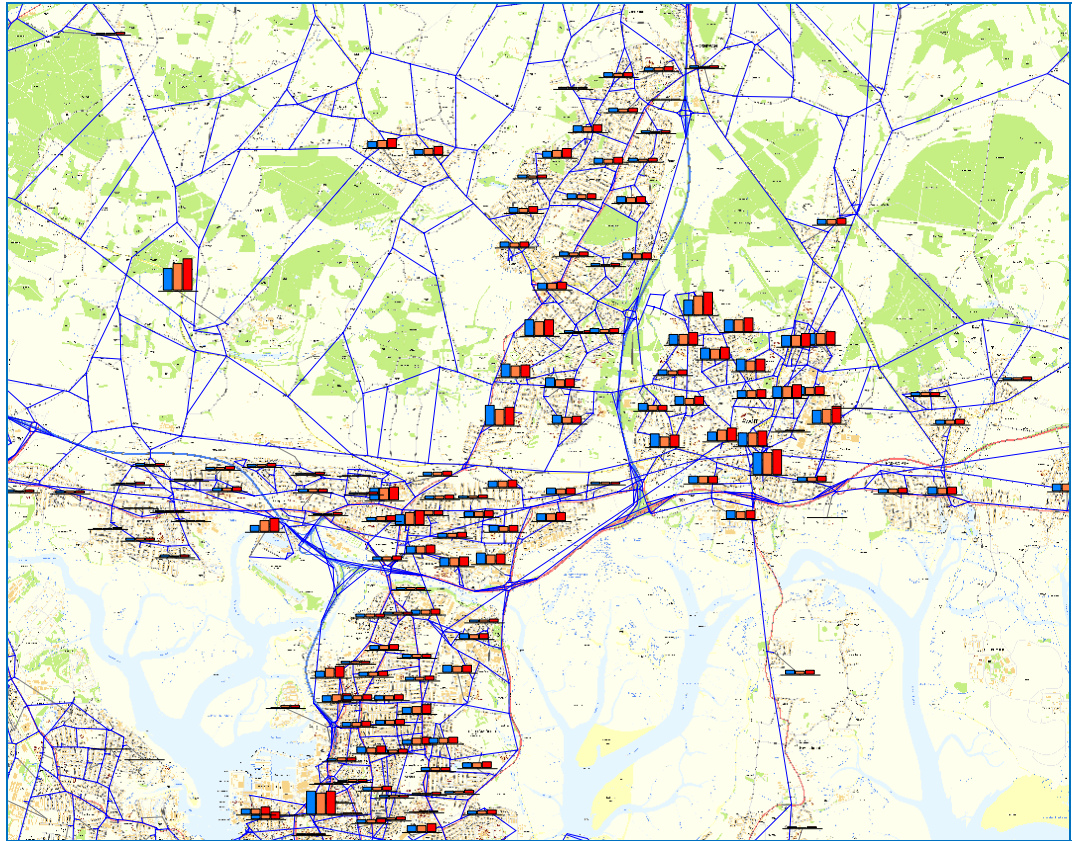
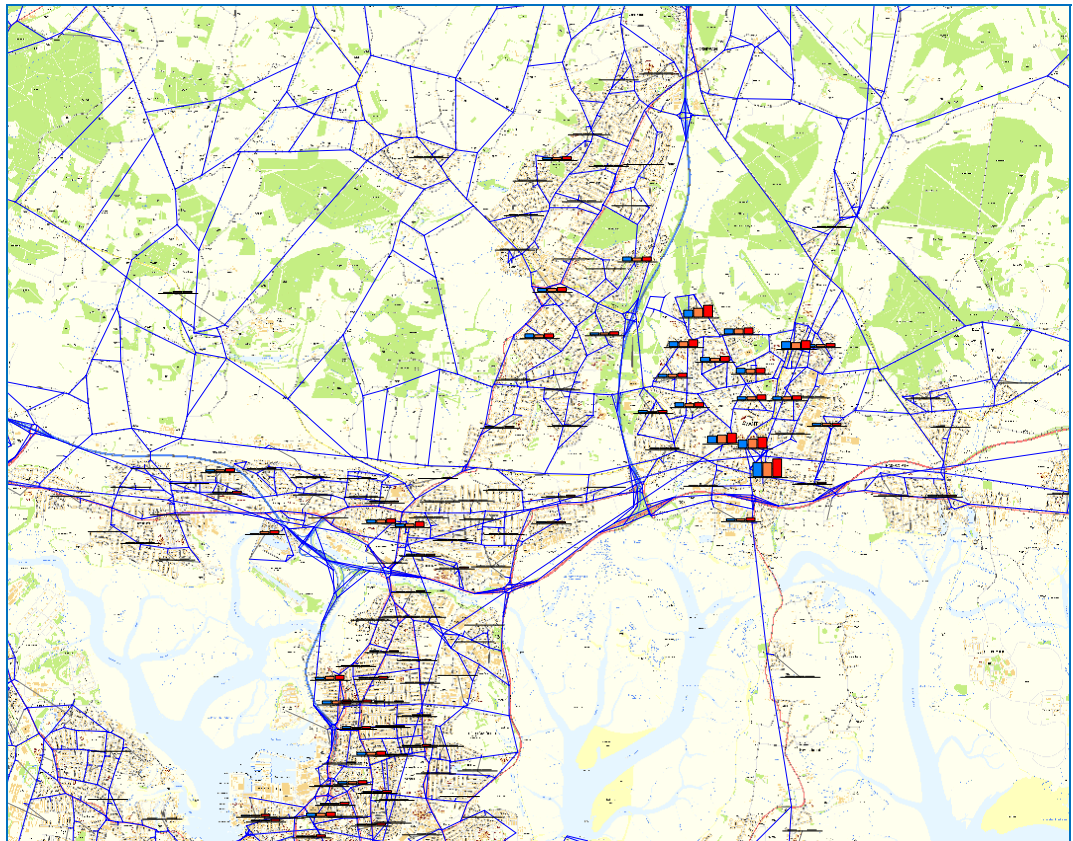
- 6.2.2 Table 6.2 shows the daily forecast trips to and from the development, by mode.

Table 6.2 LEIM Forecast Daily Trips to and from the Development

Scenario	To Dunsbury Hill Farm			From Dunsbury Hill Farm		
	Car	PT	Active	Car	PT	Active
2019 Phase 1	4085	102	1150	3915	102	1134
2026 Phase 1	4094	100	1293	3978	100	1278
2026 Phase 2	4728	129	1490	4660	129	1471

- 6.2.3 Figure 6.1 shows the distributions of the origins of highway AM peak trips travelling to the Dunsbury Hill Farm development. Figure 6.2 shows the equivalent distribution for PT trips to the development; these are shown as 5 x the scale of highway trips. The coloured bars show the following:

- Blue : 2019 Phase 1;
- Orange : 2026 Phase 1; and
- Red : 2026 Phase 2.

Figure 6.1 Distribution of Origins of Highway AM Peak Trips to the Development**Figure 6.2 Distribution of origins of Public Transport AM Peak Trips to the Development (5x scale of Highway)**

6.2.4 Table 6.3 shows the forecast effect of the development on jobs both in the Dunsbury Hill Farm development and the surrounding district. The results are shown by year and Phase.

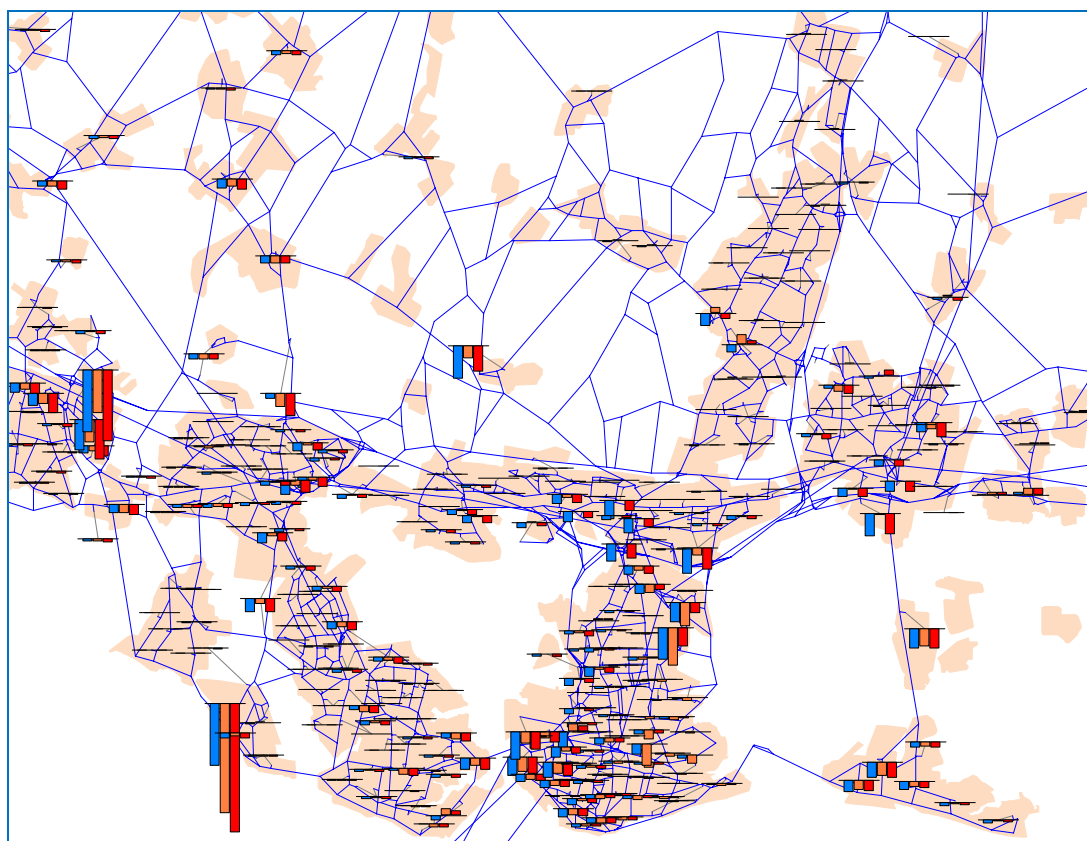
Table 6.3 Forecast Effect on Jobs in the Development and Surrounding Districts

District	2019 Phase 1	2026 Phase 1	2026 Phase 2
East Hampshire (Core)	-13	8	-7
Eastleigh	-5	-38	-66
Fareham	-304	-195	-342
Gosport	-179	-193	-254
Havant	-187	-45	-143
New Forest (Core)	-5	57	38
Test Valley (Core)	-2	-81	24
Winchester (Core)	-166	-111	-175
Portsmouth	-534	-328	-351
Southampton	-25	30	-47
Dunsbury Hill Farm	2078	2114	2664
Total	658	1219	1340

6.2.5 Figure 6.3 shows the change in jobs caused by the development graphically. The coloured bars show the following:

- Blue : Change between 2019 Phase 1 and 2019 'Do Nothing';
- Orange : Change between 2026 Phase 1 and 2026 'Do Nothing'; and
- Red : Change between 2026 Phase 2 and 2026 'Do Nothing'.

Figure 6.3 Change in Jobs Caused by Dunsbury Hill Farm Development



7 Results – Road Traffic Model

7.1 Introduction

- 7.1.1 This chapter describes forecasts produced by the RTM for Phase 1 and 2 of the Dunsbury Hill Farm development, including forecast changes in flows and delays.

7.2 Results

- 7.2.1 Figures 7.1 and 7.2 show the changes in flow between the 2026 AM peak Phase 2 scenario, and the 2026 AM peak 'Do Nothing' scenario, i.e. without the development. Figures 7.3 and 7.4 show the delays for the same scenarios; Figure 7.5 shows the change in delay between the two scenarios.
- 7.2.2 The equivalent figures for the interpeak and PM peak, for 2019 Phase 1, and 2026 Phase 2 are provided in Appendix B.

Figure 7.1 Change in Flow Resulting from Development (2026 AM Ph 2) - Wide

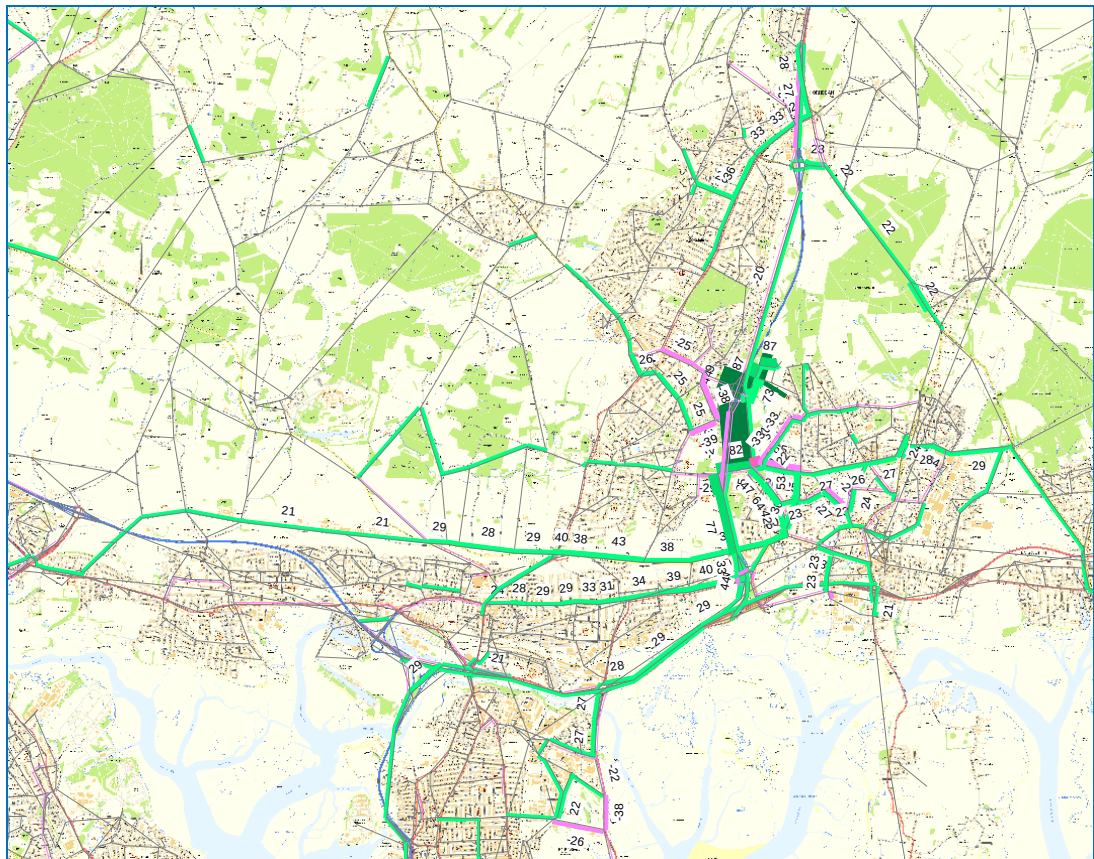


Figure 7.2 Change in Flow Resulting from Development (2026 AM Ph 2) – Zoom

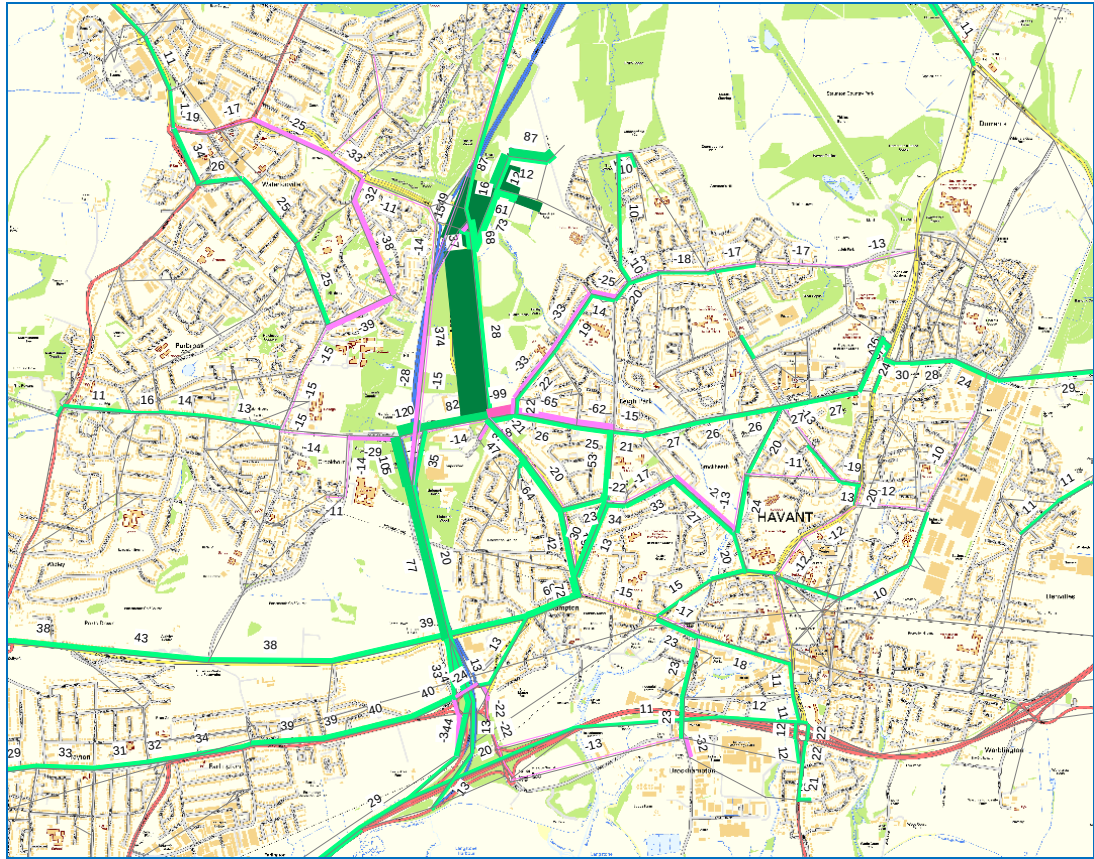


Figure 7.3 Delays in 2026 AM Peak without Development

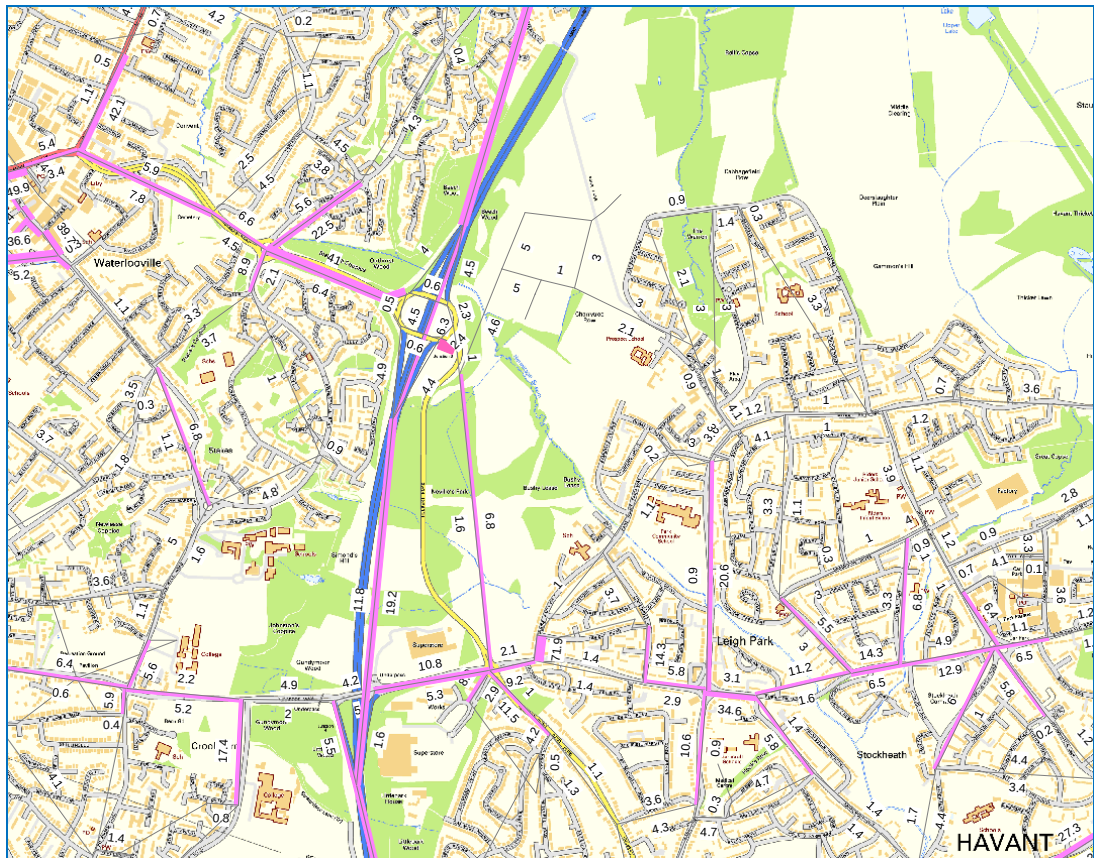


Figure 7.4 Delays in 2026 AM Peak with Phase 2 Development

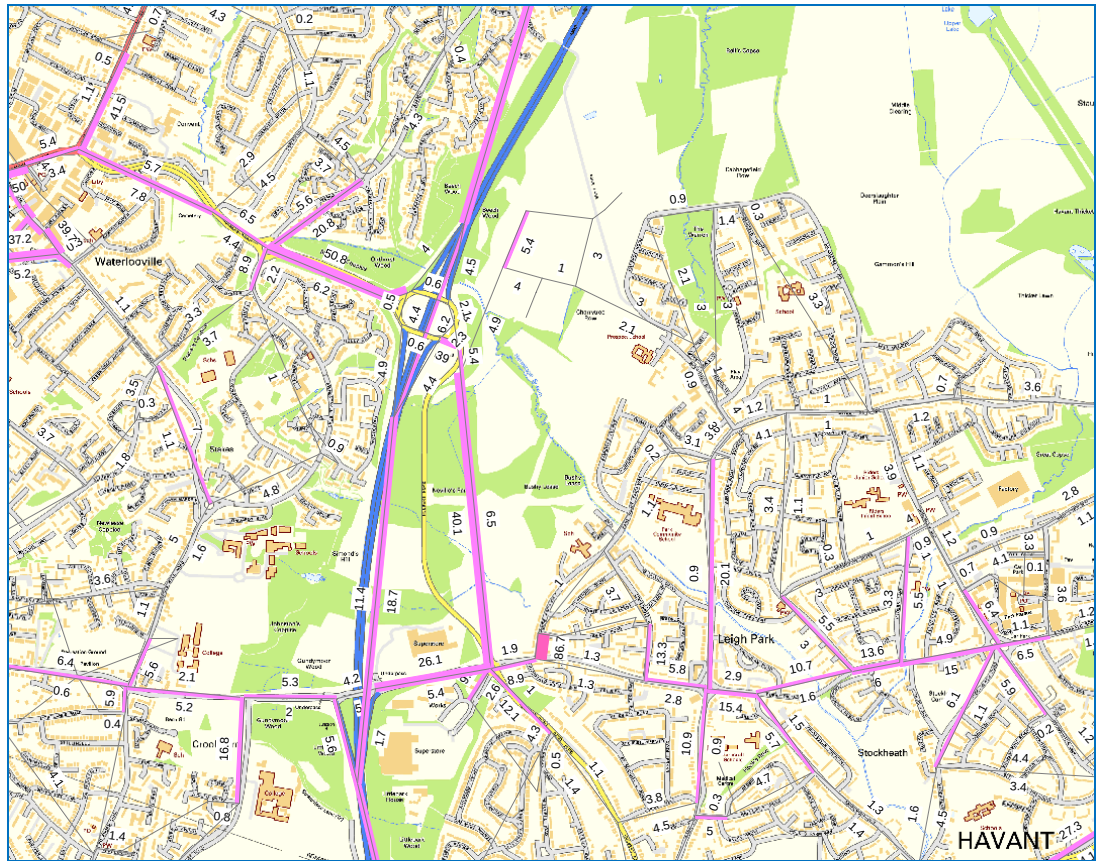
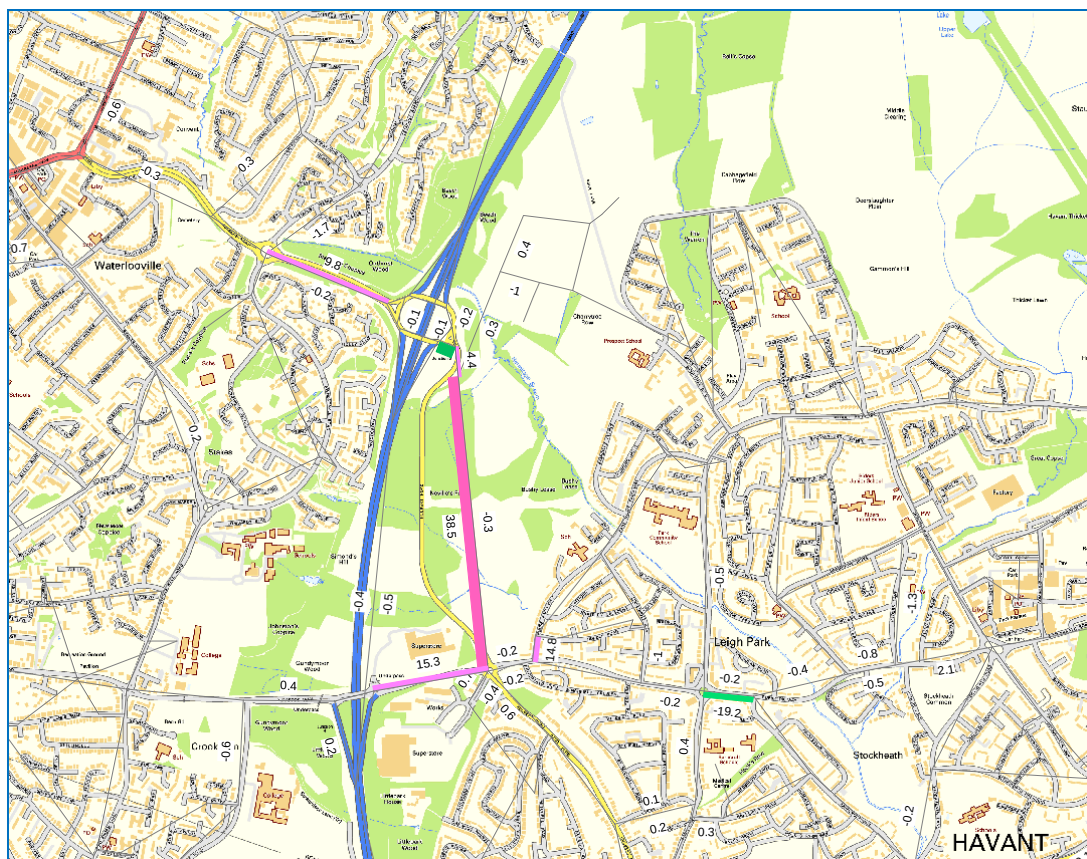


Figure 7.5 Change in Delays Resulting from Development (2026 AM Peak Phase 2)



7.3 Impact on the Highway Network

AM Peak

- 7.3.1 The general movement trend towards the development site is northbound on the A3(M) and from within Havant itself. Interestingly the majority of development trips exit the A3(M) at junction 4 rather than junction 3 and then access the site via Purbrook Way, and subsequently Hulbert Road (B2150). This could possibly be due to existing congestion northbound on the A3(M) or at junction 3 itself.
- 7.3.2 Delays on the A3(M) are largely unchanged. The greatest change in delay in the immediate vicinity to the development site occurs eastbound on the short section of Purbrook Way between the A3(M) junction 4 interchange and Hulbert Road and on the short eastbound section of Hulbert Road in advance of the A3(M) junction 3 interchange from Waterlooville, which is consistent with increased traffic volumes and reduced spare junction capacity.

Inter peak

- 7.3.3 For the Inter peak there is an increase in southbound traffic joining the A3(M) at junction 3 after exiting the development site. There is a reduction in traffic joining the A3(M) and travelling northbound. As with the AM peak the increase in northbound traffic on the A3(M) to the site exits at junction 4 and not junction 3.
- 7.3.4 The only noticeable change in delay is northbound on Hulbert Road, probably stemming from increased pressure on the site access junctions.

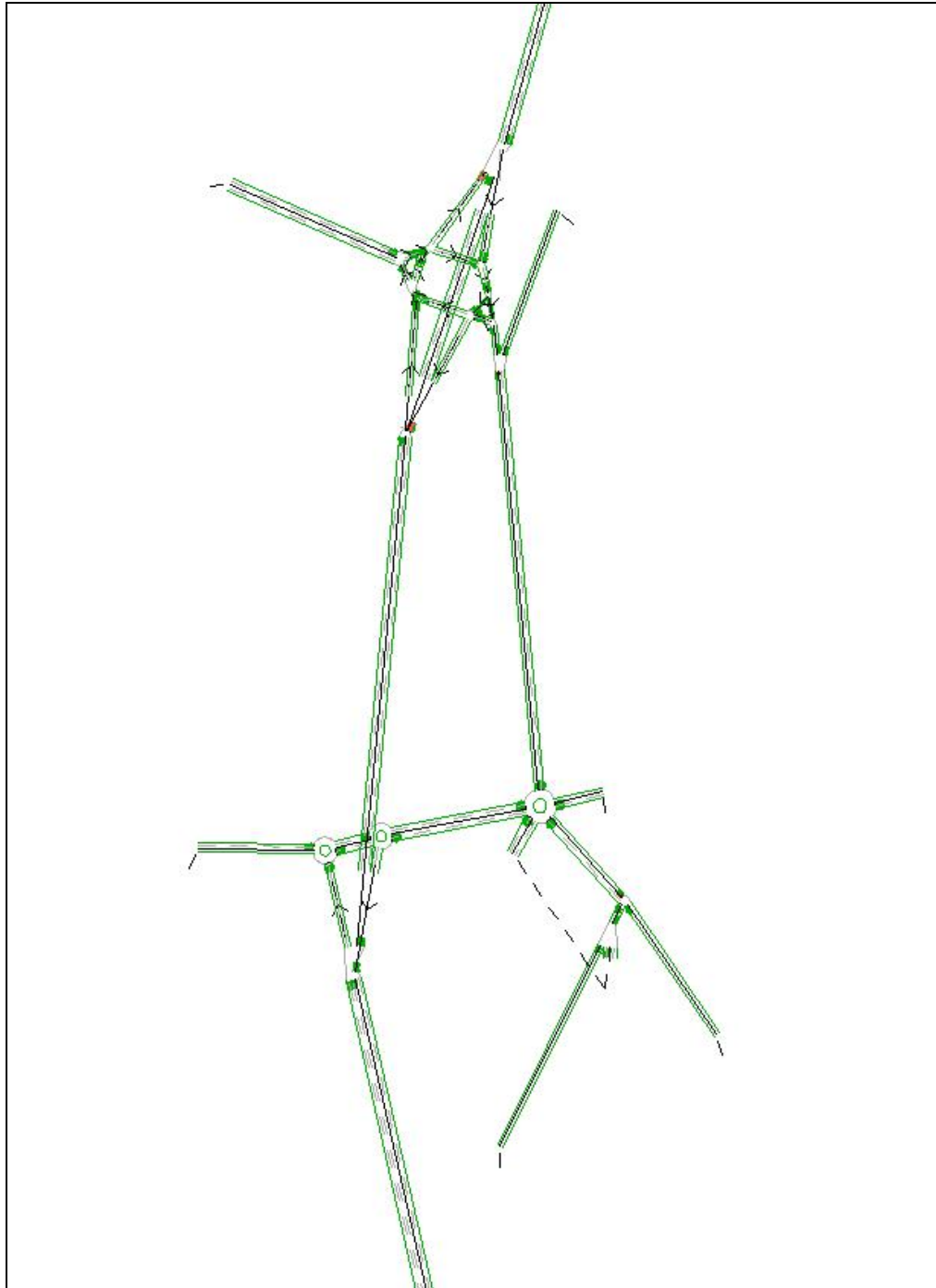
PM Peak

- 7.3.5 As would be expected the overall trend in the PM peak is the reverse of the AM, with an increase in southbound movements. The majority initially progress southbound on Hulbert Road towards the junction with Purbrook Way. It is apparent that a majority of southbound movements away from the development site access the A3(M) at junction 4, as opposed to junction 3, which again is a reverse of the AM northbound route choice.
- 7.3.6 Within Havant there is a distinct change in westbound route choice away from Hulbert Road and onto Purbrook Road. This indicates potential congestion on the Hulbert Road approach of the roundabout junction with Pulbrook Road.
- 7.3.7 The only significant change in delay is eastbound on Pulbrook Way at the junction with Hulbert Road, where there is a significant reduction in delay. This is probably a result of the change in distribution of trips at this roundabout creating greater gaps and reduced delay for vehicles joining from Pulbrook Road eastbound.

7.4 Cut-out VISSIM Input

- 7.4.1 The RTM forecasts are providing data for a microsimulation model. Flows for all periods, years and scenario are output for the immediate road network around the development. Figure 7.6 shows the RTM network that is covered by the microsimulation model.

Figure 7.6 Extent of RTM Network Covered by the Microsimulation Model



8 Results – Public Transport Model

8.1 Introduction

8.1.1 This chapter provides forecasts from the PTM for Phase 1 and 2 of the DHF development.

8.2 Results

8.2.1 Figures 8.1 and 8.2 show the forecast boardings, alightings and loadings on the Cross Borough Service, in the eastbound and westbound directions respectively. The 2019 Phase 1 forecasts are shown in red, with the 2026 Phase 2 shown in blue. The Figures show that the main centres of demand are Waterlooville (particularly A3 / Hulbert Rd) and Havant.

Figure 8.1: AM Eastbound Boardings, Alightings & Loadings - Cross Borough Route

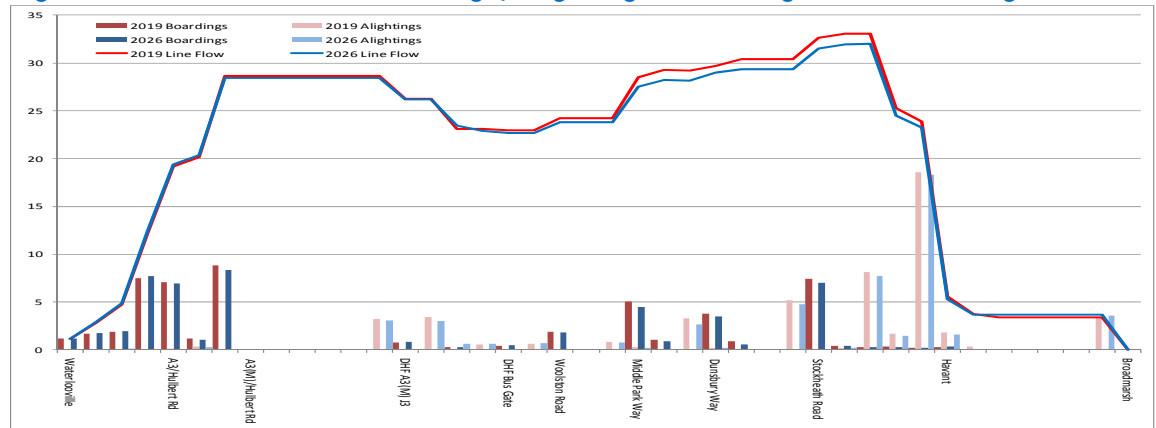
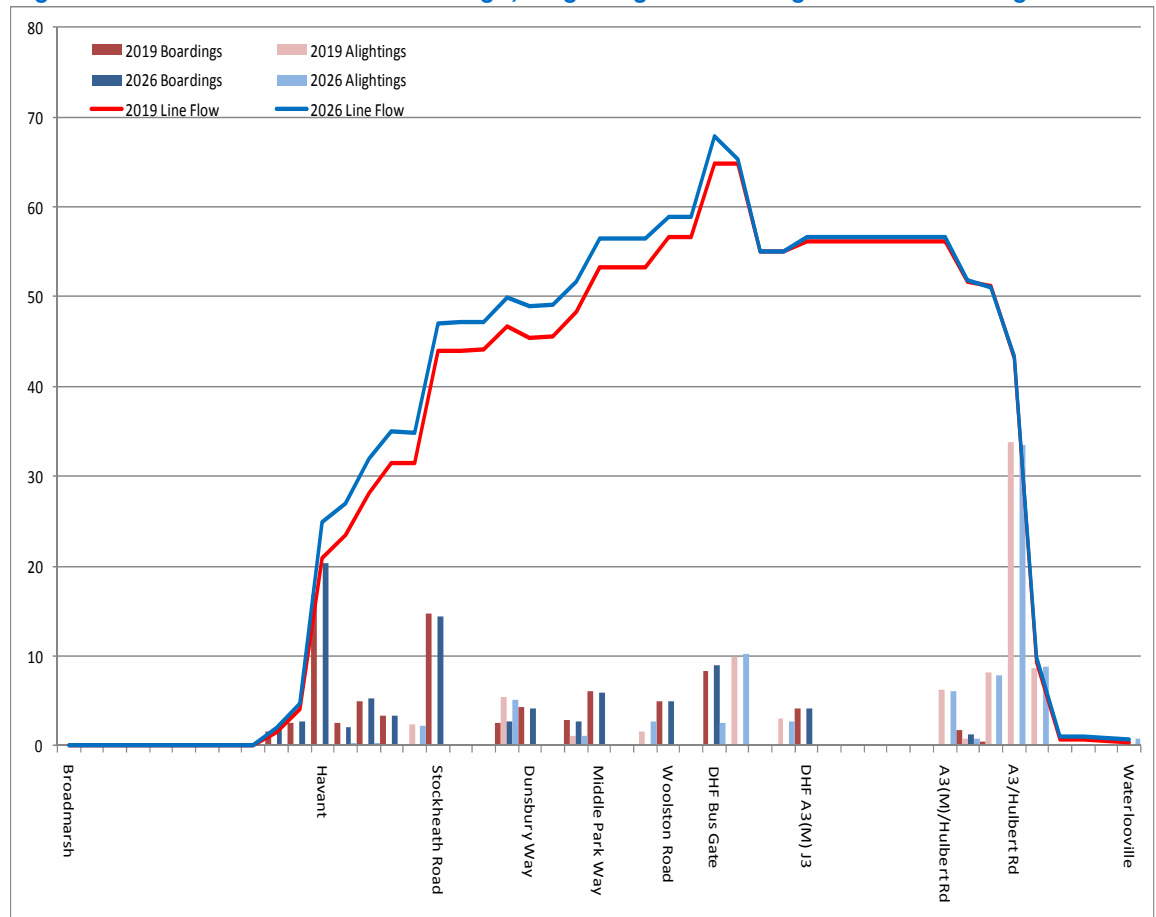
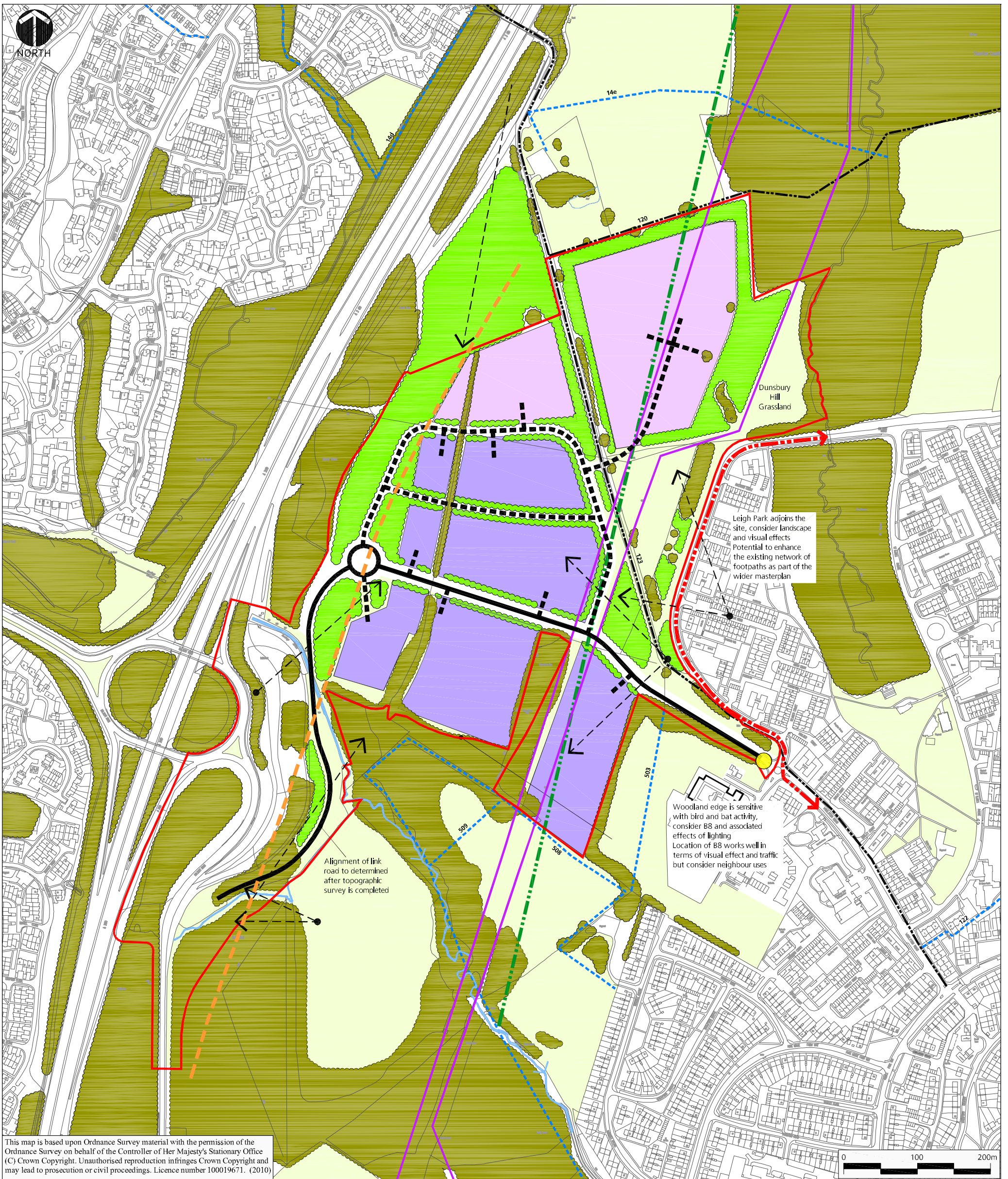


Figure 8.2: AM Westbound Boardings, Alightings & Loadings - Cross Borough Route



Appendix A – First Draft Masterplan



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KEY

- | | | | |
|--|--------------------------------------|--|--|
| | APPLICATION BOUNDARY | | EXISTING VEGETATION |
| | PHASE 1 DEVELOPMENT PLOTS | | EXISTING GRASSLAND |
| | PHASE 2 DEVELOPMENT PLOTS | | PROPOSED LANDSCAPE STRUCTURE |
| | PROPOSED LINK ROAD AND SITE ACCESS | | EXISTING WATERCOURSES |
| | SUGGESTED ACCESS ROUTE THROUGH PLOTS | | EXISTING OVERHEAD CABLES WITH EASEMENTS TO BE CONSIDERED |
| | BUS GATE | | EXISTING HP GAS MAIN (APPROXIMATE LOCATION) WITH EASEMENT OF 12m OVERALL |
| | EXISTING BRIDLEWAY | | 150m LANDSCAPE BUFFER OFFSET FROM A3(M) |
| | EXISTING FOOTPATHS | | |



LOCAL VIEWS OF THE SITE

LONG DISTANCE VIEWS OF THE SITE

Dunsbury Hill Farm First Draft Masterplan

Scale 1:5,000 at A3
April 2011



ATKINS

Appendix B – RTM Flow and Delay Results

Figure 1 Change in Flow Resulting from Development (2019 AM Peak Phase 1) – Wide View

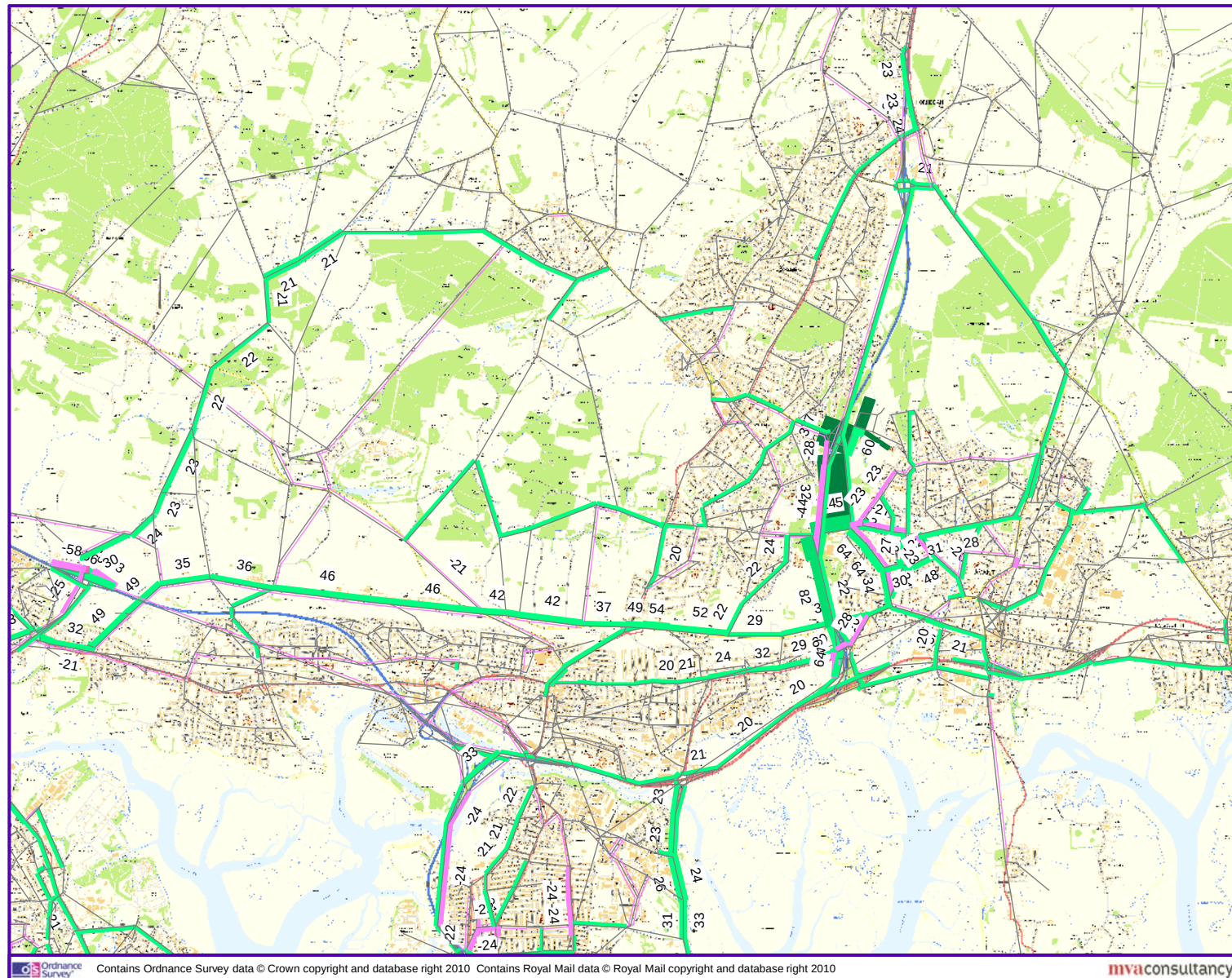


Figure 2 Change in Flow Resulting from Development (2019 AM Peak Phase 1) – Zoom View

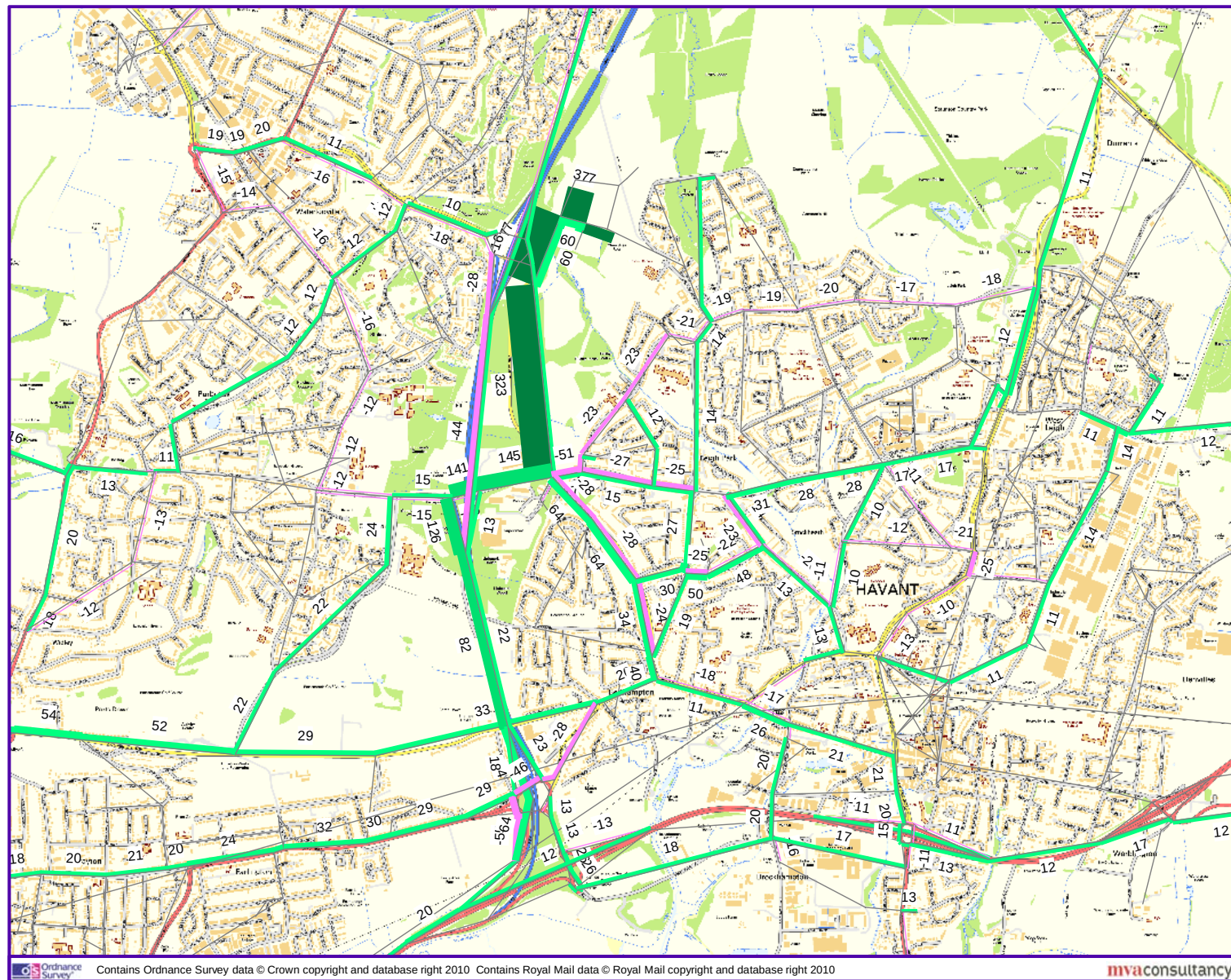


Figure 3 Change in Flow Resulting from Development (2019 Interpeak Phase 1) – Wide View

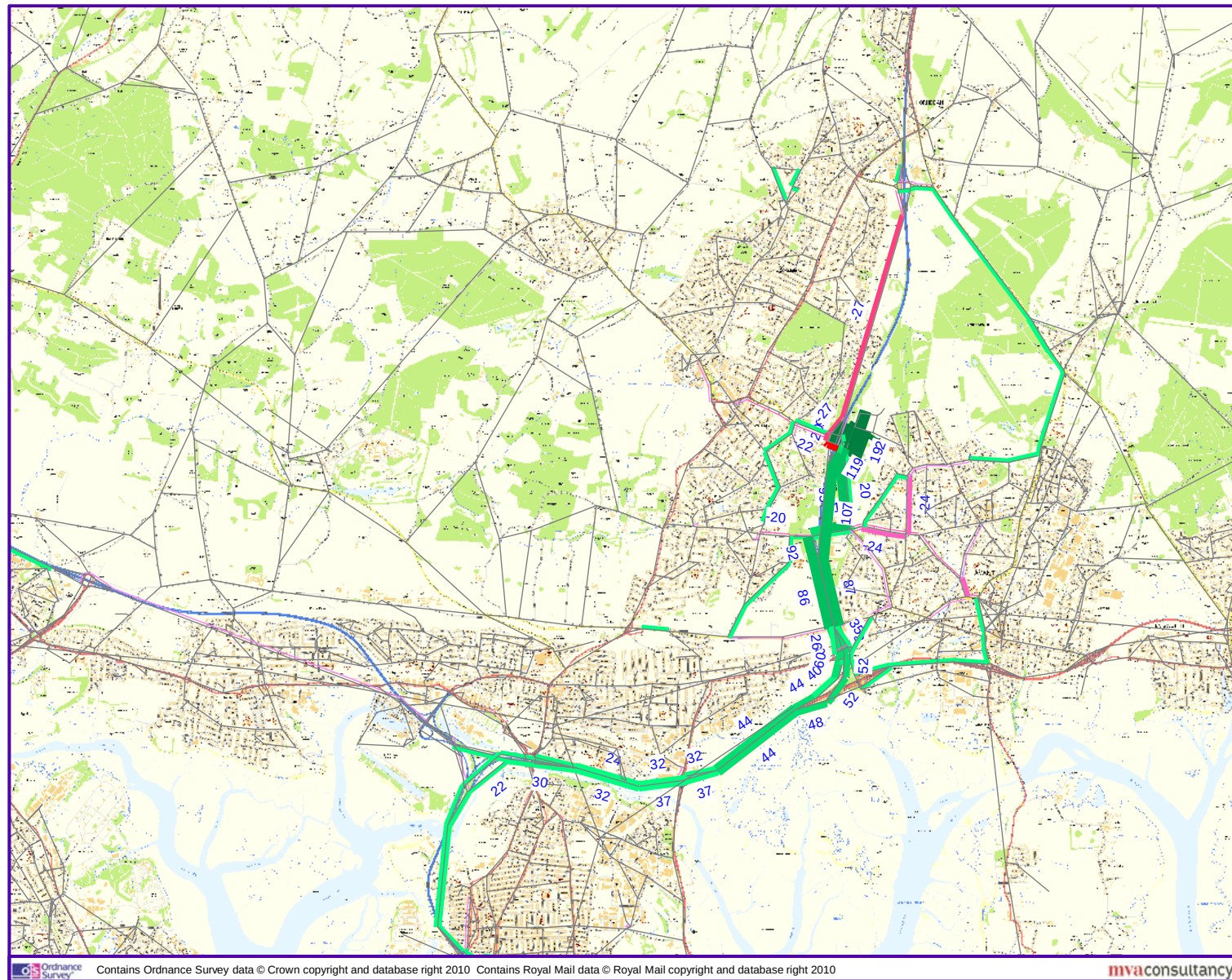


Figure 4 Change in Flow Resulting from Development (2019 Interpeak Phase 1) – Zoom View

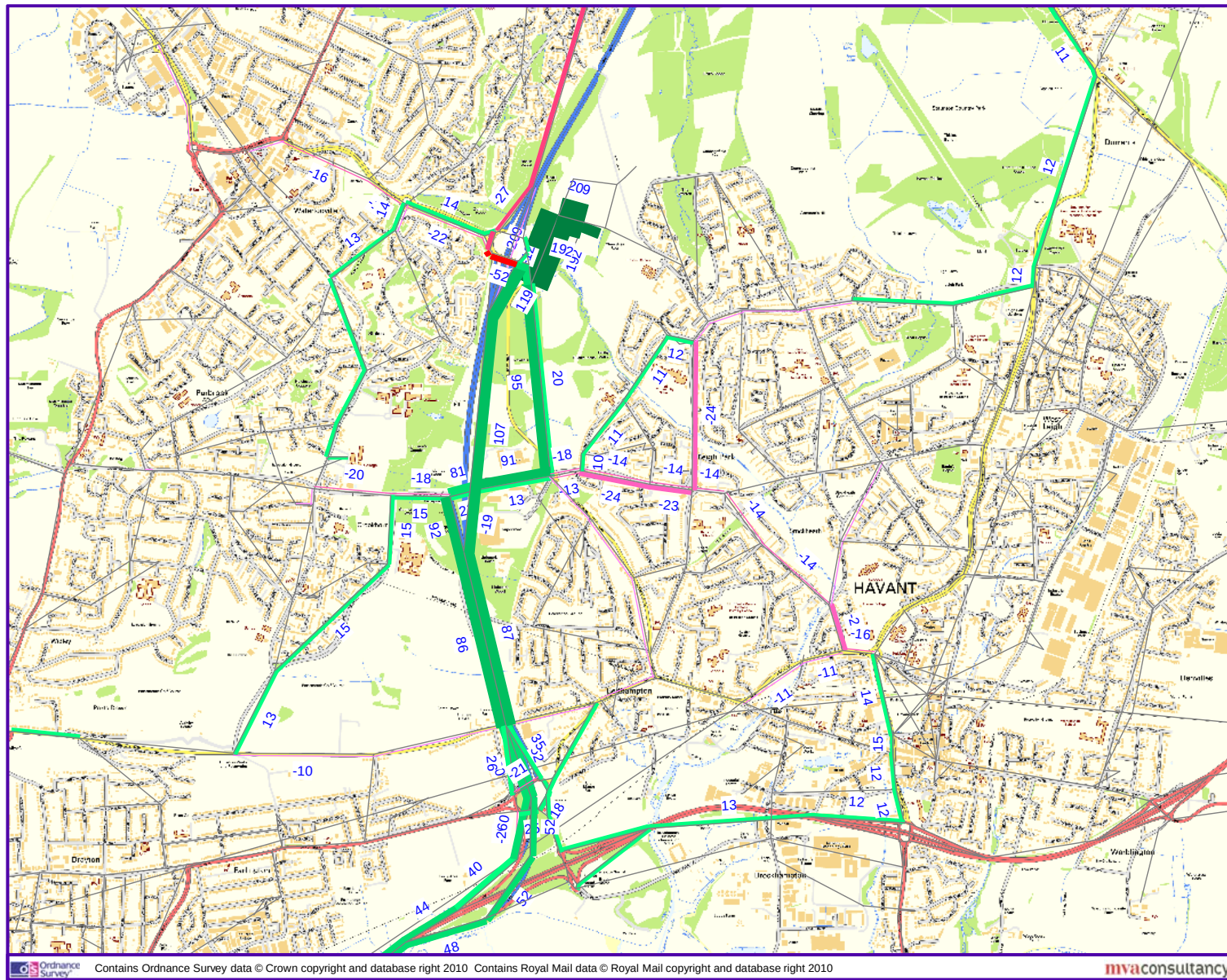


Figure 5 Change in Flow Resulting from Development (2019 PM Peak Phase 1) – Wide View

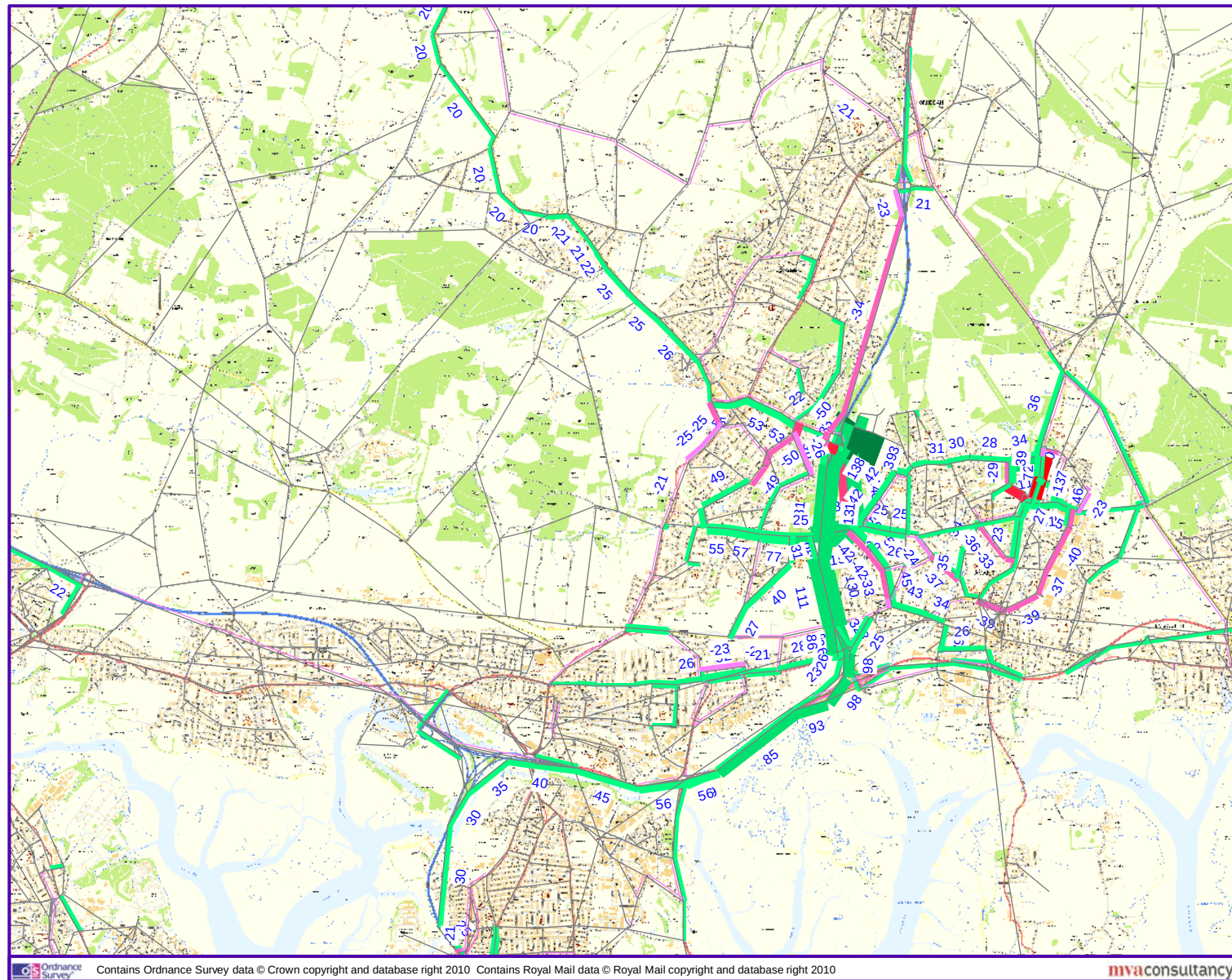


Figure 6 Change in Flow Resulting from Development (2019 PM Peak Phase 1) – Zoom View

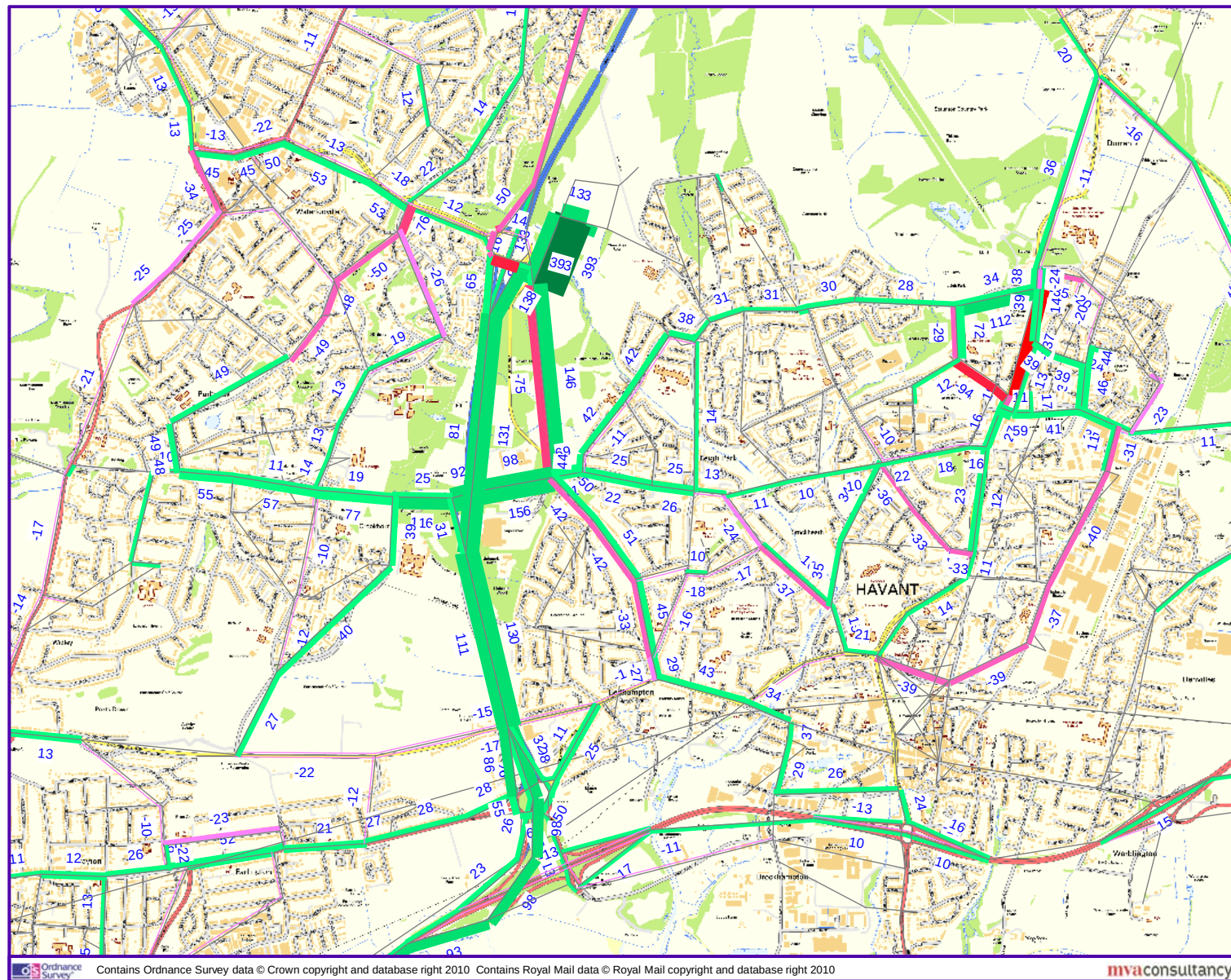


Figure 7 Delays in 2019 AM Peak without Development

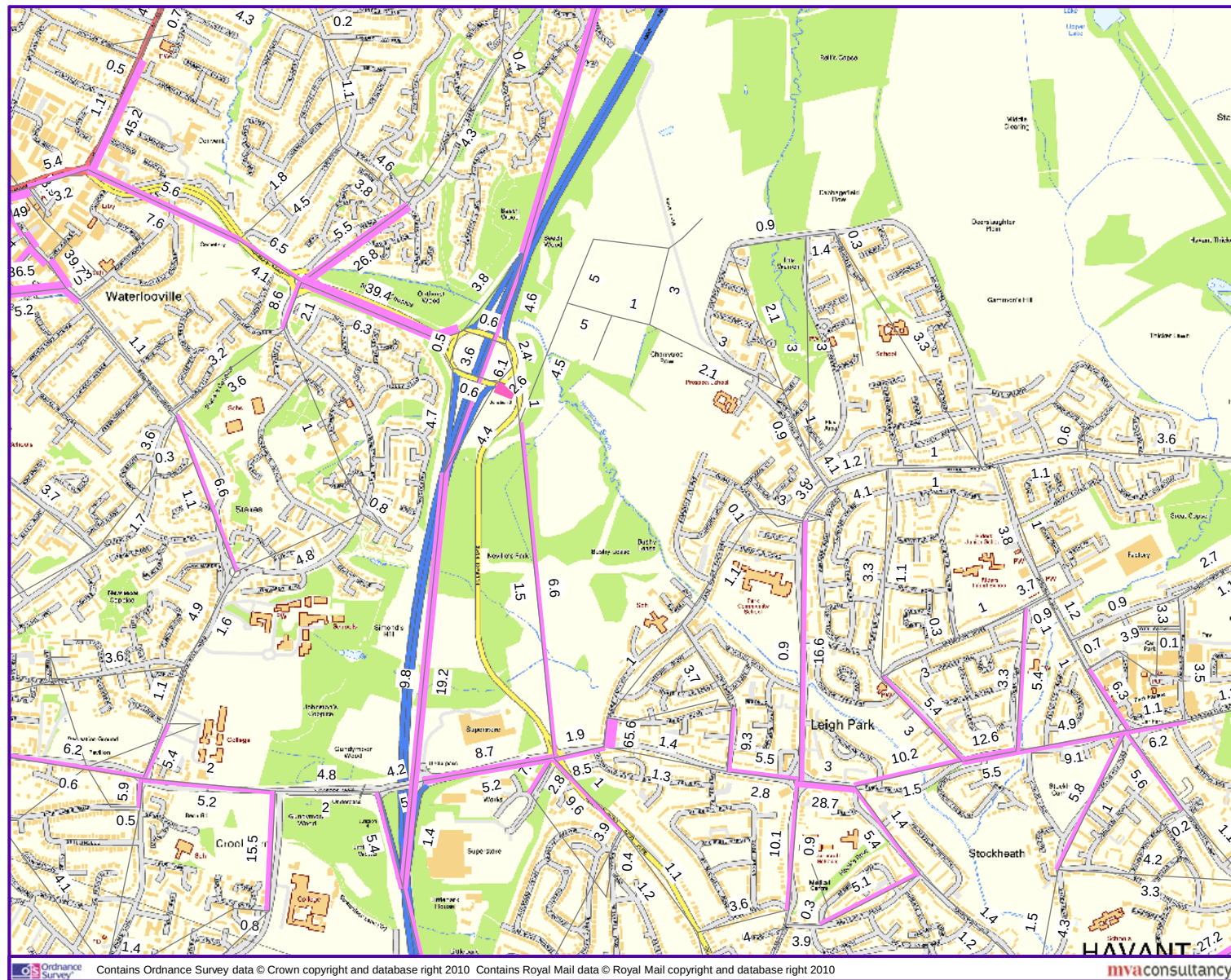


Figure 8 Delays in 2019 AM Peak with Phase 1 Development

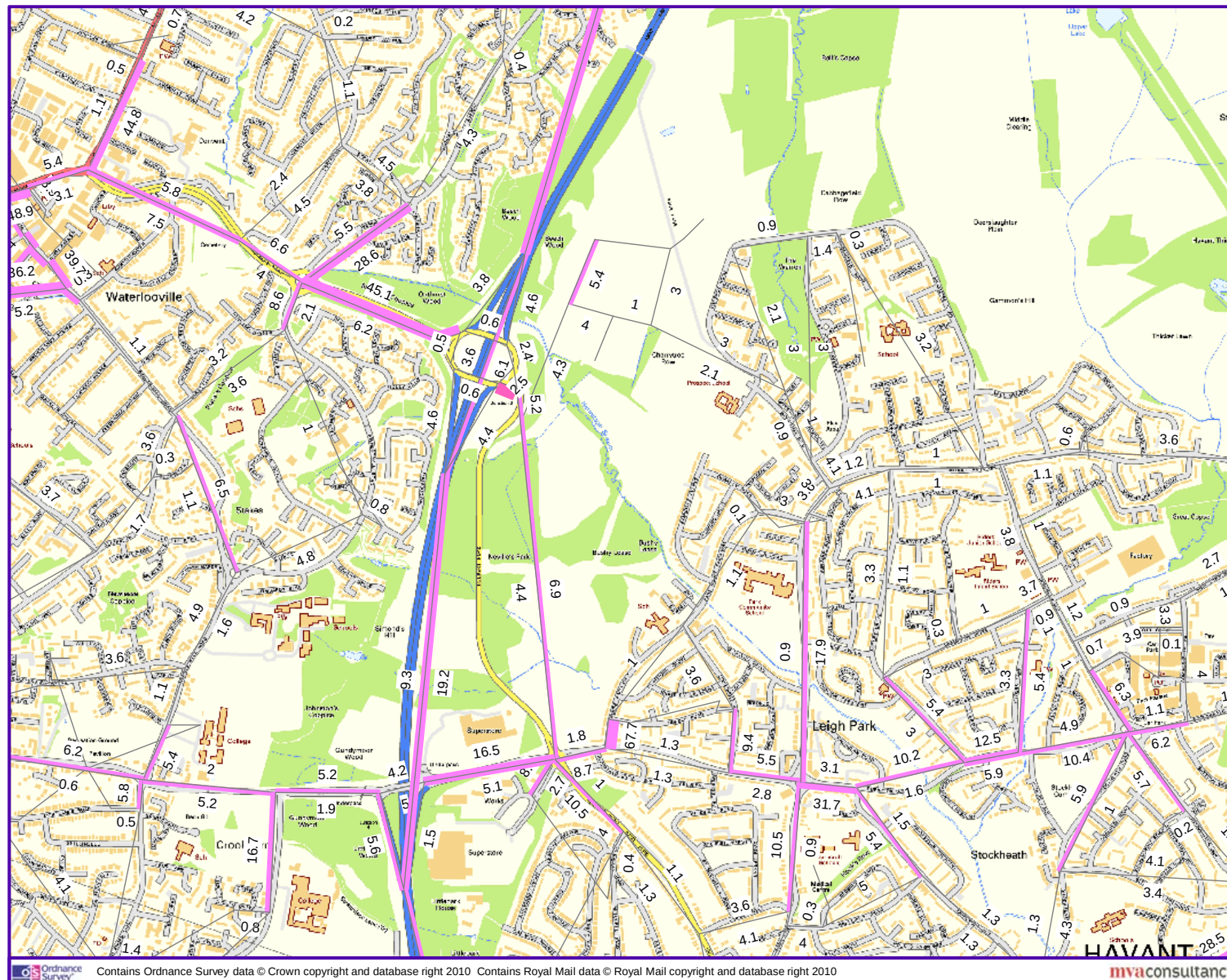


Figure 10 Delays in 2019 Interpeak without Development

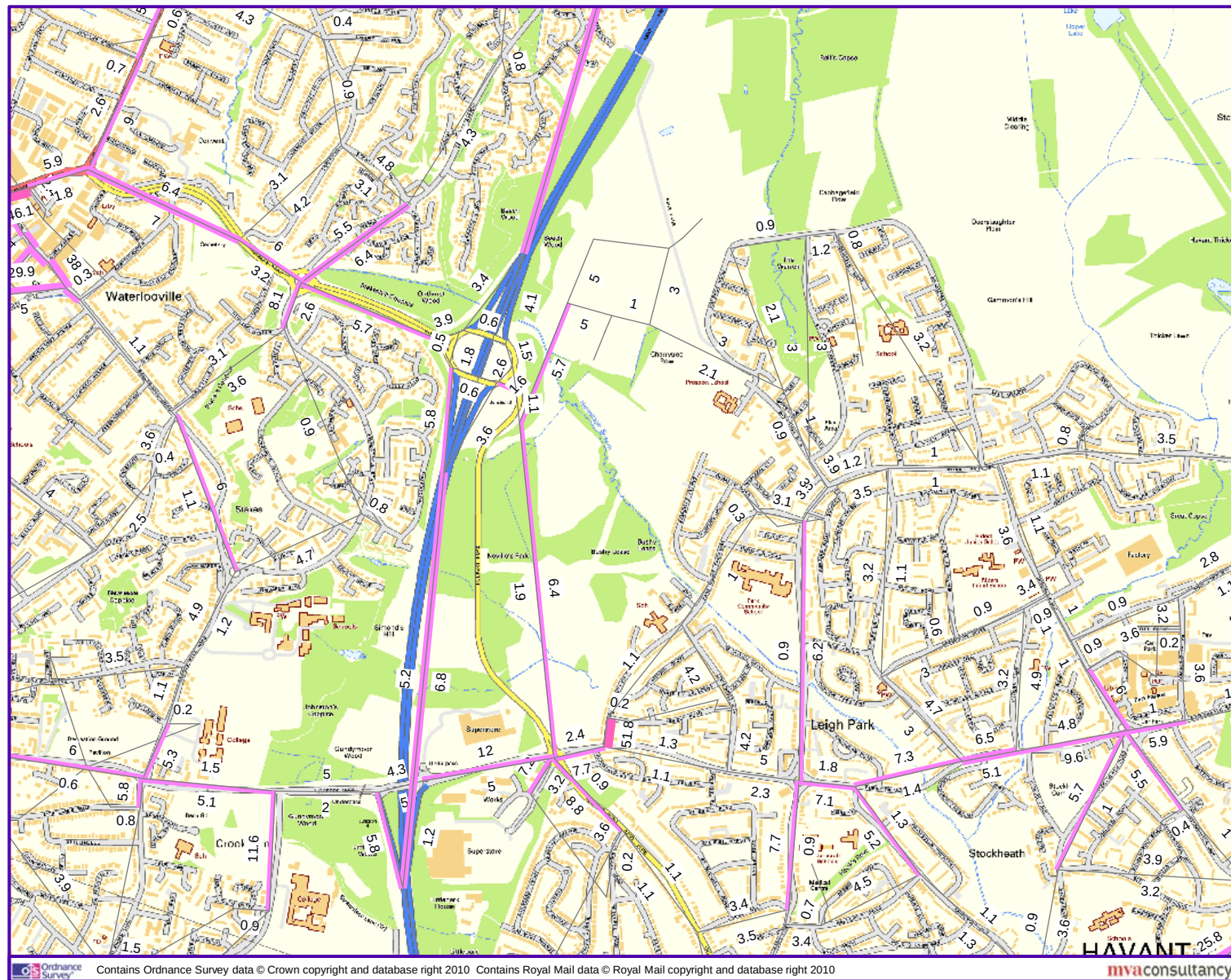


Figure 11 Delays in 2019 Interpeak with Phase 1 Development

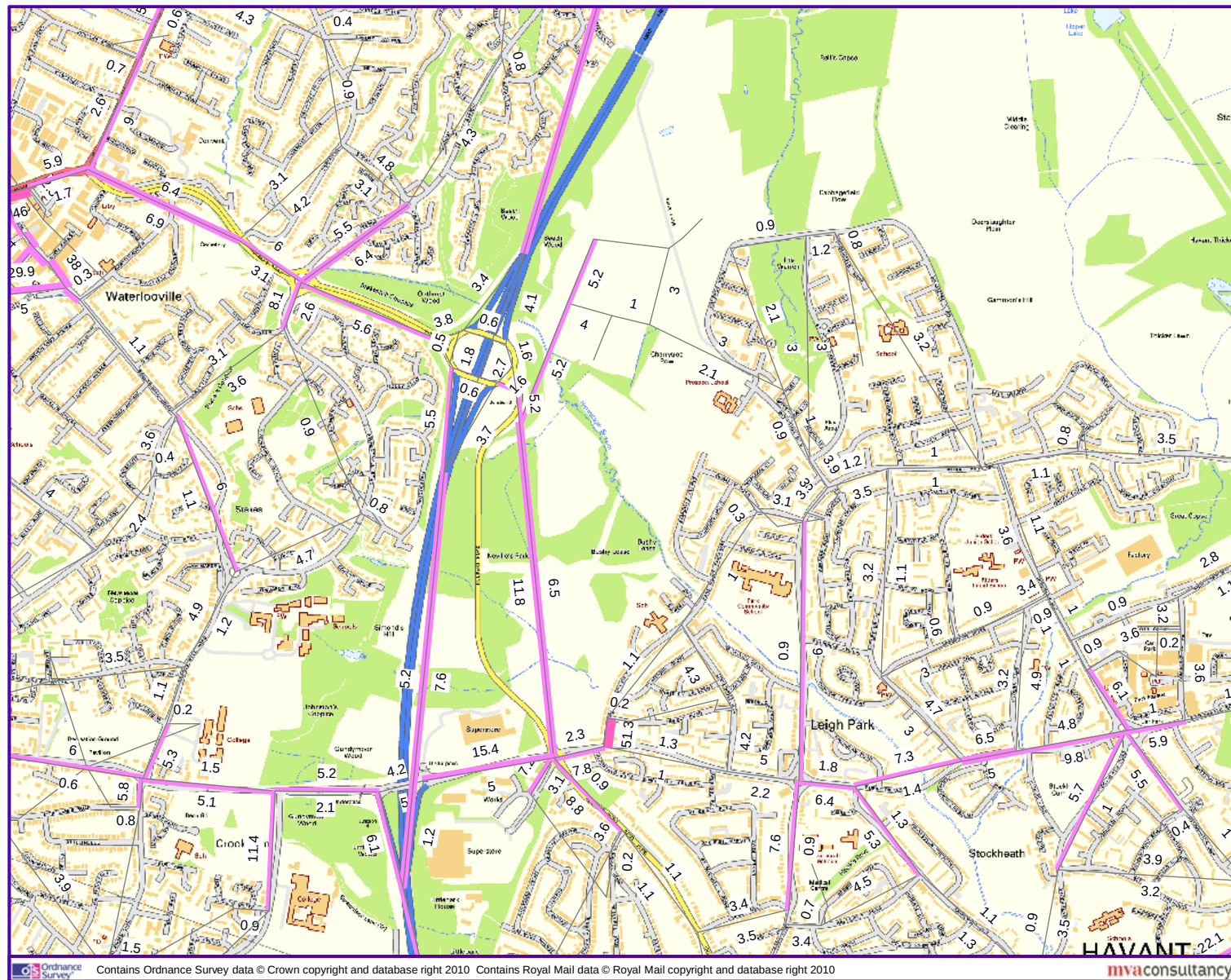


Figure 12 Change in Delays Resulting from Development (2019 Interpeak Phase 1)

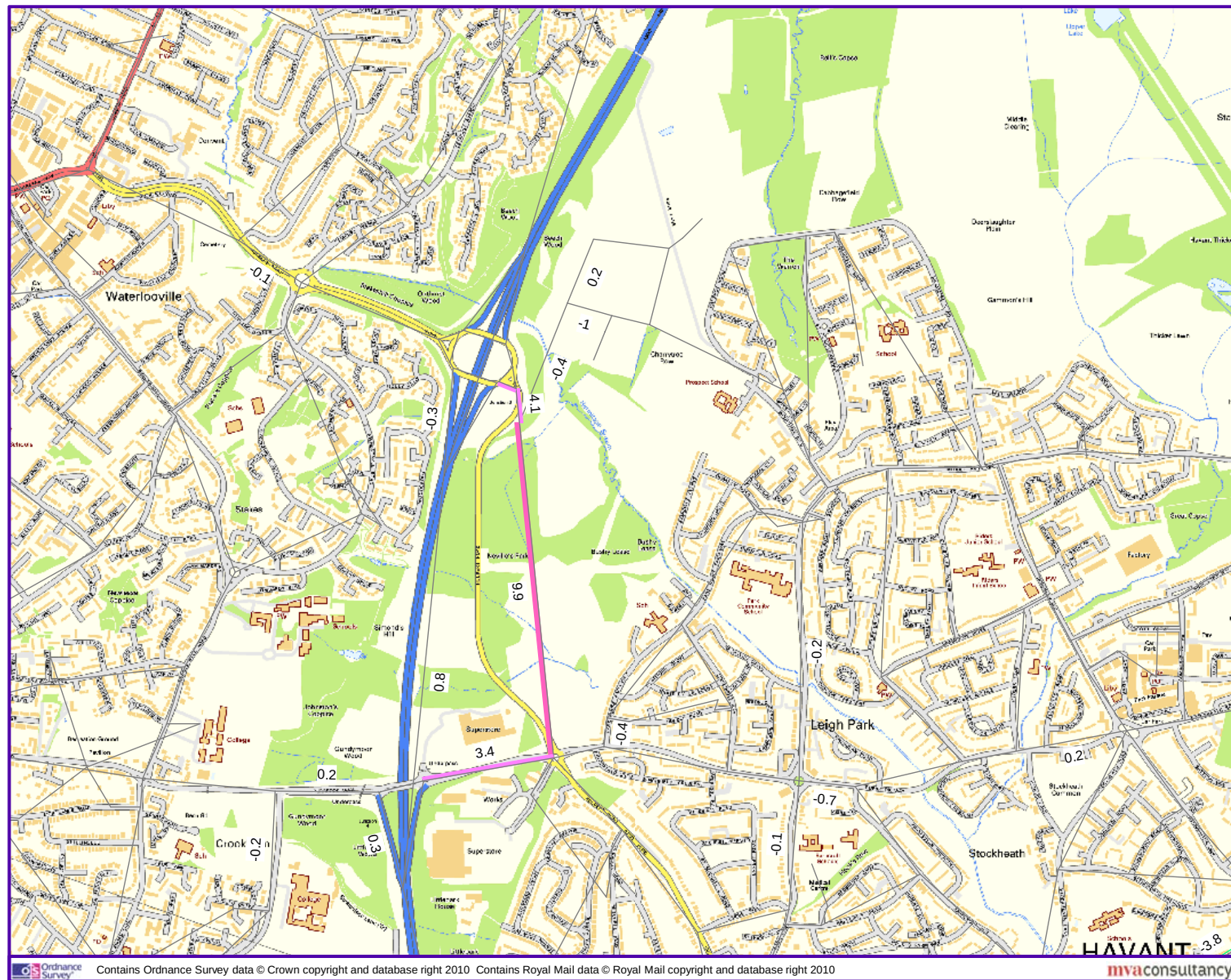


Figure 13 Delays in 2019 PM Peak without Development

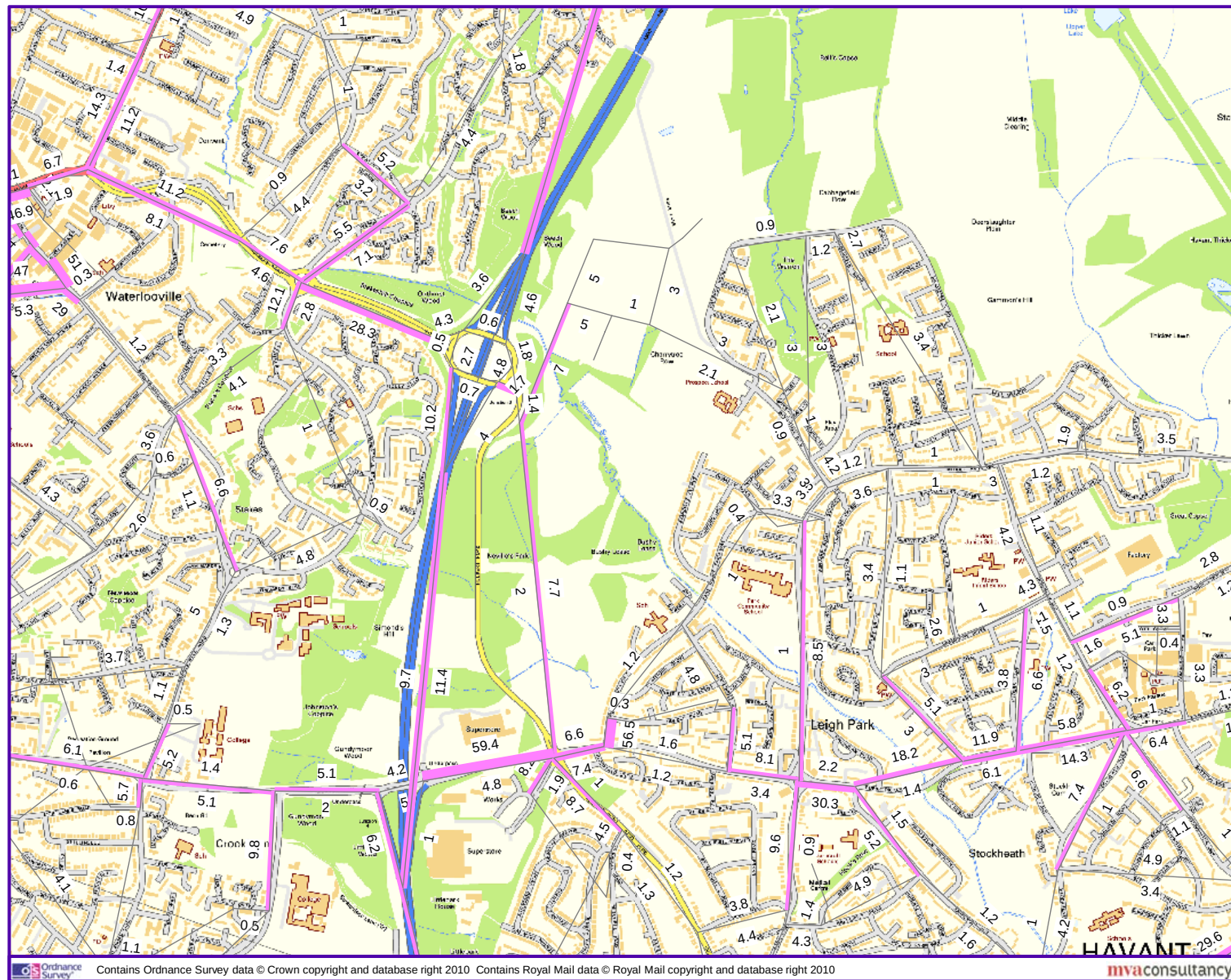
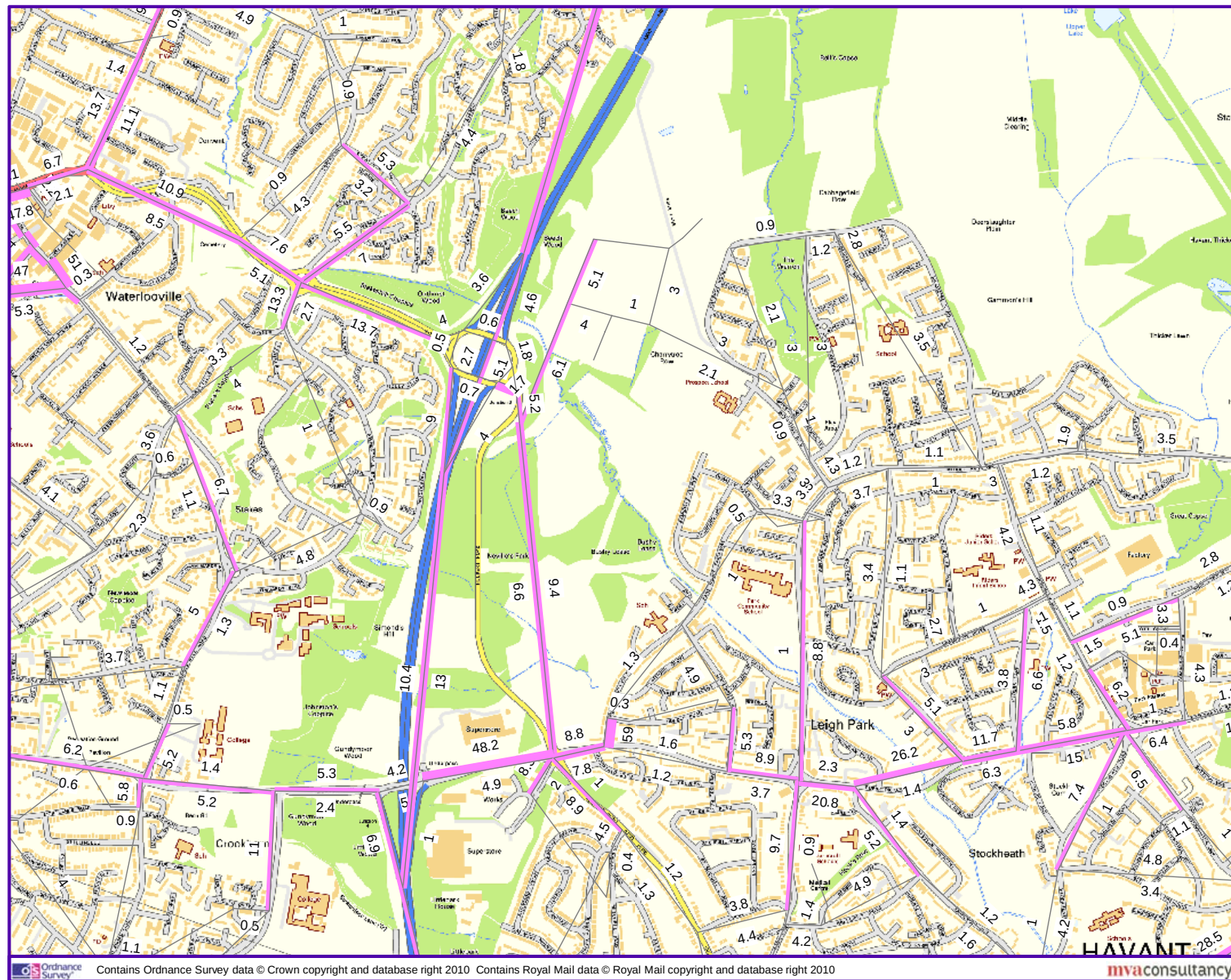


Figure 14 Delays in 2019 PM Peak with Phase 1 Development



The map displays a proposed road network in the Waterloo and Leigh Park area of Havant. Key features include:

- Proposed Roads:** Indicated by colored lines: red (top left), yellow (top center), green (center), blue (bottom center), and purple (right side).
- Geographical Labels:** 'Waterlooville' (top left), 'Leigh Park' (center right), 'Stock Heath' (bottom right), and 'Havant' (bottom right).
- Infrastructure:** 'Leigh Park School' is marked with an orange building icon. 'Leigh Park' is marked with an orange building icon.
- Topography:** Green areas represent parks or open spaces, including 'Leigh Park' and 'Stock Heath'.
- Water Features:** A large blue area represents a body of water, likely the 'Havant Estuary'.
- Annotations:** Numerous numerical values are scattered across the map, possibly representing elevation, distance, or other metrics. These include values like 0.1, 0.2, 0.3, 0.4, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2.0, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3.0, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.0, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 5.0, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 6.0, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 7.0, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 8.0, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 9.0, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, 10.0, 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8, 10.9, 11.0, 11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 11.8, 11.9, 12.0, 12.1, 12.2, 12.3, 12.4, 12.5, 12.6, 12.7, 12.8, 12.9, 13.0, 13.1, 13.2, 13.3, 13.4, 13.5, 13.6, 13.7, 13.8, 13.9, 14.0, 14.1, 14.2, 14.3, 14.4, 14.5, 14.6, 14.7, 14.8, 14.9, 15.0, 15.1, 15.2, 15.3, 15.4, 15.5, 15.6, 15.7, 15.8, 15.9, 16.0, 16.1, 16.2, 16.3, 16.4, 16.5, 16.6, 16.7, 16.8, 16.9, 17.0, 17.1, 17.2, 17.3, 17.4, 17.5, 17.6, 17.7, 17.8, 17.9, 18.0, 18.1, 18.2, 18.3, 18.4, 18.5, 18.6, 18.7, 18.8, 18.9, 19.0, 19.1, 19.2, 19.3, 19.4, 19.5, 19.6, 19.7, 19.8, 19.9, 20.0, 20.1, 20.2, 20.3, 20.4, 20.5, 20.6, 20.7, 20.8, 20.9, 21.0, 21.1, 21.2, 21.3, 21.4, 21.5, 21.6, 21.7, 21.8, 21.9, 22.0, 22.1, 22.2, 22.3, 22.4, 22.5, 22.6, 22.7, 22.8, 22.9, 23.0, 23.1, 23.2, 23.3, 23.4, 23.5, 23.6, 23.7, 23.8, 23.9, 24.0, 24.1, 24.2, 24.3, 24.4, 24.5, 24.6, 24.7, 24.8, 24.9, 25.0, 25.1, 25.2, 25.3, 25.4, 25.5, 25.6, 25.7, 25.8, 25.9, 26.0, 26.1, 26.2, 26.3, 26.4, 26.5, 26.6, 26.7, 26.8, 26.9, 27.0, 27.1, 27.2, 27.3, 27.4, 27.5, 27.6, 27.7, 27.8, 27.9, 28.0, 28.1, 28.2, 28.3, 28.4, 28.5, 28.6, 28.7, 28.8, 28.9, 29.0, 29.1, 29.2, 29.3, 29.4, 29.5, 29.6, 29.7, 29.8, 29.9, 30.0, 30.1, 30.2, 30.3, 30.4, 30.5, 30.6, 30.7, 30.8, 30.9, 31.0, 31.1, 31.2, 31.3, 31.4, 31.5, 31.6, 31.7, 31.8, 31.9, 32.0, 32.1, 32.2, 32.3, 32.4, 32.5, 32.6, 32.7, 32.8, 32.9, 33.0, 33.1, 33.2, 33.3, 33.4, 33.5, 33.6, 33.7, 33.8, 33.9, 34.0, 34.1, 34.2, 34.3, 34.4, 34.5, 34.6, 34.7, 34.8, 34.9, 35.0, 35.1, 35.2, 35.3, 35.4, 35.5, 35.6, 35.7, 35.8, 35.9, 36.0, 36.1, 36.2, 36.3, 36.4, 36.5, 36.6, 36.7, 36.8, 36.9, 37.0, 37.1, 37.2, 37.3, 37.4, 37.5, 37.6, 37.7, 37.8, 37.9, 38.0, 38.1, 38.2, 38.3, 38.4, 38.5, 38.6, 38.7, 38.8, 38.9, 39.0, 39.1, 39.2, 39.3, 39.4, 39.5, 39.6, 39.7, 39.8, 39.9, 40.0, 40.1, 40.2, 40.3, 40.4, 40.5, 40.6, 40.7, 40.8, 40.9, 41.0, 41.1, 41.2, 41.3, 41.4, 41.5, 41.6, 41.7, 41.8, 41.9, 42.0, 42.1, 42.2, 42.3, 42.4, 42.5, 42.6, 42.7, 42.8, 42.9, 43.0, 43.1, 43.2, 43.3, 43.4, 43.5, 43.6, 43.7, 43.8, 43.9, 44.0, 44.1, 44.2, 44.3, 44.4, 44.5, 44.6, 44.7, 44.8, 44.9, 45.0, 45.1, 45.2, 45.3, 45.4, 45.5, 45.6, 45.7, 45.8, 45.9, 46.0, 46.1, 46.2, 46.3, 46.4, 46.5, 46.6, 46.7, 46.8, 46.9, 47.0, 47.1, 47.2, 47.3, 47.4, 47.5, 47.6, 47.7, 47.8, 47.9, 48.0, 48.1, 48.2, 48.3, 48.4, 48.5, 48.6, 48.7, 48.8, 48.9, 49.0, 49.1, 49.2, 49.3, 49.4, 49.5, 49.6, 49.7, 49.8, 49.9, 50.0, 50.1, 50.2, 50.3, 50.4, 50.5, 50.6, 50.7, 50.8, 50.9, 51.0, 51.1, 51.2, 51.3, 51.4, 51.5, 51.6, 51.7, 51.8, 51.9, 52.0, 52.1, 52.2, 52.3, 52.4, 52.5, 52.6, 52.7, 52.8, 52.9, 53.0, 53.1, 53.2, 53.3, 53.4, 53.5, 53.6, 53.7, 53.8, 53.9, 54.0, 54.1, 54.2, 54.3, 54.4, 54.5, 54.6, 54.7, 54.8, 54.9, 55.0, 55.1, 55.2, 55.3, 55.4, 55.5, 55.6, 55.7, 55.8, 55.9, 56.0, 56.1, 56.2, 56.3, 56.4, 56.5, 56.6, 56.7, 56.8, 56.9, 57.0, 57.1, 57.2, 57.3, 57.4, 57.5, 57.6, 57.7, 57.8, 57.9, 58.0, 58.1, 58.2, 58.3, 58.4, 58.5, 58.6, 58.7, 58.8, 58.9, 59.0, 59.1, 59.2, 59.3, 59.4, 59.5, 59.6, 59.7, 59.8, 59.9, 60.0, 60.1, 60.2, 60.3, 60.4, 60.5, 60.6, 60.7, 60.8, 60.9, 61.0, 61.1, 61.2, 61.3, 61.4, 61.5, 61.6, 61.7, 61.8, 61.9, 62.0, 62.1, 62.2, 62.3, 62.4, 62.5, 62.6, 62.7, 62.8, 62.9, 63.0, 63.1, 63.2, 63.3, 63.4, 63.5, 63.6, 63.7, 63.8, 63.9, 64.0, 64.1, 64.2, 64

Figure 16 Change in Flow Resulting from Development (2026 AM Peak Phase 1) – Wide View

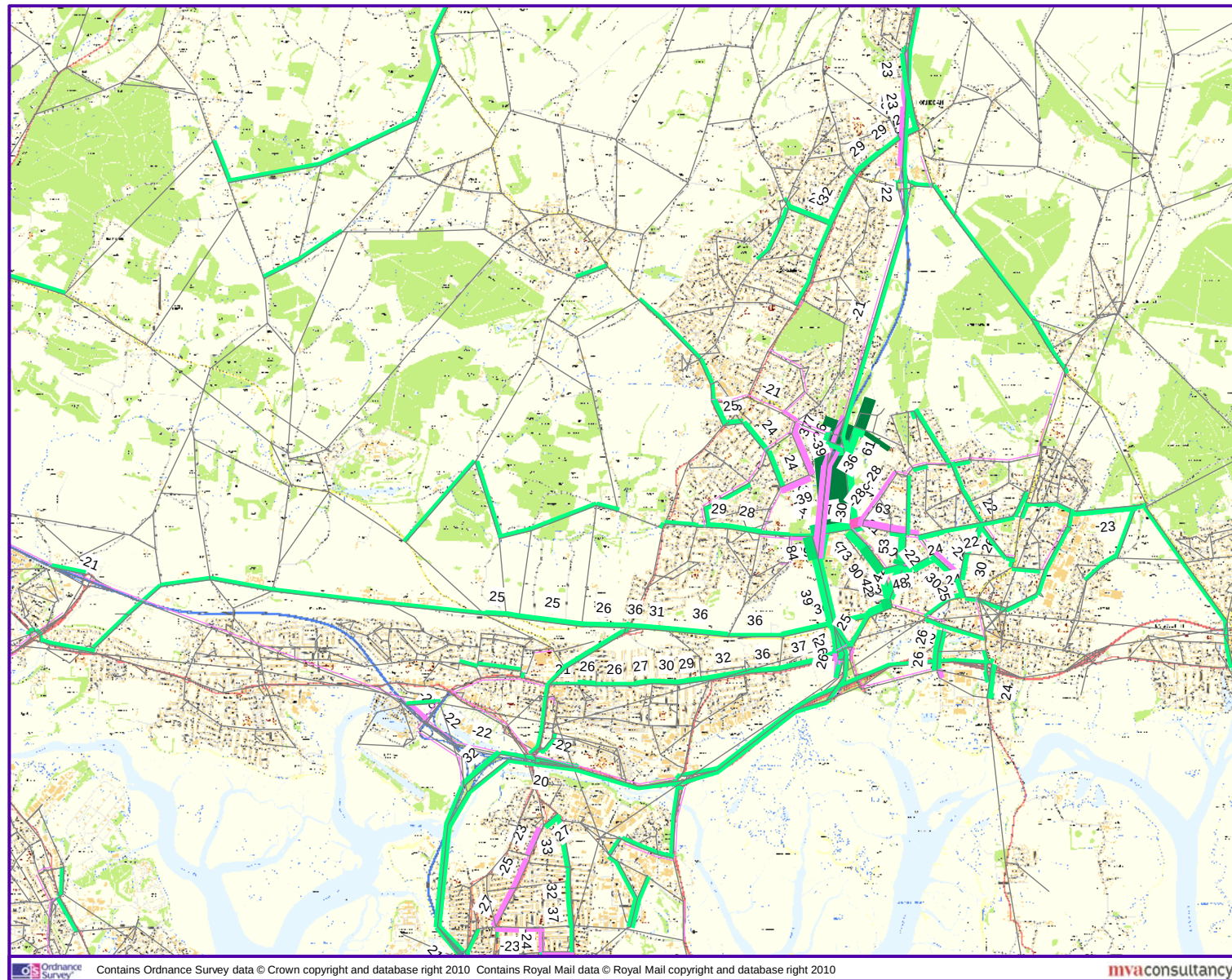


Figure 17 Change in Flow Resulting from Development (2026 AM Peak Phase 1) – Zoom View

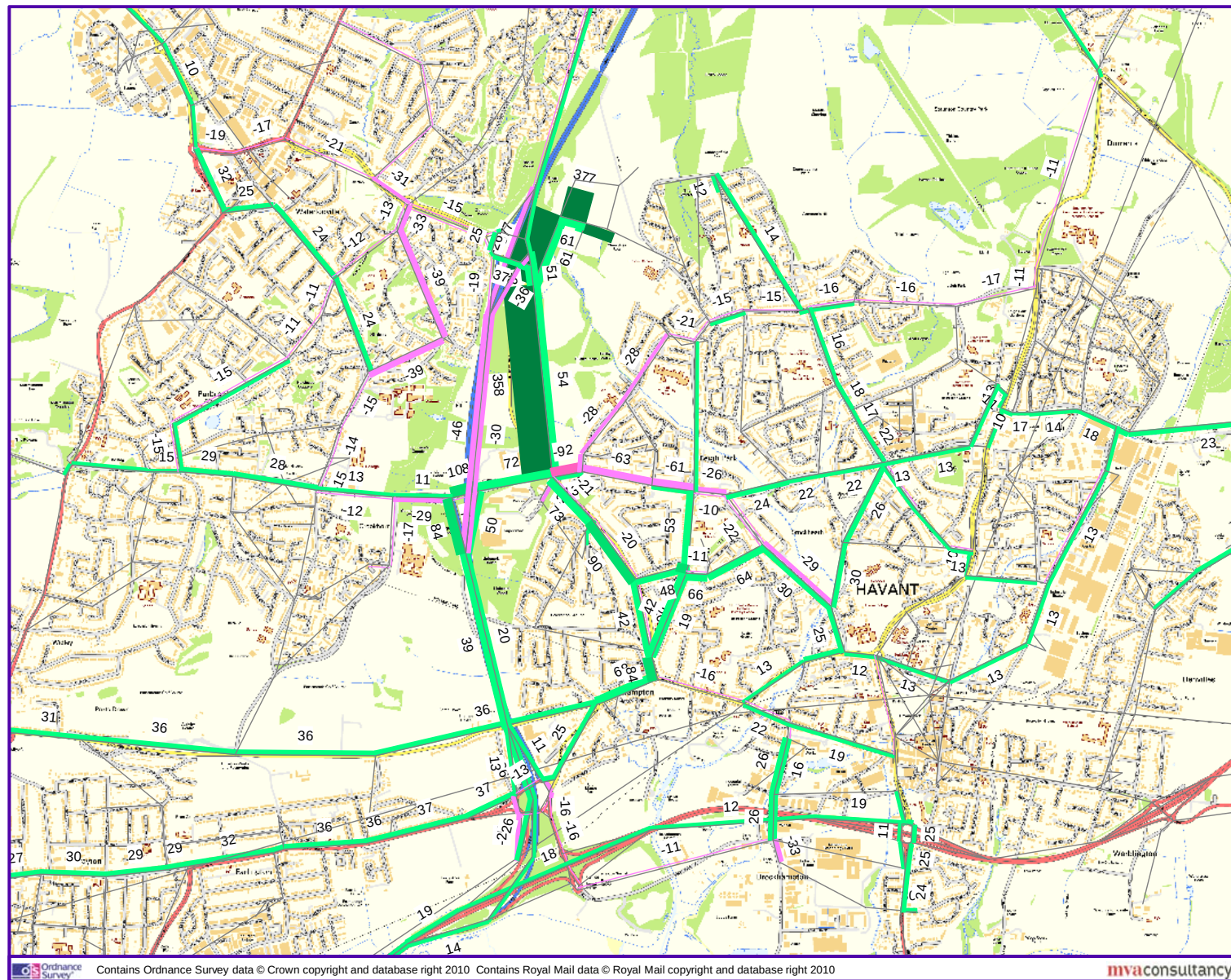


Figure 18 Change in Flow Resulting from Development (2026 Interpeak Phase 1) – Wide View

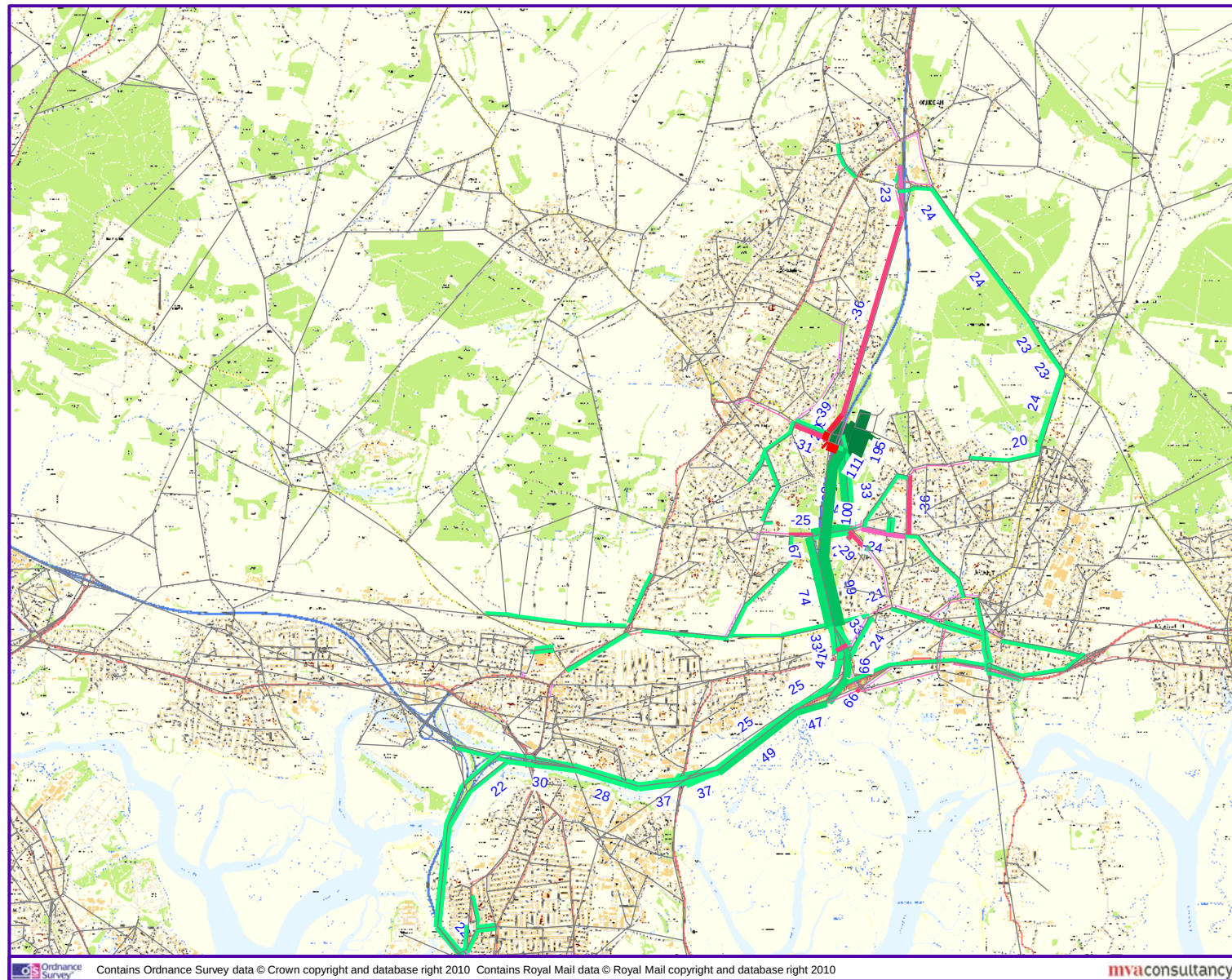


Figure 20 Change in Flow Resulting from Development (2026 PM Peak Phase 1) – Wide View

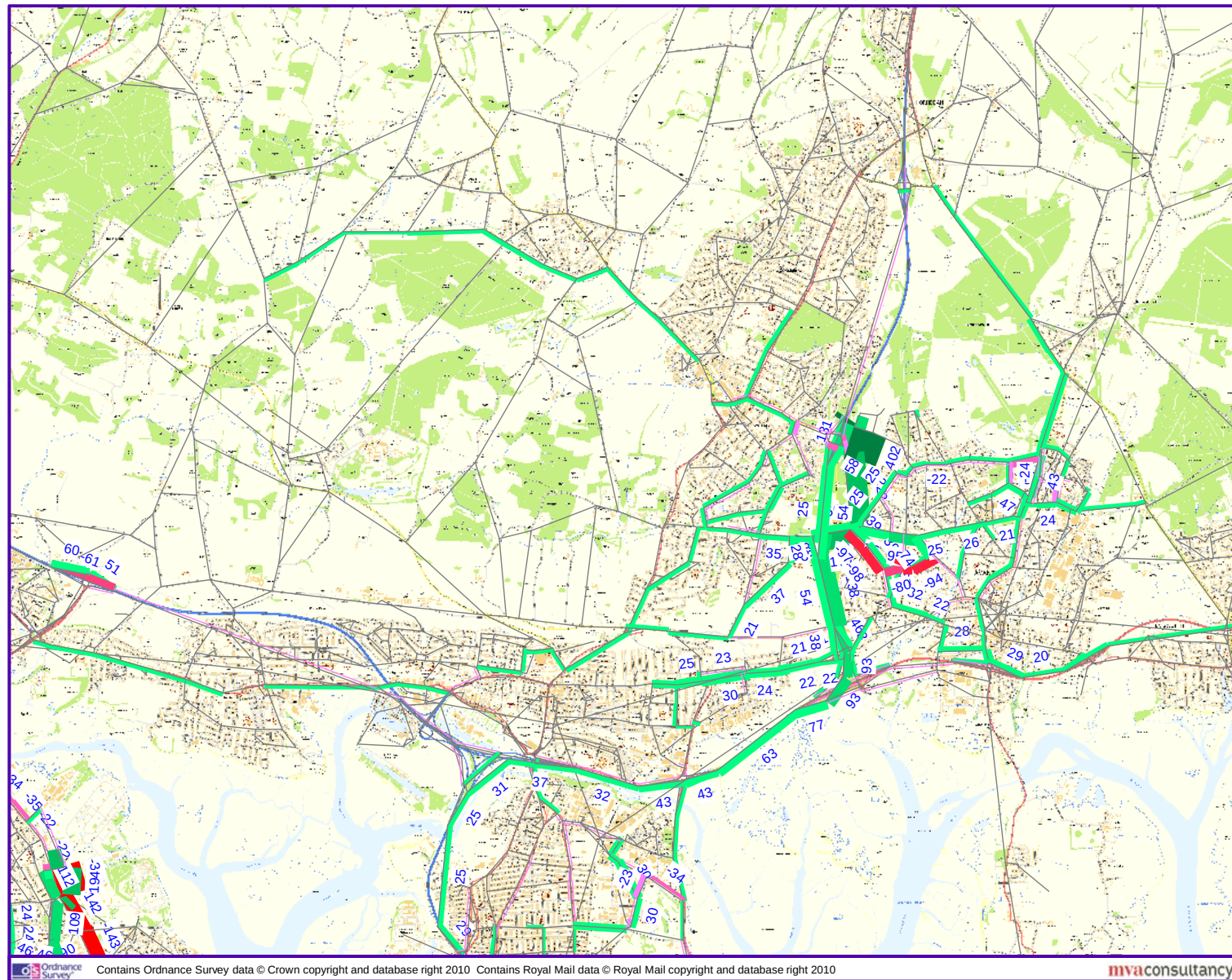


Figure 21 Change in Flow Resulting from Development (2026 PM Peak Phase 1) – Zoom View

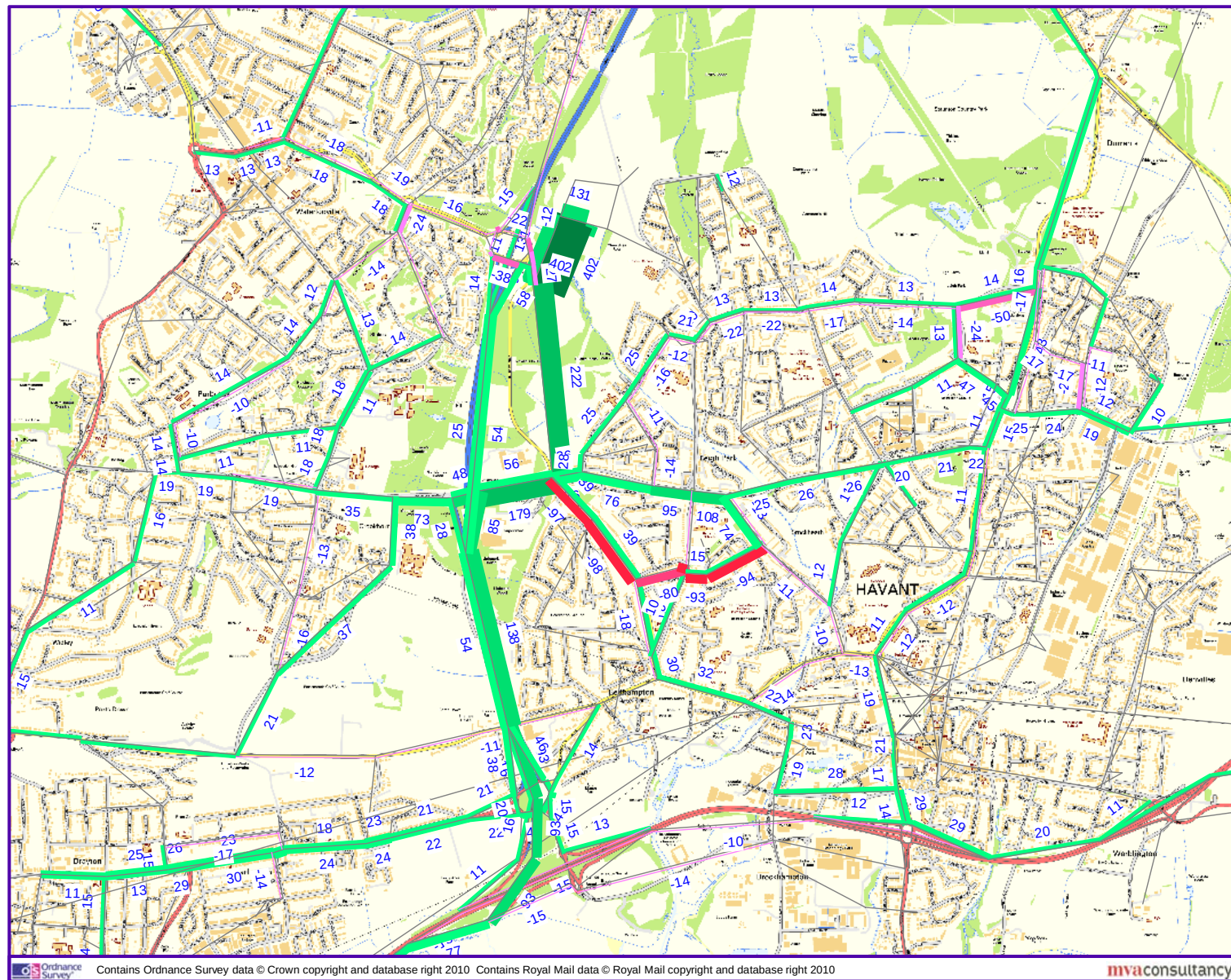


Figure 22 Delays in 2026 AM Peak without Development

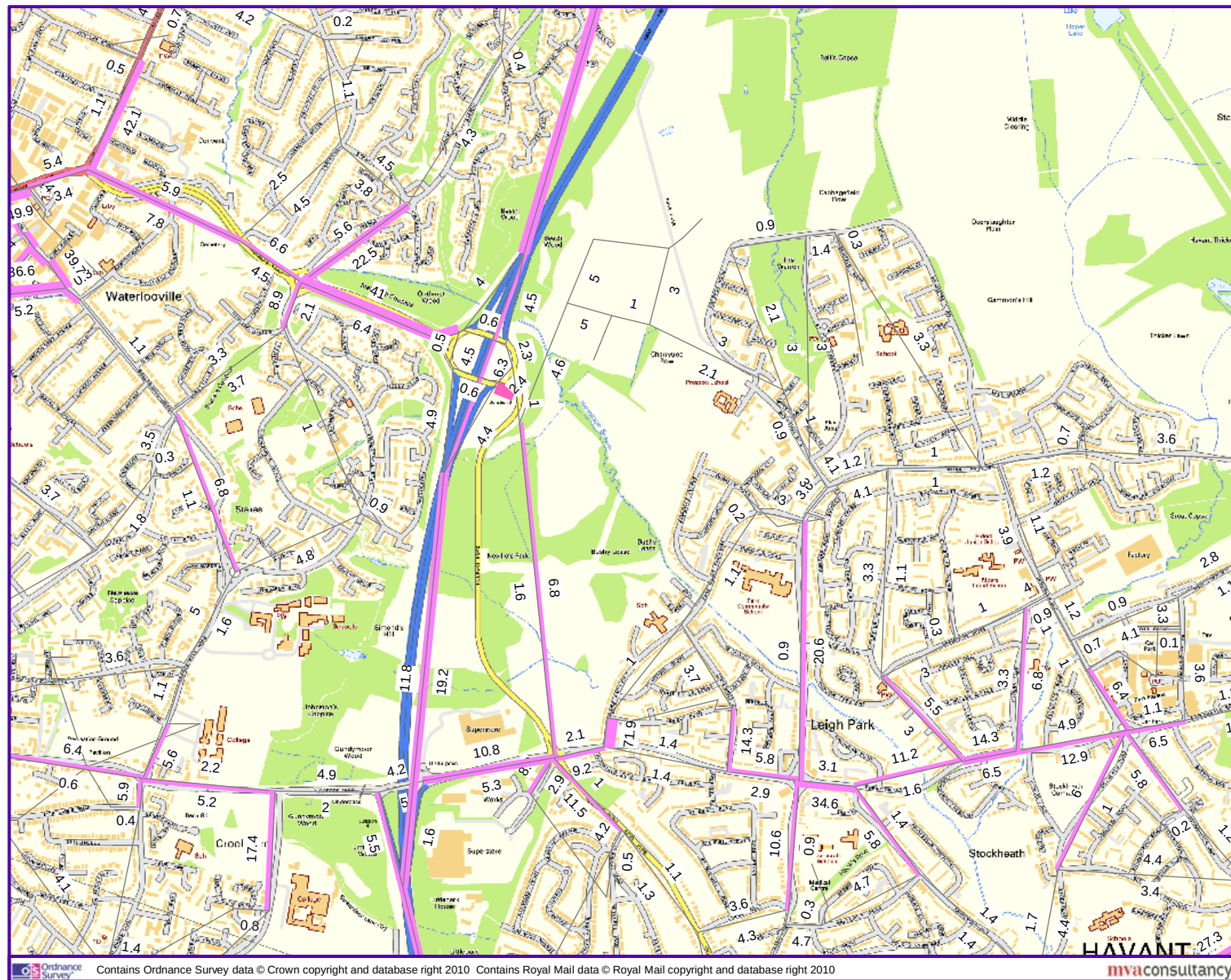


Figure 23 Delays in 2026 AM Peak with Phase 1 Development

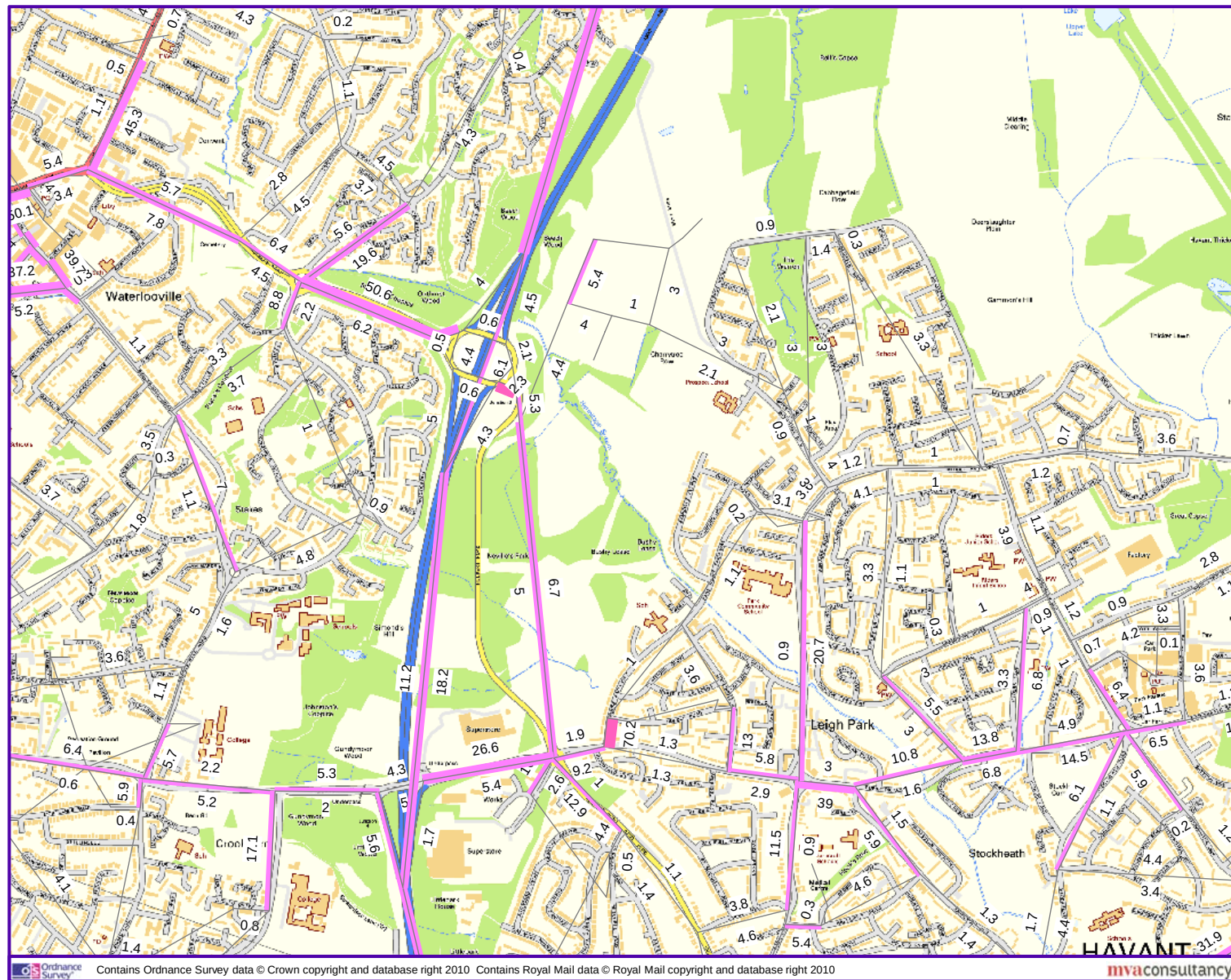


Figure 24 Change in Delays Resulting from Development (2026 AM Peak Phase 1)

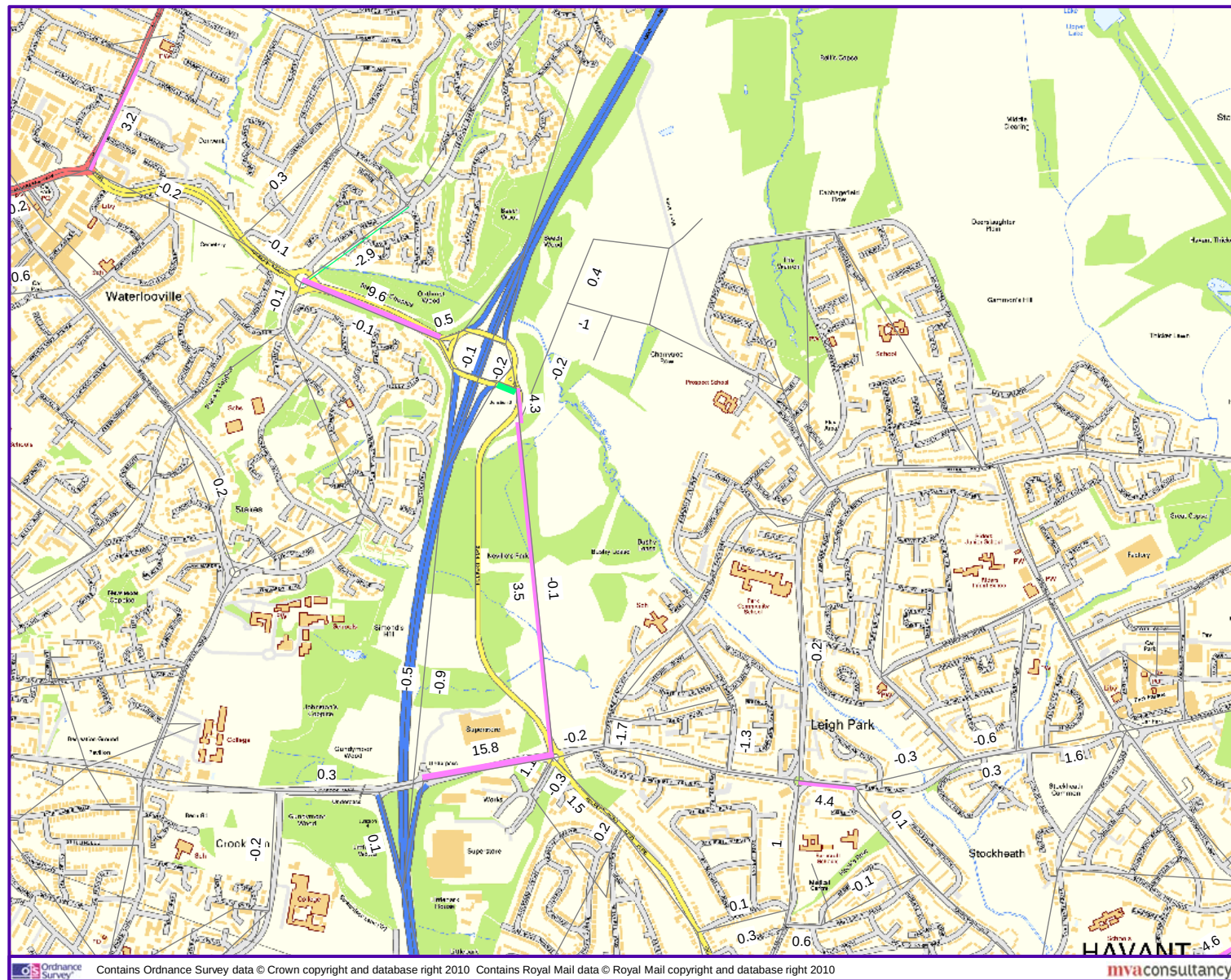


Figure 25 Delays in 2026 Interpeak without Development

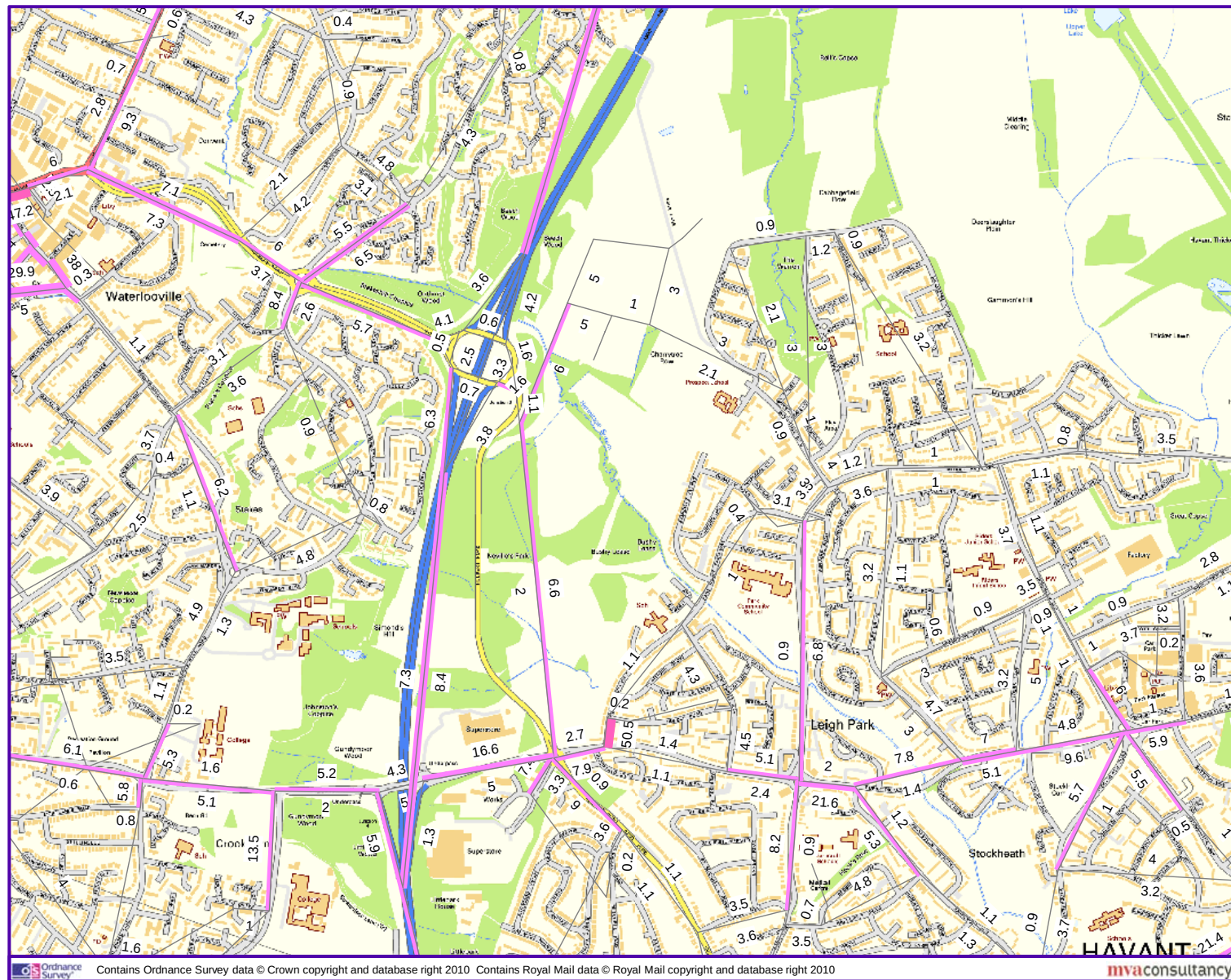


Figure 26 Delays in 2026 Interpeak with Phase 1 Development

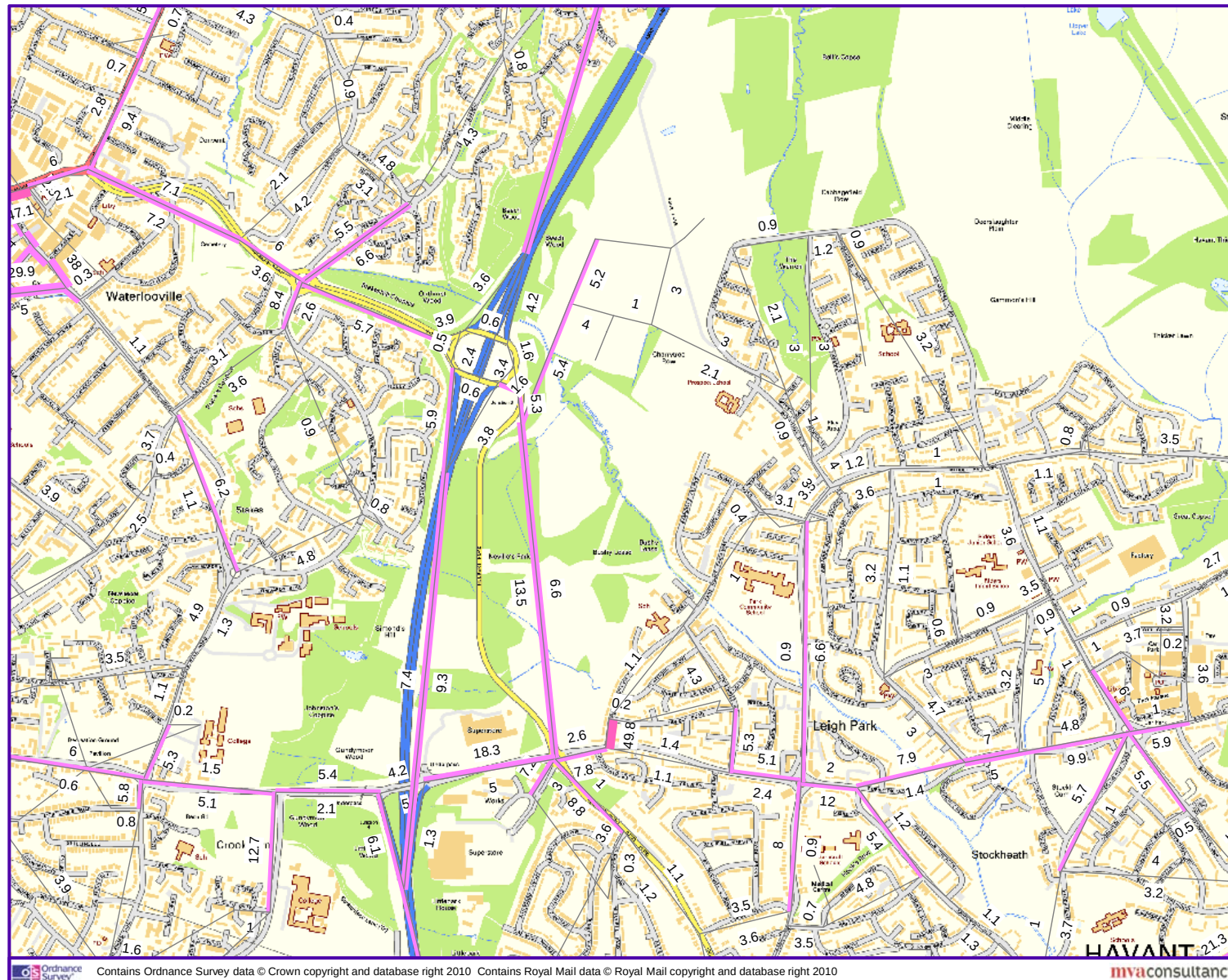


Figure 27 Change in Delays Resulting from Development (2026 Interpeak Phase 1)

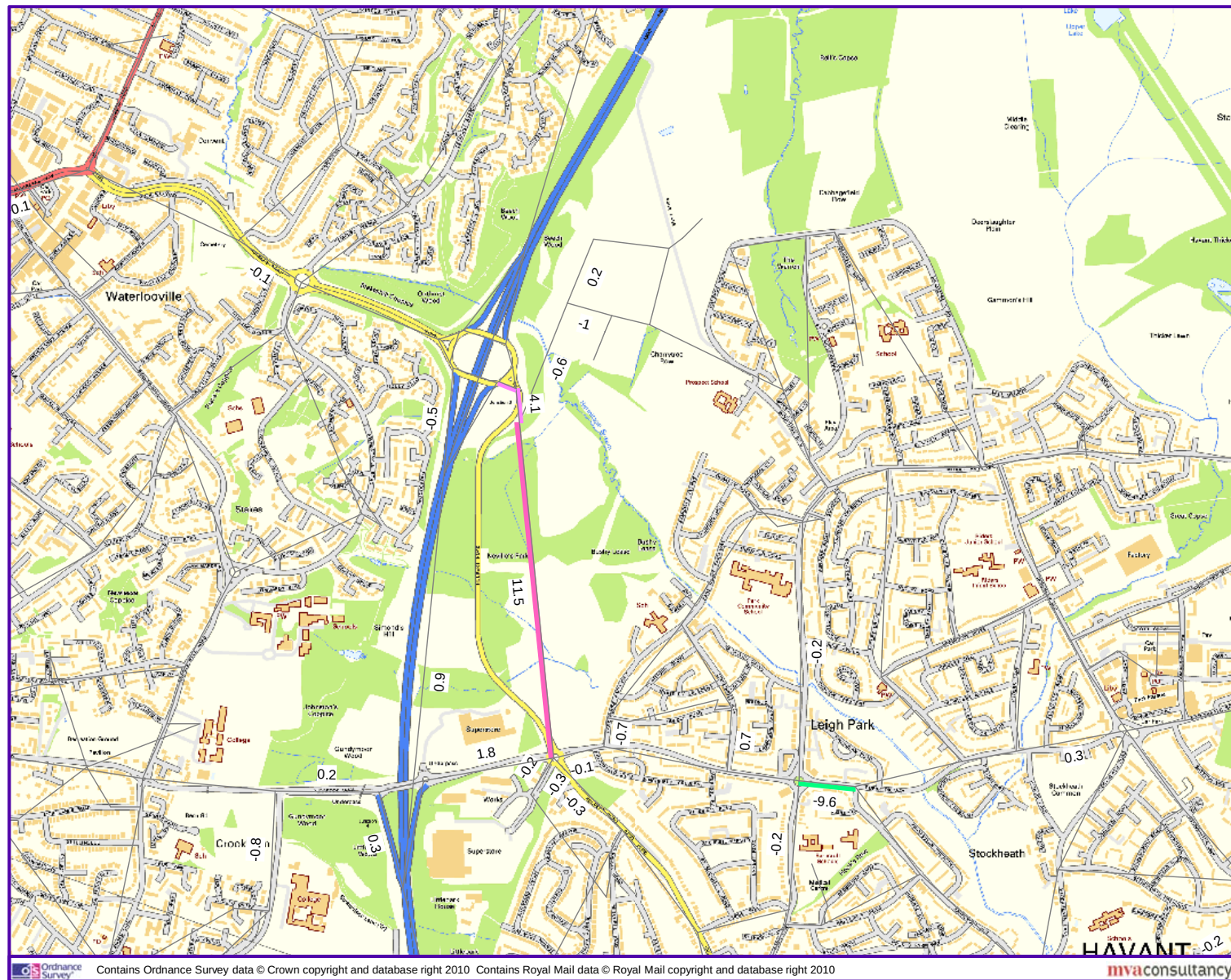


Figure 28 Delays in 2026 PM Peak without Development

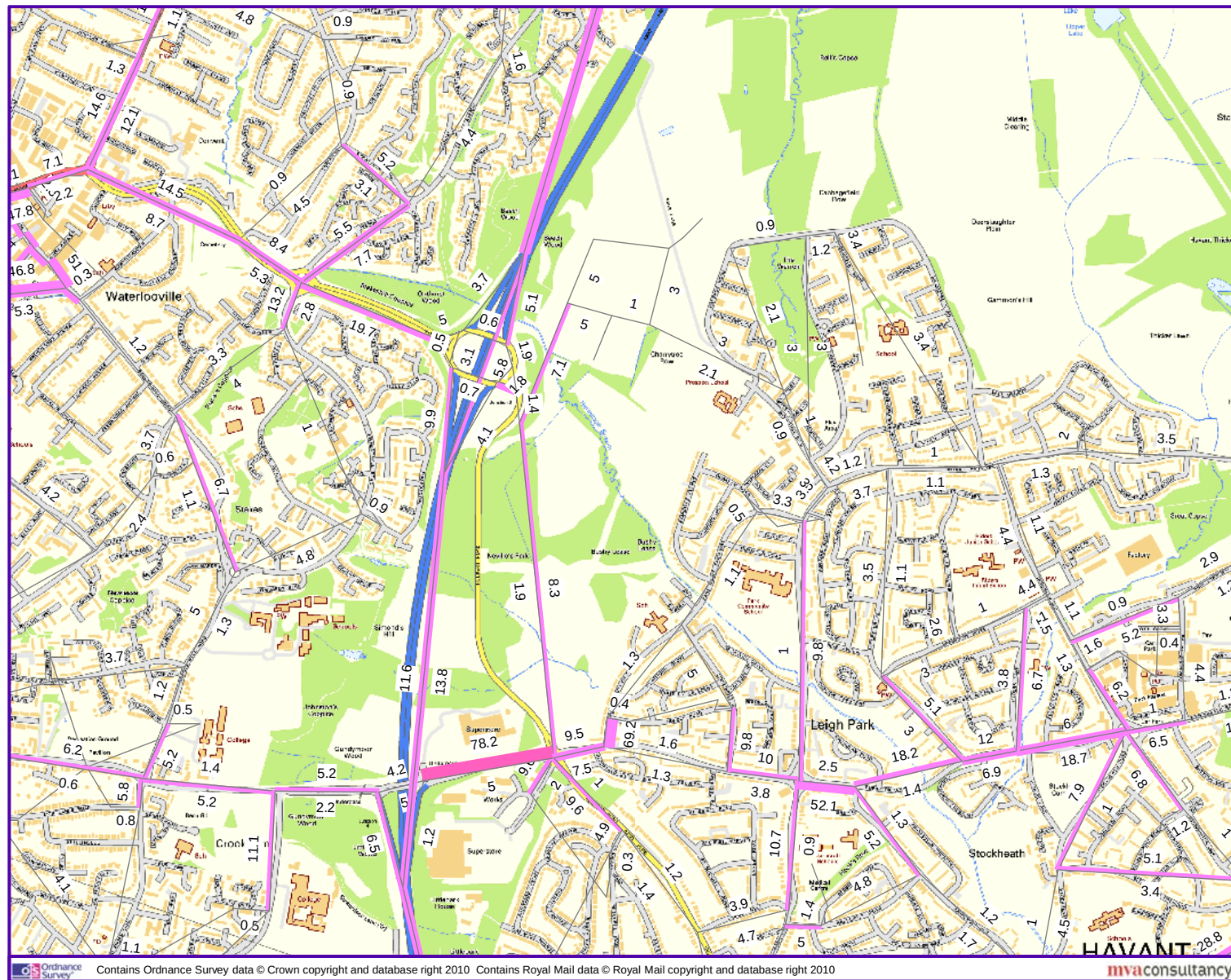


Figure 29 Delays in 2026 PM Peak with Phase 1 Development

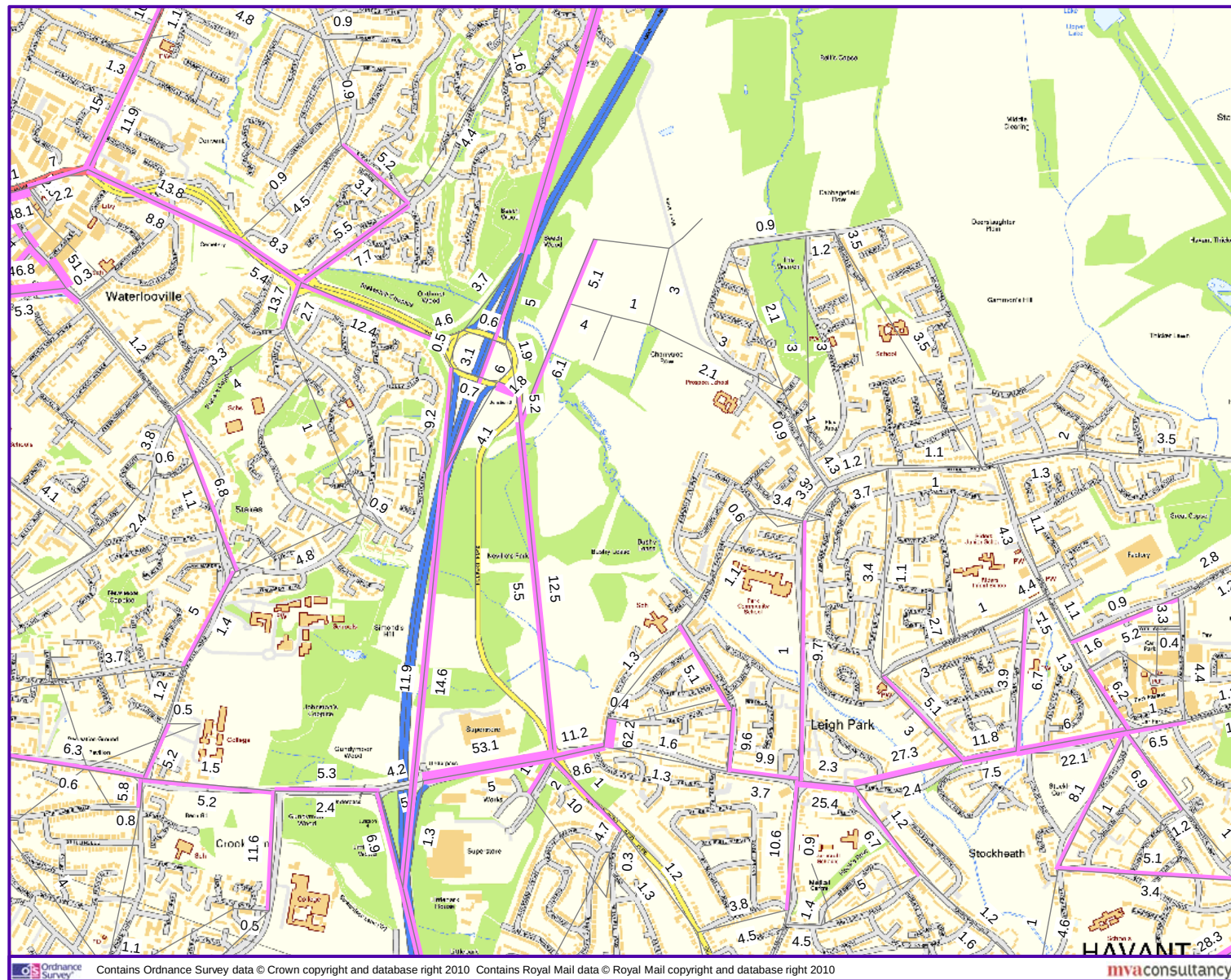


Figure 30 Change in Delays Resulting from Development (2026 PM Peak Phase 1)

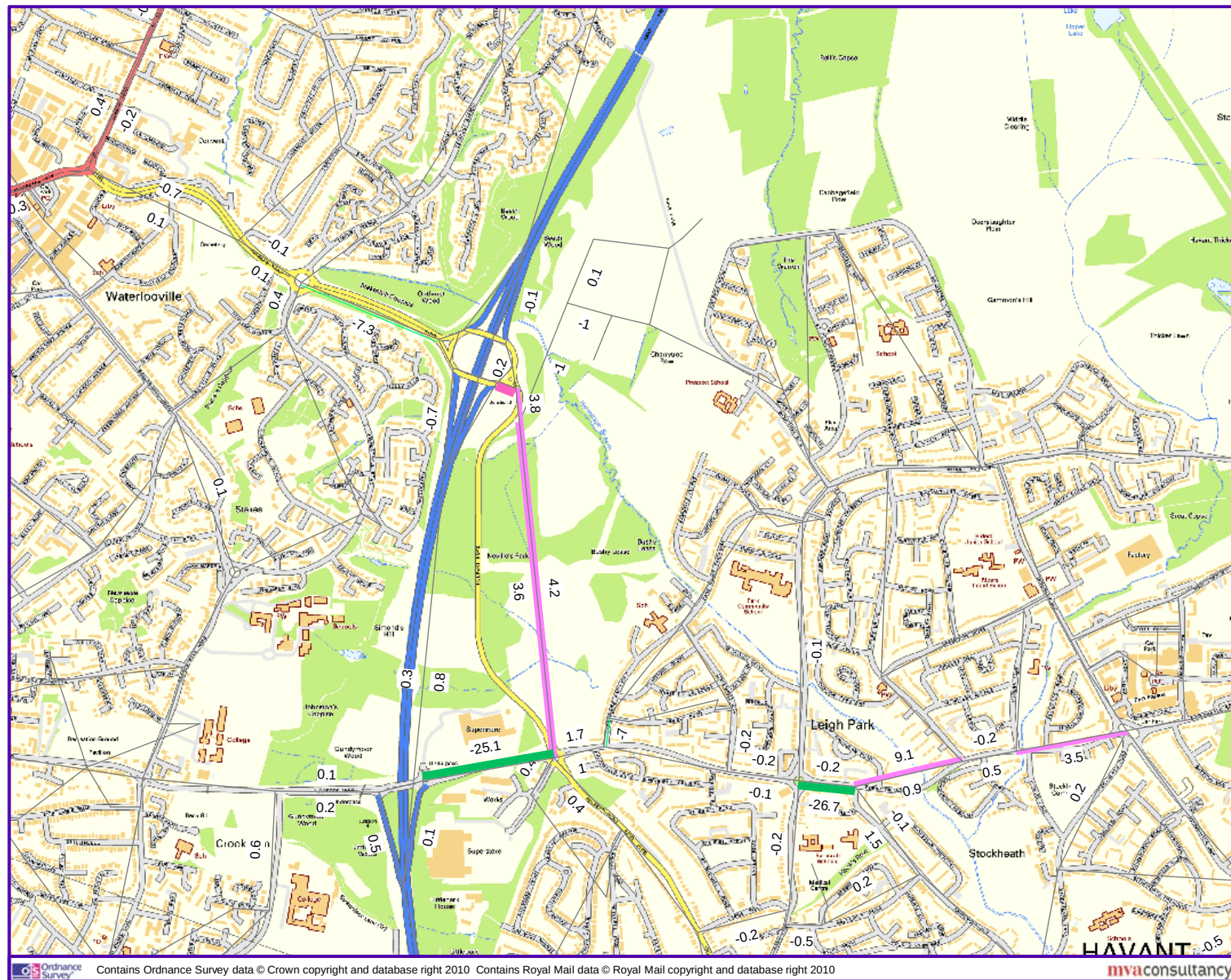


Figure 31 Change in Flow Resulting from Development (2026 AM Peak Phase 2) – Wide View

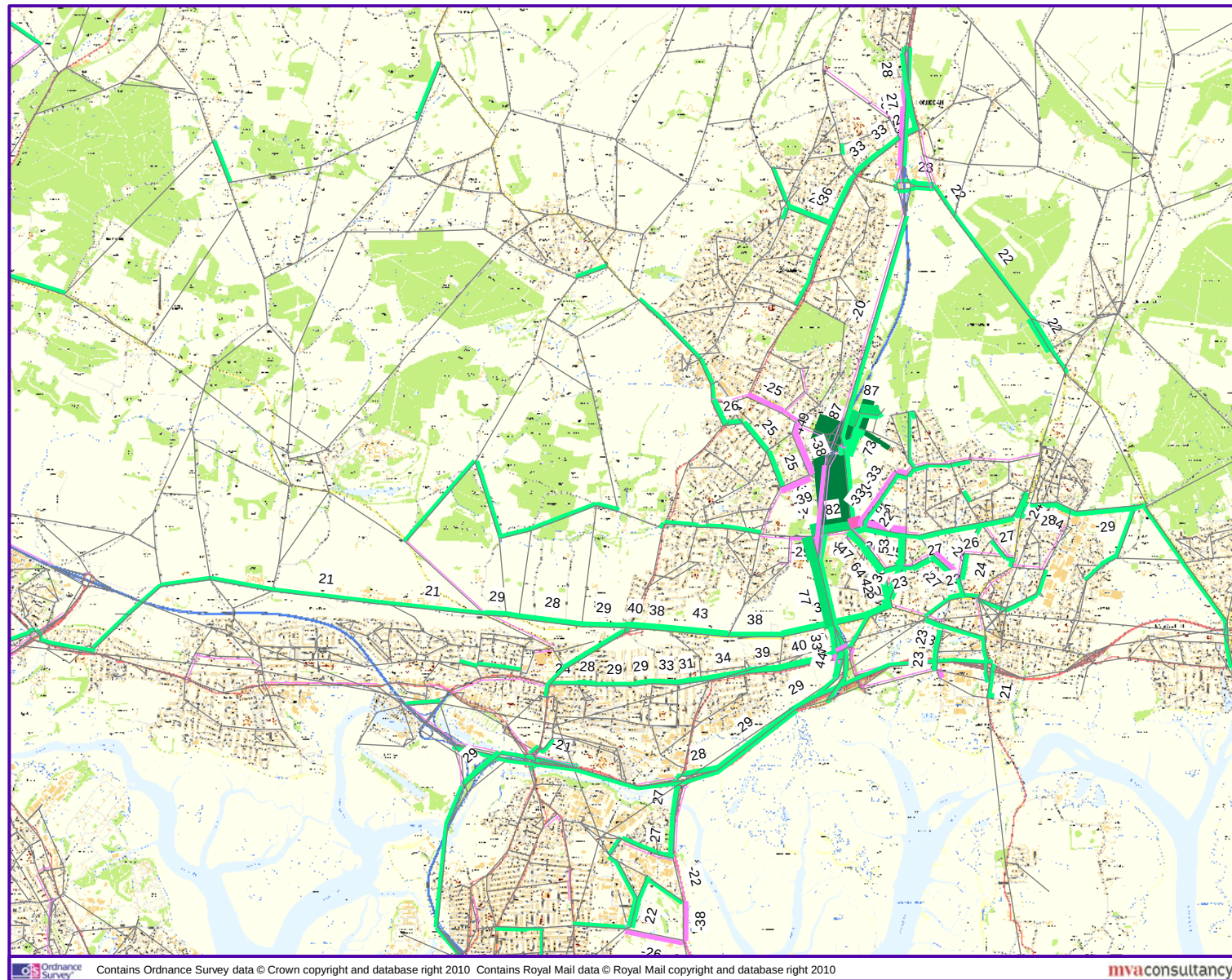


Figure 32 Change in Flow Resulting from Development (2026 AM Peak Phase 2) – Zoom View

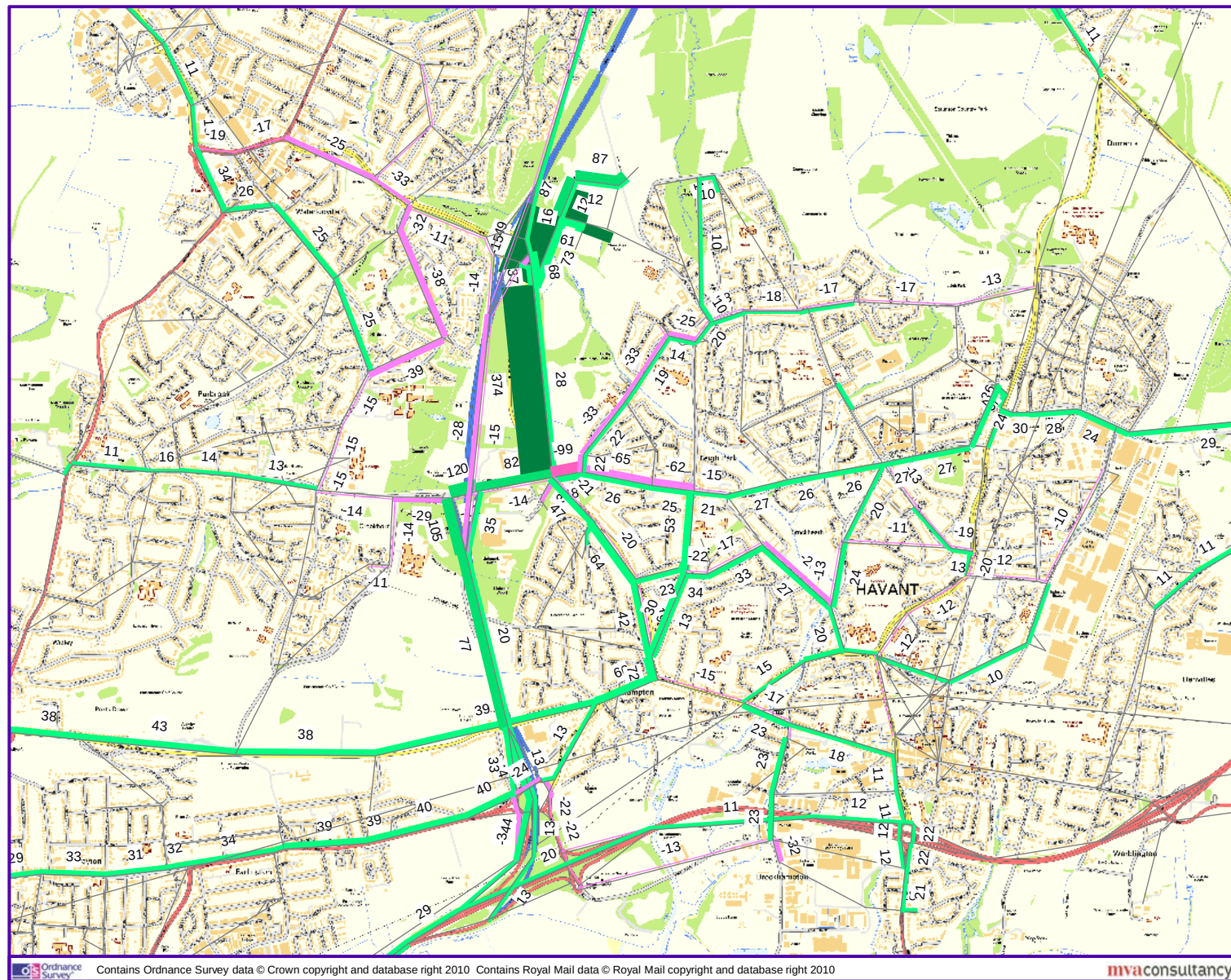


Figure 33 Change in Flow Resulting from Development (2026 Interpeak Phase 2) – Wide View

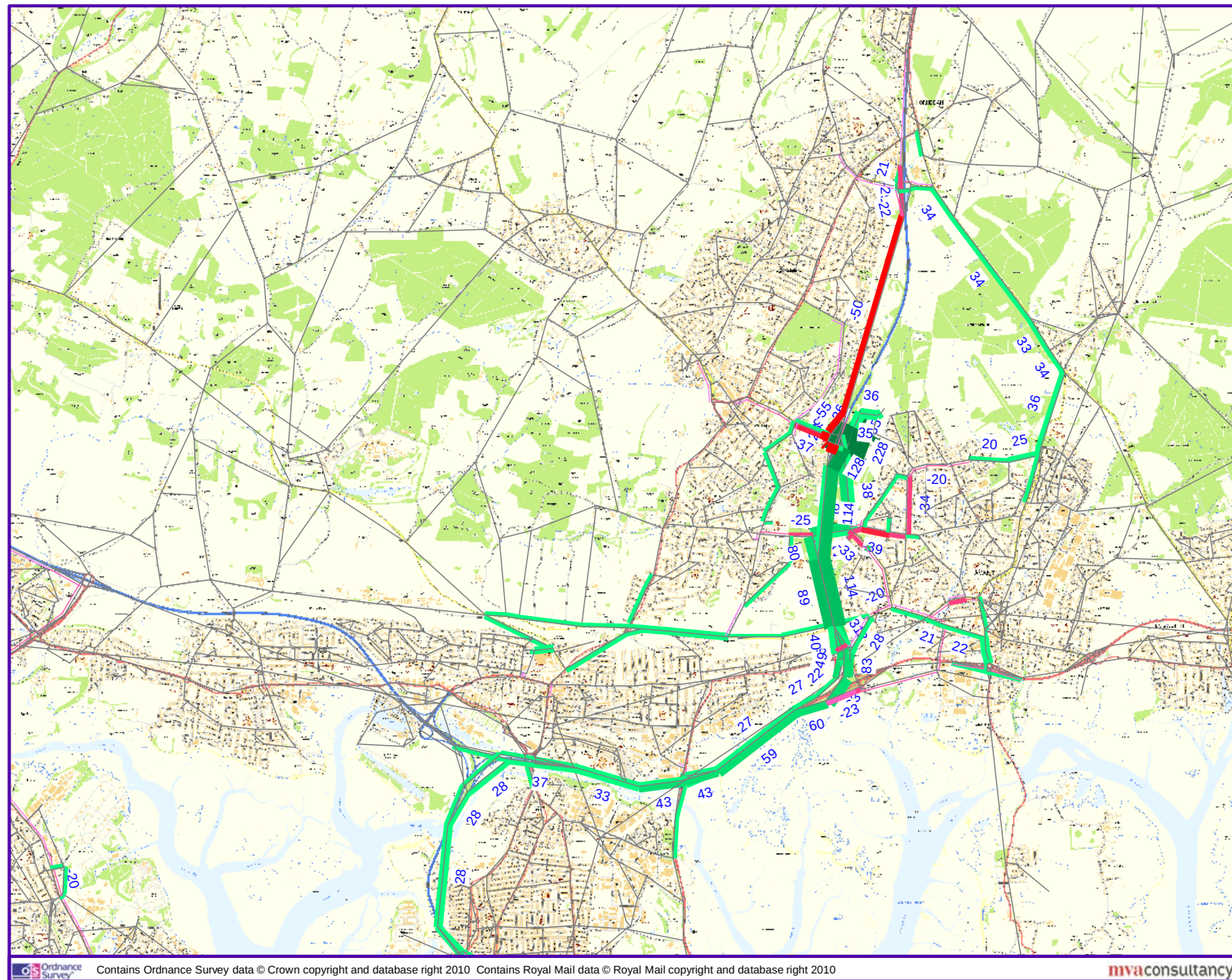


Figure 34 Change in Flow Resulting from Development (2026 Interpeak Phase 2) – Zoom View

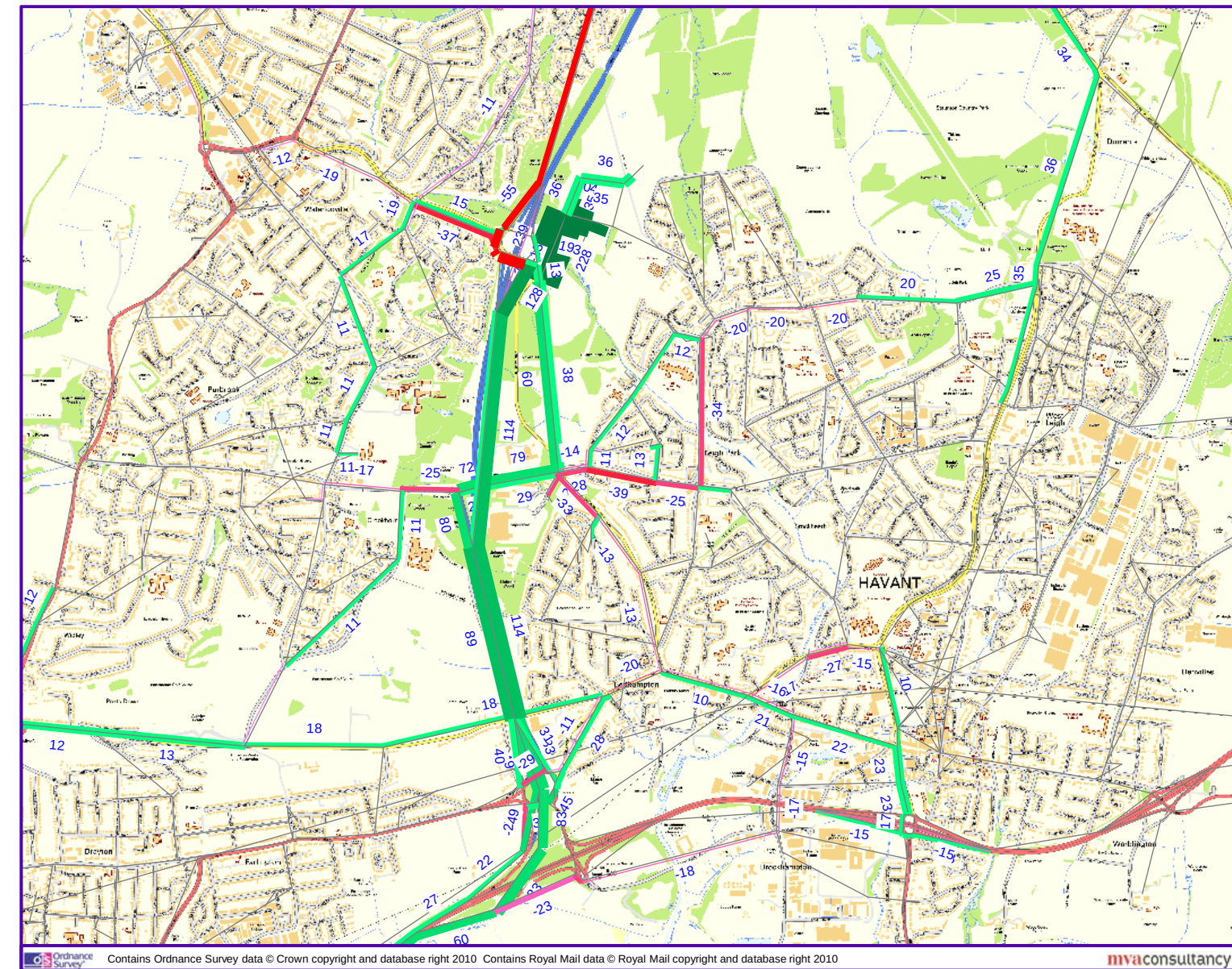


Figure 35 Change in Flow Resulting from Development (2026 PM Peak Phase 2) – Wide View

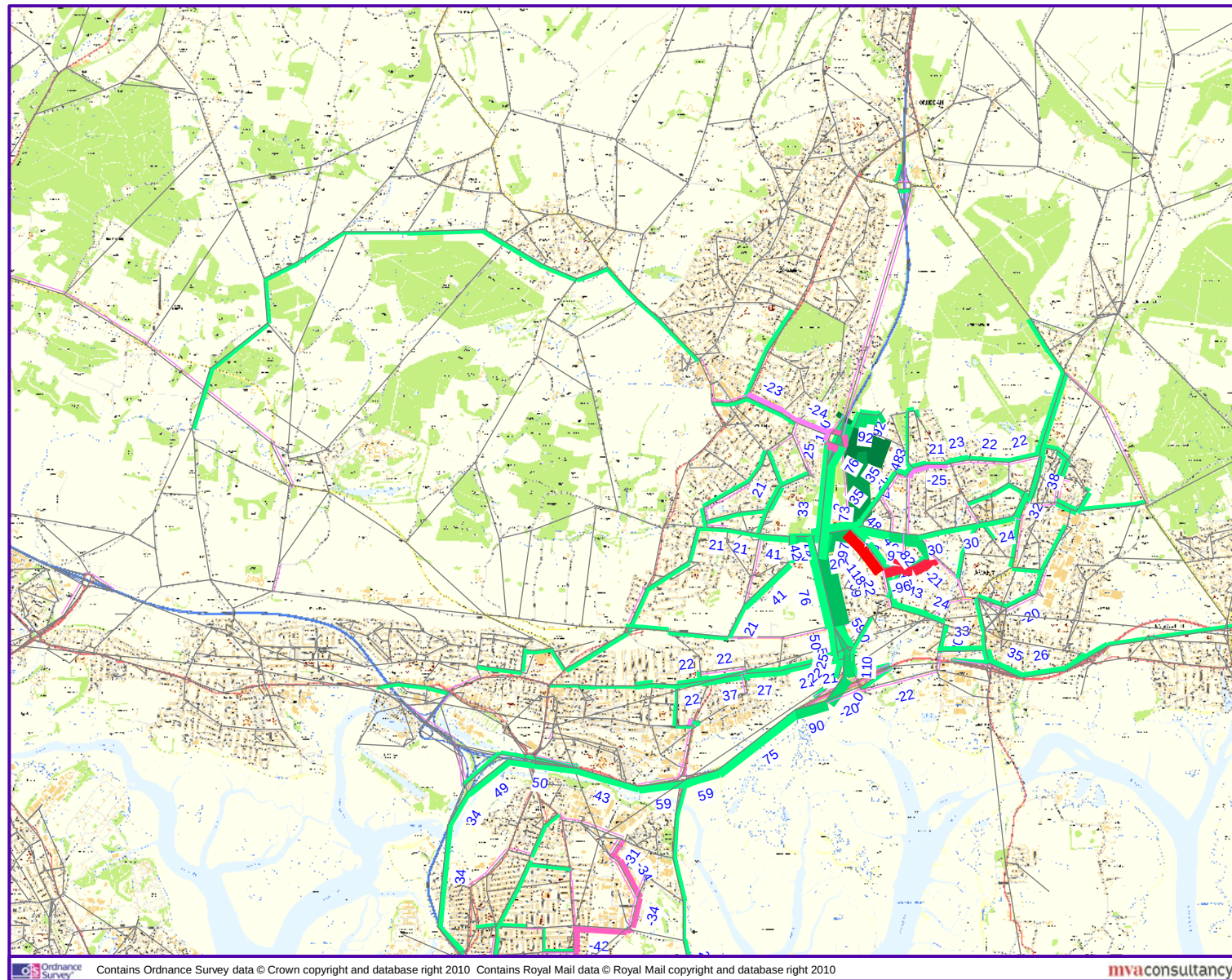


Figure 36 Change in Flow Resulting from Development (2026 PM Peak Phase 2) – Zoom View

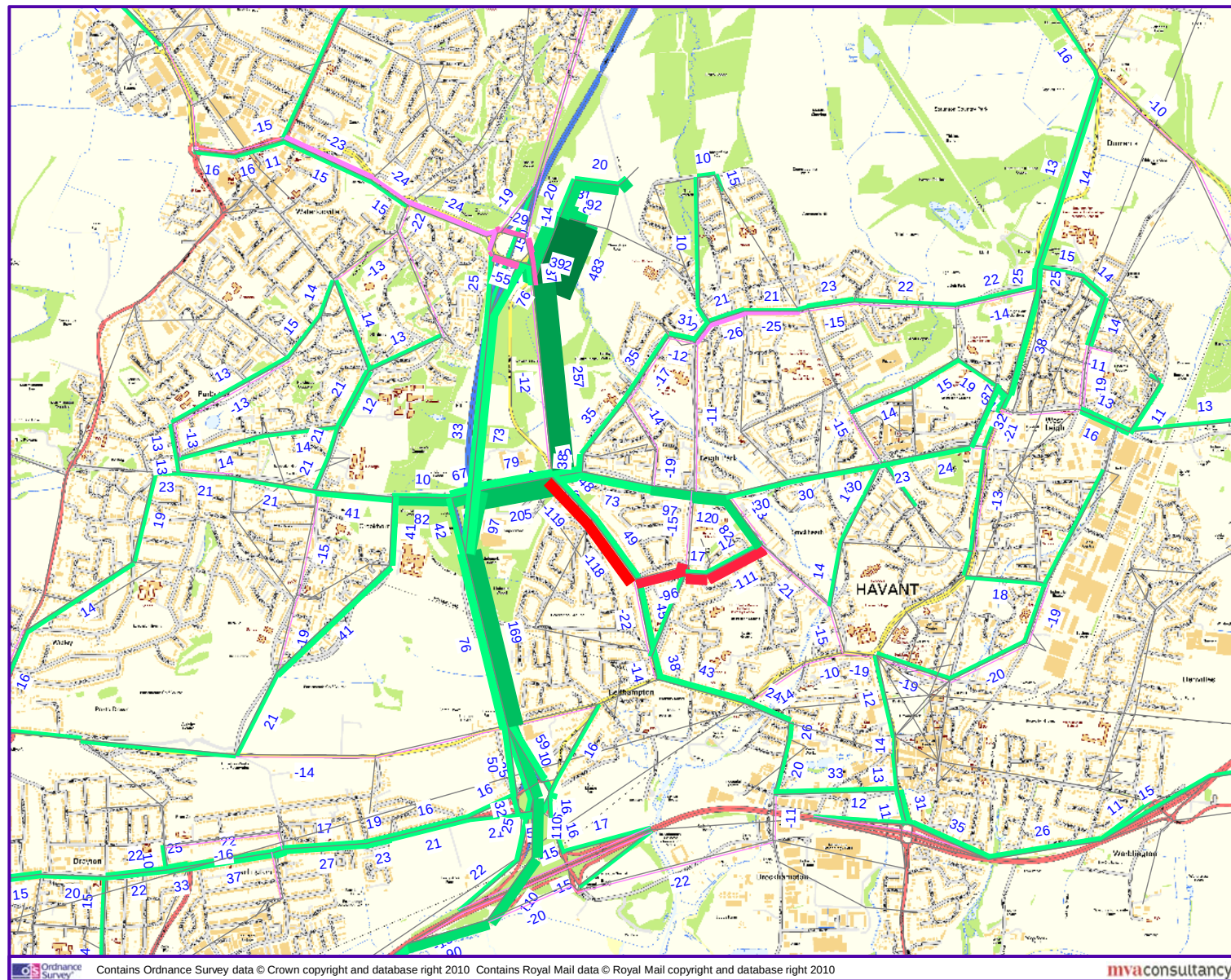


Figure 37 Delays in 2026 AM Peak without Development

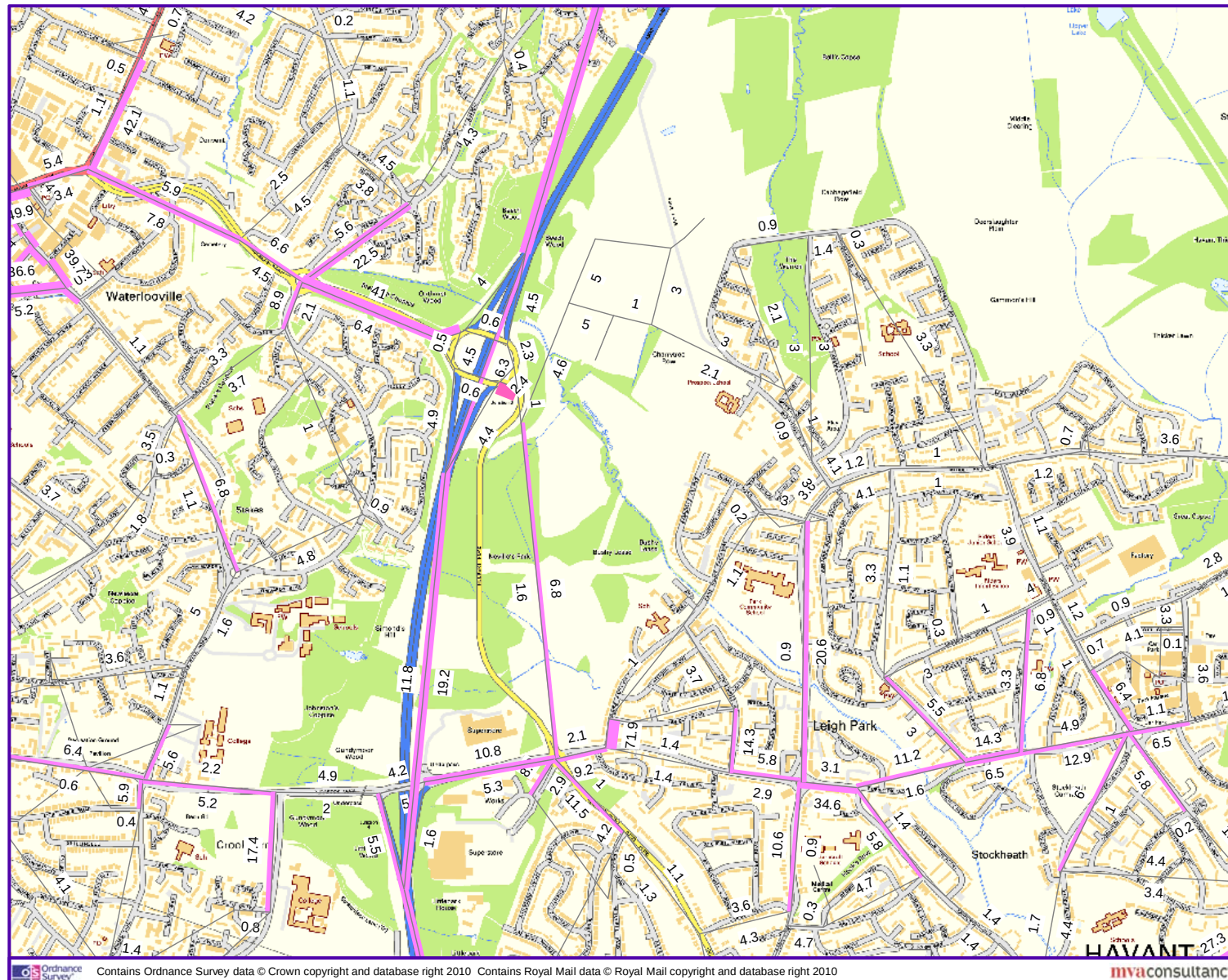


Figure 38 Delays in 2026 AM Peak with Phase 2 Development

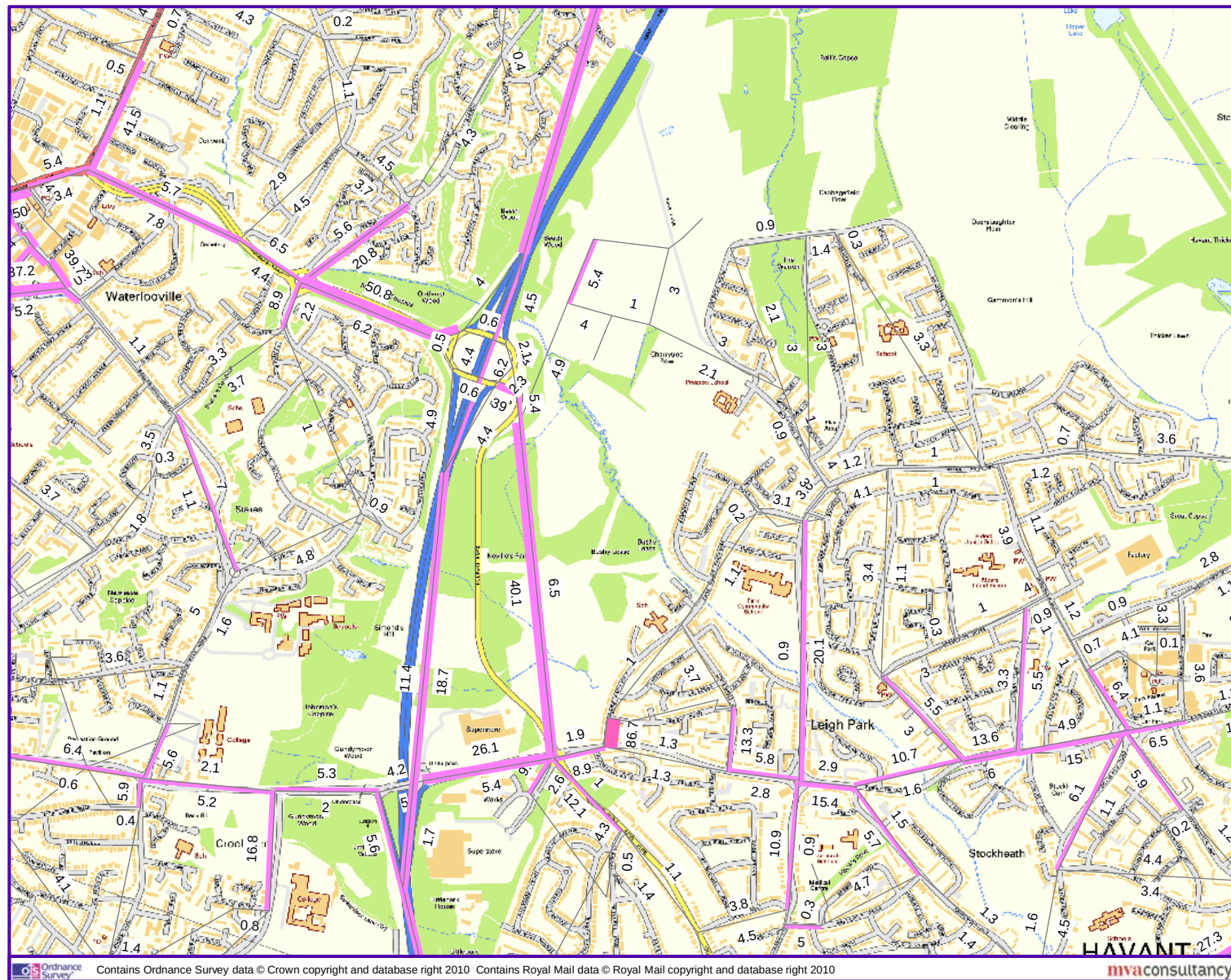


Figure 39 Change in Delays Resulting from Development (2026 AM Peak Phase 2)

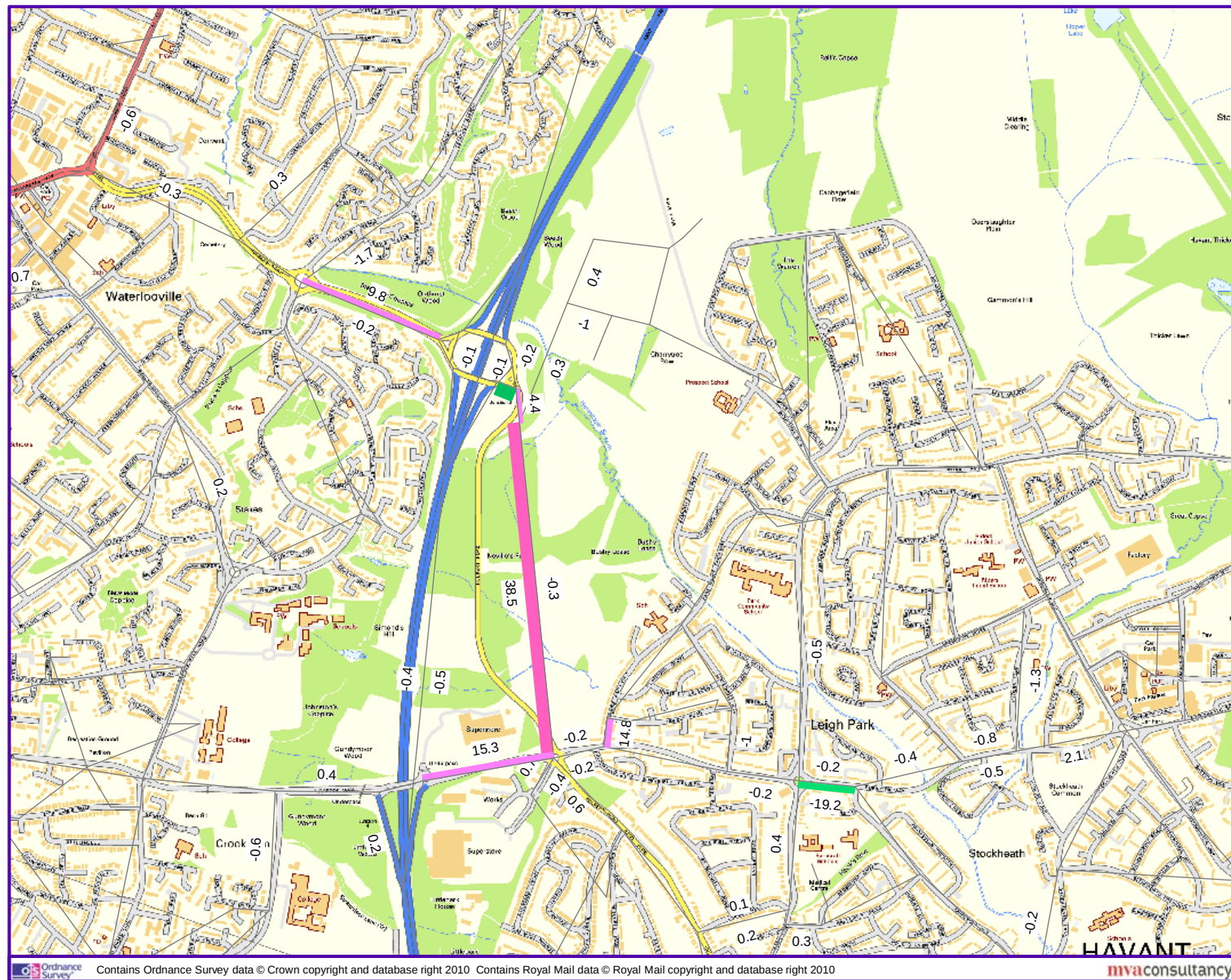


Figure 40 Delays in 2026 Interpeak without Development

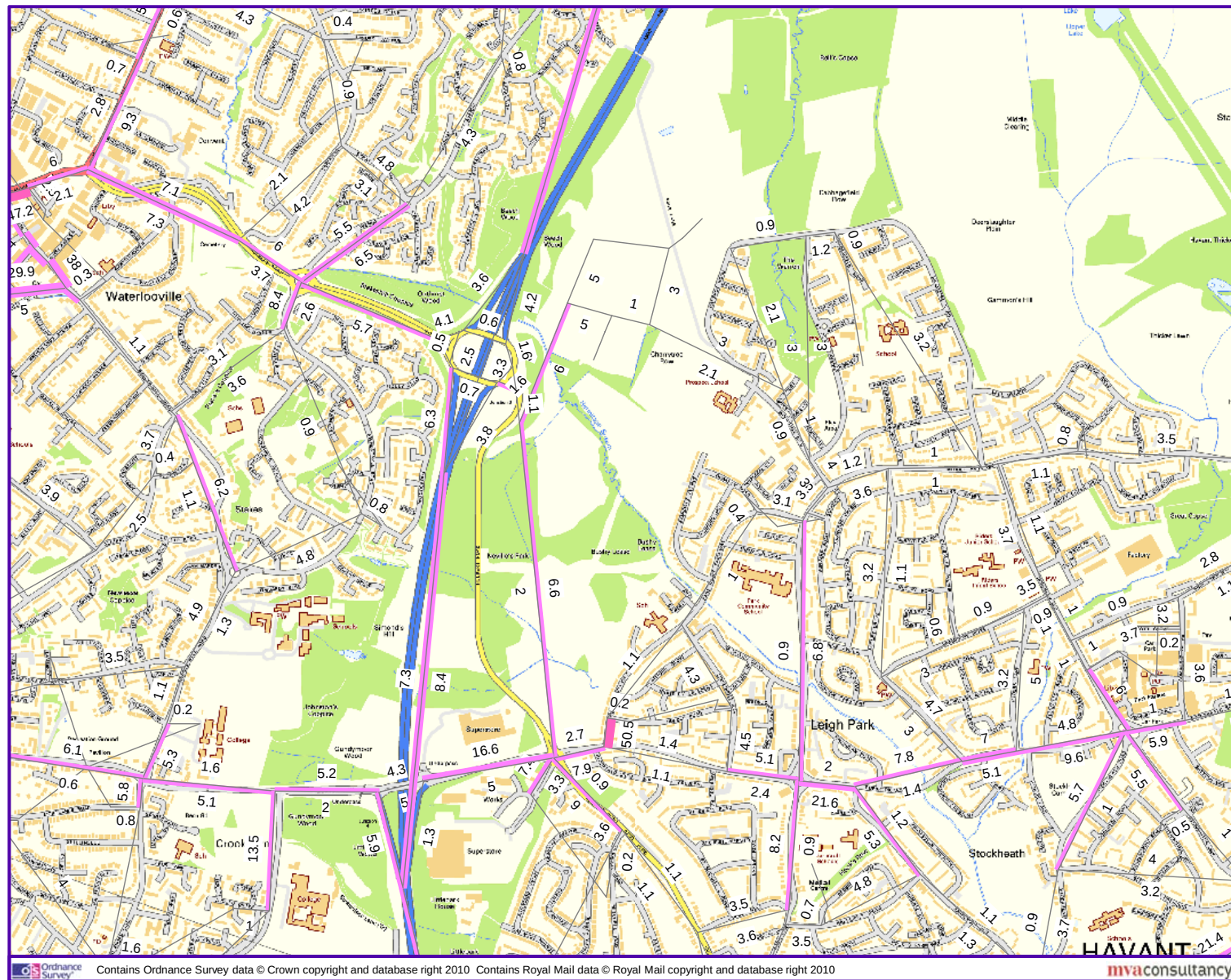


Figure 41 Delays in 2026 Interpeak with Phase 2 Development

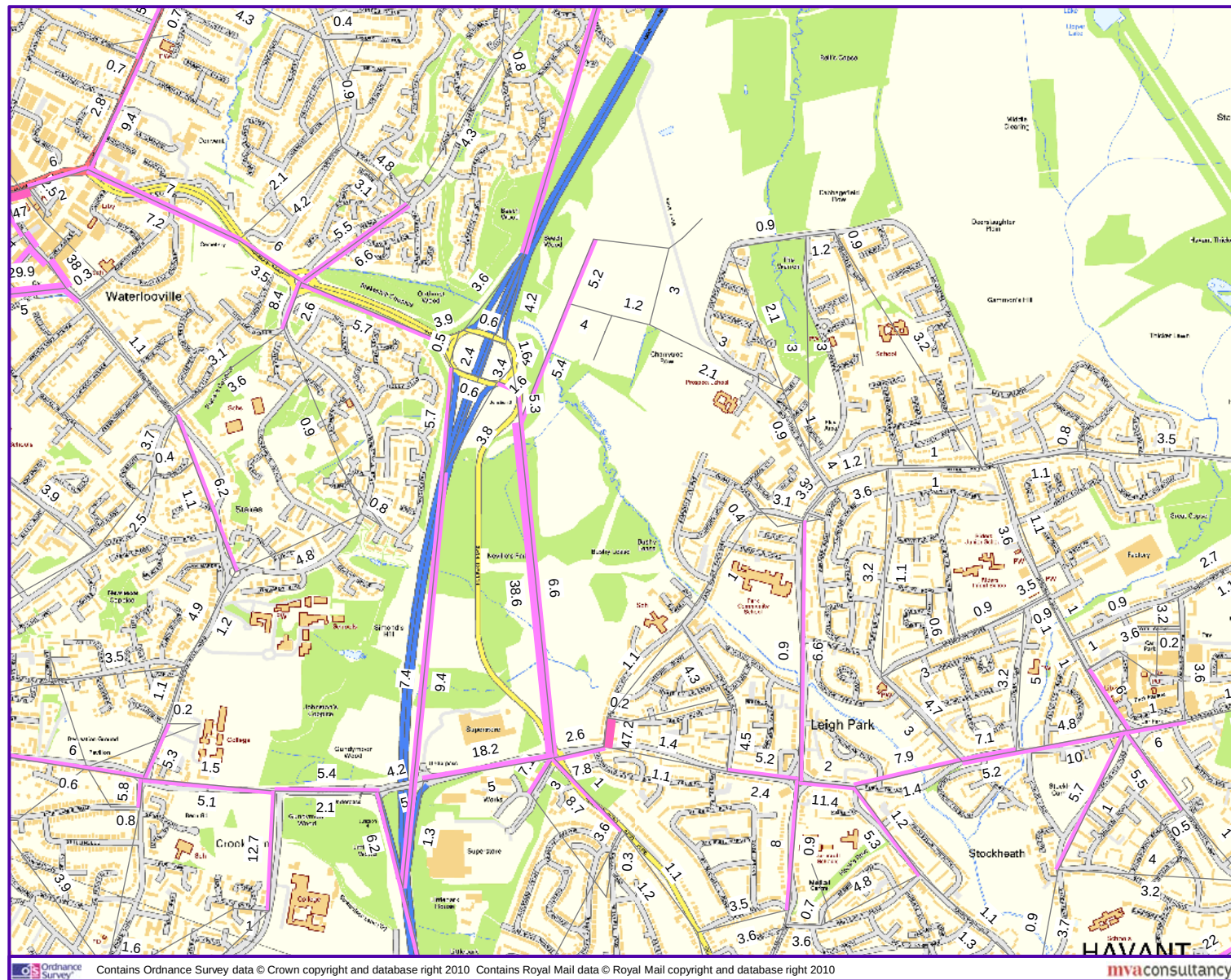


Figure 42 Change in Delays Resulting from Development (2026 Interpeak Phase 2)

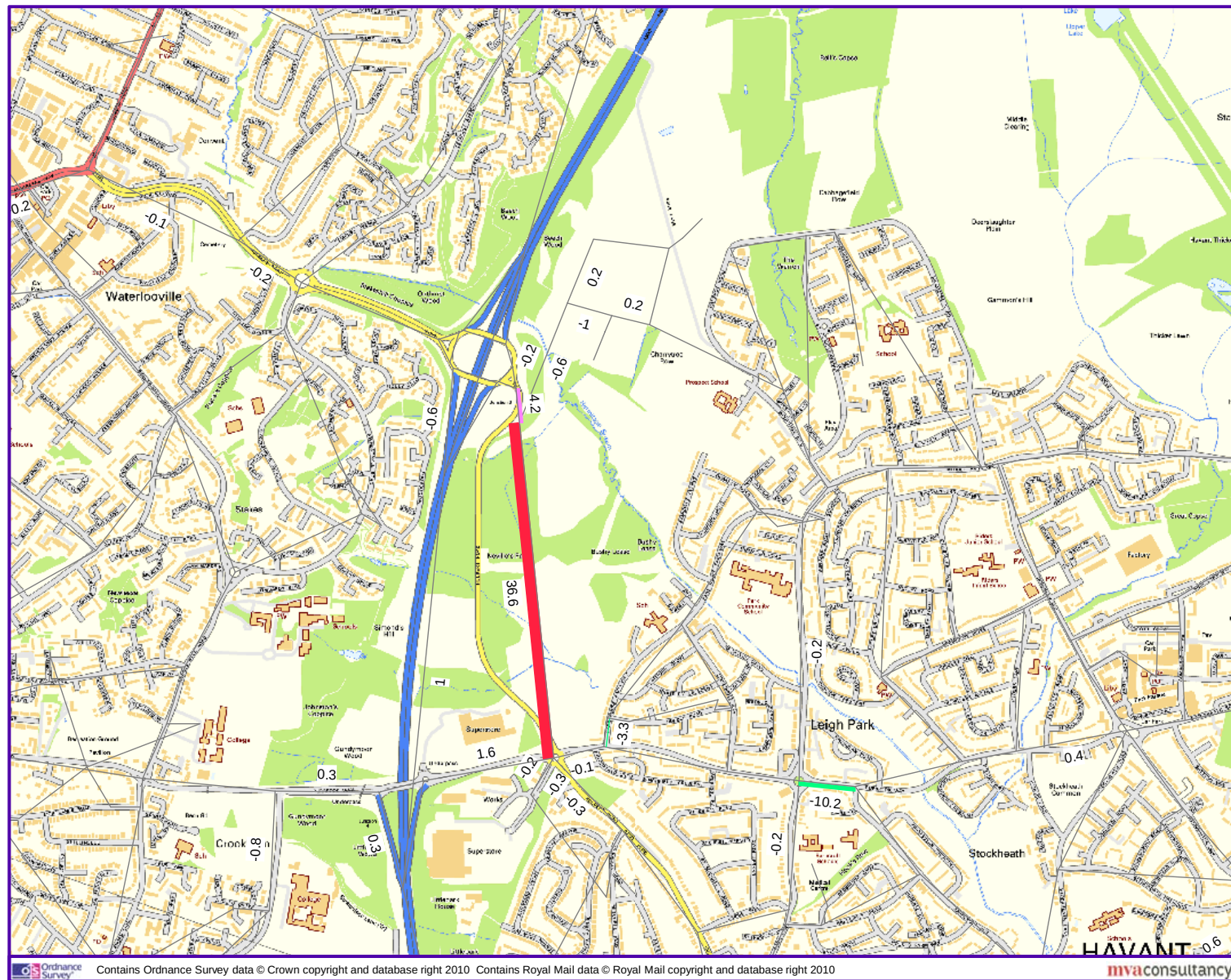


Figure 43 Delays in 2026 PM Peak without Development

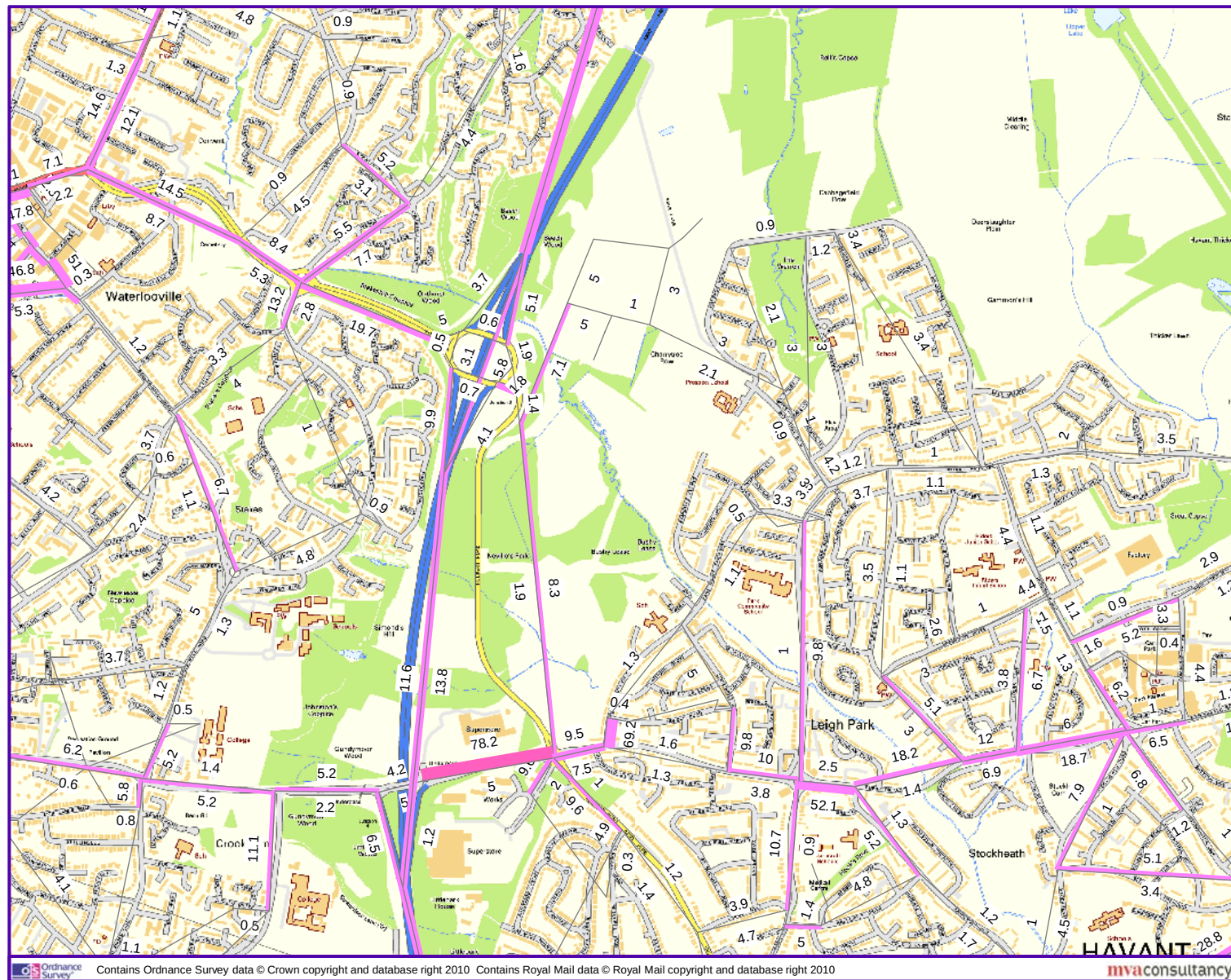


Figure 44 Delays in 2026 PM Peak with Phase 2 Development

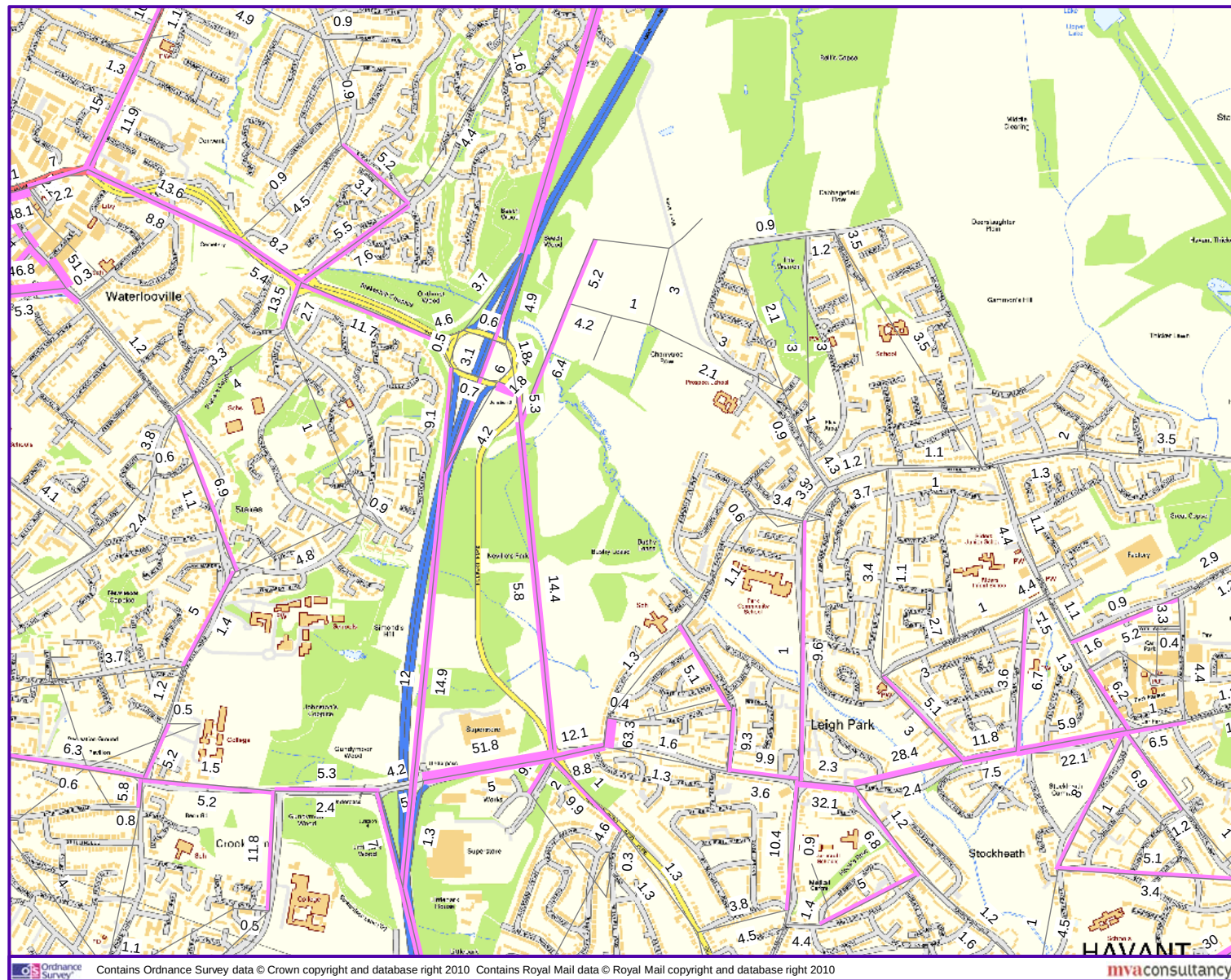
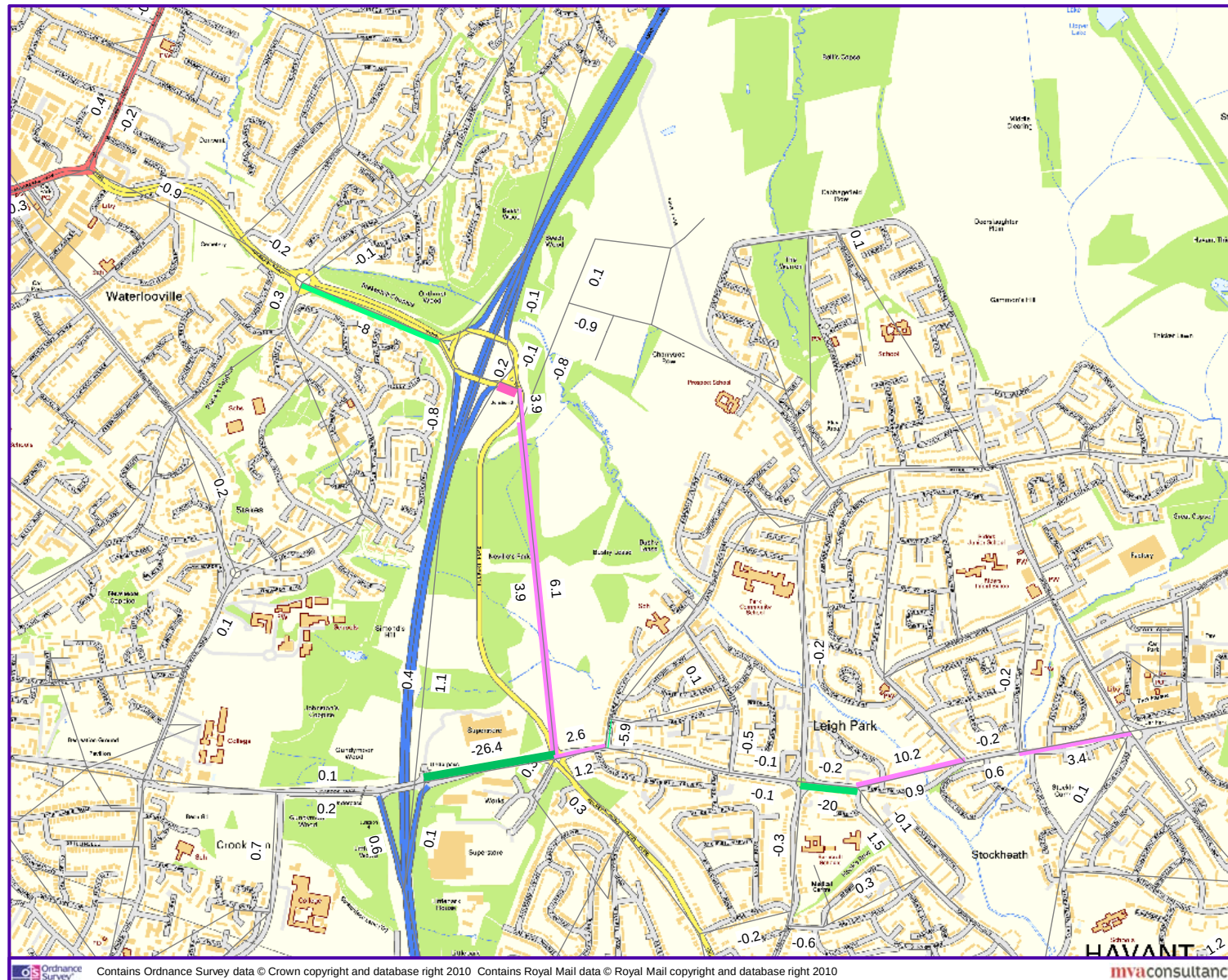


Figure 45 Change in Delays Resulting from Development (2026 PM Peak Phase 2)



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Appendix D - Adjusted Driving Behaviour Parameters

Freeway – Lane Change Parameters

Driving Behavior Parameter Sets

No.: 3 Name: Freeway (free lane selection)

Following **Lane Change** Lateral Signal Control

General behavior: Free Lane Selection

Necessary lane change (route)

	Own	Trailing vehicle
Maximum deceleration:	-4.00 m/s ²	-3.00 m/s ²
- 1 m/s ² per distance:	100.00 m	80.00 m
Accepted deceleration:	-1.00 m/s ²	-0.50 m/s ²

Waiting time before diffusion: 70.00 s

Min. headway (front/rear): 0.30 m

To slower lane if collision time above: 0.00 s

Safety distance reduction factor: 0.50

Maximum deceleration for cooperative braking: -5.00 m/s²

Overtake reduced speed areas: ☐

OK Cancel

Urban Motorised – Lane Change Parameters

Driving Behavior Parameter Sets

No.: 6 Name: Urban (motorized) - lane change more easily

Following **Lane Change** Lateral Signal Control

General behavior: Free Lane Selection

Necessary lane change (route)

	Own	Trailing vehicle
Maximum deceleration:	-5.00 m/s ²	-4.00 m/s ²
- 1 m/s ² per distance:	30.00 m	25.00 m
Accepted deceleration:	-4.00 m/s ²	-3.00 m/s ²

Waiting time before diffusion: 80.00 s

Min. headway (front/rear): 0.30 m

To slower lane if collision time above: 0.00 s

Safety distance reduction factor: 0.50

Maximum deceleration for cooperative braking: -5.00 m/s²

Overtake reduced speed areas: ☐

OK Cancel

Appendix E - VISSIM Vehicle Delay Results

VISSIM Micro-simulation Model:

Junction Delay Results

Delays on the approaches are measured in terms of the average delay per vehicle in seconds.

2019 with and without Phase 1

Junction Delay		Maximum Average Delay per movement per vehicle (sec)			
Junction	Approach	2026 Base		2026 Phase 1	
		AM	PM	AM	PM
A3(M) Junction 3 / B2150 Hulbert Road	A3(M) J3 (N)	43.0	6.2	23.8	7.9
	Hulbert Road (E)	36.3	12.9	34.5	12.8
	A3(M) J3 (S)	6.8	19.0	9.4	13.3
	Hulbert Road (W)	18.1	9.0	20.0	7.5
B2150 Hulbert Road / Purbrook Way Roundabout	Hulbert Road (N)	6.9	16.3	7.5	25.3
	Purbrook Way (E)	12.1	12.2	12.2	17.1
	Hulbert Road (S)	17.1	42.1	21.6	30.8
	Purbrook Way (W)	12.1	33.4	15.9	33.4
	ASDA	26.1	136.4	26.7	106.1
A3(M) Junction 4 / Purbrook Way (West Roundabout)	A3(M) J4 Northbound Off-slip	5.7	55.6	3.6	56.9
	Purbrook Way (W)	5.3	37.2	5.1	35.8
	Purbrook Way (E)	3.5	10.1	3.2	9.2
A3(M) Junction 4 / Purbrook Way / B&Q Havant (East Roundabout)	B & Q Exit	11.1	28.4	11.8	27.3
	Purbrook Way (E)	6.9	10.1	6.2	9.2
	Purbrook Way (W)	6.9	117.1	6.9	110.6
DHF Access Roundabout Junction	DHF Access Road	N/A	N/A	5.3	3.2
	Hulbert Road (S)	N/A	N/A	10.8	5.8
	Hulbert Road (N)	N/A	N/A	1.9	5.3

The delay results, presented in terms of average delay per vehicle, show some increases as would be expected in line with where the model is showing increases in queues. However there are some approaches where the delays would be reduced in the 'with development' scenario. This is a result of the higher demand creating a slightly different arrival profile in VISSIM for vehicles at the junctions and hence different gap opportunities at the roundabouts. This can sometimes result in reduced queues and delays on some approaches.

2026 with and without Phase 1

Junction Delay		Maximum Average Delay per movement per vehicle (sec)			
Junction	Approach	2026 Base		2026 Phase 1	
		AM	PM	AM	PM
A3(M) Junction 3 / B2150 Hulbert Road	A3(M) J3 (N)	16.0	7.0	8.4	8.5
	Hulbert Road (E)	23.7	14.0	22.5	17.7
	A3(M) J3 (S)	6.5	13.1	10.1	12.9
	Hulbert Road (W)	13.8	9.0	16.4	10.1
B2150 Hulbert Road / Purbrook Way Roundabout	Hulbert Road (N)	8.1	21.6	8.6	26.3
	Purbrook Way (E)	15.5	11.6	15.1	17.5
	Hulbert Road (S)	35.8	78.8	64.0	38.9
	Purbrook Way (W)	26.4	33.6	29.6	33.3
	ASDA	25.7	202.5	30.1	135.6
A3(M) Junction 4 / Purbrook Way (West Roundabout)	A3(M) J4 Northbound Off-slip	9.0	55.7	11.3	59.6
	Purbrook Way (W)	15.4	39.3	20.9	36.6
	Purbrook Way (E)	3.5	4.3	3.4	4.4
A3(M) Junction 4 / Purbrook Way / B&Q Havant (East Roundabout)	B & Q Exit	18.9	28.7	17.3	36.4
	Purbrook Way (E)	3.5	9.7	7.4	10.9
	Purbrook Way (W)	26.0	122.3	34.6	106.0
DHF Access Roundabout Junction	DHF Access Road	N/A	N/A	2.6	4.4
	Hulbert Road (S)	N/A	N/A	4.6	7.9
	Hulbert Road (N)	N/A	N/A	2.3	5.6

The table of delays for 2026 generally show a relatively minor increase in delays on various approaches between the Base and with Phase 1 scenarios. However, there are some approaches where the delays are predicted to reduce. This is a result of the higher demand in VISSIM creating a slightly different arrival profile for vehicles at the junctions, resulting in different gap opportunities at roundabouts, and hence reduced queues and delays on some approaches.

2026 with and without Phase 1&2

Junction Delay		Maximum Average Delay per movement per vehicle (sec)			
Junction	Approach	2026 Base		2026 Phase 1&2	
		AM	PM	AM	PM
A3(M) Junction 3 / B2150 Hulbert Road	A3(M) J3 (N)	16.0	7.0	10.7	9.2
	Hulbert Road (E)	23.7	14.0	20.4	17.3
	A3(M) J3 (S)	6.5	13.1	11.2	13.2
	Hulbert Road (W)	13.8	9.0	18.3	9.9
B2150 Hulbert Road / Purbrook Way Roundabout	Hulbert Road (N)	8.1	21.6	9.1	30.8
	Purbrook Way (E)	15.5	11.6	14.2	18.0
	Hulbert Road (S)	35.8	78.8	54.6	39.8
	Purbrook Way (W)	26.4	33.6	30.5	33.4
	ASDA	25.7	202.5	31.3	115.4
A3(M) Junction 4 / Purbrook Way (West Roundabout)	A3(M) J4 Northbound Off-slip	9.0	55.7	10.0	62.5
	Purbrook Way (W)	15.4	39.3	19.2	36.6
	Purbrook Way (E)	3.5	4.3	3.1	4.5
A3(M) Junction 4 / Purbrook Way / B&Q Havant (East Roundabout)	B & Q Exit	18.9	28.7	17.6	25.4
	Purbrook Way (E)	3.5	9.7	7.1	12.4
	Purbrook Way (W)	26.0	122.3	28.9	110.2
DHF Access Roundabout Junction	DHF Access Road	N/A	N/A	2.1	9.5
	Hulbert Road (S)	N/A	N/A	3.4	7.9
	Hulbert Road (N)	N/A	N/A	2.6	7.6

The junction delay results generally show an increase in delays, in terms of average delay per vehicle, between the 2026 Base and with Phase 1 and 2 scenarios. However, there are some approaches where the delays are predicted to reduce. This is a result of the higher demand in VISSIM creating a slightly different arrival profile for vehicles at the junctions, resulting in different gap opportunities at roundabouts, and hence reduced queues and delays on some approaches.

Sensitivity Test

2026 with and without Phase 1&2 – Sensitivity Test

Junction Delay		Maximum Average Delay per movement per vehicle (sec)			
Junction	Approach	2026 Base		2026 Phase 1&2	
		AM	PM	AM	PM
A3(M) Junction 3 / B2150 Hulbert Road	A3(M) J3 (N)	16.0	7.0	12.4	8.5
	Hulbert Road (E)	23.7	14.0	22.7	17.8
	A3(M) J3 (S)	6.5	13.1	11.9	13.8
	Hulbert Road (W)	13.8	9.0	36.1	8.5
B2150 Hulbert Road / Purbrook Way Roundabout	Hulbert Road (N)	8.1	21.6	9.1	29.2
	Purbrook Way (E)	15.5	11.6	14.2	18.6
	Hulbert Road (S)	35.8	78.8	62.4	50.9
	Purbrook Way (W)	26.4	33.6	33.5	31.1
	ASDA	25.7	202.5	32.7	139.8
A3(M) Junction 4 / Purbrook Way (West Roundabout)	A3(M) J4 Northbound Off-slip	9.0	55.7	17.4	57.0
	Purbrook Way (W)	15.4	39.3	32.7	33.8
	Purbrook Way (E)	3.5	4.3	3.2	4.3
A3(M) Junction 4 / Purbrook Way / B&Q Havant (East Roundabout)	B & Q Exit	18.9	28.7	19.6	28.1
	Purbrook Way (E)	3.5	9.7	6.7	12.4
	Purbrook Way (W)	26.0	122.3	61.1	110.4
DHF Access Roundabout Junction	DHF Access Road	N/A	N/A	2.1	5.7
	Hulbert Road (S)	N/A	N/A	4.2	8.3
	Hulbert Road (N)	N/A	N/A	3.3	6.9

The junction delay results generally show an increase in delays, in terms of average delay per vehicle, between the 2026 Base and with Phase 1 and 2 scenarios. However, there are some approaches where the delays are predicted to reduce. This is a result of the higher demand in VISSIM creating a slightly different arrival profile for vehicles at the junctions, resulting in different gap opportunities at roundabouts, and hence reduced queues and delays on some approaches.

Appendix F - Framework Workplace Travel Plan

Dunsbury Hill Farm

Framework Travel Plan

March 2012

Notice

This report was produced by *Atkins Highways and Transportation* for Portsmouth City Council (PCC), Havant Borough Council (HBC) and the Partnership for Urban South Hampshire (PUSH) for the specific purpose of the *Dunsbury Hill Farm Framework Travel Plan*.

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Plan Design Enable

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Appendices

1. Introduction

- 1.1 Atkins has been commissioned jointly by Portsmouth City Council (PCC), Havant Borough Council (HBC) and the Partnership for Urban South Hampshire (PUSH) to prepare a Framework Travel Plan for the proposed business park development at Dunsbury Hill Farm, near Waterlooville in Hampshire. The location of the proposed Dunsbury Hill development site is shown in Figure 1.1.
- 1.2 This Framework Travel Plan is an Appendix to the Transport Assessment (TA) that has also been completed by Atkins, to support the outline planning application for the proposed business park development at Dunsbury Hill Farm.
- 1.3 The development proposal involves the construction of a business park in two phases with an associated hotel development. Construction of road works forming the detailed element of the hybrid planning application, access and link road, is planned for 2013. It is then intended that the site will be constructed in two phases as follows:
- Phase 1 – employment land use (46,450 m² GFA) and a Hotel (5,574 m² GFA); and
 - Phase 2 – additional employment land use (15,329 m² GFA).
- 1.4 Phase 1 is currently planned to begin in 2014 with Phase 2 following in 2022. Both phases have an anticipated timescale of four years to full completion and occupation therefore will be expected for 2018 and 2026 respectively.

Aim of the Travel Plan

- 1.5 The Travel Plan is a package of incentives that has been identified for this particular site and aimed at bringing transport and other related issues together in a co-ordinated strategy with an emphasis on reducing reliance on the private car and increasing travel choice for staff and visitors. It is part of a dynamic process that will develop over time in changing circumstances.
- 1.6 In Chapter 7 of the TA, the importance of a Travel Plan is outlined in relation to its impact towards influencing travel patterns of employees and encouraging the use of non-car modes of travel, as a way of mitigating the impacts of the development.
- 1.7 Generally, the three main aims of the Travel Plan will be to:
- Support the planning application of the development;
 - Identify an effective strategy for managing travel behaviour of staff and visitors to the development, and
 - Manage parking demand on site for operational and staff vehicles.
- 1.8 More specifically it will seek to deliver the following benefits:
- Improving site access and travel choice;
 - Increasing business efficiency and equality;
 - Reducing congestion and demand for parking spaces;
 - Ensuring adequate provision for people with disabilities;
 - Providing choice and quality access to key services;
 - Delivering local environmental improvements from reduced congestion, pollution and noise; and
 - Providing opportunities for active, healthy travel.

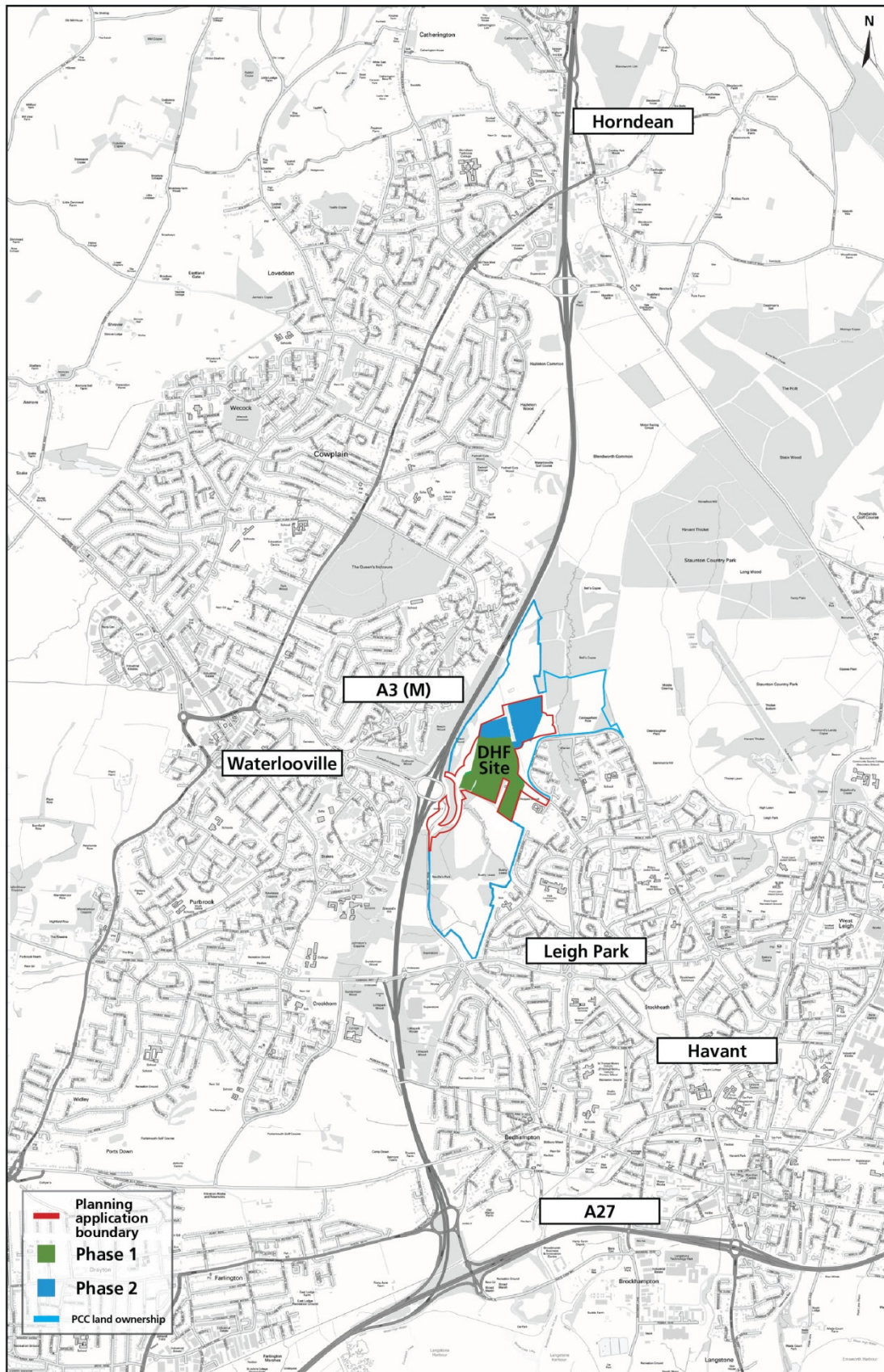
Scope of Travel Plan

- 1.9 It has been agreed that the Travel Plan will be Framework at this stage. The travel survey will therefore commence once the site is occupied and when the information can be coordinated internally.
- 1.10 The Framework Travel Plan has been prepared in line with the Department for Transport (DfT) document 'Good Practice Guidelines: Delivering Travel Plans through the Planning Process'. 2009.

Report Structure

- 1.11 The remainder of this Framework Travel Plan document will be structured as follows:
- Section 2 details as far as practical the baseline transport conditions associated with the site;
 - Section 3 summarises the development proposals;
 - Section 4 quantifies as far as practical the forecast staff travel patterns for the site;
 - Section 5 presents the objectives of the Travel Plan, a review of relevant national, regional and local policy in regards to the Travel Plan and sets out indicative targets for the Travel Plan;
 - Section 6 outlines recommended Travel Plan measures;
 - Section 7 details the car parking management strategy;
 - Section 8 details delivery and monitoring of the Travel Plan and outlines the marketing and communication strategies; and
 - Section 9 sets out the proposed Action Plan for delivery of the Travel Plan.

Figure 1.1 – Site Location Plan



2. Baseline Transport Conditions

Overview

- 2.1 This section of the report provides a summary of existing accessibility to Dunsbury Hill Farm for staff and visitors by all modes of transport.

Site Location

- 2.2 The existing Dunsbury Hill Farm site predominantly comprises agricultural land that lies within an undeveloped strategic gap immediately east of the A3 (M) motorway Junction 3, between Waterlooville and the northern area of Havant. The land is owned by PCC, however is situated in HBC, who is the planning authority for the site. The slip road leading off the A3(M) is the B2150 known as Hulbert Road which leads southwards to Purbrook Way. It is intended that this road will be adjoined by the link road to provide access to the site.
- 2.3 The site is currently characterised by the following key features:
- A series of extensive open fields enclosed within established hedgerow, lying to the west of Leigh Park residential area;
 - Park Lane which connects Waterlooville and Leigh Park estate (Havant) and dissects the site across the north east corner;
 - Belts of woodland lying to the south and west of the site which are identified as Sites of Importance to Nature Conservation (SINCs);
 - A number of trees located within and adjacent to the study area;
 - The Hermitage Stream which runs to the south west of the site, and the adjoining area, which is located within Flood Zone 3;
 - Two high voltage power lines and a mains gas pipeline running through the eastern part of the site parallel to the study area boundary;
 - Further overhead power lines passing through the site along an east west axis at approximately the centre of the site; and
 - Part of the site overlies a former landfill site containing inert construction waste from the A3 (M) motorway requiring appropriate risk assessments.

Existing Site Land Uses

- 2.4 The Dunsbury Hill Farm development site predominantly comprises agricultural land that lies within an undeveloped strategic gap, and as such, only farm vehicle trips are generated by the site.

Public Transport Accessibility

- 2.5 Access to public transport is shown graphically in Figure 3.6 in the TA Report supporting the planning application for the site.

Access by Rail

- 2.6 The nearest railway station is Bedhampton, which is just over 2km from the site. Rail services at Bedhampton are operated by Southern and Southwest Trains and a summary of the services at Bedhampton station are shown in Table 2.1 below.

Table 2.1 – Existing rail services at Bedhampton Station

Train Operating Company	Origins	Destinations	AM Peak Hour Frequency
Southern	Barnham Brighton Ford Littlehampton London Victoria	Havant Portsmouth & Southsea Portsmouth Harbour Southampton Central	4 trains / hour
Southwest Trains	Guildford London Waterloo	Havant Hilsea Portsmouth & Southsea Portsmouth Harbour	2 trains / hour

2.7

Havant station is just over 2.5km from the site and connects with Bedhampton. Rail services at Havant are operated by First Great Western, Southern and Southwest Trains. A summary of the services at Havant station is shown in Table 2.2 below.

Table 2.2 - Existing rail services at Havant Station

Train Operating Company	Origins	Destinations	AM Peak Hour Frequency
First Great Western	Bristol Temple Meads	Brighton	N/A (limited daytime service)
Southern	Barnham Brighton Ford Littlehampton London Victoria	Portsmouth & Southsea Portsmouth Harbour Southampton Central	5 trains / hour
Southwest Trains	Guildford London Waterloo	Hilsea Portsmouth & Southsea Portsmouth Harbour	3 trains / hour

Access by Bus

2.8

The nearest bus services are Route 23 at Calshot Road (Hockham Court), approximately 400m from the site, and Route 39 at Middle Park Way (Woolston Road), approximately 500m from the site. Route 37 runs west of the site in Waterloo. A summary of these and other nearby services is shown in Table 2.3 below. These services are operated by Stagecoach.

Table 2.3 – Existing Bus Services near Dunsbury Hill Farm

Route number	Nearest stop	Origin	Destination	AM Peak Hour Frequency
23	Calshot Road (Larkwhistle Walk)	Southsea	Leigh Park	10 minutes
39	Middle Park Way (Woolston Road)	Havant	Wecock Farm	15 minutes
37	Hulbert Road Roundabout, Waterlooile	Havant	Alton	30 – 60 minutes
20	Dunsbury Way (Leigh Park)	Havant	Portsmouth Harbour	30 minutes
21	Dunsbury Way (Leigh Park)	Havant	Portsmouth Harbour	20 – 30 minutes

Pedestrians and Cyclist Connectivity

- 2.9 There is an existing bridleway passing through the development site along Park Lane, which forms a cycle route linking Tempest Avenue, to the west of the A3 (M), to Middle Park Way and Dunsbury Way to the east of the A3 (M); this crosses the A3 (M) on a bridge to the north of Junction 3. There is an off-road cycle route southbound from Woolston Road roundabout along Middle Park Way. The route continues off-road along the Hermitage Stream path which heads south towards Havant town centre. There is also an off-road cycle route along Purbrook Way west of the Hulbert Road / ASDA Roundabout which heads to the west of the A3(M). All these routes are connected to the residential areas and Havant town centre, with a network of suggested link routes, some of which are signposted at present.
- 2.10 There is a circular footpath through the site between Park House Farm Way and Ramsdale Avenue and between Ramsdale Avenue and Park Lane, which connects with the Park Lane bridleway. An east-west bridleway connects with Park Lane leading from the north of the site eastwards to Stansted and Rowland's Castle. From this there is a bridleway leading south to Swanmore Road and Dunsbury Way.
- 2.11 The walking and cycling routes are shown graphically in Figure 3.7 of the TA Report supporting the planning application for the site.

3. Development Proposals

- 3.1 Dunsbury Hill Farm is a Strategic Site in the Havant Borough Core Strategy which was adopted on the 1st March 2011. The allocation covers an area of 13.2 hectares. As part of the South Hampshire growth agenda, a seven hectare extension to this allocation was proposed in the 2008 Site Allocations: Issues and Options document.
- 3.2 The entire 20.2 hectare site is a Strategic Site in the Havant Borough Core Strategy which was adopted on 1st March 2011. It was marketed by PCC for development following publication of the Dunsbury Hill Development Brief in 2007 and the site remains key to delivering employment in the local and sub-regional areas and is seen as a potential new business gateway to South Hampshire via the A3(M) Corridor.
- 3.3 The aspirations are for a top end business park/campus and an exemplar construction and design to BREEAM Excellent standard.
- 3.4 The delivery of Dunsbury Hill Farm is integral to achieving the vision of the core strategy and wider sub-region in terms of key economic, employment and regeneration objectives. The development proposals are therefore hybrid to achieve outline consent for the core strategy allocation and detailed to cover to access and link road to provide appropriate transport infrastructure to enable future development on the site in accordance with the agreed land uses.
- 3.5 Construction of road works forming the detailed element of the hybrid planning application, access and link road, is planned for 2013. It is then intended that the site will be constructed in two phases as follows:
- Phase 1 – employment land use (46,450 m² GFA) and a Hotel (5,574 m² GFA); and
 - Phase 2 – additional employment land use (15,329 m² GFA).
- 3.6 Phase 1 is currently planned to begin in 2014 with Phase 2 following in 2022. Both phases have an anticipated timescale of four years to full completion, and occupation therefore will be expected for 2018 and 2026 respectively.
- 3.7 The hotel is intended to be internal-facing and provide conferencing facilities and accommodation for visitors to the employment zone. Employment land uses will be assigned a mix of approximately 40% B1, 40% B2 and 20% B8. The associated quantum of development is summarised in the Table 3.1 below:

Table 3.1 – Dunsbury Hill Farm Land Use Breakdown

Land Use	Phase 1 m ² GFA	Phase 2 m ² GFA	Total m ² GFA
B1 (Business)	18,580	6,132	24,712
B2 (General Industrial)	18,580	6,132	24,712
B8 (Storage and Distribution)	9,290	3,065	12,356
C1 (Hotel)	5,574	-	5,574
Total	52,024	15,329	67,354

New Access

- 3.8 A new access will be provided via a link to the B2150 Hulbert Road to the west from which traffic can distribute north to the A3(M) Junction 3 and south to Purbrook Way. A further link will be

provided to the east into Leigh Park. This will operate as a bus only link enforced via a bus gate and will also serve to provide a second point of access in emergencies.

3.9 The Indicative Masterplan is shown in Figure 4.1 of the TA.

4. Forecast Travel Patterns

- 4.1 At this stage detail regarding the site operation is limited and based on the Dunsbury Hill Farm TA.
- 4.2 Within three months of full occupation of the site a baseline travel survey will be undertaken of all staff and visitors, as appropriate, to establish the travel patterns to and from site. This information will be used to finalise the modal split targets for the Full Travel Plan, however for the purposes of this Framework Travel Plan, indicative targets have been set based on information provided in the TA for the site. The proposed methodology of the travel surveys is presented at the end of this section.

Site Operation

- 4.3 The site operation details are not yet known and this level of detail will be included in the Full Travel Plan.

Staff Numbers

- 4.4 Staff numbers are not yet known and this level of detail will be included in the Full Travel Plan.

Staff Shift Patterns

- 4.5 Staff shift patterns are not yet known and this level of detail will be included in the Full Travel Plan.

Modal Split

- 4.6 Modal split information has been taken from the Dunsbury Hill Farm TA prepared as part of the planning application for the site. The TA mode split predictions for the development have been based on the Sub-Regional Transport Model (SRTM); the methodology of which is outlined in Chapter 5 of the TA. Table 4.1 shows the predicted modal split for the development as a whole.

Table 4.1 – Estimated Modal Split

Mode	Estimated Modal Split
Car	75%
Walking and cycling	23%
Public Transport	2%
TOTAL	100%

- 4.7 This information will be used to establish indicative Travel Plan targets. Once the baseline travel survey is completed, the modal split will be updated with more accurate modal split on which targets can be based. The baseline survey will provide more detailed mode split information, including car drivers, car passengers, walking, cycling, motorcycling, train, bus and taxi.

Staff Travel Survey

- 4.8 The Baseline Travel Survey will be required to progress this Framework Travel Plan to a Full Travel Plan. Visitors will be surveyed, however the associated Travel Plan targets will relate to staff only. Staff will make up the vast majority of the trips generated by the site and this is where

significant change to travel can be made. It is recommended that the following is included in the Baseline Travel Survey:

- Existing travel patterns;
- Existing distance travelled to work;
- Existing journey times;
- Reasons for car travel; and
- Measures that would encourage travel by public transport, cycle, on foot or participation in a car sharing scheme.

4.9 This information should be completed for all employees working on site. It is recommended that the survey is electronic as this will ensure that all staff are in receipt of the survey, which may not otherwise be the case due to the staff working different shifts. The baseline travel survey will be completed within three months of the site operating to ensure early implementation of the Travel Plan.

5. Travel Plan Objectives & Targets

- 5.1 This section of the report outlines the overall objectives of the Travel Plan and identifies targets to meet these objectives. Travel Plan objectives are the high-level aims of the plan. They provide direction and focus to the Travel Plan. Travel Plan targets are measurable 'goals' set up in order to assess whether the objectives have been met.
- 5.2 The Travel Plan is a dynamic process and the targets can be used to monitor change. Where change is not achieved (and a target is not met) targets should be reviewed and replaced with a more realistic alternative.

Aims of the Travel Plan

- 5.3 The aims of the Travel Plan as set out in Section 1 of the Travel Plan are to:
- Support the planning application of the development;
 - Identify an effective strategy for managing travel behaviour of staff and visitors to the business park and associated hotel development; and
 - Manage parking demand on site for staff vehicles.

Objectives of the Travel Plan

- 5.4 In order to achieve these aims the following objectives have been set for the Travel Plan:
- **Objective 1** - To maximise opportunities for staff and visitors to travel to the business park and hotel development by means other than single occupancy car;
 - **Objective 2** - To encourage new staff to commute to work by modes of travel other than the single occupant car;
 - **Objective 3** – To reduce the carbon footprint of the development by minimising transport contributions; and
 - **Objective 4** - Improve access to the site for all.

Planning Requirements and Local Policy

- 5.5 It is necessary for a Travel Plan to be produced to promote sustainable measures of travel for the site. The requirement for a Travel Plan is supported by a number of relevant national, regional and local planning policy documents which are discussed in detail in the TA and include:
- Planning Policy Guidance Note 13 (PPG13);
 - Transport White Paper 'Future for Transport' (2004);
 - Delivering a Sustainable Transport System (2008);
 - Local Transport Act (2008);
 - From Crisis to Cutting Edge: Regional Transport Strategy (2002);
 - PUSH South Hampshire South Regional Strategy (2005);
 - South East Plan (2009);
 - Regional Economic Strategy (2006 – 2016);
 - Regional Network Report for the South East (2008);

- Hampshire Local Transport Plan 3 (2011 – 31);
- Solent Transport Sub-Regional Strategy (STSS) (2006 – 11);
- Transport for South Hampshire – Towards Delivery (2008);
- Havant Borough District-Wide Local Plan (2005) & Saved Policies (2008); and
- Havant Borough Council Local Development Framework Core Strategy (Adopted 2011).

Targets of the Travel Plan

- 5.6 Travel Plan targets are required to monitor the success of the Travel Plan in meeting the objectives outlined above. Targets are measurable goals with achievable timescales associated with them. They should be **SMART** - Specific, Measurable, Achievable, Realistic and Time bound.
- 5.7 The objectives of the Travel Plan have the overall aim of changing the travel behaviour of staff (and to some extent visitors) to reduce the number of single occupancy trips to the site and increase the number of journeys made by other modes of travel. They also aim to improve accessibility to the site by public transport, walking and cycling. The targets to achieve these objectives are set out in Table 5.1. It should be noted that the targets are often related to more than one Travel Plan objective.

Table 5.1 – Travel Plan Targets/Objectives

Objective	Target
To maximise opportunities for staff and visitors to travel to site by means other than the single occupancy car	Reduction in single occupancy trips to the site hence controlling car parking demand
To encourage new staff to commute to work by modes of travel other than the single occupant car	Increase the number of staff using public transport, cycling and walking
To reduce the carbon footprint of the site by minimising transport contributions	Reduce the use of the car overall at the site
Improve access to the site for all	Improve accessibility to the site by public transport, cycling and walking

Mode Share Targets

- 5.8 DfT guidance states that a successful Travel Plan with a wide range of measures, initiatives and promotion can reduce the volume of solo occupancy commuter travel to a site by between 15 and 30 percent.
- 5.9 The targets will need to be completed once the baseline travel survey has been completed on occupation of the site. Initial estimated targets for the site are included in Table 5.2.

Table 5.2 – Estimated and Target Staff Modal Splits

Mode	Estimated Modal Split (%)	Medium Term Modal Split (%)	Long Term Modal Split (%)
Car	75	70	65
Active travel modes (walking and cycling)	23	25	25
Public Transport	2	5	10
Total	100	100	100

5.10 The Travel Plan is a dynamic process and will need to be reassessed within a long term programme. It has been assumed that this will be a ten year programme given the size of the site. Appropriate timescales will be assigned to each measure/indicator to suit the Travel Plan objectives based upon the following timescales:

- Short Term: 0 to one year – targets designed to address the immediate concerns of the site;
- Medium Term: one to three years – targets to ensure the Travel Plan continues to meet its objectives, particularly in promoting travel by public transport; and
- Long term: three to ten years – strategic targets based upon improving the overall accessibility of the site.

6. Travel Plan Measures

Overview

- 6.1 Targeting staff that will travel to the site by private car is clearly where a change in modal split will be possible. A range of deliverables and effective measures have been developed to deliver the Travel Plan objectives and targets. These include 'physical' measures, co-ordination and promotion/information dissemination which address both staff and visitor travel.

Development Wide Initiatives

- 6.2 Raising awareness of environmental issues is important in order to promote more sustainable travel modes to the site. It is recommended that the site develops an Environmental Network for disseminating best practice in reducing environmental impacts and promoting sustainability to all staff.

- 6.3 It is recommended that the following initiatives are considered:

- Public Transport Incentives.
- Flexible Working Policy – Provision of several options for working flexibly which will reduce the need to travel at peak times. These include:
 - Compressed hours and Flexi-Time;
 - Part-time working;
 - Annualised hours;
 - Job Sharing; and
 - Home working.
- Cycling – Shower and locker facilities will be provided and consideration will be given to implementing interest free cycle loans to provide a financial incentive for cycling to work.
- Car Sharing – Encouraging car sharing among employees for car journeys to and from work. The developer will consider the site becoming a corporate member of 'Liftshare' an online car share matching scheme that puts people travelling in the same direction or a similar destination in contact with each other, allowing them to arrange to travel together and share the costs, whilst also reducing congestion and pollution on the roads.
- Teleconferencing – Consider establishing the teleconferencing technology and facilities.

Provision of On-Site Information

- 6.4 Up to date transport information will be provided on a regular basis in locations easily accessible to staff. A travel information board could be located within staff locker rooms, which are used by staff on a daily basis and display:

- Current bus timetables;
- Current rail timetables;
- Walking and cycling routes / networks;
- Upcoming Travel Plan initiatives/measures; and
- Details of the car share scheme.

- 6.5 This information should also be available on the staff intranet site and new staff made aware as part of their induction process.

Measures to Promote Sustainable Transport

- 6.6 The existing public transport routes have been discussed in Section 2 and bus routes 37 and 23 serving Leigh Park pass immediately to the east of Phase 1 and Phase 2 of the site respectively. It is therefore important for the sustainability of the site that appropriate connections are made.
- 6.7 It is understood that there are plans for a Havant Cross Borough Bus Service connecting Waterlooville to the west and Leigh Park to the East of the A3(M) corridor. It is envisaged that this bus route will use Hulbert Road access and the Woolston Road bus-only link and will cross the site. In addition these access points will enable the existing local bus routes to enter and leave the site from either the east or west of the A3(M) without needing to travel through the site. New bus infrastructure on the link road in the form of a bus turn round or bus interchange will ensure that the site can be served by the Cross Borough Bus Service and the existing local bus services. The development site thus provides the opportunity for a direct link to connect to existing bus routes 39 and 23 west of the site and A3(M).
- 6.8 It is proposed that a bus gate is placed on the far east of the Dunsbury Hill Farm Link Road so that the site is permeable to buses and an appropriate place for interchange introduced either east of west of the Link Road.
- 6.9 The existing public rights of way will be retained within the development. The existing bridleway which crosses the site will be maintained. Park Lane is a well used Bridleway which could be upgraded as part of a site wide approach to footpaths and cycleways; this would also extend connections to Havant Thicket Reservoir.
- 6.10 Secondary routes and local access, together with proposed footpaths and cycleways will form part of the reserved matters.
- 6.11 Opportunity exists to make the connection with Staunton Country Park, whilst enhancing existing accessibility across the site for all modes and prioritising pedestrians and cyclists.
- 6.12 The possible initiatives to be developed as part of a public transport strategy are identified in Table 6.1

Table 6.1 – Public Transport Strategy

Potential Measure	Details
Dissemination of information on public transport travel to staff	Information displayed in locker rooms, and other communal areas
Interest Free Season Ticket Loans	Interest Free Season Ticket Loans offered to staff which are repaid as part of a salary deduction scheme

Public Transport Information

- 6.13 By providing public transport information around the site the staff will become more aware of what public transport is available to them. This information will include timetables, planned engineering works and measures that the developer will put in place to encourage people to use public transport. The best place to put this information is in areas where staff members congregate such as communal areas. It is also suggested for staff that this information is displayed on the staff Intranet pages, if available.

Interest Free Public Transport Loans

- 6.14 Consider providing interest free public transport loans which would see the developer pay for staff members' annual season ticket and then the staff member pay this back interest free. The staff member would pay this back through reductions to their monthly/weekly wage. This measure would encourage staff who otherwise might not afford to use public transport. This would depend on the site's capability to offer loans.

Walking Strategy

- 6.15 The TA estimates that 23% percent of staff will either walk or cycle to work. To maximise the accessibility of the site by foot Table 6.2 shows the measures that could be used to encourage walking to work.

Table 6.2 – Walking Strategy

Measure	Details
Discount on Walking Equipment	Negotiations with local retailers to secure all staff with a discount on walking equipment
Map of Local Footways	A map of local footways provided free of charge to all staff to encourage them to walk to work
Changing room with showers and lockers	These facilities must be maintained to a high quality to encourage use

Discount on Walking Equipment

- 6.16 By negotiating with local stores/retailers discounts could be received for all staff on walking equipment such as appropriate footwear and clothing. This could encourage staff that currently do not walk to work, and live within an appropriate distance from the site, to begin walking. It may also encourage some members of staff to begin walking in their free time and therefore improve their health.

Map of Local Footways

- 6.17 The production of a map on local footways, particularly those which are well lit, for all staff will help to encourage those staff which have the capacity to walk to work to do so, particularly in the summer months. This measure also helps promote a healthy lifestyle to staff members.

Facilities

- 6.18 On site facilities will be maintained to high standards to ensure that all staff members are encouraged to use them.

Cycling Strategy

- 6.19 Cycle parking will be provided at the site in accordance with the relevant HBC standards for employment land uses and hotel developments (as detailed in Chapter 4 of the TA). As detailed in section 6.15 above, the TA estimates that 23% percent of staff will either walk or cycle to work. DfT have estimated that four kilometres is a reasonable commuting distance to work, which is likely to encompass a number of staff.
- 6.20 The cycle strategy for the development that should be implemented is identified in Table 6.3.

Table 6.3 – Cycling Strategy

Measure	Details
Cycle Parking	Cycle parking will be provided in accordance with the relevant HBC standards for employment land uses and hotel developments (as detailed in Chapter 4 of the TA).
On Site Cycle Store	Cycle equipment such as a puncture repair kit, spare tyres etc should be kept on site
Discount on Cycle Equipment	Negotiations with retailers to secure all staff with a discount on cycling equipment
Cycle Training	Cycle training should be available to all staff
Changing rooms with showers and lockers for staff	These facilities must be maintained to a high quality to encourage use
Cycle Loan Scheme	Bike4work scheme allowing employees the long term loan of a bicycle

On Site Cycle Store

- 6.21 It is recommended that a number of bicycle spares be kept on site such as a puncture repair kit, spanners and spare tyres in case staff members suffer problems with their cycle that would prevent them getting home from work.

Discount on Cycling Equipment

- 6.22 By negotiating with stores/retailers discounts could be received for all staff at the development on cycling equipment such as appropriate helmets and clothing. This would encourage staff that currently do not cycle to work, and live within an appropriate distance from the site, to begin cycling. It may also encourage some members of staff to begin cycling in their free time and therefore improve their health.

Cycle Training

- 6.23 Cycle training will give staff confidence to cycle on the roads and improve staff safety for those that currently cycle for their commute to work.

Facilities

- 6.24 It is recommended that secure staff lockers are provided. All staff should have access to shower facilities and changing areas with separate facilities for men and women. It would be positive if facilities such as a drying room, irons and hair dryers are also available. These facilities should be maintained to high standards to ensure that all staff members are encouraged to use them.

Cycle Loan Scheme

- 6.25 The Bike4work scheme is a government scheme for cycle loans which allows employees to benefit from a long term loan of a bike and safety equipment tax free. It is recommended that the developer participates in this scheme.

Moped/Motorcycle Strategy

- 6.26 Motorcycles and mopeds can offer a more environmentally friendly alternative to travel by private car and are more space efficient than other vehicles particularly in terms of congestion and parking.

Motorcycle/Moped Parking

- 6.27 It is recommended that a motorcycle/moped parking area is provided if a need for it is identified in the baseline travel survey.

Safety Training

- 6.28 Motorcycle training will encourage staff to travel by motorcycle to work. This will improve staff safety for those that currently use a motorcycle for their commute.

Discount on Motorcycle Equipment

- 6.29 By negotiating with local stores/retailers discounts could be received for all staff on motorcycling equipment such as appropriate helmets and clothing.

Car Sharing Strategy

- 6.30 Car sharing can be an effective way of reducing peak hour congestion and decreasing the demand for parking on the site. It also has benefits for the individual (in terms of cost of travel). The developer will consider the site becoming a corporate member of 'Liftshare'.
- 6.31 Following the baseline travel survey, postcode analysis should enable a clear picture of potential clusters for car sharing.
- 6.32 In order to encourage car sharing it will be confirmed at detailed application stage whether the developer will develop a number of initiatives to support the scheme as shown in Table 6.4.

Table 6.4 – Car Sharing Strategy

Measure	Details
Publicity of Liftshare car sharing scheme	Information displayed around the site in staff areas or staff memos
Priority parking spaces for car sharers as part of Car Park Management Plan	Dedicated car share spaces marked
Incentives for car sharing e.g. guaranteed ride home	Provision of taxi or alternative arrangements with a colleague for transport home if share arrangement fails

Publicity

- 6.33 It is essential that the car share scheme is widely promoted in order to sustain sufficient levels of car sharing. This will be part of the overall marketing strategy for the Travel Plan (see Section 8).

Priority Parking

- 6.34 To encourage car sharing staff will be provided with dedicated 'car sharer' parking spaces.
- 6.35 Priority parking spaces must have formal membership criteria and rigorous enforcements. A parking permit system could be introduced with regular patrols to check that only registered car sharers park in these bays.

Parking Management

- 6.36 It is recommended that parking will be managed by a Car Parking Management Strategy. This details the operation of the staff and visitor parking. The Car Parking Management Strategy is detailed in Section 7 of this document.

Minimise Single Occupancy Business Travel

- 6.37 Staff will be encouraged to travel sustainably in instances when they are required to travel on business. This includes travelling in groups rather than driving alone.
- 6.38 For staff travelling over long distances from the site for business needs, public transport will be encouraged as the preferred mode of transport.
- 6.39 If the site has video conferencing facilities, then staff will be encouraged to consider whether business travel is necessary or whether the need could be met using these facilities.

Incentives

- 6.40 A travel award scheme can be set up which rewards those who regularly participate in the car share scheme, use public transport, use a moped/motorcycle or walk or cycle to work.
- 6.41 Below are the possible options for a Travel Award Scheme.
 - Staff who can show that they have car shared, taken public transport, travelled by motorcycle/moped, cycled or walked earn points on a daily basis. Accumulation of points will equate to a financial reward, a gift, or time off work. However, this system may prove to be difficult and onerous to monitor;
 - Contribution towards a public transport season ticket, towards the purchase of a bicycle/equipment, towards waterproof clothing;
 - Prize draws may be held which involve only those staff who do not hold a 'single car driver permit'; and
 - Staff that can demonstrate that they previously drove to work and are willing to give up a parking space are provided with a contribution towards the cost of his/her newly adopted transport to work. It will be noted that this scheme alone would not be equitable to those who already use a sustainable form of transport as they would not be rewarded.

TravelWise

- 6.42 The aim of the company TravelWise® is to help employers work with their staff to improve their travel choices and provide alternatives to the car especially for the journeys to work. Affiliation to the scheme is free and the scheme offers numerous benefits to both the employer and employees. It is suggested that the developer joins the scheme.
- 6.43 The benefits companies and their employees receive include:
 - Professional advice and support; and
 - Involvement in a new car sharing system.
- 6.44 Both the employer and employee can receive the many benefits offered by the network of support companies including:
 - Reduced priced travel passes;
 - Discounted bicycles;
 - Discounted motor scooter and access to training; and
 - Discounted bicycle stands.

7. Car Park Management Strategy

Parking Provision

- 7.1 Within the Masterplan area the principle will be adopted that the proposed levels of parking provision will be in accordance with relevant HBC standards for employment land uses and hotel developments. The parking standards are shown in Table 7.1 below.

Table 7.1 – HBC Parking Standards

Land Use	Car Parking Standard Maximum Limit	Cycle Parking Standard (minimum)	
		Long Stay	Short Stay
B1 Office	1 space per 30 sqm	1 stand per 150 sqm	1 stand per 500 sqm
B2 General Industrial	1 space per 45 sqm	1 stand per 350 sqm	1 stand per 500 sqm
B8 Warehousing	1 space per 90 sqm	1 stand per 500 sqm	1 stand per 1000 sqm
C1 Hotel	1 space per bedroom	1 space per 6 staff or 1 space per 40 sqm	1 stand per 10 bedrooms

- 7.2 In order to improve and control the use of the car park as well as improving safety, a Car Park Management Plan has been included for the Travel Plan.
- 7.3 The Car Park Management Plan would provide disincentives for lone car travel and ensure that staff members without alternative travel modes have priority access to parking spaces. The plan will also make provision for car sharers and staff with medical or welfare needs. As discussed in the TA it is important to manage parking effectively and prevent overspill parking on Leigh Road. The following measures are being considered for inclusion in a car park management plan:
- Staff needs-based permit allocation system;
 - Enforcement of car park measures, for example clamping;
 - Provisions for those with welfare needs/disability; and
 - Priority spaces for car sharers.

Car Park Management Plan

Parking Permit System

Needs Based Permit Criteria

- 7.4 A “Needs Based Permit” system is a means of allocating staff parking permits according to an identified “need” criteria. This has become increasingly recognised as an effective parking management strategy at employment sites, ranging from hospitals, private and public sector offices and educational establishments. A fixed permit total is identified based on parking capacity (plus 10-15 percent). This fixed number of permits is allocated to individual employees using various need-based criteria. For example accessibility to non-car travel options, as described below.
- 7.5 These criteria will be assessed by scores. A score is assigned to each staff applicant, based on these criteria. Applicants’ scores are ranked and permits allocated at a level which matches the total number of permits. This system provides an equitable approach to permit allocation based on needs. The criteria for allocation will be made transparent to all staff.

Accessibility Zone

- 7.6 An 'accessibility zone' can be defined around the site within which there are assessed to be viable alternative forms of transport to single occupancy car journeys. This may be based on the following:
- Staff home addresses within 1.6 kilometres (one mile) of the site, which is a reasonable walking distance of up to 40 minutes;
 - Staff home addresses within approximately 400 metres of a frequent and direct bus route.
- 7.7 The accessibility zone would also include proximity to railway stations.
- 7.8 Other criteria should also be identified for the system. The exact definition of these (and the weighting attached in the scoring allocation system) would need to be identified in consultation with the developer. Suggested criteria that could be included in the scheme include:
- Disability/medical condition, requiring confirmation by Occupational Health;
 - Staff that require their car for business use during the working day;
 - Shift workers; and
 - Childcare/other caring responsibilities, which in relation to working hours prevent the staff member from using a mode other than car for the journey to work. This is likely to count as a relatively low priority for permit allocations.
- 7.9 Table 7.2 shows an example of a weighted points scoring system which could be adapted to be relevant to the development.

Table 7.2 – An Example of a Permit Weighting and Scoring System

Factor	Sub factor	Weighting
Mobility Impairment	Registered disability	+30
Accessibility to workplace	Outside exclusion zone	+10
Car Share	No. of Passengers	+3 per passenger carried
Unsociable Working Hours (for regular timetabled hours)	Start before 0700 hours	+2
	Finish after 1900 hours	+2
Operational need	Operational Staff	+5
	Carry heavy loads	+1
Carer Responsibilities	Need to drop off	+0.3
	Need to collect	+0.3
	Need to do both	+0.6
	Willing to car share	+0.1

- 7.10 Those with welfare needs or disabilities would be given priority in regards to parking. In a permit system they would be guaranteed a permit. Proof of welfare needs or a disability would be required to prove that the parking space is required.

Car Sharer Permits

- 7.11 Those members of staff who take part in the car sharing scheme would be guaranteed a parking space in a prime location close to building entrances at levels which match Travel Plan mode share targets for car share.

Parking Enforcement Systems

- 7.12 Staff parking could be enforced through a card reader system which monitors who enters and exits the car park. Staff would need to be made aware of the proposed managed enforcement system in place. This will have to be well communicated to staff as part of the communications strategy.
- 7.13 It is recommended that the first stage of an enforcement system is verbal, followed by a written warning to offending employees informing them that any further parking offences will result in recovery of their parking permit.
- 7.14 There will be no enforcement strategy for the visitor parking.

Incentives to Non-Car Transport

Travel Plan Document

- 7.15 The Travel Plan document will encourage travel by non car modes, with a potential target of reducing single occupancy car travel by 5 percent in the medium term and 10 percent in the longer term. The restricted number of spaces being provided in the car park and the permit system may go some way to help manage the spaces within the car park. However potential overspill will need to be managed through making staff and visitors aware of the travel alternatives to the site and offering incentives to travel by alternative means as identified in Section 6 of this document.

8. Delivery and Monitoring

Delivery

- 8.1 The objectives of the Travel Plan can only be realised through the implementation of the Travel Plan measures in an integrated manner with the correct marketing and communication. This will take strong leadership from a member of staff who will listen to the views of staff and visitors but still be willing to push the Travel Plan forward. The running of the approved Travel Plan will be by a dedicated Travel Plan Coordinator and it is proposed that the Travel Plan Coordinator is an existing member of staff.

Appointment of Travel Plan Coordinator

- 8.2 To implement the Travel Plan, support will be required by the senior management of the site to appoint a Travel Plan Coordinator (TPC). This post will be appointed on completion of the first phase of development, before occupation of the site. Establishing a named Coordinator allows staff a single point of contact with enquiries and questions regarding the Travel Plan. The Coordinator will be responsible for the implementation and monitoring of the Travel Plan on a day to day basis. This will be a site-wide role and they will be responsible for all aspects of the site. This could be an in house member of staff or someone appointed externally. Their duties will include:

- Managing the implementation of the Car Park Management Plan;
- Designing and implementing effective marketing and awareness raising campaigns to promote the Travel Plan;
- Coordinating a car share scheme and allocation of permits to those who participate in the scheme;
- Coordinating annual travel survey to monitor the progress of the Travel Plan;
- Lead the annual Travel Plan review;
- Acting as a point of information and contact for all those staff requiring information;
- Keeping Travel Plan information constantly up to date;
- Liaising with parties within the organisation and outside; and
- Maintaining a file containing all correspondence relating to the Travel Plan.

- 8.3 Before occupation of the site, as soon as an appointment is made Portsmouth City Council (PCC), Havant Borough Council (HBC) and the Partnership for Urban South Hampshire (PUSH) will be informed. It is anticipated that in order to undertake the role efficiently the Travel Plan Coordinator will spend up to one day a week on the role, although this will be more time intensive for the initial set up.

- 8.4 The detailed site-wide Travel Plan will be finalised within the first six months of occupation following the baseline travel survey to be carried out after 3 months of occupation. The TPC role will be supported by a steering group.

Steering Groups

- 8.5 The role of a Travel Plan Coordinator can be a large responsibility, particularly if one person has to incorporate the role into another role within the organisation. The Travel Plan Coordinator Role can be supported by setting up a steering group to provide direction for the overall coordinator.

- 8.6 A Travel Plan steering group should be set up for the development. It is suggested that the group could be made up of:
- One representative from the business development site;
 - One representative from the hotel staff;
 - A senior manager; and
 - The Travel Plan Coordinator.
- 8.7 The Steering Group should meet on a regular basis, every two to three months is suggested, to discuss the Travel Plan and its various successes and failures. The Steering Group will help to provide the Travel Plan with focus. Before each steering group meeting the representatives from the different staff groups should speak to the staff that they represent and see if there are any issues they would like raising or any elements of the Travel Plan that are working particularly well. This would then be fed back to the Steering Group.
- 8.8 The issues that are raised at the Steering Group Meetings will be noted by the Travel Plan Coordinator and used to direct future Travel Plan measures and initiatives.
- 8.9 The representatives within the Steering Group will feed back to the staff that they represent any issues that were raised.

Marketing & Communication

- 8.10 The effective communication and marketing of the Travel Plan to all stakeholders involved is vital to ensuring its success. Marketing and communication will be targeted at the various groups involved in the Travel Plan including:
- Senior management;
 - Staff; and
 - Visitors (where necessary).
- 8.11 Effective marketing techniques may differ for each of these target groups. All marketing and communication of the Travel Plan will be led by the Travel Plan Coordinator.
- 8.12 The implementation of the Travel Plan depends on individuals making changes to their current journey patterns and as a result it is important to view the Travel Plan as it will be perceived by each of the target groups.
- 8.13 Once this has been achieved, effective marketing and communication strategies to 'get the message across' to each target group should be identified. For example for a member of staff living a significant distance away from the site, walking routes to work may not be of interest, whilst communicating the benefits of a car share scheme (financial savings / better for the environment) may have a greater impact.
- 8.14 A publicity and marketing strategy will be developed for the Travel Plan to comprise the following components:
- Publicised launch event for the Travel Plan to develop awareness amongst staff;
 - Continual updates on the Travel Plan and its performance in communal staff areas;
 - Travel Plan Coordinator to inform staff by emails of new Travel Plan measures and initiatives;
 - Information leaflets which include public transport timetables and information about different Travel Plan initiatives to be regularly distributed to staff;
 - Participation in special events weeks such as Bike to Work etc in order to raise awareness;

- Travel Plan updates regarding public transport and car park management in visitor communal areas and on staff intranet site; and
- Information regarding different aspects of the Travel Plan to be in communal staff areas and generally widely available.

- 8.15 The Travel Plan will be marketed as helping staff / visitors to the site and should be promoted in a positive light to encourage staff / visitors to start and continue participating.
- 8.16 A Travel Plan starter pack will be produced for all new staff working at the site. This would include information on Public Transport, Travel Plan initiatives, their staff representatives and how to contact the Travel Plan Coordinator.
- 8.17 A number of approaches will be considered in the communication of the strategy. Communication should involve all the target groups and use different forms of media as appropriate.
- 8.18 The Travel Plan Coordinator will ensure that all measures proposed as part of the Travel Plan are communicated to staff and visitors in order for them to participate and change their travel patterns.
- 8.19 The Travel Plan Coordinator will also respond to comments from staff and visitors regarding the Travel Plan to ensure it continuously evolves.
- 8.20 The primary comments regarding the Travel Plan will be communicated through a series of surveys after the implementation of the Travel Plan.

Direct Marketing

- 8.21 The marketing strategy for the Travel Plan will aim to develop “a brand” that is easily recognisable to staff and visitors. This will be communicated during the launch of the Travel Plan through a leaflet or existing form of staff communication. This should detail what a Travel Plan is and what it means for the site.

Monitoring

- 8.22 Ongoing monitoring and reporting is necessary to ensure the continuous effectiveness of the Travel Plan.
- 8.23 A strategy will be implemented for the regular monitoring of the progress of the Travel Plan against objectives and targets and highlight any deficiencies in/changes required to the Travel Plan or any additional measures required. The monitoring strategy will be led by the Travel Plan Coordinator.

Baseline Survey

- 8.24 A baseline travel survey will be completed within three months of the site operating. The survey will be used to set the Travel Plan targets post occupation.
- 8.25 For a workplace Travel Plan, such as this, the following survey types are undertaken:
- Employer Management Questionnaire – Factual information completed by a senior member of onsite staff;
 - Multi-Modal Count Survey – A count of all vehicles entering and leaving the site over one day;
 - Parking Survey – A parking survey undertaken at the beginning, middle and end of day to check against the multi-modal count;
 - Deliveries/Freight Count – Count of deliveries vehicles that come on site over a day;
 - Employee Questionnaire/Diary – A handful of staff are asked to complete a questionnaire and diary about their workplace journeys over a period of one day’ and

- Visitor Interview Survey – On site visitors are surveyed about their journey.

8.26 The above surveys, all completed over a single day, will be combined to produce a more complete picture of travel to and from site.

Annual Monitoring Survey

8.27 Once the Travel Plan is fully in place, snapshot surveys should be carried out periodically by the Travel Plan Coordinator. This will help to assess the modes of transport that staff and visitors are using to travel to the site. Information that should be gathered during a snapshot survey includes:

- Tracking bicycle use by counting the number of stands in use in the bicycle racks;
- Number of cars parked inside the car park and outside of permitted areas;
- Number of car sharing spaces in use; and
- Information on bus passenger levels that local bus operators may be able to provide.

8.28 As required, this monitoring will commence with the annual review for the first three years of implementation from occupation of the site.

8.29 This information should also be used to help assess the success or failures of the Travel Plan measures, and direct its future.

Review

8.30 The travel surveys will be conducted annually for the first three years following the initial survey amongst staff and the results they produce will be presented in the form of a report.

8.31 The travel survey results will dictate the future direction and focus of the Travel Plan, identifying in which areas the Travel Plan is working successfully and areas in which there are deficiencies. Improvements can then be made accordingly. A Travel Plan is a dynamic process and likely to change over time.

8.32 The monitoring process will facilitate the implementation of the Travel Plan over the short, medium and long term. The TPC should identify which measures should be implemented over each of these timescales, with the possibility of longer term measures being developed further after initial monitoring of the effectiveness of the Travel Plan.

Funding

8.33 The funding will be confirmed upon occupation of the site. The Section 106 will outline the necessary financial commitments for this as well as commitment that targets are met and measures implemented to ensure the successful delivery of the Travel Plan.

8.34 It is likely that the monitoring and review strategy will be funded by facilities management budgets for the development. Funding will be secured for undertaking the surveys and to cover monitoring administration fees. The monitoring administration fee is usually in the region of £2,500-£3,000.

9. Action Plan

9.1 Table 9.1 shows a proposed programme of implementation for selected Travel Plan measures.

Table 9.1 – Action Plan

Action	By Whom	Cost	Timeframe
Appointment of a Travel Plan Coordinator (TPC)	Developer	No cost	Before occupation of site
Marketing and Communication of Travel Plan	TPC	Low	Ongoing from occupation of site
Provision of Site Information	TPC	Low	Ongoing from occupation of site and checked every 3 months
Public Transport Strategy	TPC	Low	Ongoing from occupation of site
Car Park Management Plan	TPC / Developer	High	Ongoing from occupation of site
Car Sharing Strategy	TPC / Developer	Low	If car sharing spaces are to installed these could be painted before occupation, other measures will be ongoing from occupation of site
Minimise Single Business Travel	TPC	Low	Ongoing from occupation of site
Walking Strategy	TPC / Developer	Low / work included in the construction cost	Showers/changing rooms/lockers to be provided before occupation, other measures will be ongoing from occupation of site
Cycle Strategy	TPC / Developer	Low / work included in the construction cost	Showers/changing rooms/lockers to be provided before occupation, other measures will be ongoing from occupation of site
Moped / Motorcycle Strategy	TPC	Low	To be considered within 3 months of the Baseline Survey being completed
Incentives	TPC	Low	Ongoing from occupation of site
TravelWise	TPC / Developer	Low	To sign up to within 3

			months of site occupation
Baseline travel survey	TPC / Staff	Low	Within 3 months of the site operating
Annual monitoring of Travel Plan	TPC / Staff	Medium	Annually from date baseline survey is completed
Re-submission of Travel Plan	TPC	Low	Within 6 months of the site operating
Travel Plan Review	TPC	Low	3 years after the baseline survey is completed

Funding

- 9.2 The funding will be confirmed upon occupation of the site. The Section 106 will outline the necessary financial commitments for this as well as commitment to meeting the targets and that measures are implemented to ensure the successful delivery of the Travel Plan.
- 9.3 It is likely that the developer will utilise the facilities management budgets for the site to ensure that the Travel Plan and its various measures are effectively delivered.

Appendix G – Technical Note ‘Dunsbury Hill Farm: Pedestrian and Cycle Access’

Technical note

Project:	Dunsbury Hill Farm	To:	Steve Jenkins
Subject:	Pedestrian and Cycle Access	From:	John Malyon
Date:	13 March 2012	cc:	Senthuran Sritharan

Introduction

This Technical Note considers the potential for providing a footway/cycleway link between the proposed development at Dunsbury Hill Farm and the:

- Housing areas on the south eastern outskirts of Waterlooville to the west of the A3(M) via Junction 3; and
- The 'Asda' Roundabout via Hulbert Road.

Route to/from South Eastern Waterlooville

Route Options

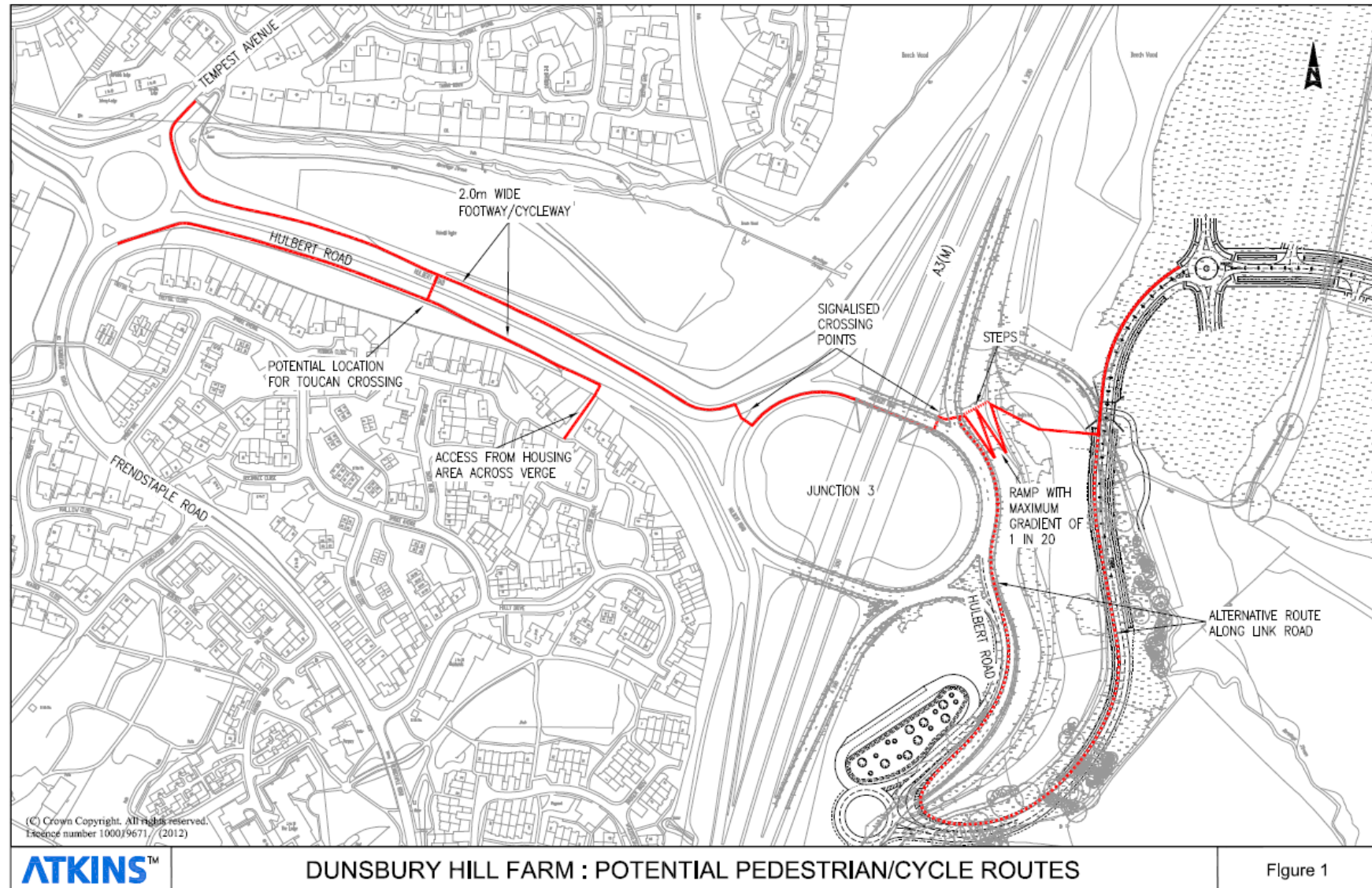
Figure 1 shows the potential routes, including a link through the fence and across the verge from the housing area to the south of Hulbert Road (west).

There is sufficient space available on both sides of Hulbert Road (west) to provide a 2.0m wide footway/cycleway for its entire length linking with the crossing points in both Tempest Avenue and Frendstaple Road at the roundabout on Hulbert Road, to the west of the A3(M). However, a number of relatively minor alterations to existing features would be required. These include the:

- Relocation of safety fencing on the northern side of Hulbert Road as the setback of this is currently between 1.0m and 1.5m;
- Relocation of the existing traffic signs, which would need to be installed at the correct mounting height; and
- Re-routing of the filter drain in the southern verge.

Technical note

Figure 1. Proposed Routes



Technical note

There is also sufficient width to provide the same facility around the A3(M) Junction 3, with the exception of the south eastern corner where a crash cushion protects the signalling equipment at the southbound A3(M) on-slip, as shown in Figure 2.



Figure 2. Crash Cushion at A3(M) Junction 3 Southbound On-slip

Unless it is possible to reconfigure or replace this crash cushion, it effectively prevents a pedestrian/cycle route using the southern section of the junction. This leaves a route using the northern bridge as the only viable option.

Once on the eastern side of the A3(M) Junction 3 there are two options for providing access to the site:

1. Following Hulbert Road south and then along the link road from the proposed roundabout; and
2. Via a ramp/steps down the embankment immediately east of the A3(M) northbound off-slip.

There is a difference in levels of around 7.0m between the top and bottom of the embankment at this point meaning that any ramp would need to be at least 140m in length to meet the minimum Disabled Discrimination Act (DDA) requirements of a maximum gradient of 1 in 20. Allowing for the ramp to zigzag as shown in Figure 1 the length of ramp will be nearer 160m and would be likely to require substantial lengths of retaining wall to support the various sections.

Crossing Facilities

In order for the footway/cycleway to be installed and used without any further infrastructure, pedestrians and cyclists would potentially need to cross Hulbert Road (west) and both A3(M) entry and exit slips on the northern side of the roundabout (all of which are subject to the national speed limit).

The safety of pedestrians and cyclists crossing at these locations is a major concern if the crossing points are uncontrolled. The proposed scheme would encourage pedestrians and cyclists to use the route but would not provide a safe means of crossing the high speed roads. A particular concern is the crossing of the motorway entry slip where vehicles are likely to be accelerating.

In order to provide a safer route for their use, traffic signals would be required at three locations:

- A toucan crossing would be required in the middle of Hulbert Road (west) between the lay-bys and
- Traffic signals with pedestrian facilities would be needed at two nodes on the A3(M) junction
 - One at the eastern end of Hulbert Road; and
 - One at the end of the A3(M) southbound off-slip.

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Associated with the provision of traffic signals would be the need to provide street lighting to allow pedestrians and cyclists to be seen clearly whilst waiting to cross. Given the locations of the crossing points it is quite likely that once these are individually lit to standard, the remaining gaps would be so short that lighting along the entire length of Hulbert Road and the A3(M) Junction 3 may be required. Not only would this be a significant cost it may also have severe implications environmentally with the problem of light pollution.

Indicative Construction Costs

Given that no design work has been carried out, approximate indicative costs for both scheme options are given below.

Table 1. Indicative Scheme Construction Costs

Scheme Option	Route	Indicative Construction Cost
Footway / Cycleway with Controlled Crossings and Street Lighting	Direct Route (using steps and ramps)	£1,230,000
	Alternative Route (following proposed road alignment)	£970,000
Footway / Cycleway with Uncontrolled Crossings	Direct Route (using steps and ramps)	£715,000
	Alternative Route (following proposed road alignment)	£430,000

Estimated Demand

It is anticipated that there would be a total of 22 walk / cycle trips in the AM peak period and 18 trips in the PM peak period. This is based on the proportion of the walk / cycle trips from the SRTM and assumes 10% arrive from Hulbert Road (west), based on the vehicle trip distribution.

An indicative cost-benefit analysis was completed using a peak flow of 22 trips and a time saving of 10 minutes per trip. The results suggest the total benefit would be £308,018 over 30 years.

There are significant safety concerns with providing a footway / cycleway along this route with uncontrolled crossings due to the existing high speed of vehicles using the roads. Therefore, controlled crossings and street lighting are considered necessary. Given the high cost of construction (for both the direct and alternative routes) relative to the anticipated benefits it is suggested that the provision of a footway / cycleway along this route would not be economical.

Route to/from 'Asda' Roundabout

The route from the new development access roundabout to the 'Asda' roundabout would follow the alignment of Hulbert Road. The current speed limit is national speed limit and there is no footway provision. There is a 0.6m wide verge with adjacent ditches on both sides of the carriageway (see Figure 3).

Technical note



Figure 3. View along Hulbert Road between development roundabout and 'Asda' roundabout

To the east and west of Hulbert Road between the development roundabout and the 'Asda' roundabout there are Sites of Importance for Nature Conservation (SINC), namely:

- Neville's Park West Wood;
- Hulbert Road Meadow;
- Neville's Park East Wood; and
- Neville's Park Areas 4-10.

The width between the existing carriageway and the fence line is currently around 2m. A 2m wide footway could therefore be implemented on either side of the carriageway, although a 3m footway / cycleway could only be implemented if several trees within the SINC are felled. At this stage it is suggested that a footway would only be provided on the eastern side of Hulbert Road. The works required to implement the footway include:

- 2m wide footway with standard kerb upstand;
- Piping of the existing ditch to permit the implementation of the footway. This may be a conventional drainage system if gradients and outfalls permit or a piped filter drain with the footway construction over the top;
- Road drainage with gullies connecting to the pipe; and
- In some locations existing vegetation would need to be trimmed.

There are a number of unknowns at this stage, however, the anticipated cost of providing a footway on the eastern side of Hulbert Road is £540,000. This cost excludes the provision of street lighting as it is anticipated that street lighting would not be implemented due to the local environmental sensitivity.

It is expected that the level of pedestrian demand in the future year scenario would be relatively low along this route. Due to the expected high cost of the proposed scheme relative to the anticipated level of use it is suggested that the scheme would not be economical.

Conclusion

Route to/from South Eastern Waterlooville

Although the cost of the uncontrolled crossings scheme is lower than the alternative, it is considered highly undesirable to provide facilities that encourage pedestrians and cyclists to cross roads with high-speed traffic due to the associated safety risks.

Technical note

Using the proportion of walk / cycle trips from the SRTM it is anticipated that there would be 22 trips in the AM peak and 18 trips in the PM peak. This assumes 10% arrive from Hulbert Road (west) based on the vehicle trip distribution. An indicative cost-benefit analysis using a peak flow of 22 trips and a time saving of 10 minutes per trip the total benefit would only be £380,018 over 30 years.

Based on this analysis it is unlikely the numbers of pedestrians and cyclists wishing to use the route will be significant and therefore the high cost of the controlled crossings scheme make it financially uneconomical

Route to/from 'Asda' Roundabout

Due to the high cost of implementing the footway along Hulbert Road in comparison to the expected level of use it is suggested that the scheme would be uneconomical.

Appendix H – Letter from PCC



Portsmouth
CITY COUNCIL

Asset Management Service (property)

Civic Offices
Guildhall Square
PORTSMOUTH PO1 2NE

Phone: 023 92 834289

Havant Borough Council
Planning Department
Public Service Plaza
Civic Centre Road
Havant
Hampshire, PO9 2AX

Date: 23rd March 2012

Dear Sirs,

Re: Dunsbury Hill Farm – Public Transport Provision

In response to the request from Hampshire County Council we confirm that our hybrid planning application makes provision for an east/west link road through the site. This meets your core strategy objectives of providing the opportunity of an east/west bus link through Havant and onwards to neighbouring areas.

Our planning application has been developed to reflect the objectives set out in your Core Strategy. We are proposing that these details should be considered at the reserved matters stage of the application for the development.

We acknowledge the importance of ensuring a sustainable transport strategy for this site.

Yours faithfully

T.P. 

Tom Southall MRICS
Head of Property & Landlord Services