



TRANSPORT ASSESSMENT

LAND AT ROOK FARM, ST MARY'S ROAD
HAYLING ISLAND, HAMPSHIRE

Client: Gladman



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1 INTRODUCTION

1.1 Purpose of Report

- 1.1.1 This Transport Assessment (TA) considers the highways and transportation implications associated with Gladman's proposal for a residential development comprising up to 300 dwellings at Rook Farm off St Mary's Road, Hayling Island, Hampshire. The site is to be allocated for residential development as Policy H27 Rook Farm in the emerging Havant Borough Local Plan.
- 1.1.2 A previous application assigned the reference APP/17/00007 by Havant Borough Council (HBC), the local planning authority (LPA), for this site was submitted in December 2016, however planning permission was refused in April 2017 for a number of reasons, including highways. This report incorporates comments from Hampshire County Council (HCC), the local highway authority (LHA), with regard to the original application, and focuses on the transportation implications of the new application. The previous planning application was for up to 210 dwellings and 0.6ha for apartments with care.
- 1.1.3 This document has been prepared in accordance with the Government's Planning Practice Guidance: *Transport evidence bases in plan making* (2014) and *Travel Plans, transport assessments and statements in decision-taking* (2014) and the Department for Transport's (DfT) *Guidance on Transport Assessment* (GTA) (2007).
- 1.1.4 The conclusions and recommendations contained herein have been drawn based on information available and obtained in advance of the planning submission to which this report relates.
- 1.1.5 Reasonable checks have been carried out on any third-party information used in the preparation of this report but, nonetheless, Prime Transport Planning (Prime) accepts no liability for the accuracy or otherwise of this data.
- 1.1.6 Third-party rights are excluded for the use of information contained within this report.

1.2 Scope of Report

- 1.2.1 This report has been prepared in accordance with *Transport evidence bases in plan making* which replaced the DfT's GTA in 2014. However, the new document is not a like-for-like replacement for GTA, providing no guidance on the production of Transport Assessments to accompany developments. The latest guidance instead helps local planning authorities assess strategic transport needs to reflect and, where appropriate, mitigate these in their Local Plan.
- 1.2.2 More relevant information is provided within the PPG under *Travel plans, transport assessments and statements in decision-taking* however this also does not provide the level of detailed guidance that was contained within DfT's GTA. Given that GTA was in place for 7-years, Prime believes that

assessment in-line with the document still represents industry best-practice, particularly for aspects where the current guidance lacks the necessary detail to form a robust assessment.

- 1.2.3 The lack of current detailed guidance places greater emphasis on agreeing the scope of a TA with the highway authority responsible for the location in which the development is proposed and in employing industry best-practice.
- 1.2.4 The scope of the 2017 application was agreed with HCC and an updated scoping exercise took place in 2018. Copies of the email based correspondence is provided for reference in Appendix A. Several further discussions with HCC took place during 2019 and 2020 as the Local Plan was evolving.
- 1.2.5 An Environmental Statement (ES) has also been produced, which includes a Transport chapter written by Prime. The scope of the ES was agreed with HBC and the chapter should be read alongside this TA, as should the accompanying Travel Plan (TP) which aims to promote and encourage travel by sustainable modes.
- 1.2.6 This TA should not be confused with the Hayling Island Transport Assessment (HITA) prepared on behalf of HBC to support the emerging Local Plan. However, the HITA provides an important assessment of the emerging Local Plan led development, which this site forms a significant part of. As such, reference will be made to several aspects of the HITA, particularly the microsimulation traffic model used to assess the impact and test measures to mitigate the cumulative impact of the Local Plan growth.
- 1.2.7 Following this introduction, the remainder of this report is structured as follows:
 - Section 2 describes the relevant local and national transport policy and guidance;
 - Section 3 describes the existing situation in terms of the site, local highway network and traffic conditions;
 - Section 4 details the development proposal including the access strategy;
 - Section 5 details access to the site by sustainable modes of travel which includes walking, cycling and public transport;
 - Section 6 discusses the forecasting methodology, trip generation and traffic impact assessment;
 - Section 7 describes the existing safety of the local highway network; and
 - Section 8 summarises and concludes the findings of the Transport Assessment.

2 TRANSPORT POLICY AND GUIDANCE

2.1 National Planning Policy Framework

2.1.1 The current *National Planning Policy Framework* (NPPF) was published in July 2021 and sets out the Government's current planning policies. At the heart of the NPPF is '*a presumption in favour of sustainable development*' as detailed in paragraphs 10 and 11.

2.1.2 Section 9 of the NPPF, *Promoting sustainable transport*, outlines the important role that the planning system has in facilitating sustainable development. It states in paragraph 105 that:

'Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health.'

2.1.3 The document offers guidance for planning policies including:

- supporting appropriate mixes of land uses;
- minimising the number and length of journeys;
- actively involving local highway authorities, transport infrastructure providers and operators and neighbouring councils in order to align strategies and investments for supporting sustainable travel; and
- providing high quality walking and cycling networks and associated supporting facilities such as cycle parking.

2.1.4 Paragraph 110 of the NPPF provides direction for the assessment of sites for development, stating:

'...it should be ensured that:

a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

b) safe and suitable access to the site can be achieved for all users; and

c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code;

d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.'

2.1.5 In determining planning applications, paragraph 111 states that:

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

2.1.6 Paragraph 112 continues:

'Within this context, applications for development should:

a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.'

2.1.7 Paragraph 113 highlights the need for planning applications for developments that will *'generate significant amounts of movement'* to be accompanied by a Transport Assessment or Transport Statement and a Travel Plan so that the *'likely impacts of the proposal can be assessed'*.

2.1.8 Paragraph 98 highlights the importance of access to open spaces as well as opportunities for sport and physical activity in the context of the health and well-being of communities. Paragraph 100 continues to include the importance of access to and the enhancement of public rights of way (PRoW).

2.2 Planning Practice Guidance

2.2.1 The theme of sustainable development runs throughout Planning Practice Guidance, with the detailed elements regarding transport being focussed in the following sections:

- Transport evidence bases in plan making and decision taking; and
- Travel plans, transport assessments and statements in decision-taking.

2.2.2 Both sections of the Guidance provide significant amounts of detail on the information types and sources that are appropriate for helping Local Planning Authorities to take forward their Local Plan

with an appropriate evidence base. The Guidance is also a useful reference for assessing schemes such as the development which this report accompanies.

- 2.2.3 The core components of the requirements for assessment, as set out in the Guidance, can be summarised as:

'The key issues, which should be considered in developing a transport evidence base, include the need to:

- *assess the existing situation and likely generation of trips over time by all modes and the impact on the locality in economic, social and environmental terms*
- *assess the opportunities to support a pattern of development that, where reasonable to do so, facilitates the use of sustainable modes of transport*
- *highlight and promote opportunities to reduce the need for travel where appropriate*
- *identify opportunities to prioritise the use of alternative modes in both existing and new development locations if appropriate*
- *consider the cumulative impacts of existing and proposed development on transport networks*
- *assess the quality and capacity of transport infrastructure and its ability to meet forecast demands*
- *identify the short, medium and long-term transport proposals across all modes.'*

- 2.2.4 The principles set out in Planning Practice Guidance are consistent with the approach undertaken in the production of this Transport Assessment.

2.3 Manual for Streets and HCC Technical Guidance Notes

- 2.3.1 *Manual for Streets* (MfS) was published on behalf of the DfT and Communities and Local Government in March 2007 and provides advice for the design of residential streets in England and Wales.

- 2.3.2 The focus of MfS is to demonstrate the:

'benefits that flow from good design and assigns a higher priority to pedestrians and cyclists, setting out an approach to residential streets that recognises their role in creating places that work for all members of the community. MfS refocuses on the place function of residential streets, giving clear guidance on how to achieve well-designed streets and spaces that serve the community in a range of ways' (MfS page 7).

- 2.3.3 The guidance addresses many common design principles and discusses detailed design issues, often presenting recommended design criteria. Some of the key principles of MfS include:

- The need to shift from focusing on designing for motor vehicles to designing streets around the needs of pedestrians, cyclists and public transport users which in turn enhances safety;

- Good design can help to create and strengthen a sense of place and community;
- Creating streets that are permeable and offer good quality connections to main destinations for all road users;
- Inclusive design that recognises the needs of people of all ages and abilities; and
- Cost-effective construction often by avoiding over-designing.

2.3.4 In September 2010 a companion document *Manual for Streets 2 – wider application of the principles* (MfS2) was published. This document expands on some of the design principles of MfS and provides examples of places where designs based on these principles have been implemented.

2.3.5 HCC has produced a series of *Technical Guidance Notes* to replace its *Companion Document to Manual for Streets* which, for a time, sat alongside MfS. The Notes include its standards for adoption.

2.4 Hampshire Local Transport Plan

2.4.1 HCC's Local Transport Plan (LTP) was formally approved in 2011 and covers the period to 2031.

2.4.2 The LTP is written in two parts: an LTP Strategy and an LTP Implementation Plan. The LTP Strategy is a comprehensive document which covers a 20-year period, from 2011 to 2031, and as such is intended to set out a long-term vision for how the transport network of Hampshire will be developed. The LTP Implementation Plan is a shorter document which comprises a three-year prioritised programme of integrated transport schemes to be delivered between 2014/15 to 2016/17.

2.4.3 The LTP sets out three main transport priorities for Hampshire for the next 20 years, these being:

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

2.4.4 The LTP sets fourteen further policy objectives organised under the following five '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.

- 2.4.5 Theme E in particular relates to the link between transport and land-use policy, and in discussing Theme E, the LTP notes that:

'Whilst acknowledging that most people will wish to own and use cars, it is important that new development is planned to avoid increasing traffic pressure by ensuring that attractive sustainable transport alternatives are available. These alternatives then need to be promoted to ensure that those working and living within new developments are aware of the travel choices open to them.'

- 2.4.6 Chapter 7 of the LTP specifically addresses the South Hampshire Joint Strategy area, which includes Hayling Island and Havant, and has been developed jointly by HCC, Portsmouth City Council and Southampton City Council, working collectively as Transport for South Hampshire (TfSH). The vision for TfSH is to create:

'A resilient, cost effective, fully-integrated sub-regional transport network, enabling economic growth whilst protecting and enhancing health, quality of life and environment'.

- 2.4.7 There are 10 transport policies relevant to Hayling Island which are as follows:

- *Policy A: To develop transport improvements that support sustainable economic growth and development within South Hampshire;*
- *Policy C: To optimise the capacity of the highway network and improve journey time reliability for all modes;*
- *Policy D: To achieve and sustain a high-quality, resilient and well-maintained highway network for all;*
- *Policy E: To deliver improvements in air quality;*
- *Policy G: To improve road safety across the sub-region;*
- *Policy H: To promote active travel modes and develop supporting infrastructure;*
- *Policy I: To encourage private investment in bus, taxi and community transport solutions, and where practical, better infrastructure and services;*
- *Policy L: To work with Local Planning Authorities to integrate planning and transport;*
- *Policy M: To develop and deliver high-quality public realm improvements; and*
- *Policy N: To safeguard and enable the future delivery of transport improvements within the TfSH area.*

- 2.4.8 HCC is currently working on LTP4 which seeks the following outcomes:

- A carbon neutral, resilient Hampshire;
- Respect and protect Hampshire's environment;
- Thriving and prosperous places; and
- Healthy, happy and inclusive lives.

2.5 Havant Borough Council Core Strategy

2.5.1 The Havant Borough Council Core Strategy (2011-2026) was adopted in March 2011, and is the principal document in the Council's Local Plan.

2.5.2 The document sets out a vision for the future development of the Borough between 2011-2026, which is to transform Havant Borough into a *'cleaner, safer and more prosperous place. It will be a place where people of all ages and circumstances will want to live, visit or work.'*

2.5.3 The Core Strategy comprises seven key themes, which are as follows:

1. Health and Wellbeing;
2. Promoting Havant Borough's Economy;
3. Regeneration and Community Support;
4. Community Safety;
5. Housing;
6. Caring for Our Borough; and
7. Infrastructure, Implementation and Monitoring.

2.5.4 The Core Strategy also sets out Development Management Policies, which are as follows:

- *Health and Wellbeing – Community Facilities, Recreation and Open Space;*
- *Promoting Havant Borough's Economy;*
- *Housing;*
- *Caring for Our Borough; and*
- *Infrastructure – Transport*

2.5.5 The following Development Management (DM) Policies are set out under 'Infrastructure-Transport'.

DM Policy 11 – Planning for More Sustainable Travel

2.5.6 Within the document it 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'.

2.5.7 The document sets out a list of measures including:

1. *'Securing on-site and/or off-site interventions that promote integrated travel and access by non-motorised modes;*
2. *Requiring safe and secure vehicular and cycle parking and turning facilities to adopted standards;*

3. *Securing appropriate improvements to public and community transport in accordance with the Hampshire Local Transport Plan and the relevant sub-regional transport strategy;*
4. *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*
5. *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.'*

DM Policy 12 – Mitigating the Impacts of Travel

- 2.5.8 It is stated in the document that *'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'.*
- 2.5.9 By ensuring that the above is met, Havant Borough Council have set out the following criteria:
1. *'Adequate provision is made for integrated and improved transport infrastructure or appropriate mitigation measures, through direct improvements and S106 contributions;*
 2. *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;*
 3. *The submission of a Transport Statement must accompany planning applications to explain changes to travel demand;*
 4. *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; and*
 5. *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.'*

DM Policy 13 – Car and Cycle Parking in Residential Development

- 2.5.10 It is set out in the document that:
- '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.'*

2.6 Havant Borough Parking Supplementary Planning Document

- 2.6.1 The Supplementary Planning Document (SPD) was adopted in 2016. The document provides comprehensive information and local standards with regards to parking provision and design in residential developments. Image 2.1 below is Table 4A from the document and shows the allocated vehicle parking standards, Image 2.2 is Table 4B from the document and shows the shared/communal parking standards and Image 2.3 is Table 4D from the document and shows the cycle parking standard.

Image 2.1: Allocated Parking Standards

TABLE 4A			
C3 Dwelling Houses – Vehicle Parking			
Zone Size of dwelling	Minimum Car Parking Requirement	Havant Town Centre	Waterlooville Town Centre
1 Bed Unit	1 space	Max 1 space	Max 1 space
2 Bed Unit	2 spaces	Max 1 space	Max 1 space
3 Bed Unit	2 spaces	Max 1 space	Max 2 spaces
4+ Bed Unit	3 spaces	Max 2 spaces	Max 2 spaces

Image 2.2: Shared/Communal Parking

TABLE 4B			
C3 Dwelling Houses – Shared/Communal Parking (unallocated)			
Zone Size of dwelling	Minimum Car Parking Requirement	Havant Town Centre	Waterlooville Town Centre
1 Bed Unit	0.9 spaces	Max 0.5 spaces	0.6 spaces
2 Bed Unit	1.3 spaces	Max 0.8 spaces	1 space
3 Bed Unit	1.9 spaces	Max 1 spaces	1.4 spaces
4+ Bed Unit	2.4 spaces	Max 1.2 spaces	1.8 spaces

Image 2.3: Cycle Parking/Storage Provision

TABLE 4D		
C3 Dwelling Houses – Cycle Parking/Storage Provision		
Size of Dwelling	Long stay	Short Stay
1 Bed Unit	1 space per unit	In larger developments (schemes of 10 or more dwellings), short-term visitor parking will be expected at 20% of the long-term cycle parking standard.
2 Bed Unit	2 spaces per unit	
3 Bed Unit	2 spaces per unit	
4+ Bed Unit	2 spaces per unit	

- 2.6.2 The standards for allocated and shared/communal cars parking vary based on the house type and the local area's level of accessibility as do the standards for cycle parking.

2.7 Emerging Havant Local Plan

- 2.7.1 HBC is currently working on a new Local Plan to guide the borough's growth strategy up to 2037. The draft version of the Local Plan was submitted for examination to the Secretary of State for Housing Communities and Local Government on 12th February 2021 and was subject to Examination in Public (EiP) in summer 2021. At the time of writing, we understand that the Inspectors have provided HBC with an initial response which requires the LPA to undertake further work, but a summary of the submission version of the Local Plan is as follows.
- 2.7.2 The emerging Local Plan identifies six overlapping strategic priorities which make up HBC's vision for the future. Of particular relevance to highways and transportation is the priority, *'Communities are supported through new infrastructure and improvements to the network.'* This calls for new developments to be supported with the *'right infrastructure'* to be secured alongside them with a link between transport infrastructure and attractiveness and sustainability. There is also a desire for an integrated public transport system.
- 2.7.3 The regeneration of Hayling Island is referred to as Key Project 3 (KP3). The focus for the regeneration is on the sea front but clearly new residential development on the wider island, rather than just the sea front, can aid the regeneration. In a similar vein, such new residential development can aid KP6 Langstone Technology Park, by providing potential future staff with quality new homes just a short distance away.
- 2.7.4 Infrastructure is addressed in policies IN1 to IN5 with IN2 to IN5 being particularly relevant to transport as follows:

IN2: Improving transport infrastructure

'The principle of development will be supported for transport and land use proposals which:

- a. Improve accessibility to goods, services and employment for all and provide transport options that promote equality;*
- b. Improve the network of infrastructure which encourages sustainable, low carbon transport modes, with a particular emphasis on healthy non-motorised modes and public transport;*
- c. Provide transport management measures to ensure the safe and efficient operation of the strategic and local road network;*
- d. Prioritise transport improvements that support economic growth;*
- h. Mitigation schemes identified through the Local Plan Transport Assessment and Hayling Island Transport Assessment; and*
- j. Delivery of new, or improvements to existing rights of way, to enhance the network of sustainable and leisure travel routes.'*

IN3: Transport and parking

'Development proposals will be permitted, provided that the site is designed so that:

- a. Safe and suitable access to the site is provided for all people and modes of transport;*
- b. Sustainable modes of travel are encouraged and supported through on and/or off-site measures;*
- c. The site layout encourages lower vehicle speeds, and prioritises the safe and convenient movement of pedestrians and cyclists within the site;*
- d. Pedestrian and cycle routes are provided which conveniently reach all parts of the site, and link with the wider network beyond the site, providing a high level of permeability;*
- e. Any existing public rights of way are safeguarded and where appropriate improved, and new routes provided where appropriate;*
- f. The streets and public and private parking areas contribute positively to the design of the development and deliver a high quality public realm, including the use of high quality materials and integration of landscaping;*

- g. Sufficient visibility and lighting is provided for the safe and convenient use of the roads, cycle routes, walking routes and parking places;*
- h. Adequate provision is made for varying sizes of vehicles, including refuse and emergency vehicles, to access all parts of the site, park, load, unload and turn safely and conveniently;*
- i. Provision is made for the parking of cars, motor cycles and cycles in line with Council standards;*
- j. Electric Vehicle charging infrastructure is provided for:*
 - i. Each new residential unit with private off-street parking;*
 - ii. An appropriate number of spaces in shared parking at residential and commercial development where long-term parking for staff or residents is provided.*
- k. Where required, a satisfactory Transport Statement or Transport Assessment is submitted in support of the planning application to evaluate transport impacts, and to demonstrate that proposed transport improvements will meet the needs of the development and mitigate adverse impacts;*
- l. The traffic generated by the development, taking into account any proposed avoidance and mitigation measures, would not result in severe cumulative impacts on the transport network or the environment;*
- m. A Travel Plan is provided in support of a planning application where appropriate in relation to the scale and type of development.'*

IN4: Access onto Classified Roads

- 'a. Proposals for additional accesses onto classified roads, or an intensification of use of existing accesses, will only be permitted where the arrangements on the site allow vehicles to turn, so they can enter and leave the site in forward gear.*
- b. Notwithstanding criterion a), on the A3023 at Langstone and Hayling Island additional access points, or an intensification of use of existing accesses, will not be permitted, unless*
 - i. they form part of a proposal to deliver a development site allocated in this Plan and the proposal includes a satisfactory highways mitigation scheme designed to minimise friction; or*
 - ii. the access is specifically part of a transport mitigation scheme.'*

INS: Future management and Management Plans

'When granting planning permission for development that includes new 'common parts' a legal agreement will be required that provides for their sustainable management and maintenance through either:

a. Design and construction in full compliance of an adopting authority's standards, together with the provision of an in-perpetuity maintenance payment to be agreed with the adopting authority; or

b. The whole-life management and maintenance of the common parts is secured through a legal agreement which establishes a management company.'

2.7.5 In addition to the above, there are a series of environmental policies, with 'E2: Health and wellbeing' calling for: the promotion of active and healthy lifestyles; easy and safe access to education and employment; and enhancement of existing and facilitation of new opportunities for active travel (walking and cycling).

2.7.6 The development site forms Policy H27: Rook Farm for 'about' 390 dwellings. The policy requires: a TA and TP, which have been prepared; access from Manor Road (changed to Lulworth Close in advance of the EiP); emergency access (with pedestrian and cycle connectivity) from St Mary's Road; a high degree of permeability for pedestrians and cyclists with connection to existing public rights of way (PRoW) and the adjacent H28 Fathoms Reach emerging allocation; and protection and enhancement of the existing PRoW.

2.7.7 With regard to access, discussions took place between the applicant, HBC, HCC and Prime from 2019 onwards. It was made clear by the applicant and Prime, that access from Manor Road was not achievable nor feasible for a number of reasons including but not limited to the requirement for significant areas of third-party land and engineering constraints associated with the potential access junction from Manor Road. Prior to EiP, HBC changed the wording of the policy to require the allocation to be accessed from Lulworth Close north of the site. However many of the reasons given by the applicant and Prime regarding access from Manor Road remained applicable. Detailed evidence to outline the applicant's position and demonstrate that safe and convenient access could be achieved from St Mary's Road was formally submitted prior to EiP and further verbal evidence given to the Inspectors during the Examination. More details of the proposed access arrangement are provided in Section 4.

2.8 Hayling Island Transport Assessment (2019) and Addendum (2020)

2.8.1 The Hayling Island Transport Assessment (HITA) and its subsequent Addendum was prepared by HBC's consultant, CampbellReith, with modelling support from Systra. The HITa included a thorough review

of existing baseline traffic and transportation conditions, presented the results from the Hayling Island microsimulation model and considered initial network improvements and interventions.

2.8.2 The HITA Addendum affirmed a package of mitigation measures required to enable the Local Plan development to be delivered without resulting in a 'severe' impact on the island's highway network and a section of the network on the mainline in the vicinity of Langstone and Havant town. The microsimulation model was used to assess the impact and sequentially test the mitigation package. H27 Rook Farm was included in the traffic model as an allocation for up to 395 dwellings.

2.8.3 It was concluded that the Local Plan development could be safely accommodated on the local highway network without a 'severe' cumulative impact subject to the delivery of the mitigation package, which the developers behind the emerging allocations would be expected to financially contribute to on a scale commensurate to the size of the individual developments.

2.9 Summary

2.9.1 This section has outlined national and local transport policies and guidance which are applicable to the development site. How the site conforms to and complements these policies and guidance will be discussed in the following sections of this report, where relevant.

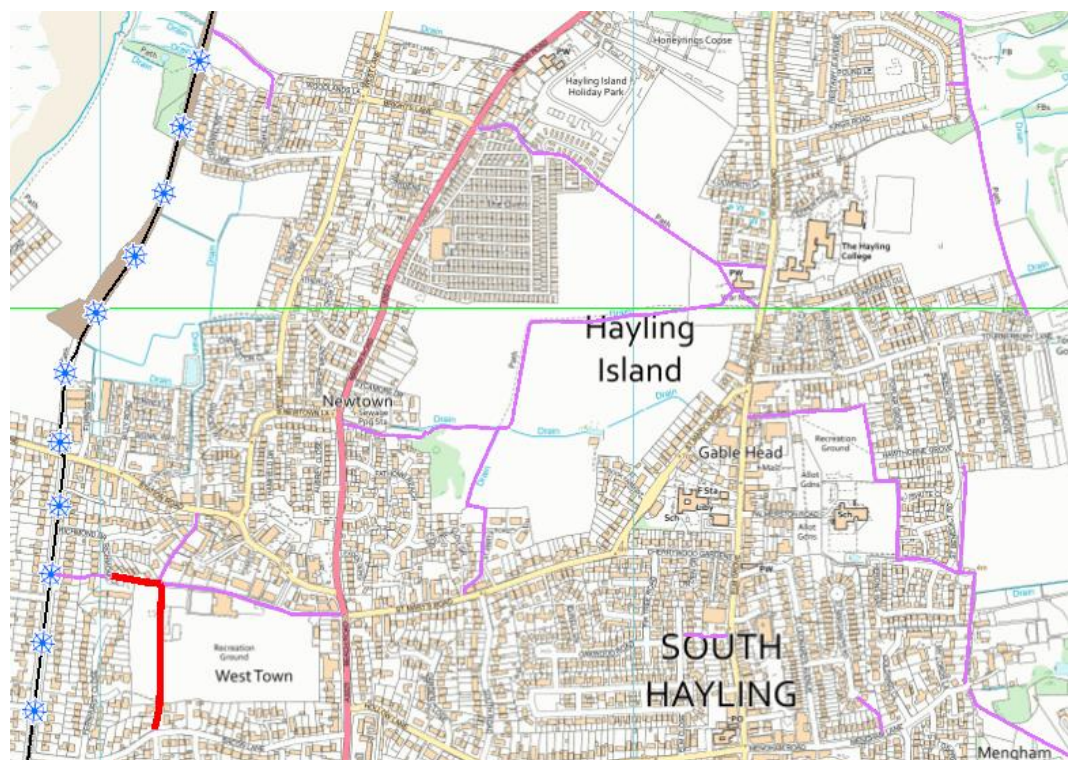
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3 EXISTING SITUATION

3.1 Site Description

- 3.1.1 The application site is currently largely undeveloped and in agricultural use. It is located in the Gable Head area of Hayling Island to the north of the South Hayling area. The site is bound to the south and east by existing residential properties off St Mary's Road and Church Road and bound to the north and west by open space. The site's only frontage with the adopted highway network is an approximately 30m wide section with St Mary's Road, in between numbers 115 and 123.
- 3.1.2 Hayling Island itself is a true island with a single bridge connection from the mainland. The Gable Head area is approximately 4.5 miles south of the centre of Havant and 10 miles east of Portsmouth. The location of the site in the context of Hayling Island and the local highway network is illustrated in Figure 1 in Appendix B.
- 3.1.3 Image 3.1, an extract of HCC's online mapping system, shows the various public rights of way (PROW) in the vicinity of the site. Footpaths are highlighted purple with Footpath 93 running along but outside of the northern boundary of the site from St Mary's Church to Footpath 92 which continues south along but outside of the western boundary then west to Manor Road. Footpath 94 runs from Footpath 92 to St Mary's Road at Southleigh Grove. Footpath 96 runs west from the St Mary's Road/Beach Road junction to the long distance route Shipwrights Way, indicated by the black line with blue markers.

Image 3.1: Extract from HCC's Online Mapping System Depicting the Public Rights of Way



Source: <https://maps.hants.gov.uk/rightsofwaydefinitivemap/largemap>

3.2 Local Highway Network

St Mary's Road

- 3.2.1 As mentioned above, St Mary's Road is the site's only frontage with the local highway network. It is a residential local access collector road effectively connecting Church Road to Manor Road as well as providing access to a number of side roads, along with many properties which have driveway frontage with it. The road is best described in two sections, with the north-eastern section running diagonally from a priority-controlled junction with ghost island right turn with Church Road in the north-east, to Cherrywood Gardens where it forms a split priority junction. The western section then continues west from this junction to a priority-controlled junction with minor arm flare with Manor Road.
- 3.2.2 St Mary's Road is two-way with a single lane in each direction. It is subject to a 30mph speed limit. The road also provides access to Mengham Infant School, a public car park and a retirement home. A central reserve is present in the vicinity of the school access which includes an uncontrolled crossing. A school bus stop with layby is also present at this location. Double yellow lines restrict parking between the Church Road junction and the school while some on-street parking is permitted between the school and Cherrywood Gardens. Parking restrictions are largely not present along the western section. Continuous footway is present along the southern side of the western section while the footways along the eastern section are somewhat intermittent but safe contiguous walking routes are available by crossing over the road. Traffic calming features are not present on St Mary's Road.

Church Road/Elm Grove/Sea Grove Avenue

- 3.2.3 Church Road runs south from the A3023 roundabout becoming Elm Grove south of St Mary's Road then Sea Grove Avenue as it approaches Sea Front, the coast road. The road is one of the two distributor roads in the southern half of the island. It collects traffic from numerous side roads with many residential and commercial properties also taking access from it. Several bus stops can be found along Church Road within a reasonable walking distance of St Mary's Road. Between Gable Head and South Hayling it acts as the local high street with shops and other businesses forming the majority of the frontage and wide footways being present. It is subject to a 30mph speed limit.

A3023

- 3.2.4 The A3023 is the primary distributor road that connects the island with the mainland. It runs south from a grade separated traffic signal-controlled roundabout with the A27 and Park Road South to the south of Havant where it is named Langstone Road. It then bridges over Chichester and Langstone Harbours with the structure commonly known as Langstone Bridge. The bridge itself has a single lane in each direction and shared cycleways on each side of the carriageway. Continuing onto the island, the A3023 is named Havant Road and passes through the Stoke area where the speed limit reduces from 40mph to 30mph and provides access to side roads and driveway access to residential and commercial properties. This characteristic continues further south although driveway frontage

becomes more prevalent as the surrounding areas become more urban. To the west of the roundabout with Church Road, the A3023 continues west then south running parallel to Church Road/Elm Grove/Sea Grove Avenue to Sea Front passing through a district centre in the vicinity of St Mary's Road.

3.3 Existing Traffic Conditions

Site Visit Observations

- 3.3.1 Numerous site visits have been undertaken during different times of the year and at different times of the day between 2016 and 2021. During the site visits, it was observed that traffic flowed freely on Hayling Island itself and over the Langstone Bridge with traffic travelling at typical free flow speeds albeit restricted by the speed of the vehicle at the front of the platoon. Some queues have been observed on the A3023 approach to the junction with the A27 and at the merge point travelling southbound from the junction, but these queues tended to clear fairly quickly, particularly at the merge point with drivers showing courtesy to others to allow the merge to happen smoothly. From more recent site visits, several changes to kerb lines, foot/cycleways, side roads and bus stops appear to have improved the merge arrangement.
- 3.3.2 Some slight delays have been observed on the minor arms of junctions with the A3023 when traffic was gap-seeking but again, many drivers drove with courtesy and often allowed traffic out of the side roads. Traffic was also able to turn in between platoons. No notable queues were observed on the island itself.
- 3.3.3 It was noted that bus services appeared to be frequent and popular. Many pedestrians and cyclists were also observed, particularly in the district centres. Many parents/guardians appear to travel on foot to/from Mengham Infant School, and those that choose to drive appear to park with a reasonable degree of courtesy, with school peak times tending to last for around 20-30 minutes in the morning and late afternoon.

St Mary's Road Speed Surveys

- 3.3.4 Several speed surveys have been undertaken on St Mary's Road at the site frontage for use in access design. It is industry standard practice to design accesses with a level of visibility that is appropriate for the 85th percentile speeds of the road that access is taken from.
- 3.3.5 The most recent speed survey was undertaken using an automatic traffic counter (ATC) installed on Tuesday 17th August 2021 following HCC granting the appropriate licence. It had been intended to record data over a 7-day period, unfortunately however, the ATC equipment was removed and vandalised in a seemingly criminal act, which is the second time this has happened in this location. Fortunately the hardware recorded data for almost two and a half days, returning 1,672 speed measurements. We acknowledge that the survey was undertaken during the summer however an

officer at HCC had previously remarked that such surveys would be appropriate in a location such as Hayling Island that is popular with tourists over the summer period. Furthermore, we have experience of highway authorities across the country accepting use of speed survey data recorded during what can be described as non-neutral periods, as speeds tend to fluctuate less than traffic flows between neutral and non-neutral periods.

- 3.3.6 A summary of the speed surveys from August 2021 is provided in Table 3.1 with the raw data provided in Appendix C.

Table 3.1: St Mary's Road Speed Survey Results at Site Access

Direction	Speed (mph)	
	Average	85th %ile
North-east	21.4	25.9
South-west	18.6	22.9

- 3.3.7 The results in Table 3.1 show that average speeds on St Mary's Road at the site frontage are close to 20mph. The 85th percentile speeds are well below the signed 30mph speed limit. The recorded speeds are in line with what are commonly regarded to be conducive to a safe residential environment. Use of the speed survey results in the access design is discussed in Section 4.

4 DEVELOPMENT PROPOSAL

4.1 Development Description

- 4.1.1 Gladman is seeking outline planning permission for up to 300 dwellings on land at Rook Farm off St Mary's Road, Hayling Island. The nature of the application will mean that all matters will be reserved except for access.
- 4.1.2 Further details on the mix of dwelling types and areas of public open space will be provided in other documents submitted as part of the planning application. These documents should be available via the online HBC planning portal.
- 4.1.3 It is recognised that the emerging Local Plan policy for the site states up to 390 dwellings, however detailed masterplanning informed by on-site investigations undertaken by the applicant has shown this quantum to not be achievable. The proposals for up to 300 dwellings is a more realistic, achievable quantum.
- 4.1.4 A Development Framework Plan has been produced by FPCR and forms part of the supporting documentation for the planning application. It is not included within this document as it has the potential to be revised up to the point of submission and therefore, to avoid conflicting and superseded layouts being submitted within the various planning documents, it is omitted from this report.
- 4.1.5 The Development Framework Plan shows that the site is to be served via a new access from St Mary's Road with the primary access route running through the portions of the site to be developed. This developed area will be surrounded by green infrastructure and a play area. Pedestrian accesses will connect to a number of the local PRoWs that border the site.

4.2 Access Strategy

Vehicular Access

- 4.2.1 It is suggested that a single main access will be appropriate to serve this development. This will take the form of a priority-controlled junction located at the St Mary's Road frontage. The junction has been located in the optimum location at the site frontage following a detailed swept path analysis detailed below. The proposed access strategy is shown in Drawing P21033-001D in Appendix D.
- 4.2.2 Modern best-practice design guidance, specifically MfS, the *National Design Guide* (2021) and the *National Design Model Code* (2021), does not prescribe a limit for the number of dwellings served by a single vehicular access. In a modern residential environment such as the development's internal layout, which will be presented and determined at the reserved matters stage, and will be expected to be designed to encourage speeds of ≤ 20 mph with traffic calming features, the chances of

collisions severe enough to block the internal route will be very limited indeed. To reduce the chances of an accident at the access on St Mary's Road, which as the speed surveys detailed in the previous section show is subject to average speeds of circa 20mph, the proposed access is somewhat oversized in terms of its width, which will help to reduce the chance of blockage in the highly unlikely event of a collision. Furthermore, an additional emergency access can be provided as will be detailed below. It is of course useful to note that the whole island is served by a single access.

4.2.3 As mentioned in Section 2.8, HBC has expressed a preference for the development to be served by Lulworth Close which is over 250m from the northern boundary of the site and would require the use of land outside of the control of the applicant. Detailed evidence was submitted to the Planning Inspectorate during the Local Plan EiP to outline the applicant's position on this matter, part of this evidence included an EiP Access Note which is provided in Appendix E, but note that the drawings originally included in Appendix 3 of the Note have been removed to avoid confusion with the proposed drawings in Appendix D which superseded them.

4.2.4 The proposed access arrangement from St Mary's Road was also subject to an independent Stage 1 Road Safety Audit, contained in Appendix F, as detailed later in this section. In summary, access from Lulworth Close, and indeed an earlier suggestion by HBC to serve the site via Manor Road, is deemed to be unfeasible due to a number of factors and there are no reasons why access from St Mary's Road is unsuitable or unsafe.

4.2.5 To ensure that the proposed vehicular access is a safe design, the visibility splays have been calculated based on the stopping sight distance (SSD) for vehicles. MfS2 contains the following calculation for SSD:

$$SSD = vt + v^2/2(d+0.1a)$$

where:

v = speed (m/s)

t = driver perception-reaction time (seconds)

d = deceleration (m/s²)

a = longitudinal gradient (%)

4.2.6 Table 10.1 in MfS2 provides a recommendation of variable SSD criteria. For speeds of 60kph (37mph) and below, a reaction time of 1.5s and deceleration rate of 0.45g (equivalent to 4.41m/s²) should be used; for speeds above 60kph, a reaction time of 2s and deceleration rate of 0.375g (3.68m/s²) (absolute), or 0.25g (2.45m/s²) (desirable), should be used.

4.2.7 Table 3.1 shows that the recorded 85%ile speeds from the most recent speed survey were 25.9mph in the north-eastbound direction and 22.9mph in the south-westbound direction, these being the speeds for use in the derivation of the SSD. Applying this figure in the SSD calculation provided above, alongside the 'below 60kph' reaction time (1.5s) and deceleration rate (4.41m/s²) gives the

- appropriate stopping sight distance, otherwise known as the 'y' distance, of 33m to the right on exit and 28m to the left on exit.
- 4.2.8 In-line with MfS guidance, an 'x' distance of 2.4m has been used, which 'represents a reasonable maximum distance between the front of the car and the driver's eye' (MfS2 paragraph 10.5.6). Collectively the 'x' and 'y' distances are referred to as the visibility splay
- 4.2.9 Visibility splays of 2.4m x 33m to the right on exit and 2.4m x 28m to the left on exit have therefore been shown on the Proposed Access Arrangement Drawing P21033-001D contained with Appendix D. Greater visibility is available in both directions.
- 4.2.10 It is useful to note that the abovementioned visibility splays lie within the red line boundary of the site and the adopted highway.
- 4.2.11 The proposed access consists of a 6.5m wide carriageway, 2 x 2m wide footways and 8m junction radii. These dimensions accord with MfS guidelines in that they are greater than the minimum width required to allow two vehicles to pass. The width proposed is greater than the 5.5m commonly used to access major residential estates in order to better facilitate construction vehicle access, with HCC objecting to the previous application on the ground that sufficient evidence regarding this matter had not been submitted. The swept path analysis used to determine this width is detailed below.
- 4.2.12 The two footways will tie in to the existing provision on St Mary's Road which itself will be extended further south-west as shown on the abovementioned drawing. The width of new footway provision along St Mary's Road will be limited by the available highway verge. A topographic survey used in the design shows that a footway of a varying width of between 1.8m and 2.0m is present, albeit with some overhanging vegetation that should be cut-back, until outside property number 109.
- 4.2.13 An uncontrolled crossing will be provided in advance of this point. The crossing will consist of dropped-kerbs and tactile paving, allowing pedestrians to cross to the existing footway on the south-eastern side of the road where a new section of footway will be provided. The applicant is mindful of the presence of a mature tree in this location and has sought the advice of an arboricultural consultant who has suggested that root-friendly surfacing (cellular confinement system) and construction methods (hand-tooling) can be used to minimise any damage to the tree roots, with the latter appearing to have been used when the new kerb edge was installed as part of the Limewood development. Additional dropped-kerbs and tactile paving will then aid the crossing of the public car park access. Provision of this section of footway and crossing improvements will offer some benefit to existing pedestrians on St Mary's Road.
- 4.2.14 To maximise accessibility, Gladman will be willing to fund the provision of a white-lined safety zone through the HBC owned public car park to the footpath that leads to Elm Grove as shown indicatively on Drawing P21033-001D in Appendix D. This route will provide a convenient cut-through for many residents of the site.

- 4.2.15 Drawing P21033-001D in Appendix D demonstrates that adequate pedestrian-vehicle intervisibility to the proposed uncontrolled crossings can be achieved with the MfS2 formula used for the signed 30mph speed limit, with the equivalent SSD being 43m which is inclusive of a bonnet length adjustment. Greater SSDs in both directions are clearly achievable.
- 4.2.16 To further maximise accessibility, Gladman is willing to fund the provision of two uncontrolled crossings with pedestrian refuge islands in the ghost island tapers on Church Road/Elm Grove as shown on Drawing P21033-002B in Appendix D. These features demarcate safe places to cross and allow Church Road/Elm Grove to be crossed in two movements. The provision of the northern crossing will require the removal of a short section of the bus layby by building out the footway, but this will not affect the operation of the layby as the parallel section will still be greater than the 17m minimum length required, which was confirmed by Stagecoach in the correspondence provided in Appendix G. A swept path analysis has been provided for a bus using the layby as shown in Drawing P21033-007B in Appendix D, an earlier version of which was provided to Stagecoach in the aforementioned email chain. The provision of the refuge islands should also encourage slower speeds through the junction by creating a narrowing effect.
- 4.2.17 A traffic island is also proposed across the St Mary's Road arm of its junction with Church Road/Elm Grove/Tournerbury Lane as shown in Drawings P21033-001D and P21033-002B in Appendix D. The northern kerb will need to be realigned to accommodate the traffic island, with the dropped kerbs reinstated to maintain access to the 'works' on the northern side, which remains accessible with swept path analysis undertaken during the design process. Tactile paving has not been shown on the northern arm given that vehicle accessing the works may drive over it resulting in damage to the paving, however stainless steel tactile studs could be used which can be explored further at the detailed design stage.
- 4.2.18 The access width and radii have been based on a swept path analysis using the industry standard software AutoTrack for the following vehicles as shown in the respective drawings listed below and included in Appendix D.
- Refuse collection vehicle: Drawing P21033-003B;
 - Articulated lorry (construction): Drawing P21033-004B;
 - Tipper truck (construction): Drawing P21033-005B; and
 - Pantechicon (furniture removals): Drawing P21033-006B.
- 4.2.19 The refuse collection vehicle will be the largest vehicle expected to regularly access with smaller vehicles, such as cars, ambulances and fire appliances having less onerous swept paths. The drawing showing the refuse collection vehicle demonstrates that the vehicle will be able to access the site with minimal crossing onto the opposite side of the carriageway which should be acceptable given that such vehicles will only need to access the site once a week and is a commonly accepted degree of

overhang. Providing greater dimensions would be contrary to MfS advice as it would be over-designing and would make it more difficult for pedestrians to cross.

- 4.2.20 As part of their comments on the previous planning application, HCC Highways also requested that adequate access for construction vehicles should be incorporated into the site access arrangements. This issue is normally dealt with at the reserved matters stage during which further details and a Construction Traffic Management Plan will be provided, however, the abovementioned swept path analysis for the articulated lorry and tipper truck demonstrate that both large construction vehicles can safely access and egress the site. The access is wider than that proposed as part of the previous application in order to better accommodate these vehicles types.
- 4.2.21 It should be remembered that AutoTrack provides for a worst-case assessment with qualified heavy vehicle drivers being able to undertake tighter turns than shown in the software. It should also be remembered that banksmen and on-site staff will be present to guide larger vehicles in and out of the site if and when required. As the associated swept path (Drawing P21033-004B) shows, the pedestrian island on the St Mary's Road arm of the Church Road/Elm Grove/Tournerbury Lane junction will need to be installed post-construction to avoid the articulated vehicles striking the kerbs unless HCC will permit flush kerbs at the island. Either way the pedestrian island is not essential to provide safe pedestrian access for residents of the site, but it is beneficial to all pedestrians who would choose to cross at that point such as those shopping on Elm Grove.

Emergency Access

- 4.2.22 Whilst not strictly a requirement for residential developments, and being highly unlikely to ever be used for such a purpose, a separate emergency access can be provided via Rook Farm Way. Whilst this road is unadopted, it is constructed to a good standard and is wide enough to be navigable by a fire appliance. The land owner has a right of access which should enable emergency access. This access will not be usable by pedestrians and cyclists. Its exact method of physical restriction will be subject to detail at the reserved matters stage, but it is anticipated that it will likely be gated at the site's frontage with Rook Farm Way, with the gate locked by a soft metal padlock that can be easily removed by the fire authority should the highly unlikely need for it ever arise, and should HCC or HBC require such an emergency access to be provided which HBC did suggest in the site's policy requirements.
- 4.2.23 Should either authority have any concerns with this potential emergency access, the main site access off St Mary's Road could be modified with one of the footways widened to 3.1m or wider in line with national fire and rescue guidance, *Fire Safety: Approved Document B*, to allow it to be driven over by a fire appliance.

Additional Accesses for Pedestrians

- 4.2.24 Whilst the vehicular access will cater for all road users, the accessibility of the site by sustainable modes of transport will be enhanced by the provision of two pedestrian accesses onto Footpath 94 which provides connection to other footpaths and to Southleigh Grove, via the adjacent Fathoms Reach emerging allocation (H28), and the south-western section of St Mary's Road.

4.3 Stage 1 Road Safety Audit

- 4.3.1 The independent and specialist consultant six:TEN Highways & Traffic Ltd was instructed to carry out a Stage 1 Road Safety Audit (RSA) on an earlier version of the proposed access arrangement at St Mary's Road along with the associated pedestrian improvements.
- 4.3.2 The RSA was undertaken by two Society of Road Safety Auditors qualified professionals who undertook a site visit on 16th June 2021 and the audit was carried out in accordance with *Design Manual for Roads and Bridges (DMRB) GG119 – Road Safety Audit*.
- 4.3.3 The RSA was appended to the RSA Designers Response, included in Appendix F of this TA, and submitted as evidence by the applicant for consideration during the EiP. The RSA raised only minor issues and were predominantly related to pedestrian crossing points, tactile paving and road marking. No issues were raised regarding the principle of the access arrangement such as the location or form of junction. The proximity to the Church Road/Elm Grove/St Mary's Road junction was considered and not raised as an issue. Note that the drawings included in Appendix B of the RSA Designers Response have been removed to avoid confusion with the proposed drawings in Appendix D of this TA which superseded them.
- 4.3.4 The issues raised by the Stage 1 RSA were noted and largely addressed within the latest drawings where applicable to this stage of the design process.

4.4 Internal Layout

- 4.4.1 It is expected that the masterplan associated with any reserved matters application will include turning areas within the site for vehicles, either in the form of internal loops or turning heads.
- 4.4.2 The design speed of the access road will be 20mph. While the internal layout will be subject to a separate Reserved Matters application by the potential house builder, it is expected that it will be based on MfS design guidance meaning that the layout will focus on the needs of pedestrians, cyclists and public transport users, create a sense of place and community, create permeable streets offering good quality connections and will recognise the needs of people of all ages and abilities. All of these should be achieved without over-designing.
- 4.4.3 The proposed access strategy and pedestrian improvements will enhance the site's permeability and connectivity by sustainable modes of travel. It will also help the site to integrate with the existing and

proposed surrounding residential areas and is therefore compliant with the various Themes and Objectives outlined within the LTP document.

4.5 Parking

- 4.5.1 The Havant Borough car and cycle parking standards are presented in Section 2 and vary depending on the dwelling size and establishment type. The housing mix has not been finalised as part of this outline application and will be addressed as part of the reserved matters application but it is expected that the subsequent reserved matters application will provide sufficient parking to comply with the relevant standards at the time of submission.

4.6 Traffic Calming Scheme

- 4.6.1 In acknowledgement of the site's proximity to Mengham Infant School and CherryHarbour Nursery, the applicant is willing to fund a traffic regulation order (TRO) to reduce the speed limit on St Mary's Road to 20mph along with an accompanying traffic calming scheme to be discussed with HCC and HBC.

4.7 Summary

- 4.7.1 As described in this section, the development will conform to a number of national and local policy guidance and has been subject to an independent Stage 1 Road Safety Audit. The design of the site accesses will conform to the standards in MfS. As such the design will also conform to and complement several national and local policies. The relevant local transport policies pertinent to the development proposals include: LTP Main Priorities 1 and 2; TfSH LTP policies A, H and M; HBC Core Strategy policies DM11 and DM13; and HBC emerging Local Plan policies IN2, IN3, IN4, E2 and the permeability requirement of H27.
- 4.7.2 The design reflects the MfS principles of inclusive design, shifting from focusing on designing for motor vehicles to designing streets around the needs of pedestrians, cyclists and public transport users, controlling speeds, not overdesigning and creating permeable streets. These principles in turn help the site to conform to NPPF guidance, as seen within paragraph 112 in giving priority to pedestrian and cycle movements and minimising conflict for these users, as well as paragraph 110 in promoting sustainable transport modes and creating '*safe and suitable access to the site*' along with paragraphs 98 and 100 by providing opportunity for physical activity and enhancements to PRoW.

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5 ACCESS BY SUSTAINABLE MODES OF TRANSPORT

5.1 Introduction to Sustainable Modes

- 5.1.1 National and local transport planning policy centres on the importance of sustainable development, meaning that new developments should be located in areas where there is access to sustainable modes of travel, or where sustainable modes of travel can be introduced. The *National Design Guide* (2021) defines sustainable transport modes as:

'Any efficient, safe and accessible means of transport with overall low impact on the environment, including walking and cycling, low and ultra low emission vehicles, car sharing and public transport.'

- 5.1.2 Walking, cycling and public transport are commonly regarded to be the most sustainable modes of transportation. This section of the report will describe how the site can be accessed by these modes.

5.2 Access on Foot

- 5.2.1 The site is located adjacent to existing residential areas and close to the amenities of Hayling Island. As stated in Section 4, together with the vehicular access, the development proposals include pedestrians only accesses to the PRow network.
- 5.2.2 The development proposals include uncontrolled crossings on St Mary's Road, Elm Grove and Church Road. These will encourage walking to and from the site and will not only benefit future residents of the site but existing local residents. They will be particularly beneficial for walking trips to/from the local schools, creating safer routes.
- 5.2.3 Research has indicated that acceptable walking distances depend on several factors, including the quality of the development, the type of amenity offered, the surrounding area, and other local facilities. The Chartered Institution of Highways and Transportation (CIHT) document entitled *Providing for Journeys on Foot* (2000) suggests walking distances which are relevant to this application. These distances are shown in Table 5.1.

Table 5.1: Suggested Acceptable Walking Distances

Criteria	Town Centres (m)	Commuting/School/Sightseeing (m)	Elsewhere/Local Services (m)
Desirable	200	500	400
Acceptable	400	1000	800
Preferred Maximum	800	2000	1200

Source: CIHT Document *'Providing for Journeys on Foot'* (2000)

- 5.2.4 To illustrate the site's accessibility on foot, an indicative walking isochrone has been produced using the Geographic Information System (GIS) software Visography TRACC. Figure 2 in Appendix B, represents the site's walking catchment for local service and commuting/school trips. The walking

catchment is based on the distances of 1200m and 2000m 'Preferred Maximum' by the CIHT for local service and commuting/school trips respectively.

5.2.5 Shown within the figure is a selection of local schools, local amenities and places of employment. To provide an accurate representation of the future highway and footway network in the area, the site's proposed vehicular access, as well as the pedestrian and pedestrian/cycle only accesses have been manually added to the network used for the isochrone, as have local PRoWs. The local bus stops are also shown in Figure 2.

5.2.6 Table 5.2 below summarises the distance and the typical time it would take to walk from the centre of the site to the local amenities and centres of employment and education, identified in Figure 2 of Appendix B via the road and/or PRoW network. It provides a comparison against those distances recommended in the CIHT's Providing for Journeys on Foot. The time it takes is based on a walking speed of 4.8kph which corresponds with the TRACC default, which itself is based on advice in the DfT document *Transport Connectivity Travel Time Indicators: Guidance Notes*.

Table 5.2: Distance and Walking Time Taken from Site to Local Amenities

Employment/ Education/ Amenity	Distance from Site (m)	Preferred Max Walk Distance (m)	Walk Time (mm:ss)
Hayling Billy Public House	273	1200	03:28
Co-Operative Foodstore	364	1200	04:34
Restaurant	376	1200	04:44
Recreation Ground	476	1200	06:01
Mengham Infant School	480	2000	06:03
St Mary C of E Church	525	1200	06:36
Library	605	1200	07:36
Restaurant	623	1200	07:50
Hayling Christian Centre	681	1200	08:33
The Hayling College	708	2000	08:56
Mengham Junior School	711	2000	08:58
Health Centre	794	1200	09:58
Food Takeaway	905	1200	11:22
South Hayling District Centre	928	1200/2000	11:37
West Town District Centre	991	1200/2000	12:23
Tesco Express	996	1200	12:29
Hayling Island Community Centre	1023	1200	12:50
Sainsbury's Local	1052	1200	13:12
Tournerbury Golf Course	1053	1200/2000	13:13
Pharmacy	1059	1200	13:16
Lidl	1225	1200/2000	15:21
Tennis Club	1233	1200	15:31
CherryIsland Nursey	1316	2000	16:34
Amusement Park	1336	1200	16:48
Mill Rythe Schools	1350	2000	16:58
St Patrick's Church	1357	1200	17:02
Mill Rythe Coastal Village	1756	2000	21:58

Bus stops	Distance from Site (m)	Preferred Max Walk Distance (m)	Walk Time (mm:ss)
Tournerbury Lane, S-bound	330	400	04:08
Tournerbury Lane, N-bound	357	400	04:29

- 5.2.7 The results in Table 5.2 show that some amenities are within a 'desirable' walking distance (400m) from the site, these include a Hayling Billy Public House, Co-Operative Foodstore and a restaurant. Many amenities fall within an 'acceptable' walking distance (800m) from the site, including a recreation ground, library, restaurant, health centre, and two churches. Outside of this distance but within the preferred maximum (1200m) are the South Hayling and West Town district centres which includes numerous amenities including shops, restaurants, banks and a post office. Also within the preferred maximum walk distance are a Tesco Express, Sainsbury's Local, pharmacy, community centre and Tournerbury Golf Course. Just outside of the 1200m distance but within a 17-minute walk are the new Lidl store, tennis club, amusement park and St Patrick's Church.
- 5.2.8 Of the five schools/colleges listed, Mengham Infant School and nursery falls within a desirable walking distance (500m), while Mengham Junior School and The Hayling College fall within an acceptable walking distance (1000m). The two Mill Rythe schools fall within the 'preferred maximum' of 2000m. Employment opportunities may be available over time at the various amenities listed above, particularly the foodstores and local businesses in the district centres.
- 5.2.9 The local highway network provides good standard road-side and off-road footways that are naturally conducive to safe walking environments. This is particularly important to walking routes to and from schools. As shown in Table 5.2 all of the local schools are within a 17-minute walk and less than 1400m away from the centre of the site, with all but the Mill Rythe schools being less than a 9-minute and 750m walk away.
- 5.2.10 Table 5.2 also shows that the closest pair of bus stops that facilitate access to local bus services, which are on Church Road opposite and adjacent to Tournerbury Lane, are less than a 5-minute walk away.
- 5.2.11 Given the evidence presented in Figure 2 of Appendix B and Table 5.2, walking can be considered to be a realistic and viable method of travel indicating that the site's location is accessible via this sustainable mode.

5.3 Access by Cycle

- 5.3.1 It is widely recognised that cycling can offer an attractive alternative to short car trips, particularly those under 5km, but also as part of longer journeys by public transport.
- 5.3.2 The CIHT document *Cycle Friendly Infrastructure* (2004) states in paragraph 2.3 that:

'Three quarters of journeys by all modes of travel are less than five miles (8km) and half under two miles (3.2km) (DoT 1993, table 2a). These are distances that can be cycled comfortably by a reasonably fit person.'

- 5.3.3 Local Transport Note (LTN) 1/20 *Cycle Infrastructure Design* states similar, in that *'Two out of every three personal trips are less than five miles [8km] in length – an achievable distance to cycle for most people'*. The National Travel Survey states that in 2019, the average cycling trip took 23-minutes, equivalent to 6,133m (based on an average speed of 16kph), again this being an average with a proportion of respondents cycling a greater distance than this. LTN 1/20 also recognises that lightly trafficked, low speed streets can be conducive to cycling, stating, *'in quiet residential streets, most people will be comfortable cycling on the carriageway even though they will be passed by the occasional car moving at low speeds'*.
- 5.3.4 The generally flat topography of Hayling Island is naturally conducive to cycling. Shared cycleways are also present on Langstone Bridge which allows cyclists to avoid the carriageway which is not only safer for cyclists, but it means that they do not impact upon the capacity of the carriageway.
- 5.3.5 A cycling isochrone showing the site's catchment has also been produced using TRACC and is shown as Figure 3 in Appendix B. The figure illustrates 2000m, 5000m and 8000m catchment ranges which equate to 10-minute, 25-minute and 40-minute journey times respectively which are based on the somewhat conservative or leisurely cycle speed of 12kph. Anecdotally, commuting cyclists are generally thought to travel at speeds between 15-20kph so a greater catchment may be more realistic. The cycling distances and times to a selection of key local centres of education, employment and amenities, as well as neighbouring areas, are shown in Table 5.3, although the cycle times detailed in the table are based on a cycling speed of 16kph which corresponds with the TRACC default, which the software developer has based on DfT advice. It should be noted that some of the cycle distances differ from the walking distances as cycling along PRow's is typically not allowed unless designated as cycleways, bridleways or byways.

Table 5.3: Distance and Cycling Time Taken from Site to Local Centres of Employment, Education, Amenities and Neighbouring Settlements

Employment/ Education/ Amenity/ Settlement	Distance from Site (m)	Cycle Time (mm:ss)
Hayling Billy Public House	335	01:35
Co-Operative Foodstore	425	01:52
Restaurant	437	01:58
Recreation Ground	538	02:41
Mengham Infant School	541	02:24
Fire Station	583	02:42
St Mary C of E Church	587	02:45
Library	666	02:49
Restaurant	684	02:55
Hayling Christian Centre	742	03:05
The Hayling College	770	03:23
Mengham Junior School	772	03:25
Health Centre	855	03:35
Food Takeaway	967	04:00
South Hayling District Centre	990	03:52
Sainsbury's Local	1113	04:33
Tournerbury Golf Course	1115	04:31
Pharmacy	1120	04:31
Lidl	1303	05:02
CherryIsland Nursey	1378	05:50
Mill Rythe Schools	1411	05:49
Tesco Express	1427	05:43
Hayling Island Community Centre	1496	05:56
Tennis Club	1547	06:25
West Town District Centre	1555	05:59
St Patrick's Church	1628	06:34
Amusement Park	1746	07:09
Mill Rythe Coastal Village	1929	07:25
Beachlands/Hayling Golf Club	2901	11:04
Stoke	3258	12:22
Sinah Warren Leisure Club	3480	13:14
Hayling Ferry Terminal	4406	16:50
North Hayling	4532	17:10
Langstone	6182	23:22
Solent Retail Park	7457	28:07
Langstone Technology Park	7468	28:10
Havant Town Centre	7494	29:03
Tesco Extra	7681	29:17
Solent Trade Park	7782	29:20

5.3.6 Figure 3 in Appendix B and Table 5.3 above illustrate that there is a considerable range of local amenities, places of employment, places of education and settlements within the cycle catchment. All of the amenities and centres of employment and education mentioned in the Access on Foot

section are within the 2000m catchment. Most of Hayling Island is within the 5000m catchment including the residential areas of Stoke and North Hayling as well as the Hayling Ferry Terminal.

- 5.3.7 Between the 5000m and 8000m catchment ranges and a 30-minute cycle time, which may be feasible for some residents of the site particularly given the cycle-friendly topography of the island, are Solent Retail Park, Langstone Technology Park, Havant Town Centre, Tesco Extra and Solent Trade Park, all major places of employment.
- 5.3.8 Connection can be made to National Rail services at Havant station which is in the town centre and around a 30-minute cycle ride from the site. The station has 92 CCTV protected cycle storage spaces (source: <http://www.nationalrail.co.uk/stations/HAV/details.html>).
- 5.3.9 The catchment plan and Table 5.3 suggest that cycling will be a viable mode of travel for access to a range of local amenities and places of employment and education.
- 5.3.10 Clearly the site location and the surrounding infrastructure will mean that travel on foot and by cycle will be realistic and convenient modes of travel for some future residents of the site. The potential numbers of walking and cycling trips that the site will generate will be discussed in Section 6 of this report, but clearly the scale of the site is not such that it will disadvantage existing pedestrians and cyclists.
- 5.3.11 The proposed site access point and pedestrian connections will complement the existing pedestrian and cycle infrastructure and provide convenient routes that will follow natural desire lines for future residents of the site.

5.4 Access by Public Transport

- 5.4.1 The Chartered Institute of Highways and Transportation (CIHT) document, *Planning for Public Transport in Development* recommends that developments should ideally be located within 400m of a bus stop. As Table 5.2 shows, the stops on Church Road opposite and adjacent to Tournerbury Lane are within this distance. Both stops have flag poles with timetables, while the northbound bus stop comprises seating and shelter to protect waiting passengers from inclement weather. Other stops are located close to the site and provide access to the same services.
- 5.4.2 Table 5.4 below summarises the services that can be accessed via these stops. Timetable information for all the services mentioned above can be downloaded from <https://www.stagecoachbus.com/timetables> with the timetables referenced at the time of writing available on request.

Table 5.4: Summary of Bus Services in the Vicinity of the Site

Bus Service	Route	Weekday (Mon-Fri)	Weekend	
30	Havant – Hayling Island Circular (clockwise)	2 services per hour	1-2 services per hour	1 service per hour
31	Havant – Hayling Island Circular (anticlockwise)	1-2 services per hour	1-2 services per hour	1 service per hour

- 5.4.3 Both circular services link the main residential areas of Hayling Island to Havant town centre with a single service of the number 30 continuing to/from Oaklands School in Purbrook during school opening and closing times. The two services combined provide up to four services per hour in the weekday peak periods. The first number 30 service departs the Church Road bus stops at 06:02 with the last return 31 service departing Havant at 22:00. The two services should be convenient modes of travel for future residents of the site who work at Langstone Technology Park, Solent Retail Park or in Havant town centre. Connection can also be made to National Rail services at Havant station which is a short walk from Havant bus station.
- 5.4.4 The services are operated by Stagecoach with the current fleet including smart ticketing, low floor access, wheelchair access and Wi-Fi. There are however aspirations to upgrade the fleet as part of the emerging Local Plan.
- 5.4.5 An additional no.32 service operates from the Elm Grove stops opposite and adjacent to St Leonards Avenue around a 650m walk from the site. This service is operated by Hampshire Community Transport on a 'pre-book' basis, primarily for people with certain needs. It provides five services per day in each direction between South Hayling and Havant bus station.
- 5.4.6 To demonstrate the accessibility of bus services, an isochrone has been produced using TRACC and is shown as Figure 4 in Appendix B which highlights the destinations served by the regular daily bus services in Hayling Island. The calculation involved in producing the catchment plan includes only direct services to destinations within one hour's journey time. A greater range of destinations will be available if passengers make connections to other bus services. The isochrone was produced for the typical commuter hours of 0600-0900 using the National Public Transport Data Repository (NPTDR) dataset for the fourth quarter of 2021 for a typical Monday and includes services accessible only from the six closest bus stops to the site.
- 5.4.7 Figure 4 in Appendix B demonstrates that the bus services adjacent to the site provide convenient connections to a number of destinations. As illustrated, the majority of the main population centres on Hayling Island centre can be reached within a 25-minute journey time, while residents will be able to reach Langstone Technology Park and Havant town centre, including the train station and retail parks, within 30-minutes when travelling by bus. Bus travel may therefore be a viable mode of transport and provides a reasonable choice for a number of residents of the site.

- 5.4.8 As mentioned above, Havant train station may be within a reasonable cycling distance for some residents of the site with secure cycle storage available. The station provides regular services to London Waterloo and Victoria, Portsmouth, Southampton, Littlehampton and Brighton. The station is also accessible via the local bus services in conjunction with a short walk between it and the bus station.
- 5.4.9 Hayling Ferry Terminal is within a 23-minute cycle time from the site. The current (at the time of writing) winter timetable available on <http://www.haylingferry.net/> provides 14 Monday to Sunday services to Eastney at 40-110 minute intervals from 0805 until 1850. The last return service from Eastney departs at 1900. This service enables Hayling Island residents to commute to/from Portsmouth with the ferry licenced to carry up to 63 passengers. Many services link to the 25 bus service in Eastney which connects to Portsmouth city centre. The current single ticket fare for an adult is £2.75 with discount available for 10 and 20 trip tickets and for concessions. Contactless payment is available. Bicycles can be carried free of charge with the ferry also forming part of the 14.5 mile long Langstone Harbour Circular Walk and Cycle Ride.

5.5 Travel Plan

- 5.5.1 A residential Travel Plan (TP) has been produced as part of the package of documents supporting the planning application. The document forms the start of an ongoing process to encourage and monitor the use of sustainable modes of travel. As many aspects of the TP will be applicable to this TA, a summary of the key points is as follows:
- Outlines the key local and national objectives of the TP process;
 - Sets targets for the reduction of car or van driver trips by 10%;
 - Indicates potential measures that can be implemented to achieve these targets; and
 - Provides details of how the TP will be managed, monitored and reviewed.
- 5.5.2 It should however be noted that in order to provide a robust assessment, the traffic impact assessment detailed in Section 6 of this TA, does not take into account any trip reduction as part of the TP.

5.6 Summary

- 5.6.1 This section of the report has demonstrated that the site is in a sustainable location where a range of local amenities and centres of employment and education are within nationally recognised acceptable walking and cycling distances. The local bus services provide connections to some of the main employment areas and schools making bus travel a viable option for some of the residents of the site.
- 5.6.2 This section has also explained that a TP produced in support of the development will help to encourage the use of these sustainable modes. It is hoped that a combination of the site's sustainable

location and design and adoption of the TP will help to maximise the use of sustainable modes of transport.

- 5.6.3 It can be concluded that the proposed development accords to MfS and NPPF guidance including paragraph 105 with the site being in a location that is or can be made sustainable, the principles of Paragraph 110 in terms of promoting opportunities for sustainable travel and it is located and designed to give priority to pedestrian, cycle and public transport movements as per paragraph 112. The proposals also align with NPPF paragraphs 98 and 100 by providing opportunities for physical activity (walking and cycling) and enhancement of PRow.
- 5.6.4 It has also been demonstrated that the site location, design and pedestrian improvements conform to Main Priority 3 of the LTP, TfSH LTP policies A, G, H and M, HBC Core Strategy policies DM11 and DM12 as well as HBC emerging Local Plan policies IN2, IN3, E2 and the permeability requirement of H27.

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6 TRAFFIC IMPACT ASSESSMENT

6.1 Introduction

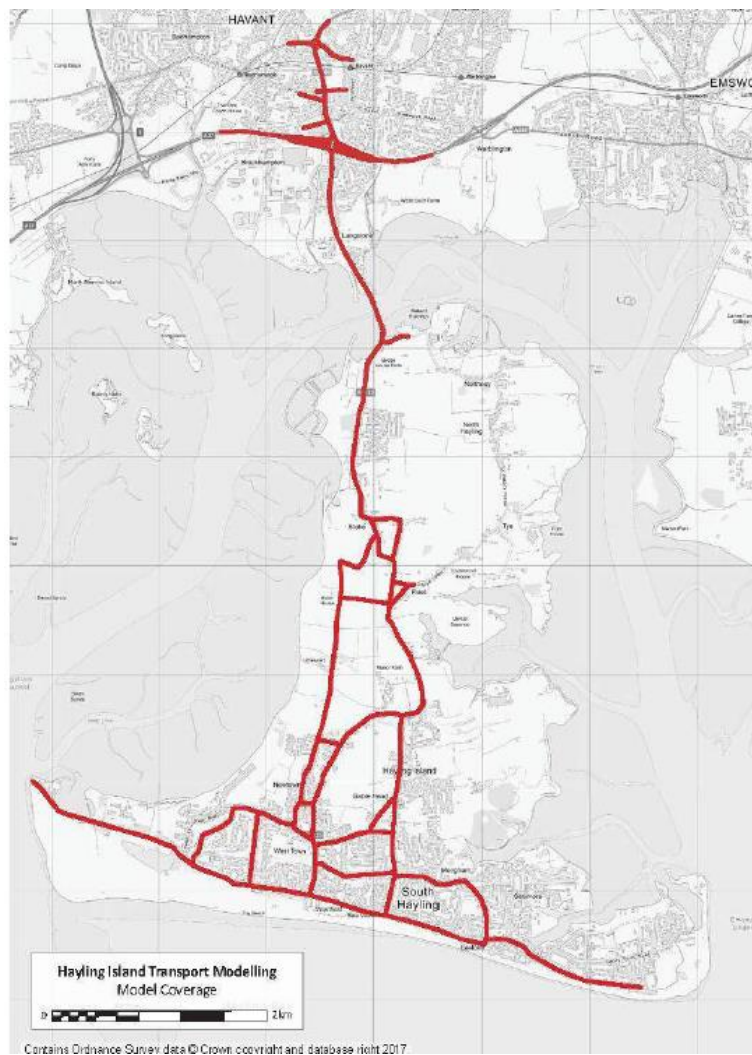
- 6.1.1 This section of the report details the methodology used to predict the demand associated with the development. It then provides a cumulative assessment of the impact of the development on the highway network.

6.2 Hayling Island Microsimulation Model

- 6.2.1 As mentioned earlier in this report, HBC commissioned Systra to construct a microsimulation model using Paramics software to help assess the impact of the emerging Local Plan allocations on the local highway network. The model would also be used to identify the need for mitigation and to test various mitigation proposals.
- 6.2.2 Microsimulation modelling is regarded in the development planning industry as being an advanced method of traffic modelling. Not only does it encompass elements of strategic modelling, such as route choice, but it also includes detailed link and junction operation. It was made clear to the Planning Inspectorate at the EiP stage that HCC was supportive of the modelling methodology, highlighting that the software's ability to model 'friction', which is explained in the HITA Addendum as being driver responses to physical road conditions which interfere with traffic flow, such as '*vehicle composition (cars / lorries / caravans etc), vehicle turning movements, weather and the complex behaviour of undisciplined road users, which leads to shockwaves or 'phantom traffic jams'*'. It is well-known that the local highway network can be particularly prone to such friction as acknowledged in the HITA. We are also supportive of the use of microsimulation to better understand traffic behaviour on the island and to derive suitable mitigation measures.
- 6.2.3 Further details of the microsimulation model are provided in the HITA and the HITA Addendum but a summary is provided as follows.

Base Model

- 6.2.4 A model of the existing highway network was constructed, with the model study area shown in Image 6.1, this being Figure 17 in the HITA.

Image 6.1: Microsimulation Model Study Area

- 6.2.5 The model therefore includes the main roads on the island as well as the A3023 junction with the A27 and the approach to Havant town centre.
- 6.2.6 The model was produced for the 12-hour period between 0700-1900 though the focus of the assessment in the HITA was based on the following three hours:
- AM Peak 0800-0900;
 - Inter Peak 1200-1300; and
 - PM Peak 1700-1800.
- 6.2.7 Baseline traffic data was obtained from a variety of sources during neutral periods in 2017, detailed in Appendix B of the HITA, and the model was calibrated and validated in line with DfT WebTAG guidance. As such, the model provides an acceptable replication of actual traffic conditions in 2017 and formed a suitable base to assess the cumulative impact of the emerging Local Plan.

Forecast Model

Committed Developments

- 6.2.8 The following developments were included in the model, this being a section Table 2 from Appendix C of the HITA:

Committed Developments sites:		
Development Name	Type	Dwellings or Area
117 Elm Grove	Retirement	33
11 Bound Lane	Residential	8
36, 38 & 40 & 1 West Lane Station Road	Residential	18
3 Elm Grove	Residential	6
31 Elm Grove	Residential	3
Newtown House Hotel, Manor Road	Residential	3
19 - 23 & 29 - 31 Creek Road	Residential	3
151-153 Southwood Road	Residential	3
	Total Residential	77
Lidl: Land South of Manor Road	Commercial	1,340m ²

- 6.2.9 The addition of traffic from the above to the 2017 Base model resulted in the 2036 Baseline. No background traffic growth was added as it was believed that the committed developments and emerging Local Plan allocations would account for the traffic growth.

Emerging Allocations

- 6.2.10 The following emerging Local Plan allocations were including in the model, this being a section of Table 3 from Appendix C of the HITA:

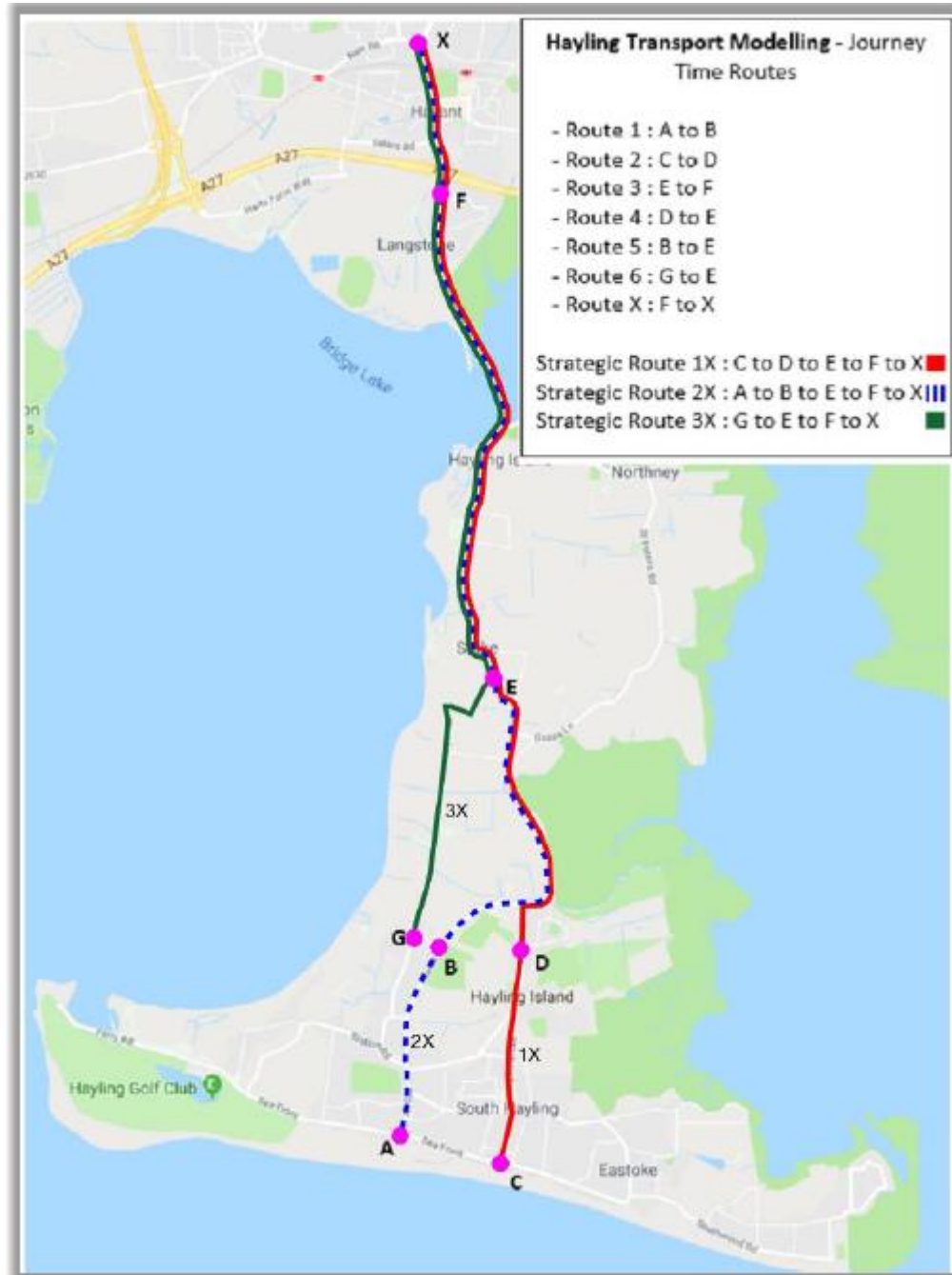
LDP sites:		
Development Name	Type	Dwellings or Area
Land to rear 108-110 Elm Grove	Residential	15
Land at Fathoms Reach	Residential	55
Station Road (North of Sinah Lane / West of Furniss Way)	Residential	195
Land West of Tournerbury Golf Course	Residential	40
Northney Marina	Residential	40
41 Station Road	Residential	13
Manor Nurseries	Residential	15
Beachlands, Hayling Island Seafront	Residential	125
Eastoke Corner	Residential	20
The Nab Car Park Southwood Road	Residential	30
Windfall	Residential	144
Rook Farm	Residential	395
	Total Residential	1087

- 6.2.11 Note that 395 dwellings from Rook Farm were included in the model rather than the emerging allocation figure of 390 dwellings or the proposals for 300 dwellings by the applicant. As such the assessment should be considered to be particularly robust regarding Rook Farm.
- 6.2.12 The addition of traffic from the emerging allocations to the 2036 Baseline resulted in the 2036 Do Minimum. No changes, such as mitigation measures, were added to the Do Minimum, these would be included in a series of Do Something scenarios.

Forecast Traffic Impact on Existing Network

- 6.2.13 The main form of assessment in the microsimulation modelling was a journey time comparison across 7 main routes and 3 strategic routes, both of which are shown in Image 6.2 taken from the Appendix A of the HITA Addendum.

Image 6.2: Journey Time Routes



- 6.2.14 The journey time results of the Do Minimum scenario compared to the Baseline are shown in Table A6 of Appendix A of the HITA Addendum which is included in Appendix H of this TA for ease of reference. The difference between the two scenarios in the AM and PM peak hours for the 7 routes is shown in Table 6.1. The inter peak results have not been presented as there was only a small

increase in journey times and the impact of residential developments is typically assessed on the AM and PM peak hours only.

Table 6.1: Baseline vs Do Minimum Journey Time Comparison

Description	Route #	Baseline	Do Minimum	Difference
AM Peak 0800 - 0900				
Beechlands Rbt - Brights Lane	Route 1 NB	03:07	05:07	02:00
Brights Lane - Beechlands Rbt	Route 1 SB	02:26	02:26	00:00
Sea Front - St Mary's Road	Route 2 NB	02:05	02:07	00:02
St Mary's Road - Sea Front	Route 2 SB	02:16	02:19	00:03
West Lane/A3023 - Tech Park	Route 3 NB	05:59	08:34	02:35
Tech Park - West Lane/A3023	Route 3 SB	04:38	05:09	00:31
Church Road - West Lane/A3023	Route 4 NB	03:48	04:16	00:28
West Lane - Church Road/A3023	Route 4 SB	03:34	03:42	00:08
Manor Road - West Lane/A3023	Route 5 NB	04:38	07:02	02:24
West Lane/A3023 - Manor Road	Route 5 SB	03:49	03:56	00:07
West Lane Northbound	Route 6 NB	04:38	04:01	-00:37
West Lane Southbound	Route 6 SB	03:49	03:01	-00:48
Tech Park - New Rd RBT	Route X NB	02:52	03:39	00:47
New Rd RBT - Tech Park	Route X SB	02:45	06:59	04:14
PM Peak 1700 - 1800				
Beechlands Rbt - Brights Lane	Route 1 NB	02:29	02:30	00:01
Brights Lane - Beechlands Rbt	Route 1 SB	02:33	02:35	00:02
Sea Front - St Mary's Road	Route 2 NB	02:01	02:04	00:03
St Mary's Road - Sea Front	Route 2 SB	02:14	02:13	-00:01
West Lane/A3023 - Tech Park	Route 3 NB	04:47	05:23	00:36
Tech Park - West Lane/A3023	Route 3 SB	05:15	07:59	02:44
Church Road - West Lane/A3023	Route 4 NB	03:37	03:47	00:10
West Lane - Church Road/A3023	Route 4 SB	03:38	03:40	00:02
Manor Road - West Lane/A3023	Route 5 NB	03:54	04:01	00:07
West Lane/A3023 - Manor Road	Route 5 SB	03:52	03:55	00:03
West Lane Northbound	Route 6 NB	02:35	02:36	00:01
West Lane Southbound	Route 6 SB	02:33	02:34	00:01
Tech Park - New Rd RBT	Route X NB	04:16	04:13	-00:03
New Rd RBT - Tech Park	Route X SB	02:50	03:00	00:10

- 6.2.15 The most notable journey time increases as a result of the emerging Local Plan development in the AM peak is on Routes 1, 3 and 5 northbound with increases of between 2:00 and 2:35 minutes, and 4:14 minutes on Route X southbound. An increase of up to 2:44 minutes on Route 5 southbound is forecast in the PM peak.

Mitigation Measures

- 6.2.16 A mitigation package has been devised on behalf of HBC by their consultants to accommodate the emerging Local Plan allocations which includes the development site. At the time of writing, we understand that the approved mitigation package, which has been devised following an iterative detailed testing and modelling exercise using the microsimulation model, includes the following

highway measures, which are a combination of friction reduction measures (known as package M1A) and a series of individual junction improvements:

- Northney Road unhooked left turn;
- Langstone Road southbound two-lane extension;
- Langstone roundabout and Langstone Road southbound: Provide a bus lane on the east side of the circulatory area;
- Park Road South: Northbound widening to increase capacity and resilience for traffic leaving the roundabout;
- Park Road South: Southbound widening to increase capacity and resilience for traffic entering the roundabout;
- Package of 'friction reduction' schemes aimed at improving flow at specific junctions and bus stops north of Mill Rythe;
- Realignment of the north end of West Lane to create a new priority junction: addresses safety and severance issues;
- Northney Road folded right turns;
- West Lane/Havant Road signalised junction;
- Mill Rythe (Manor Road / Church Road / Havant Road) junction signalisation; and
- Right turn bans with signalisation at Technology Park Access.

6.2.17 The highway mitigation package proposes a number of pedestrian crossing improvements particularly as part of the Mill Rythe (A3023/Church Road/Manor Road junction) improvement which includes signal controlled pedestrian crossing improvements where there are only uncontrolled facilities at the moment; at the West Lane upgrade which includes the same; an uncontrolled crossing with pedestrian island at the Havant Road/Northney Road junction; toucan crossing over Havant Road close to the Technology Park access; and speed limit reductions on the A3023.

6.2.18 In addition to the highway measures above, a package of non-highway improvements has been devised by HBC which include:

- Cycling: East-west routes at Saltmarsh Lane, Higworth Lane – Church Road and in Hayling Park;
- Variable Message Signs at key access points to network;
- Billy Trail phase 1: Creation of emergency access route
- Parking and loading restrictions: Parking, waiting and loading restrictions on A3023;
- Bus stop infrastructure: Upgrades of bus stops with more information, RTI if appropriate, new shelters etc.;
- Bus fare subsidy: Long-term reduction in commuter fare;
- Bus vehicles: Bring forward fleet replacement at current service frequency;

- Bus vehicle electrification: Fleet replacement using electric vehicles with uplift in service frequency;
- Ferry: Growing use and connectivity;
- Walking: Upgrade of footpaths for inclusive mobility;
- Cycling: Ongoing Island route development; and
- Billy Trail phase 2: Bound surface and route reinforcement.

6.2.19 Many of the pedestrian improvements also offer benefit to bus users as they have to walk between their origin/destination and the bus stops. However, in addition to this, several of the friction reduction measures in the highway mitigation package propose changes to bus stops and laybys to improve their locations and aid the manoeuvring of buses into and out of the main stream of traffic. The non-highway mitigation package also includes a number of bus improvement measures such as fare subsidies and fleet modernisation. Improvements to bus services can have knock-on benefits for rail use, encouraging multimodal travel. The package also includes funding for ferry improvements.

Forecast Traffic Impact with Mitigation Measures in Place

6.2.20 The microsimulation model was used by HBC to incrementally test the M1A mitigation package with additional junction improvements, and the results of each are presented in the HITA Addendum. We understand that the full package listed above represents HBC's preferred mitigation scheme, as such we have referred to it as the Do Something scenario for simplicity.

6.2.21 It should be noted that the Do Something scenario assessed using the microsimulation model only includes the highway measures and not the non-highway measures nor the sustainable transport measures included in the Site's Travel Plan and the Travel Plans that will be prepared to support the other development sites. It should therefore be noted that the results presented below are likely to be somewhat pessimistic, with the unmodelled non-highway sustainable transport measures likely to improve the results further.

6.2.22 The journey time results of the Do Something (DS) scenario compared to the Baseline (BI) are shown in Table A6 of Appendix A of the HITA Addendum, while the DS compared to the Do Minimum (DM) are shown in Table A2, both of which are included in Appendix H of this TA for ease of reference. The difference between the DS and the BI and the DS and the DM scenarios in the AM and PM peak hours for the 7 routes is shown in Table 6.2.

Table 6.2: Do Minimum vs Do Something Journey Time Comparison

Description	Route #	BI	DM	DS	Diff. DS vs DM	Diff. DS vs BI
AM Peak 0800 - 0900						
Beechlands Rbt - Brights Lane	Route 1 NB	03:07	05:07	04:14	-00:53	01:07
Brights Lane - Beechlands Rbt	Route 1 SB	02:26	02:26	02:29	00:03	00:03
Sea Front - St Mary's Road	Route 2 NB	02:05	02:07	02:07	00:00	00:02
St Mary's Road - Sea Front	Route 2 SB	02:16	02:19	02:20	00:01	00:04
West Lane/A3023 - Tech Park	Route 3 NB	05:59	08:34	07:18	-01:16	01:19
Tech Park - West Lane/A3023	Route 3 SB	04:38	05:09	04:26	-00:43	-00:12
Church Road - West Lane/A3023	Route 4 NB	03:48	04:16	04:37	00:21	00:49
West Lane - Church Road/A3023	Route 4 SB	03:34	03:42	03:35	-00:07	00:01
Manor Road - West Lane/A3023	Route 5 NB	04:38	07:02	06:32	-00:30	01:54
West Lane/A3023 - Manor Road	Route 5 SB	03:49	03:56	03:51	-00:05	00:02
West Lane Northbound	Route 6 NB	04:38	04:01	03:34	-00:27	-01:04
West Lane Southbound	Route 6 SB	03:49	03:01	02:54	-00:07	-00:55
Tech Park - New Rd RBT	Route X NB	02:52	03:39	03:33	-00:06	00:41
New Rd RBT - Tech Park	Route X SB	02:45	06:59	05:30	-01:29	02:45
PM Peak 1700 - 1800						
Beechlands Rbt - Brights Lane	Route 1 NB	02:29	02:30	02:31	00:01	00:02
Brights Lane - Beechlands Rbt	Route 1 SB	02:33	02:35	02:35	00:00	00:02
Sea Front - St Mary's Road	Route 2 NB	02:01	02:04	02:03	-00:01	00:02
St Mary's Road - Sea Front	Route 2 SB	02:14	02:13	02:14	00:01	00:00
West Lane/A3023 - Tech Park	Route 3 NB	04:47	05:23	05:16	-00:07	00:29
Tech Park - West Lane/A3023	Route 3 SB	05:15	07:59	07:59	00:00	02:44
Church Road - West Lane/A3023	Route 4 NB	03:37	03:47	03:59	00:12	00:22
West Lane - Church Road/A3023	Route 4 SB	03:38	03:40	03:42	00:02	00:04
Manor Road - West Lane/A3023	Route 5 NB	03:54	04:01	04:08	00:07	00:14
West Lane/A3023 - Manor Road	Route 5 SB	03:52	03:55	03:59	00:04	00:07
West Lane Northbound	Route 6 NB	02:35	02:36	03:09	00:33	00:34
West Lane Southbound	Route 6 SB	02:33	02:34	03:26	00:52	00:53
Tech Park - New Rd RBT	Route X NB	04:16	04:13	04:14	00:01	-00:02
New Rd RBT - Tech Park	Route X SB	02:50	03:00	02:56	-00:04	00:06

- 6.2.23 The DS largely offers a benefit to journey times compared to the DM, particularly in the AM peak with improvements of up to 1 minute 29 seconds southbound on Route X and 1 minute 16 seconds northbound on Route 3. The mitigation package therefore offers a clear betterment to the DM scenario.
- 6.2.24 The DS also offers some benefits compared to the BI, particularly on Route 6 northbound and southbound in the AM peak, though the journey times are generally higher which is perhaps to be expected given the level of growth and robust modelling method i.e. non-highways mitigation not modelled.
- 6.2.25 HBC appears to be content that the mitigation package is appropriate to accommodate emerging Local Plan growth to an extent that it will not result in an unacceptable impact on highway safety or a severe cumulative impact on the road network in line with NPPF paragraph 111.

6.3 Rook Farm Specific Modelling

- 6.3.1 The journey times presented above were from the main version of the microsimulation model which includes access to the site from Manor Road. A meeting between HBC, HCC, Gladman and Prime was held on 26th September 2019 where it was made clear to HBC that access from Manor Road was not feasible for a variety of reasons. The EiP Access Note included in Appendix E provides further details of this. A suggestion was made that if Gladman were to insist on access from St Mary's Road, the microsimulation model could be used to test this, with the access relocated accordingly.
- 6.3.2 Gladman commissioned HBC's modelling consultant to undertake an additional model run with access from St Mary's Road. The results were provided in a Testing Briefing Note with a covering email chain, both of which are included in Appendix 2 of the EiP Access Note in Appendix E of this TA. In summary, access from Manor Road showed no significant impacts at the Mill Rytte junction (with the proposed traffic signals upgrade in place), nor at anywhere else on the local highway network, with the difference in journey times in the peak hour assessments being no greater than +3 seconds and -5 seconds, which was described by the consultant as being 'negligible'. The above journey time results therefore remain representative of the St Mary's Road access version of the model.
- 6.3.3 We acknowledge that the Gladman runs of the model included a slightly different access arrangement from St Mary's Road, where traffic into and out of the site would have priority over other traffic movements on St Mary's Road. The current proposed access arrangement however is a simple priority controlled junction where movements to/from the site would give-way to other movements on St Mary's Road. The change in arrangement should have very little difference to the modelled results with any queues confined to the site access rather than St Mary's Road. We have undertaken a separate capacity assessment of the proposed site access which is detailed later in this section.
- 6.3.4 Following completion of the model runs with access from St Mary's Road, traffic flow data from that version of the model was provided to us by HBC's consultant. The data was obtained for the same study area links and junctions included in the assessment prepared to support the 2017 application with additional links added for EIA purposes.
- 6.3.5 As the traffic associated with the Rook Farm emerging allocation was included in the main assessment along with the other emerging Local Plan allocations, the consultant produced two 2036 traffic flow scenarios, one with Rook Farm removed (Without Development), the other including Rook Farm (With Development). From this we can consider the increase in traffic associated with the development in the following peak hours:
- AM Peak 0800-0900;
 - School Peak 1500-1600; and
 - PM Peak 1700-1800.

- 6.3.6 Whilst we accept that the true network peaks may fall 15 or 30-minutes from the start of the hour, we are limited by the availability of the data from the microsimulation model, however the robustness of the model should counter any shortfall.
- 6.3.7 The model was also ran based on the development quantum assumption of 395 dwellings at Rook Farm rather than the proposed up to the 300 which is 75.9% of the figure modelled. We will therefore consider the impact of both the 395 dwellings and 300 dwellings in the tables below.
- 6.3.8 The traffic flows associated with the emerging Local Plan developments included in the microsimulation model were forecast using TRICS, which is an industry standard trip generation database that includes trip rates derived from actual developments of different land uses. A summary of the trip rates and resultant trip generation used by HBC's consultant in the microsimulation model are summarised in Table 6.3.

Table 6.3: Trip Rates Applied to Rook Farm and Resultant Trip Generation

Time	Trip Rates			Trip Generation 395 Dwells			Trip Generation 300 Dwells		
	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
0800-0900	0.124	0.362	0.486	49	143	192	37	109	146
1500-1600	0.250	0.176	0.426	99	70	169	75	53	128
1700-1800	0.351	0.161	0.512	139	64	203	105	48	153

- 6.3.9 Based on the 395 dwellings modelled, the Rook Farm development would be expected to generate around 200 two-way trips in the AM and PM peak hours, and around 170 dwellings in the school peak. However the actual development of up to 300 dwellings is likely to generate up to 146 two-way trips in the AM peak, 153 in the PM peak and 128 in the school peak. The AM and PM peak values are equivalent to between 2-3 trips per minute at the site access before dissipating across the local highway network and just over 2 trips in the school peak.
- 6.3.10 A summary of the traffic flows and associated differences in absolute and percentage terms for the AM, school and PM peaks at the key junctions in the study area and Langstone Bridge, is provided in Tables 6.4 and 6.5. These were the same junctions assessed as part of the 2017 application. Table 6.4 is based on the 395 modelled, while Table 6.5 is based on 300 dwellings with the absolute difference reduced by 75.9%. Where there are small negative values, this is likely to be due to a combination of modelling aspects, such as small levels of reassignment (re-routing), traffic waiting at other junctions (particularly as a result of the traffic signals) and rounding. The data supplied by HBC's modelling consultant is available on request subject to HBC's permission for us to share it.

Table 6.4: Junction Impact – 395 Dwellings

Junction/ Link	AM Peak				School Peak				PM Peak			
	Without Dev	With Dev	Abs Diff	% Diff	Without Dev	With Dev	Abs Diff	% Diff	Without Dev	With Dev	Abs Diff	% Diff
1. A27/A3023 Langstone Road/Park Road South	4152	4133	-20	-0.5%	4002	4048	46	1.2%	4284	4345	61	1.4%
2. A3023 Langstone Rd/ Technology Park Access/ Southbrook Rd	2574	2573	-1	0.0%	2304	2355	52	2.2%	2663	2730	67	2.5%
3. A3023 Havant Road/ Church Road	1806	1866	61	3.4%	1648	1715	67	4.1%	1764	1852	87	5.0%
4a. A3023 Manor Road/ Station Road	722	755	32	4.5%	856	874	18	2.1%	742	762	20	2.7%
4b. A3023 Manor Road/ St Mary's Road	654	695	41	6.3%	792	821	30	3.8%	670	698	28	4.1%
5. Elm Grove/ Cherrywood Gardens	1125	1177	52	4.6%	1091	1152	61	5.6%	1177	1203	26	2.2%
6. St Mary's Road/Cherrywood Gardens	149	194	45	30.0%	170	200	31	18.0%	133	161	28	20.9%
7a. Church Road/Elm Grove/St Mary's Road	1186	1345	159	13.4%	1115	1240	125	11.2%	1209	1355	146	12.0%
7b. Church Road/Tournerbury Lane	1227	1335	109	8.8%	1138	1206	68	5.9%	1250	1348	98	7.9%
8. Langstone Bridge	2160	2171	12	0.5%	1858	1919	62	3.3%	2097	2170	72	3.5%

Table 6.5: Junction Impact – 300 Dwellings

Junction/ Link	AM Peak		School Peak		PM Peak	
	Abs Diff	% Diff	Abs Diff	% Diff	Abs Diff	% Diff
1. A27/A3023 Langstone Road/Park Road South	-15	-0.4%	35	0.9%	47	1.1%
2. A3023 Langstone Rd/ Technology Park Access/ Southbrook Rd	-1	0.0%	39	1.7%	51	1.9%
3. A3023 Havant Road/ Church Road	46	2.5%	51	3.1%	66	3.8%
4a. A3023 Manor Road/ Station Road	25	3.4%	14	1.6%	15	2.0%
4b. A3023 Manor Road/ St Mary's Road	31	4.8%	23	2.9%	21	3.1%
5. Elm Grove/ Cherrywood Gardens	40	3.5%	46	4.2%	20	1.7%
6. St Mary's Road/Cherrywood Gardens	34	22.8%	23	13.6%	21	15.9%
7a. Church Road/Elm Grove/St Mary's Road	121	10.2%	95	8.5%	111	9.1%
7b. Church Road/Tournerbury Lane	82	6.7%	51	4.5%	75	6.0%
8. Langstone Bridge	9	0.4%	47	2.5%	55	2.6%

- 6.3.11 The above tables show that the greatest impact is likely to occur at the Church Road/Elm Grove/ St Mary's Road junction which is logical given its proximity to the site. The proposed 300 dwellings are likely to add 121, 95 and 111 two-way trips to the junction in the AM, school and PM peaks respectively, with the equivalent percentage impacts being 10.2%, 8.5% and 9.1%. The absolute numbers of trips is equivalent to around 2 trips per minute in the AM and PM peaks and just over 3 trips every 2 minutes in the school peak.
- 6.3.12 A greater percentage impact is likely to be experienced at the St Mary's Road/Cherrywood Gardens junction, though this is as a result of the Without Development flows being low at 149 to 170 trips. The absolute impact is equivalent to just 1 trip every two minutes in the AM peak and closer to 1 trip every 2 minutes in the school and PM peaks.
- 6.3.13 The impact of the development reduces with distance from the site, and other than the Church Road/Tournerbury Lane half of the Church Road/Elm Grove/St Mary's Road junction, the absolute impact is generally 1 trip per minute or less and the percentage impact is less than 5%. The impact on Langstone Bridge is forecast to be no greater than 2.6% and less than 1 trip per minute.
- 6.3.14 Given the positive results of the Do Something scenario mentioned earlier, which includes a package of highway mitigation measures, and with consideration given to the non-highway package, both of which the applicant will be expected to contribute to on a commensurate basis, there is nothing to suggest that the development will result in a severe cumulative impact with the committed developments and other emerging Local Plan allocations.

6.4 Junction Capacity Assessment

- 6.4.1 Given that a complex microsimulation model has been produced on behalf of HBC, to a level of performance which HCC is content with, there should be no need to undertake standalone junction capacity assessments using more traditional software, particularly as microsimulation software is known to be able to produce more realistic results. Furthermore, several of the junctions have had mitigation measures designed and tested using the model. However, given that the proposed access arrangement slightly differs to the one modelled in the microsimulation model, a Junctions 9 model has been produced for it. Also, as the traffic impact is greatest at the Church Road/Elm Grove/St Mary's Road/Tournerbury Lane junction (junctions 7a and 7b listed in the tables above) which is the closest junction to the site, a Junctions 9 model has also been used to provide further assessment.
- 6.4.2 When interpreting the results, the capacity of each arm or movement is calculated as the Ratio of Flow to Capacity (RFC) with 0.85 representing the practical capacity threshold of the arm and 1.00 representing the theoretical capacity threshold. It is above the practical capacity threshold where capacity problems begin to occur while exceeding the theoretical capacity means that arms are over capacity.

- 6.4.3 Modelled queues are shown in passenger car units (PCUs), this being equivalent to a distance of 5.75m which is the length of road space (car length plus gap length) that a typical car will occupy when queueing. In order to convert the traffic flows into PCUs, which is the requisite input flow unit required in the modelling software, a factor of 2.0 has been applied to the heavy vehicle user class, while cars effectively have a factor of 1.0.
- 6.4.4 Junction geometry has been coded into the models based on a mixture of OS mapping, topographical survey data, aerial photography and on-site observations. Geometry and visibility values have generally been rounded down to increase the level of robustness.
- 6.4.5 Traffic flows have been input based on the 'ONE HOUR' (ODTAB) option which synthesises a 'peak within a peak' at the middle of the time period modelled and is generally seen as being the worst-case form of assessment in terms of impact. The traffic flows input are based on 395 dwellings at Rook Farm for robustness rather than the up to 300 proposed.
- 6.4.6 All model report outputs are included in Appendix I. The results of the capacity assessment for each of the junctions are described below.

Proposed Site Access

- 6.4.7 The proposed site access off St Mary's Road has been assessed with the results summarised in Table 6.6.

Table 6.6: Capacity Assessment Results – Proposed Site Access/St Mary's Road

Arm	AM		PM		School PM	
	RFC	Q (PCU)	RFC	Q (PCU)	RFC	Q (PCU)
2026 With Development						
Proposed Site Access	0.26	0.4	0.12	0.1	0.13	0.2
St Mary's Road	0.06	0.1	0.18	0.2	0.13	0.2

- 6.4.8 The results show that the proposed site access will operate with a considerable level of spare capacity and will therefore be suitable to serve the proposed development.

Church Road/Elm Grove/St Mary's Road/Tournerbury Lane

- 6.4.9 The results for the staggered crossroads are shown in Table 6.7. Note that the geometry is based on the proposals shown in Drawing P21033-002B in Appendix D for all scenarios for simplicity.

Table 6.7: Capacity Assessment Results – Church Rd/Elm Grove/St Mary's Rd/Tournerbury Ln

Arm	AM		PM		School PM	
	RFC	Q (PCU)	RFC	Q (PCU)	RFC	Q (PCU)
2017 Base						
St Mary's Road	0.13	0.1	0.11	0.1	0.11	0.1
Elm Grove	0.04	0.0	0.06	0.1	0.05	0.0
Tournerbury Ln Ahead & Left	0.04	0.0	0.06	0.1	0.06	0.1
Tournerbury Ln Right	0.09	0.1	0.08	0.1	0.06	0.1
Church Road	0.09	0.1	0.10	0.1	0.09	0.1
2036 Without Development						
St Mary's Road	0.13	0.1	0.09	0.1	0.11	0.1
Elm Grove	0.04	0.0	0.07	0.1	0.06	0.1
Tournerbury Ln Ahead & Left	0.06	0.1	0.08	0.1	0.07	0.1
Tournerbury Ln Right	0.13	0.2	0.09	0.1	0.08	0.1
Church Road	0.07	0.1	0.07	0.1	0.07	0.1
2036 With Development						
St Mary's Road	0.46	0.8	0.24	0.3	0.25	0.3
Elm Grove	0.05	0.1	0.08	0.1	0.06	0.1
Tournerbury Ln Ahead & Left	0.06	0.1	0.08	0.1	0.08	0.1
Tournerbury Ln Right	0.15	0.2	0.10	0.1	0.08	0.1
Church Road	0.12	0.1	0.23	0.3	0.16	0.2

- 6.4.10 The results show that the junction will continue to operate with a good level of spare capacity with the development in place in all scenarios.

6.5 Person Trip Generation

- 6.5.1 The HITA includes forecast vehicle trips however detail on person trips/multimodal trip generation is limited. For completeness, and given the importance to travel planning, we can forecast indicative person trips by applying a factor between the TRICS based vehicular trip generation and the 2011 census Method of Travel to Work (MTW) car/van driver figure.
- 6.5.2 The MSOA Havant 016 (E02004777) has been selected as it includes the site and the surrounding residential area. The trip ends for each method of travel have been downloaded from Nomis (<http://www.nomisweb.co.uk>).
- 6.5.3 Several of the transport mode categories have been manually removed from the data for reasons including the observed census trips being very low (e.g. taxi), it being unrealistic that they will be used by residents of the site (i.e. underground, metro, light rail) or they will not generate a trip (i.e. not in employment and working from home).
- 6.5.4 As the vehicular trips were calculated using TRICS, factors have been derived between them and the census car driver trips (1,461). The factors equate to 10.0% for the AM peak and 10.5% for the PM peak. They have then been applied to the other census modes to forecast the likely number of multimodal trips generated by the site. A summary of these multimodal trips is shown in Table 6.8.

Table 6.8: Forecast Multimodal Person Trips

Method of Travel to Work	Census Trips	Mode %	AM Trips	PM Trips	AM Mode %	PM Mode %
Train	58	3%	6	6	3.1%	3.0%
Bus, minibus or coach	74	4%	7	8	3.6%	4.0%
Motorcycle, scooter or moped	28	1%	3	3	1.6%	1.5%
Driving a car or van	1,461	76%	146	153	76.0%	75.7%
Passenger in a car or van	77	4%	8	8	4.2%	4.0%
Bicycle	63	3%	6	7	3.1%	3.5%
On foot	158	8%	16	17	8.3%	8.4%
All Modes	1,919	100%	192	202	100.0%	100.0%
<i>Factor</i>			<i>10.0%</i>	<i>10.5%</i>	-	-

6.5.5 Based on the results in Table 6.8, the site is forecast to generate 192 and 202 total people trips in the AM and PM peaks respectively. Following driving a car being the most frequent method of travel likely to be used by residents of the site, equating to 76%, walking trips will account for 16 and 17 trips in the AM and PM peaks respectively equating to 8% of trips. Car or van passengers will account for 8 trips in each peak equating to 4% of trips. Train passengers and cyclists will account for between 6 and 7 trips each (3%) while the remainder will consist of users of motorised two-wheelers. As the nearest train station, Havant, is around 7.5km away, it is likely that the initial part of the outbound trip and final part of the return journey will be made as a car driver, car passenger, bus passenger or cyclist. It is not expected that the number of non-car trips will be of a level that would cause capacity issues associated with the respective method of transportation.

6.6 Summary

6.6.1 The microsimulation modelling undertaken by HBC's modelling consultant has demonstrated that the impact of the emerging Local Plan led growth on the local highway network will not be 'severe', subject to the implementation of their devised highway mitigation package, in line with NPPF paragraph 111. The applicant accepts that they will be expected to contribute to the highway and non-highway mitigation packages at a level commensurate to the scale of the impact of the site.

6.6.2 It has also been demonstrated that the proposed access will operate with sufficient capacity to accommodate the development proposals.

6.6.3 Aside from being in line with NPPF, the proposals are in accordance with LTP Main Priorities 1 and 3 including TfSH policies A, and C, HBC Core Strategy policy DM12 and HBC emerging Local Plan policies IN2 and IN3.

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7 HIGHWAY SAFETY

7.1 Accident Analysis

- 7.1.1 Personal injury accident data has been purchased from Hampshire Constabulary to cover the five-year period of 1st May 2016 to 30th April 2021 i.e. 60 months. The accident study area is shown on the plan provided by Hampshire Constabulary in Appendix J, with the collision reports available on request. The study area includes the A3023 from its junction with the A27 and Park Road South in Havant to the north, to its junction with Sea Front (Beachlands roundabout) to the south. Also included is Church Road from its junction with the A3023 and Sea Front to the north and south respectively, as well as St Mary's Road and Cherrywood Gardens.
- 7.1.2 In total there were 114 accidents within the study area, comprising of 25 serious and 89 slight injury accidents. No fatal accidents occurred. The annual breakdown of numbers and type of classification is shown in Table 7.1 below.

Table 7.1: Summary of Reported Personal Injury Accidents

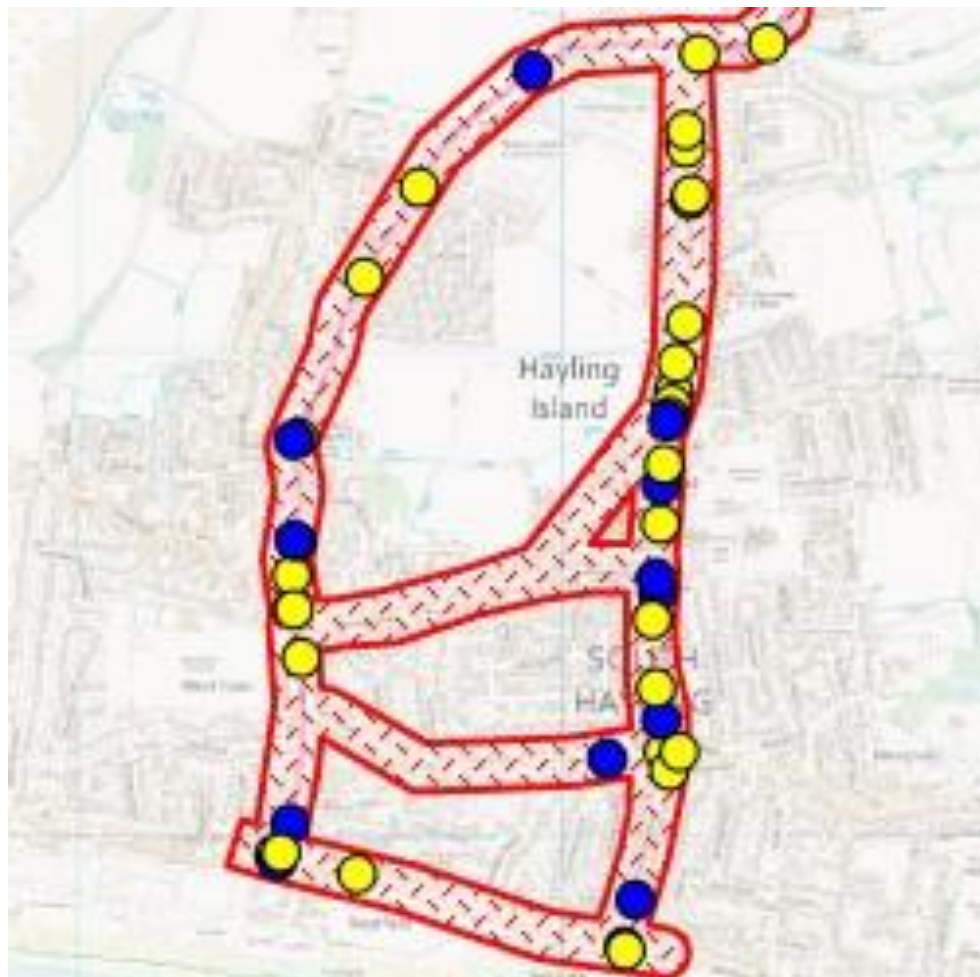
Severity	Year						Total	Severity %
	2016 (May-Dec)	2017	2018	2019	2020	2021 (Jan-Apr)		
Slight	16	23	16	15	17	2	89	78%
Serious	4	3	2	7	8	1	25	22%
Fatal	0	0	0	0	0	0	0	0%
Total	20	26	18	22	25	3	114	100%

- 7.1.3 The results show a similar frequency of accidents in each year with a slight peak of accidents in 2017 with 23 slight and 3 serious. The severity of accidents does however appear to have increased in 2019 and 2020. The number of accidents is not unusually high given that it covers a total road length of circa 12.5km.
- 7.1.4 A summary of the reported casualties is provided in Table 7.2.

Table 7.2: Summary of Reported Casualties

Casualties	Fatal	Serious	Slight	Total	% of all Casualties	% Serious
Vehicle Driver	0	5	54	59	42.8%	8.5%
Passenger	0	2	22	24	17.4%	8.3%
Motorcycle Rider	0	11	17	28	20.3%	39.3%
Cyclist	0	4	13	17	12.3%	23.5%
Pedestrian	0	4	6	10	7.2%	40.0%
Total	0	26	112	138	100%	100%

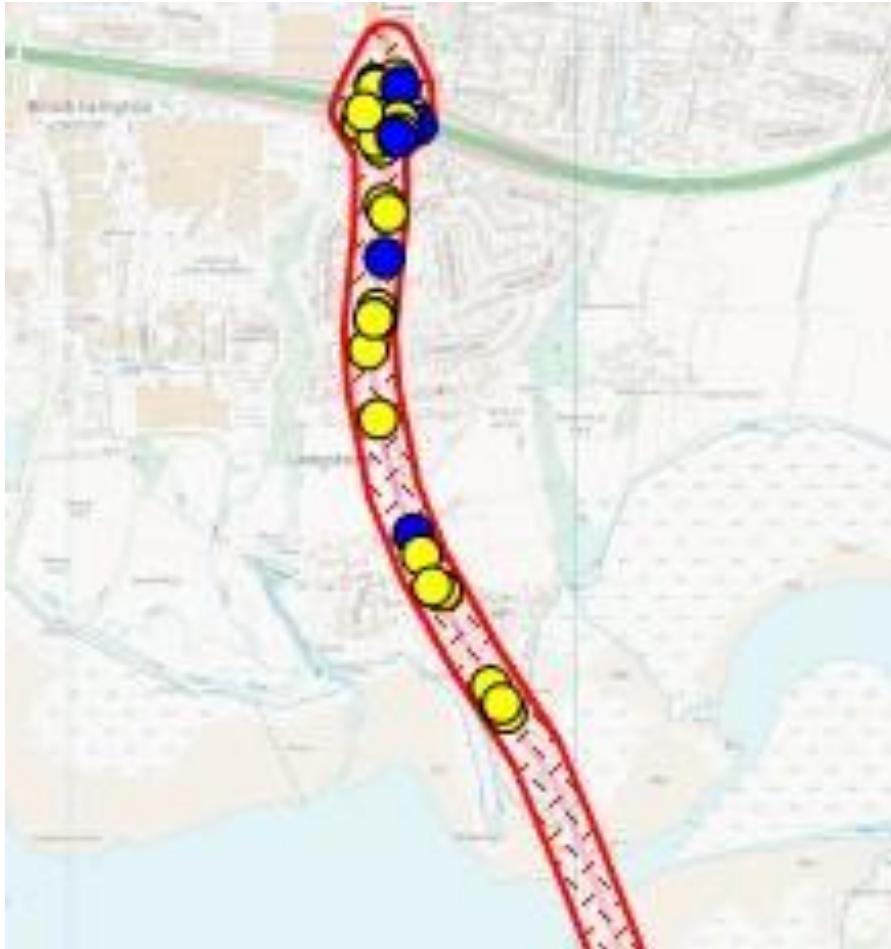
- 7.1.5 The 114 accidents resulted in 134 casualties, with 60.1% being vehicle drivers or passengers, 20.3% being motorcycle riders, 13.2% cyclists and 7.2% pedestrians. The highest proportion of serious injuries occurred to pedestrians and motorcyclists, with 40% and 39.3% of injuries to these road users respectively resulting in serious injury.
- 7.1.6 The information in the collision reports has been summarised in Table J1 in Appendix J.
- 7.1.7 A number of key statistics from the accident reports are as follows:
- 52.6% of accidents occurred at or within 20m of a junction;
 - Vehicle types: 87.7% of accidents involved cars, 7.9% involved vans, 2.6% involved lorries or other goods vehicles and 3.5% involved buses;
 - Vulnerable road users: 25.4% of accidents involved a motorcyclist, 14.9% involved cyclists and 8.8% involved pedestrians;
 - 20.2% of accidents occurred on a wet carriageway surface;
 - 7.9% occurring when it was raining;
 - 47.4% involved elderly or inexperienced drivers;
 - 3.5% involved alcohol or drugs;
 - Main causation factors: Driver error was listed at the first factor in 86.4% of accidents, illness or disability in 4.9%, alcohol or drugs in 4.9%, road condition (surface deposit/slippery surface) in 1.9% and isolated incidents of sun dazzle, animal on road and cyclist error.
- 7.1.8 The accidents have occurred at various locations across the study area, however the following paragraphs group the accidents into geographic locations to aid in the identification of any common causation factors across the highway network. The causation factors mentioned are those presented in the police reports. The images are extract from the main overview plan provided by Hampshire Constabulary, with the blue dots representing a serious accident and the yellow dots representing a slight accident.

South Island Area**Image 7.1 – South Island Accident Locations and Severity**

- 7.1.9 From review of Image 7.1, no accidents occurred on St Mary's Road or on Cherrywood Gardens. There are some small clusters of accidents at the main junctions along Church Road/Elm Grove and at the Sea Front/Beach Road mini-roundabout.
- 7.1.10 From the descriptions provided in the police reports, it appears that four accidents, one serious and three slight, occurred in the vicinity of the St Mary's Road/Church Road/Tournerbury Road/Elm Grove junction. The serious accident occurred in 2020 when a motorcyclist collided with a car making the left-right staggered turn out of Tournerbury Lane causing serious injury to the motorcyclist with failure to look properly given as the main causation factor. The same causation factor is listed for the three slight accidents.

North Island Area**Image 7.2: North Island Accident Locations and Severity**

- 7.1.11 From review of Image 7.2, the accidents on the A3023 on the northern half of the island were generally dispersed, albeit with some small clusters in the section around Daw Lane, Copse Lane and West Lane.

Mainland Study Area**Image 7.3: Mainland Accident Locations and Severity**

- 7.1.12 Image 7.3 shows a notable cluster of accidents around the A3023/A27 junction which is not untypical of a well-trafficked grade-separated junction. No accidents occurred on the bridge though there were small clusters in the vicinity of the junctions with Mill Lane, Langstone Avenue, The Mallards, Southbrook Road and the Technology Park access.

HITA

- 7.1.13 The HITA undertook a review of accidents on the A3023 in the local area between 1st August 2013 to 31st July 2018. This showed 76 reported accidents, no fatalities, 11 serious and 65 slight. Over half of the accidents occurred at junctions. Four accidents involved pedestrians and two of these resulted in serious injury. 11 accidents involved cyclists, one of which resulted in serious injury.

7.2 Mitigation Package

- 7.2.1 As mentioned in Section 6, a mitigation package has been devised by HBC to help facilitate the emerging Local Plan development. This package will not only mitigate traffic impact, but also help to

enhance highway safety. Some of the safety benefits of the package were summarised in the HITA as follows:

- *'The introduction of safe pedestrian and cycle crossings through the signalisation of certain junctions;*
- *Reducing the existing friction that currently occurs along the A3023 and introducing an element of control to the local road network, which can aid journey predictability and reliability;*
- *Safe and controlled side road access for vehicles.'*

7.2.2 In addition to the above, Appendix E of the HITA Addendum lists the following measures which offer a safety benefit:

- Various bus stop laybys;
- Various right turn lanes;
- Extended two lanes on A3023 southwards at Woodbury Avenue/Technology Park access;
- Signal control of the Woodbury Avenue/Technology Park access;
- Heavily restricted parking and loading along the length of the A3023;
- Walking and cycling improvements along A3023; and
- Consistent 30mph speed limit on A3023 south of A27.

7.3 Safety Improvements Associated with Access Design

7.3.1 As detailed in Section 4, the proposed access arrangement has been designed in accordance with national design guidance in the form of MfS and has been subject to an independent Stage 1 RSA, with the issues applicable to this stage of the design process addressed.

7.3.2 The proposed access will provide new footways which will tie into the existing infrastructure on St Mary's Road, with a new section of footway to be provided on the southern side of the road along with a number of uncontrolled crossings or crossing improvements, including at the St Mary's Road/Church Road/Elm Grove/Tournerbury Lane junction with the pedestrian island also helping to control traffic speeds.

7.3.3 Whilst there have not been any accidents reported on St Mary's Road in the last five-years, in recognition of the site's proximity to Mengham Infant School and CherryHarbour Nursery, the applicant is willing to fund the TRO required to introduce a 20mph zone, with such zones commonplace outside schools across the country. As well as the associated signage, the applicant is willing to fund a traffic calming scheme to help enforce this speed limit. Such a scheme will be discussed with HCC and HBC and may consist of vertical deflection such as raised table crossings and/or speed cushions, horizontal deflection such as build-outs and surface treatment.

7.4 Summary

- 7.4.1 The above shows there have been 114 injury accidents in the circa 12.5km long study area in the last five-years resulting in 138 casualties. The majority of these accidents involved an injury to a driver or passenger of a vehicle. No fatal accidents occurred.
- 7.4.2 It should be noted that the overwhelming majority of accidents were a result of driver/rider error, with the layout of the local highway network not considered to be a causation factor. In addition, no accidents were recorded along St Mary's Road where the proposed site access will be located.
- 7.4.3 The proposed pedestrian improvements at the St Mary's Road/Church Road/Elm Grove/ Tournerbury Lane junction should improve safety at the junction, particularly for pedestrians by allowing all arms of the junction to be crossed in two movements. The narrowing effect of the refuge islands should also encourage slower speeds through the junction. A number of other pedestrian improvements local to the site are proposed, along with funding to implement a 20mph zone on St Mary's Road subject to further discussions with HCC and HBC.
- 7.4.4 We are in agreement that the mitigation package devised by HBC and its consultants will help to mitigate the safety impacts of the emerging Local Plan and offer a wider benefit to all road users. The applicant is willing to contribute to the mitigation package at a level commensurate to the scale of the site.
- 7.4.5 Furthermore, the proposed safety improvements will conform with LTP Main Priority 2 including TfSH policy G and emerging HBC Local Plan policies IN2 and IN3.

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8 SUMMARY AND CONCLUSION

8.1 Summary

- 8.1.1 This TA accompanies the proposal to develop land at Rook Farm off St Mary's Road, Hayling Island for up to 300 dwellings. The application site is an emerging Local Plan allocation with the policy reference H27.
- 8.1.2 A single vehicular access is to be provided at the St Mary's Road frontage. This access has been designed based on national design guidance and best practice both in terms of geometry and visibility with the latter based on a local speed survey. Detailed swept path analysis has been undertaken to aid the design and demonstrate its suitability, addressing reasons for refusal associated with a planning application in 2017. Whilst HBC's preference for access from Lulworth Close, superseding a preference for access from Manor Road, is noted, it has been demonstrated to HBC and the Planning Inspectorate that such an option is not viable for a number of reasons; St Mary's Road remains the only viable access option. It has been clearly demonstrated that access from St Mary's Road is safe and provides sufficient capacity to serve the development.
- 8.1.3 Two pedestrian accesses will be provided onto the local PRow network and emergency only access can be provided via Rook Farm Way if deemed necessary by HBC, HCC or the local fire authority.
- 8.1.4 The proposed access arrangement includes the provision of a new section of footway to the south-west of the site access along with uncontrolled crossings adjacent to the public car park access on St Mary's Road. Gladman is willing to fund a white lined footpath/safety zone through the car park to provide a convenient connection to the public footpath that leads to Elm Grove. The proposed access arrangement and associated improvements are shown in Drawing P21033-001D in Appendix D.
- 8.1.5 Gladman is also willing to fund the provision of uncontrolled crossings over the Elm Grove, Church Road and St Mary's Road arms of the associated junction which will include pedestrian refuge islands which will allow pedestrians to cross in two movements and should encourage slower vehicle speeds through the junction. These improvements are shown in Drawing P21033-002B in Appendix D.
- 8.1.6 In addition to the above, the applicant is also willing to fund the implementation of a 20mph zone on St Mary's Road with associated traffic calming features, subject to further discussions with HBC and HCC.
- 8.1.7 A Residential Travel Plan has been prepared alongside this TA and forms one of the documents which support this planning application.
- 8.1.8 The location of the site has been shown to be sustainable when considering access to and from the site by modes of travel other than the private car, particularly walking, cycling and public transport. It has been demonstrated that the local schools, places of employment and local amenities are within

nationally acceptable walking and cycling distances. The bus stops in the vicinity of the site provide connections to the rest of the island, Langstone Technology Park, Solent retail and trade parks and Havant, including Havant train station, making bus travel a viable option for some of the residents of the site. The access strategy maximises access via sustainable modes and the proposal includes measures to encourage travel by non-car modes, which is described in further detail in the Residential Travel Plan.

- 8.1.9 The impact of the proposed development has been assessed cumulatively with committed developments and other emerging Local Plan allocations. Full details of the cumulative assessment are provided in the HITA and HITA Addendum prepared on behalf of HBC.
- 8.1.10 A key tool used to assess the cumulative impact is the Hayling Island microsimulation model which has also been used by HBC's consultant to derive a highway mitigation package which helps the local highway network to accommodate the emerging Local Plan developments without a severe impact. The package includes a number of friction reduction measures and junction upgrades. It should be noted that the model assessed a development of 395 dwellings at Rook Farm rather than the 300 dwellings proposed by the applicant, which follows more detailed consideration of the on-site constraints and masterplanning.
- 8.1.11 In addition to the above, HBC has devised a non-highway mitigation package which includes a number of predominantly sustainable travel centric incentives which were not modelled in the microsimulation model, make the modelling exercise even more robust. The applicant is willing to contribute to both mitigation packages at a level commensurate to the scale of the impact of the site.
- 8.1.12 A minor variation of the model has been used to consider access from St Mary's Road, which resulted in very little change to the network performance compared to the main assessment model which has access coded from Manor Road. Traffic flows from this version of the model have been provided by HBC's consultant which includes Without Development and With Development scenarios so we have been able to consider the impact of the development on top of the other emerging Local Plan allocations. Aside from the detailed and advance microsimulation modelling, this TA has presented standalone junction capacity assessment at the proposed site access and at the nearby Church Road/Elm Grove/St Mary's Road/Tournerbury Lane junction. This has shown that both the access and the adjacent junction will operate with spare capacity with the development in place.
- 8.1.13 A review of personal injury accidents that have occurred on the local highway network has been undertaken for the most recent 5-year period that the data was available for. 114 accidents have occurred during this period, 25 of which resulted in serious injury and the others in slight injury. No fatal accidents occurred. The accidents are not particularly concentrated with this and the causation factors listed suggesting that the vast majority of these accidents did not occur as a result of highway layout or design, but as a result of driver error. The highway mitigation package also offers a series of highway safety improvements which should prove effective in increasing safety for all road users.

8.2 Conclusion

- 8.2.1 It is concluded that the proposed development would not result in an '*unacceptable impact on highway safety*' nor have a '*severe*' cumulative impact on the operation of the highway network in terms of capacity, in line with NPPF paragraph 111. This follows a highways and a non-highways mitigation package which the applicant will be expected to contribute to.
- 8.2.2 As the proposal complies with local and national planning policy and guidance with respect to sustainable accessibility, safety and impact on the highway network, there are no highways or transportation related reasons why planning permission should not be granted. Should the local highway authority have any concerns, we are happy to consult further with them.

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APPENDIX A

SCOPING CORRESPONDENCE WITH HCC

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David Stoddart

From: Drury, Holly <holly.drury@hants.gov.uk>
Sent: 19 June 2019 16:19
To: David Stoddart
Cc: Hirst, Chris; Morton, Stuart
Subject: St Mary's Road Pre-Application Advice

Dear David

Thank you for the pre-app consultation of the proposed application for St Mary's Road (Rook Farm) in Hayling Island. I understand the application will be for 390 dwellings as per the emerging Local Plan.

Emerging Local Plan Policy

The emerging local plan policy clearly states the following regarding the development and transport matters:

- *Secures access to the site from the A3023 (Manor Road) with only an emergency access (including pedestrian and cycle permeability) from St Mary's Road*

This emerging policy is key when considering your access arrangements to the site and further evidence is required to support any alternative access arrangement and why the local plan policy requirement cannot be met.

HBC Paramics Model

The base model and forecast model used by Havant for the purpose of the Local Plan has been agreed. The outputs from the model however and the conclusions within the pre-submission TA have raised concerns with the Highway Authority and HBC are currently undergoing further work to address these.

Therefore whilst there may be benefit in utilising the model to obtain current and forecast flow data and to understand the cumulative impact of proposed local plan development it is unclear how the model is proposed to be further utilised for the purpose of this TA. Clarity is sought on this.

What is currently absent from the Local Plan work is individual junction modelling of specific mitigation measures and the principle of these measures being agreed and run through the Paramics model to identify journey time benefits along the route as a result of mitigation back to the agreed 2017 base. It is this work that HBC are currently undertaking. You would need to discuss with them any timescale for the results of this additional TA work being available.

The base year of 2017 is considered to represent a without development scenario of 2036 as without the local plan allocation background traffic growth on the island is assumed to be marginal.

One key matter to be aware of is that the access arrangement assumed within the Paramics model for this site is as set out within the Local Plan to be via Manor Road with the emergency access only onto St Mary's Road.

Site Access Speed Surveys

These surveys are dated having been carried out in November 2016 and will need to be updated to support any new application.

Additional Survey Requirements

The Paramics model has a 2017 base and it would be considered appropriate to utilise the same base year assessment as the local plan work to allow comparisons to be made to an agreed base situation.

Committed Developments

There would be an expectation for the assessment work especially if proposing to utilise the HBC Paramics modelling work for an assessment which include all emerging local plan allocations on Hayling. This is to ensure any mitigation identified is suitable to accommodate the cumulative harm of the proposed level of development.

There are current applications in place for Sinah Lane and the Manor Road allocations within the emerging local plan which should be considered committed given the unknown timescales of your application.

The general view is that all local plan traffic generation should be assessed as the proposed forecast year for assessment is 2036 to accord with the Local Plan period.

In addition it should be noted that the base 2017 data would not include the Lidl development which has been built out. If for any reason the future year assessment data is not obtained from Paramics then this scheme flows would need to be manually applied to a forecast year.

Committed Highway Improvement Schemes

I am not aware to date of any committed schemes within our capital programme. The applicant should make note of any emerging mitigation identified by other applications such as Sinah Lane.

Assessment Criteria

The weekday AM and PM peak is suitable for the majority of the network. At the Manor Road junction traffic distribution is different during the school peak collection time which may need to be considered at the localised modelling level. There is survey information and modelling of this within the Lidl application.

For individual junction assessment there may be a requirement be analysis undertaken for the forecast 2028 opening year. This would need to be discussed further as we understand better how you propose to assess the application site within the TA.

Trip Rates

Agreed and that 100% new trips

Accident Data Analysis

The study area is agreed as per application APP/17/00007

Capacity Assessment

As noted above individual junction modelling of any mitigation will be required to support any paramics runs of a mitigation strategy for the site.

Site access modelling will also be required.

Site Mitigation

There are no committed schemes or works package for mitigating the impact of the emerging local plan. It will be for the applicant to identify appropriate mitigation and for agreement to be reached with the highway authority regarding suitable delivery mechanisms. It is difficult to comment on this further in the absence of the evidence base. The local plan evidence however clearly demonstrates with no mitigation a cumulative impact of the proposed local plan development on

the A3023 corridor which would meet the required tests to require mitigation measures funded/delivered from the proposed developments.

Site Access

It is noted that access is proposed primarily from St Mary's Road. As outlined this is not in accordance with the emerging local plan. The Highway Authority also had a number of design issues with the proposed access arrangement as part of application APP/17/0007. Before I ask our engineering team to comment on the layout it would be beneficial for you to confirm if amendments as per our prior discussions have been made.

I am concerned regarding the increase in housing numbers and therefore the suitability of the proposed access given the nature of St Mary's Road and the proximity to the school. It would be beneficial to see modelling results and confirmation of accordance with DMRB criteria to ensure the junction form is appropriate for the level of movements anticipated before more detailed design comments are provided. The information for me to assess this is absent from the pre-app information sent through.

Reference is made to the land being unavailable for access onto Manor Road but it is noted that there is an allocation HA28 which adjoins this land which would appear to demonstrate availability of land to provide an alternative arrangement for the site. This matter should be discussed further through the Pre-app process with both HCC and the planning authority.

Car Parking

Car parking numbers are a matter for HBC as parking authority and they have their own documentation on this matter. HCC will require confirmation of conformity with the required parking standards however at the Outline stage to ensure that there are no implications to highway operation or safety as a result of over spill parking.

Planning Policy Requirements

Agreed

Any other special circumstances

HCC currently have a raised concerns to the proposed housing allocation on Hayling Island, with one of the primary concerns being the inability of the A3023 to accommodate additional vehicular traffic without mitigation along the route. To date as set out above a suitable mitigation package has not been agreed. Given that this site makes up a substantial proportion of the emerging allocation this will need to be a key consideration for any application which comes forward ahead of the local plan evidence base being agreed.

I hope the above information is useful.

Kind Regards

Holly

Holly Drury BSc (Hons) MSc MCIHT MSoRSA

Principal Transport Planner – Highways Development Planning

Hampshire County Council

2nd Floor Ell Court West, Winchester

Hampshire, SO23 8UJ

0845 603 5633 (Contact centre)

E-mail: holly.drury@hants.gov.uk

Web: www.hants.gov.uk/highways

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David Stoddart

From: David Stoddart
Sent: 10 June 2019 16:26
To: Drury, Holly
Cc: Hirst, Chris; Morton, Stuart
Subject: RE: Pre-app Request - Hayling Island
Attachments: 7478-L-02 DEVELOPMENT FRAMEWORK PLAN RevK.pdf; P18034-007.pdf; P18034-001B.pdf; P18034-002.pdf; P18034-003.pdf; P18034-004.pdf; P18034-005.pdf; P18034-006.pdf; St Mary's Road, Hayling Island, Hampshire_Scoping Checklist.docx

Hi Holly,

Further to the below, please find attached our 'Scoping Checklist' for your review along with the associated access drawing, pedestrian improvement drawings, swept paths and indicative development framework plan.

As you may be aware, Havant Borough Council have a desire for a greater number of dwellings to be accommodated on this site than what Gladman were seeking permission for as part of the previous planning application. The density has therefore been increased and the care home element removed.

We anticipate utilising Havant's Paramics model as the basis for the impact assessment.

I have been told by the applicant that the cheque and pre-app request form will be posted tonight. For your information, the applicant is due to have a pre-app meeting with HBC on 24th or 25th June, I'm sure that HBC would be appreciative if your comments were available in time for the meeting if at all possible.

If you require any further information at this stage, please don't hesitate to contact me.

Kind regards

Dave

David Stoddart
Associate Director
Prime Transport Planning

DD: +44 (0)151 728 1864 M: +44(0) 7944 446528

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From: Drury, Holly <holly.drury@hants.gov.uk>
Sent: 03 June 2019 09:07
To: David Stoddart <D.Stoddart@primetp.co.uk>
Cc: Hirst, Chris <Chris.Hirst@hants.gov.uk>; Morton, Stuart <Stuart.Morton@hants.gov.uk>
Subject: RE: Pre-app Request - Hayling Island

Hi David

Yes for the short term this would still be me. The fees would be as set out in our pre-app documentation of £2000 plus VAT. This would be a major 2 scale application.

Payment can be made via cheque made payable to Hampshire County Council and sent marked for my attention and 'Private and Confidential' to the following address:

Hampshire County Council
EII Court West 2nd Floor
The Castle
Winchester
Hampshire
SO23 8UJ

Alternatively we can arrange an invoice and for a BACs payment against this invoice if you are able to confirm who the invoice needs to be raised to.

Do you have a time scale for us receiving a scoping note to review?

Kind Regards

Holly

Holly Drury BSc (Hons) MSc MCIHT MSoRSA
Principal Transport Planner – Highways Development Planning
Strategic Transport
01962 826996 (HPSN 826996)



Hampshire County Council operates a pre-application highway advice service for developers.

Hampshire County Council welcomes and encourages discussions before a developer submits a planning application. Please follow this link for further information

[Pre-Application guidance for developers](#)

From: David Stoddart <D.Stoddart@primetp.co.uk>

Sent: 28 May 2019 14:31

To: Drury, Holly <holly.drury@hants.gov.uk>

Subject: Pre-app Request - Hayling Island

Hi Holly,

I trust you are well. As you may have heard, Havant BC are looking to allocate the Gladman site off St Mary's Road, Hayling Island for circa 390 dwellings and we'd like to 'get the ball rolling' in terms of scoping discussions with HCC.

Would you still be the best point of contact? If so, please can you confirm the fees and payment methods.

Kind regards

Dave

David Stoddart
Associate Director

D: +44 (0)151 728 1864

M: +44 (0)7944 446 528

9 Hurricane Court, Liverpool International Business Park
Estuary Boulevard, Liverpool, L24 8RL





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SCOPING CHECKLIST FOR: Up to 390 dwellings on land to the west of St. Mary's Road, Hayling Island, Hampshire (Rook Farm)

HIGHWAY AUTHORITY: Hampshire County Council (HCC) DATE PREPARED: 10/06/19

Ref	Item	Intention	LHA Comments
1	Level of planning approval sought? e.g. outline, full.	Outline with all matters reserved except for access	
2	Size and description of development proposals	Up to 390 dwellings as per emerging local plan allocation H27 Rook Farm. Site same site as APP/17/00007 for 210 dwellings and 0.6Ha apartments with care. Density increased to meet local plan allocation and apartments with care removed from this application.	
3	Description of existing land uses, existing trip distribution	Agricultural land – no existing trips	
4	Does the development involve the relocation of an existing use?	No	
5	What transport based supporting documents will be produced?	Environmental Statement (Transport Chapter), Transport Assessment, Framework Travel Plan and Stage 1 Road Safety Audit with Designers' response to Safety Audit.	
6	Are traffic surveys of the existing conditions available or required?	Local plan Paramics model commissioned by Havant Borough Council (HBC) to be used. Details in Hayling Island Local Plan Transport Assessment. Speed surveys at proposed site access location dated 8 th & 14 th November 2016 used in access design.	
7	Are further traffic surveys required?	HCC to advise.	
8	Details of any other developments to be taken into account.	Other local plan allocations. HCC to advise if there are any other committed developments that need to be taken account of.	
9	Details of any adjacent highway improvement proposals by others	Please advise if there are any highway improvement schemes that need to be taken account of. We are aware of the local plan mitigation proposals	

10	When are the critical periods for assessments?	Weekday AM and PM Paramics model peaks.	
11	When would the site be fully operational?	Likely to be circa 7-year build-out. Allowing for Reserved Matters, discharge of conditions etc, year of first occupation likely to be around 2028.	
12	What are the assessment years?	2036 as per Paramics model and local plan year end	
13	Traffic growth factors?	Paramics model to be used	
14	How will vehicular trip generation be derived for the proposal?	Paramics model trip rates (TRICS based) as shown in Table 15 of Hayling Island TA	
15	How will non-car mode trip generation be derived for the proposal?	Same TRICS sample used in Paramics model to be reconstructed and used	
16	Would traffic from adjacent sites be attracted to the site? Pass-by traffic?	100% newly generated trips as per Hayling Island TA	
17	What is the assumed trip distribution?	As per Paramics model	
18	What is the extent of the accident study area to be considered?	Same as APP/17/00007 – A3023 from A27 to Sea Front, Sea Front, Sea Grove Avenue, Elm Grove, Church Road and all roads in between including St Mary's Road.	
19	Capacity tests required for the proposed and following existing junctions	Formal assessment proposed for site access Paramics model used to consider junction and journey time impact	
20	Are adjacent junctions or links likely to become overloaded?	Expected that application will contribute to HBC/HCC led schemes requires to deliver the local plan.	
21	Is a new or modified highway access likely?	Single priority controlled access to be proposed on St Mary's Road (See attached Drawing P18034-001B. Dimensions based on swept paths. Potential emergency connection to H28 and internal emergency connection between two parcels of site.	

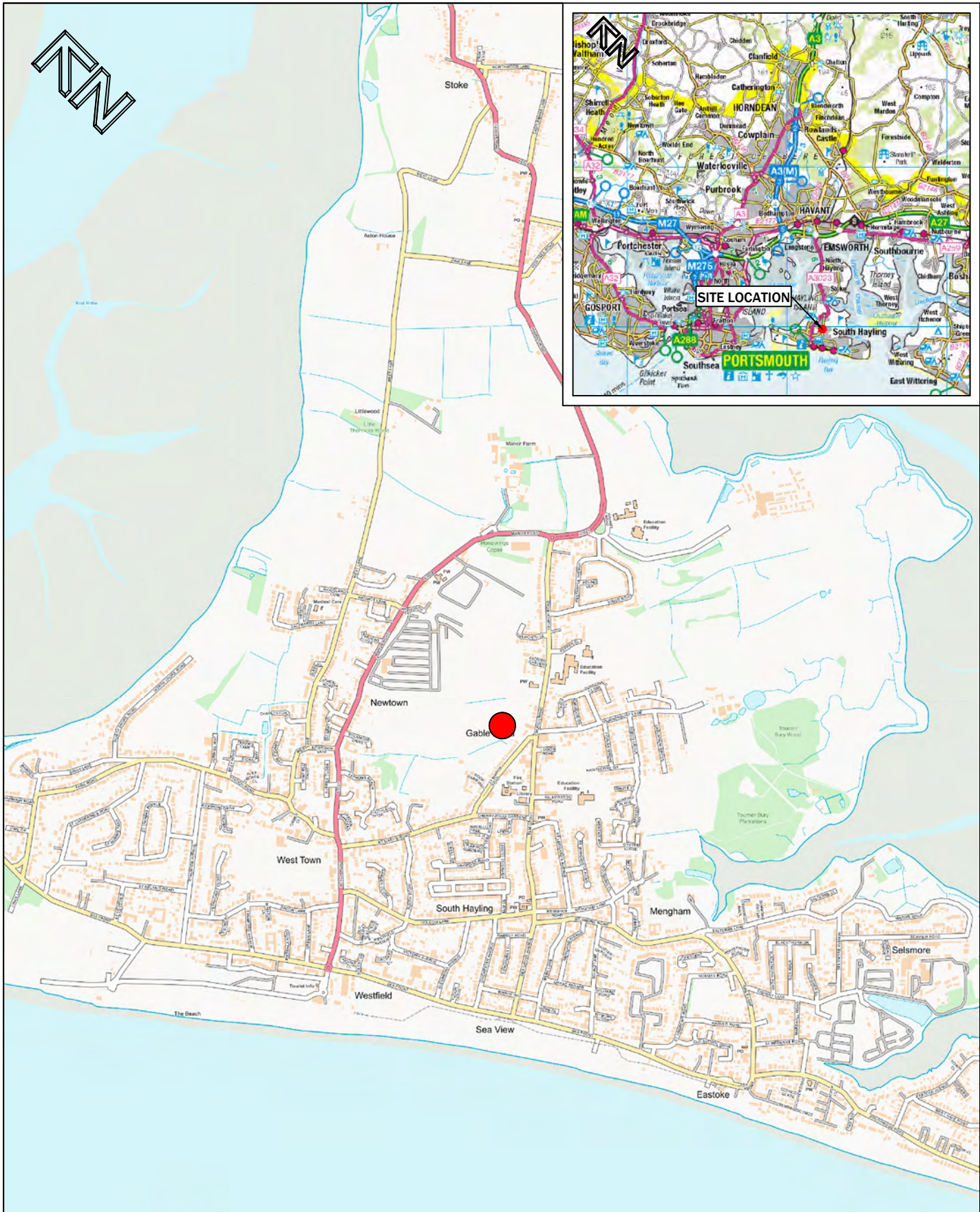
		New footway provision on St Mary's Road and pedestrian improvements at St Mary's Road/Church Road/Tournerbury Lane junction as shown in Drawing P18034-002 attached. Swept paths shown in Drawings P18034-003 to 007 attached. Note that HBC suggested vehicular access to be provided onto Manor Road however this involves a considerable amount of land outside of the allocation boundary and the applicant's control. This is therefore not feasible. See attached Development Framework Plan for indicative arrangement. Comments welcome on suggested access arrangements	
22	What are the visibility requirements?	Visibility splays shown on Drawing P18034-001B are MfS compliant based on observed 85 th percentile speeds of 20mph and 29mph.	
23	What level of car parking is required?	To be agreed at Reserved Matters stage however please advise on most current local guidance such that reference can be made in the Transport Assessment	
24	Are special provisions required for cyclists, pedestrians, those with a disability or public transport?	To be reviewed as part of Transport Assessment. Local plan improvement measures contain enhancements to local pedestrian and cycle infrastructure.	
25	What planning policy should the development comply with?	• NPPF; • MfS/MfS2 & HCC Companion Document; • HCC LTP 2011 - 2031; • Havant BC Core Strategy 2011; and • Emerging policies in Havant BC Draft Local Plan 2016 – 2036 HCC to advise on any others	
26	Are there any other special circumstances relevant to this proposal?	Please advise	

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APPENDIX B

FIGURES

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Hayling Bay

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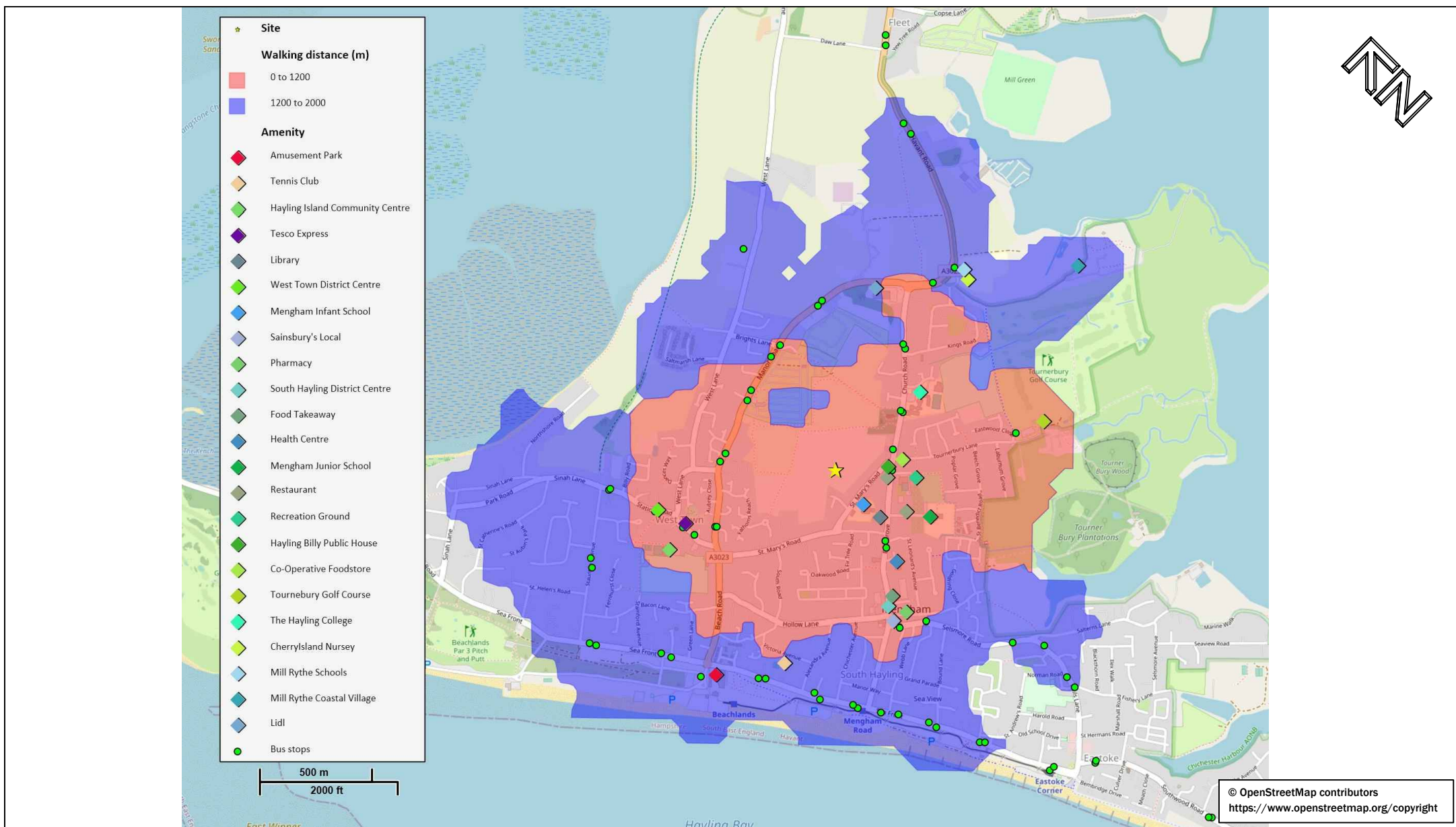
Key	
	SITE LOCATION
Drawn by VB	Issue date 23 NOV 2021
Scale(s)	NTS
Drawing No	FIGURE 1



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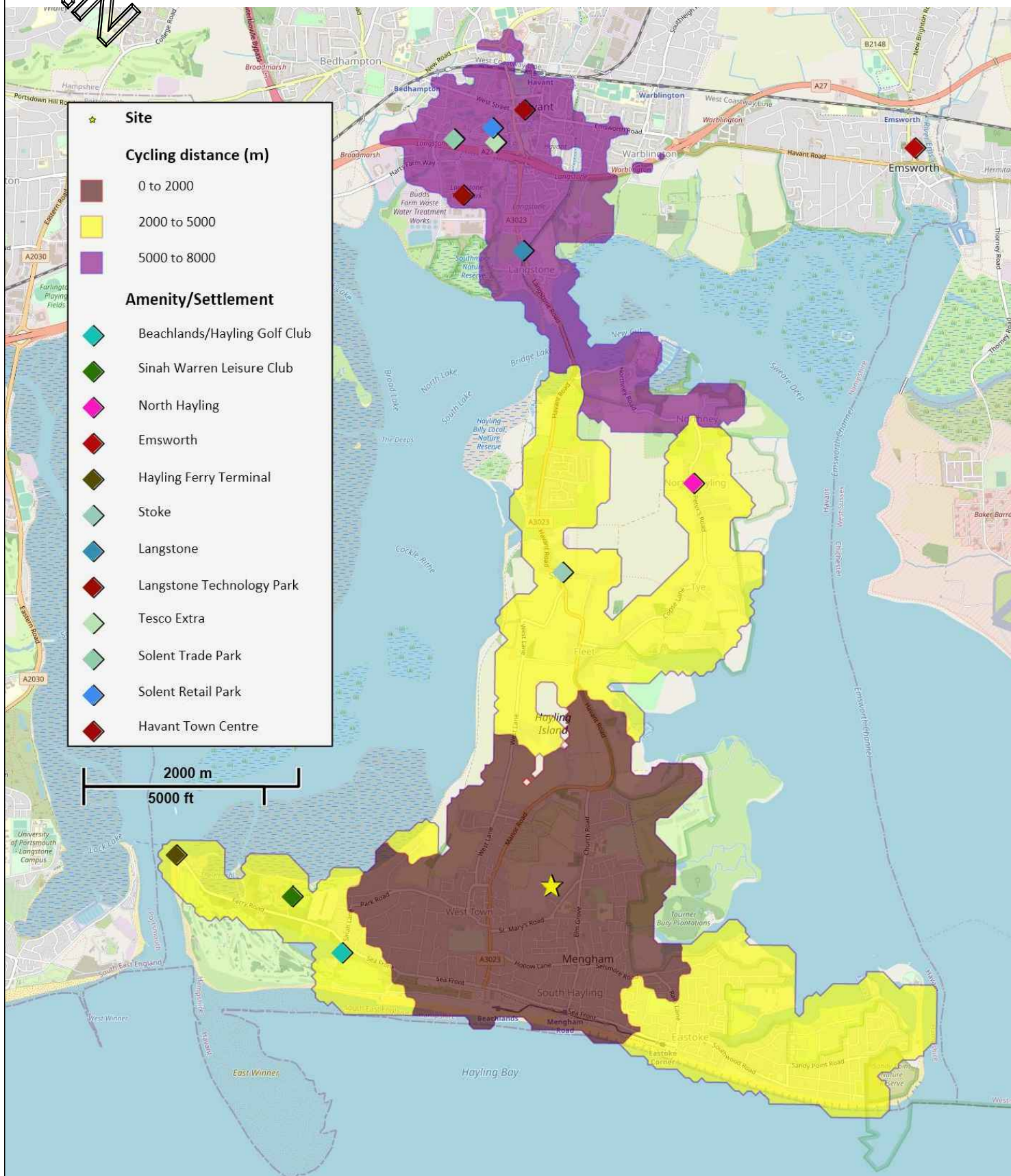
Project	ST MARY'S ROAD, HAYLING ISLAND, HAMPSHIRE
Title	SITE LOCATION PLAN

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 9 Hurricane Court Liverpool International Business Park Estuary Boulevard Liverpool L24 8RL www.primetp.co.uk 0151 728 1860	Project				ST MARY'S ROAD, HAYLING ISLAND, HAMPSHIRE		Drawn by VB	Issue date 23 NOV 2021
	Title				PEDESTRIAN ISOCHRONE		Scale(s) NTS	
	Status				FINAL		Drawing No FIGURE 2	
	Rev	Date	By	Revision notes				

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Project

**ST MARY'S ROAD, HAYLING ISLAND,
 HAMPSHIRE**

Title

CYCLING ISOCHRONE

Drawn by

VB

Issue date

23 NOV 2021

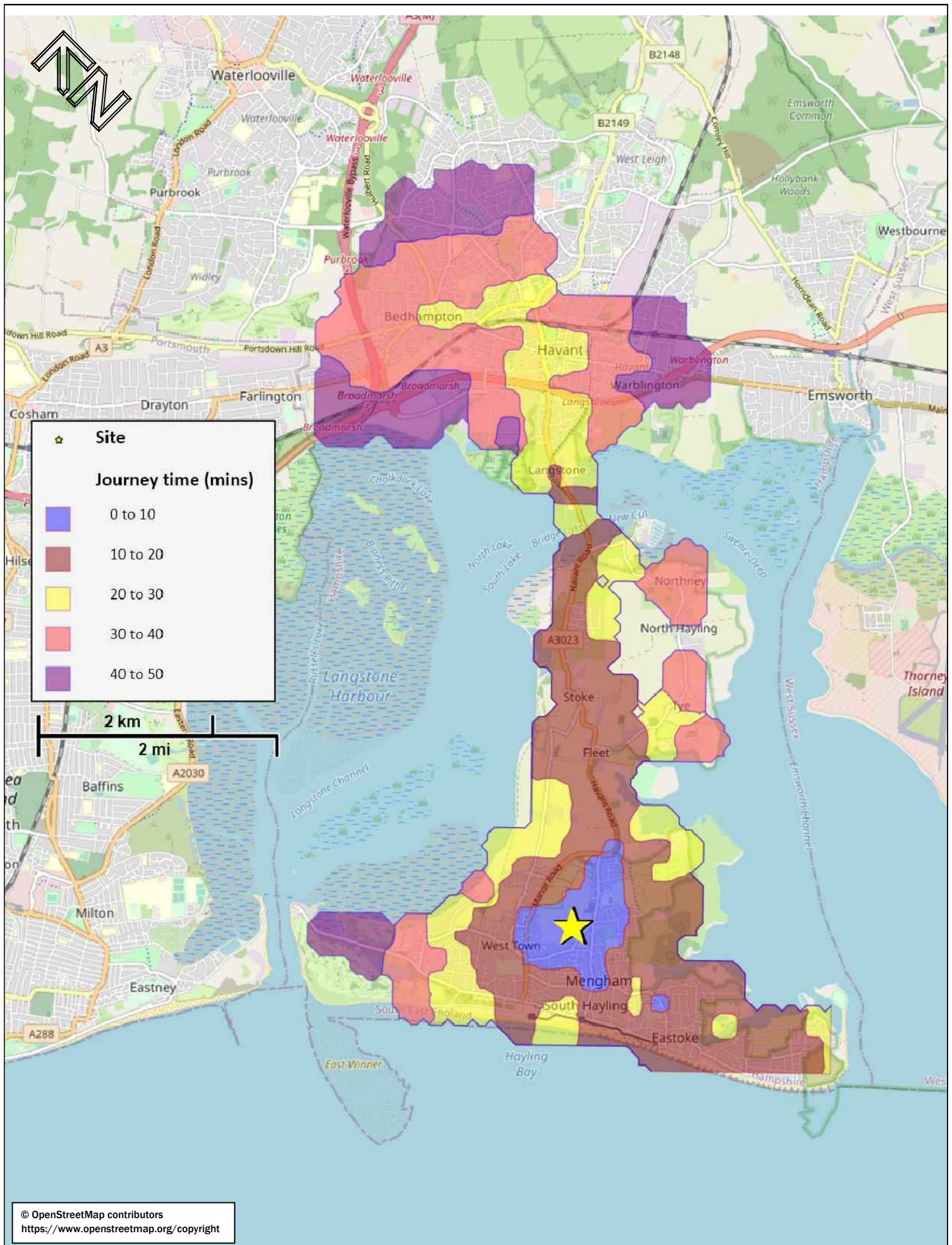
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FIGURE 3

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Project

**ST MARY'S ROAD, HAYLING ISLAND,
HAMPSHIRE**

Title

BUS CATCHMENT PLAN

Drawn by

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Scale(s)

Issue date

23 NOV 2021

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APPENDIX C

SPEED SURVEY RESULTS

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Hayling Island ATC

Direction: Northeastbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
Tue 17 Aug	464	26.1	21.7	4.2	0	3	27	104	243	82	5	0	0	0	0	0
Wed 18 Aug	832	25.9	21.4	4.3	0	10	44	211	432	122	13	0	0	0	0	0
Thu 19 Aug	835	25.7	21.1	4.5	0	8	64	230	386	142	4	1	0	0	0	0
Fri 20 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Sat 21 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Sun 22 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Mon 23 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
5 Day Ave.	710	25.9	21.4	4.3	0	7	45	182	354	115	7	0	0	0	0	0
7 Day Ave.	710	25.9	21.4	4.3	0	7	45	182	354	115	7	0	0	0	0	0

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Direction: Southwestbound

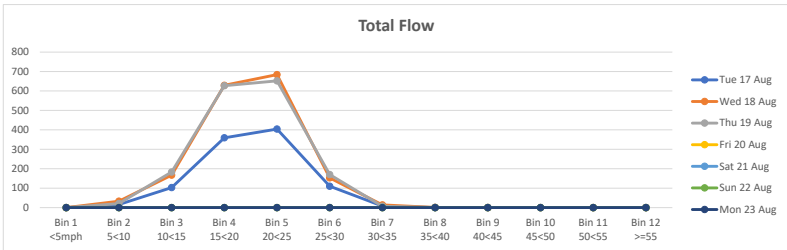
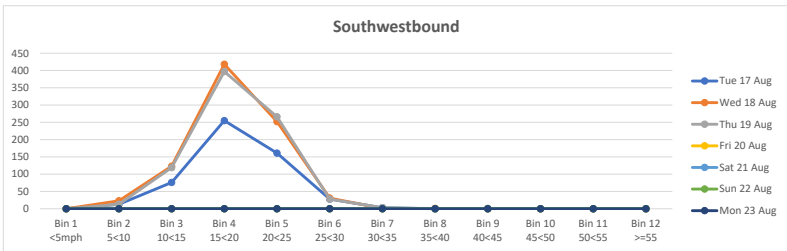
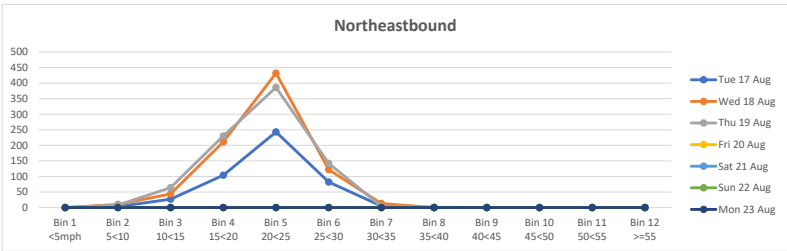
	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
Tue 17 Aug	536	23.1	18.7	4.3	0	13	76	255	161	28	3	0	0	0	0	0
Wed 18 Aug	849	22.7	18.4	4.2	0	23	123	418	252	31	1	1	0	0	0	0
Thu 19 Aug	827	22.9	18.7	4.1	0	13	119	397	266	28	3	0	1	0	0	0
Fri 20 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Sat 21 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Sun 22 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Mon 23 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
5 Day Ave.	737	22.9	18.6	4.2	0	16	106	357	226	29	2	0	0	0	0	0
7 Day Ave.	737	22.9	18.6	4.2	0	16	106	357	226	29	2	0	0	0	0	0

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Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
Tue 17 Aug	1000	24.8	20.1	4.5	0	16	103	359	404	110	8	0	0	0	0	0
Wed 18 Aug	1681	24.5	19.9	4.5	0	33	167	629	684	153	14	1	0	0	0	0
Thu 19 Aug	1662	24.5	19.9	4.5	0	21	183	627	652	170	7	1	1	0	0	0
Fri 20 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Sat 21 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Sun 22 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Mon 23 Aug	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
5 Day Ave.	1448	24.6	20.0	4.5	0	23	151	538	580	144	10	1	0	0	0	0
7 Day Ave.	1448	24.6	20.0	4.5	0	23	151	538	580	144	10	1	0	0	0	0

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Hayling Island ATC

Direction: Northeastbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
12:00	58	23.8	19.4	4.3	0	1	8	20	26	3	0	0	0	0	0	0
13:00	60	25.3	21.1	4.0	0	1	2	18	31	8	0	0	0	0	0	0
14:00	68	24.8	20.7	3.9	0	0	6	20	35	7	0	0	0	0	0	0
15:00	54	26.0	21.8	4.1	0	0	3	12	30	8	1	0	0	0	0	0
16:00	44	26.3	22.0	4.2	0	0	2	11	20	11	0	0	0	0	0	0
17:00	70	26.2	22.1	3.9	0	1	3	9	44	13	0	0	0	0	0	0
18:00	43	26.8	23.7	3.1	0	0	0	4	25	14	0	0	0	0	0	0
19:00	22	27.5	23.0	4.3	0	0	1	3	12	5	1	0	0	0	0	0
20:00	18	25.0	20.6	4.2	0	0	2	5	9	2	0	0	0	0	0	0
21:00	11	27.9	23.9	3.9	0	0	0	2	4	5	0	0	0	0	0	0
22:00	10	30.6	26.5	3.9	0	0	0	0	4	2	0	0	0	0	0	0
23:00	6	30.1	25.8	4.1	0	0	0	0	3	2	1	0	0	0	0	0
Total	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
2H(10-12)	122	25.3	21.1	4.0	0	0	9	32	65	15	1	0	0	0	0	0
12H(7-19)	397	25.7	21.4	4.1	0	3	24	94	211	64	1	0	0	0	0	0
24H(0-24)	464	26.1	21.7	4.2	0	3	27	104	243	82	5	0	0	0	0	0
AM Peak	00:00 0	#N/A 0.0	#N/A 0.0	#N/A 0.0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0
PM Peak	17:00 70	22:00 30.6	22:00 26.5	19:00 4.3	12:00 0	12:00 1	12:00 8	12:00 20	17:00 44	18:00 14	22:00 2	12:00 0	12:00 0	12:00 0	12:00 0	12:00 0

360 TSL Ltd

Direction: Southwestbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
12:00	52	21.7	17.4	4.1	0	1	14	23	13	1	0	0	0	0	0	0
13:00	57	20.9	16.9	3.9	0	3	11	34	8	1	0	0	0	0	0	0
14:00	43	21.3	17.5	3.6	0	1	8	24	10	0	0	0	0	0	0	0
15:00	68	22.0	17.5	4.3	0	4	11	36	15	2	0	0	0	0	0	0
16:00	73	22.4	18.7	3.6	0	1	6	44	19	3	0	0	0	0	0	0
17:00	99	24.0	19.2	4.6	0	2	16	37	35	9	0	0	0	0	0	0
18:00	60	23.4	19.4	3.8	0	0	5	32	18	5	0	0	0	0	0	0
19:00	25	24.2	20.5	3.5	0	0	0	12	12	1	0	0	0	0	0	0
20:00	24	26.2	21.0	5.0	0	0	3	6	11	3	1	0	0	0	0	0
21:00	24	24.9	21.5	3.3	0	0	1	5	16	2	0	0	0	0	0	0
22:00	6	29.9	20.8	8.8	0	1	0	2	1	1	1	0	0	0	0	0
23:00	5	27.2	21.5	5.5	0	0	1	0	3	1	0	0	0	0	0	0
Total	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
2H(10-12)	111	21.7	17.5	4.0	0	5	19	60	25	2	0	0	0	0	0	0
12H(7-19)	452	22.5	18.2	4.2	0	12	71	230	118	21	0	0	0	0	0	0
24H(0-24)	536	23.1	18.7	4.3	0	13	76	255	161	28	3	0	0	0	0	0
AM Peak	00:00 0	#N/A 0.0	#N/A 0.0	#N/A 0.0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0
PM Peak	17:00 99	22:00 29.9	22:00 21.5	22:00 8.8	12:00 0	12:00 4	12:00 16	12:00 44	17:00 35	18:00 9	19:00 1	12:00 0	12:00 0	12:00 0	12:00 0	12:00 0

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
12:00	110	22.9	18.5	4.3	0	2	22	43	39	4	0	0	0	0	0	0
13:00	117	23.7	19.0	4.5	0	4	13	52	39	9	0	0	0	0	0	0
14:00	111	23.7	19.4	4.1	0	1	14	44	45	7	0	0	0	0	0	0
15:00	122	24.3	19.4	4.7	0	4	14	48	45	10	1	0	0	0	0	0
16:00	117	24.2	19.9	4.1	0	1	8	55	39	14	0	0	0	0	0	0
17:00	169	25.1	20.4	4.6	0	3	19	46	79	22	0	0	0	0	0	0
18:00	103	25.4	21.2	4.1	0	0	5	36	43	19	0	0	0	0	0	0
19:00	47	25.9	21.6	4.1	0	0	1	15	24	5	2	0	0	0	0	0
20:00	42	25.6	20.8	4.6	0	0	5	11	20	5	1	0	0	0	0	0
21:00	35	26.0	22.2	3.6	0	0	1	7	20	7	0	0	0	0	0	0
22:00	16	31.2	24.4	6.6	0	1	0	2	5	5	3	0	0	0	0	0
23:00	11	29.1	23.9	5.0	0	0	1	0	6	3	1	0	0	0	0	0
Total	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
2H(10-12)	233	24.0	19.4	4.4	0	5	28	92	90	17	1	0	0	0	0	0
12H(7-19)	849	24.3	19.7	4.4	0	15	95	324	329	85	1	0	0	0	0	0
24H(0-24)	1000	24.8	20.1	4.5	0	16	103	359	404	110	8	0	0	0	0	0
AM Peak	00:00 0	#N/A 0.0	#N/A 0.0	#N/A 0.0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0	00:00 0
PM Peak	17:00 169	22:00 31.2	22:00 24.4	22:00 6.6	12:00 0	12:00 4	12:00 22	16:00 55	17:00 79	17:00 22	22:00 3	12:00 0	12:00 0	12:00 0	12:00 0	12:00 0

360 TSL Ltd

Hayling Island ATC

Direction: Northeastbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
01:00	1	-	27.5	-	0	0	0	0	0	1	0	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	1	-	27.5	-	0	0	0	0	0	1	0	0	0	0	0	0
04:00	1	-	17.5	-	0	0	0	1	0	0	0	0	0	0	0	0
05:00	9	26.2	23.1	3.0	0	0	0	1	6	2	0	0	0	0	0	0
06:00	19	26.6	22.2	4.2	0	0	1	4	9	5	0	0	0	0	0	0
07:00	50	27.3	22.8	4.3	0	1	2	4	30	12	1	0	0	0	0	0
08:00	68	25.9	21.7	4.0	0	1	2	16	37	12	0	0	0	0	0	0
09:00	64	24.6	21.6	2.9	0	0	1	14	44	5	0	0	0	0	0	0
10:00	69	23.2	18.7	4.4	0	1	12	30	23	2	1	0	0	0	0	0
11:00	80	25.2	20.8	4.3	0	3	2	24	42	9	0	0	0	0	0	0
12:00	66	25.1	21.0	4.0	0	1	4	16	38	7	0	0	0	0	0	0
13:00	57	26.5	22.1	4.2	0	0	3	11	32	9	2	0	0	0	0	0
14:00	54	25.7	21.3	4.2	0	1	2	15	27	9	0	0	0	0	0	0
15:00	60	25.0	20.8	4.0	0	0	6	13	37	3	1	0	0	0	0	0
16:00	52	26.9	22.8	4.0	0	0	0	13	25	12	2	0	0	0	0	0
17:00	60	26.4	22.1	4.1	0	0	1	19	25	14	1	0	0	0	0	0
18:00	39	25.3	21.0	4.2	0	0	3	11	21	3	1	0	0	0	0	0
19:00	42	25.9	20.7	5.0	0	1	3	14	18	4	2	0	0	0	0	0
20:00	12	28.2	24.2	3.9	0	0	0	2	4	6	0	0	0	0	0	0
21:00	17	28.6	23.4	5.1	0	0	2	0	9	5	1	0	0	0	0	0
22:00	7	26.2	19.6	6.4	0	1	0	2	3	1	0	0	0	0	0	0
23:00	4	30.3	23.8	6.3	0	0	0	1	2	0	1	0	0	0	0	0
Total																
2H(10-12)	149	24.4	19.8	4.4	0	4	14	54	65	11	1	0	0	0	0	0
2H(14-16)	114	25.3	21.1	4.1	0	1	8	28	64	12	1	0	0	0	0	0
12H(7-19)	719	25.6	21.3	4.2	0	8	38	186	381	97	9	0	0	0	0	0
24H(0-24)	832	25.9	21.4	4.3	0	10	44	211	432	122	13	0	0	0	0	0
AM Peak	11:00	07:00	01:00	10:00	00:00	11:00	10:00	10:00	09:00	07:00	07:00	00:00	00:00	00:00	00:00	00:00
	80	27.3	27.5	4.4	0	3	12	30	44	12	1	0	0	0	0	0
PM Peak	12:00	23:00	20:00	22:00	12:00	12:00	15:00	17:00	12:00	17:00	13:00	12:00	12:00	12:00	12:00	12:00
	66	30.3	24.2	6.4	0	1	6	19	38	14	2	0	0	0	0	0

360 TSL Ltd

Direction: Southwestbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	3	23.8	20.8	2.9	0	0	0	1	2	0	0	0	0	0	0	0
01:00	2	22.5	22.5	0.0	0	0	0	0	2	0	0	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	2	29.8	22.5	7.1	0	0	0	1	0	1	0	0	0	0	0	0
04:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
05:00	3	22.5	22.5	0.0	0	0	0	0	3	0	0	0	0	0	0	0
06:00	10	24.5	19.5	4.8	0	0	3	0	7	0	0	0	0	0	0	0
07:00	45	23.2	19.1	4.0	0	1	3	25	13	3	0	0	0	0	0	0
08:00	54	23.1	19.6	3.3	0	0	3	27	22	2	0	0	0	0	0	0
09:00	44	21.6	18.6	2.8	0	0	3	28	13	0	0	0	0	0	0	0
10:00	66	20.0	15.5	4.4	0	6	25	26	8	1	0	0	0	0	0	0
11:00	79	21.8	18.2	3.5	0	1	8	52	15	3	0	0	0	0	0	0
12:00	59	22.0	16.8	5.0	0	7	11	25	15	1	0	0	0	0	0	0
13:00	68	22.1	18.3	3.6	0	2	4	46	13	3	0	0	0	0	0	0
14:00	58	22.4	17.9	4.3	0	2	12	24	19	1	0	0	0	0	0	0
15:00	65	22.6	18.9	3.6	0	0	9	30	25	1	0	0	0	0	0	0
16:00	59	22.1	18.5	3.4	0	1	4	38	14	2	0	0	0	0	0	0
17:00	82	22.4	18.2	4.0	0	1	16	37	26	2	0	0	0	0	0	0
18:00	49	23.1	18.0	4.9	0	2	12	17	15	3	0	0	0	0	0	0
19:00	50	24.2	20.1	3.9	0	0	5	18	23	4	1	0	0	0	0	0
20:00	19	26.5	21.4	4.9	0	0	1	7	7	3	1	0	0	0	0	0
21:00	21	25.0	19.6	5.1	0	0	2	11	7	0	0	1	0	0	0	0
22:00	9	23.6	18.6	4.9	0	0	2	4	2	1	0	0	0	0	0	0
23:00	2	23.7	20.0	3.5	0	0	0	1	1	0	0	0	0	0	0	0
Total																
2H(10-12)	145	21.2	16.9	4.1	0	7	33	78	23	4	0	0	0	0	0	0
2H(14-16)	123	22.5	18.4	4.0	0	2	21	54	44	2	0	0	0	0	0	0
12H(7-19)	728	22.3	18.1	4.1	0	23	110	375	198	22	0	0	0	0	0	0
24H(0-24)	849	22.7	18.4	4.2	0	23	123	418	252	31	1	1	0	0	0	0
AM Peak	11:00	03:00	01:00	03:00	00:00	10:00	10:00	11:00	08:00	07:00	00:00	00:00	00:00	00:00	00:00	00:00
	79	29.8	22.5	7.1	0	6	25	52	22	3	0	0	0	0	0	0
PM Peak	17:00	20:00	20:00	21:00	12:00	12:00	17:00	13:00	17:00	19:00	20:00	21:00	12:00	12:00	12:00	12:00
	82	26.5	21.4	5.1	0	7	16	46	26	4	1	1	0	0	0	0

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	3	23.8	20.8	2.9	0	0	0	1	2	0	0	0	0	0	0	0
01:00	3	27.2	24.2	2.9	0	0	0	0	2	1	0	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	3	30.2	24.2	5.8	0	0	0	1	0	2	0	0	0	0	0	0
04:00	1	-	17.5	-	0	0	0	1	0	0	0	0	0	0	0	0
05:00	12	25.6	22.9	2.6	0	0	0	1	9	2	0	0	0	0	0	0
06:00	29	26.0	21.3	4.6	0	0	4	4	16	5	0	0	0	0	0	0
07:00	95	25.7	21.0	4.5	0	2	5	29	43	15	1	0	0	0	0	0
08:00	122	24.8	20.8	3.8	0	1	5	43	59	14	0	0	0	0	0	0
09:00	108	23.7	20.4	3.2	0	0	4	42	57	5	0	0	0	0	0	0
10:00	135	21.9	17.1	4.7	0	7	37	56	31	3	1	0	0	0	0	0
11:00	159	23.7	19.5	4.1	0	4	10	76	57	12	0	0	0	0	0	0
12:00	125	24.1	19.0	4.9	0	8	15	41	53	8	0	0	0	0	0	0
13:00	125	24.6	20.1	4.3	0	2	7	57	45	12	2	0	0	0	0	0
14:00	112	24.3	19.6	4.6	0	3	14	39	46	10	0	0	0	0	0	0
15:00	125	23.9	19.8	3.9	0	0	15	43	62	4	1	0	0	0	0	0
16:00	111	25.0	20.5	4.3	0	1	4	51	39	14	2	0	0	0	0	0
17:00	142	24.5	19.9	4.5	0	1	17	56	51	16	1	0	0	0	0	0
18:00	88	24.3	19.3	4.8	0	2	15	28	36	6	1	0	0	0	0	0
19:00	92	25.0	20.4	4.5	0	1	8	32	41	8	2	0	0	0	0	0
20:00	31	27.3	22.5	4.7	0	0	1	9	11	9	1	0	0	0	0	0
21:00	38	26.9	21.3	5.4	0	0	4	11	16	5	1	1	0	0	0	0
22:00	16	24.6	19.1	5.4	0	1	2	6	5	2	0	0	0	0	0	0
23:00	6	28.2	22.5	5.5	0	0	0	2	3	0	1	0	0	0	0	0
Total																
2H(10-12)	294	23.1	18.4	4.5	0	11	47	132	88	15	1	0	0	0	0	0
2H(14-16)	237	24.1	19.7	4.2	0	3	29	82	108	14	1	0	0	0	0	0
12H(7-19)	1447	24.3	19.7	4.4	0	31	148	561	579	119	9	0	0	0	0	0
24H(0-24)	1681	24.5	19.9	4.5	0	33	167	629	684	153	14	1	0	0	0	0
AM Peak					00:00	10:00	10:00	11:00	08:00	07:00	07:00	00:00	00:00	00:00	00:00	00:00
11:00	294	30.2	24.2	5.8	0	7	37	76	59	15	1	0	0	0	0	0
PM Peak					12:00	12:00	17:00	13:00	15:00	17:00	13:00	21:00	12:00	12:00	12:00	12:00
14:00	28.2	23.0	22.5	5.5	0	8	17	57	62	16	2	1	0	0	0	0

Hayling Island ATC

Direction: Northeastbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	2	31.0	20.0	10.6	0	0	1	0	0	1	0	0	0	0	0	0
01:00	1	-	37.5	-	0	0	0	0	0	0	0	1	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	1	-	22.5	-	0	0	0	0	1	0	0	0	0	0	0	0
04:00	1	-	12.5	-	0	0	1	0	0	0	0	0	0	0	0	0
05:00	5	26.2	22.5	3.5	0	0	0	1	3	1	0	0	0	0	0	0
06:00	19	27.8	22.2	5.4	0	0	2	5	4	8	0	0	0	0	0	0
07:00	34	25.7	21.2	4.3	0	0	2	12	13	7	0	0	0	0	0	0
08:00	61	26.0	21.8	4.0	0	0	3	15	30	13	0	0	0	0	0	0
09:00	63	25.3	21.1	4.1	0	1	4	14	37	7	0	0	0	0	0	0
10:00	56	25.6	21.0	4.5	0	1	3	18	24	10	0	0	0	0	0	0
11:00	66	26.2	20.7	5.3	0	3	6	16	29	11	1	0	0	0	0	0
12:00	62	24.9	21.3	3.5	0	0	2	18	35	7	0	0	0	0	0	0
13:00	122	24.1	19.9	4.1	0	1	10	52	49	9	1	0	0	0	0	0
14:00	66	24.7	19.5	5.0	0	0	15	19	24	7	1	0	0	0	0	0
15:00	73	24.9	20.4	4.3	0	0	8	24	31	10	0	0	0	0	0	0
16:00	43	26.8	22.3	4.4	0	1	1	8	22	11	0	0	0	0	0	0
17:00	59	26.8	22.2	4.4	0	1	2	13	27	16	0	0	0	0	0	0
18:00	39	25.9	22.6	3.1	0	0	1	4	27	7	0	0	0	0	0	0
19:00	45	26.8	22.6	4.1	0	0	2	8	22	13	0	0	0	0	0	0
20:00	17	27.8	22.8	4.8	0	0	1	3	8	4	1	0	0	0	0	0
21:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Total																
2H(10-12)	122	25.9	20.8	4.9	0	4	9	34	53	21	1	0	0	0	0	0
2H(14-16)	139	24.8	20.0	4.7	0	0	23	43	55	17	1	0	0	0	0	0
12H(7-19)	744	25.5	21.0	4.4	0	8	57	213	348	115	3	0	0	0	0	0
24H(0-24)	835	25.7	21.1	4.5	0	8	64	230	386	142	4	1	0	0	0	0
AM Peak	11:00	00:00	01:00	00:00	00:00	11:00	11:00	10:00	09:00	08:00	11:00	01:00	00:00	00:00	00:00	00:00
	66	31.0	37.5	10.6	0	3	6	18	37	13	1	1	0	0	0	0
PM Peak	13:00	20:00	20:00	14:00	12:00	13:00	14:00	13:00	13:00	17:00	13:00	12:00	12:00	12:00	12:00	12:00
	122	27.8	22.8	5.0	0	1	15	52	49	16	1	0	0	0	0	0

360 TSL Ltd

Direction: Southwestbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	1	-	32.5	-	0	0	0	0	1	0	1	0	0	0	0	0
01:00	3	35.2	29.2	5.8	0	0	0	0	1	0	2	0	0	0	0	0
02:00	1	-	22.5	-	0	0	0	0	1	0	0	0	0	0	0	0
03:00	2	31.0	20.0	10.6	0	0	1	0	0	1	0	0	0	0	0	0
04:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
05:00	1	-	22.5	-	0	0	0	0	1	0	0	0	0	0	0	0
06:00	10	22.6	18.5	3.9	0	0	2	4	4	0	0	0	0	0	0	0
07:00	47	22.9	18.7	4.1	0	0	9	20	16	2	0	0	0	0	0	0
08:00	46	24.0	19.8	4.0	0	1	3	19	20	3	0	0	0	0	0	0
09:00	51	24.2	19.8	4.3	0	2	3	19	24	3	0	0	0	0	0	0
10:00	64	22.0	18.4	3.5	0	0	10	34	19	1	0	0	0	0	0	0
11:00	56	22.9	18.8	3.9	0	0	9	25	20	2	0	0	0	0	0	0
12:00	56	21.2	17.6	3.5	0	1	10	32	13	0	0	0	0	0	0	0
13:00	65	20.9	17.6	3.2	0	1	10	41	13	0	0	0	0	0	0	0
14:00	63	21.8	18.1	3.6	0	2	6	39	15	1	0	0	0	0	0	0
15:00	83	19.5	15.7	3.7	0	4	31	39	9	0	0	0	0	0	0	0
16:00	68	23.2	19.8	3.3	0	0	1	40	22	5	0	0	0	0	0	0
17:00	76	23.6	19.0	4.5	0	0	10	39	24	2	0	0	1	0	0	0
18:00	63	23.5	19.0	4.4	0	2	8	25	25	3	0	0	0	0	0	0
19:00	43	24.6	20.5	4.0	0	0	4	13	22	4	0	0	0	0	0	0
20:00	27	24.2	20.6	3.4	0	0	2	7	17	1	0	0	0	0	0	0
21:00	1	-	17.5	-	0	0	0	1	0	0	0	0	0	0	0	0
22:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Total																
2H(10-12)	120	22.4	18.6	3.7	0	0	19	59	39	3	0	0	0	0	0	0
2H(14-16)	146	20.7	16.7	3.8	0	6	37	78	24	1	0	0	0	0	0	0
12H(7-19)	738	22.5	18.4	4.0	0	13	110	372	220	22	0	0	1	0	0	0
24H(0-24)	827	22.9	18.7	4.1	0	13	119	397	266	28	3	0	1	0	0	0
AM Peak	10:00	01:00	00:00	03:00	00:00	09:00	10:00	10:00	09:00	08:00	01:00	00:00	00:00	00:00	00:00	00:00
	64	35.2	32.5	10.6	0	2	10	34	24	3	2	0	0	0	0	0
PM Peak	15:00	19:00	20:00	17:00	12:00	15:00	15:00	13:00	18:00	16:00	12:00	12:00	17:00	12:00	12:00	12:00
	83	24.6	20.6	4.5	0	4	31	41	25	5	0	0	1	0	0	0

360 TSL Ltd

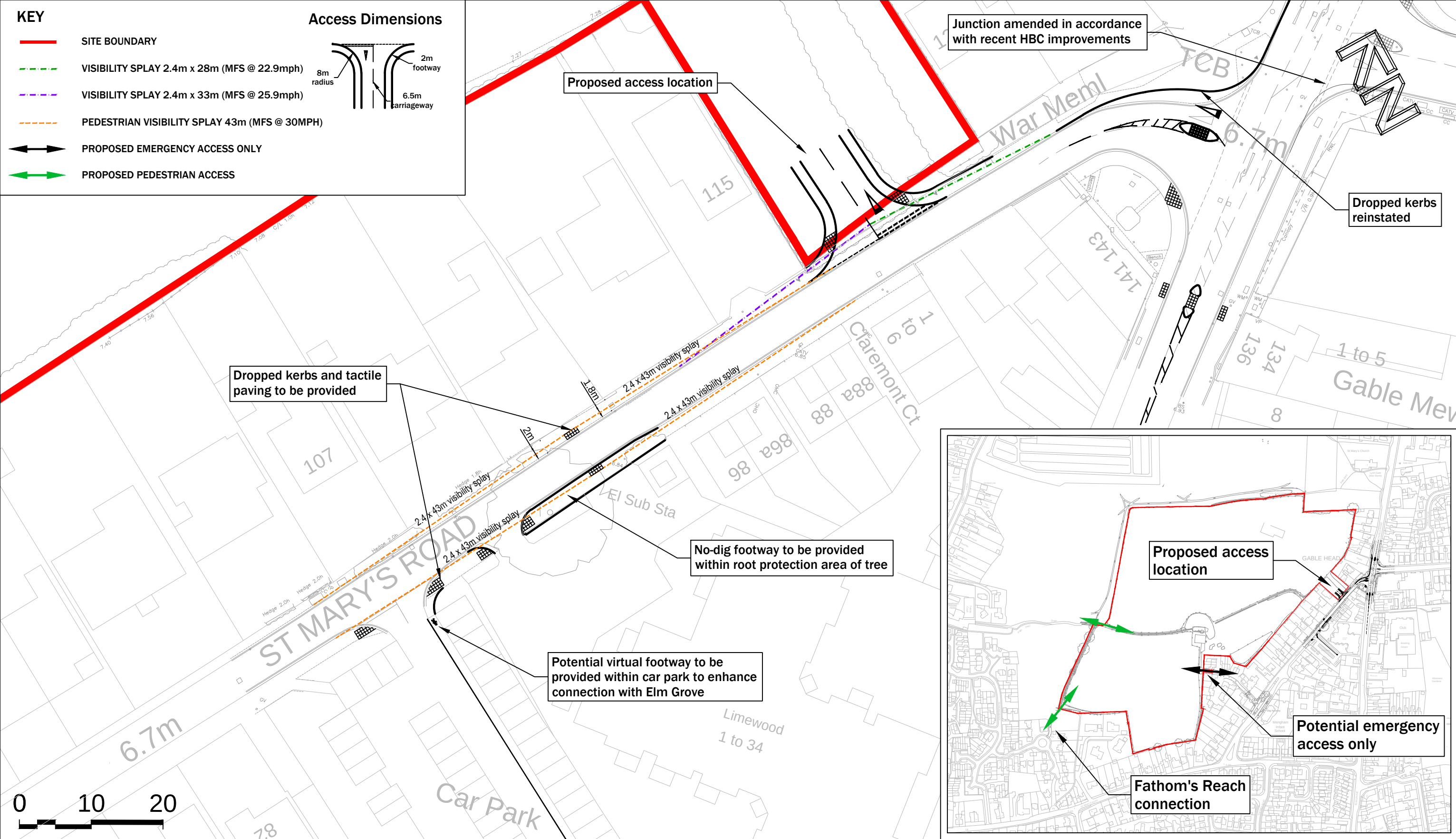
Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5mph	Bin 2 5<10	Bin 3 10<15	Bin 4 15<20	Bin 5 20<25	Bin 6 25<30	Bin 7 30<35	Bin 8 35<40	Bin 9 40<45	Bin 10 45<50	Bin 11 50<55	Bin 12 >=55
00:00	3	35.0	24.2	10.4	0	0	1	0	0	1	1	0	0	0	0	0
01:00	4	37.8	31.3	6.3	0	0	0	0	1	0	2	1	0	0	0	0
02:00	1	-	22.5	-	0	0	0	0	1	0	0	0	0	0	0	0
03:00	3	28.7	20.8	7.6	0	0	1	0	1	1	0	0	0	0	0	0
04:00	1	-	12.5	-	0	0	1	0	0	0	0	0	0	0	0	0
05:00	6	25.8	22.5	3.2	0	0	0	1	4	1	0	0	0	0	0	0
06:00	29	26.3	20.9	5.2	0	0	4	9	8	8	0	0	0	0	0	0
07:00	81	24.2	19.7	4.3	0	0	11	32	29	9	0	0	0	0	0	0
08:00	107	25.3	21.0	4.1	0	1	6	34	50	16	0	0	0	0	0	0
09:00	114	24.8	20.5	4.2	0	3	7	33	61	10	0	0	0	0	0	0
10:00	120	23.9	19.6	4.2	0	1	13	52	43	11	0	0	0	0	0	0
11:00	122	24.8	19.8	4.8	0	3	15	41	49	13	1	0	0	0	0	0
12:00	118	23.6	19.5	3.9	0	1	12	50	48	7	0	0	0	0	0	0
13:00	187	23.2	19.1	4.0	0	2	20	93	62	9	1	0	0	0	0	0
14:00	129	23.4	18.8	4.4	0	2	21	58	39	8	1	0	0	0	0	0
15:00	156	22.7	17.9	4.6	0	4	39	63	40	10	0	0	0	0	0	0
16:00	111	24.8	20.7	3.9	0	1	2	48	44	16	0	0	0	0	0	0
17:00	135	25.3	20.4	4.7	0	1	12	52	51	18	0	0	1	0	0	0
18:00	102	24.9	20.4	4.3	0	2	9	29	52	10	0	0	0	0	0	0
19:00	88	25.9	21.6	4.1	0	0	6	21	44	17	0	0	0	0	0	0
20:00	44	25.7	21.5	4.1	0	0	3	10	25	5	1	0	0	0	0	0
21:00	1	-	17.5	-	0	0	0	1	0	0	0	0	0	0	0	0
22:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Total																
2H(10-12)	242	24.4	19.7	4.5	0	4	28	93	92	24	1	0	0	0	0	0
2H(14-16)	285	23.0	18.3	4.6	0	6	60	121	79	18	1	0	0	0	0	0
12H(7-19)	1482	24.2	19.7	4.4	0	21	167	585	568	137	3	0	1	0	0	0
24H(0-24)	1662	24.5	19.9	4.5	0	21	183	627	652	170	7	1	1	0	0	0

APPENDIX D

TECHNICAL DRAWINGS

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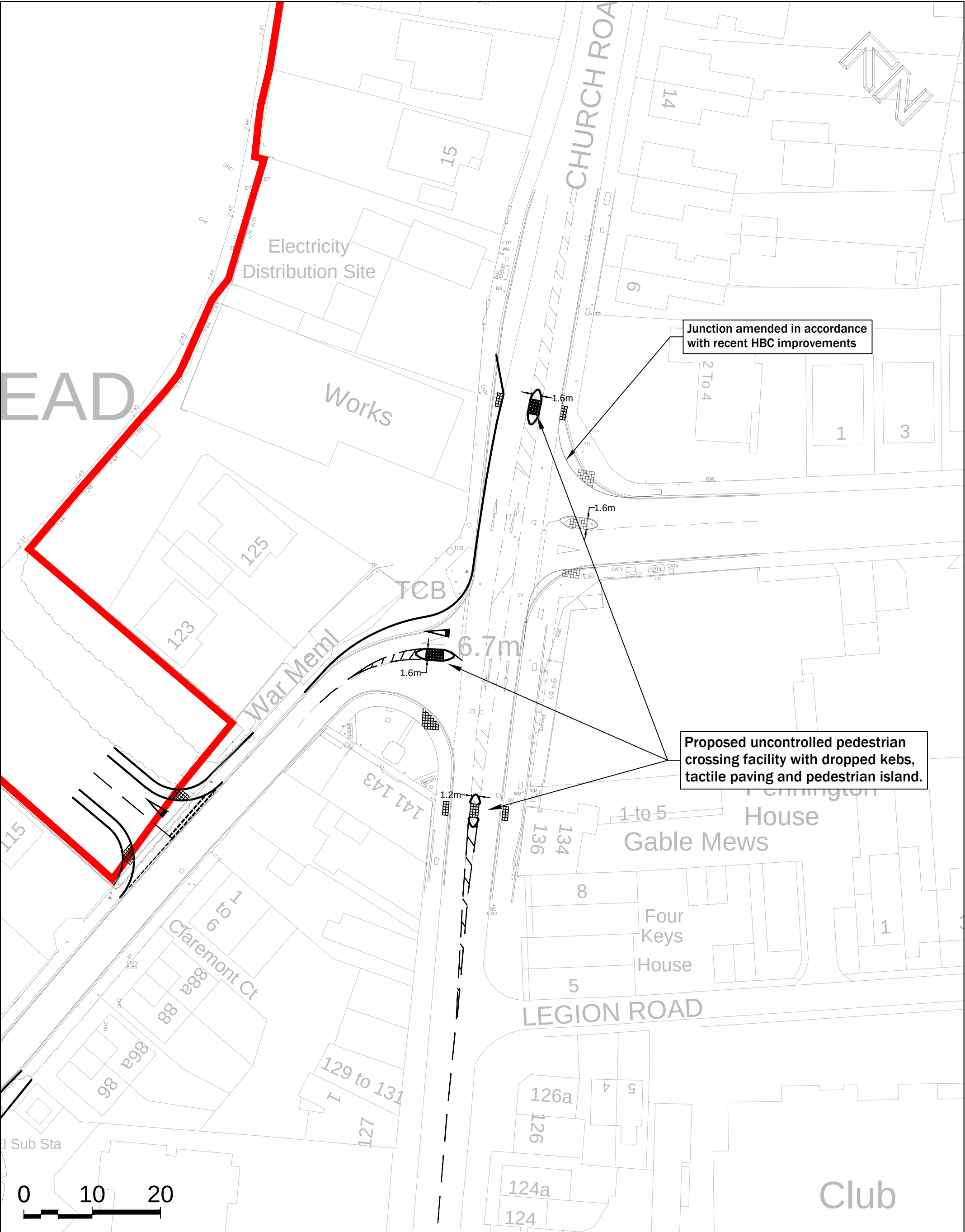
9 Hurricane Court
Liverpool International Business Park | Estuary Boulevard | Liverpool | L24 8RL
www.primetp.co.uk | 0151 728 1860

D	23.11.21	VB	MINOR AMENDMENTS
C	09.11.21	VB	UPDATED MAPPING/ EMERGENCY ACCESS
B	31.08.21	VB	MINOR AMENDMENTS TO VISIBILITY
A	02.07.21	VB	CHANGES FOLLOWING RSA COMMENTS
Rev	Date	By	Revision notes
Status			FINAL

Project	ST MARY'S ROAD, HAYLING ISLAND
Title	PROPOSED ACCESS ARRANGEMENT

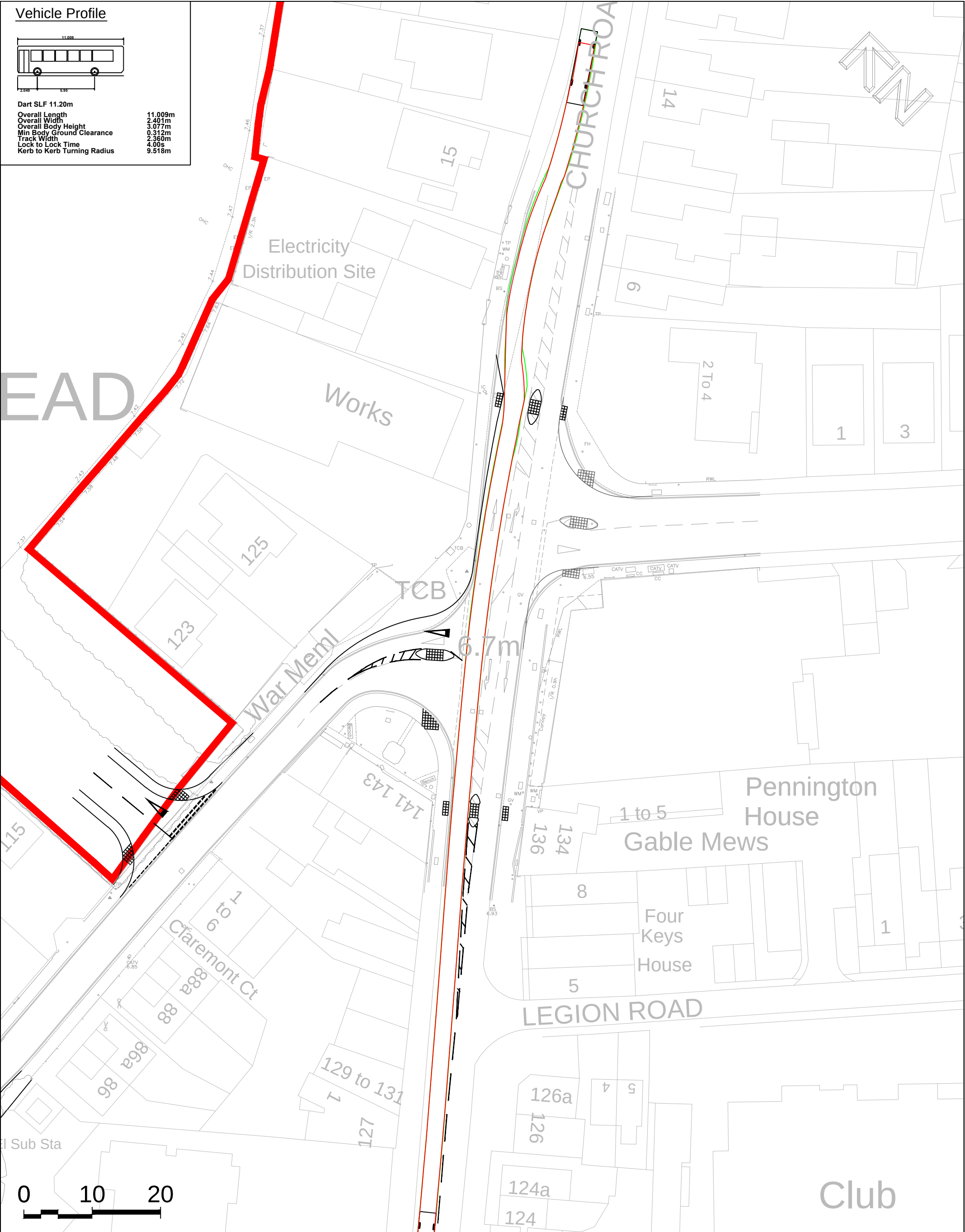
Drawn by VB	Issue date 17 JUN 2021
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Drawing No P21033-001D	

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 9 Hurricane Court Liverpool International Business Park Estuary Boulevard Liverpool L24 8RL www.primetp.co.uk 0151 728 1860					Project	Drawn by VB	Issue date 17 JUN 2021
	B A	18.11.21 02.07.21	VB VB	SCALE ADDED TO DRAWING CHANGES FOLLOWING RSA COMMENTS	ST MARY'S ROAD, HAYLING ISLAND	Scale(s) 1:500 @A3	
	Rev	Date	By	Revision notes			
	Status				Title	Drawing No	
	FINAL				PROPOSED PEDESTRIAN CROSSINGS	P21033-002B	

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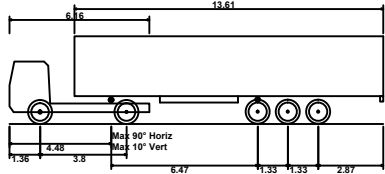


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	A	02.07.21	VB				
	Rev	Date	By	Revision notes	Title SWEPT PATH ANALYSIS (11.2m BUS)	Drawing No P21033-007B	
	Status						
INFORMATION							

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Vehicle Profile



FTA Design Articulated Vehicle (1998)

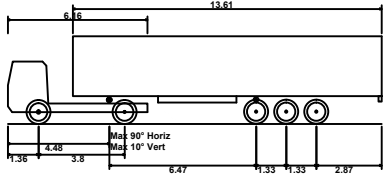
Overall Length 16.480m
Overall Width 2.550m
Overall Body Height 3.870m
Min Body Ground Clearance 0.515m
Max Track Width 2.470m
Lock to Lock Time 3.00s
Kerb to Kerb Turning Radius 6.550m

Traffic Island to be instated
post construction

6.7m



Vehicle Profile



FTA Design Articulated Vehicle (1998)

Overall Length 16.480m
Overall Width 2.550m
Overall Body Height 3.870m
Min Body Ground Clearance 0.515m
Max Track Width 2.470m
Lock to Lock Time 3.00s
Kerb to Kerb Turning Radius 6.550m

6.7m



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B A	18.11.21 02.07.21	VB VB	SCALE ADDED TO DRAWING CHANGES FOLLOWING RSA COMMENTS
Rev	Date	By	Revision notes

Status

INFORMATION

Project

ST MARY'S ROAD, HAYLING ISLAND

Title

**SWEPT PATH ANALYSIS
(16.48m ARTICULATED VEHICLE)
- PRIOR TO ISLAND INSTALLATION**

Drawn by
VB

Issue date
17 JUN 2021

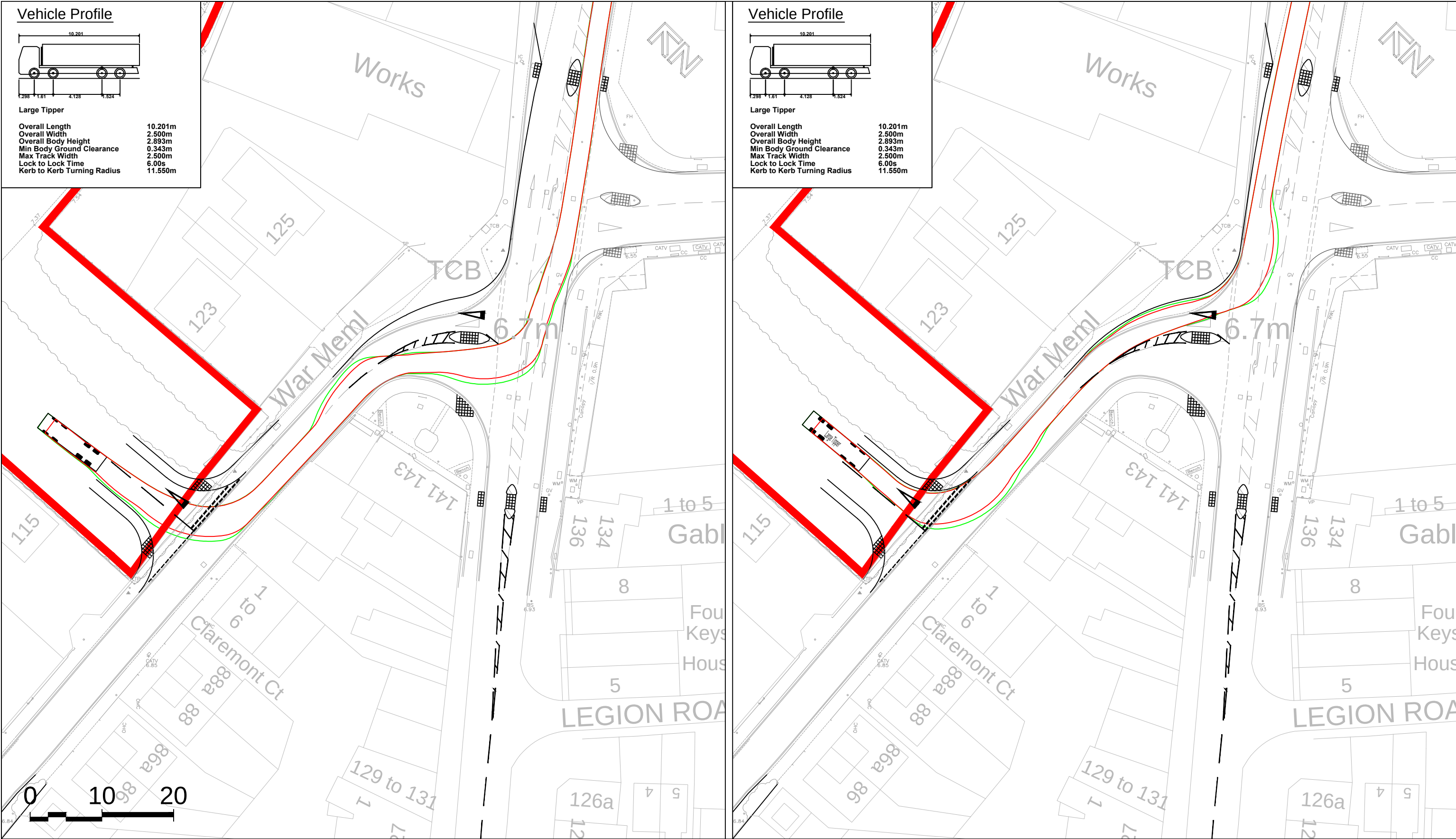
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Drawing No

P21033-004B

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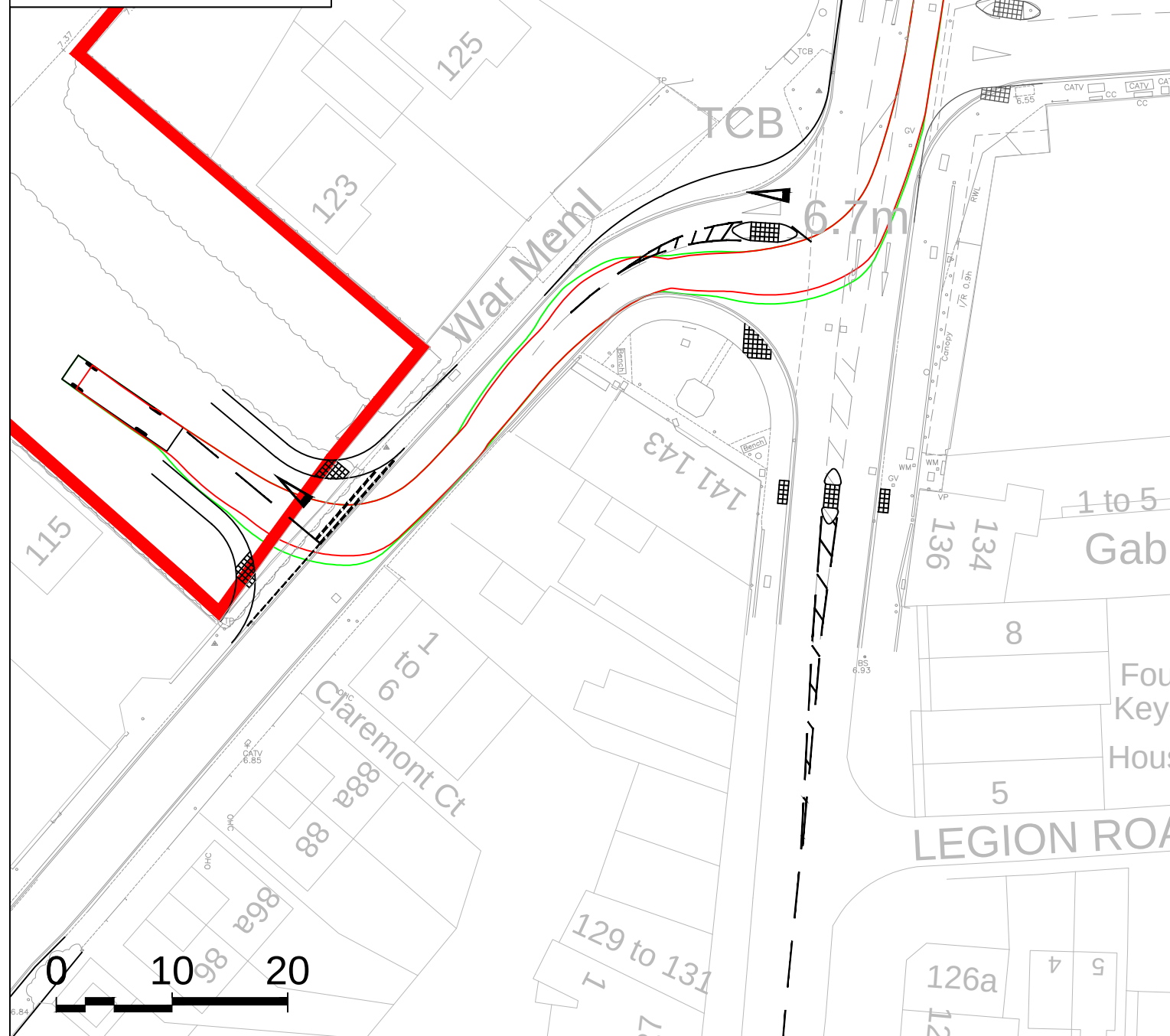


 9 Hurricane Court Liverpool International Business Park Estuary Boulevard Liverpool L24 8RL www.primetp.co.uk 0151 728 1860	B A 18.11.21 02.07.21 VB VB SCALE ADDED TO DRAWING CHANGES FOLLOWING RSA COMMENTS	Project ST MARY'S ROAD, HAYLING ISLAND	Drawn by VB	Issue date 17 JUN 2021
	Rev Date By Revision notes		Scale(s) 1:500 @ A3	
	Status INFORMATION		Drawing No P21033-005B	
	Title SWEPT PATH ANALYSIS (LARGE TIPPER TRUCK)			

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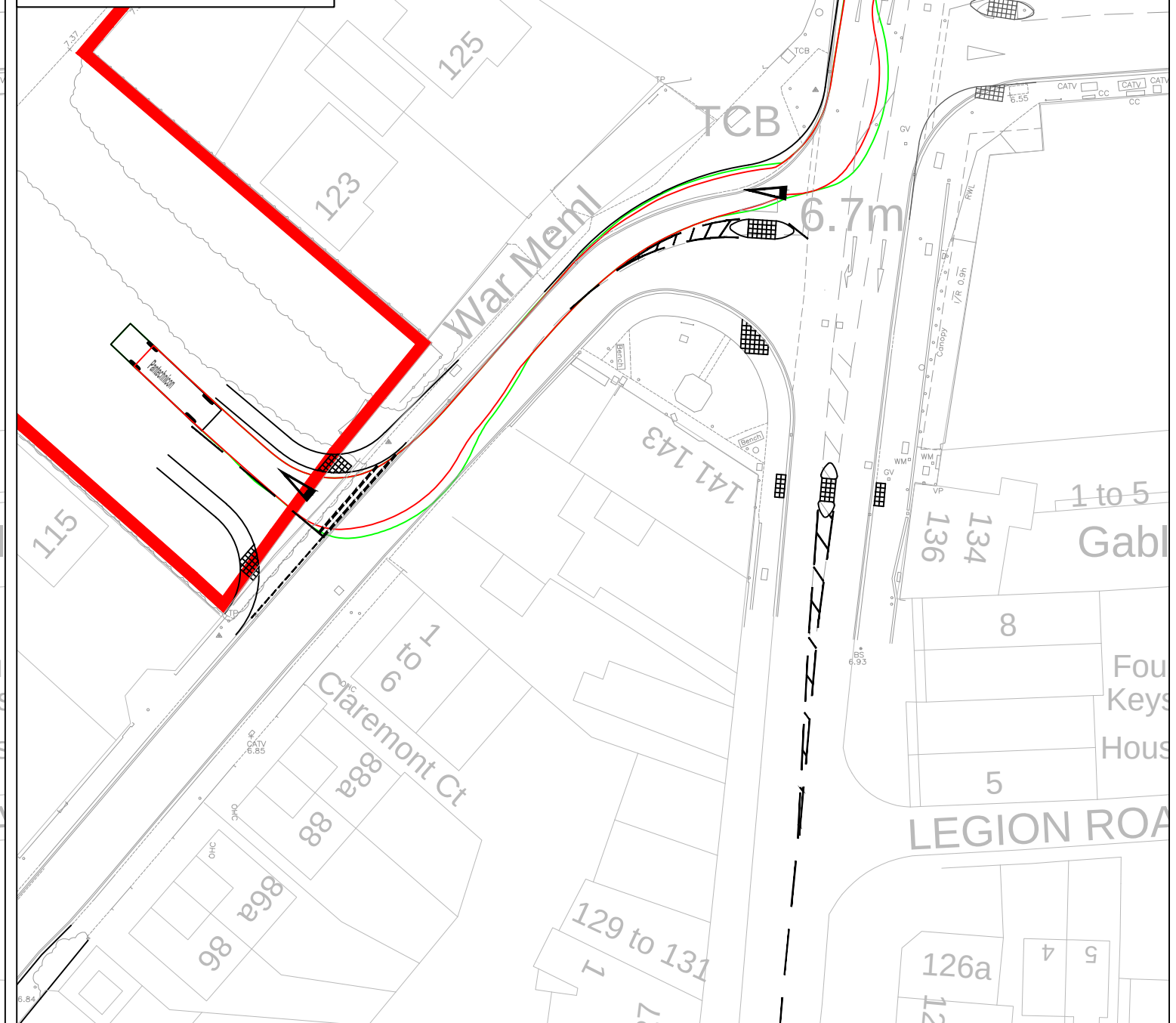
A side-view diagram of a truck. The total length of the truck is indicated by a dimension line at the top, labeled 11. The distance between the two wheels (the wheelbase) is indicated by a dimension line at the bottom, labeled 6.7. The distance from the front of the truck to the front wheel is indicated by a dimension line at the bottom, labeled 1.5. The truck has a cab on the left and a long rectangular trailer.

Pantechnicon	
Overall Length	11.000m
Overall Width	2.500m
Overall Body Height	4.730m
Min Body Ground Clearance	0.541m
Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	12.200m



A side-view diagram of a truck. The total length is labeled as 11. The distance between the front and rear wheels (wheelbase) is labeled as 6.7. The distance from the front of the truck to the front wheel is labeled as 1.5.

Pantechnicon	
Overall Length	11.000m
Overall Width	2.500m
Overall Body Height	4.730m
Min Body Ground Clearance	0.541m
Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	12.200m



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B A	18.11.21 02.07.21	VB VB	SCALE ADDED TO DRAWING CHANGES FOLLOWING RSA COMMENTS
Rev	Date	By	Revision notes
Status INFORMATION			

ST MARY'S ROAD, HAYLING ISLAND

SWEPT PATH ANALYSIS (PANTECHNICON)

Issue date
17 JUN 2021

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APPENDIX E

EIP ACCESS NOTE

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1 INTRODUCTION

1.1 Preamble

- 1.1.1 Prime Transport Planning (Prime) have been appointed to provide highways and transportation support to Gladman in relation to their proposed residential development on land known as Rook Farm off St Mary's Road, Hayling Island, allocation reference H27 for up to 390 dwellings in the emerging Havant Borough Council (HBC) Local Plan.
- 1.1.2 Prime have longstanding involvement with the site, having prepared the proposed access arrangement, Transport Assessment (TA) and Travel Plan (TP) in support of an outline planning application on the site by Gladman for up to 210 dwellings plus apartments with care in 2017 (HBC ref. APP/17/00007).
- 1.1.3 Prime's current role is to support the progress of the site as an allocation through the Local Plan adoption process with a view to preparing an updated TA and TP as well as a transport Environmental Statement chapter to support a new outline planning application.
- 1.1.4 Prime have extensive experience of supporting residential developments across the country, including several in Hampshire, and have particular expertise in access design. The author of this report has visited Hayling Island and the site multiple times since 2016, including visits during the AM and PM peak periods and the inter peak period at varying times of the year.

1.2 Purpose of Report

- 1.2.1 This report has been prepared as part of Gladman's representations for the Examination in Public (EiP) stage as, whilst the proposed allocation of the site is welcomed, the access arrangement from Manor Road suggested by HBC is not feasible but an alternative arrangement from St Mary's Road is fully deliverable. Gladman and Prime met with officers from HBC and Hampshire County Council (HCC), the local highway authority (LHA), on Thursday 26th September 2019 to discuss this issue. Whilst raising the constraints associated with the Manor Road access option in late 2019, it would appear that Manor Road, or a recently identified alternative access location off Lulworth Close, remains HBC's preferred access arrangement for the allocation.
- 1.2.2 Section 2 of this report explains the reasons why the Manor Road access arrangement is not feasible; Section 3 explains why the St Mary's Road access arrangement is fully deliverable and suitable; and Section 4 provides a summary and conclusion.

2 MANOR ROAD ACCESS

2.1 Origin of Manor Road Access Suggestion

- 2.1.1 Prime, via Gladman, were first made aware of HBC's preference for the allocation to be accessed from Manor Road in January 2019 when the pre-submission version of the Local Plan was published. Whilst the proposed allocation of the site was welcomed by Gladman, they immediately recognised the constraints associated with HBC's preferred access arrangement.
- 2.1.2 Through further discussions between Gladman and HBC, it would appear that HBC proposed the Manor Road access as it would provide a better balance of flows at the Mill Rythe roundabout (Church Road/Manor Road/Havant Road junction) than if the development traffic was to travel via Church Road via St Mary's Road, with the Church Road arm being more heavily trafficked than the Manor Road arm.
- 2.1.3 From the meeting held on 26th September 2019, it was unclear exactly where this preference came from, but HCC stated that they have had no part in the site allocation process nor the suggested access arrangements for them. HCC's role has been primarily to check that the Local Plan's supporting microsimulation model and associated trip generation and traffic growth assumptions were robust, and that the mitigation package was suitable.
- 2.1.4 The main issues with access from Manor Road are outlined below.

2.2 Issue 1: Third-Party Land

- 2.2.1 The Rook Farm site, including the allocation boundary, only has direct adopted highway network frontage with St Mary's Road, with this frontage forming the proposed access arrangement as part of the 2017 planning application. The eastern boundary is separated from Church Road by residential properties and St Mary's Church; the majority of the southern boundary is separated from St Mary's Road by residential properties, except for the aforementioned section of frontage at the existing agricultural access; and the western and northern boundaries are separated from Manor Road by fields which contain a network of public footpaths with more housing, Hayling Island Holiday Park and a campsite beyond. The aforementioned fields are irregular in shape with a western parcel and a north-eastern parcel separated by a narrower section adjacent to the north-west corner of the site.
- 2.2.2 None of these fields or properties are owned by the landowner of Rook Farm and are therefore outside of the control of Gladman; they are owned by third-parties.
- 2.2.3 The western field parcel has a circa 35m long section of frontage with Manor Road to the immediate south of the Holiday Park, with houses to the south of the frontage. The straight line distance between this Manor Road frontage, which we assume to be the location HBC have identified for the access, is

circa 270m across the circa 4.5 hectare field, although in reality the true distance of an access road would need to be longer than this to achieve the required design standards.

- 2.2.4 Clearly for Gladman to deliver a road that connects with the Manor Road frontage, it is likely that they would need to purchase or option the circa 4.5 hectare field, but as this field forms part of a singular title with the north-eastern field, it is likely that the whole circa 14.5 hectare land would need to be purchased or optioned, which is larger than the size of the allocation site area (11.92 hectares).
- 2.2.5 It would seem a wholly unreasonable requirement for Gladman to purchase or option this land to deliver an access road of the required length, given the availability of an alternative access option in the form of St Mary's Road, which is under their control and detailed in Section 3.
- 2.2.6 In our opinion, it seems somewhat unusual to allocate a site that requires unallocated land to deliver the local planning authority's favoured access arrangement.
- 2.2.7 Clearly securing an access to Manor Road requires land outside of the control of Gladman and outside of the allocation. It would seem that this is an unreasonable request, given the availability of a suitable and appropriate access from St Mary's Road. Access from Manor Road is not viable for this reason alone.

2.3 Issue 2: Access Design

- 2.3.1 The Local Plan wording related to the Manor Road access does not mention what form of junction should be used. We therefore considered what form of junction would be the most appropriate, with the aforementioned third-party land issue aside.
- 2.3.2 We discarded a full-sized roundabout as there is insufficient land available to achieve such a junction designed to appropriate standards, particularly for the diameter of the roundabout and the need for adequate deflection on approach which prevents traffic from driving straight through the roundabout without slowing. A mini-roundabout would seem somewhat out-of-place given Manor Road's 'A' classification along with the same visibility constraints we will mention below regarding a priority junction. Also, HCC informed us during the meeting on 26th September 2019 that they are not receptive to mini-roundabouts due to the maintenance liability they bring. Traffic signals would also be out-of-place and there would appear to be inadequate frontage and carriageway width to achieve an efficient design which accorded with the appropriate standards.
- 2.3.3 Priority controlled ('T') junctions are the most commonly used form of junction to access residential developments and are the most frequent junction types on Hayling Island. We therefore believe that such a junction would be most appropriate in this location, however a key design aspect for such junctions, which is important for safety reasons, is that an appropriate level of visibility needs to be achieved from the minor arm in order to help avoid collisions, known as the visibility splays. Aside

from the limited highway frontage in this location, there is another significant constraint which limits visibility, the location is on the inside of a bend.

- 2.3.4 We have produced a preliminary design shown in Drawing P19010-100 in Appendix 1 for a priority controlled junction from Manor Road which highlights the issues further. We have included visibility splays on the drawing which are based on 37mph speeds which is commonly regarded to be the upper limit of Manual for Streets visibility splay guidance; above this, the more onerous standards from the Design Manual for Roads and Bridges would likely be required. Visibility splays of 2.4m x 56m are required for speeds of 37mph, however it is important to point out the signed speed limit on Manor Road in this location is 40mph so it is likely that 85th percentile speeds, which should be used in formal design, are likely to be in excess of 37mph, so it is likely that a greater visibility splay 'y' distance is required. But as the drawing shows, even basing the design on the very conservative 37mph requirements, third-party land, in addition to the field required to physically deliver the access, is required to achieve the visibility splay to the north. This land falls outside of public highway and is owned by the Holiday Park.

2.4 Issue 3: Off-site Impact

- 2.4.1 As mentioned in the introduction to this section, the logic behind HBC's desire for access from Manor Road is to better balance the flows at the Mill Rythe roundabout. There has always been scope to modify the Mill Rythe junction, and conversion to traffic signals has been proposed as part of the Local Plan's supporting TA as one item in the package of mitigation works. Roundabouts operate more efficiently when traffic flows are evenly balanced on each arm, but traffic signals purposely help junctions to operate more efficiently when there is an imbalance, so it is somewhat counterintuitive that such an argument has been made.
- 2.4.2 As the microsimulation model produced to assess the impact of the Local Plan growth has the emerging Rook Farm allocation coded with access from Manor Road, Gladman commissioned HBC's modelling consultant, through HBC, to undertake an additional model run with access from St Mary's Road. The results were provided in a Testing Briefing Note with a covering email chain, both of which are included in Appendix 2. In summary, access from Manor Road showed no significant impacts at the Mill Rythe junction (with the proposed traffic signals upgrade in place), nor at anywhere else on the local highway network.
- 2.4.3 HBC's flow balancing argument is now void, and we have the evidence, from HBC's consultant, that access from St Mary's Road will not result in a significant impact on the local highway network with the associated mitigation package in place.

3 ST MARY'S ROAD ACCESS

3.1 2017 Planning Application

- 3.1.1 The primary access to the site from St Mary's Road was first proposed as part of the 2017 outline application (APP/17/00007). The submitted access drawing depicted a simple priority controlled junction at the site's frontage between numbers 115 and 123 St Mary's Road, with the access carriageway being 5.5m wide with 2m wide footways on both sides and 8m corner radii.
- 3.1.2 HCC reviewed the access arrangement and expressed some concerns, primarily related to the swept paths of larger vehicles, particularly refuse collection and construction vehicles. A revised access arrangement with a wider 6.5m carriageway was submitted along with supporting swept path analysis, however as an extension of time was not agreed, HCC were unable to comment on it prior to determination.

3.2 Further Discussions with HCC

- 3.2.1 Prime and Gladman have held further, more recent, discussions with HCC, particularly during the meeting on 26th September 2019 when it was explained that access from St Mary's Road would be the only deliverable access option.
- 3.2.2 A number of variations of the St Mary's Road access were tabled during this meeting including: a further revision to the submitted priority controlled option; a mini-roundabout, which HCC were unable to support due to maintenance liabilities; and an alternative priority arrangement where priority would be given to movements to and from the site and traffic on St Mary's Road to the south-west of the site would give-way.

3.3 Proposed Access Option

- 3.3.1 Whilst there was some support from HCC for the change in priority option following further discussions and this remains a viable option, we have chosen to progress the simple priority option which is an evolution of the design submitted in support of the previous application. This is on the basis that it is the most in-keeping with existing junction types on the island and retains the existing operation of St Mary's Road.
- 3.3.2 The current version of the proposed access arrangement is shown in Drawing P21033-001 in Appendix 3. The access is shown with a 6.5m wide carriageway, 2m wide footways on both sides and 8m corner radii. The dimensions are large enough to accommodate refuse collection vehicles and construction vehicles as shown in the swept path analysis shown in Drawings P21033-003 to P21033-006 also in Appendix 3.

-
- 3.3.3 The main access is supplemented by numerous pedestrian/cycle accesses to the public right of way network to the north and west, with a pedestrian/cycle access to the neighbouring emerging allocation H28 Fathom's Reach.
- 3.3.4 A number of footway and pedestrian crossing improvements are also proposed as part of the access arrangement, including new footway on the southern side of St Mary's Road along with uncontrolled crossings. Three uncontrolled crossings with pedestrian refuge islands are proposed, one over St Mary's Road close to the Church Road junction, one over Elm Grove south of St Mary's Road and the other over Church Road north of St Mary's Road as shown in Drawing P21033-002 in Appendix 3. As part of the discussions with HCC, concern was raised regarding the potential for construction vehicles to strike the proposed pedestrian refuge island on St Mary's Road, but this can be addressed by installing the island post-construction. Access to neighbouring properties and businesses is unaffected by the proposed access arrangements and pedestrian improvements.
- 3.3.5 The proposed access arrangement has been subject to a Stage 1 Road Safety Audit (RSA) by qualified and independent specialists. The audit has not raised any significant issues that would preclude safe access in the location shown, nor any issues with the form of junction. A copy of the RSA and a Designers' Response are available on request.
- 3.3.6 As mentioned in Section 2, HBC's microsimulation model did not identify any issues with access from St Mary's Road for the emerging allocation figure of 390 dwellings. Whilst the model included the now superseded change in priority access option, reverting to the proposed simple priority ('T' junction) option will not lead to any material changes in the local highway network performance.
- 3.3.7 We believe that the St Mary's Road access option is wholly safe and appropriate to serve the site.

4 SUMMARY AND CONCLUSION

4.1 Summary

4.1.1 This Access Note for the emerging H27 Rook Farm allocation has been prepared in advance of the EiP.

4.1.2 The wording associated with the emerging policy states that access should be taken from the A3023 Manor Road with emergency access from St Mary's Road. This is a concern to Gladman as there are numerous substantial constraints associated with access from Manor Road which were presented to HBC during a meeting on 26th September 2019. In summary, these issues are:

- A large parcel of third-party land will be required to provide a connection to Manor Road alongside the requirement to deliver a road that would be c.290 - 390m in length. The third-party land does not form part of the allocation and this would seem a wholly unreasonable requirement given the availability of a suitable, alternative access option;
- A safe access does not appear to be possible from Manor Road without additional third-party land; and
- There are no off-site impact reasons why access from Manor Road is required.

4.1.3 Access is proposed from the site's only highway network frontage, this being the area around the existing site access between property numbers 115 and 123 St Mary's Road. This location was also proposed as part of a previous planning application on the site submitted in 2017. The current access design, a simple priority controlled ('T') junction which is in-keeping with local junction types, has been revised since the 2017 application was submitted in order to better accommodate large vehicles.

4.1.4 Multiple pedestrian, cycle and emergency accesses are proposed, as are a number of footway and pedestrian crossing improvements.

4.1.5 HBC's microsimulation model was run by HBC's modelling consultant at the expense of Gladman, with access from St Mary's Road rather than Manor Road, with the results showing that no significant impacts would arise as a result of access from St Mary's Road.

4.2 Lulworth Close

4.2.1 Following further dialogue on the proposed access from Manor Road, it is my understanding that the Local Planning Authority have now put forward a suggested revision to the access arrangements for the Rook Farm site. This would require vehicular access to be taken from Lulworth Close to the northwest of the proposed allocation, but also to safeguard the delivery of an access from Manor Road in the future.

4.2.2 However, this change is associated with many of the same issues as the Manor Road access, with the principle, and most significant issue, being the requirement to use third-party land to access the Rook Farm allocation.

- 4.2.3 The Lulworth Close access would need to pass over the same piece of third-party land/field parcel as the Manor Road access, as well as being located further away from the allocation as the crow flies (c.290m). The proposed revisions also retain a reference to achieving access from Manor Road in the future; however, for the reasons explained above, this would not be achievable technically, and we understand that this has now been accepted by HBC.
- 4.2.4 It is not clear whether this access location has been properly assessed by either HBC or HCC. At the time of writing, informal correspondence with HBC has suggested that it has not been tested as part of the authority's microsimulation model.
- 4.2.5 In summary, it is our view that this change does not address the fundamental point that access to the Rook Farm allocation site can be safely and appropriately achieved from St Mary's Road, which is fully deliverable and in Gladman's control.

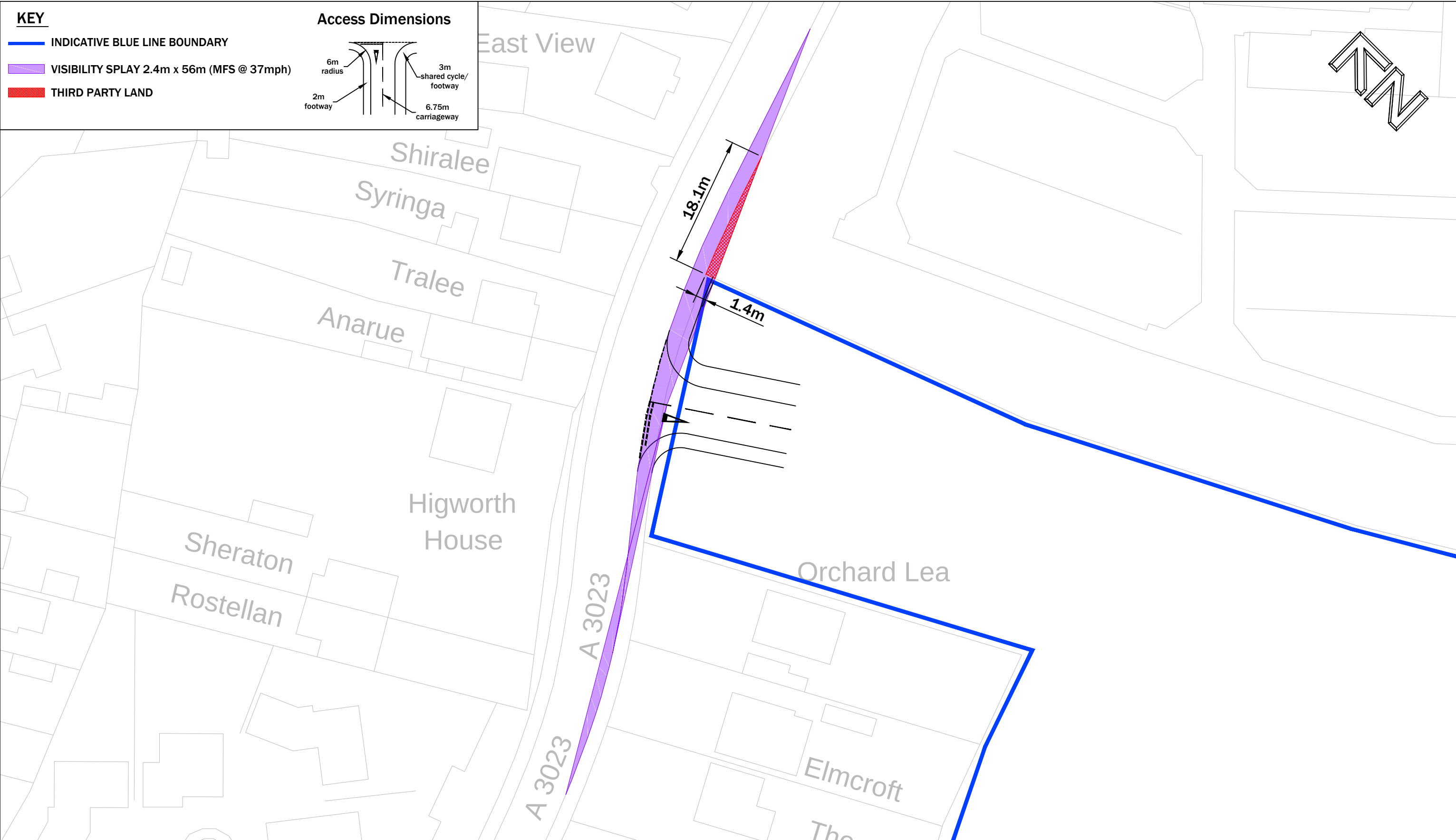
4.3 Conclusion

- 4.3.1 Access from Manor Road is outside of the control of the applicant, does not form part of the allocation boundary and has several technical constraints. It is therefore not a feasible access option.
- 4.3.2 It has been demonstrated that access from St Mary's Road, which is fully deliverable by Gladman, is a safe and appropriate location to serve the allocation.

APPENDIX 1

MANOR ROAD ACCESS DRAWINGS

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APPENDIX 2

MICROSIMULATION MODEL TESTING BRIEFING NOTE AND COVERING EMAIL

David Stoddart

From: SHAW Christopher <cshaw@systra.com>
Sent: 09 March 2020 12:03
To: David Stoddart
Cc: 'Rachael Evans'; 'Mountain, Steve'
Subject: RE: Hayling Island Transport Assessment

David – no, no concerns in that regard.

Chris

Chris Shaw
Associate Transportation Engineer

SYSTRA

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From: David Stoddart [mailto:D.Stoddart@primetp.co.uk]
Sent: Monday, March 9, 2020 10:52
To: SHAW Christopher <cshaw@systra.com>
Cc: 'Rachael Evans' <R.Evans@gladman.co.uk>; 'Mountain, Steve' <Steve.Mountain@havant.gov.uk>
Subject: RE: Hayling Island Transport Assessment

Hi Chris,

Many thanks for providing this. It is very good news indeed.

Does the model show any localised issues (notable queues, delays etc) at the site access, on St Mary's Road or on Church Road?

Kind regards

Dave

David Stoddart
Associate Director
Prime Transport Planning

DD: +44 (0)151 728 1864 M: +44(0) 7944 446528



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From: SHAW Christopher <cshaw@systra.com>
Sent: 09 March 2020 10:36
To: 'Mountain, Steve' <Steve.Mountain@havant.gov.uk>; David Stoddart <D.Stoddart@primetp.co.uk>
Cc: 'Rachael Evans' <R.Evans@gladman.co.uk>
Subject: RE: Hayling Island Transport Assessment

Steve, David

Please see attached our briefing note regards the Rook Farm test. In summary, no significant impacts on strategic journey times are observed as a result of the access being relocated, and local operation of the junction shows no issues. Let me know if you have any comments.

Steve, grateful if you could advise regards PO.

Thanks
Chris

Chris Shaw
Associate Transportation Engineer

SYSTRA

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From: Mountain, Steve [<mailto:Steve.Mountain@havant.gov.uk>]
Sent: Tuesday, February 18, 2020 16:35
To: SHAW Christopher <cshaw@systra.com>; 'David Stoddart' <D.Stoddart@primetp.co.uk>
Cc: 'Rachael Evans' <R.Evans@gladman.co.uk>
Subject: RE: Hayling Island Transport Assessment

Hi Chris et al just to be clear, the commission is from us (HBC), your fees will be invoiced to us not David. David is providing the data for you to use, that's all. Copies of the resulting report will go to us and David.
Steve

From: SHAW Christopher <cshaw@systra.com>
Sent: 18 February 2020 16:33
To: 'David Stoddart' <D.Stoddart@primetp.co.uk>
Cc: Mountain, Steve <Steve.Mountain@havant.gov.uk>; 'Rachael Evans' <R.Evans@gladman.co.uk>
Subject: RE: Hayling Island Transport Assessment
Thanks David – do you have a DWG/DWF of the layout you can provide for us to use to code the layout into the model?
David, I'll drop you a line regards fees shortly, we can get moving as soon as you approve.
Thanks
Chris

Chris Shaw
Associate Transportation Engineer

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From: David Stoddart [<mailto:D.Stoddart@primetp.co.uk>]
Sent: Tuesday, February 18, 2020 16:11
To: SHAW Christopher <cshaw@systra.com>
Cc: Mountain, Steve <Steve.Mountain@havant.gov.uk>; Rachael Evans <R.Evans@gladman.co.uk>
Subject: Re: Hayling Island Transport Assessment
Hi Chris,

HAYLING MICROSIMULATION MODEL**ROOK FARM ACCESS TESTING NOTE****SUMMARY TABLE**

Client/Project owner	Havant Borough Council
Project	Hayling Microsimulation Model
Title of Document	Rook Farm Access Testing Note
Type of Document	Briefing Note
Date	09/03/2020
Reference number	GB01T19D69/21/02/2020
Number of pages	4

1. INTRODUCTION

SYSTRA was requested to undertake testing of alternative access to Rook Farm development using Havant Borough Councils (HBC) Paramics Discovery model, '2036 M1a.paramics' that was developed for HBC by SYSTRA during LDP modelling. The details of this model can be found in 'Hayling Island Microsimulation Modelling Mitigation Testing Report'.

This technical note outlines the testing of site access for the Rook Farm development at Manor Road and St Mary's Road, reflecting infrastructure changes and the impact this has on journey times through the local road network.

Prime Transport Planning provided drawing number P18034-100C detailing the proposed site access arrangements.

2. MODEL NETWORK UPDATES

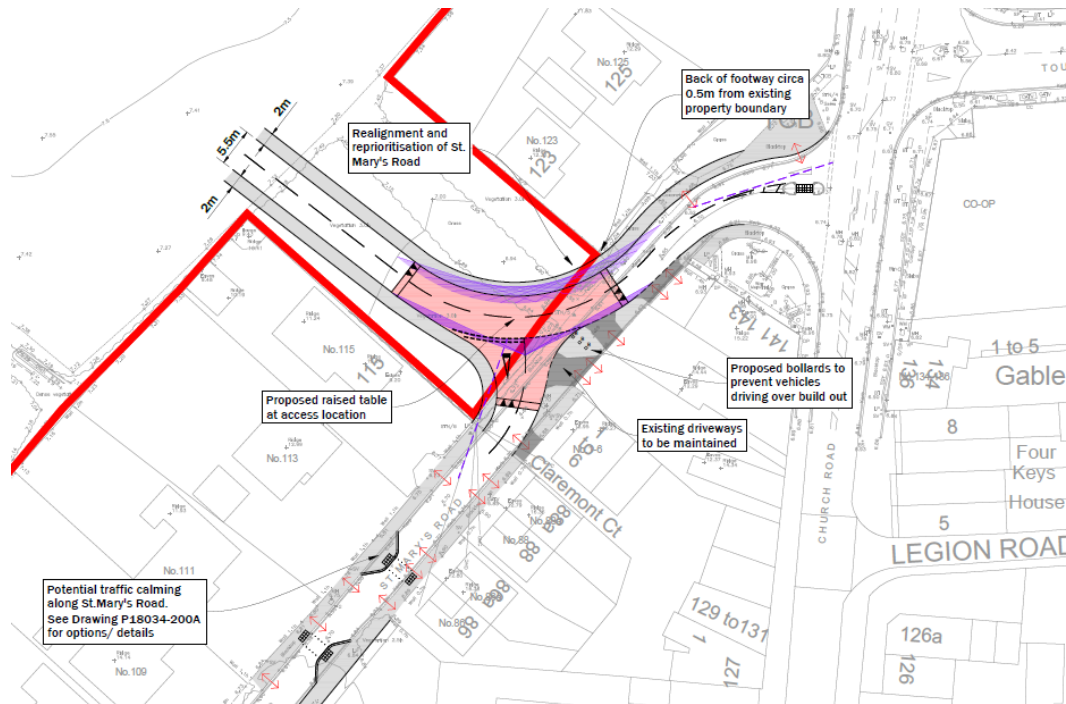
A version of 2036 M1a model was created, with site access to Rook Farm on St Mary's Road and changes to the road priority at this new site access as shown in Figure 1.

This test intends to realign St Mary's Road and reprioritise the junction to give Rook Farm access full priority making the St Mary's Road to the south give way and also includes traffic calming measures along St Mary's Road on approach to the new junction in the form of a pair of chicane-type raised pavements.

As well as this infrastructure change, St Mary's Road from Cherrywood Gardens to Church Road including the new site access are to become a 20mph speed limit area.

The vehicles coming to and from the Rook Farm development in this option would only be accessing the local road network at this new St Mary's road location and the proposed access at Manor Road adopted for the LDP testing would not be in use.

Figure 1. Road changes at Rook Farm site access
 (extract from Prime Transport Planning drawing no. P18034-100C)



3. JOURNEY TIME COMPARISON

The impact of this change will only affect local traffic and it is assumed that the strategic route beyond the Havant Road/West Lane junction would be unchanged by this test.

Journey times were collected along four main routes to the south of the Havant Road/West Lane that are expected to detail any impact of this proposed site access change. These routes are as follows:

- West Lane - West Lane/Brights Lane to West Lane/Havant Road
- Church Road - Sea Front/Sea Grove Avenue to Church Road/Manor Road
- Manor Road - Sea Front/Beach Road to Manor Road/Church Road
- Havant Road - Church Road/Manor Road to Havant Road/West Lane

Journey times were collected for the AM, Interpeak, and PM Periods (07:00-10:00, 10:00-16:00, and 16:00-19:00 respectively) and a comparison of average journey times along these routes made for the peak hours in each period (08:00-09:00, 12:00-13:00, and 17:00-18:00 respectively). Whole period averages can be found in the Appendix to this report.

Table 1. AM Peak Hour Journey Time Comparison

08:00 - 09:00	Northbound			Southbound		
	Old Access	New Access	Difference	Old Access	New Access	Difference
West Lane	03:00	02:55	-00:05	02:42	02:40	-00:01
Church Road	02:41	02:42	00:01	02:39	02:40	00:01
Manor Road	03:19	03:20	00:01	02:25	02:27	00:02
Havant Road	02:52	02:51	-00:01	02:56	02:54	-00:02

Table 2. IP Peak Hour Journey Time Comparison

12:00 - 13:00	Northbound			Southbound		
	Old Access	New Access	Difference	Old Access	New Access	Difference
West Lane	02:37	02:38	00:01	02:35	02:36	00:01
Church Road	02:38	02:38	-00:00	02:45	02:45	00:00
Manor Road	02:31	02:31	00:00	02:28	02:28	-00:00
Havant Road	02:51	02:51	00:00	02:59	02:59	-00:00

Table 3. PM Peak Hour Journey Time Comparison

17:00 - 18:00	Northbound			Southbound		
	Old Access	New Access	Difference	Old Access	New Access	Difference
West Lane	02:35	02:35	00:00	02:34	02:34	-00:00
Church Road	02:40	02:39	-00:00	02:47	02:49	00:01
Manor Road	02:30	02:28	-00:01	02:25	02:24	-00:01
Havant Road	02:51	02:54	00:03	03:00	03:01	00:02

The tables above and in the appendices show that the impact of the site access moving from Manor Road to St Mary's road on strategic journey times south of the West Lane/Havant Road junction are negligible. Observations from the model runs do not demonstrate any localised issues with the site access arrangements.

4. APPENDIX

Table 4. AM Period Journey Time Comparison

07:00 - 10:00	Northbound			Southbound		
	Old Access	New Access	Difference	Old Access	New Access	Difference
West Lane	03:03	02:55	-00:08	02:43	02:42	-00:01
Church Road	02:45	02:46	00:02	02:45	02:45	-00:00
Manor Road	03:33	03:43	00:10	02:25	02:24	-00:00
Havant Road	02:55	02:54	-00:01	02:58	02:57	-00:01

Table 5. IP Period Journey Time Comparison

10:00 - 16:00	Northbound			Southbound		
	Old Access	New Access	Difference	Old Access	New Access	Difference
West Lane	02:37	02:37	00:00	02:35	02:35	00:00
Church Road	02:40	02:40	00:00	02:46	02:47	00:01
Manor Road	02:31	02:32	00:01	02:28	02:28	-00:00
Havant Road	02:52	02:52	00:00	03:00	03:00	00:00

Table 6. PM Period Journey Time Comparison

16:00 - 19:00	Northbound			Southbound		
	Old Access	New Access	Difference	Old Access	New Access	Difference
West Lane	02:35	02:35	-00:01	02:33	02:34	00:00
Church Road	02:40	02:38	-00:01	02:45	02:47	00:01
Manor Road	02:28	02:28	-00:00	02:28	02:27	-00:01
Havant Road	02:52	02:53	00:01	03:00	03:01	00:01

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APPENDIX F

ROAD SAFETY AUDIT DESIGNERS' RESPONSE

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1 INTRODUCTION

1.1 Preamble

- 1.1.1 Prime Transport Planning (Prime) has been instructed by Gladman to advise on the traffic and transportation issues relating to a proposed residential development on land known as Rook Farm off St Mary's Road, Hayling Island, allocation reference H27 for up to 390 dwellings in the emerging Havant Borough Council (HBC) Local Plan.
- 1.1.2 Prime prepared the proposed access arrangement, Transport Assessment (TA) and Travel Plan (TP) in support of an outline planning application on the site by Gladman for up to 210 dwellings plus apartments with care in 2017 (HBC ref. APP/17/00007).
- 1.1.3 Prime's current role is to support the progress of the site as an allocation through the Local Plan adoption process with a view to preparing an updated TA and TP as well as a transport Environmental Statement chapter to support a new outline planning application.

1.2 Purpose of Report

- 1.2.1 Hampshire County Council (HCC) the local highway authority (LHA) for the area, commented on the version of the access arrangement submitted as part of the 2017 planning application, stating:

'A Road Safety Audit has not been submitted within the TA. One should be submitted to fully assess the relationship between the site access and its close proximity to the St Mary's Road/Elm Grove junction.'

- 1.2.2 This report therefore provides a Designers' Response to a Stage 1 Road Safety Audit (RSA) commissioned to consider the latest access proposals associated with the scheme, noting that the main change to the access arrangement is provision of a wider 6.5m access rather than the 5.5m previously proposed along with amendments to footway and crossing improvements. The widening has been proposed to address HCC's concerns regarding large vehicle swept paths.
- 1.2.3 The remainder of this Designers' Response is structured as follows:
- **Section 2** outlines the scope of the Road Safety Audit;
 - **Section 3** provides the Designers' Response to the Road Safety Audit; and
 - **Section 4** concludes this report.
- 1.2.4 This report follows Appendix 1 of the Gladman Hearing Statement submitted to address Matter 5 of the Examination in Public process.

2 STAGE 1 ROAD SAFETY AUDIT

2.1 Details of Commission & Receipt of RSA

- 2.1.1 The independent and specialist consultant six:TEN Highways & Traffic Ltd was instructed to carry out a Stage 1 Road Safety Audit (RSA) on the latest proposed access arrangement at St Mary's Road as part the development proposals.
- 2.1.2 The RSA was undertaken by two Society of Road Safety Auditors qualified professionals who undertook a site visit on 16th June 2021 and the audit was carried out in accordance with *Design Manual for Roads and Bridges (DMRB) GG119 – Road Safety Audit*.
- 2.1.3 The following information was provided to six:TEN Highways & Traffic Ltd:
- P21033-001 Proposed Access Arrangement
 - P21033-002 Proposed Pedestrian Crossings
 - P21033-003 Swept Path Analysis (Refuse Collection Vehicle)
 - P21033-004 Swept Path Analysis (Articulated Vehicle)
 - P21033-005 Swept Path Analysis (Large Tipper Truck)
 - P21033-006 Swept Path Analysis (Pantechnicon)
 - P21033-007 Swept Path Analysis (11.2m Bus)
 - 2016 Speed Survey Data
 - 2016 Observed Peak Hour Traffic Flow Data.
- 2.1.4 The auditors sourced 5.5 years (up to June 2020) of Personal Collision Data from crashmap.co.uk.
- 2.1.5 On instruction, Prime provided six:TEN Highways & Traffic Ltd with the above comment from HCC to ensure that they considered junction proximity as well as all other highway safety issues they would normally consider.
- 2.1.6 The Stage 1 Safety Audit (doc. Ref. 610/2021/133/01) was provided to Prime in June 2021.
- 2.1.7 Six items were raised by the auditors. These items are detailed below along with a Designers' Response provided to each of them.
- 2.1.8 A copy of the Stage 1 RSA is provided in **Appendix A** of this report.

3 DESIGNERS' RESPONSE

3.1 Introduction

- 3.1.1 A Designers' Response to each item raised by the safety auditors is provided in turn below. A revised access drawing with minor changes and accompanying swept path drawings are provided in **Appendix B** of this report.

3.2 Response to Items Raised

RSA Comment 5.1

Location: Proposed uncontrolled pedestrian crossings on St Mary's Road at car park access and Limewood access

Problem

Summary: Incorrect tactile paving layout increases the risk of visually impaired pedestrians inadvertently entering the carriageway

The proposed uncontrolled pedestrian crossings on St Mary's Road at the car park access and Limewood access do not have the required minimum depth of tactile paving across the whole width of the dropped kerbs for an in-line type uncontrolled crossing. The audit team note that the minimum depth of tactile paving for in-line crossings is generally 1200mm. A reduced depth of tactile paving results in a lack of warning for visually impaired pedestrians of the road ahead and they may inadvertently enter the carriageway, which may increase the risk pedestrian/vehicular collisions.

Recommendation: It is recommended that the tactile paving layouts should be amended to provide a minimum depth of 1200mm tactile paving across the whole width of the dropped kerbs at the in-line uncontrolled crossings.

Designers' Response to Comment 5.1

- 3.2.1 Whilst tactile paving can be addressed at detailed design, this item is noted and as such, the proposed crossing points on the southern side of St Mary's Road have been revised to provide a depth of 1200mm on Drawing P21033-001A in Appendix B.

RSA Comment 5.2

Location: Proposed uncontrolled pedestrian crossings on St Mary's Road at car park access and Limewood access

Problem

Summary: Proximity of the uncontrolled crossing to the kerb radius may result in collisions between pedestrians with visual impairments and motorised vehicles

There is a limited offset between the uncontrolled crossing points and kerb radius on St Mary's Road at the car park access and Limewood access. This could result in the potential for pedestrians with visual impairments mistaking these as crossing points across St Mary's Road and could result in an increased risk of pedestrian/vehicle collisions.

Recommendation: It is recommended that the offset between the tactile paving and kerb radius be increased, although the audit team would note that the offset should not be to the detriment of the likely pedestrian desire line across the accesses. The audit team also note that due to the existing highway layout it may not be practical to inset the crossings, however, the crossings should be moved as near as possible to the rear of the footway. Alternatively, the width of the crossings could be reduced by removing the row of tactile paving nearest to St Mary's Road in order to increase the offset from the kerb radius.

Designers' Response to 5.2

- 3.2.2 This is noted. As such, the tactile paving shown has been relocated towards the back of footway and the row nearest to St Mary's Road has been removed from Drawing P21033-001A in Appendix B.

RSA Comment 5.3

Location: South-westbound carriageway on St Mary's Road

Problem

Summary: Risk of vehicles colliding with kerbs due to proposed carriageway alignment

The proposed amendment to the carriageway alignment on the St Mary's Road south-westbound carriageway outside the Limewood development has a relatively short taper length. This may increase the risk of vehicles colliding with the kerblines and associated loss of control collisions.

Recommendation: It is recommended that the taper length should be increased to provide a smoother horizontal alignment for south-westbound vehicles.

Designers' Response to 5.3

- 3.2.3 The carriageway alignment of St Mary's Road outside the Limewood has not been altered as part of the access arrangement proposals. The 'no-dig' footway proposals shown on Drawing P21033-001 (and Rev A) follow the existing kerb edge alignment which was recorded by the topographical survey.

RSA Comment 5.4

Location: St Mary's Road junction with Elm Grove

*Problem**Summary: Road markings lead directly into central refuge island*

The drawing provided for audit does not show any proposed amendments to the road markings on St Mary's Road at the proposed pedestrian refuge island. The existing road markings shown on the drawing lead directly into the kerbs of the island. This may result in vehicles colliding with the kerbs on the island and associated loss of control collisions, as drivers are guided by the road markings.

Recommendation: It is recommended that the road markings on the approach to the central refuge island are amended to guide vehicles safely past the island.

Designers' Response to 5.4

- 3.2.4 This is noted and as such the road markings on the approach to the proposed refuge island have been amended on Drawing P21033-001A in Appendix B. The changes made to road markings and tactile paving are also reflected within the package swept path drawings which form part of the design proposals. These are also included within Appendix B.

RSA Comment 5.5

Location: Proposed uncontrolled pedestrian crossing on the southern side of St Mary's Road at the junction with Elm Grove

*Problem**Summary: Existing building may obscure pedestrian/driver intervisibility*

The intervisibility between pedestrians crossing from the southern side of St Mary's Road at the junction with Elm Grove at the proposed uncontrolled pedestrian crossing and drivers turning left into St Mary's Road from Elm Grove may be obscured by an existing building. A reduction of pedestrian/driver intervisibility may increase the risk of pedestrian/vehicular collisions as crossing pedestrians fail to sufficiently appreciate approaching traffic and vice versa.

Recommendation: It is recommended that the pedestrian/driver intervisibility at this location is examined and the uncontrolled crossing should be relocated if pedestrian/driver intervisibility is found to be obscured by the existing building.

Designers' Response to 5.5

- 3.2.5 The position of the refuge island and tactile paving had been influenced by HBC's feasibility study undertaken in 2016 to make amendments at the Church Road/ Elm Grove/ Tournerbury Lane/ St Mary's Road junction. The proposals included amendments to kerb edges and the introduction of refuge crossing points over the Tournerbury Lane and St Mary's Road, which largely appear to have been implemented with regards to Tournerbury Road, however on-site observations would suggest

that the proposals over the St Mary's Road arm have not. Given the recommendations of the RSA, Drawing P21033-001A now shows the refuge island positioned closer to Elm Grove to assist with pedestrian north-to-south movements along Church Road/ Elm Grove and improve the pedestrian/driver intervisibility.

RSA Comment 5.6

Location: Proposed pedestrian refuge islands on Elm Grove and Church Road

Problem

Summary: Narrow refuge islands may result in pedestrian/vehicle collisions

The proposed pedestrian refuge islands on Elm Grove and Church Road does not appear wide enough to accommodate a pedestrian pushing a pushchair or wheelchair, for example. These users waiting on the pedestrian refuge island may encroach into the carriageway, increasing the risk of collisions between these users and passing motorised vehicles.

Recommendation: It is recommended that the proposed pedestrian refuge islands should be widened if they are not wide enough to safely accommodate a pedestrian pushing a pushchair or wheelchair, for example.

Designers' Response to 5.6

- 3.2.6 This is noted, and as such, a wider refuge island has been shown within the northern taper of the ghost island right turn on drawing P21033-002A in Appendix B.
- 3.2.7 Inclusive Mobility states 'Where centre refuge islands are provided they can be an absolute minimum of 1200mm in width LTN 2/95 but to cater for wheelchair users they should be at least 1500mm and preferably 2000mm.'
- 3.2.8 Given the existing width of Elm Grove and Church Road, it would appear difficult to deliver 2.0m wide refuge islands and maintain suitable lane widths either side, therefore the best width which can be delivered within the northern taper is 1.6m as shown on Drawing P21033-002A, this being a sufficient width for wheelchair users according to Inclusive Mobility and is commensurate with the approved existing refuge island over Tournurbury Road. The southern proposed refuge island cannot be increased from 1.2m due to the width of the taper, which is recognised as being below the preferred width, but still meets the minimum requirements according to Inclusive Mobility. Pedestrians will also have the option of using the wider northern crossing point if required. Other crossing opportunities are available.

4 SUMMARY AND CONCLUSION

4.1 Summary

- 4.1.1 A Stage 1 Road Safety Audit has been prepared to consider the safety implications of taking access, in the form of a simple priority controlled 'T' junction, from St Mary's Road to serve the emerging H27 Rook Farm application for up to 390 dwellings. A qualified and independent audit team were commissioned who undertook that audit in accordance with national design standards.
- 4.1.2 The points raised by the independent auditors in the Stage 1 Road Safety Audit have been considered and a Designers' Response provided above. The issues raised predominantly relate to pedestrian crossing points, tactile paving and road markings.
- 4.1.3 **No issues have been raised regarding the principle of the access arrangement such as the location or form of junction.**
- 4.1.4 The proximity to the St Mary's Road/Elm Grove junction was considered and not raised as an issue.
- 4.1.5 The issues raised by the Stage 1 Road Safety Audit have been noted and largely addressed within the latest drawings which are provided in Appendix B for the consideration of HCC. Further details can be addressed at the detailed design stage.

4.2 Conclusion

- 4.2.1 It can be concluded that the access proposals from St Mary's Road to serve the emerging H27 Rook Farm allocation, are safe and appropriate. This access can be delivered using land within the control of Gladman.
- 4.2.2 Alternative options suggested by HBC which would utilise third-party land between Manor Road or Lulworth Close are not required.

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APPENDIX A

STAGE 1 ROAD SAFETY AUDIT



ST MARY'S ROAD, HAYLING ISLAND PROPOSED ACCESS ARRANGEMENT

STAGE 1 ROAD SAFETY AUDIT

610/2021/133/01

18th June 2021

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Rev:	Issue Status:	Prepared by/Date:	Checked by/Date:	Approved by/Date:
0	DRAFT	Jon Preston 17 June 2021	Tristan Brooks 17 June 2021	
1	FINAL	Jon Preston 18 June 2021	Tristan Brooks 18 June 2021	Jon Preston 18 June 2021

Report Title:	St Mary's Road. Hayling Island Proposed Access Arrangement Stage 1 Road Safety Audit
Date:	18 June 2021
Document Reference & Revision:	610/2021/33/01 Rev 1
Prepared by:	Six Ten Highways & Traffic Ltd
On behalf of:	Prime

Disclaimer note

The client has confirmed that it is entering into the agreement under which this report is being prepared on its own behalf and not on behalf of, or for the benefit of any other party and has agreed that in any event of any claim arising out of or in connection with that agreement and/or the report itself it shall be entitled to recover from six:TEN Highways & Traffic Limited only the losses, if any, it has itself suffered.

This report therefore is for the private and confidential use of the client for whom it was prepared solely for the purposes requested by the client. It should not be reproduced in whole or in part or relied upon by any third party for any use whatsoever without the express written authority of six:TEN Highways & Traffic Limited.

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1.0 INTRODUCTION

- 1.1 This report is a preliminary design Stage 1 Road Safety Audit (RSA) carried out on the proposed access arrangements for a new residential development at St Mary's Road, Hayling Island at the request of Prime, who are the Design Organisation and supplied the audit brief, which was accepted by the audit team. The local highway authority is Hampshire County Council.
- 1.2 The RSA team, staff members from six:TEN Highways & Traffic Ltd, present at the RSA were:
- Jon Preston MCIHT MSoRSA
Audit Team Leader
- Tristan Brooks Bsc (Hons), MBA, CMILT, MCIHT, MSoRSA, HE RSA Cert of Comp
Audit Team Member
- 1.3 We confirm that no member of the Audit Team has been involved with the design process.
- 1.4 A site visit was carried out on the 16th June 2021 between 15:45hrs and 16:30hrs. The weather during the site visit was sunny and the carriageway surface was dry.
- 1.5 St Mary's Road in the vicinity of the proposed highway works is subject to a 30mph speed and is street lit.
- 1.6 The RSA brief issued to the team comprised various elements listed at Appendix Two.
- 1.7 The audit brief contained a specific requirement from the local highway authority requesting the audit team fully assess the relationship between the site access and its close proximity to the St Mary's Road/Elm Grove junction.
- 1.8 The terms of reference of the RSA are as described in the Design Manual for Roads and Bridges GG119 – Road Safety Audit. The RSA team has examined and reported only the road safety issues of the scheme as presented and has not examined or verified the compliance of the design to any other criteria.
- 1.9 A plan showing the location of the road safety problems raised in this report is included at Appendix Three.

2.0 PROPOSALS

The proposed highway works are associated with the construction of a new residential development which in summary includes:

- Provision of a major/minor priority-controlled T-junction on the north-western side of St Mary's Road;
- Provision of uncontrolled pedestrian crossings with dropped kerbs and buff tactile paving at the following locations:
 - Outside No. 111 St Mary's Road;
 - Hayling Billy access; and
 - Car park access.
- Provision of pedestrian refuge island with uncontrolled pedestrian dropped crossings with dropped kerbs and buff tactile paving at the following locations:
 - St Mary's Road junction with Elm Grove;
 - Church Road north of the junction with Tournurbury Lane; and
 - Outside 134/136 Elm Grove.
- Widening of the St Mary's Road carriageway near the junction with Elm Grove; and
- Narrowing of the Tournurbury Lane carriageway near the junction with Church Road.

3.0 PERSONAL INJURY COLLISION DATA

- 3.1 Personal injury collision data for the five-year period up to June 2020 was obtained from crashmap.co.uk and the location plan is shown in Appendix Five.
- 3.2 There have been six personal injury collisions in the vicinity of the proposed highway works.
- 3.3 All six collisions occurred on Church Road/Elm Grove.
- 3.4 One collision was classed as serious in severity and the remaining five collisions were classed as slight in severity.
- 3.5 The six collisions resulted in one seriously injured casualty and six slightly injured casualties.
- 3.6 The seriously injured casualty was a pedestrian, and one slightly injured casualty was a pedal cyclist.

4.0 TRAFFIC FLOW AND SPEED DATA

- 4.1 Traffic flow data obtained in 2016 was provided to the audit team, the AM and PM peak hour observed flows are shown in Appendix Six.
- 4.2 The traffic speed data also obtained in 2016 shows that the 85th percentile speeds on St Mary's Road were 29.0mph northbound and 20.0mph southbound.
- 4.2 During the site visit approximately eight pedestrians and two cyclists were observed in the vicinity of the proposed highway works.

5.0 ITEMS RAISED AT THIS (STAGE 1) ROAD SAFETY AUDIT

5.1 Location: Proposed uncontrolled pedestrian crossings on St Mary's Road at car park access and Limewood access

Problem

Summary: Incorrect tactile paving layout increases the risk of visually impaired pedestrians inadvertently entering the carriageway

The proposed uncontrolled pedestrian crossings on St Mary's Road at the car park access and Limewood access do not have the required minimum depth of tactile paving across the whole width of the dropped kerbs for an in-line type uncontrolled crossing. The audit team note that the minimum depth of tactile paving for in-line crossings is generally 1200mm. A reduced depth of tactile paving results in a lack of warning for visually impaired pedestrians of the road ahead and they may inadvertently enter the carriageway, which may increase the risk pedestrian/vehicular collisions.

Recommendation

It is recommended that the tactile paving layouts should be amended to provide a minimum depth of 1200mm tactile paving across the whole width of the dropped kerbs at the in-line uncontrolled crossings.

5.2 Location: Proposed uncontrolled pedestrian crossings on St Mary's Road at car park access and Limewood access

Problem

Summary: Proximity of the uncontrolled crossing to the kerb radius may result in collisions between pedestrians with visual impairments and motorised vehicles

There is a limited offset between the uncontrolled crossing points and kerb radius on St Mary's Road at the car park access and Limewood access. This could result in the potential for pedestrians with visual impairments mistaking these as crossing points across St Mary's Road and could result in an increased risk of pedestrian/vehicle collisions.

Recommendation

It is recommended that the offset between the tactile paving and kerb radius be increased, although the audit team would note that the offset should not be to the detriment of the likely pedestrian desire line across the accesses. The audit team also note that due to the existing highway layout it may not be practical to inset the crossings, however, the crossings should be moved as near as possible to the rear of the footway. Alternatively, the width of the crossings could be reduced by removing the row of tactile paving nearest to St Mary's Road in order to increase the offset from the kerb radius.

5.3 Location: South-westbound carriageway on St Mary's Road

Problem

Summary: Risk of vehicles colliding with kerbs due to proposed carriageway alignment

The proposed amendment to the carriageway alignment on the St Mary's Road south-westbound carriageway outside the Limewood development has a relatively short taper length. This may increase the risk of vehicles colliding with the kerblines and associated loss of control collisions.

Recommendation

It is recommended that the taper length should be increased to provide a smoother horizontal alignment for south-westbound vehicles.

5.4 Location: St Mary's Road junction with Elm Grove

Problem

Summary: Road markings lead directly into central refuge island

The drawing provided for audit does not show any proposed amendments to the road markings on St Mary's Road at the proposed pedestrian refuge island. The existing road markings shown on the drawing lead directly into the kerbs of the island. This may result in vehicles colliding with the kerbs on the island and associated loss of control collisions, as drivers are guided by the road markings.

Recommendation

It is recommended that the road markings on the approach to the central refuge island are amended to guide vehicles safely past the island.

5.5 Location: Proposed uncontrolled pedestrian crossing on the southern side of St Mary's Road at the junction with Elm Grove

Problem

Summary: Existing building may obscure pedestrian/driver intervisibility

The intervisibility between pedestrians crossing from the southern side of St Mary's Road at the junction with Elm Grove at the proposed uncontrolled pedestrian crossing and drivers turning left into St Mary's Road from Elm Grove may be obscured by an existing building. A reduction of pedestrian/driver intervisibility may increase the risk of pedestrian/vehicular collisions as crossing pedestrians fail to sufficiently appreciate approaching traffic and vice versa.

Recommendation

It is recommended that the pedestrian/driver intervisibility at this location is examined and the uncontrolled crossing should be relocated if pedestrian/driver intervisibility is found to be obscured by the existing building.

5.6 Location: Proposed pedestrian refuge islands on Elm Grove and Church Road**Problem****Summary: Narrow refuge islands may result in pedestrian/vehicle collisions**

The proposed pedestrian refuge islands on Elm Grove and Church Road does not appear wide enough to accommodate a pedestrian pushing a pushchair or wheelchair, for example. These users waiting on the pedestrian refuge island may encroach into the carriageway, increasing the risk of collisions between these users and passing motorised vehicles.

Recommendation

It is recommended that the proposed pedestrian refuge islands should be widened if they are not wide enough to safely accommodate a pedestrian pushing a pushchair or wheelchair, for example.

APPENDIX ONE**6.0 ROAD SAFETY AUDIT TEAM STATEMENT**

We certify that the audit has been carried out in accordance with the requirements set out in DMRB GG119.

AUDIT TEAM LEADER

Jon Preston MCIHT MSoRSA

Director

six:TEN Highways & Traffic Ltd

Signed:



Date: 18 June 2021

AUDIT TEAM MEMBER

Tristan Brooks Bsc (Hons), MBA, CMILT, MCIHT, MSoRSA, HE RSA Cert of Comp

Traffic & Road Safety Engineer

six:TEN Highways & Traffic Ltd

Signed:



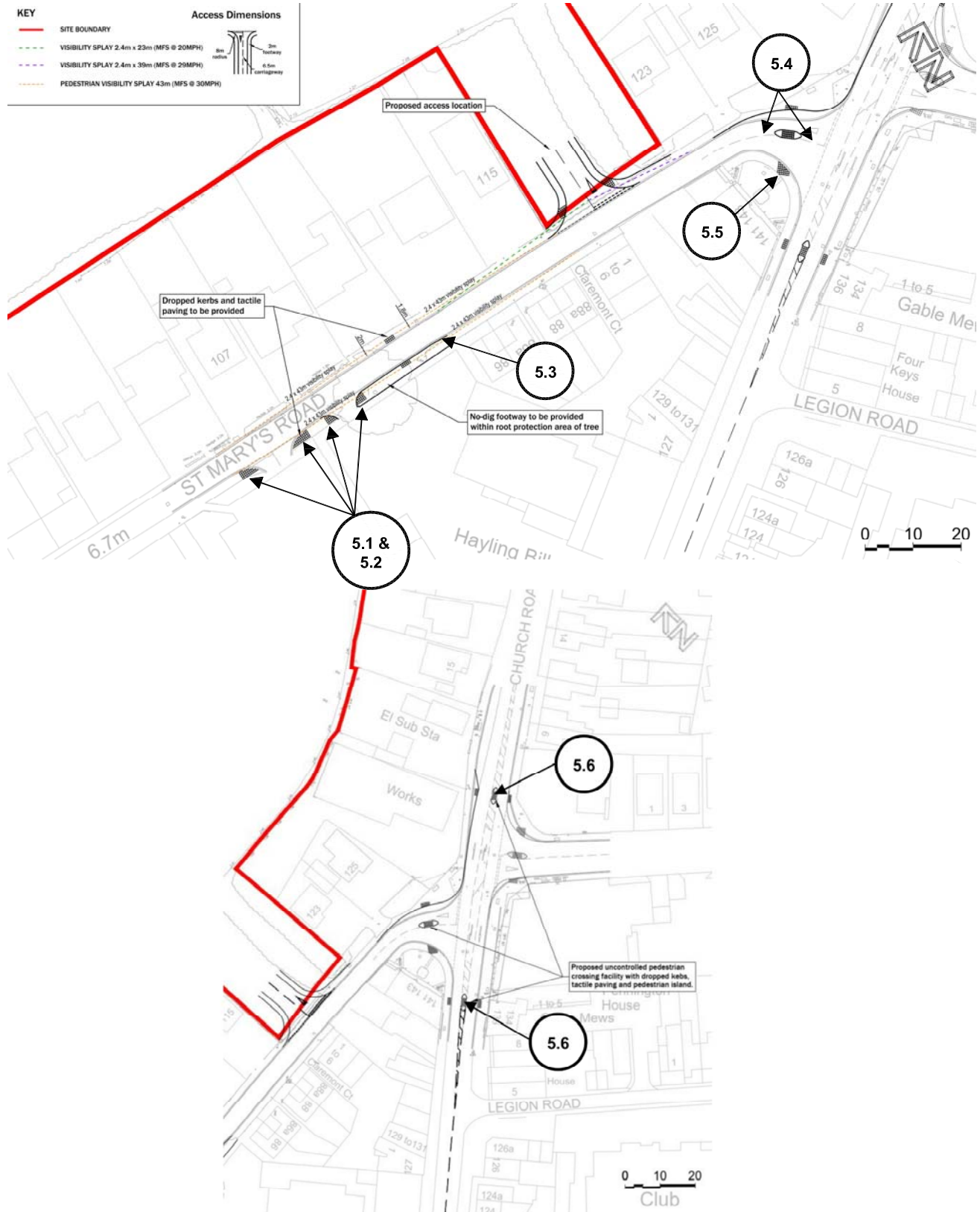
Date: 18 June 2021

APPENDIX TWO**7.0 LIST OF DRAWINGS AND DOCUMENTS PROVIDED WITH THE AUDIT BRIEF**

- P21033-001 Proposed Access Arrangement
- P21033-002 Proposed Pedestrian Crossings
- P21033-003 Swept Path Analysis (Refuse Collection Vehicle)
- P21033-004 Swept Path Analysis (Articulated Vehicle)
- P21033-005 Swept Path Analysis (Large Tipper Truck)
- P21033-006 Swept Path Analysis (Pantechnicon)
- P21033-007 Swept Path Analysis (11.2m Bus)
- 2016 Speed Survey Data
- 2016 Observed Peak Hour Traffic Flow Data
- 5 year (up to June 2020) Personal Collision Data from crashmap.co.uk

APPENDIX THREE

8.0 PROBLEM LOCATION PLAN



APPENDIX FOUR

9.0 PHOTOGRAPHS



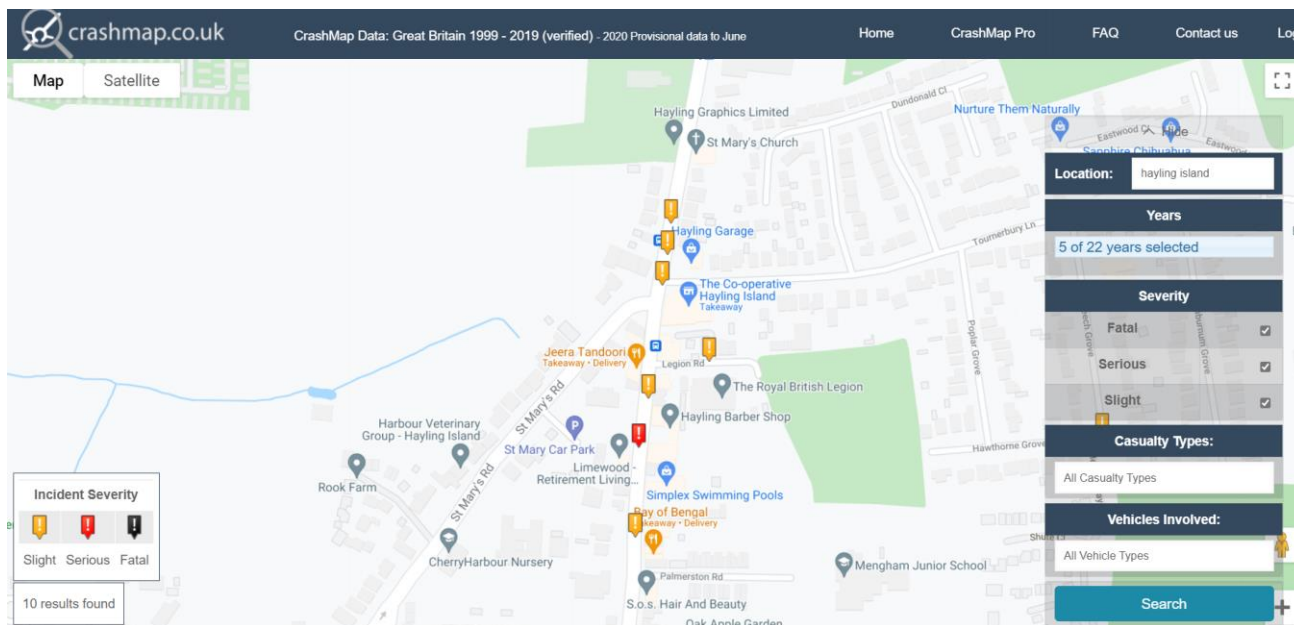
9.1 Looking southwest towards proposed access on St Mary's Road



9.2 Looking northeast towards proposed access on St Mary's Road

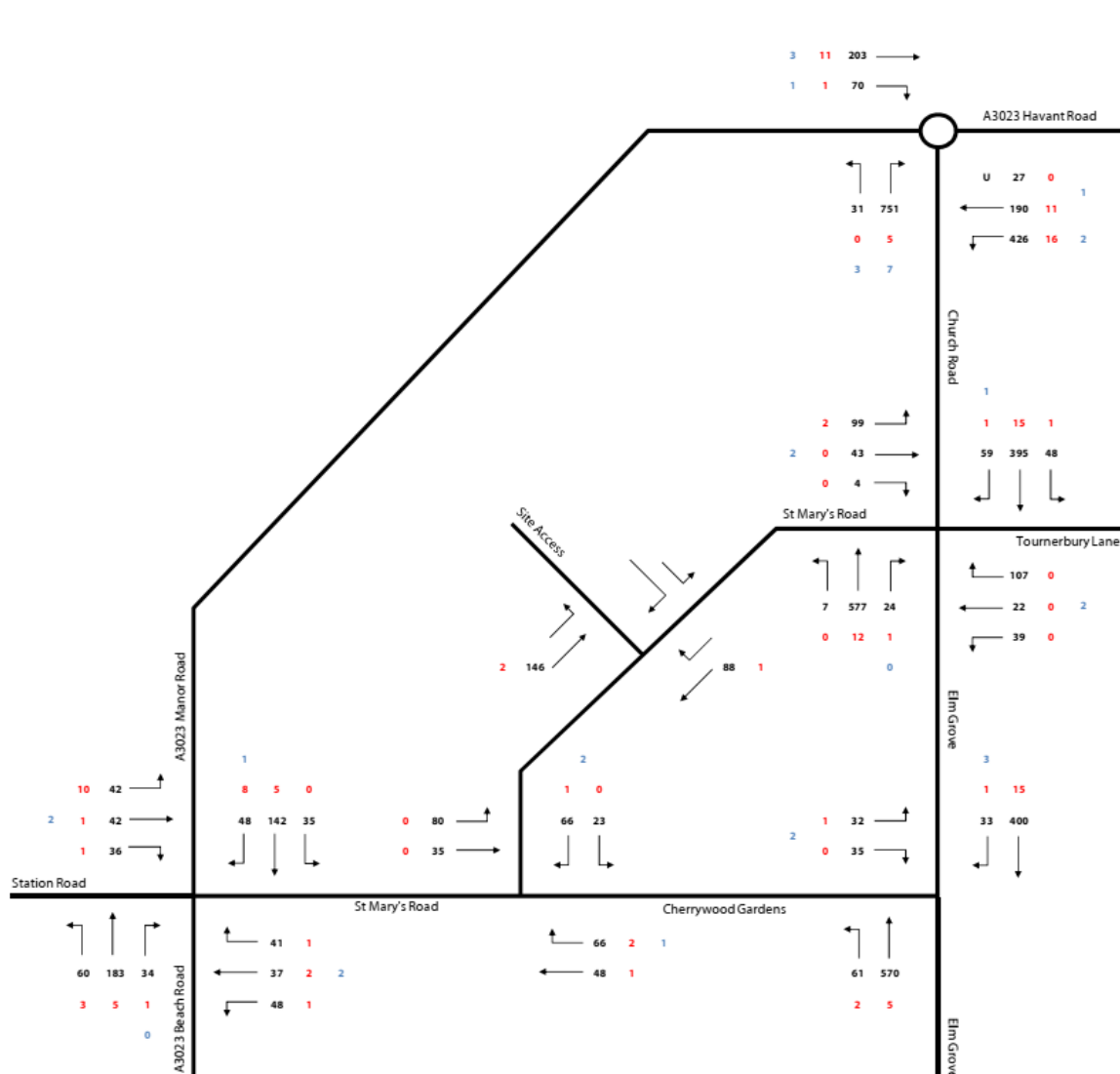
APPENDIX FIVE

10.0 PERSONAL INJURY COLLISION LOCATION PLAN

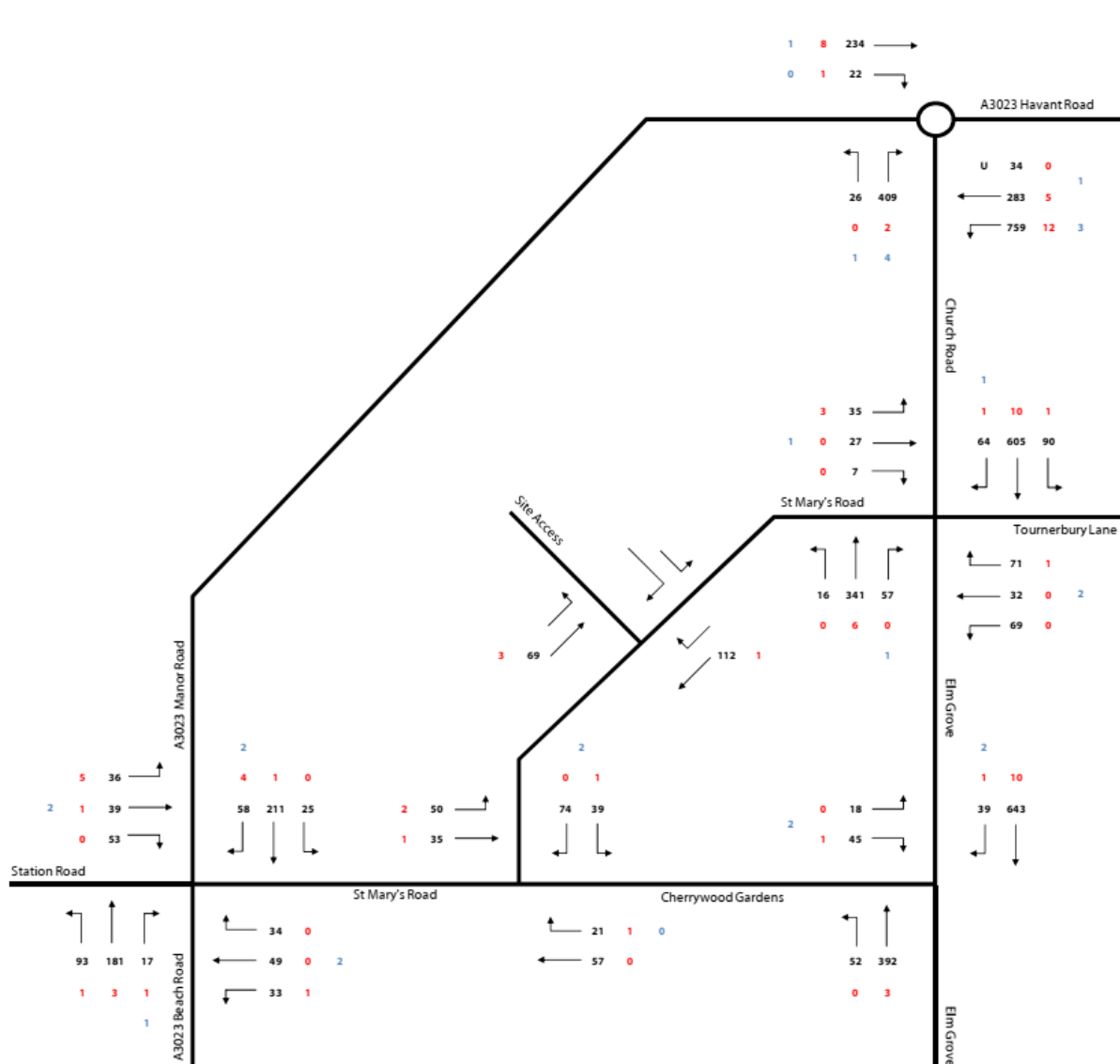


APPENDIX SIX

11.0 TRAFFIC FLOW DATA



11.1 2016 AM Peak Observed Traffic Flows



11.2 2016 PM Peak Observed Traffic Flows

APPENDIX G

CORRESPONDENCE WITH STAGECOACH

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David Stoddart

From: Gordon Frost <Gordon.Frost@stagecoachbus.com>
Sent: 05 May 2017 10:41
To: David Stoddart
Subject: RE: Hayling Island Query

Hi Dave

Aah! I can see real merit in doing all three crossings- sorry I hadn't picked that up first time. That plan is also really useful as it shows you are looking to "pinch" the least useful part of the current lay-by. I can't see we have any issues with that and from our point of view I'd carry on with your plan.

Regards

Gordon

Gordon Frost
Operations Director
Stagecoach South
Bus Station
Southgate
Chichester
PO19 2DG

07785 694302
01243 755858



Stagecoach South
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David Stoddart

From: David Stoddart
Sent: 04 May 2017 09:20
To: Gordon Frost
Subject: RE: Hayling Island Query
Attachments: P16031-002A.PDF; P16031-007.pdf

Hi Gordon,

Thanks for coming back to me. Attached is our initial design for the crossing and a swept path analysis which shows that two 11.2m long Dennis Darts can easily fit in the layby. As you will see, we're looking at shortening the taper by only a few metres. I think that the local highway authority is being overly cautious although they are yet to see this latest drawing, with the previous one taking a greater length from the layby.

We're looking to make the junction as pedestrian friendly as we can. There is a college and a primary school to the north but there is a signal controlled crossing further north, so we could always remove the proposed crossing from the design.

In terms of the white vans shown on Google Earth, I didn't see anyone parked there on my recent site visits, but given the length of the layby, I can see it being regularly abused for parking.

Really, we're keen to learn the value of the layby to Stagecoach, ascertain if you do have a requirement for two buses to dwell there and whether you would have any concerns with us slightly reducing the length of the taper.

Kind regards

Dave

David Stoddart

Principal Transport Planner | **T:** 0151 728 1864 | **M:** 07944446528



From: Gordon Frost [mailto:Gordon.Frost@stagecoachbus.com]
Sent: 03 May 2017 14:58
To: David Stoddart <D.Stoddart@primetp.co.uk>
Subject: RE: Hayling Island Query

Hi Dave

Whereabouts were you actually looking to site the crossing? Looking at the map the main generator of any pedestrian traffic would appear to be the Co-op store, so I'd almost expect the crossing to be located south of the St Mary's Rd junction where it wouldn't interfere with our bus stop at all. What are the benefits of locating it north of the junction and how is meant to serve?

Whilst the bus stop does look long, there is a very long taper on it with a narrow initial splay. It's a fair way into the layby before the bus is actually off the road so it's not quite a double length as it first appears. Interestingly both your shot and the one of google earth show it being used by white vans for parking, which makes me nervous about reducing the length if they continue to sue it for parking.

Regards

Gordon

Gordon Frost
Operations Director
Stagecoach South
Bus Station
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APPENDIX H

MICROSIMULATION MODEL JOURNEY TIME RESULTS

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Table A2: Journey time routes 1 – 6 and X

Individual junction mitigation measures combination with mitigation package M1A compared with **Do-Minimum**

08:00 - 09:00										
Journey Times (mm:ss)										
Description	Route	Do Minimum	2036 M1a	M1a + Langstone	M1a + Mill Rythe	M1a + Northney Gyr	M1a + Northney Sigs	M1a + Tech Park	M1a + West Lane	M1a + West Lane + Folded + Langstone
Beachlands Rbt - Brights Lane	Route 1 NB	03:58	04:11	04:15	02:56	04:13	04:12	04:06	04:21	04:08
Brights Lane - Beachlands Rbt	Route 1 SB	02:23	02:23	02:23	02:25	02:24	02:25	02:23	02:23	02:23
Sea Front - St Mary's Road	Route 2 NB	02:07	02:07	02:07	02:07	02:07	02:07	02:07	02:07	02:07
St Mary's Road - Sea Front	Route 2 SB	02:19	02:19	02:20	02:19	02:18	02:19	02:21	02:21	02:19
West Lane/A3023 - Tech Park	Route 3 NB	06:26	07:23	06:28	06:51	06:41	09:06	09:00	07:09	06:28
Tech Park - West Lane/A3023	Route 3 SB	04:34	04:40	04:38	04:44	04:50	05:05	04:53	04:29	04:23
Church Road - West Lane/A302	Route 4 NB	03:51	03:53	03:52	04:07	03:51	05:12	03:58	04:11	04:08
West Lane/A3023 Church Road	Route 4 SB	03:33	03:34	03:34	04:41	03:33	03:38	03:35	03:33	03:30
Manor Road - West Lane/A302	Route 5 NB	05:29	05:42	05:46	04:23	05:43	07:08	05:43	06:11	05:55
West Lane/A3023 - Manor Roa	Route 5 SB	03:47	03:48	03:48	04:35	03:47	03:52	03:48	03:47	03:44
West Lane Northbound	Route 6 NB	03:05	03:11	03:12	03:30	03:13	04:51	03:13	03:13	03:09
West Lane Southbound	Route 6 SB	02:47	02:48	02:47	02:48	02:47	03:00	02:49	03:00	03:00
Tech Park - New Rd RBT	Route X NB	03:38	03:39	03:37	03:39	03:39	03:36	03:37	03:42	03:40
New Rd RBT - Tech Park	Route X SB	02:44	02:49	02:47	02:58	03:02	02:42	02:41	02:45	02:50
12:00 - 13:00										
Journey Times (mm:ss)										
Description	Route #	Do Minimum	2036 M1a	M1a + Langstone	M1a + Mill Rythe	M1a + Northney Gyr	M1a + Northney Sigs	M1a + Tech Park	M1a + West Lane	M1a + West Lane + Folded + Langstone
Beachlands Rbt - Brights Lane	Route 1 NB	02:32	02:30	02:31	02:44	02:32	02:31	02:31	02:31	02:32
Brights Lane - Beachlands Rbt	Route 1 SB	02:26	02:28	02:30	02:28	02:26	02:29	02:30	02:30	02:29
Sea Front - St Mary's Road	Route 2 NB	02:03	02:03	02:03	02:03	02:03	02:03	02:03	02:03	02:03
St Mary's Road - Sea Front	Route 2 SB	02:13	02:16	02:16	02:16	02:14	02:14	02:14	02:15	02:16
West Lane/A3023 - Tech Park	Route 3 NB	04:27	04:30	04:28	04:27	04:27	04:41	04:37	04:29	04:24
Tech Park - West Lane/A3023	Route 3 SB	04:32	04:41	04:35	04:41	04:46	04:49	04:42	04:38	04:28
Church Road - West Lane/A302	Route 4 NB	03:34	03:36	03:35	04:00	03:35	03:35	03:35	03:42	03:42
West Lane/A3023 Church Road	Route 4 SB	03:32	03:35	03:34	04:11	03:32	03:33	03:35	03:36	03:33
Manor Road - West Lane/A302	Route 5 NB	03:50	03:50	03:51	04:00	03:51	03:50	03:50	03:56	03:55
West Lane/A3023 - Manor Roa	Route 5 SB	03:46	03:49	03:49	04:17	03:47	03:48	03:50	03:52	03:48
West Lane Northbound	Route 6 NB	02:37	02:36	02:37	02:39	02:38	02:37	02:37	03:07	03:09
West Lane Southbound	Route 6 SB	02:34	02:36	02:35	02:34	02:36	02:35	02:35	03:16	03:24
Tech Park - New Rd RBT	Route X NB	03:11	03:09	03:09	03:09	03:11	03:10	03:19	03:09	03:08
New Rd RBT - Tech Park	Route X SB	02:39	02:40	02:41	02:39	02:40	02:41	02:40	02:40	02:40
17:00 - 18:00										
Journey Times (mm:ss)										
Description	Route #	Do Minimum	2036 M1a	M1a + Langstone	M1a + Mill Rythe	M1a + Northney Gyr	M1a + Northney Sigs	M1a + Tech Park	M1a + West Lane	M1a + West Lane + Folded + Langstone
Beachlands Rbt - Brights Lane	Route 1 NB	02:28	02:28	02:29	02:40	02:28	02:29	02:28	02:29	02:28
Brights Lane - Beachlands Rbt	Route 1 SB	02:29	02:28	02:30	02:27	02:29	02:29	02:30	02:31	02:30
Sea Front - St Mary's Road	Route 2 NB	02:03	02:04	02:03	02:04	02:03	02:03	02:04	02:04	02:04
St Mary's Road - Sea Front	Route 2 SB	02:14	02:14	02:14	02:17	02:15	02:15	02:14	02:14	02:15
West Lane/A3023 - Tech Park	Route 3 NB	04:39	04:28	04:24	04:28	04:27	05:14	04:37	04:25	04:24
Tech Park - West Lane/A3023	Route 3 SB	05:51	06:34	06:19	06:15	06:08	06:35	06:14	06:19	05:51
Church Road - West Lane/A302	Route 4 NB	03:39	03:39	03:40	04:21	03:38	03:43	03:40	03:47	03:44
West Lane/A3023 Church Road	Route 4 SB	03:37	03:35	03:36	04:17	03:36	03:36	03:36	03:39	03:39
Manor Road - West Lane/A302	Route 5 NB	03:51	03:50	03:51	03:59	03:50	03:55	03:52	03:57	03:55
West Lane/A3023 - Manor Roa	Route 5 SB	03:50	03:48	03:49	04:26	03:50	03:49	03:50	03:53	03:53
West Lane Northbound	Route 6 NB	02:36	02:35	02:36	02:36	02:35	02:36	02:36	03:03	03:06
West Lane Southbound	Route 6 SB	02:33	02:34	02:34	02:33	02:34	02:34	02:34	03:30	03:21
Tech Park - New Rd RBT	Route X NB	04:11	04:12	04:16	04:18	04:15	04:14	04:29	04:17	04:13
New Rd RBT - Tech Park	Route X SB	02:57	02:58	02:55	02:57	02:58	02:59	02:56	02:58	02:55

Comparison with Do-Minimum:
 > 30s decrease
 > 30s increase

Table A6: Journey time routes 1 – 6 and X

Individual junction mitigation measures in combination with mitigation package M1A, compared with **Baseline 2036**

08:00 - 09:00

Journey Times (mm:ss)	Route		2036 M1a	M1a + Langstone	M1a + Mill Rythe	M1a + Northney Gyr	M1a + Northney Sigs	M1a + Tech Park	M1a + West Lane	M1a + West Lane + Folded + Langstone
Description	2036 Baseline									
Beachlands Rbt - Brights Lane Route 1 NB	03:07	04:11	04:15	02:56	04:13	04:12	04:06	04:21	04:08	
Brights Lane - Beachlands Rbt Route 1 SB	02:26	02:23	02:23	02:25	02:24	02:25	02:23	02:23	02:23	
Sea Front - St Mary's Road Route 2 NB	02:05	02:07	02:07	02:07	02:07	02:07	02:07	02:07	02:07	
St Mary's Road - Sea Front Route 2 SB	02:16	02:19	02:20	02:19	02:18	02:19	02:21	02:21	02:19	
West Lane/A3023 - Tech Park Route 3 NB	05:59	07:23	06:28	06:51	06:41	09:06	09:00	07:09	06:28	
Tech Park - West Lane/A3023 Route 3 SB	04:38	04:40	04:38	04:44	04:50	05:05	04:53	04:29	04:23	
Church Road - West Lane/A302 Route 4 NB	03:48	03:53	03:52	04:07	03:51	05:12	03:58	04:11	04:08	
West Lane/A3023 Church Road Route 4 SB	03:34	03:34	03:34	04:41	03:33	03:38	03:35	03:33	03:30	
Manor Road - West Lane/A302 Route 5 NB	04:38	05:42	05:46	04:23	05:43	07:08	05:43	06:11	05:55	
West Lane/A3023 - Manor Road Route 5 SB	03:49	03:48	03:48	04:35	03:47	03:52	03:48	03:47	03:44	
West Lane Northbound Route 6 NB	02:52	03:11	03:12	03:30	03:13	04:51	03:13	03:13	03:09	
West Lane Southbound Route 6 SB	02:45	02:48	02:47	02:48	02:47	03:00	02:49	03:00	03:00	
Tech Park - New Rd RBT Route X NB	03:30	03:39	03:37	03:39	03:39	03:36	03:37	03:42	03:40	
New Rd RBT - Tech Park Route X SB	03:35	02:49	02:47	02:58	03:02	02:42	02:41	02:45	02:50	

Comparison with Baseline:
 > 30s decrease
 > 30s increase

12:00 - 13:00

Journey Times (mm:ss)	Route #		2036 M1a	M1a + Langstone	M1a + Mill Rythe	M1a + Northney Gyr	M1a + Northney Sigs	M1a + Tech Park	M1a + West Lane	M1a + West Lane + Folded + Langstone
Description	2036 Baseline									
Beachlands Rbt - Brights Lane Route 1 NB	02:31	02:30	02:31	02:44	02:32	02:31	02:31	02:31	02:31	02:32
Brights Lane - Beachlands Rbt Route 1 SB	02:35	02:28	02:30	02:28	02:26	02:29	02:30	02:30	02:30	02:29
Sea Front - St Mary's Road Route 2 NB	02:02	02:03	02:03	02:03	02:03	02:03	02:03	02:03	02:03	02:03
St Mary's Road - Sea Front Route 2 SB	02:12	02:16	02:16	02:16	02:14	02:14	02:14	02:15	02:16	
West Lane/A3023 - Tech Park Route 3 NB	04:45	04:30	04:28	04:27	04:27	04:41	04:37	04:29	04:24	
Tech Park - West Lane/A3023 Route 3 SB	04:38	04:41	04:35	04:41	04:46	04:49	04:42	04:38	04:28	
Church Road - West Lane/A302 Route 4 NB	03:37	03:36	03:35	04:00	03:35	03:35	03:35	03:42	03:42	
West Lane/A3023 Church Road Route 4 SB	03:36	03:35	03:34	04:11	03:32	03:33	03:35	03:36	03:33	
Manor Road - West Lane/A302 Route 5 NB	03:55	03:50	03:51	04:00	03:51	03:50	03:50	03:56	03:55	
West Lane/A3023 - Manor Road Route 5 SB	03:53	03:49	03:49	04:17	03:47	03:48	03:50	03:52	03:48	
West Lane Northbound Route 6 NB	02:37	02:36	02:37	02:39	02:38	02:37	02:37	03:07	03:09	
West Lane Southbound Route 6 SB	02:35	02:36	02:35	02:34	02:36	02:35	02:35	03:16	03:24	
Tech Park - New Rd RBT Route X NB	03:09	03:09	03:09	03:09	03:11	03:10	03:19	03:09	03:08	
New Rd RBT - Tech Park Route X SB	02:39	02:40	02:41	02:39	02:40	02:41	02:40	02:40	02:40	

17:00 - 18:00

Journey Times (mm:ss)	Route #		2036 M1a	M1a + Langstone	M1a + Mill Rythe	M1a + Northney Gyr	M1a + Northney Sigs	M1a + Tech Park	M1a + West Lane	M1a + West Lane + Folded + Langstone
Description	2036 Baseline									
Beachlands Rbt - Brights Lane Route 1 NB	02:29	02:28	02:29	02:40	02:28	02:29	02:29	02:28	02:29	02:28
Brights Lane - Beachlands Rbt Route 1 SB	02:33	02:28	02:30	02:27	02:29	02:29	02:30	02:31	02:30	
Sea Front - St Mary's Road Route 2 NB	02:01	02:04	02:03	02:04	02:03	02:03	02:04	02:04	02:04	
St Mary's Road - Sea Front Route 2 SB	02:14	02:14	02:14	02:17	02:15	02:15	02:14	02:14	02:15	
West Lane/A3023 - Tech Park Route 3 NB	04:47	04:28	04:24	04:28	04:27	05:14	04:37	04:25	04:24	
Tech Park - West Lane/A3023 Route 3 SB	05:15	06:34	06:19	06:15	06:08	06:35	06:14	06:19	05:51	
Church Road - West Lane/A302 Route 4 NB	03:37	03:39	03:40	04:21	03:38	03:43	03:40	03:47	03:44	
West Lane/A3023 Church Road Route 4 SB	03:38	03:35	03:36	04:17	03:36	03:36	03:36	03:39	03:39	
Manor Road - West Lane/A302 Route 5 NB	03:54	03:50	03:51	03:59	03:50	03:55	03:52	03:57	03:55	
West Lane/A3023 - Manor Road Route 5 SB	03:52	03:48	03:49	04:26	03:50	03:49	03:50	03:53	03:53	
West Lane Northbound Route 6 NB	02:35	02:35	02:36	02:36	02:35	02:36	02:36	03:03	03:06	
West Lane Southbound Route 6 SB	02:33	02:34	02:34	02:33	02:34	02:34	02:34	03:30	03:21	
Tech Park - New Rd RBT Route X NB	04:16	04:12	04:16	04:18	04:15	04:14	04:29	04:17	04:13	
New Rd RBT - Tech Park Route X SB	02:50	02:58	02:55	02:57	02:58	02:59	02:56	02:58	02:55	

APPENDIX I

CAPACITY ASSESSMENT REPORT OUTPUTS

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Junctions 9	
PICADY 9 - Priority Intersection Module	
Version: 9.5.1.7462 © Copyright TRL Limited, 2019	
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Filename: Site Access.j9

Path: N:\Projects 2021\P21033 - Hayling Island, Hampshire 2nd Application\6.Technical\Models

Report generation date: 19/11/2021 14:56:52

- »2036 With Dev, AM
- »2036 With Dev, PM
- »2036 With Dev, SC PM

File summary

File Description

Title	Site Access
Location	Hayling Island
Site number	
Date	19/11/2021
Version	
Status	Final
Identifier	
Client	Gladman
Jobnumber	P21033
Enumerator	D.Stoddart
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2036 With Dev	AM	ONE HOUR	07:45	09:15	15	✓
D2	2036 With Dev	PM	ONE HOUR	16:45	18:15	15	✓
D3	2036 With Dev	SC PM	ONE HOUR	14:15	15:45	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2036 With Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - St Mary's Road (E) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Proposed Site Access	T-Junction	Two-way		4.77	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	St Mary's Road (W)		Major
B	Site Access		Minor
C	St Mary's Road (E)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - St Mary's Road (E)	5.50			200.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Site Access	One lane	3.25	19	19

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	505	0.094	0.238	0.150	0.340
B-C	652	0.102	0.258	-	-
C-B	690	0.273	0.273	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2036 With Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - St Mary's Road (W)		ONE HOUR	✓	69	100.000
B - Site Access		ONE HOUR	✓	143	100.000
C - St Mary's Road (E)		ONE HOUR	✓	78	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - St Mary's Road (W)	B - Site Access	C - St Mary's Road (E)
From	A - St Mary's Road (W)	0	10	59
	B - Site Access	22	0	121
	C - St Mary's Road (E)	40	38	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - St Mary's Road (W)	B - Site Access	C - St Mary's Road (E)
From	A - St Mary's Road (W)	0	0	5
	B - Site Access	0	0	0
	C - St Mary's Road (E)	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.26	8.11	0.4	A	131	197
C-AB	0.06	5.54	0.1	A	37	55
C-A					35	52
A-B					9	14
A-C					54	81

2036 With Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - St Mary's Road (E) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Proposed Site Access	T-Junction	Two-way		4.17	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2036 With Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - St Mary's Road (W)		ONE HOUR	✓	62	100.000
B - Site Access		ONE HOUR	✓	62	100.000
C - St Mary's Road (E)		ONE HOUR	✓	152	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - St Mary's Road (W)	B - Site Access	C - St Mary's Road (E)
From	A - St Mary's Road (W)	0	14	48
	B - Site Access	11	0	51
	C - St Mary's Road (E)	44	108	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - St Mary's Road (W)	B - Site Access	C - St Mary's Road (E)
From	A - St Mary's Road (W)	0	0	5
	B - Site Access	0	0	0
	C - St Mary's Road (E)	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.12	6.89	0.1	A	57	85
C-AB	0.18	6.29	0.2	A	105	158
C-A					34	51
A-B					13	19
A-C					44	66

2036 With Dev, SC PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - St Mary's Road (E) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Proposed Site Access	T-Junction	Two-way		3.84	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2036 With Dev	SC PM	ONE HOUR	14:15	15:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - St Mary's Road (W)		ONE HOUR	✓	65	100.000
B - Site Access		ONE HOUR	✓	70	100.000
C - St Mary's Road (E)		ONE HOUR	✓	120	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - St Mary's Road (W)	B - Site Access	C - St Mary's Road (E)
From	A - St Mary's Road (W)	0	18	47
	B - Site Access	15	0	55
	C - St Mary's Road (E)	43	77	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - St Mary's Road (W)	B - Site Access	C - St Mary's Road (E)
From	A - St Mary's Road (W)	0	0	5
	B - Site Access	0	0	0
	C - St Mary's Road (E)	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.13	7.07	0.2	A	64	96
C-AB	0.13	5.93	0.2	A	75	113
C-A					35	53
A-B					17	25
A-C					43	65

Junctions 9	
PICADY 9 - Priority Intersection Module	
Version: 9.5.1.7462 © Copyright TRL Limited, 2019	
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Filename: Church Rd_Tournerbury Ln_Elm Grove.j9

Path: N:\Projects 2021\P21033 - Hayling Island, Hampshire 2nd Application\6.Technical\Models

Report generation date: 19/11/2021 18:08:34

- »2017 Base, AM
- »2017 Base, PM
- »2017 Base, School PM
- »2036 Without Dev, AM
- »2036 Without Dev, PM
- »2036 Without Dev, School PM
- »2036 With Dev, AM
- »2036 With Dev, PM
- »2036 With Dev, School PM

File summary

File Description

Title	Church Rd/ Elm Grove/ St Mary's Rd/ Tournerbury Ln/
Location	Hayling Island
Site number	
Date	19/11/2021
Version	
Status	Final
Identifier	
Client	Gladman
Jobnumber	P21033
Enumerator	D Stoddart
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2017 Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2017 Base	PM	ONE HOUR	16:45	18:15	15	✓
D3	2017 Base	School PM	ONE HOUR	14:45	16:15	15	✓
D4	2036 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓
D5	2036 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓
D6	2036 Without Dev	School PM	ONE HOUR	14:45	16:15	15	✓
D7	2036 With Dev	AM	ONE HOUR	07:45	09:15	15	✓
D8	2036 With Dev	PM	ONE HOUR	16:45	18:15	15	✓
D9	2036 With Dev	School PM	ONE HOUR	14:45	16:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2017 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Church Rd/Elm Gr/St Mary's Rd/Tournerbury Ln	Left-Right Stagger	Two-way		0.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Elm Grove		Major
B	St Mary's Road		Minor
C	Church Rd		Major
D	Tournerbury Lane		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Elm Grove	6.50		✓	2.25	250.0	✓	2.00
C - Church Rd	6.50		✓	2.25	250.0	✓	2.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - St Mary's Road	One lane	4.10								41	36
D - Tournerbury Lane	One lane plus flare		10.00	5.50	5.10	5.10	4.90	✓	3.00	34	29

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B
AB-D	723	-	-	-	-	-	0.274	0.274	0.274	-	-
B-A	565	0.101	0.254	0.254	-	-	0.160	0.363	-	0.160	0.363
B-CD	718	0.108	0.272	0.272	-	-	-	-	-	-	-
CD-B	723	0.274	0.274	0.274	-	-	-	-	-	-	-
D-AB	627	-	-	-	-	-	0.238	0.238	0.094	-	-
D-C	521	-	0.148	0.335	0.148	0.335	0.235	0.235	0.093	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2017 Base	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Elm Grove		ONE HOUR	✓	641	100.000
B - St Mary's Road		ONE HOUR	✓	59	100.000
C - Church Rd		ONE HOUR	✓	431	100.000
D - Tournbury Lane		ONE HOUR	✓	42	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournbury Lane
From	A - Elm Grove	0	6	617	18
	B - St Mary's Road	4	0	53	2
	C - Church Rd	376	43	0	12
	D - Tournbury Lane	16	2	24	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournbury Lane
From	A - Elm Grove	0	0	2	4
	B - St Mary's Road	0	0	0	4
	C - Church Rd	4	2	0	2
	D - Tournbury Lane	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.13	8.27	0.1	A	54	81
A-B					6	8
A-C					566	849
A-D					17	25
AB-CD	0.04	6.55	0.0	A	18	28
AB-C					615	922
D-AB	0.04	7.43	0.0	A	17	25
D-C	0.09	13.40	0.1	B	22	33
C-D					11	17
C-A					345	518
C-B					39	59
CD-AB	0.09	7.56	0.1	A	41	62
CD-A					359	539

2017 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Church Rd/Elm Gr/St Mary's Rd/Tournerbury Ln	Left-Right Stagger	Two-way		0.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2017 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Elm Grove		ONE HOUR	✓	377	100.000
B - St Mary's Road		ONE HOUR	✓	54	100.000
C - Church Rd		ONE HOUR	✓	729	100.000
D - Tournerbury Lane		ONE HOUR	✓	44	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournerbury Lane
From	A - Elm Grove	0	8	346	23
	B - St Mary's Road	7	0	44	3
	C - Church Rd	654	52	0	23
	D - Tournerbury Lane	24	2	18	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournerbury Lane
From	A - Elm Grove	0	0	2	0
	B - St Mary's Road	0	0	0	10
	C - Church Rd	2	2	0	1
	D - Tournerbury Lane	0	0	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.11	7.48	0.1	A	50	74
A-B					7	11
A-C					317	476
A-D					21	32
AB-CD	0.06	7.65	0.1	A	24	36
AB-C					358	537
D-AB	0.06	8.34	0.1	A	24	36
D-C	0.08	16.12	0.1	C	17	25
C-D					21	32
C-A					600	900
C-B					48	72
CD-AB	0.10	6.57	0.1	A	50	75
CD-A					622	933

2017 Base, School PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Church Rd/Elm Gr/St Mary's Rd/Tournerbury Ln	Left-Right Stagger	Two-way		0.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2017 Base	School PM	ONE HOUR	14:45	16:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Elm Grove		ONE HOUR	✓	459	100.000
B - St Mary's Road		ONE HOUR	✓	55	100.000
C - Church Rd		ONE HOUR	✓	537	100.000
D - Tournerbury Lane		ONE HOUR	✓	44	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournerbury Lane
	A - Elm Grove	0	7	430	22
	B - St Mary's Road	6	0	47	2
	C - Church Rd	479	45	0	13
	D - Tournerbury Lane	26	2	16	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournurbury Lane
	A - Elm Grove	0	0	2	0
	B - St Mary's Road	0	0	0	10
	C - Church Rd	2	2	0	1
	D - Tournurbury Lane	0	0	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.11	7.58	0.1	A	50	76
A-B					6	10
A-C					395	592
A-D					20	30
AB-CD	0.05	6.77	0.0	A	22	33
AB-C					438	656
D-AB	0.06	7.32	0.1	A	26	39
D-C	0.06	14.28	0.1	B	15	22
C-D					12	18
C-A					440	659
C-B					41	62
CD-AB	0.09	6.81	0.1	A	43	65
CD-A					463	695

2036 Without Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Church Rd/Elm Gr/St Mary's Rd/Tournerbury Ln	Left-Right Stagger	Two-way		0.67	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2036 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Elm Grove		ONE HOUR	✓	686	100.000
B - St Mary's Road		ONE HOUR	✓	58	100.000
C - Church Rd		ONE HOUR	✓	432	100.000
D - Tournerbury Lane		ONE HOUR	✓	60	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournerbury Lane
	A - Elm Grove	0	5	659	22
	B - St Mary's Road	3	0	53	2
	C - Church Rd	384	33	0	15
	D - Tournerbury Lane	23	2	35	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournurbury Lane
	A - Elm Grove	0	0	2	3
	B - St Mary's Road	0	0	0	4
	C - Church Rd	3	1	0	2
	D - Tournurbury Lane	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.13	8.40	0.1	A	53	80
A-B					5	7
A-C					605	907
A-D					20	30
AB-CD	0.04	6.56	0.0	A	22	33
AB-C					653	980
D-AB	0.06	7.68	0.1	A	23	34
D-C	0.13	14.41	0.2	B	32	48
C-D					14	21
C-A					352	529
C-B					30	45
CD-AB	0.07	7.60	0.1	A	32	48
CD-A					373	560

2036 Without Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Church Rd/Elm Gr/St Mary's Rd/Tournerbury Ln	Left-Right Stagger	Two-way		0.59	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2036 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Elm Grove		ONE HOUR	✓	411	100.000
B - St Mary's Road		ONE HOUR	✓	45	100.000
C - Church Rd		ONE HOUR	✓	752	100.000
D - Tournerbury Lane		ONE HOUR	✓	52	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournerbury Lane
	A - Elm Grove	0	5	378	28
	B - St Mary's Road	5	0	37	3
	C - Church Rd	686	36	0	30
	D - Tournerbury Lane	30	2	20	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournurbury Lane
	A - Elm Grove	0	0	2	0
	B - St Mary's Road	0	0	0	9
	C - Church Rd	2	1	0	1
	D - Tournurbury Lane	0	0	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.09	7.38	0.1	A	41	62
A-B					5	7
A-C					347	520
A-D					26	39
AB-CD	0.07	7.82	0.1	A	29	43
AB-C					381	571
D-AB	0.08	8.52	0.1	A	29	44
D-C	0.09	17.20	0.1	C	18	28
C-D					28	41
C-A					629	944
C-B					33	50
CD-AB	0.07	6.50	0.1	A	35	53
CD-A					657	985

2036 Without Dev, School PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Church Rd/Elm Gr/St Mary's Rd/Tournerbury Ln	Left-Right Stagger	Two-way		0.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2036 Without Dev	School PM	ONE HOUR	14:45	16:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Elm Grove		ONE HOUR	✓	485	100.000
B - St Mary's Road		ONE HOUR	✓	51	100.000
C - Church Rd		ONE HOUR	✓	564	100.000
D - Tournerbury Lane		ONE HOUR	✓	53	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournerbury Lane
From	A - Elm Grove	0	6	453	26
	B - St Mary's Road	8	0	41	2
	C - Church Rd	510	37	0	17
	D - Tournerbury Lane	32	2	19	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournerbury Lane
From	A - Elm Grove	0	0	2	0
	B - St Mary's Road	0	0	0	9
	C - Church Rd	2	1	0	1
	D - Tournerbury Lane	0	0	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.11	7.96	0.1	A	47	70
A-B					6	8
A-C					416	624
A-D					24	36
AB-CD	0.06	6.92	0.1	A	26	39
AB-C					453	680
D-AB	0.07	7.54	0.1	A	31	47
D-C	0.08	15.04	0.1	C	17	26
C-D					16	23
C-A					468	702
C-B					34	51
CD-AB	0.07	6.79	0.1	A	36	54
CD-A					497	746

2036 With Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Church Rd/Elm Gr/St Mary's Rd/Tournerbury Ln	Left-Right Stagger	Two-way		1.56	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2036 With Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Elm Grove		ONE HOUR	✓	703	100.000
B - St Mary's Road		ONE HOUR	✓	180	100.000
C - Church Rd		ONE HOUR	✓	452	100.000
D - Tournerbury Lane		ONE HOUR	✓	61	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournerbury Lane
From	A - Elm Grove	0	22	658	23
	B - St Mary's Road	39	0	136	5
	C - Church Rd	384	53	0	15
	D - Tournerbury Lane	22	3	36	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournerbury Lane
From	A - Elm Grove	0	0	2	3
	B - St Mary's Road	0	0	0	4
	C - Church Rd	3	1	0	2
	D - Tournerbury Lane	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.46	15.38	0.8	C	165	248
A-B					20	30
A-C					604	906
A-D					21	32
AB-CD	0.05	6.67	0.1	A	26	39
AB-C					728	1092
D-AB	0.06	7.82	0.1	A	23	34
D-C	0.15	15.71	0.2	C	33	50
C-D					14	21
C-A					352	529
C-B					49	73
CD-AB	0.12	7.98	0.1	A	52	78
CD-A					372	558

2036 With Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Church Rd/Elm Gr/St Mary's Rd/Tournerbury Ln	Left-Right Stagger	Two-way		1.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2036 With Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Elm Grove		ONE HOUR	✓	430	100.000
B - St Mary's Road		ONE HOUR	✓	99	100.000
C - Church Rd		ONE HOUR	✓	823	100.000
D - Tournerbury Lane		ONE HOUR	✓	52	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournerbury Lane
From	A - Elm Grove	0	29	373	28
	B - St Mary's Road	27	0	67	5
	C - Church Rd	677	117	0	29
	D - Tournerbury Lane	28	5	19	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournerbury Lane
From	A - Elm Grove	0	0	2	0
	B - St Mary's Road	0	0	0	9
	C - Church Rd	2	0	0	1
	D - Tournerbury Lane	0	0	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.24	10.54	0.3	B	91	136
A-B					27	40
A-C					342	513
A-D					26	39
AB-CD	0.08	8.27	0.1	A	30	46
AB-C					404	605
D-AB	0.08	8.90	0.1	A	30	45
D-C	0.10	19.22	0.1	C	17	26
C-D					27	40
C-A					621	932
C-B					107	161
CD-AB	0.23	7.39	0.3	A	117	175
CD-A					642	963

2036 With Dev, School PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Church Rd/Elm Gr/St Mary's Rd/Tournerbury Ln	Left-Right Stagger	Two-way		1.01	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2036 With Dev	School PM	ONE HOUR	14:45	16:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Elm Grove		ONE HOUR	✓	515	100.000
B - St Mary's Road		ONE HOUR	✓	103	100.000
C - Church Rd		ONE HOUR	✓	603	100.000
D - Tournerbury Lane		ONE HOUR	✓	54	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournerbury Lane
From	A - Elm Grove	0	40	451	24
	B - St Mary's Road	29	0	70	4
	C - Church Rd	512	76	0	15
	D - Tournerbury Lane	31	4	19	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Elm Grove	B - St Mary's Road	C - Church Rd	D - Tournerbury Lane
From	A - Elm Grove	0	0	2	0
	B - St Mary's Road	0	0	0	9
	C - Church Rd	2	0	0	1
	D - Tournerbury Lane	0	0	1	0

Results

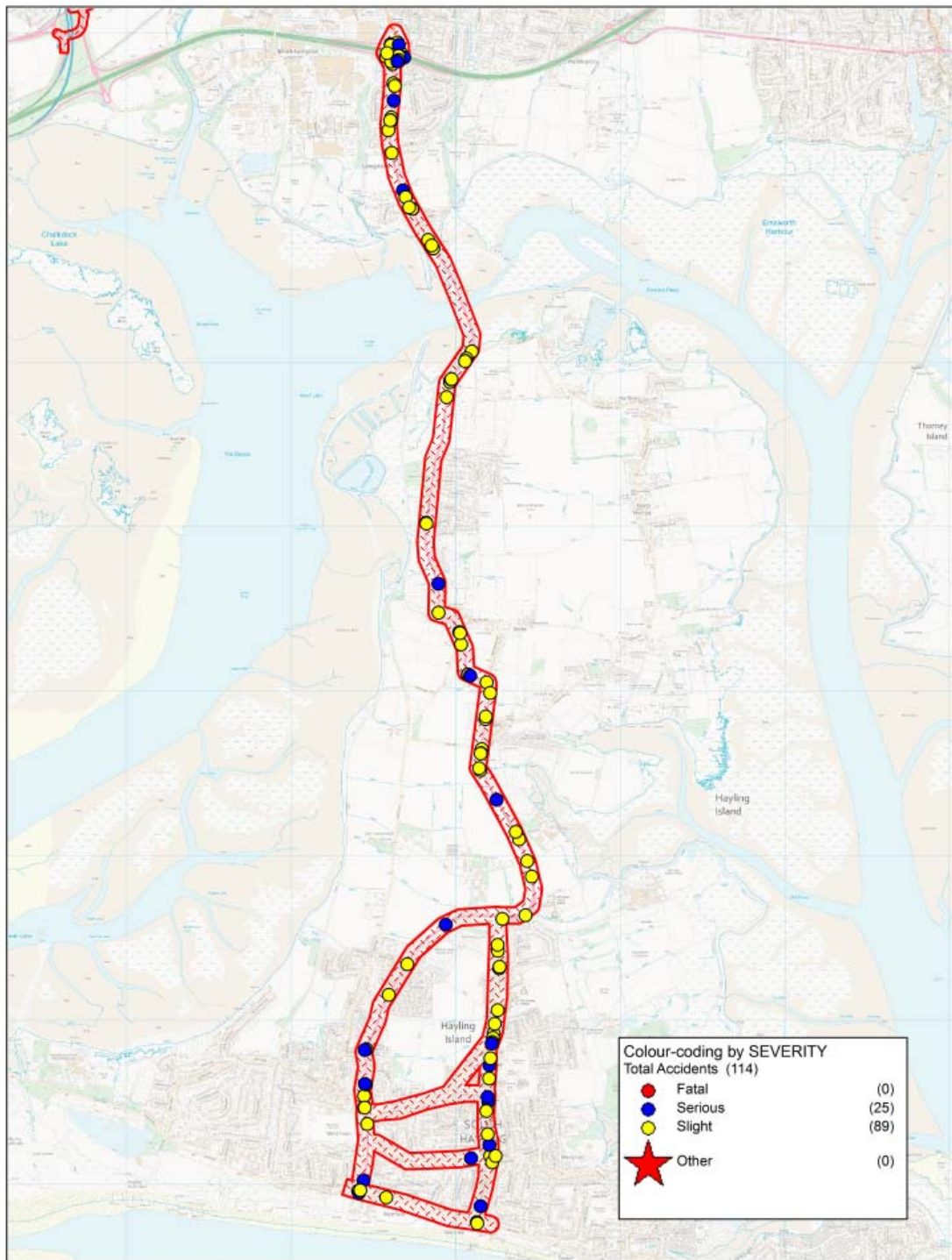
Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.25	10.58	0.3	B	95	142
A-B					37	55
A-C					414	621
A-D					22	33
AB-CD	0.06	7.12	0.1	A	26	39
AB-C					478	717
D-AB	0.08	7.73	0.1	A	32	48
D-C	0.08	15.99	0.1	C	17	26
C-D					14	21
C-A					470	705
C-B					70	105
CD-AB	0.16	7.36	0.2	A	75	112
CD-A					497	746

APPENDIX J

COLLISION PLAN AND SUMMARY TABLE

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Hayling Island

SCALE	NTS
DATE	15/11/2021
DRAWING No.	
DRAWN BY	

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Table J1: Accident Summary												
Ref	Date	Time	Within 20m of Junction?	No. Vehs	No. Casualties	Severity	Surface	Weather	Elderly or Inexperienced?	Alcohol/Drugs?	Vulnerable Road Users	Location
1	16/05/2016	1645	No	4	2	Slight	Dry	Fine	Yes	No		Church Rd no. 10
2	06/06/2016	0925	Yes	2	2	Slight	Dry	Fine	No	No		Havant Rd/Daw Ln
3	12/06/2016	0850	No	1	1	Slight	Wet	Fine	No	No		A27 Eastbound Marker
4	14/06/2016	0741	No	2	1	Serious	Wet	Fine	Yes	No / N/A	Pedestrian	A3023 Langstone Road Outside Ship Inn Pub
5	19/06/2016	0001	No	2	1	Slight	Wet	Rain	Yes	N/A	Pedal Cycle	A3023 Havant Road Outside Number 88
6	05/07/2016	1405	No	2	1	Slight	Dry	Fine	Yes	No	Motor Cycle	Elm Grove Outside Fire Station
7	14/07/2016	2030	Yes	2	1	Slight	Dry	Fine	Yes	No		A3023 Langstone Road Junction with A27 Eastbound
8	30/07/2016	1615	Yes	1	1	Slight	Dry	Fine	No	N/A	Pedal Cycle	B2149 Park Road South at Junction with A3023 Langstone Road
9	17/08/2016	1745	Yes	2	2	Serious	Dry	Fine	No	No		Hollow Lane at Junction with Elm Close
10	18/08/2016	1800	No	2	1	Slight	Dry	Fine	No	N/A		Mengham Road outside Sainsbury's
11	24/08/2016	0925	Yes	2	1	Slight	Dry	Fine	Yes	No / N/A	Pedal Cycle	Church Rd at Junction with Kings Rd
12	24/08/2016	0415	No	3	1	Slight	Dry	Fine	No	No / N/A		Church Rd Outside Number 81
13	29/08/2016	1200	Yes	1	1	Slight	Dry	Fine	Yes	No	Motor Cycle	A3026 Langstone Road at Junction with Langstone High Street
14	01/09/2016	0635	Yes	2	1	Slight	Dry	Fine	No	No		A3023 Park Road South at Junction with A27 Westbound
15	05/09/2016	0838	Yes	2	1	Slight	Wet	Rain	Yes	N/A		A3023 Havant Road at Junction with Northney Road
16	21/10/2016	2300	Yes	2	1	Serious	Dry	Fine	No	No / N/A	Pedal Cycle and Motor Cycle	A3023 Langstone Road at Junction with Mill Road
17	04/11/2016	1515	No	2	1	Slight	Dry	Fine	No / N/A	N/A	Motor Cycle	A3023 Havant Road outside Number 117
18	04/11/2016	1539	Yes	2	1	Serious	Wet	Rain	No	N/A	Pedestrian and Motor Cycle	Elm Grove at Junction with St Leonards Avenue
19	13/11/2016	1130	No	1	1	Slight	Dry	Fine	No	N/A		A3023 Havant Road 103 Metres South of Yew Tree Road
20	17/11/2016	1415	No	1	1	Slight	Dry	Fine	N/A	N/A		A3023 Havant Road 37 Metres South-East of Mill Rythe Lane
21	20/01/2017	1925	Yes	3	2	Slight	Dry	Fine	No	No / N/A		A3023 Havant Road at Junction with Castlemans Lane
22	24/01/2017	0930	Yes	2	2	Slight	Wet	Fine	No	N/A		A3023 Langstone Road at Junction with Langbrook Close
23	02/03/2017	0800	Yes	2	1	Slight	Dry	Fine	Yes	N/A	Pedal Cycle	Church Road at Junction with Hayling Garage
24	06/03/2017	1010	Other	2	1	Slight	Dry	Fine	Yes	N/A	Motor Cycle	A3023 Havant Road Outside the Esso Garage
25	11/03/2017	1300	No	2	2	Slight	Wet	Fine	No	No / N/A		A3023 Langstone Road Outside Ship Inn Pub
26	15/03/2017	1705	No	2	2	Slight	Dry	Fine	No	N/A		A3023 Havant Road Outside the Esso Garage
27	21/03/2017	1124	No	1	1	Slight	Dry	Fine	No	N/A		A3023 Langstone Road Outside of Langstone Lodge
28	16/04/2017	1300	Yes	2	1	Serious	Dry	Fine	No	No	Motor Cycle	A3023 Beach Road at Junction with Beach Road Cul De Sac
29	28/05/2017	0805	Yes	2	1	Slight	Dry	Fine	No	No / N/A	Pedal Cycle	A3023 Beach Road at Junction with Station Road
30	28/06/2017	0815	Yes	2	1	Slight	Dry	Fine	No	No		A3023 Havant Road at Junction with Havant Spur Road
31	08/07/2017	1545	Yes	2	1	Slight	Dry	Fine	No / N/A	N/A	Pedal Cycle	Hollow Lane at Junction with Sea Grove Avenue
32	18/07/2017	1455	Yes	2	1	Slight	Dry	Fine	Yes	N/A	Pedal Cycle	A3023 Manor Road at Junction with Higworth Lane
33	26/07/2017	1340	Yes	2	3	Slight	Dry	Fine	No / N/A	N/A		West Lane at Junction IWHT A3023 Havant Road
34	04/08/2017	1358	Yes	1	1	Slight	Dry	Fine	N/A	N/A		A3023 Havant Road at Junction with Mill Rythe Lane
35	11/08/2017	0651	Yes	2	1	Slight	Dry	Fine	Yes	N/A		A3023 Havant Road at Junction with Northney Road
36	16/08/2017	1100	Yes	3	2	Slight	Dry	Fine	No	No		A3023 Manor Road at Junction with Lexden Gardens
37	22/08/2017	1440	No	1	1	Serious	Dry	Fine	Yes	No	Pedestrian	Elm Grove outside Number 116
38	18/09/2017	1000	No	2	1	Slight	Dry	Fine	Yes / N/A	N/A		A3023 Havant Road Outside Number 258
39	04/10/2017	1115	No	2	1	Slight	Dry	Fine	No	No		Church Road Outside Number 89
40	16/10/2017	0830	No	2	1	Slight	Dry	Fine	Yes	No / N/A	Pedal Cycle	A3023 Havant Road Outside Number 79
41	02/11/2017	1135	No	2	2	Serious	Dry	Fine	Yes	No		A3023 Langstone Road at Junction with Hayling Island Service Station
42	04/11/2017	0900	Yes	3	1	Slight	Wet	Rain	Yes	No / N/A	Pedal Cycle	A3023 Havant Road at Junction with Yew Tree Road
43	20/11/2017	0845	No	2	1	Slight	Dry	Fine	Yes	N/A	Motor Cycle	A3023 Langstone Road at Junction with Langstone Tech Park
44	23/11/2017	1647	Yes	2	1	Slight	Dry	Fine	No	No	Motor Cycle	A3023 Langstone Road at Junction with Woodbury Avenue
45	25/11/2017	0400	No	1	1	Slight	Dry	Fine	No	N/A		A3023 Havant Road 92m South of Yew Tree Road
46	30/12/2017	1150	No	2	2	Slight	Wet	Fine	Yes	No		A3023 Havant Road Outside Number 91
47	23/01/2018	1315	No	1	1	Slight	Wet	Fine	Yes	No		A3023 Havant Road Outside Number 86
48	22/02/2018	1431	Yes	2	1	Slight	Dry	Fine	No	No		Selsmore Road at Junction with Sea Grove Avenue
49	27/02/2018	0844	No	2	1	Slight	Dry	Fine	Yes	No / N/A	Pedal Cycle	A3023 Manor Road at Junction with Hayling Island Holiday Park
50	11/03/2018	0438	No	1	1	Slight	Wet	Fine	No	Yes		A3023 Havant Road Outside Number 149
51	21/04/2018	0945	Yes	1	1	Serious	Dry	Fine	No	No	Pedestrian	Sea Grove Avenue at Junction with Manor Way
52	26/04/2018	1643	Yes	1	1	Slight	Dry	Fine	No	No		Havant Road at Junction with Church Road
53	03/05/2018	1818	Yes	2	1	Slight	Dry	Fine	Yes	No		A27 Havant Bypass at Junction with B2149 Park Road S
54	27/06/2018	1900	No	1	1	Slight	Dry	Fine	N/A	N/A	Pedestrian	Mengham Road 24m E of Junction with Elm Grove
55	26/07/2018	1345	Yes	2	2	Slight	Dry	Fine	Yes	No / N/A	Motor Cycle	A3023 Havant Road at Junction with Yew Tree Road
56	06/08/2018	1512	Yes	2	1	Slight	Dry	Fine	Yes	No		B2149 Park Road South at Junction with A3023 Langstone Road
57	14/08/2018	2010	Yes	2	1	Slight	Dry	Fine	No / N/A	N/A	Motor Cycle	Church Lane at Junction with Tournerbury Lane
58	26/08/2018	1451	No	1	1	Serious	Wet	Rain	No	N/A		A27 Westbound at Marker Post 53.1
59	31/08/2018	1336	Yes	2	1	Slight	Dry	Fine	Yes	No		A3023 Havant Road at Junction with Corpse Lane
60	12/09/2018	1558	No	1	1	Slight	Wet	Rain	No	No	Motor Cycle	Elm Grove, 24m S of Junction with Legion Road
61	25/09/2018	1114	Yes	2	1	Slight	Dry	Fine	Yes	No		A3023 Langstone Road at Junction with A27 Havant Bypass
62	03/10/2018	2115	Yes	1	1	Slight	Dry	Fine	No	No	Motor Cycle	A27 Westbound on Slip at Junction with A3023 Langstone Road
63	24/10/2018	2240	Yes	2	1	Slight	Dry	Fine	No / N/A	N/A		A3023 Langstone Road at Junction with A27 Havant Bypass
64	20/12/2018	1050	No	2	1	Slight	Dry	Fine	Yes / N/A	No / N/A		A27 Westbound at Marker Post 53.1
65	16/01/2019	1730	Yes	1	1	Serious	Wet	Fine	No	No	Pedestrian	Elm Grove at Junction with Elm Grove
66	18/01/2019	0830	Yes	2	1	Slight	Dry	Fine	Yes	No		Langstone Road at Junction with Southbrook Road
67	24/01/2019	1615	Yes	2	1	Serious	Dry	Fine	Yes	No / N/A	Motor Cycle	A3023 Langstone Road at Junction with Langbrook Close
68	30/01/2019	0925	No	1	1	Slight	Wet	Fine	Yes	No	Pedestrian	Elm Grove Outside Number 35
69	09/03/2019	1130	Yes	2	1	Serious	Dry	Fine	Yes	No	Motor Cycle	A3023 Langstone Road at Junction with B2149 Park Road South
70	20/03/2019	1000	No	3	1	Slight	Dry	Fine	Yes	No		A3023 Havant Road Outside of Number 91
71	30/04/2019	0715	Yes	2	1	Slight	Dry	Fine	No	N/A		A3023 Langstone Road at Junction with Langstone High Street
72	06/06/2019	2305	No	2	1	Slight	Wet	Rain	Yes / N/A	No / N/A		A3023 Havant Road, 35m N from Number 256
73	22/06/2019	0250	Yes	2	1	Serious	Dry	Fine	No / N/A	N/A	Motor Cycle	Sea Front at Junction with Sea Grove Avenue

74	11/07/2019	1545	No	1	1	Slight	Dry	Fine	N/A	N/A	Pedestrian	Cars	N/A	A3023 Beach Road, 45m S of Junction with St Mary's Road
75	23/07/2019	1847	Yes	2	1	Slight	Dry	Fine	No / N/A	N/A		Car and Bus	N/A	A3023 Langstone Road at Junction with Southbrook Road
76	29/07/2019	1000	No	2	1	Slight	Dry	Fine	No	No	Motor Cycle	Van	Failed to look	A27 Havant Flyover at Marker Post 53.1
77	11/08/2019	1810	No	2	1	Slight	Dry	Fine	No	N/A	Motor Cycle	Cars	Failed to look / failed to judge others path/speed	A3023 Havant Road at Junction with Driveway of Number 5
78	17/08/2019	1557	No	3	2	Slight	Dry	Fine	Yes	No / N/A		Cars	Reckless / failed to judge others path/speed	A3023 Havant Road Outside Protyre
79	31/08/2019	0929	No	3	1	Slight	Dry	Fine	Yes	N/A		Cars and van	Failed to look	A3023 Havant Road at Junction with Bridge Lake Parking Entrance
80	05/09/2019	1615	Yes	2	1	Serious	Dry	Fine	No	No	Motor Cycle	Van	Failed to look	A3023 Langstone Road at Junction with Southbrook Road
81	19/09/2019	1328	No	2	1	Slight	Dry	Fine	No / N/A	No		Cars	Failed to look / junction restart	A3023 Langstone Road at Junction with Hayling Island Service Station
82	01/10/2019	1949	No	2	1	Slight	Dry	Fine	Yes	No / N/A		Cars	Failed to judge others path/speed / Distraction in vehicle	Langstone Road Outside Number 50A
83	07/10/2019	0658	Yes	2	2	Serious	Wet	Rain	No	No		Cars	Failed to look / failed to judge others path/speed	A3023 Manor Road at Junction with Sinnaker Close
84	02/11/2019	2013	Yes	2	3	Slight	Wet	Fine	Yes	No		Cars	Failed to look	Sea Front at Junction with A3023 Beach Road (Beachlands Roundabout)
85	05/11/2019	1818	Yes	2	1	Slight	Wet	Fine	Yes	No	Motor Cycle	Cars	N/A	Church Road at Junction with Kings Road
86	03/12/2019	1830	No	2	1	Serious	Dry	Fine	No	N/A	Motor Cycle	Cars	N/A	A3023 Havant Road at Junction with Number 173
87	05/01/2020	1159	Yes	2	1	Serious	Dry	Fine	Yes	N/A		Cars	Failed to look	A3023 Beach Road at Junction with Sea Front
88	22/01/2020	2140	Yes	1	1	Slight	Wet	Fine	No	Yes		Cars	Impaired by alcohol	Sea Front at Junction with Sea Grove Avenue
89	25/01/2020	0931	No	2	3	Serious	Dry	Fine	Yes	Yes		Cars	Impaired by alcohol	A3023 Havant Road 109m W of the junction with Castlemans Lane
90	29/01/2020	0822	No	1	1	Slight	Dry	Fine	No	No	Pedestrian	Cars	Failed to look	Church Road outside St Mary's Church
91	06/03/2020	1246	Yes	3	2	Slight	Dry	Fine	Yes	No	Motor Cycle	Cars	Failed to look / failed to judge others path/speed	A3023 Havant Road at Junction with Corpse Lane
92	06/03/2020	1452	No	2	1	Slight	Dry	Fine	Yes	N/A	Pedal Cycle	Cars	N/A	A3023 Langstone Road at Junction with Driveway of Number 8B
93	09/03/2020	1715	Yes	2	1	Slight	Dry	Fine	Yes	No		Cars	Failed to look	A3023 Beach Road at Junction with Sea Front
94	26/03/2020	1100	No	2	1	Slight	Dry	Fine	Yes	N/A		Cars	N/A	A3023 Havant Road at Junction with Havant Billy Trail Car Park
95	16/06/2020	1420	No	2	1	Slight	Dry	Fine	Yes	N/A	Pedal Cycle	Cars	N/A	Elm Grove Outside Number 65
96	25/06/2020	2308	No	2	1	Slight	Dry	Fine	Yes / N/A	N/A	Pedal Cycle	Cars	Failed to look	Langstone Road at Junction with the Ship Inn PH
97	09/07/2020	1954	No	1	1	Serious	Dry	Fine	Yes	N/A	Pedal Cycle	Cars	Swerved	A3023 Manor Road Outside Myrtle Villa
98	23/07/2020	1520	Yes	2	2	Slight	Dry	Fine	No / N/A	N/A		Cars	N/A	A3023 Langstone Road at the Roundabout Junction with A27
99	23/07/2020	1840	No	2	1	Slight	Dry	Fine	Yes	No		Cars	Loss of control	A3023 Havant Road 154m North of Mill Rytte Junior School
100	24/07/2020	2358	Yes	1	2	Serious	Dry	Fine	No	N/A		Cars	Loss of control / impaired by alcohol	Manor Road at Junction with Spinnaker Close
101	29/07/2020	1719	No	1	1	Slight	Dry	Fine	Yes	No	Pedestrian	Cars	Failed to look properly	Manor Road Outside Newton House Hotel
102	30/07/2020	2028	No	2	1	Serious	Dry	Fine	No	N/A	Motor Cycle	Cars	Failed to look properly	A3023 Havant Road at Junction with the Maypole PH
103	02/08/2020	1109	No	3	3	Slight	Dry	Fine	Yes	N/A		Cars	Loss of control / illness or disability, metal or physical	Church Road Outside of a Hall Number 24
104	04/09/2020	1000	Yes	2	1	Serious	Dry	Fine	Yes	No	Motor Cycle	Cars	Failed to look	Church Road at Junction with Tournierbury Lane
105	12/09/2020	1014	Yes	2	1	Slight	Dry	Fine	No	No		Cars	Failed to judge other persons path or speed	A3023 Langstone Road at the Roundabout Junction with A27
106	10/10/2020	1635	Yes	1	1	Serious	Dry	Fine	No	No	Motor Cycle	N/A	Loss of control	A3023 Manor Road at Junction with Newton Lane
107	18/11/2020	1224	Yes	2	1	Serious	Wet	Fine	Yes	N/A	Pedal Cycle	Van	Failed to judge other persons path or speed	Elm Grove at Junction with Cherrywood Gardens
108	25/11/2020	0720	Yes	2	1	Slight	Wet	Fine	Yes	N/A	Motor Cycle	Cars	N/A	A3023 Langstone Road at Junction with A27 Havant Bypass
109	25/11/2020	0339	No	1	1	Slight	Dry	Fine	No	Yes		Cars	Impaired by drugs (illicit or medicinal) / fatigue	A27 West Bound 51m East of Marker 53.0
110	09/12/2020	0958	No	2	1	Slight	Dry	Fine	No	No / N/A	Motor Cycle	Cars	Poor turn	A3023 Langstone Road at Junction with Number 6 Langstone Road
111	18/12/2020	1138	Yes	2	1	Slight	Wet	Rain	Yes	No		Cars	Following too close	A3023 Langstone Road at Junction with the Mallards
112	21/02/2021	1832	Yes	2	1	Slight	Dry	Fine	No / N/A	N/A	Motor Cycle	Cars	N/A	A3023 Manor Road at Junction with Station Road
113	11/03/2021	0637	Yes	2	1	Serious	Dry	Fine	No	No	Motor Cycle	Cars	Failed to look / Poor turn	A27 Havant Bypass at Junction with A3023 Langstone Road
114	24/03/2021	1042	No	4	1	Slight	Dry	Fine	No / N/A	No / N/A		Cars	Illness or disability, mental or physical	Sea Front Outside of Number 216