



# LAND AT SINAH LANE, HAYLING ISLAND

## TRANSPORT ASSESSMENT

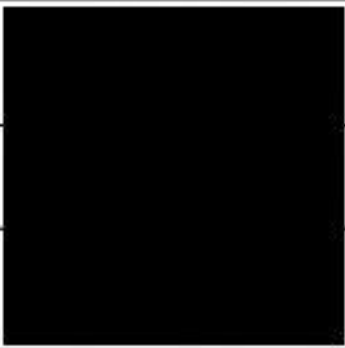
June 2018

Barratt Homes

RESIDENTIAL DEVELOPMENT  
LAND AT SINAH LANE  
HAYLING ISLAND

TRANSPORT ASSESSMENT

CONTROLLED DOCUMENT

|                            |                    |                                                                                       |           |
|----------------------------|--------------------|---------------------------------------------------------------------------------------|-----------|
| PB-Associates Document No: |                    | 041.0031/TA/2                                                                         |           |
| Status:                    | Final              | Copy No:                                                                              |           |
|                            | Name               | Signature                                                                             | Date      |
| Prepared by:               | Shannon Betteridge |  | June 2018 |
| Checked:                   | Jessica Lloyd      |                                                                                       | June 2018 |
| PBA Approved:              | Mark Smith         |                                                                                       | June 2018 |

Revision Record

| Rev. | Date     | By | Summary of Changes  | Chkd | Aprvd |
|------|----------|----|---------------------|------|-------|
| 2    | 27.06.18 | JL | Updated Site Layout | JL   | MS    |
|      |          |    |                     |      |       |



Barratt Homes  
Tollbar House  
Tollbar Way  
Hedge End  
Southampton  
SO30 2UH



Paul Basham Associates Ltd  
Lancaster Court  
8 Barnes Wallis Road  
Fareham  
Hampshire  
PO15 5TU

**RESIDENTIAL DEVELOPMENT  
LAND AT SINAH LANE  
HAYLING ISLAND**

**TRANSPORT ASSESSMENT**

**Contents**

|           |                                                     |           |
|-----------|-----------------------------------------------------|-----------|
| <b>1.</b> | <b>INTRODUCTION .....</b>                           | <b>3</b>  |
| <b>2.</b> | <b>EXISTING LOCAL CONDITIONS.....</b>               | <b>5</b>  |
| <b>3.</b> | <b>LOCAL ACCESSIBILITY .....</b>                    | <b>11</b> |
| <b>4.</b> | <b>PLANNING POLICY.....</b>                         | <b>23</b> |
| <b>5.</b> | <b>DEVELOPMENT PROPOSALS.....</b>                   | <b>26</b> |
| <b>6.</b> | <b>TRIP DISTRIBUTION AND ROUTE ASSIGNMENT .....</b> | <b>33</b> |
| <b>7.</b> | <b>JUNCTION CAPACITY ASSESSMENT .....</b>           | <b>41</b> |
| <b>8.</b> | <b>SENSITIVITY TEST .....</b>                       | <b>55</b> |
| <b>9.</b> | <b>SUMMARY AND CONCLUSIONS.....</b>                 | <b>59</b> |

**Figures**

- Figure 1 – Site Location
- Figure 2 – Site Context (Source: Google Maps)
- Figure 3 – Wider Road Network
- Figure 4 – PIA Data in the Immediate Vicinity of the Site
- Figure 5 – PIA Data: West Lane
- Figure 6 – Public Rights of Way
- Figure 7 – Local Cycle Routes (Source: HBC Cycle Network Map 2017)
- Figure 8 – Alternative Agricultural Access on North Shore Road (Source: Google)
- Figure 9 – Location of Committed Developments
- Figure 10 – Location of Local Junctions Requiring Assessment
- Figure 11 – Sensitivity Test Development Locations

**Tables**

- Table 1 – Local Amenities and Facilities
- Table 2 – CIHT Guidance for Providing for Journeys on Foot
- Table 3 – Local Bus Services
- Table 4 – Proposed Accommodation Schedule
- Table 5 – HBC Residential Car Parking Standards
- Table 6 – Required Parking Provision
- Table 7 – HBC Cycle Parking Standards
- Table 8 – Proposed Trip Generation
- Table 9 – Sinah Lane Traffic Survey Summary
- Table 10 – Residents Place of Work (2011 Travel to Work Statistics)
- Table 11 – Route Assignment by Percentage
- Table 12 – DfT AADF Count against Development Flows

|                                                                                  |
|----------------------------------------------------------------------------------|
| Table 13 – Station Road/ West Lane Turning Count Data                            |
| Table 14 – West Lane/ Newtown Road Turning Count Data                            |
| Table 15 – West Lane/ Havant Road Turning Count Data                             |
| Table 16 – Station Road/ A3023 Manor Road/ St Mary's Road Turning Count Data     |
| Table 17 – 2016 – 2036 Tempro Growth Rates                                       |
| Table 18 – Site Access Junction Capacity Assessment                              |
| Table 19 – Station Road/ West Lane Junction Capacity Assessment                  |
| Table 20 – West Lane/ Newtown Road Junction Capacity Assessment                  |
| Table 21 – West Lane/ Havant Road Junction Capacity Assessment                   |
| Table 22 – Development Percentage Impact on West Lane/ Havant Road               |
| Table 23 – Station Road/ Manor Road/ St Mary's Road Junction Capacity Assessment |
| Table 24 – Tempro Growth Rates (2022- 2027)                                      |
| Table 25 – Impact of Development on A27 Roundabout                               |
| Table 26 – Impact on Havant Road Northbound on A27 Roundabout                    |
| Table 27 – Sensitivity Test: Station Road/ St Mary's Road/ Manor Road            |
| Table 28 – Sensitivity Test: West Lane/ Havant Road                              |

## Appendices

|                                                                                        |
|----------------------------------------------------------------------------------------|
| Appendix A – Site Layout                                                               |
| Appendix B – ATC Outputs                                                               |
| Appendix C – PIA Data                                                                  |
| Appendix D – Accessibility Map                                                         |
| Appendix E – Internal Visibility                                                       |
| Appendix F – Refuse Vehicle and Fire Tender Tracking                                   |
| Appendix G – TRICS Outputs                                                             |
| Appendix H – Access Design, Visibility Splay & RSA                                     |
| Appendix I – Distribution Diagrams                                                     |
| Appendix J – Turning Count Data                                                        |
| Appendix K – TEMPRO Growth Rates                                                       |
| Appendix L – Site Access Modelling Outputs                                             |
| Appendix M – Station Road/West Lane Modelling Outputs                                  |
| Appendix N – West Lane/Newtown Road Modelling Outputs                                  |
| Appendix O – West Lane/Havant Road Modelling Outputs                                   |
| Appendix P – Station Road/Manor Road/St Mary's Road Modelling Outputs                  |
| Appendix Q – Sensitivity Test Diagram                                                  |
| Appendix R – Sensitivity Test Station Road/Manor Road/St Mary's Road Modelling Outputs |
| Appendix S – Sensitivity Test Havant Road/West Lane                                    |

## 1. INTRODUCTION

1.1 This Transport Assessment (TA) has been prepared by Paul Basham Associates on behalf of Barratt Homes to support a full planning application for a residential development comprising '195 dwellings, associated open space, pumping station, substation with vehicular access via Sinah Lane and change of use of agricultural land to a Wader and Brent Geese refuge' at land to the north of Sinah Lane, Hayling Island. The site location is demonstrated in **Figure 1**, with the site layout included in **Appendix A**.



**Figure 1:** Site Location

1.2 A number of site visits have been undertaken to review the existing situation and identify any constraints, opportunities and site accessibility observations in relation to the highway network and local facilities.

1.3 Following the submission of a Transport Scoping Note prepared by Paul Basham Associates in May 2017, pre-application discussions were undertaken on 13<sup>th</sup> June 2017 between Paul Basham Associates and Hampshire County Council (HCC). The meeting sought to agree the following:

- Extent of Personal Injury Accident (PIA) assessment;
- Proposed trip rates and distribution onto the wider road network;
- The scope of junctions requiring assessment; and
- Identify any off-site highway works that may require a contribution or improvements.

- 1.4 Further to Paul Basham Associates proposals, the meeting with HCC also identified committed developments that should be considered when undertaking the junction capacity assessment and further developments required to be considered as part of a sensitivity test. The additional developments that should be considered are:
- Land east of Furniss Way (76 dwellings);
  - Land south of Beech Grove (131 dwellings);
  - Mill Rythe Holiday Village (203 holiday caravans);
  - Land at Rook Farm (up to 394 dwellings); and
  - Beachlands (125 dwellings)
- 1.5 A detailed junction capacity assessment is also undertaken within the report to determine the likely impact of the development on the local road network. Additional junctions to those proposed were requested and therefore the junctions that are to be assessed are summarised below;
- Site Access;
  - Station Road/ West Lane;
  - Sinah Lane/ Staunton Avenue/ Station Road;
  - West Lane/Havant Road;
  - A3023/ St Mary's Road/ Station Road;
  - West Lane/ Newtown Road;
  - Newtown Road/Manor Road; and
  - A27 Langstone Roundabout
- 1.6 The scope of this TA therefore reviews existing site conditions and site accessibility, Personal Injury Accident (PIA) data, the proposed accommodation schedule, car and cycle parking requirements, visibility and access arrangements, servicing, trip generation, traffic impact and capacity assessment on the local road network (LRN), makes recommendations for any mitigation measures and draws conclusions from the overall assessment.
- 1.7 A separate Residential Travel Plan (TP) has been prepared in conjunction with this TA, which seeks to facilitate and promote the use of sustainable transport modes, by providing a package of soft measures, supported by investment in on-site infrastructure. The TP will also include a detailed Action Plan and modal share targets, based on HCC's Travel Plan guidance.

## 2. EXISTING LOCAL CONDITIONS

### Existing Use

- 2.1 The site is c.12.64 hectares and currently a green field. The site, situated within 500m of West Town and approximately 1.7km west of Mengham (from the site access), is located on the western side of Hayling Island within Havant Borough and is bordered to the south and west by residential dwellings, greenfield to the north and the Hayling Billy Trail and Hayling Island Amateur Dramatic Society to the east. The existing site and its surroundings are demonstrated in **Figure 2**.

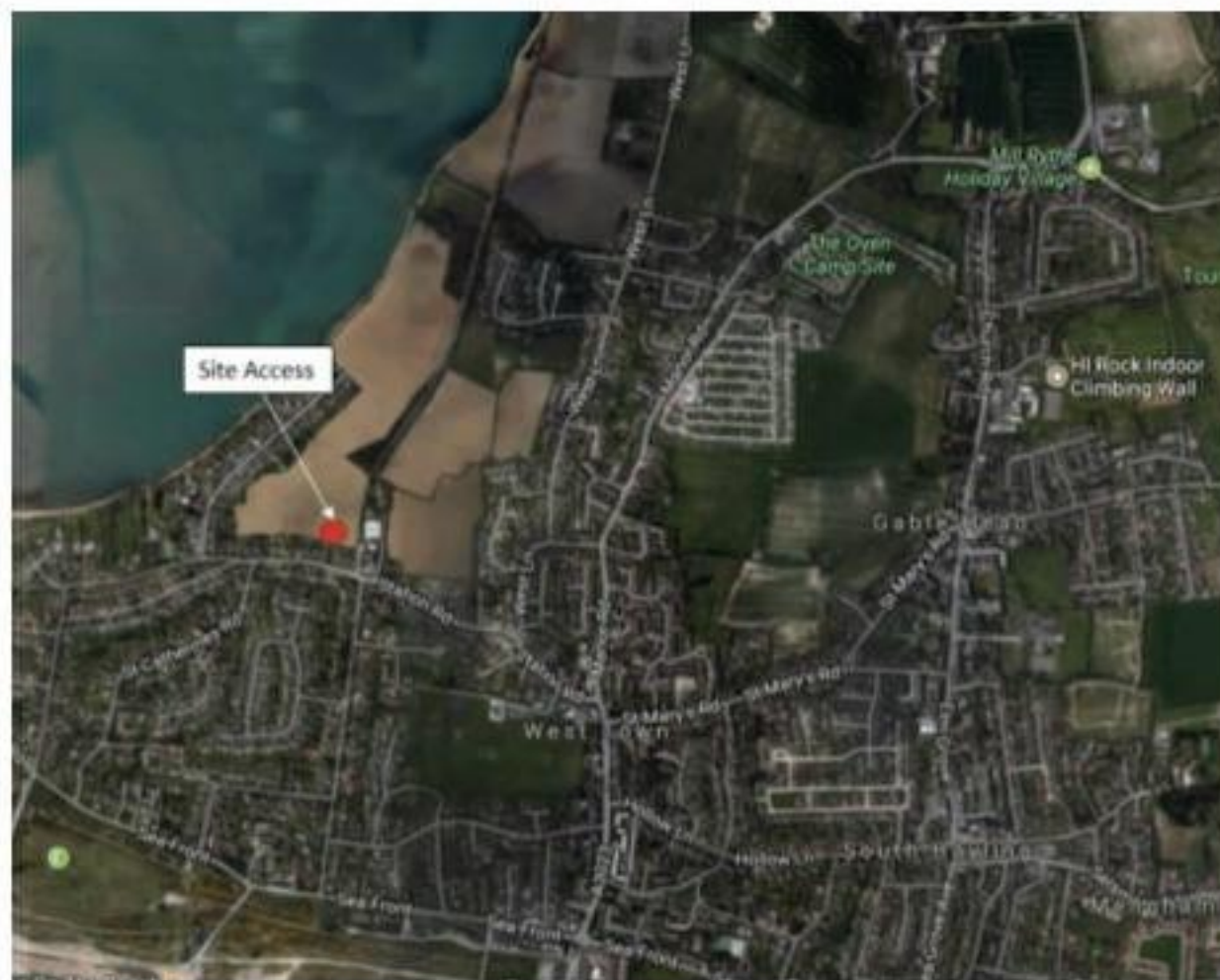


**Figure 2:** Site Context (Source: Google Maps)

### Local Road Network

#### Sinah Lane

- 2.2 The site is to be served via a single vehicular access onto Sinah Lane. Sinah Lane is a single carriageway road approximately 6.5m in width, which becomes Station Road approximately 80m to the east and connects to the Seafront approximately 950m southwest of the site. Sinah Lane is subject to a 30mph speed limit across the site frontage which remains as it becomes Station Road.
- 2.3 An Automated Traffic Count (ATC) survey was undertaken on Sinah Lane between 23rd June and 4<sup>th</sup> July 2016 which demonstrated 85<sup>th</sup> percentile speeds of 31.1mph (EB) and 29.5mph (WB) and 5-day average eastbound/westbound traffic volumes of 1,688 and 1,903 respectively over a 24hr period. The ATC outputs are included as **Appendix B** with the flows assessed in subsequent chapters of this TA.

- 2.4 Whilst no parking restrictions are in place in the vicinity of the site, parking along the Sinah Lane carriageway is rare with the majority of properties fronting onto the road equipped with a driveway. The existing conditions along Sinah Lane are demonstrated in **Photograph 1**.



**Photograph 1:** Sinah Lane Conditions

#### Station Road

- 2.5 Sinah Lane becomes Station Road after the junction with Staunton Avenue (approximately 80m to the east of the proposed site access). Station Road is approximately 600m in length and provides a direct route to the A3023 Manor Road and subsequently the wider road network. The Station Road carriageway varies in width along its length and is flanked by a continuous footway on the southern side of the carriageway, with the northern side of the carriageway flanked by intermittent footways.
- 2.6 Station Road is not subject to on-street parking as parking restrictions (in the form of double yellow lines) are present along both sides of the carriageway. The existing Station Road conditions are demonstrated in **Photograph 2**.



**Photograph 2:** Station Road Conditions

### Wider Road Network

- 2.7 In the wider vicinity, the site is situated approximately 700m west of the A3023 which provides an arterial route connecting the south of the island to the north. The A3023 culminates at the junction with the A27 approximately 7.5km north of the development site. The A27 provides a direct route between Chichester to the east and Portsmouth to the west. The site's location in relation to the wider road network is demonstrated in **Figure 3**.



**Figure 3:** Wider Road Network

## Personal Injury Accident Data

2.8 Personal Injury Accident (PIA) data has been assessed to consider the existing safety situation on the local road network. Patterns displayed in the data can be assessed with regards to the proximity, frequency and severity of incidents that have occurred that may require further in-depth consideration. At the pre-application stage, the scope of the PIA assessment was agreed, and therefore the covers the following area;

- Sinah Lane to the junction with North Shore Road;
- Station Road;
- West Lane;
- Newtown Lane; and
- A3023 between West Lane and the zebra crossing south of St Mary's Road

2.9 The PIA data has been obtained from Hampshire Constabulary for the latest 5-year period between June 2012 and May 2017. The full PIA data is included in **Appendix C**.

2.10 Whilst the full data identifies 22 PIA incidents, there has been a total of 16 incidents at the junctions agreed with HCC at the pre-application stage, with only one incident occurring in the vicinity of the proposed site access. The remaining PIAs occurred on side streets where development traffic is unlikely to travel. Therefore, only the 16 incidents have been assessed of which, 3 were recorded as 'serious' in nature. These are summarised below;

1: Car travelling north on A3023 Beach Road slows for Zebra crossing to allow cyclist to cross. Car believed cyclists was going to wait on pavement and therefore continued straight across the crossing and hits the cyclist

Contributory Factors: Failed to judge other persons path or speed; Disobeyed pedestrian crossing facility

Date of Incident: 21.06.2012

Type: Serious

2: Car travelling east along Station Road lost control on right hand bend and collided with bollard

Contributory Factors: Inexperienced or learner driver/rider; Travelling too fast for conditions; Loss of Control

Date of Incident: 19.02.2014

Type: Serious

3: Car travelling north along A3023 Beach Road collides with car parked on the nearside. Vehicle 2 pushed into vehicle 3, with vehicle 1 rolling onto its roof

Contributory Factors: Illness or disability, mental or physical

Date of Incident: 13.03.2015

Type: Serious



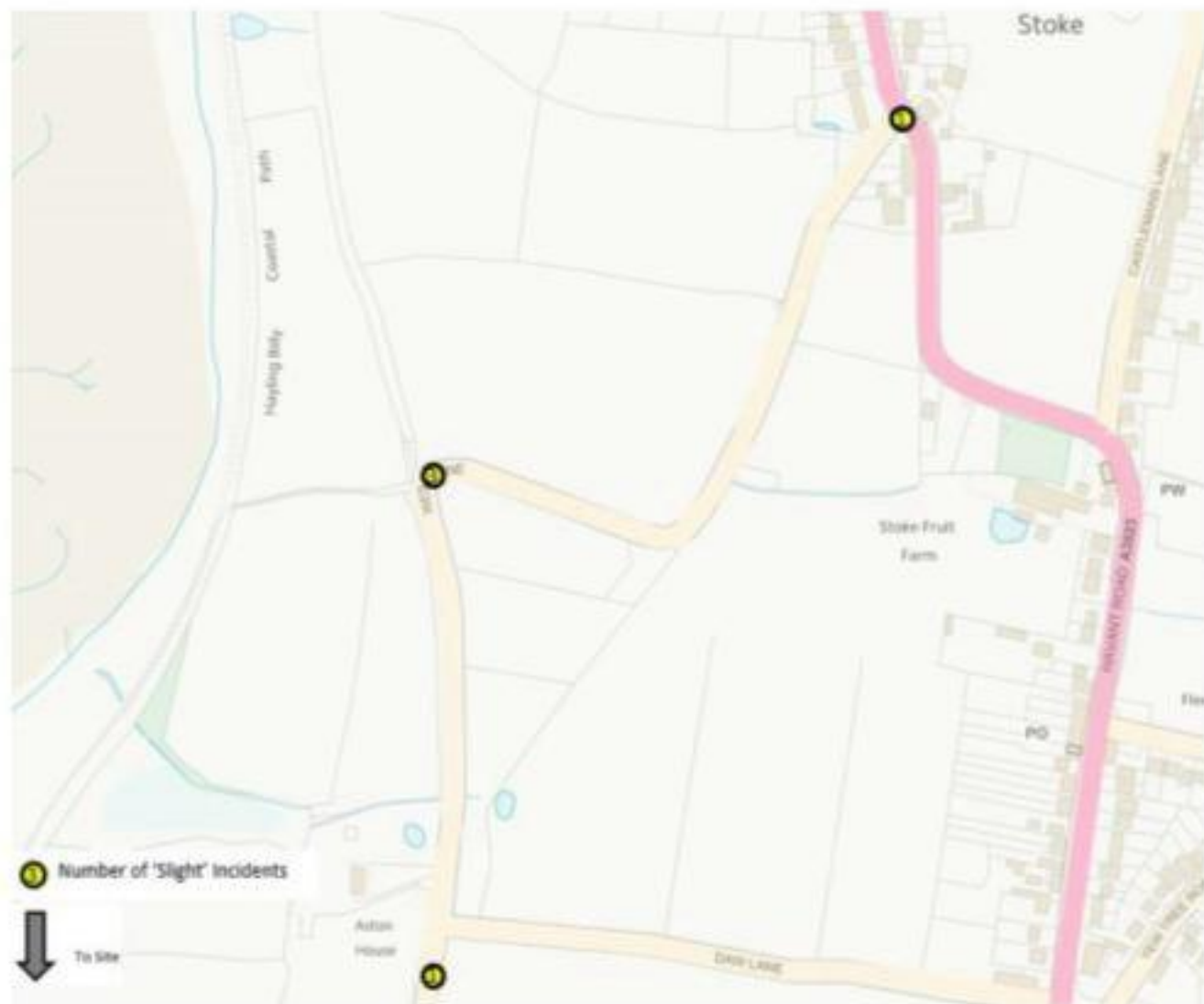


**Figure 5:** PIA Data: West Lane

- 2.13 Whilst any PIA is regrettable, there does not appear to be any significant pattern in the data, other than that accidents tend to occur at junctions (as expected). When evaluating the 16 incidents, a number had more than one cause. Of these, the majority (of both 'slight' and 'serious' incidents) were attributed to either the driver failing to look (6 incidents) or the driver misjudged the speed/path of the vehicle (3 incidents). Of the 3 'slight' incidents recorded at the bend along West Lane, all were attributed to 'poor turn of manoeuvre', indicating driver error rather than a highway concern.
- 2.14 In addition, of the 16 recorded PIAs in the vicinity of the site, 3 involved cyclists, of which 2 were classified as 'slight' in nature and 1 was classified as 'serious'.
- 2.15 Overall, the distribution, frequency and severity of incidents does not suggest a trend in the PIAs and the investigation does not indicate any specific highways concern that would worsen as a result of the development, or pose a highways safety concern for future site users.

### 3. LOCAL ACCESSIBILITY

- 3.1 The application site access is approximately 500m from the centre of West Town and 1.7km west of Mengham. In addition, the site is 8km south of Havant Town Centre which is accessible via the A3023.
- 3.2 The site's proximity to existing local amenities, pedestrian and cycle networks presents a good opportunity to encourage the use of sustainable transport and create a sustainable development. A summary of some of the local facilities in the vicinity of the site and their associated walking/cycling distances measured from the centre of the site is shown in **Table 1** and illustrated in an 'Accessibility Map', included in **Appendix D**. An additional 200m has been added to the associated distances to both West Town and Mengham to account for internal site walking, as requested by HCC at the pre-application stage.

|                                                                                                                                                                                                                                                                |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| West Town (700m from centre of the site)                                                                                                                                                                                                                       |  |
| Walking Time: 6mins                                                                                                                                                                                                                                            |  |
| Cycle Time: 1-2mins                                                                                                                                                                                                                                            |  |
| Local Facilities:                                                                                                                                                                                                                                              |  |
| <ul style="list-style-type: none"> <li>• Convenience Store</li> <li>• Eateries/ Takeaways</li> <li>• Bus Stops</li> <li>• Pharmacy</li> <li>• Bakery</li> <li>• Hairdressers</li> <li>• Community Centre</li> </ul>                                            |  |
| Mengham (1.9km from centre of the site)                                                                                                                                                                                                                        |  |
| Walking Time: 25mins                                                                                                                                                                                                                                           |  |
| Cycle Time: 6mins                                                                                                                                                                                                                                              |  |
| Bus Time: 13min (Every 30min from Station Theatre Bus Stop)                                                                                                                                                                                                    |  |
| Local Facilities:                                                                                                                                                                                                                                              |  |
| <ul style="list-style-type: none"> <li>• Doctor's Surgery</li> <li>• Pharmacy</li> <li>• Schools</li> <li>• Pubs/ Restaurants/ Takeaways</li> <li>• Banks</li> <li>• Post Office</li> <li>• Convenience Store/ Supermarket</li> <li>• Health Centre</li> </ul> |  |

**Table 1:** Local Amenities and Facilities

- 3.3 Additional facilities and amenities are available along the seafront, which is located approximately 1km south of the site accessible via a 9 minute walk or 2 minute cycle, including a golf course, amusement park and tennis courts.

- 3.4 Within approximately 2km of the site, there are three schools, including an infant school (Mengham Infant School), a junior school (Mengham Junior School) and a secondary school (The Hayling College). There is also a nursery school situated on St Mary's Road (Hayling Community Pre-School). The nearest school is Mengham Infant School located 1.6km away from the site access. The Hayling College is the nearest secondary school and is located 2.1km from the centre of the site.
- 3.5 In terms of health provision there is a Doctors surgery situated on Elm Grove (a 23 minute walk) with the closest pharmacy being on Station Road (650m from the site). The nearest dentist is Elm Grove Dental Practice located on Elm Grove. The nearest hospital with Accident and Emergency facilities is Queen Alexandra, Portsmouth; approximately a 20 minute drive away.
- 3.6 The Chartered Institution of Highways and Transportation (CIHT) outlines guidance for 'Providing for Journeys on Foot' (2000), which identifies desirable, acceptable and preferred maximum walking distances for local amenities, as outlined in **Table 2**.

|                          | Local Centre (m) | Commuting/School/Sight-seeing (m) | Elsewhere (m) |
|--------------------------|------------------|-----------------------------------|---------------|
| <b>Desirable</b>         | 200              | 500                               | 400           |
| <b>Acceptable</b>        | 400              | 1000                              | 800           |
| <b>Preferred Maximum</b> | 800              | 2000                              | 1200          |

**Table 2:** CIHT Guidance for Providing for Journeys on Foot (2000)

- 3.7 **Table 2** demonstrates that there are numerous facilities within close proximity which are within the preferred maximum distance that CIHT suggests. In particular local schools and a post office are all within the 'preferred maximum' walking distances for journeys on foot. This highlights that walking to the local schools and facilities from the proposed development is realistic, with journey times reduced by cycling and bus opportunities.

#### **Local Pedestrian Network**

- 3.8 The local footway network around the site benefits from a gentle topography and therefore lends itself to pedestrian movements. Sinah Lane is flanked by footways approximately 1.8m wide on either side of the carriageway, with a wide grass verge also provided on the southern side, enhancing the pedestrian environment.
- 3.9 Dropped kerbs and tactile paving are provided at crossing points on the local road network, facilitating the movement of all non-motorised site users. The pedestrian network on Sinah Lane is demonstrated in **Photograph 3**.



**Photograph 3:** Sinah Lane Pedestrian Environment

3.10 Staunton Avenue, situated 80m to the east of the site, provides a route towards the sea front. The pedestrian network along Staunton Avenue provides an attractive environment with wide footways and verges. The Staunton Avenue pedestrian environment is demonstrated in **Photograph 4**.



**Photograph 4:** Staunton Avenue Pedestrian Environment

### **Station Road**

3.11 Pre-application discussions with HCC identified that the existing pedestrian environment towards West Town could be improved, with footway widenings taking place. The pedestrian route towards West Town (using Station Road) from the proposed site is currently being upgraded as part of Barratt Homes' 'The Oysters' development (*reference: APP/15/00919*).

- 3.12 The improvement works along Station Road have received S278 technical approval and have commenced. These works include widening the footway on the southern side of the carriageway to 1.2m in width, removing the centre line of the carriageway and providing a buff anti-skid surfacing and implementing advisory 'Road Narrowing' signage. These improvements were considered suitable and appropriate for the development at 'The Oysters' and would enable all non-motorised site users to travel safely along the southern side of the carriageway towards West Town and the wider pedestrian network.
- 3.13 It is noted that HCC highway officers identified that the pedestrian provision along Station Road should be explored, in particular in relation to the missing section of footway outside the pub. However, the pedestrian improvements coming forward as part of 'The Oysters' development were assessed in detail at the time and considered the best pedestrian infrastructure improvements achievable within this highway boundary in this area, and with the crossing point provided before the pub, there would be minimal pedestrian desire line movements along the northern footway, using instead the wider southern footway.
- 3.14 Within West Town itself, suitably wide footways flank either side of the carriageway providing an attractive pedestrian environment. In addition, raised tables and changes in carriageway surfaces are present, enforcing the pedestrian-focussed nature of the area and reducing vehicle speeds. The pedestrian environment in West Town is demonstrated in **Photograph 5**.



**Photograph 5:** West Town Pedestrian Network

### Wider Pedestrian Network

- 3.15 The attractiveness and safety of the route to school and the facilities available in Mengham was identified by HCC at the pre-application stage as an area which requires a full assessment, and has been reviewed in the subsequent paragraphs.

#### Facilities in Mengham

- 3.16 The pedestrian route towards the local facilities situated in Mengham would utilise Station Road and St Mary's Road. At the junction of Station Road/Manor Road and Manor Road/St Mary's Road both are enhanced by dropped kerbs and pedestrian refuge islands, facilitating the movement of all non-motorised users across these junctions.
- 3.17 In addition, a zebra crossing is in place across Beach Road/Manor Road, approximately 100m south of Station Road. This crossing point is supported by tactile paving, bollards and lighting, as demonstrated in **Photograph 6**.



**Photograph 6:** Pedestrian Crossing on Beach Road

- 3.18 HCC highways officers indicated that the current zebra crossing on Beach Road is offset from the pedestrian desire line and therefore further crossing locations should be explored in the vicinity of the Station Road/ St Mary's Road/ Manor Road staggered junction. As such, we have assessed the suitability of the junction for providing an alternative location for a crossing, as detailed below;
- **North of Station Road;** Whilst this appears to be achievable in relation to the land available for implementing a crossing point, the location of any crossing to the north of Station Road would also result in pedestrians walking away from the desire lines along St Mary's Road, and therefore does not provide any material difference from the current location.
  - **In the right turn lane taper;** A second location has been assessed to the south of Station Road in the direct taper of the existing right turn lane, for northbound traffic turning right into St Mary's Road. There are however, numerous constraints to a crossing point in this location. Firstly, the railings restrict the movement across Manor Road and are therefore ensuring

pedestrian safety. To the immediate south of the railings, a vehicular access is provided, and on the opposite side of the carriageway a couple of private driveways are also provided which would also restrict the placement of a crossing point.

- 3.19 It is therefore identified that the location of the existing zebra crossing is the best option for providing a crossing across the carriageway (and presumably why the location was chosen to implement the crossing previously), and whilst this may result in slightly longer walking distances and times (only 1 minute), will ensure that the southern footway along Station Road connects to the southern footway provided along St Mary's Road ensuring a safe crossing is provided for all non-motorised site users.

#### Route to School

##### *Mengham*

- 3.20 The closest infant, junior and secondary schools to the site have been identified as Mengham Infant, Mengham Junior and The Hayling College respectively. The routes to the schools are assessed subsequently, as requested by HCC at the pre-application stage.
- 3.21 St Mary's Road, which provides the most direct route to Mengham Infant School and would be used to access to Mengham Junior School, provides a continuous footway (approximately 2m in width) along the southern edge of the carriageway. Dropped kerbs are provided at each junction along St Mary's Road facilitating the movement of all non-motorised users in this location. The existing footway infrastructure along St Mary's Road is demonstrated in **Photographs 7 and 8**.



**Photograph 7:** St Mary's Road Footway



**Photograph 8:** St Mary's Road Crossing Points

3.22 St Mary's Road also provides two pedestrian refuge islands; one at the junction with Manor Road, and a second directly outside the entrance to the infant school. Both crossings are supported by dropped kerbs and tactile paving, facilitating the movement of all non-motorised users, and ensuring a safe and direct route between the school and the development site. The crossing outside the school is demonstrated in **Photograph 9**.



**Photograph 9:** St Mary's Road Crossing Point

3.23 Street lighting and dropped kerbs provided along the duration of this route enhance the pedestrian environment and therefore encourages walking as a predominant method of travel.

3.24 Continuing east to access Mengham Junior School, pedestrians would utilise St Mary's Road, Cherrywood Gardens, Elm Grove and Palmerston Road. Cherrywood Gardens forms an extension of St Mary's Road with footways approximately 1.8m in width flanking both sides of the carriageway. The junction on Cherrywood Gardens and Linden Grove is facilitated by dropped kerbs and tactile paving to aid pedestrian movements towards Elm Grove.

3.25 Elm Grove, along which a comprehensive range of facilities and services are situated, provides an attractive pedestrian environment facilitated by wide footways, tactile paving and additional zebra crossing points. A crossing point is provided across Elm Grove in the form of dropped kerbs, bollards and tactile paving along with dropped kerbs and tactile paving across Palmerston Road to connect pedestrians to the junior school.

### *The Hayling College*

- 3.26 The Hayling College is situated approximately 500m north of Mengham Infant School, with the route to the college largely the same as the route to the Mengham Schools. A signalised crossing is provided outside the entrance to the school facilitating the movement of all non-motorised site users in the vicinity of the site.
- 3.27 It is therefore considered that the existing routes to school provide a safe and convenient means of access with multiple pedestrian crossing points and suitably wide footways.

### **Public Rights of Way**

- 3.28 The site is also well located in relation to Public Rights of Way (PRoW), with a number of routes located in the vicinity of the site. The Public Rights of Way are demonstrated in **Figure 6**.



**Figure 6:** Public Rights of Way

### **Cycle Network**

- 3.29 The local road network benefits from a gentle topography which helps to make cycling a more attractive mode of transport. Sinah Lane and Station Road lend themselves to cycling with suitably wide carriageways, supported by advisory on-street cycle signage, as demonstrated in **Photograph 10**.



**Photograph 10:** On-street Cycling Conditions

- 3.30 The cycle route towards Mengham also provides a good opportunity to encourage cycling as a method of transport from the site. Station Road, Manor Road and St Mary's Road all benefit from wide carriageways enabling cyclists to share the carriageway with motorised users safely.
- 3.31 In addition, National Cycle Network Route 2 (NCN 2) is within close proximity of the site which runs between Dover and Cornwall. More locally, NCN 2 connects Portsmouth, Chichester and Southampton.
- 3.32 The routes available around Hayling Island comprise a mix of on-road and traffic-free routes, as demonstrated in **Figure 7**.



**Figure 7:** Local Cycle Routes (Source: Havant Borough Cycle Network Map 2017)

3.33 For a local ride, a journey to Havant takes approximately 25 minutes whilst a journey to Portsmouth takes approximately 40 minutes (including a ferry crossing).

3.34 The site is also adjacent to the 'Hayling Billy Trail' which is a 5-mile traffic free round trip which runs from the north of Hayling Island to the south. The trail uses the Hayling Billy Coastal Path (which forms part of NCN Route 2) and runs along the west coast of Hayling Island. Parts of the Hayling Billy Trail run very close to the coast line, and as requested by HCC at the pre-application stage, a contribution will be made to improving this route as a result of the proposed development. The existing conditions of the Hayling Billy Trail are demonstrated in **Photographs 11, 12 and 13**.



**Photograph 11:** Hayling Billy Trail (Southern End)



**Photograph 12:** Hayling Billy Trail (Middle)



**Photograph 13:** Hayling Billy Trail (Northern End)

3.35 The Hayling Billy Trail varies in width, with parts having a demarcation for equestrian users, cyclists and pedestrians. The surfacing also changes along the route with the northern end from Victoria Road more formally surfaced, as evident in **Photograph 13**.

### Bus Services

3.36 The closest bus stops to the site are situated to the east of Furniss Way, approximately 110m from the site access and thus 310m from the centre of the site. Both bus stops comprise a single pole and timetable, with the eastbound bus stop also comprising a covered seating area. The bus services available from these bus stops are summarised in **Table 3**.

| Service | Route                                        | Frequency        |                  |        |
|---------|----------------------------------------------|------------------|------------------|--------|
|         |                                              | Monday – Friday  | Saturday         | Sunday |
| 30/31   | Purbrook – Hayling Island – Mengham – Havant | Every 30 Minutes | Every 30 Minutes | Hourly |

**Table 3:** Local Bus Services

- 3.37 Bus service 30/31 connects the site to South Hayling, Mengham, Gable Head, Langstone and Havant and provides a service seven day a week. A journey to Havant takes approximately 40 minutes.
- 3.38 Through the pre-application stage, it was noted that HCC are currently investigating opportunities for improvements along the route of bus service 31. These improvements could result in a more frequent service, greater destinations available on-route and the use of 'Real-Time Passenger Information' (RTPI).

### **Rail Services**

- 3.39 Havant Rail Station is located approximately a 30 minute cycle to the north of the site and is accessible via the Hayling Billy Trail and National Cycle Route 2. The station is also accessible via the aforementioned Stagecoach bus service number 30/31.
- 3.40 Havant Rail Station is equipped with 92 sheltered and secure cycle storage spaces, a total of 632 car parking spaces across two car parks (including 8 disabled spaces) step free access, waiting rooms, toilets, customer help points, CCTV and daytime (Monday-Sunday) staffing.
- 3.41 The station provides direct access to destinations including Portsmouth Harbour, Southampton Central, Brighton, London Victoria and London Waterloo. Trains typically stop at a frequency of two per hour for services to Southampton Central, Brighton and London Victoria, three per hour to London Waterloo and four per hour to Portsmouth Harbour. Journeys to Portsmouth Harbour take approximately 16 minutes with journeys to London Waterloo taking approximately 70-80 minutes.
- 3.42 In the AM and PM peaks there are trains roughly every 30 minutes in an easterly direction, 10 minutes in a westerly direction and every 15 minutes in a northerly direction providing opportunities for commuters to Brighton, Portsmouth/Southampton and London Waterloo/Victoria respectively (as well as intermediate stations).

### **Maritime Services**

- 3.43 A commercial ferry service is also available from Ferry Point (Ferry Road) (re-launched August 2016) and connects Hayling Island and Portsmouth for foot passengers and cyclists. Ferry Point is approximately 2.6km west of the proposed site, approximately a 30 minute walk or 10 minute cycle.

### **Summary of Site Conditions and Local Accessibility**

- 3.44 The application site access is approximately 500m from the centre of West Town and 1.7km west of Mengham. In addition, the site is 8km south of Havant which is accessible via the A3023.

- 3.45 The site's proximity to existing local amenities, pedestrian and cycle networks presents a good opportunity to encourage the use of sustainable transport and create a sustainable development with a number of amenities and services within walking distance of the site, including bus stops, a convenience store and a pharmacy.
- 3.46 Sinah Lane measures 6.5m in width and benefits from a footway flanking both sides of the carriageway. The gentle topography and dropped kerb pedestrian crossings within the vicinity of the site provide an attractive pedestrian environment. The wider pedestrian network presents a good opportunity to promote walking for primary journeys including walking to school, due to continuous footways being supported by dropped kerbs and tactile paving.
- 3.47 NCN Route 2 route which links Dover and St Austell runs parallel to the site via the Hayling Billy Trail. In addition, the gentle topography experienced on Hayling Island and in the vicinity of the site in particular, lends itself to encouraging cycling as a primary mode of transport. A cycle to Portsmouth takes approximately 40 minutes, with part of the journey incorporating the use of the Hayling ferry located 2.6km from the site.
- 3.48 The nearest bus stops to the site are situated approximately 110m east of the site access and provides a frequent service to Havant seven days a week. A bus journey to Havant takes approximately 40 minutes.
- 3.49 Havant Railway Station is accessible via a 30 minute cycle or via bus service 31 from the proposed site. This station provides direct services to Portsmouth, Southampton, Brighton and London.

## 4. PLANNING POLICY

### National Planning Policy

- 4.1 The National Planning Policy Framework (NPPF) acts as the national guidance for development planning and replaces the national Planning Policy Guidance and Plan Policy Statements, including Planning Policy Guidance 13 (PPG13): Transport.
- 4.2 Designed to make the planning system less complex and more accessible, the NPPF gives greater responsibility to local authorities, a 'presumption in favour of sustainable development', and encourages local planning authorities to 'positively seek' opportunities to meet the development needs of their area.
- 4.3 The NPPF paragraph 32 states:  
*"All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account of whether:*
- The opportunities for sustainable transport have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;*
  - Safe and suitable access to the site can be achieved for all people; and*
  - Improvements can be undertaken within the transport network that cost-effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe."*
- 4.4 This TA and accompanying Travel Plan accord with these principles. The NPPF also cites the following as key considerations with regards to transport and development planning to which this proposal's highway approach adheres:
- The development gives priority to pedestrian and cycle movements, and has access to public transport facilities;*
  - The development has a safe and secure layout which minimises conflicts between traffic and cyclists or pedestrians, avoids street clutter, and where appropriate, establishes home zones; and*
  - The development considers the needs of people with disabilities.*

## Regional and Local Policy

### Hampshire County Council's Local Transport Plan 3 (2011-2031)

- 4.5 LTP3 sets out HCCs transport strategy and identifies a range of policy objectives, based on the three guiding principles of "Reduce, Manage and Invest". The most relevant policy objectives to this TA are summarised below:

**Policy Objective 4:** Work with bus and coach operators to grow bus travel, seek to remove barriers that prevent some people using buses where affordable and practical, and reduce dependence on the private car for journeys on inter- and intra-urban corridors;

**Policy Objective 11:** Reduce the need to travel through encouragement of a high-speed broadband network, supporting the local delivery of services and in urban areas the application of 'Smarter Choices' initiatives;

**Policy Objective 12:** Invest in sustainable transport measures, including walking and cycling infrastructure, principally in urban areas, to provide a healthy alternative to the car for local short journeys to work, local services or schools; and work with health authorities to ensure that transport policy supports local ambitions for health and well-being.

### Havant Borough Council Core Strategy (2011)

- 4.6 The Core Strategy is implemented to help guide the development of the borough by outlining the long-term vision and the aims and objectives. The Core Strategy aim most relevant to this TA is *'the borough's residents expect high quality public services and the vision includes an aspiration to provide better coordinated and joined up services'*.
- 4.7 The Core Strategy also identifies a policy specific to Transport and Access to which developments within the borough follow and adhere to wherever possible. This policy (PCS20) is outlined below;

**Policy CS20:** Development will be permitted that:

- Is consistent with and contributes to the implementation of the HCC 'Reduce, Manage and invest' Strategy;
- Does not increase congestion and promotes better use of existing transport networks;
- Improves accessibility to goods, services and employment and promotes equality in the transport system;
- Provides transport management measures to ensure the safe and efficient operation of the strategic and local road network;
- Ensures that highway design response positively to the characteristics of the area and delivers a high quality public realm for all users;
- Maintains or improves the range of transport modes accessible to the users of the development site with specific emphasis on public transport, especially high quality/ frequency uses and includes walking and cycling where appropriate; and
- Improves highway, cycling and pedestrian's links

### **Site Status and “Committed Schemes” on Hayling Island**

- 4.8 The site (UE18) was identified in the Strategic Housing Local Availability Assessment (January 2017) as a site with potential for development. The site was identified as suitable for accommodating approximately 161 dwellings (with a smaller site area).
- 4.9 The site has also been identified in Havant Borough Council’s Draft Local Plan (2036) which was out for public consultation between 8<sup>th</sup> January to 16<sup>th</sup> February 2018. The site is identified as Policy H31: Sinah Lane with policy stating that a Travel Plan and Transport Assessment should be submitted to support an application. It was hoped that this TA would be supported by the findings of a microsimulation model undertaken on behalf of Havant Borough Council to assess vehicle trips on and off the island, however, as the data is yet to be published (scheduled December 2017), with the results continually being pushed back, this application has assessed the route for all vehicles anticipated to leave the island, as further detailed in the latter part of this report.
- 4.10 Through the Pre-Application discussions with HCC it was agreed that the following developments should be assessed and included as ‘Committed Development’:
- Station Road, Hayling Island (APP/15/00919) – Believed to be 0% occupied at the time of the surveys;
  - 25% of Land South of Beech Grove (APP/12/00966) – Believed to be 75% occupied at the time of the surveys; and
  - Mill Rythe Holiday Village (*application reference: APP/16/01237*)
- 4.11 A further two developments were also identified that need to be assessed as part of a sensitivity test only. These developments are;
- Land at Rook Farm: Allocation for 394 dwellings
  - Beachlands: Allocation for 125 dwellings, leisure and tourism

### Public Consultation and Development Consultation Forum

- 4.12 This TA has also been informed by feedback from a Public Consultation event held at the Hayling Island Community Centre in October 2017 and a Development Consultation Forum (DCF) held at Havant Borough Council offices in November 2017.

## 5. DEVELOPMENT PROPOSALS

- 5.1 The proposed development would consist of 195 dwellings with associated car parking. It is proposed that 30% of the dwellings would be provided as affordable housing. The proposed accommodation schedule is summarised in **Table 4**, with the site layout included in **Appendix A**.

| Type of Dwelling | Number of Units |
|------------------|-----------------|
| 2 Bedrooms       | 69              |
| 3 Bedrooms       | 106             |
| 4 Bedrooms       | 20              |
| <b>Total</b>     | <b>195</b>      |

**Table 4:** Proposed Accommodation Schedule

### Car Parking

- 5.2 Car parking would be provided in accordance with Havant Borough Council's (HBC) Parking SPD (Adopted 2016). A summary of the parking standards is provided in **Table 5**.

| Type of Dwelling | Minimum Car Parking Requirement (Allocated) | Minimum Car Parking Requirement (Unallocated) |
|------------------|---------------------------------------------|-----------------------------------------------|
| 1 Bedroom        | 1 space                                     | 0.9 spaces                                    |
| 2 Bedrooms       | 2 spaces                                    | 1.3 spaces                                    |
| 3 Bedrooms       | 2 spaces                                    | 1.9 spaces                                    |
| 4+ Bedrooms      | 3 spaces                                    | 2.4 spaces                                    |

**Table 5:** HBC Residential Car Parking Standards

- 5.3 **Table 6** demonstrates the number of parking spaces required to serve the development in accordance with the residential parking standards outlined in **Table 5**.

| Type of Dwelling                       | Number of Dwellings | Spaces Required per Dwelling | Parking Provision (Allocated) |
|----------------------------------------|---------------------|------------------------------|-------------------------------|
| 2 Bedrooms                             | 69                  | 2 spaces                     | 138                           |
| 3 Bedrooms                             | 106                 | 2 spaces                     | 212                           |
| 4 Bedrooms                             | 20                  | 3 spaces                     | 60                            |
| <b>Total Number of Spaces Required</b> | <b>-</b>            | <b>-</b>                     | <b>410</b>                    |

**Table 6:** Required Parking Provision

- 5.4 A total of 411 car parking spaces are provided on-site, and therefore the parking provision is provided narrowly above the requirement. Parking would be provided in the form of private driveways, garages and on plot spaces.

- 5.5 Furthermore, HBC standards require additional unallocated parking for visitors (0.2 per dwelling), and therefore an additional 39 spaces are provided. Such spaces are evenly dispersed through the site to ensure all visitors are able use such spaces. Disabled parking would be provided at a provision of 5% of all parking spaces. The site therefore provides a total of 450 parking spaces which ensures that the development would not result in any overspill parking onto the local road network with all parking demand wholly contained within the site.
- 5.6 All parking spaces would measure 2.4m x 4.8m in accordance with HBC design guidance with a 6m aisle width where appropriate. Where garages are provided, internal measurements of 3m x 6m will be provided in accordance with HBC design guidance. For parallel parking bays, the spaces measure 2.5m x 6m in accordance with HCC adoptability standards.

### Cycle Parking

- 5.7 Cycle parking has also been provided in accordance with HBC's cycle parking standards. The standards are summarised within **Table 7**.

| Size of Dwelling | Long Stay Provision | Short Stay Provision                        |
|------------------|---------------------|---------------------------------------------|
| 1 Bedroom        | 1 space per unit    | 20% of the long-term cycle parking standard |
| 2 Bedrooms       | 2 spaces per unit   |                                             |
| 3 Bedrooms       | 2 spaces per unit   |                                             |
| 4+ Bedrooms      | 2 spaces per unit   |                                             |

**Table 7:** HBC Cycle Parking Standards

- 5.8 For every house provided with a garage, the dimensions of the garage are at least 3m x 6m to accommodate the cycle parking requirements. All other houses would be provided with a secure shed within the rear garden of the property, with direct access to the rear garden either via a side gate or rear gate. The maisonettes on the development are all provided with secure cycle stores within the individual units.

### Internal Road Layout

- 5.9 The parameters of the site layout would be designed to create an attractive and permeable pedestrian and cycle environment. The development access road would measure 6m in width, after which the carriageways narrow and become more reflective of Manual for Streets (MfS) design principles. A carriageway width of 4.8m is sufficient in accommodating a car and a larger vehicle to pass simultaneously. To summarise, the design principles on which the scheme will be based:
- Access road to measure 6m in width, before narrowing to 5.5m – 4.1m upon entry to cul-de-sacs;
  - 2m wide footways flanking either side of main estate roads throughout the site;

5.10 As the internal road moves towards the outskirts of the site into quieter cul-de-sacs, there will be shared-surface carriageways adopting 'home zone' principles.

5.11 In accordance with MfS design guidance, all bends within the home zones would be designed to achieve the required inter-visibility for vehicles travelling up to 15 – 20mph within the site. Any planting provided within the visibility envelope would be maintained to below 600mm in height. The internal visibility splays, prepared by Rogers Cory Partnership (RCP) are included in **Appendix E**.

### **Refuse and Servicing**

5.12 Servicing would take place internally within the site boundary in order to reduce the impact on the local road network. It is envisaged that kerbside collection would be undertaken for the properties and where shared surfaces terminate in a cul-de-sac, the carry and/or reversing distances would be in accordance with MfS best practice guidance of 30m for residents and 25m for refuse collectors.

5.13 Fire tender vehicles can get within 45m of all dwellings in accordance with MfS design guidance. Swept path analysis of the site has been undertaken by RCP to ensure that refuse vehicles and fire tender vehicles can enter, turn and exit on-site and is included in **Appendix F**.

### **Off-site Highway Improvements**

5.14 Offsite highway works are proposed to facilitate non-motorised site users towards the pedestrian desire lines. The following options have been raised by HCC at the pre-application stage;

- Footway widening along Station Road providing safe pedestrian route to West Town;
- The missing section of footway outside the pub on the southern side of Station Road;
- Safe crossing across A3023 towards St Mary's Road and the schools;
- Improve the facilities at the bus stop situated east of Furniss Way; and
- Contribution towards improvements along the Hayling Billy Trail

5.15 As aforementioned, pedestrian improvements are being delivered along Station Road as a result of the Barratt Homes 'The Oysters' development to the east of the proposed site. As part of that application, the improvements were considered acceptable to facilitate the non-motorised users in the vicinity of the site and around the wider pedestrian network, and therefore it is not expected that the proposed development would need to deliver further works in this location given such work is now being delivered.

5.16 Further options have been explored to provide a safe pedestrian crossing point in the vicinity of the Station Road/ Manor Road/ St Mary's Road staggered junction. There are however a number of constraints at this junction that will restrict any further crossing being implemented safely and provide

a betterment to the existing location.

5.17 It is noted that there are opportunities to provide a betterment to the existing bus stop facilities on Station Road including providing real-time information (RTI), seating facilities and rotating the bus stop shelter to face the footway. Barratt Homes will offer a contribution to HCC to deliver these improvements as part of HCC's wider RTI proposals. These would be discussed with HCC to determine the exact extent to which these are provided.

5.18 The development would provide a contribution towards improving the Hayling Billy Trail, located 60m from the proposed site access. This route forms part of the NCN Route 2 and with improvements, should help to reduce the number of residents travelling by car.

### Trip Generation

5.19 This section of the TA assesses the likely vehicular trip generation associated with the proposed development.

5.20 At the pre-application stage, HCC requested that the trip rates used for this application are the same as those submitted and approved as part of the Land South of Beech Grove application (*application reference: APP/12/00966*). The parameters used to calculate the trips rates for that application were;

- TRICS 2012 (v.6.9.2) Database;
- Residential', 'Houses Privately Owned' use class;
- Sites in England and Wales only (Excluding Greater London)
- 100 - 195 Units
- Weekday surveys only;
- 'Suburban' Location only

5.21 It is noted that whilst the development is anticipated to comprise 30% of affordable housing, only private housing has been assessed to ensure a robust assessment.

5.22 The resultant TRICS outputs are demonstrated in **Table 8**, with the full outputs included as **Appendix G**.

| TRICS                           | AM Peak Period (0800-0900) |            | PM Peak Period (1700-1800) |            | Total Daily Trips |
|---------------------------------|----------------------------|------------|----------------------------|------------|-------------------|
|                                 | Arrivals                   | Departures | Arrivals                   | Departures |                   |
| Trip Rate (per Dwelling)        | 0.161                      | 0.447      | 0.437                      | 0.270      | 5.941             |
| Trip Generation (195 Dwellings) | 31                         | 87         | 85                         | 53         | 1,159             |

**Table 8:** Proposed Trip Generation

- 5.23 **Table 8** demonstrates that the proposed development would be anticipated to generate 118 trips in the AM peak period, 138 trips in the PM peak period and 1,159 trips across a 12 hour day. As the existing site is currently greenfield, the proposal's development trips are all additional to the local highway network. The impact of the development on the operation of the local road network is assessed later in the report.
- 5.24 These trip rates are higher than those approved for 'The Oysters' at Station Road under application APP/15/00919 and so are considered particularly robust.
- 5.25 It should also be noted that at the pre-application stage, HCC highway officers requested that consideration is given to the number of vehicles which would likely drive to Mengham Schools. It is anticipated that the development would generate 13 two-way movements in the AM peak period and 15 two-way movements in the PM peak period to/from St Marys Road. This equates to an additional vehicle trip every 3 – 4 minutes on the local road network which is not considered 'severe' and therefore no further junction capacity assessment is required near the schools.

#### Access Arrangement

- 5.26 The proposed site would be served by a single vehicular access onto Sinah Lane. The type of vehicular access required has been established using the likely trip generation for the site and an Automated Traffic Count (ATC) survey undertaken along Sinah Lane in the vicinity of the proposed site access between 23<sup>rd</sup> June and 4<sup>th</sup> July 2016.
- 5.27 The ATC results are provided in **Table 9**, with the full outputs included as **Appendix B**.

| Sinah Lane | Weekday AM (0800-0900) Volume | Weekday PM (1700-1800) Volume | Total Daily Flows |
|------------|-------------------------------|-------------------------------|-------------------|
| Eastbound  | 130                           | 109                           | 1,688             |
| Westbound  | 97                            | 146                           | 1,903             |
| Total      | 227                           | 255                           | 3,591             |

**Table 9:** Sinah Lane Traffic Survey Summary

- 5.28 According to the Design Manual for Roads and Bridge (DMRB) TD 42/95, a ghost island right turn lane should be '*considered*' given the quantum of traffic generated by the site (1,159 vehicles). However, as the flows on the major road (Sinah Lane) are low (3,591 vehicles per day), at the pre-application stage it was agreed with HCC highway officers that a simple priority junction would be suitable in serving the development.

- 5.29 In addition, a Ghost Island Right Turn Lane would be considered as an over engineered design for an access in this location and would not be in keeping with other similar junctions. During the PM peak when the level of traffic completing a right turn into the site would be at its highest, there would be approximately 1 vehicle turning every 43 seconds, which, when considering the flows on Sinah Lane, would not affect the operation of the local road network.
- 5.30 There are no known safety concerns or issues along Station Road or Sinah Lane which would make access in this location unfeasible. It should also be noted that the number of HGV movements will be low in this area, and those needing to enter the development beyond the construction phase would also be low, and therefore the proposed access arrangements are more than suitable to accommodate the development.
- 5.31 The access would be provided in the form of a bellmouth arrangement, flanked by a 2.0m pedestrian footway to the east. The access road would measure 6m in width, would be supported by 8m corner radii and will be provided with dropped kerbs and tactile paving. This access design ensures that two vehicles can pass simultaneously when turning in and out of the access. Tracking at the site access has been undertaken to demonstrate that the access can accommodate servicing vehicles, and is included on the access design, attached as **Appendix H**.
- 5.32 An independent Stage 1 Road Safety Audit (RSA) was undertaken in January 2018 for the proposed access arrangements and no issues were raised. The RSA output is included in **Appendix H** for reference.

### **Visibility**

- 5.33 Speed surveys were undertaken across the site frontage to establish the vehicle speeds and resultant visibility splays required at the site access. Sinah Lane is subject to a 30mph speed limit across the site frontage, however 85<sup>th</sup>ile speeds of 31.1mph eastbound and 29.5mph westbound were recorded. Through pre-application discussions with HCC, the highway officer requested that visibility should be demonstrated to 2.4m x 45m. Visibility in both the primary and secondary direction is visually demonstrated in **Photographs 14** and **15**, with a visibility splay drawing included in **Appendix H**.



**Photograph 14:** Primary Direction Visibility



**Photograph 15:** Secondary Direction Visibility

### **Agricultural Access**

- 5.34 Pre-application discussions with HCC identified the need to assess the agricultural access to the fields north of the proposed development site. For the first 3 months following the site's purchase, the fields will be accessed via an alternative access onto North Shore Road. This access arrangement will remain for the following 21 months. After the 24 month period has finished, the owner of the fields will be entitled to a right of way of access over the internal estate road.
- 5.35 North Shore Road is considered suitable for accommodating agricultural vehicles for a 24 month period given the 5.5m wide carriageway. In addition, the road culminates in a dead-end and therefore is anticipated to be lightly trafficked with low vehicle speeds. Access to the fields is provided where the road culminates in a turning head, demonstrated in **Figure 8**.



**Figure 8:** Alternative Agricultural Access on North Shore Road (Source: Google)

## 6. TRIP DISTRIBUTION AND ROUTE ASSIGNMENT

6.1 In order to assess the likely impact of the development on the local road network, the distribution of trips has been assessed using data obtained from the 2011 'Travel to Work' Census Data for Havant 015 (Hayling Island West). Data set WF01BEW has been assessed to determine the likely destinations and route residents of the proposed development would use and by which proportion.

6.2 **Table 10** summarises the main destinations of residents currently residing in Havant 015 (Hayling Island West) along with the route most likely used. **Table 11** then summarises each route by percentage of residents expected to use each one. These percentages have been agreed with HCC at the pre-application stage.

| Destination                                                              | Percentage  | Route Assignment                  |
|--------------------------------------------------------------------------|-------------|-----------------------------------|
| Havant Centre                                                            | 11.9%       | Park Road N/S                     |
| Portsmouth                                                               | 11.6%       | A27 West                          |
| West Town and North Hayling                                              | 9.7%        | Stay on Hayling Island<br>(25.4%) |
| South Hayling                                                            | 7.9%        |                                   |
| Eastoke and Mengham                                                      | 7.8%        |                                   |
| Winchester and East Hampshire                                            | 5.9%        | A27 West                          |
| Chichester                                                               | 5.8%        | A27 East                          |
| Cosham and Paulsgrove                                                    | 5.1%        | A27 West                          |
| Waterlooville                                                            | 4.1%        | A27 West                          |
| Hilsea                                                                   | 4.0%        | A27 West                          |
| Fareham                                                                  | 3.8%        | A27 West                          |
| Surrey, Bedfordshire, Cambridgeshire, Berkshire, Buckinghamshire, Oxford | 3.1%        | A3M                               |
| Southampton and Eastleigh                                                | 2.9%        | A27 West                          |
| Havant                                                                   | 2.8%        | Park Road N/S                     |
| London                                                                   | 2.7%        | A3M                               |
| West Leigh                                                               | 2.5%        | Park Road N/S                     |
| Bedhampton and Purbrook                                                  | 1.6%        | A27 West                          |
| West Sussex                                                              | 1.6%        | A27 East                          |
| Gosport                                                                  | 0.9%        | A27 West                          |
| West                                                                     | 0.9%        | A27 West                          |
| Test Valley and New Forest                                               | 0.9%        | A27 West                          |
| Rushmoor and Hart                                                        | 0.7%        | A27 West                          |
| Milton, Baffins and Eastney                                              | 0.5%        | A27 West                          |
| Cowplain                                                                 | 0.3%        | A3M                               |
| North                                                                    | 0.3%        | A3M                               |
| Basingstoke and Deane                                                    | 0.2%        | A27 West                          |
| East Sussex                                                              | 0.2%        | A27 East                          |
| Kent                                                                     | 0.1%        | A27 East                          |
| Essex                                                                    | 0.1%        | A27 East                          |
| Isle of Wight                                                            | 0.1%        | A27 West                          |
| <b>TOTAL</b>                                                             | <b>100%</b> | <b>N/A</b>                        |

**Table 10:** Residents' Place of Work (2011 Travel to Work Statistics)

| Route Assignment       | Percentage  |
|------------------------|-------------|
| Park Road N/S          | 17.2%       |
| A27 West               | 43.2%       |
| A27 East               | 7.8%        |
| Stay on Hayling Island | 25.4%       |
| A3M                    | 6.4%        |
| <b>TOTAL</b>           | <b>100%</b> |

**Table 11:** Route Assignment by Percentage

6.3 The distribution assessment suggests that 25.4% of all work trips would remain on Hayling Island with 74.6% of vehicle trips leaving Hayling Island. The total percentage of vehicles staying on Hayling Island proposed in **Tables 10** and **11** are similar to those provided as part of the Rook Farm application (APP/17/00007) which suggested 22.5%. The values between the two applications are different however, as the data for the Rook Farm application used ward 'Havant 016' whereas this application used data from ward 'Havant 015' because of their location boundaries. HCC confirmed through the pre-application they were happy with our percentages and the reasoning behind the difference.

6.4 The distribution of the development traffic from the site access is summarised within the following paragraphs of the report and subsequently demonstrated in the distribution diagram included in **Appendix I**.

#### **Site Access**

6.5 Using the data outlined in **Table 10** and agreed at the pre-application stage, **Appendix I** demonstrates that all of the development traffic is anticipated to turn left out of the site onto Sinah Lane.

6.6 It is noted that at the pre-application stage, HCC highways officers suggested turning count surveys could be undertaken at the North Shore Road junction in order to assess the volume of traffic likely to travel left from the site access. Whilst it is noted that a small percentage of vehicles leaving the site may turn right from the site access and travel along the sea front, by applying 100% of traffic turning left it is demonstrating a robust assessment of the local road network and represents a worst-case scenario for junctions which are anticipated to be affected by the development.

#### **Sinah Lane/ Staunton Avenue/ Station Road Junction**

6.7 It is anticipated that approximately 5% of the total 25% anticipated to stay on Hayling Island will travel southbound along Staunton Avenue in order to reach the seafront and South Hayling, as demonstrated in the distribution diagram included in **Appendix I**.

#### **Station Road/ West Lane Junction**

- 6.8 The distribution of traffic at this junction has been provided in line with the percentage splits obtained from turning counts. This junction forms the basis of the distribution of site traffic given that it best represents the immediate site traffic and the 'West Hayling' ward in general. This is because the further from the site access the junctions are, the more factors come into consideration such as local shops and residential properties. The percentages applied from this junction have also been retained for vehicle arrivals.
- 6.9 Of the 95% of traffic travelling eastbound along Station Road, 50% are anticipated to turn left at the Station Road/ West Lane junction. The remaining 45% at the Station Road/ West Lane junction are anticipated to continue straight along Station Road. This is demonstrated in the distribution diagram included in **Appendix I**.

#### **West Lane/ Newtown Road Junction**

- 6.10 Of the 50% of traffic travelling northbound along West Lane, 40% are anticipated to turn left and continue along West Lane to the junction with Havant Road. The remaining 10% are anticipated to continue straight along Newtown Road and exit onto the A3023 Manor Road given the 'rural' nature of West Lane and the reduced visibility in the primary direction at the West Lane/ Havant Road junction. This is demonstrated in **Appendix I**.

#### **West Lane/ A3023 Havant Road Junction**

- 6.11 All the traffic travelling northbound along West Lane is anticipated to turn left at the junction with Havant Road to continue their journeys off the island. At this junction, 35% of development traffic is travelling along the Havant Road westbound arm, comprising the 10% of traffic who utilised Newtown Road and the remaining 25% who continued along Station Road before travelling northbound on A3023 Manor Road. The distribution of the development traffic at the West Lane/ Havant Road junction is demonstrated in **Appendix I**.

#### **Station Road/ A3023 Manor Road/ St Mary's Road Staggered Junction**

- 6.12 It is anticipated that of the 45% of traffic that approaches this junction, 25% are anticipated to travel northbound to make up the 75% of traffic leaving the island. 12.5% of traffic is anticipated to continue across the stagger onto St Mary's Road as is anticipated to travel southbound along A3023 in order to reach destinations including the seafront and South Hayling. The distribution at this junction is demonstrated in **Appendix I**.

6.13 In order to provide an assessment of the percentage increase on the A3023 and Langstone Bridge the Department for Transport (DfT) published traffic count data has been obtained for two locations along the A3023 on the route north towards the A27. This data provides Annual Average Daily Traffic Flows (AADF) per year and the most recent data available is outlined in **Table 12**, along with the percentage increase based on the vehicle distributions from the proposed development.

| Location                          | 2016 AADF | Proposed number of additional vehicle trips to this location | Percentage Increase |
|-----------------------------------|-----------|--------------------------------------------------------------|---------------------|
| Northney Road to Langstone Avenue | 26,927    | 762                                                          | 2.83%               |
| Langstone Avenue to A27           | 27,197    | 762                                                          | 2.80%               |

**Table 12:** DfT AADF Count against Development Flows

6.14 It is prudent to note that the above assessment is for 'Travel to Work' only and therefore does not take into account any other vehicle trip purposes such as leisure or school drop off (in many instances remaining on the island), whereas the proposed trip generation covers all purpose vehicle trips. The above percentage increase therefore acts as a worst-case scenario, assuming all trips are for work purposes only.

#### **Traffic Surveys**

6.15 In order to establish the baseline traffic flows on the local road network, Automated Traffic Count (ATC) surveys were undertaken on Sinah Lane (June 2016), as demonstrated in **Table 9** (Section 7). In addition, turning count surveys were undertaken in June 2017 at the following junctions in accordance with pre-application feedback;

- Station Road/ West Lane
- West Lane/ Newtown Road
- West Lane/ Havant Road
- Station Road/ A3023 Manor Road/ St Mary's Road

6.16 A summary of the flow data is demonstrated in **Tables 13** to **16**, with the full outputs included in **Appendix J**.

| Station Road/ West Lane |                   |           |                   |       |
|-------------------------|-------------------|-----------|-------------------|-------|
|                         | Station Road (EB) | West Lane | Station Road (WB) | Total |
| AM Peak (0830-0930)     |                   |           |                   |       |
| Flows                   | 268               | 101       | 192               | 561   |
| PM Peak (1630-1730)     |                   |           |                   |       |
| Flows                   | 236               | 171       | 154               | 561   |

**Table 13:** Station Road/ West Lane Turning Count Data

| West Lane/ Newtown Road |                |                 |              |       |
|-------------------------|----------------|-----------------|--------------|-------|
|                         | West Lane (EB) | West Lane North | Newtown Road | Total |
| AM Peak (0800-0900)     |                |                 |              |       |
| Flows                   | 185            | 104             | 119          | 408   |
| PM Peak (1700-1800)     |                |                 |              |       |
| Flows                   | 156            | 201             | 71           | 428   |

**Table 14:** West Lane/ Newtown Road Turning Count Data

| West Lane/ Havant Road |                  |           |                  |       |
|------------------------|------------------|-----------|------------------|-------|
|                        | Havant Road (EB) | West Lane | Havant Road (WB) | Total |
| AM Peak (0715-0815)    |                  |           |                  |       |
| Flows                  | 535              | 240       | 879              | 1,654 |
| PM Peak (1630-1730)    |                  |           |                  |       |
| Flows                  | 1,115            | 151       | 648              | 1,914 |

**Table 15:** West Lane/ Havant Road Turning Count Data

| Station Road/ A3023 Manor Road/ St Mary's Road |              |                       |                |                       |       |
|------------------------------------------------|--------------|-----------------------|----------------|-----------------------|-------|
|                                                | Station Road | A3023 Manor Road (SB) | St Mary's Road | A3023 Manor Road (NB) | Total |
| AM Peak (0815-0915)                            |              |                       |                |                       |       |
| Flows                                          | 169          | 231                   | 109            | 375                   | 884   |
| PM Peak (1630-1730)                            |              |                       |                |                       |       |
| Flows                                          | 179          | 294                   | 114            | 255                   | 842   |

**Table 16:** Station Road/ A3023 Manor Road/ St Mary's Road Turning Count Data

### TEMPRO Traffic Growth

6.17 As the baseline traffic survey along Sinah Lane was undertaken in 2016, a growth factor has been applied to gain a 2018 baseline which can be used to assess the site access capacity for the application year.

6.18 In addition, the data has had further growth factors applied to establish the future impact of the traffic on the local road network and in accordance with the scope agreed at the pre-application stage. The factors have also been applied to the 2017 turning count data to assess for a five year future year scenario (2023), a 10 year future year scenario (2028) and at the end of the Local Plan period (2036). The TEMPRO growth rates are summarised in **Table 17** with the full outputs included in **Appendix K**.

| TEMPRO      | Growth Factor |        |
|-------------|---------------|--------|
| 2016 - 2017 | AM            | 1.0168 |
|             | PM            | 1.0157 |
| 2017 - 2018 | AM            | 1.0165 |
|             | PM            | 1.0155 |
| 2017 - 2023 | AM            | 1.1009 |
|             | PM            | 1.0965 |
| 2023 – 2028 | AM            | 1.0505 |
|             | PM            | 1.0498 |
| 2028 – 2036 | AM            | 1.0529 |
|             | PM            | 1.0538 |

**Table 17:** 2016 – 2036 TEMPRO Growth Rates

### Committed Development

6.19 A number of committed developments in the area have been considered in order to establish the predicted traffic pressures on the local road network before the development traffic is added. At the pre-application stage, the three 'Committed Developments' that would require consideration as part of an application were identified as;

- Land South of Beech Grove (*application reference: APP/12/00966*);
- Land East of Furniss Way (*application reference: APP/15/00919*); and
- Mill Rythe Holiday Village (*application reference: APP/16/01237*)

6.20 The location of these sites in relation to the proposed development site is demonstrated in **Figure 9**.

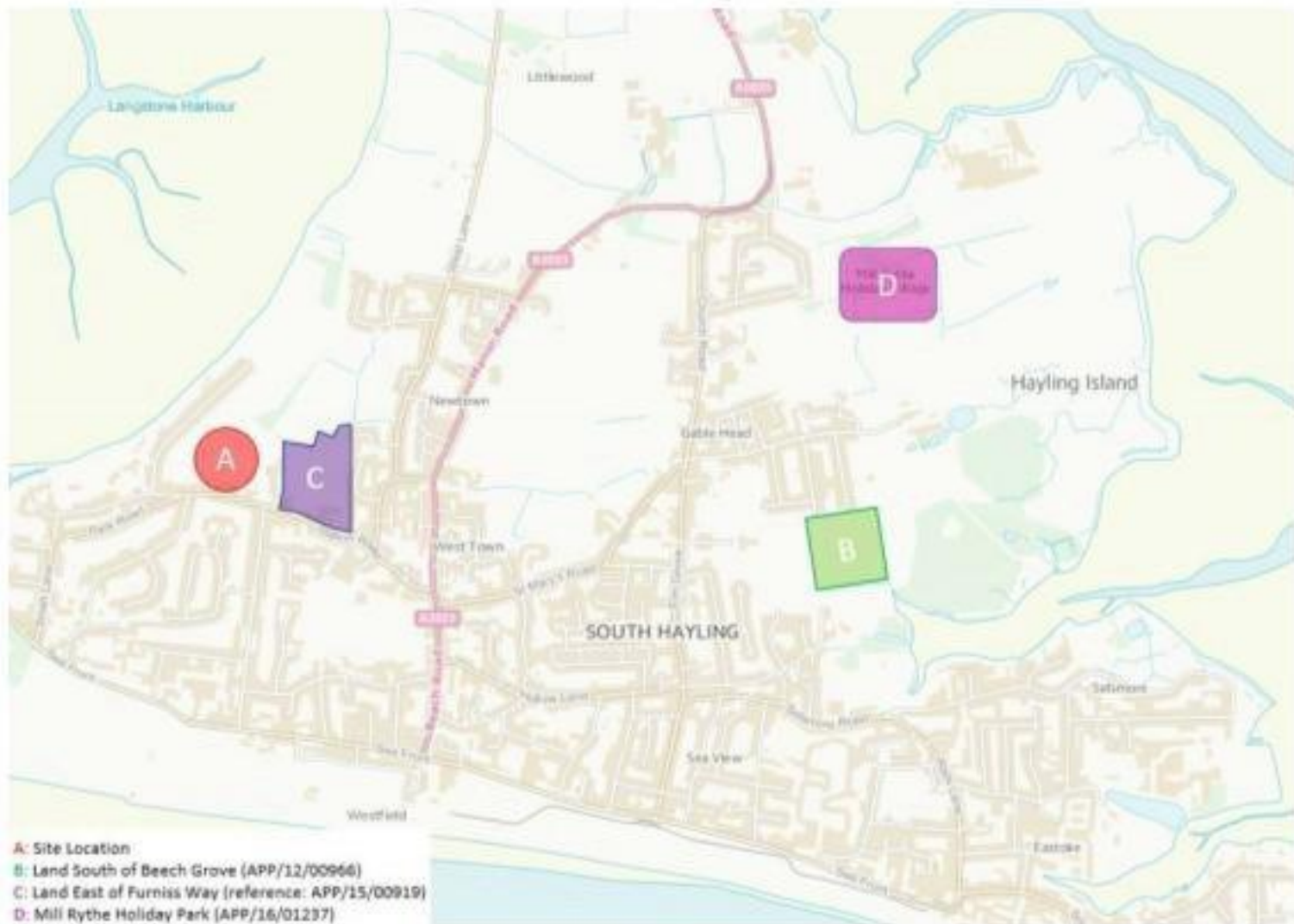


**Figure 9:** Location of Committed Developments

#### B: Land South of Beech Grove

6.21 This application was submitted in 2012 for 131 dwellings and concluded that 54 trips would be generated in the AM peak period and 32 trips in the PM peak period. At the pre-application stage, it was agreed with HCC that a 75% reduction in vehicle trips would be applied, with 75% of this development occupied by the time the traffic surveys associated with this application were carried out (June 2017) for the proposed application. This therefore equates to 14 vehicle trips included as Committed Development in the AM peak period and 8 trips included in the PM peak period. This is reflected in the distribution diagrams included in **Appendix I**.

#### C: Land East of Furniss Way

6.22 The Transport Statement for this site was prepared by Paul Basham Associates and concluded that the development for 76 dwellings and 1,000sqm of light industrial accommodation would generate 52 trips in the AM peak period and 57 trips in the PM peak period.

6.23 Following further investigations, the traffic generated by this site has been excluded from the committed development as the site is listed in HBC Annual Monitoring Report 2014 and therefore included within the TEMPRO growth factor.

#### D: Mill Rythe Holiday Park

- 6.24 This application involved the demolition of existing chalets and associated buildings and replaced with 203 holiday caravans and associated facilities. The highways comments made on that application expressed concerns regarding traffic generation, however, these concerns were addressed in the Planning Statement. A Transport Statement was therefore not submitted to the local authority as the impact would not be severe on the local road network, and subsequently no trips from this site have been included in this report. Holiday accommodation also typically generated vehicle trips outside of the peak periods and with significant seasonal variations.
- 6.25 It should also be noted that a further two developments were identified by HCC highway officers as requiring consideration as part of a sensitivity test as they were included in the Local Plan; 'Land at Rook Farm', and 'land at Beechlands'. These applications have been assessed further in Chapter 8 of the report.
- 6.26 Therefore, this TA includes 25% of development traffic generated by the Land South of Beech Grove application in the 'Committed Development' aspect of the report.

## 7. JUNCTION CAPACITY ASSESSMENT

- 7.1 To identify the highway impact of the development proposals, junction capacity analysis has been undertaken at a number of key local junctions.

### Scope of Assessment

- 7.2 The spatial scope of the modelling assessment required to support the development was informed by the distribution of vehicular trips on the highway network, and was agreed through pre-application discussions with Hampshire County Council. Therefore, the following junctions were identified as requiring assessment:

- Site access onto Sinah Lane
- Sinah Lane/ Staunton Avenue/ Station Road
- Station Road/ West Lane
- West Lane/ Newtown Road
- Newtown Road/ Manor Road
- West Lane/ Havant Road
- Station Road/ Manor Road/ St Mary's Road
- A27 Roundabout

### Sinah Lane/ Staunton Avenue/ Station Road

- 7.3 Sinah Lane/ Staunton Avenue/ Station Road provides a priority junction approximately 80m from the proposed site access. Staunton Lane provides a direct route from Sinah Lane to the seafront, avoiding the main A3023 Manor Road. Staunton Avenue measures approximately 4.8m in width with footways approximately 1.8m in width flanking either side of the carriageway.

### Station Road/ West Lane

- 7.4 Station Road/ West Lane provides a priority junction approximately 450m to the east of the proposed development site. West Lane, which connects to Havant Road to the north, measures approximately 6m in width at the junction before narrowing to 4.8m in width with a 1.8m wide footway flanking the western side of the carriageway for approximately 175m north of the junction.

### West Lane/ Newtown Road

- 7.5 West Lane/ Newtown Road forms a priority junction approximately 650m northwest of the proposed site access. Newtown Road connects West Lane EB to A3023 Manor Road approximately 100m east of the junction with West Lane SB. Newtown Road measures approximately 4.8m in width and is flanked by a 2m wide footway along its northern edge.

#### **Newtown Road/ Manor Road**

- 7.6 Newtown Road/ Manor Road provides a priority junction approximately 750m northwest of the proposed site access. Manor Road measures approximately 6.5m in width and is flanked by footways approximately 2m in width along either side of the carriageway.

#### **West Lane/ Havant Road**

- 7.7 West Lane/ Havant Road provides a priority junction approximately 3.5km to the north of the proposed development site. Havant Road measures approximately 7m in width and provides the primary route around the island.
- 7.8 It is noted that the primary direction visibility from West Lane is restricted at this junction given the proximity of an adjacent third party wall. Therefore, the modelling parameters reflect this with the visibility to the right provided at 10m.

#### **Station Road/ Manor Road/ St Mary's Road**

- 7.9 Station Road forms a staggered junction with Manor Road and St Mary's Road approximately 650m east of the proposed development site. Station Road measures approximately 6.5m in width and is supported by footways on either side of the carriageway. A pedestrian refuge island, supported by dropped kerbs and tactile paving, is provided at the junction, facilitating the movement of pedestrians in this location.
- 7.10 Manor Road provides direct access to the southern part of the island and connects to Havant Road in the north. Manor Road measures approximately 7m in width, however as a right turn lane is provided for traffic into St Mary's Road, the road width in this location is increased to approximately 9.5m. A zebra crossing is provided on Beach Road, approximately 90m to the south of St Mary's Road, providing a safe crossing point for all non-motorised users towards the desire lines.
- 7.11 St Mary's Road measures approximately 7.5m in width and provides the most direct route to the local school. A footway approximately 1.8m in width flanks the southern side of the carriageway and is connected to the wider pedestrian network via a pedestrian refuge island at the junction.
- 7.12 The location of the junctions in relation to the site access is demonstrated in **Figure 10**.

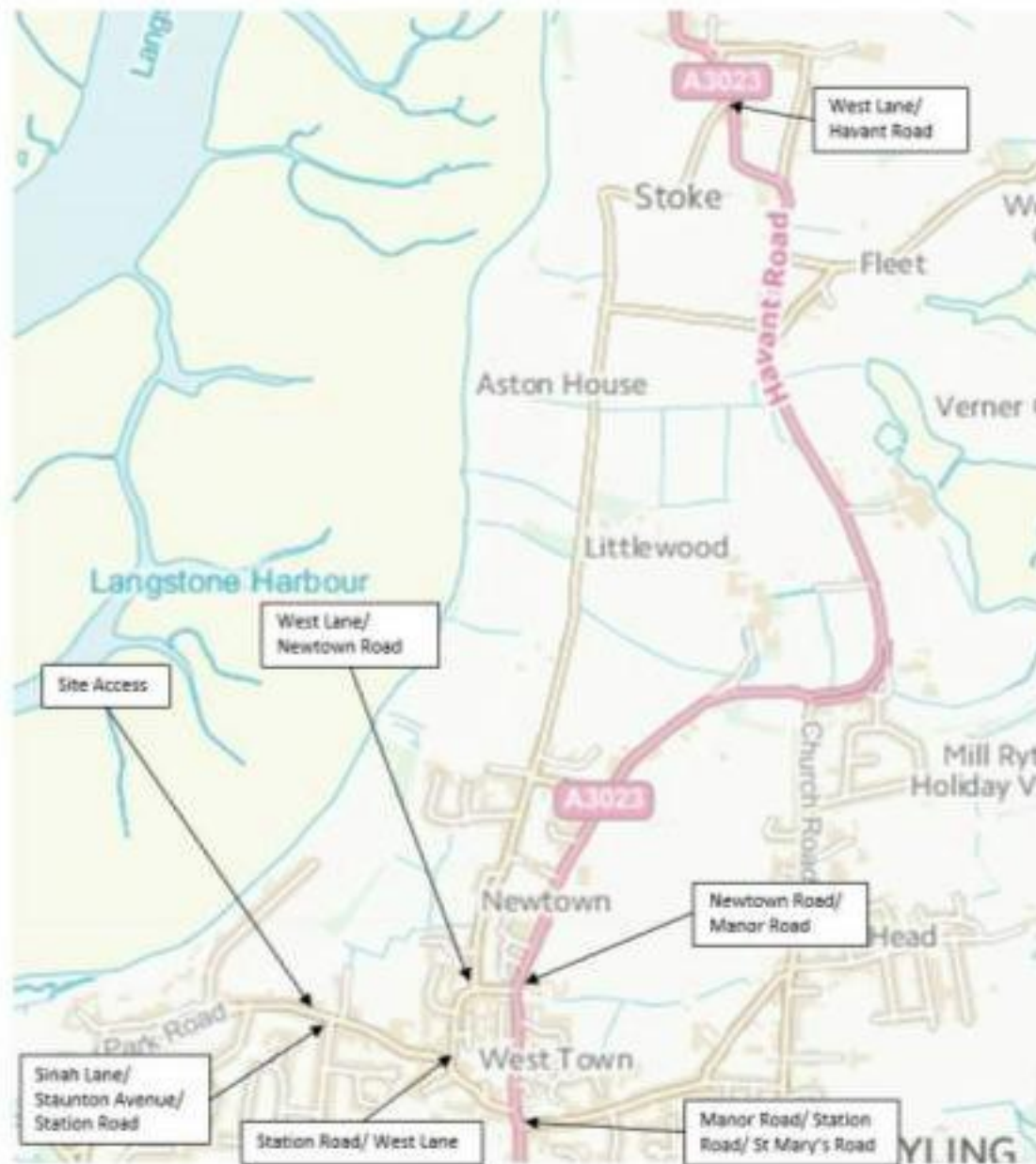


**Figure 10:** Location of Local Junctions Requiring Assessment

7.13 The junction modelling has covered the following scenarios for the 'Site Access', 'Station Road/West Lane' and 'West Lane/Newtown Road' junctions, given that none of the 'Committed Development' referred to in **Chapter 6** affect these junctions:

- 2018 Baseline;
- 2023 Baseline;
- 2023 Baseline + Proposed Development;
- 2028 Future Year;
- 2028 Future Year + Proposed Development;
- 2036 Future Year; and
- 2036 Future Year + Proposed Development

7.14 The junction modelling has covered the following scenarios for the West Lane/Havant Road and St Mary's Road/Manor Road/Station Road junctions, where 'Committed Development' (refers to development listed in **Chapter 6**) does have an impact:

- 2018 Baseline;
- 2023 Baseline;
- 2023 Baseline + Committed Development;
- 2023 Baseline + Committed Development + Proposed Development;
- 2028 Future Year;
- 2028 Future Year + Committed Development;
- 2028 Future Year + Committed Development + Proposed Development;
- 2036 Future Year;
- 2036 Future Year + Committed Development; and
- 2036 Future Year + Committed Development + Proposed Development

### **Junction Modelling Software**

- 7.15 The capacity of local junctions has been assessed using Junctions 9 software. Junctions 9 is the industry standard software package for assessing roundabout and priority junctions, and provides a Ratio of Flow to Capacity (RFC) value, which identifies what proportion of each arm's total capacity is currently being utilised. RFC values exceeding 0.85 signify the point at which the capacity of the arm is being approached, and the potential to improve capacity could be explored, whilst RFC values of 1.0 or greater represent a junction operating above capacity. Junctions 9 software also provides values for junction delay (in seconds) and queue length in vehicles.
- 7.16 The junctions have been modelled using the 'FLAT' profile given the consistent traffic flow volumes in the recorded peak periods at each junction. The turning count data is included in **Appendix J**.
- 7.17 All modelling has been completed using 'vehicle' values rather than PCUs and as such the appended traffic flow diagrams are also all in vehicles. In order to provide a robust assessment, a 10% HGV rate has been applied throughout.
- 7.18 The method used to estimate the traffic generation of the proposed development and the method used to account for the future years and committed development is a worst-case scenario for the following reasons:
- The trip rates used to assess the proposed developments traffic generation are for 'Private Houses' only which produce significantly higher trip rates than mixed/affordable trip rates or mixed housing/flats trip rates. As the rate of affordable housing for this development is 30% in reality trips associated with the site are anticipated to be much lower;
  - The modelling and traffic generation does not quantify the impact of a Travel Plan which could achieve a modal shift away from the private car with a sustainable transport strategy; and

- The assessment does not take into account the impact of peak spreading, whereby individuals may exit the development onto the local road network earlier or later to avoid travelling in the peak period.
- The development peak flows 0800 – 0900am and 1700 – 1800pm have been added to the network peaks for the respective junctions and therefore cover the periods with the greatest flows.

## Modelling Results

### Site Access

7.19 To ensure that the site access has sufficient capacity to accommodate the proposed development, modelling has been undertaken using the geometries outlined in the access design (included as **Appendix H**). The modelling has been undertaken for the '2023 Baseline + Proposed Development', '2028 Future Year + Proposed Development' and '2036 Future Year + Proposed Development' scenarios only.

7.20 The site access modelling results are summarised in **Table 18**, with the full outputs included in **Appendix L**.

| Scenario                             | Arm             | AM Peak Period (0800 – 0900) |           |                 | PM Peak Period (1700 – 1800) |           |                 |
|--------------------------------------|-----------------|------------------------------|-----------|-----------------|------------------------------|-----------|-----------------|
|                                      |                 | RFC                          | Max Queue | Delay (seconds) | RFC                          | Max Queue | Delay (seconds) |
| 2023 Baseline + Proposed Development | Sinah Lane (EB) | -                            | -         | -               | -                            | -         | -               |
|                                      | Site Access     | 0.16                         | 0.2       | 7.65            | 0.09                         | 0.1       | 7.06            |
|                                      | Sinah Lane (WB) | 0.06                         | 0.1       | 7.10            | 0.16                         | 0.2       | 7.56            |
| 2028 Future Year + Proposed Dev      | Sinah Lane (EB) | -                            | -         | -               | -                            | -         | -               |
|                                      | Site Access     | 0.16                         | 0.2       | 7.67            | 0.09                         | 0.1       | 7.07            |
|                                      | Sinah Lane (WB) | 0.06                         | 0.1       | 7.11            | 0.16                         | 0.2       | 7.56            |
| 2036 Future Year + Proposed Dev      | Sinah Lane (EB) | -                            | -         | -               | -                            | -         | -               |
|                                      | Site Access     | 0.16                         | 0.2       | 7.71            | 0.09                         | 0.1       | 7.10            |
|                                      | Sinah Lane (WB) | 0.06                         | 0.1       | 7.14            | 0.16                         | 0.2       | 7.57            |

**Table 18:** Site Access Junction Capacity Assessment

7.21 **Table 18** demonstrates that the site access would operate well within capacity with a maximum RFC value of 0.16, queues of less than 1 vehicle and delays of under 8 seconds. There are therefore no capacity concerns as to the functioning of the proposed accesses onto Sinah Lane.

## Station Road/ West Lane

7.22 Capacity assessment modelling has been undertaken at the Station Road/ West Lane priority junction for all scenarios (except the scenarios which include Committed Development, as no additional traffic is placed on this junction) to assess the impact of the development on its operation during the AM and PM peak periods. The modelling results are summarised in **Table 19**, with the full outputs included in **Appendix M**.

| Scenario                                | Arm             | AM Peak Period (0830 – 0930) |           |                 | PM Peak Period (1630 – 1730) |           |                 |
|-----------------------------------------|-----------------|------------------------------|-----------|-----------------|------------------------------|-----------|-----------------|
|                                         |                 | RFC                          | Max Queue | Delay (seconds) | RFC                          | Max Queue | Delay (seconds) |
| 2018 Baseline                           | Station Road EB | -                            | -         | -               | -                            | -         | -               |
|                                         | West Lane       | 0.23                         | 0.3       | 10.80           | 0.38                         | 0.6       | 12.76           |
|                                         | Station Road WB | 0.09                         | 0.1       | 8.04            | 0.08                         | 0.1       | 7.96            |
| 2023 Baseline                           | Station Road EB | -                            | -         | -               | -                            | -         | -               |
|                                         | West Lane       | 0.26                         | 0.3       | 11.33           | 0.42                         | 0.7       | 13.71           |
|                                         | Station Road WB | 0.10                         | 0.1       | 8.15            | 0.09                         | 0.1       | 8.05            |
| 2023 Baseline + Proposed Development    | Station Road EB | -                            | -         | -               | -                            | -         | -               |
|                                         | West Lane       | 0.31                         | 0.4       | 12.77           | 0.54                         | 1.1       | 18.00           |
|                                         | Station Road WB | 0.10                         | 0.1       | 8.46            | 0.09                         | 0.1       | 8.19            |
| 2028 Future Year                        | Station Road EB | -                            | -         | -               | -                            | -         | -               |
|                                         | West Lane       | 0.27                         | 0.4       | 11.60           | 0.43                         | 0.8       | 14.16           |
|                                         | Station Road WB | 0.10                         | 0.1       | 8.20            | 0.09                         | 0.1       | 8.10            |
| 2028 Future Year + Proposed Development | Station Road EB | -                            | -         | -               | -                            | -         | -               |
|                                         | West Lane       | 0.32                         | 0.5       | 13.09           | 0.55                         | 1.2       | 18.87           |
|                                         | Station Road WB | 0.10                         | 0.1       | 8.52            | 0.09                         | 0.1       | 8.22            |
| 2036 Future Year                        | Station Road EB | -                            | -         | -               | -                            | -         | -               |
|                                         | West Lane       | 0.29                         | 0.4       | 12.11           | 0.47                         | 0.9       | 15.20           |
|                                         | Station Road WB | 0.11                         | 0.1       | 8.29            | 0.10                         | 0.1       | 8.19            |
| 2036 Future Year + Proposed Development | Station Road EB | -                            | -         | -               | -                            | -         | -               |
|                                         | West Lane       | 0.35                         | 0.5       | 13.74           | 0.59                         | 1.4       | 20.71           |
|                                         | Station Road WB | 0.11                         | 0.1       | 8.61            | 0.10                         | 0.1       | 8.31            |

**Table 19:** Station Road/ West Lane Junction Capacity Assessment

7.23 **Table 19** demonstrates that the junction operates well within capacity for all scenarios, with a maximum RFC value of 0.59 and queues of under 2 vehicles. The proposed development would also only contribute a maximum of 8 seconds delay to the queues on West Lane between the 2018 baseline and 2036 with development scenarios. Therefore, there are no capacity concerns as to the functioning of this junction with the addition of the proposed development.

#### West Lane/ Newtown Road

7.24 Capacity assessment modelling has been undertaken at the West Lane/ Newtown Road priority junction for all scenarios (except the with Committed Development scenarios as no additional traffic is placed on this junction) to assess the impact of the development on its operation during the AM and PM peak periods. The modelling results are summarised in **Table 20**, with the full outputs included in **Appendix N**.

| Scenario                                | Arm          | AM Peak Period (0800 – 0900) |           |                 | PM Peak Period (1700 – 1800) |           |                 |
|-----------------------------------------|--------------|------------------------------|-----------|-----------------|------------------------------|-----------|-----------------|
|                                         |              | RFC                          | Max Queue | Delay (seconds) | RFC                          | Max Queue | Delay (seconds) |
| 2018 Baseline                           | West Lane EB | -                            | -         | -               | -                            | -         | -               |
|                                         | West Lane SB | 0.24                         | 0.3       | 10.95           | 0.45                         | 0.8       | 14.31           |
|                                         | Newtown Road | 0.19                         | 0.2       | 8.63            | 0.08                         | 0.1       | 7.46            |
| 2023 Baseline                           | West Lane EB | -                            | -         | -               | -                            | -         | -               |
|                                         | West Lane SB | 0.27                         | 0.4       | 11.43           | 0.49                         | 0.9       | 15.44           |
|                                         | Newtown Road | 0.20                         | 0.3       | 8.85            | 0.08                         | 0.1       | 7.54            |
| 2023 Baseline + Proposed Development    | West Lane EB | -                            | -         | -               | -                            | -         | -               |
|                                         | West Lane SB | 0.31                         | 0.4       | 12.35           | 0.58                         | 1.3       | 19.19           |
|                                         | Newtown Road | 0.21                         | 0.3       | 9.04            | 0.09                         | 0.1       | 7.55            |
| 2028 Future Year                        | West Lane EB | -                            | -         | -               | -                            | -         | -               |
|                                         | West Lane SB | 0.28                         | 0.4       | 11.66           | 0.50                         | 1.0       | 16.07           |
|                                         | Newtown Road | 0.21                         | 0.3       | 8.95            | 0.09                         | 0.1       | 7.56            |
| 2028 Future Year + Proposed Development | West Lane EB | -                            | -         | -               | -                            | -         | -               |
|                                         | West Lane SB | 0.31                         | 0.5       | 12.55           | 0.59                         | 1.4       | 20.01           |
|                                         | Newtown Road | 0.22                         | 0.3       | 9.14            | 0.09                         | 0.1       | 7.57            |
| 2036 Future Year                        | West Lane EB | -                            | -         | -               | -                            | -         | -               |
|                                         | West Lane SB | 0.30                         | 0.4       | 12.10           | 0.54                         | 1.2       | 17.43           |
|                                         | Newtown Road | 0.23                         | 0.3       | 9.16            | 0.09                         | 0.1       | 7.63            |
| 2036 Future Year + Proposed Development | West Lane EB | -                            | -         | -               | -                            | -         | -               |
|                                         | West Lane SB | 0.33                         | 0.5       | 13.06           | 0.63                         | 1.7       | 22.16           |
|                                         | Newtown Road | 0.23                         | 0.3       | 9.37            | 0.10                         | 0.1       | 7.64            |

**Table 20:** West Lane/ Newtown Road Junction Capacity Assessment

7.25 The modelling results demonstrated in **Table 20** indicates that the junction would operate under capacity in all scenarios, with a maximum RFC value of 0.63, maximum queues of less than 2 cars and delays of under 23 seconds. The proposed development is therefore not anticipated to have a significant impact on the operation of this junction.

### West Lane/ Havant Road

7.26 Capacity assessment modelling has been undertaken at the West Lane/ Havant Road priority junction for all scenarios to assess the impact of the development on its operation during the AM and PM peak periods. The modelling results are summarised in **Table 21**, with the full outputs included in **Appendix O**.

| Scenario                                                     | Arm            | AM Peak Period (0715 – 0815) |           |                 | PM Peak Period (1630 – 1730) |           |                 |
|--------------------------------------------------------------|----------------|------------------------------|-----------|-----------------|------------------------------|-----------|-----------------|
|                                                              |                | RFC                          | Max Queue | Delay (seconds) | RFC                          | Max Queue | Delay (seconds) |
| 2018 Baseline                                                | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 0.71                         | 2.4       | 35.72           | 0.39                         | 0.6       | 15.07           |
|                                                              | Havant Road EB | 0.18                         | 0.3       | 9.84            | 0.51                         | 2.3       | 8.29            |
| 2023 Baseline                                                | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 0.81                         | 3.9       | 55.35           | 0.44                         | 0.8       | 16.84           |
|                                                              | Havant Road EB | 0.20                         | 0.3       | 10.03           | 0.56                         | 3.2       | 8.68            |
| 2023 Baseline + Committed Development                        | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 0.81                         | 4.1       | 58.04           | 0.44                         | 0.8       | 17.01           |
|                                                              | Havant Road EB | 0.20                         | 0.3       | 10.07           | 0.57                         | 3.3       | 8.67            |
| 2023 Baseline + Committed Development + Proposed Development | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 0.93                         | 10.3      | 130.90          | 0.49                         | 0.9       | 18.49           |
|                                                              | Havant Road EB | 0.25                         | 0.5       | 10.21           | 0.66                         | 5.5       | 10.51           |
| 2028 Future Year                                             | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 0.87                         | 6.2       | 84.32           | 0.47                         | 0.9       | 18.68           |
|                                                              | Havant Road EB | 0.22                         | 0.4       | 10.18           | 0.60                         | 4.1       | 9.13            |
| 2028 Future Year + CD                                        | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 0.88                         | 6.6       | 90.26           | 0.47                         | 0.9       | 18.68           |
|                                                              | Havant Road EB | 0.22                         | 0.4       | 10.18           | 0.61                         | 4.2       | 9.13            |
| 2028 Future Year + CD + Proposed Development                 | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 1.01                         | 22.9      | 275.84          | 0.52                         | 1.1       | 20.12           |
|                                                              | Havant Road EB | 0.22                         | 0.4       | 10.20           | 0.70                         | 7.3       | 11.63           |
| 2036 Future Year                                             | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 0.96                         | 13.0      | 169.37          | 0.52                         | 1.1       | 21.10           |
|                                                              | Havant Road EB | 0.24                         | 0.5       | 10.24           | 0.65                         | 5.7       | 9.91            |
| 2036 Future Year + CD                                        | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 0.97                         | 14.5      | 187.53          | 0.52                         | 1.1       | 21.10           |

|                                         |                |      |      |        |      |      |       |
|-----------------------------------------|----------------|------|------|--------|------|------|-------|
|                                         | Havant Road EB | 0.24 | 0.5  | 10.28  | 0.65 | 5.7  | 9.91  |
| 2036 Future Year + Proposed Development | Havant Road WB | -    | -    | -      | -    | -    | -     |
|                                         | West Lane      | 1.10 | 52.4 | 609.11 | 0.56 | 1.2  | 22.35 |
|                                         | Havant Road EB | 0.29 | 0.7  | 10.44  | 0.75 | 10.3 | 13.99 |

**Table 21:** West Lane/ Havant Road Junction Capacity Assessment

- 7.27 **Table 21** demonstrates that the Havant Road/ West Lane junction operates within capacity in all scenarios in the PM peak period with a maximum RFC value of 0.75, a maximum queue of 10 vehicles on Havant Road and delays of approximately 22 seconds on the West Lane arm.
- 7.28 In the AM peak period, the junction is shown to operate under the full capacity threshold in all scenarios, except the '2028 Future Year + CD + Development and 2036 Future Year + CD + Development' scenarios, however, the junction is demonstrated as operating over the 0.85 threshold from the 2023 Baseline plus Committed Development plus Proposed Development scenario.
- 7.29 In both the '2028 Future Year' and '2036 Future Year' scenarios the junction operates above the 0.85 threshold prior to any Committed Development or Proposed Development traffic being added to the local road network. This therefore suggests that the growth in background traffic alone would likely cause capacity issues at this junction.
- 7.30 It is also important to stress that using Junctions 9 modelling software exponentially increases queues once capacity is reached, and this is not necessarily occurring on the ground. In addition, it is highly unlikely that the suggested queues demonstrated in **Table 21** would occur on the ground, given that there will be an element of 'merge in turn' type manoeuvres as vehicles along Havant Road let a vehicle out of West Lane.
- 7.31 Through the transport assessment works being completed within the Borough Wide TA and Micro Simulation Model it is anticipated that improvements along the A3023 corridor including this junction would be proposed. We therefore recommend a contribution is sought to fund improvements in this location/ the A3023 corridor which could also support wider improvement works on Hayling Island.
- 7.32 Discouraging the use of the junction by providing a series of traffic calming measures along the route could provide an improvement to the operation of this junction and reduce traffic volumes through this route which includes a 90 degree bend which could be welcomed by local residents. These could be in the form of pinch points, additional signage and a weight restriction/speed restriction traffic regulation order (TRO).

7.33 Another option to improve the operation of the West Lane/ Havant Road junction, would be for West Lane to become a 'left out' only. This would ensure that vehicles who are waiting to turn right out would not obstruct the queue on West Lane. As only 1 vehicle was recorded as completing a right turn manoeuvre in this location, this improvement is not anticipated to disrupt local residents and cause an adverse effect on other junctions. Therefore, this manoeuvre has been taken off in the following scenarios:

- 2023 Baseline + Committed Development + Proposed Development
- 2028 Future Year + CD + Proposed Development
- 2036 Future Year + CD + Proposed Development

7.34 The percentage impact of the development has been assessed for both the AM and PM peak periods. The percentage impact of the development has been calculated against the flows in the '2023 Baseline + Committed Development' scenario as later year scenarios would present a lower percentage impact. This is summarised in **Table 22**.

| Junction               | AM Peak Period              |                                 |                   | PM Peak Period              |                                 |                   |
|------------------------|-----------------------------|---------------------------------|-------------------|-----------------------------|---------------------------------|-------------------|
|                        | Traffic Flows (0715 – 0815) | Development Flows (0800 – 0900) | Percentage Impact | Traffic Flows (1630 – 1730) | Development Flows (1700 – 1800) | Percentage Impact |
| Havant Road/ West Lane | 1,840                       | 89                              | 4.84%             | 2,120                       | 103                             | 4.86%             |

**Table 22:** Development Percentage Impact on West Lane/ Havant Road

7.35 **Table 22** demonstrates that the additional traffic generated by the proposed development contributes a less than 5% increase on flow through this junction. Such an increase is considered modest and therefore the development should not be considered as having a 'severe' impact on the operation of this junction, particularly when the queuing on West Lane is unlikely to match that shown in **Table 21** given an element of 'merge in turn' type manoeuvres.

### Station Road/ Manor Road/ St Mary's Road

7.36 Capacity assessment modelling has been undertaken at the Station Road/ Manor Road/ St Mary's Road staggered junction for all scenarios (except 2023 Baseline + Committed Development as no additional traffic is placed on this junction in comparison to the 2023 Baseline scenario) to assess the impact of the development on its operation during the AM and PM peak periods.

7.37 The geometries used at this junction are in accordance with those submitted as part of the 'Land off St Mary's Road' application (*reference: APP/17/00007*) and subsequent highways comments dated 3<sup>rd</sup> March 2017.

7.38 The modelling results are summarised in **Table 23**, with the full outputs included in **Appendix P**.

| Scenario                                            | Arm            | AM Peak Period (0815 – 0915) |           |                 | PM Peak Period (1630 – 1730) |           |                 |
|-----------------------------------------------------|----------------|------------------------------|-----------|-----------------|------------------------------|-----------|-----------------|
|                                                     |                | RFC                          | Max Queue | Delay (seconds) | RFC                          | Max Queue | Delay (seconds) |
| 2018 Baseline                                       | Manor Road NB  | 0.26                         | 0.6       | 6.47            | 0.21                         | 0.3       | 6.61            |
|                                                     | Station Road   | 0.39                         | 0.6       | 13.35           | 0.39                         | 0.6       | 12.50           |
|                                                     | Manor Road SB  | 0.15                         | 0.2       | 7.13            | 0.11                         | 0.2       | 5.95            |
|                                                     | St Mary's Road | 0.24                         | 0.3       | 13.67           | 0.25                         | 0.3       | 14.18           |
| 2023 Baseline                                       | Manor Road NB  | 0.28                         | 0.6       | 6.68            | 0.23                         | 0.4       | 6.82            |
|                                                     | Station Road   | 0.44                         | 0.8       | 14.84           | 0.43                         | 0.7       | 13.66           |
|                                                     | Manor Road SB  | 0.17                         | 0.3       | 7.24            | 0.12                         | 0.2       | 5.93            |
|                                                     | St Mary's Road | 0.26                         | 0.4       | 14.52           | 0.28                         | 0.4       | 15.12           |
| 2023 Baseline + Committed Development + Development | Manor Road NB  | 0.28                         | 0.6       | 6.70            | 0.23                         | 0.4       | 6.50            |
|                                                     | Station Road   | 0.52                         | 1.1       | 17.12           | 0.48                         | 0.9       | 15.25           |
|                                                     | Manor Road SB  | 0.19                         | 0.3       | 7.44            | 0.17                         | 0.3       | 6.35            |
|                                                     | St Mary's Road | 0.27                         | 0.4       | 14.84           | 0.31                         | 0.4       | 15.87           |
| 2028 Future Year                                    | Manor Road NB  | 0.30                         | 0.7       | 6.82            | 0.24                         | 0.4       | 7.03            |
|                                                     | Station Road   | 0.46                         | 0.9       | 15.94           | 0.46                         | 0.8       | 14.66           |
|                                                     | Manor Road SB  | 0.18                         | 0.3       | 7.34            | 0.13                         | 0.2       | 5.94            |
|                                                     | St Mary's Road | 0.28                         | 0.4       | 15.19           | 0.30                         | 0.4       | 15.89           |
| 2028 Future Year + CD                               | Manor Road NB  | 0.30                         | 0.7       | 6.85            | 0.24                         | 0.4       | 7.06            |
|                                                     | Station Road   | 0.55                         | 1.2       | 18.71           | 0.51                         | 1.0       | 16.40           |
|                                                     | Manor Road SB  | 0.20                         | 0.4       | 7.42            | 0.13                         | 0.2       | 5.94            |
|                                                     | St Mary's Road | 0.29                         | 0.4       | 15.56           | 0.33                         | 0.5       | 16.72           |
| 2028 + CD + Proposed Development                    | Manor Road NB  | 0.30                         | 0.7       | 6.85            | 0.24                         | 0.4       | 7.06            |
|                                                     | Station Road   | 0.55                         | 1.2       | 18.71           | 0.51                         | 1.0       | 16.40           |
|                                                     | Manor Road SB  | 0.20                         | 0.4       | 7.55            | 0.18                         | 0.4       | 6.35            |
|                                                     | St Mary's Road | 0.29                         | 0.4       | 15.56           | 0.33                         | 0.5       | 16.72           |
| 2036 Future Year                                    | Manor Road NB  | 0.31                         | 0.7       | 7.01            | 0.25                         | 0.4       | 7.20            |
|                                                     | Station Road   | 0.50                         | 1.0       | 17.39           | 0.49                         | 0.9       | 15.72           |
|                                                     | Manor Road SB  | 0.19                         | 0.3       | 7.42            | 0.13                         | 0.3       | 5.93            |

|                                  |                |      |     |       |      |     |       |
|----------------------------------|----------------|------|-----|-------|------|-----|-------|
|                                  | St Mary's Road | 0.30 | 0.4 | 16.01 | 0.32 | 0.5 | 16.71 |
| 2036 Future Year + CD            | Manor Road NB  | 0.31 | 0.7 | 7.01  | 0.25 | 0.4 | 7.20  |
|                                  | Station Road   | 0.50 | 1.0 | 17.39 | 0.49 | 0.9 | 15.72 |
|                                  | Manor Road SB  | 0.19 | 0.3 | 7.42  | 0.13 | 0.3 | 5.93  |
|                                  | St Mary's Road | 0.30 | 0.4 | 16.01 | 0.32 | 0.5 | 16.71 |
| 2036 + CD + Proposed Development | Manor Road NB  | 0.31 | 0.7 | 7.04  | 0.26 | 0.4 | 7.23  |
|                                  | Station Road   | 0.58 | 1.4 | 20.75 | 0.54 | 1.2 | 17.79 |
|                                  | Manor Road SB  | 0.21 | 0.4 | 7.63  | 0.19 | 0.4 | 6.38  |
|                                  | St Mary's Road | 0.32 | 0.5 | 16.42 | 0.35 | 0.5 | 17.63 |

**Table 23:** Station Road/ Manor Road/ St Mary's Road Junction Capacity Assessment

7.39 The modelling results demonstrate that the staggered junction operates well below the 0.85 threshold in all scenarios with a maximum RFC of 0.58, queues of less than 2 vehicles and delays of approximately 20 seconds.

7.40 The results of the junction capacity assessment at this junction are in accordance with the results demonstrated as part of the 'Land at Rook Farm' application in January 2017, with incremental increases in comparison to their results. Therefore, there are no capacity concerns with regards to the operation of this junction with the additional development traffic placed upon it.

### A27 Roundabout

7.41 Along with the site access, the A27 roundabout would receive the greatest volume of site traffic, as 75% of the development traffic is anticipated to travel off the island and therefore through the A27 roundabout. In order to assess the impact of the development on the operation of this roundabout, a percentage impact has been calculated.

7.42 The Land at Rook Farm application modelled the A27 roundabout using a 2016 baseline. These 2016 baseline flows were applied a growth factor to obtain the 2023, 2028 and 2036 baseline traffic flows. The growth factors are demonstrated in **Table 24**.

| TEMPO       | Growth Factor |        |
|-------------|---------------|--------|
| 2016 - 2023 | AM            | 1.1193 |
|             | PM            | 1.1137 |
| 2016 - 2028 | AM            | 1.1758 |
|             | PM            | 1.1693 |
| 2016 - 2036 | AM            | 1.2304 |
|             | PM            | 1.2246 |

**Table 24:** Temprow Growth Rates (2023 and 2028)

7.43 The resultant percentage impact of the development on the operation of the roundabout in both the 2023 baseline and 2028 baseline is subsequently demonstrated in **Table 25**.

| A27 Roundabout | AM Peak (0800-0900) |             |                   | PM Peak (1700-1800) |             |                   |
|----------------|---------------------|-------------|-------------------|---------------------|-------------|-------------------|
|                | Baseline            | Development | Percentage Impact | Baseline            | Development | Percentage Impact |
| 2016           | 4165                | -           | -                 | 4326                | -           | -                 |
| 2023           | 4662                | 89          | 1.91%             | 4818                | 103         | 2.14%             |
| 2028           | 4897                | 89          | 1.82%             | 5058                | 103         | 2.04%             |
| 2036           | 5125                | 89          | 1.74%             | 5298                | 103         | 1.94%             |

**Table 25:** Impact of Development on A27 Roundabout

7.44 **Table 25** demonstrates that the development would result in a maximum 2.14% increase of traffic flows on the A27 roundabout (PM Peak period) and this is therefore considered a modest impact.

7.45 An assessment on the Havant Road northbound arm has also been assessed, given this arm will see the single largest increase in vehicle trips. This assessment has been based on the Land at Rook Farm 2016 turning count surveys and TEMPRO factors as per the above assessment. Given the focus on this arm only, the AM and PM departure trips values have been assessed, with 75% of departures anticipated to utilise this junction. The impact is outlined in **Table 26**.

| A27 Roundabout – Havant Road Northbound | AM Peak (0800-0900) |             |                   | PM Peak (1700-1800) |             |                   |
|-----------------------------------------|---------------------|-------------|-------------------|---------------------|-------------|-------------------|
|                                         | Baseline            | Development | Percentage Impact | Baseline            | Development | Percentage Impact |
| 2016                                    | 1452                | -           | -                 | 1205                | -           | -                 |
| 2023                                    | 1625                | 65          | 4.00%             | 1342                | 39          | 2.91%             |
| 2028                                    | 1707                | 65          | 3.81%             | 1409                | 39          | 2.77%             |
| 2036                                    | 1787                | 65          | 3.64%             | 1476                | 39          | 2.64%             |

**Table 26:** Impact on Havant Road Northbound on A27 Roundabout

7.46 The above table outlines that on the arm most heavily impacted by the proposed development, the percentage impact remains at a maximum of 4%, which is not considered to cause a severe impact on the operation of the local road network.

### **Additional Junction Assessments**

#### Sinah Lane/ Staunton Avenue/ Station Road

7.47 This junction has not been subject to a junction capacity assessment through a modelling exercise as the number of vehicle trips anticipated to utilise this junction is minimal. It is anticipated that 5% of development departures in both the AM and PM peak periods will travel along Staunton Avenue. This equates to 4 vehicles in the AM peak period and 3 vehicles in the PM peak period.

7.48 It is also therefore anticipated that the 5% of trips who depart the site and travel southbound along Staunton Avenue will also return to the site via this route. This therefore results in 2 vehicles turning left onto Sinah Lane in the AM peak period and 4 vehicles in the PM peak period. The proposed development is therefore not considered to have a 'noticeable' impact on the operation of this junction.

#### Newtown Road/ Manor Road

7.49 This junction has not been subject to a junction capacity assessment through a modelling exercise as the number of vehicle trips anticipated to utilise this junction is minimal. It is anticipated that 10% of development departures in both the AM and PM peak periods will travel along Newtown Avenue to access onto the A3023 Manor Road. This equates to 9 vehicles in the AM peak period and 5 vehicles in the PM peak period.

7.50 It is also therefore anticipated that the 10% of trips who depart the site and travel eastbound along Newtown Road will also return to the site via this route. This therefore results in 3 vehicles turning right onto Newtown Road in the AM peak period and 9 vehicles in the PM peak period. The proposed development is therefore not considered to have a 'noticeable' impact on the operation of this junction.

#### **Summary of Junction Capacity Assessment**

7.51 The results of the junction capacity assessments demonstrate that with the additional development traffic placed onto the local road network, all the junctions except West Lane/ Havant Road operate well within capacity.

7.52 The West Lane/ Havant Road junction operates over the 0.85 threshold in both the 2028 and 2036 future year scenarios before the addition of any development traffic. Although the proposed development adds further traffic to this junction, it has a less than 5% impact on the junction in relation to traffic flows, and therefore a proportionate contribution would be made to improvements at this junction.

## 8. SENSITIVITY TEST

- 8.1 As requested by HCC at the pre-application stage, an additional two development sites have been taken into consideration as part of a sensitivity test. The additional developments are listed below;
- Land at Rook Farm: Allocation for 394 dwellings
  - Beachlands: Allocation for 125 dwellings, leisure and tourism
- 8.2 An application was submitted and refused at Rook Farm in April 2017 (*Land at Rook Farm*) for 210 dwellings (*application reference: APP/17/00007*) and as such has not been considered as 'committed'. As the site was however draft allocated for up to 394 dwellings, the full allocation has been included and assessed in the sensitivity test. The application at Beachlands however, has been discounted given the site's allocation in the 2014 Local Plan and subsequent inclusion in the Annual Monitoring Report produced by Havant Borough Council in 2014. This has therefore already been included within the TEMPRO growth rates, and to include again would be double-counting.
- 8.3 The additional development is demonstrated in **Figure 11**, with the distribution diagram including the full sensitivity test included in **Appendix Q**.

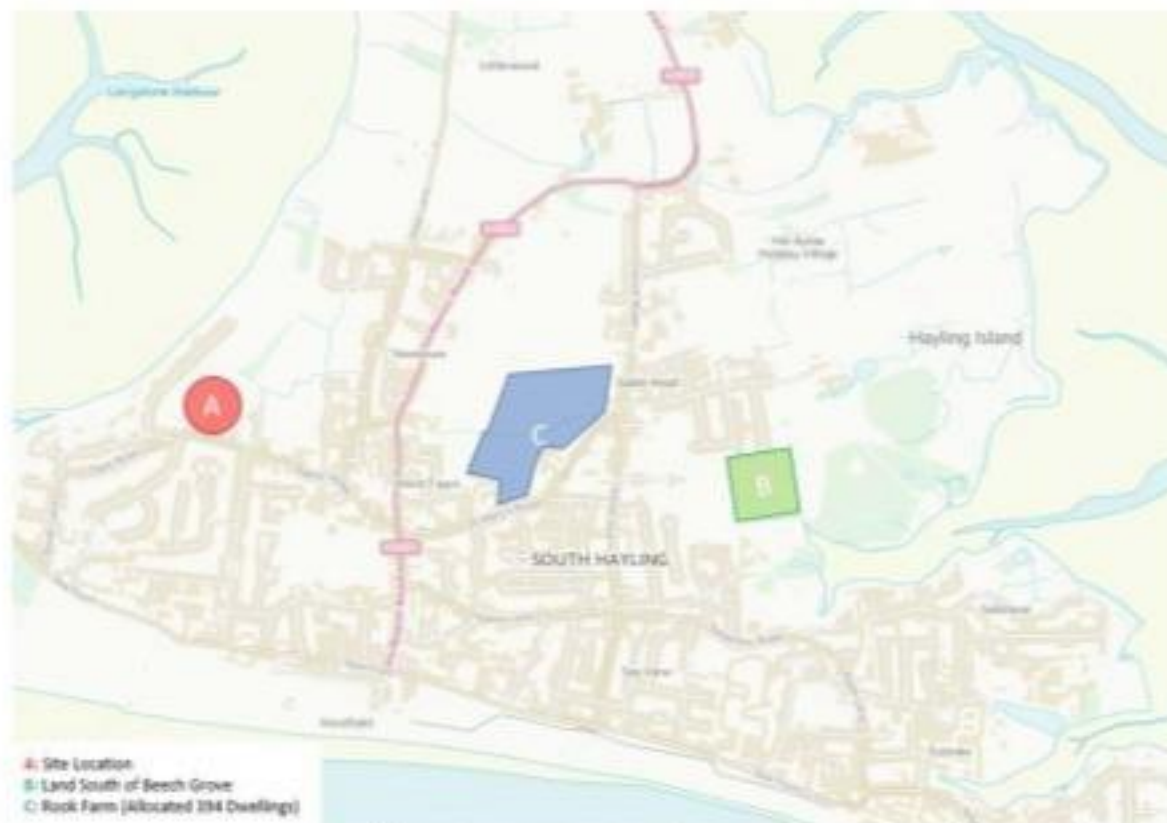


**Figure 11:** Sensitivity Test Development Locations

- 8.4 The traffic flows for the full Rook Farm development site (394 dwellings) have been placed on the local road network in accordance with those trip rates and distributions submitted as part of the '*Land at Rook Farm*' planning application (*reference: APP/17/00007*) and included as 'Committed Development' with the modelling of the original junctions rerun for all scenarios.

8.5 The traffic generated by the Rook Farm allocation site are only anticipated to have an impact on the Station Road/Manor Road/ St Mary's Road staggered junction and the Havant Road/West Lane priority junction, with no Rook Farm development traffic routing through the other junctions assessed in this TA. Therefore, these junctions have been remodelled to assess their capacity should the development at Rook Farm come forward in future years.

8.6 The sensitivity test results for the Station Road/ Manor Road/ St Mary's Road junction are summarised in **Table 27**, with the full outputs included in **Appendix R**.

| Scenario                                                     | Arm            | AM Peak Period (0815 – 0915) |           |                 | PM Peak Period (1630 – 1730) |           |                 |
|--------------------------------------------------------------|----------------|------------------------------|-----------|-----------------|------------------------------|-----------|-----------------|
|                                                              |                | RFC                          | Max Queue | Delay (seconds) | RFC                          | Max Queue | Delay (seconds) |
| 2023 Baseline + Committed Development                        | Manor Road NB  | 0.29                         | 0.6       | 6.77            | 0.24                         | 0.4       | 7.08            |
|                                                              | Station Road   | 0.44                         | 0.8       | 15.19           | 0.45                         | 0.8       | 14.22           |
|                                                              | Manor Road SB  | 0.15                         | 0.2       | 8.57            | 0.10                         | 0.1       | 7.54            |
|                                                              | St Mary's Road | 0.30                         | 0.4       | 15.27           | 0.30                         | 0.4       | 15.80           |
| 2023 Baseline + Committed Development + Proposed Development | Manor Road NB  | 0.29                         | 0.6       | 6.80            | 0.25                         | 0.4       | 7.20            |
|                                                              | Station Road   | 0.53                         | 1.1       | 17.58           | 0.50                         | 1.0       | 15.95           |
|                                                              | Manor Road SB  | 0.17                         | 0.2       | 8.71            | 0.14                         | 0.2       | 7.79            |
|                                                              | St Mary's Road | 0.31                         | 0.4       | 15.63           | 0.33                         | 0.5       | 16.61           |
| 2028 Future Year + CD                                        | Manor Road NB  | 0.30                         | 0.7       | 6.89            | 0.25                         | 0.4       | 7.28            |
|                                                              | Station Road   | 0.47                         | 0.9       | 16.35           | 0.48                         | 0.9       | 15.30           |
|                                                              | Manor Road SB  | 0.16                         | 0.2       | 8.71            | 0.10                         | 0.1       | 7.60            |
|                                                              | St Mary's Road | 0.32                         | 0.5       | 16.01           | 0.32                         | 0.5       | 16.64           |
| 2028 + CD + Proposed Development                             | Manor Road NB  | 0.30                         | 0.7       | 6.94            | 0.26                         | 0.4       | 7.33            |
|                                                              | Station Road   | 0.56                         | 1.3       | 19.27           | 0.53                         | 1.1       | 17.21           |
|                                                              | Manor Road SB  | 0.18                         | 0.2       | 8.86            | 0.15                         | 0.2       | 7.84            |
|                                                              | St Mary's Road | 0.33                         | 0.5       | 16.42           | 0.35                         | 0.5       | 17.54           |
| 2036 Future Year + CD                                        | Manor Road NB  | 0.32                         | 0.7       | 7.10            | 0.27                         | 0.4       | 7.47            |
|                                                              | Station Road   | 0.51                         | 1.0       | 17.87           | 0.51                         | 1.0       | 16.58           |
|                                                              | Manor Road SB  | 0.17                         | 0.2       | 8.84            | 0.11                         | 0.1       | 7.66            |
|                                                              | St Mary's Road | 0.34                         | 0.5       | 16.93           | 0.35                         | 0.5       | 17.71           |
| 2036 + CD + Proposed Development                             | Manor Road NB  | 0.32                         | 0.7       | 7.14            | 0.27                         | 0.4       | 7.51            |
|                                                              | Station Road   | 0.59                         | 1.5       | 21.44           | 0.56                         | 1.3       | 18.73           |
|                                                              | Manor Road SB  | 0.19                         | 0.2       | 8.99            | 0.16                         | 0.2       | 7.90            |
|                                                              | St Mary's Road | 0.35                         | 0.5       | 17.38           | 0.37                         | 0.6       | 18.54           |

**Table 27:** Sensitivity Test: Station Road/ Manor Road/ St Mary's Road

8.7 The results of the sensitivity test demonstrate that should the 'Land at Rook Farm' application come forward for its full allocation in the future, the junction will continue to operate well within capacity with a maximum RFC value of 0.59, queues of under 2 vehicles and delays of less than 25 seconds.

8.8 The sensitivity test results for the West Lane/ Havant Road junction are summarised in **Table 28**, with the full outputs included in **Appendix S**.

| Scenario                                                     | Arm            | AM Peak Period (0715 – 0815) |           |                 | PM Peak Period (1630 – 1730) |           |                 |
|--------------------------------------------------------------|----------------|------------------------------|-----------|-----------------|------------------------------|-----------|-----------------|
|                                                              |                | RFC                          | Max Queue | Delay (seconds) | RFC                          | Max Queue | Delay (seconds) |
| 2023 Baseline + Committed Development                        | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 0.90                         | 7.4       | 106.09          | 0.47                         | 0.9       | 19.26           |
|                                                              | Havant Road EB | 0.22                         | 0.4       | 10.49           | 0.59                         | 4.2       | 8.58            |
| 2023 Baseline + Committed Development + Proposed Development | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 1.03                         | 28.0      | 350.91          | 0.51                         | 1.0       | 20.39           |
|                                                              | Havant Road EB | 0.27                         | 0.6       | 10.60           | 0.69                         | 7.4       | 10.84           |
| 2028 Future Year + CD                                        | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 0.97                         | 14.3      | 195.02          | 0.51                         | 1.0       | 21.74           |
|                                                              | Havant Road EB | 0.24                         | 0.5       | 10.54           | 0.63                         | 5.4       | 9.18            |
| 2028 Future Year + CD + Proposed Development                 | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 1.10                         | 52.1      | 638.14          | 0.54                         | 1.2       | 22.15           |
|                                                              | Havant Road EB | 0.29                         | 0.7       | 10.66           | 0.74                         | 9.8       | 12.56           |
| 2036 Future Year + CD                                        | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 1.06                         | 37.4      | 481.03          | 0.62                         | 1.6       | 32.63           |
|                                                              | Havant Road EB | 0.26                         | 0.6       | 10.62           | 0.68                         | 7.4       | 10.26           |
| 2036 Future Year + CD + Proposed Development                 | Havant Road WB | -                            | -         | -               | -                            | -         | -               |
|                                                              | West Lane      | 1.21                         | 89.1      | 1113.90         | 0.58                         | 1.4       | 24.87           |
|                                                              | Havant Road EB | 0.32                         | 0.9       | 10.78           | 0.79                         | 14.3      | 16.52           |

**Table 28:** Sensitivity Test: Havant Road/ West Lane

- 8.9 The results of the sensitivity test for the Havant Road/ West Lane junction demonstrates that the junction operates within capacity in all PM peak period scenarios. In the AM period, the junction would be approaching capacity in the '2023 baseline with Committed Development' scenario and operating over capacity in the 2036 Future Year + CD scenario, before the addition of development traffic.

#### **Summary of Sensitivity Test Analysis**

- 8.10 The results of the sensitivity test demonstrate that the St Mary's Road/Manor Road/ Station Road junction would continue to operate well within capacity even with the additional developments that have been taken into consideration. The West Lane/ Havant Road junction operates over capacity; however, this is already demonstrated to occur in the 2036 Future year + CD scenario even without the proposed development.
- 8.11 It is believed that the West Lane/Havant Road junction is currently under review as part of the wider Hayling Island microsimulation model which is reviewing the route into/out of Hayling Island, and whilst possible mitigation against the Sinah Lane development impact have been identified, it is expected that both Sinah Lane and Rook Farm would make transport contributions towards the wider mitigation strategy if both sites came forward.

## 9. SUMMARY AND CONCLUSIONS

- 9.1 This Transport Assessment has been prepared by Paul Basham Associates on behalf of Barratt Homes to support a full planning application for a residential development comprising '195 dwellings, associated open space, pumping station, substation with vehicular access via Sinah Lane and change of use of agricultural to a Wader and Brent Geese refuge' at Sinah Lane, Hayling Island.
- 9.2 The proposed site's current development use is greenfield land, situated approximately 500m west of West Town and 1.7km west of Mengham. In addition, the site is located 8km south of Havant and is bordered to the south and west by residential dwellings, greenfield to the north and the Hayling Billy Trail and Hayling Island Amateur Dramatic Society to the east. The site's proximity to local amenities and services provides an excellent opportunity to encourage sustainable travel to and from the site.
- 9.3 The site has previously been identified in the Strategic Housing Local Availability Assessment and has more recently been identified as a draft allocation in Havant Borough Council's Local Plan as suitable for residential development.
- 9.4 Sinah Lane, which is subject to a 30mph speed limit across the proposed site frontage, is a single carriageway road measuring approximately 6.5m in width. Footways flank either side of the carriageway providing a safe and direct route to the local amenities and wider pedestrian network.
- 9.5 A total of 16 PIAs were recorded in the vicinity of the site, of which 3 incidents were classified as 'serious' in nature. The majority of incidents were due to driver error rather than highway conditions and considering that the number of incidents equates to one incident every 5 months, the investigation does not indicate any specific highways concerns or patterns that would worsen as a result of the development, or pose a highways safety concern for future site users.
- 9.6 The proposed development comprises 195 dwellings. The site would be served via a single vehicular access point onto Sinah Lane. The access would be provided in the form of a bellmouth arrangement measuring 6m with an 8m corner radii. Internally, the road layout will be more reflective of a residential development with shared surfaces and cul-de-sacs provided.
- 9.7 Both car and cycle parking would be provided in accordance with Havant Borough Council's residential parking standards. The development would provide 411 parking spaces for residents, with an additional 39 spaces provided for visitors spread evenly throughout the site.
- 9.8 The TRICS database has been used to assess the likely trip generation for the proposed development. Trip rates have been used in accordance with those submitted for the Land South of Beech Grove application (*application reference: APP/12/00966*), as agreed with HCC at the pre-application stage.

The resultant assessment indicates that the proposed development would generate 118 trips in the AM peak period (0800-0900), 138 trips in the PM peak period (1700-1800) and 1,159 trips across a 12 hour day. As the existing site is predominantly greenfield, the proposal's generated trips would all be additional to the local road network.

- 9.9 The trips associated with the scheme have been distributed across the local road network on the basis of traffic distribution from 2011 'Location of Usual Residence and Place of Work' Census data, and individual turning proportions from independent traffic surveys. A baseline traffic scenario for 2023 has been established by applying a growth factor calculated by TEMPRO to the traffic survey results.
- 9.10 Capacity modelling assessments undertaken at the major junctions in the vicinity of the site demonstrates that there are only capacity issues at one of the junctions (West Lane/ Havant Road). Whilst this junction is shown to be operating over capacity in a future year pre-development scenario, a percentage impact assessment has been undertaken which indicates that the proposed development would have a less than 5% impact, and this is therefore not considered to be 'severe'.
- 9.11 A sensitivity test has also been undertaken to assess the operation of the junctions should the undetermined applications be approved. The results of the sensitivity test demonstrate that the Station Road/ St Mary's Road/ A3023 Manor Road junction would still operate well within capacity. The West Lane/ Havant Road junction would exceed capacity in the future year scenario before the addition of development traffic, with the development only having a minimal percentage impact.
- 9.12 Given that the site is to come forward in advance of the Hayling Island Microsimulation model, a full capacity assessment has been undertaken for the vehicles anticipated to leave the island from the site, with detailed junction capacity assessments undertaken. An assessment of the A27 roundabout has also been undertaken which has demonstrated a minimal percentage impact from the proposed site.
- 9.13 This Transport Assessment has demonstrated that the proposed development will not have a 'severe' impact on the capacity, operation or safety of the local road network, given that no junction would operate over capacity that does not already do so in a Future Year scenario. We therefore encourage Hampshire County Council to look favourably upon this development in relation to highways.