OAKCROFT LANE, STUBBINGTON

REVISED TRANSPORT ASSESSMENT

April 2020

Persimmon Homes

RESIDENTIAL DEVELOPMENT
OAKCROFT LANE
STUBBINGTON

REVISED TRANSPORT ASSESSMENT

CONTROLLED DOCUMENT

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RESIDENTIAL DEVELOPMENT
OAKCROFT LANE
STUBBINGTON

REVISED TRANSPORT ASSESSMENT

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1. INTRODUCTION

1.1 This Revised Transport Assessment (RTA) has been prepared by Paul Basham Associates on behalf of Persimmon Homes to support a full planning application for a residential development comprising of 209 dwellings on land north and south of Oakcroft Lane, Stubbington. The site location is shown below in **Figure 1**, whilst the proposed site layout is attached as **Appendix A**.

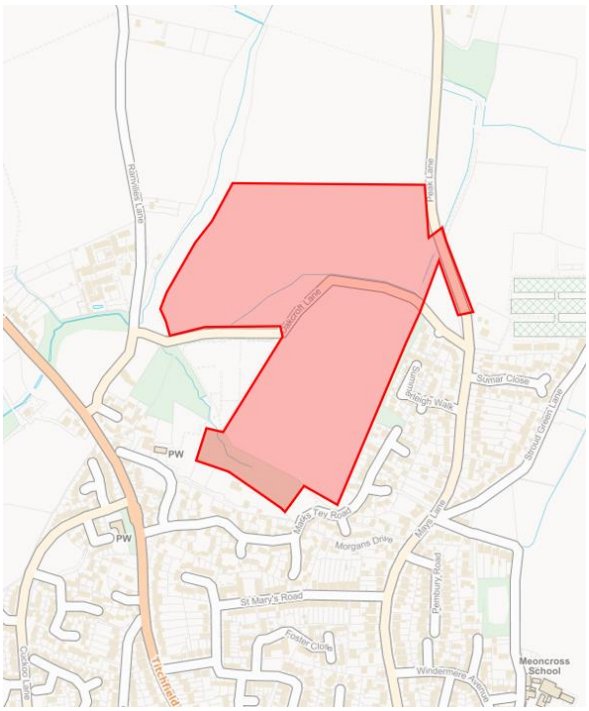

Figure 1: Site Location

1.2 A Transport Scoping Note (TSN) was submitted to Hampshire County Council (HCC) Development Control Officers, which set out baseline traffic conditions on Peak Lane and Oakcroft Lane, development trip rates, traffic distribution, scoping of capacity assessment and accident review, the principle of access design into the site and a general assessment regarding site accessibility.

1.3 This RTA has also been prepared to address comments raised on a previous planning application at this site. Persimmon Homes submitted a planning application in 2019 for '*261 dwellings, new access from Park Lane and stopping up of Oakcroft Lane, with car parking, landscaping, public open space and associated works*' under application reference: P/19/0301/FP. This planning application was refused on 22nd August 2019 with 21 reasons for refusal. The revised scheme comprises of 52 less units with a revised site layout to address many of the reasons for refusal. Five highways issues were raised within the decision notice, which were as follows:

- v) the proposed development involves development that involves significant vehicle movements that cannot be accommodated adequately on the existing transport network.

Insufficient information has been provided to demonstrate that the development would not result in a severe impact on road safety and operation of the local transport network

- vi) the proposed access arrangement onto Peak Lane is inadequate to accommodate the development safely. This would result in an unacceptable impact on the safety of users of the development and adjoining highway network
- vii) the proposals fail to demonstrate that the development would be accessible with regards to public transport links and walking and cycling routes to local services and facilities
- viii) the development as proposed fails to provide sufficient provision of, or support for, sustainable transport options. This would result in a greater number of trips by private car which will create a severe impact on the local transport network and the environment
- xx) in the absence of a legal agreement to secure the submission and implementation of a full Travel Plan, payment of the Travel Plan approval and monitoring fees and provision of a surety mechanism to ensure implementation of the Travel Plan, the proposed development would not make the necessary provision to ensure measures are in place to assist reducing the dependency on the use of the private motorcar.

1.4 Through the 2019 application highway comments were received from HCC (dated 10th May 2019) which at that time did not raise a highways reason for refusal but instead stated that 'Until the additional information is provided the highway authority will not be in a position to agree the transport impacts on the development proposals'. This RTA therefore responds to the revised site layout and reduction in unit numbers as well as HCC comments on the previous application which can be summarised as:

- A review should be conducted on pedestrian crossing points on May's Lane
- Review of pedestrian/cycle routes to local schools and Stubbington Village Centre
- An agreement must be made to ensure an adequate bus service for the proposed site
- Amendments to the site access proposals
- Amendments to the junction modelling
- Junction modelling should be conducted for A27/Peak Lane, May's Lane/Titchfield Road/B3334 Roundabout and Stubbington Green/Stubbington Lane/Gosport Road/B3334 Roundabout
- Details regarding the internal site layout
- Amendments to the Travel Plan

1.5 A separate Full Revised Travel Plan (FRTP) has been prepared in conjunction with this RTA, which seeks to facilitate and promote the use of sustainable transport modes, by providing a package of soft measures, supported by investment in infrastructure. The RFTP also includes a detailed Action Plan and mode share targets, based on HCC Travel Plan guidance.

2. PLANNING POLICY REVIEW

2.1 This section of the RTA provides a summary of the existing and emerging policy relevant to highways and the proposed development site. This includes national, regional and local policy as well as considering local committed infrastructure.

National Planning Policy Framework

2.2 The revised National Planning Policy Framework (February 2019) acts as the central guidance for development planning, replacing all national planning policy guidance. The following NPPF paragraphs are relevant to this RTA:

2.3 Paragraph 102 states that "transport issues should be considered from the earliest stages of plan-making and development proposals", so that:

a) The potential impacts of development on transport networks can be addressed;

b) Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised;

c) Opportunities to promote walking, cycling and public transport use are identified and pursued;

d) The environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account- including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and

e) Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.

2.4 Paragraph 103 identifies that "*Significant development should be focused on locations which are or can be made sustainable, through limiting the needs to travel and offering a genuine choice of transport modes. This can help reduce congestion and emissions and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making*."

2.5 Paragraph 108 sets out the three transport 'tests' which need to be addressed when considering sites that may be allocated for development in plans. It should be ensured that:

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

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

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

2.6 Paragraph 109 identifies that "*Development should only be prevented or refused on highways grounds if there was an unacceptable impact on highway safety, or residual cumulative impacts on the road network would be severe*".

2.7 Paragraph 111 states "*All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impact of the proposal can be assessed*".

Hampshire County Council Local Transport Plan 3 (LTP3 2011-2031)

2.8 LTP3 sets out HCC's transport strategy and identifies a range of policy objectives based on the three guiding principles of *"developing and supporting stronger communities, maximising wellbeing and enhancing quality of place*". The most relevant policy objectives to this TA are summarised as:

- Continue to work and improve road safety through targeted measures that deliver a reduction in casualties and reduce the impact of traffic on community life and promote considerate driver behaviour;
- Work with district authorities to agree coherent policy approaches to parking; and
- Invest in sustainable transport measures, including walking and cycling infrastructure.

Fareham Borough Council Local Plan (2011-2026)

2.9 FBC's Local Plan: Core Strategy (August 2011) has been prepared as a long-term document which seeks to shape and guide development in Fareham up to 2026. The Core Strategy (CS) proposes a policy framework that plans for new development to deliver the vision that has been developed alongside the Sustainable Community Strategy, the CS identifies the following as its mission:

"Fareham Borough will offer a high quality of life to all residents and be an attractive, safe and pleasant place to live, work and visit. It will be sustainable and increasingly prosperous, with low levels of crime and unemployment and good access to community facilities, jobs, leisure, shops, open space and services. Fareham will remain a freestanding settlement".

2.10 FBC have identified twelve strategic objectives that are to be achieved by 2026 in relation to the sustainability of the Borough in general, but also specific objectives that new developments must aim to adhere to, and can be viewed below:

SO1: To deliver the South Hampshire Strategy in a sustainable way, focusing development in Fareham, the Strategic Development Area north of Fareham and the Western Wards

SO2: To promote and encourage the efficient re-use of previously developed land and buildings in accordance with the principles of high quality and sustainable design

SO5: To ensure development provides and/or contributes to timely and appropriate transport infrastructure and mitigation measures to support the needs of development, and provide and/or contribute to public transport and quality pedestrian and cycle links to reduce dependence on the car

SO9: To improve accessibility to and facilitate the development and expansion of leisure, recreation, community, education, open space and health facilities and services. Achieve better access to green spaces close to where people live and work, to encourage healthy active lifestyles.

SO10: To manage, maintain and improve the built and natural environment to deliver quality places, through high quality design sustainability and maintenance standards, taking into account the character and setting of existing settlements and neighbourhoods and seeking safe environments which help to reduce crime and the fear of crime.

2.11 Core Strategy 5 - 'Transport Strategy and Infrastructure' states that "*The council will, where necessary, work with the Local Highways Authority, Highways Agency and transport operators to promote, permit, develop and/or safeguard a high quality and sustainable integrated transport system for the Borough*"

2.12 CS5 states that 'The council will permit development which:

- Contributes towards and/or provides necessary and appropriate transport infrastructure including reduce and manage measures and traffic management measures in a timely way;
- Does not adversely affect the safety and operation of the strategic and local road network, public transport operations or pedestrian and cycle routes; and
- Is designed and implemented to prioritise and encourage safe and reliable journeys by walking, cycling and public transport'.

Fareham Draft Local Plan 2036

2.13 FBC have begun working on a new Local Plan following changes to the National Planning Policy Framework which significantly increased the number of new homes required in Fareham by some 30%. In January 2020 the Council launched the next stage of their consultation works which closed on Sunday 1st March 2020. The consultation contained a revised development strategy, proposals for additional housing sites and new policies on development and the natural environment. FBC plan to submit the new local plan to the Secretary of State in Summer 2020, with the adoption expected in early 2021.

2.14 The proposed development site is now included in FBC's Strategic Housing and Employment Land Availability Assessment (SHELAA) under site ID: 1341: Land South of Oakcroft Lane, Stubbington. The SHELAA site details confirms the site is within 400m of a high frequency bus stop, within 800m of an accessible green or play space, within 1600m of a Town/District or Local Centre and within 800m of a Community or Leisure facility. The case also confirms that access should be sought from Peak Lane as opposed to Oakcroft Lane/Ranvilles Lane and that the site is within the proposed 'Strategic Growth Area' which identifies the land between Fareham and Stubbington as potential area for future growth.

Stubbington Bypass

2.15 Hampshire County Council submitted a planning application in 2015 for:

- The construction of new road linking Titchfield Road to Gosport Road
- Improvement works to Titchfield Road and Gosport Road
- New or improved junctions at Titchfield Gyratory, Bridge Street, Peel Common Roundabout & Peak Lane at Titchfield Road/Gosport Road

2.16 The proposed Stubbington Bypass will run to the north of the proposed development site which provides key improvements for access to the Gosport and Fareham peninsula. The Stubbington Bypass and associated improvements will aim to provide an alternative access route to the peninsula for north-south traffic. The objectives of the Bypass scheme are:

- To provide a viable alternative for traffic wishing to travel from the Gosport Peninsula westwards towards the M27 Junction 9, whilst avoiding heavily congested parts of the transport network;
- To help unblock critical bottlenecks and congestion hotspots on strategic routes, in town centre areas and in areas of employment;
- To provide new and improved existing infrastructure to help better manage traffic flows, particularly during peak travel periods; and
- To help remove the transport barriers to growth.

2.17 Planning permission was granted (subject to conditions) in October 2015 under application reference P/15/0718/CC. To support the planning application a Transport Assessment was prepared in June 2015 by Hampshire County Council. Where applicable data from this assessment has been used to support this RTA including 2015 junction modelling results, 2019 junction modelling results, and concept design sketches.

2.18 Works on the bypass have now begun and are proposed in 4 key stages with the construction programme running from early 2020 to Spring 2022. The Stubbington Bypass can therefore be considered as a committed piece of infrastructure which should be completed prior to substantial levels of occupations of this proposed development.

3. EXISTING CONDITIONS

3.1 The existing site is currently vacant greenfield separated into two parcels north and south of Oakcroft Lane. To the south, the site is predominantly bordered by residential dwellings which current form the northern boundary of Stubbington Village.

3.2 To the north, the site is bordered by greenfield land, similar to the proposed development site which extends north towards the southern boundary of Fareham. It is currently proposed that the Stubbington Bypass would extend laterally forming the northern boundary of the proposed development site.

3.3 To the east, the site is bound by the rear gardens of properties along Peak Lane and May's Lane and to the west the site is bound by Oakcroft Cemetery and agricultural land.

3.4 The southern field is accessed from Oakcroft Lane, approximately 125m northwest of the Peak Lane/Oakcroft Lane junction whilst the northern field is accessed from Peak Lane.

Local Road Network

Oakcroft Lane

3.5 Oakcroft Lane is a semi-rural lane that provides access to a handful of residential dwellings (around 7) adjacent to the junction with Peak Lane to the east. To the west of the site Oakcroft Lane provides access to Crofton Cemetery before continuing west to connect with Ranvilles Lane. Oakcroft Lane dissects the site into two land parcels to the north and south and then provides access to Titchfield Road to the south and the A27 in the north. To the east, the Oakcroft Lane/Peak Lane/May's Lane priority junction connects to Stubbington Village Centre to the south via May's Lane and connects to the A27 to the north via Peak Lane.

3.6 Oakcroft Lane varies in width between 4m-5m for its duration with limited road markings or street lighting. A c. 2m wide footway is provided at the lane's eastern extent with the junction of Peak Lane before terminating to the west of the existing residential properties. There are no further segregated pedestrian facilities on Oakcroft Lane west of this point. The conditions on Oakcroft Lane are demonstrated in **Photograph 1**.

Photograph 1: Existing Conditions on Oakcroft Lane (Eastbound)

3.7 Oakcroft Lane is subject to a derestricted speed limit for its duration as well as being subject to a 7.5 tonne weight restriction (except for access). An Automated Traffic Count (ATC) survey was commissioned on Oakcroft Lane to establish the existing traffic situation on the local road network in order to fully understand the likely impact of the development. This survey was undertaken in October 2018 with the results presented in **Table 1** and attached as **Appendix B**.

Oakcroft Lane	AM Peak (0800-0900) 5-Day Average Volume (%)	PM Peak (1700-1800) 5-Day Average Volume (%)	Daily Flow (5-Day Average)	Daily 85th Percentile Speeds
Eastbound	151 (84.8%)	78 (36.1%)	1004	31.5mph
Westbound	27 (15.2%)	138 (63.9%)	838	33.6mph

Table 1: Oakcroft Lane ATC Survey Results

3.8 **Table 1** demonstrates that Oakcroft Lane experiences low traffic volumes with a greater flow of movements eastbound towards Peak Lane in the AM (0800-0900) peak and westbound in the PM (1700-1800) peak towards the residential dwellings served from Oakcroft Lane. 85th percentile speeds along Oakcroft Lane are demonstrated as being significantly lower than the derestricted speed limit.

Peak Lane

3.9 Peak Lane is a strategic route connecting Stubbington with Fareham to the north. The carriageway is subject to national speed limit across the proposed site frontage and is circa 7.5m wide with substantial highway verge on both the eastern and western sides of the carriageway. Approximately 100m to the south of the proposed access the speed limit reduces to 30mph and, on entrance to Stubbington Village, the change in speed limit is supported by traffic calming in the form of road markings and dragons' teeth providing a gateway feature, as demonstrated in **Photograph 2**.

Photograph 2: Gateway Feature on Peak Lane

3.10 To the south, Peak Lane becomes May's Lane on entrance to Stubbington Village, circa 100m south of the proposed site access. May's Lane continues south into the centre of Stubbington and Stubbington Green, connecting with Titchfield Road (B3334) through a roundabout junction circa 1.2km south of the proposed development site.

3.11 To the north, Peak Lane continues north and forms a roundabout with Rowan Way and Longfield Avenue circa 1.2km from the site boundary. Peak Lane continues north past the roundabout and connects with the A27 in the form of a signalised junction. Rowan Way continues west and also connects with the A27 via a priority junction whilst Longfield Avenue connects with Newgate Lane to the east. The conditions on Peak Lane are demonstrated in **Photograph 3**.

Photograph 3: Existing Conditions on Peak Lane

3.12 Given the change in speed limit in the vicinity of the proposed access and to assist with the design of the access a second ATC was carried out at Peak Lane alongside that on Oakcroft Lane. The results are demonstrated in **Table 2**, with the outputs attached as **Appendix B**.

Peak Lane	AM Peak (0800-0900) 5-Day Average Volume (%)	PM Peak (1700-1800) 5-Day Average Volume (%)	Daily Flow (5-Day Average)	Daily 85th Percentile Speeds
Northbound	974 (69.6%)	383 (29.5%)	6647	46.4mph
Southbound	425 (30.4%)	917 (70.5%)	6415	44.8mph

Table 2: Peak Lane ATC Survey Results

3.13 **Table 2** demonstrates that Peak Lane experiences modest traffic volumes with a greater flow of movements northbound towards Fareham and the A27 in the AM (0800-0900) peak and southbound in the PM (1700-1800) peak. 85th percentile speeds along Peak Lane are also demonstrated as being significantly lower than the derestricted speed limit.

Wider Road Network

3.14 The A27 (1.4km directly to the north of the site access) runs west-east from Salisbury (Wiltshire) and Pevensey (East Sussex) across the south of England, travelling via Romsey, Fareham, Havant, Chichester, Worthing, Brighton, Lewes and Polegate. The A27 provides a connection to the M27, A3 and A259 amongst other strategic roads. Due to the proximity of the A27 to the site, development traffic on long-distance journeys will be predominantly travelling on strategic roads, avoiding congestion on the local residential roads.

3.15 The M27 is a 40km long running west-east from Cadnam to Portsmouth. Locally the M27 connects to the M275 into Portsmouth and the A3 towards Petersfield in the east. In the west it connects to the M3 towards Winchester and the M271 into Southampton.

Personal Injury Accident (PIA) Data

3.16 Personal Injury Accident (PIA) data) was purchased in 2019 from Hampshire Constabulary to consider the existing safety situation on the local road network for the most recent five-year period with regards to the location and severity of incidents (covering August 2013 to July 2018). A map demonstrating the location of incidents is provided in **Figure 2** with a summary of the incidents provided in **Table 3** and the full detailed report attached as **Appendix C**.

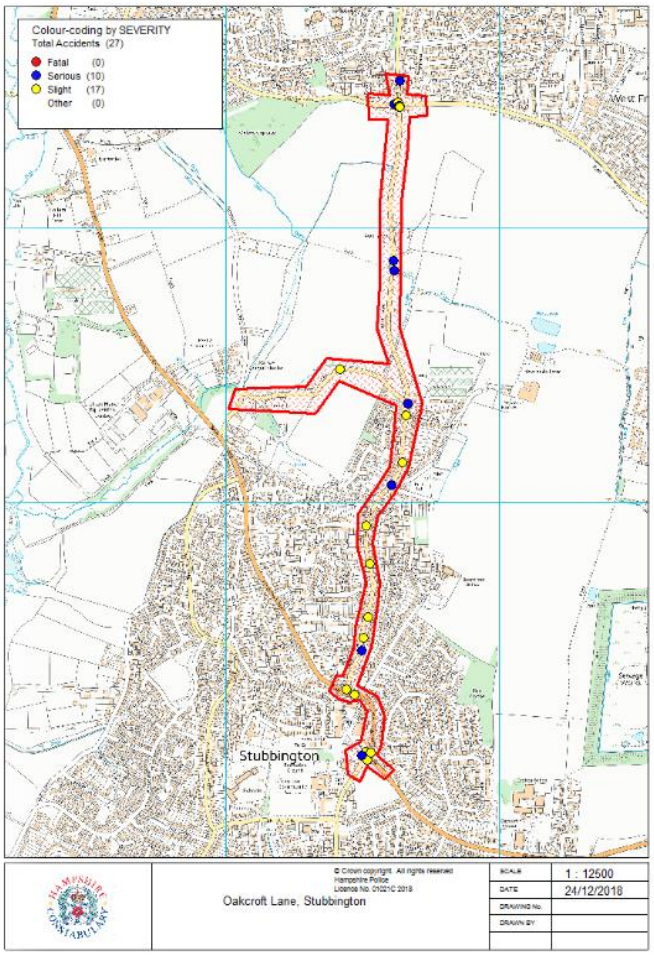

Figure 2: Summary of PIA Data in vicinity of site

Severity		Slight	Serious	Fatal
Accidents		17	10	0
Casualties		20	10	0
Number of Vehicles Involved		36	14	0
Weather Conditions	Dry	12	5	0
	Wet/Damp	5	4	0
Time of Day	Morning (00:01-12:00)	9	4	0
	Afternoon (12:01-17:00)	6	4	0
	Evening (17:01-00:00)	2	2	0

Table 3: Summary of Accident Data from Hampshire Constabulary

3.17 The data from Hampshire Constabulary confirmed there have been a total of 27 incidents both to the north and south of the site. There have only been three slight incidents located within 300m of the site and two serious incidents within 300m of the site. Figure 2 identifies a small cluster of 8 incidents at the Rowan Way/Peak Lane/Longfield Avenue Roundabout which is located approximately 900m north of the site access.

3.18 Five of these incidents were classified as slight in nature and three were classified as serious in nature. Four of the five slight incidents occurred during the morning period with the last slight incident occurring in the afternoon at 13:57 in December 2015. Of the three serious incidents at this location the first serious incident occurred at 05:46 on the morning in April 2014, which involved a car colliding with a cyclist. The second incident occurred at 14:10pm in July 2015, where a car collided with a motorcycle rider. The third serious incident occurred at 06:52 on the morning in June 2017. Upon a closer look of the incident data in the Hampshire Constabulary report, all of the aforementioned incidents were recorded as being due to driver error, as opposed to highway design.

3.19 A cluster of two incidents also occurred at the Titchfield Road/May's Lane/Gosport Road Roundabout located approximately 1.3km south of the site, both incidents were slight in nature and occurred in June 2017 at 07:15 and in October 2017 at 07:00. Both incidents involved cars failing to see a cyclist and a moped user respectively and were therefore caused by driver error rather than highway design.

3.20 A cluster of four incidents occurred at the Gosport Road/Stubbington Lane/Stubbington Green Roundabout approximately 1.6km south of the site. Across both roundabouts ten incidents occurred and given that all except one incident at these junctions were classified as 'slight', the PIA data does not indicate any key highway safety concerns at this point. The slight incidents occurred predominately in the afternoon timescale, with one slight incident occurring at 09:50 in May 2017. One severe incident was observed over the most recent 5-year period within the study area, this incident occurred at the Gosport Road/Stubbington Lane/Stubbington Green Roundabout in October 2017 at 14:33 and involved a car failing to see a cyclist. The cause of both the slight and serious incidents were therefore identified in the Hampshire Constabulary report as due to driver error, therefore not indicating any existing highway design feature as the cause.

3.21 As mentioned previously, it is noted that improvement works have been approved as part of the Stubbington Bypass application (ref. P/15/0718/CC) and construction work has commenced on the Bypass. The approved bypass will connect Titchfield Road in the north to Gosport Road to the south via a signalised junction with Peak Lane in the middle. As part of these works, there are planned improvements to both the Titchfield Road/May's Lane/Gosport Road Roundabout and the Gosport Road/Stubbington Lane/Stubbington Green Roundabout. Works are also proposed along the proposed bypass route to improve the existing conditions to make this route more attractive, such as widening the northern end of Titchfield Road to provide two lanes in each direction which will help enforce this as a more attractive route into Stubbington than via the A27/Peak Lane signalised junction to the east.

3.22 Furthermore, the bypass will run directly north of the site, allowing residents to connect onto the bypass at the Peak Lane/Stubbington Bypass Signalised Junction and thus reducing the number of vehicles and future users to travel via the Rowan Way/Peak Lane/Longfield Avenue Roundabout, therefore reducing the traffic flow at this roundabout.

3.23 The Stubbington Bypass scheme is designed to improve capacity and decrease traffic congestion through Stubbington Village Centre and to the north of the site, therefore reducing the potential for conflict at the aforementioned junctions and roundabouts (particularly Rowan Way/Peak Lane/Longfield Avenue Roundabout) by reducing traffic flow. Therefore, whilst HCC comments on the site's previous planning application requested the potential for highway safety mitigation at this roundabout, this is not considered necessary when assessed alongside the implications of the Stubbington Bypass. It is also considered that if there were any fundamental concerns with the safe operation of any of these junctions then improvements would necessarily have been proposed through the Stubbington Bypass works. Improvements are proposed at the Titchfield Road/May's Lane/Gosport Road Roundabout and Gosport Road/Stubbington Lane/Stubbington Green Roundabouts, which were clearly deemed necessary. No works are therefore proposed at the Rowan Way/Peak Lane/Longfield Avenue Roundabout given works on the Bypass have begun. This is confirmed within the Stubbington Bypass TA page 89 which states 'this junction is forecast to experience a notable reduction in traffic flows as a result of the scheme and therefore the number of accidents would be expected to reduce accordingly.

3.24 To support this RTA, updated data from Hampshire Constabulary could not be obtained due to COVID-19 priorities for Hampshire Constabulary, however the data included in **Appendix C** and analysed above remains the latest available data to the design team. To assess if there have been any significant changes the data outlined in **Figure 2** and **Table 3** crashmap.co.uk has been reviewed for their most recent 5-year period which is from 2014-2018. Crashmap data from the key junctions referenced above are provided in **Figures 3 – 5** where a yellow marker highlights a slight incident, red a serious incident and black a fatal incident.

Figure 3: Crashmap: Rowan Way/Peak Lane/Longfield Avenue Roundabout

Figure 4: Crashmap: May's Lane/B3334 Roundabout

Figure 5: Crashmap: Stubbington Green/B3334/Stubbington Lane Roundabout

3.25 The crashmap data review confirms the same assumptions as the Hampshire Constabulary review. Therefore, the distribution, frequency and number of incidents over the period analysed does not indicate any existing safety issues.

4. SITE ACCESSIBILITY

4.1 The proposed development site sits approximately 1km north of Stubbington Village Centre (measured from the site access) and 3.7km south west of Fareham Town Centre.

4.2 Services within Stubbington Village Centre include convenience stores, eateries, places of worship, a veterinary practice, a library, community centre, banks and a number of retail outlets, all situated on and around Stubbington Green, and are all within a circa 15-minute walk of the site. Also located within Stubbington Village Centre is the Stubbington Recreation Ground providing leisure facilities. The proposed site location with reference to Stubbington Village Centre is identified in **Figure 6**, with the site location identified in red and the village centre in yellow. The two pedestrian routes are demonstrated in yellow whilst the cycle route is demonstrated in blue.

Figure 6: Site Location in Context with Stubbington Village Centre

4.3 Further afield, Fareham Town Centre hosts a greater number of services and amenities, including large superstores and Fareham Shopping Centre, as well as Fareham Railway Station which provides access to other destinations such as Southampton and Portsmouth City Centres.

4.4 Approximate distances to local amenities measured from the centre of the site using the most appropriate route (either onto Marks Tey Road or Peak Lane for pedestrians or using Oakcroft Lane/Peak Lane for cyclists) are summarised in **Table 4**. Walking times are based on the speed of 80m per minute and cycling speed based on 240m per minute.

Amenity	Walking Distance	Walking Time	Cycling Distance	Cycling Time
Sumar Close Bus Stop (northbound)	560m	7	390m	2
Sumar Close Bus Stop (southbound)	680m	9	520m	2
Infant School (Crofton Anne Dale Infant School)	1.8km	23	2.4km	10
Junior School (Crofton Anne Dale Junior School)	1.8km	23	2.4km	10
Secondary School (Crofton School)	2.5km	31	2.6km	11
Stubbington Village Centre	1.2km	15	1.3km	5
Library (Stubbington Library)	1.8km	23	1.9km	8
Community Centre (Crofton Community Association)	1.8km	23	1.9km	8
Recreation Ground (Stubbington Recreation Ground)	1.8km	23	1.9km	8
Doctors Surgery (The Stubbington Medical Practice)	1.3km	16	1.4km	6
Dental Practice (Stubbington Green Dental Practice)	1.2km	15	1.3km	5
Pharmacy (Village Pharmacy)	1.3km	16	1.4km	6
Place of Worship (St Edmund's (Crofton Old Church))	690m	9	1.7km	7

Table 4: Distance to Local Amenities

4.5 It is evident from **Table 4** that there are a number of local facilities within close proximity of the proposed development site. The Chartered Institution of Highways and Transportation's (CIHT) 'Planning for Walking' (April 2015) document identifies that the average length of pedestrian journeys is now 1.37km (page 6). Reviewing the amenities demonstrated within **Table 4** it is evident that there are several key amenities within this distance. This therefore helps to ensure the development can operate sustainably by allowing future residents to travel sustainably.

Pedestrian Network

4.6 The local footway network around the site benefits from a gentle topography and footways of sufficient width. Through the site's previous planning application HCC raised comments regarding the suitability of the walking routes, particularly to the village centre and catchment schools. Therefore, these key routes will be the specific focus of the review of the pedestrian network.

4.7 To access the village centre to the south pedestrians can either exit the site onto Peak Lane/May's Lane through the main site access or utilise the pedestrian link onto Marks Tey Road and St Mary's Road to the south which connects with May's Lane.

Peak Lane

4.8 Peak Lane is flanked by a c.2m wide shared footway/cycleway on the eastern side of the carriageway which is separated from the main carriageway by a c. 3m wide grass verge. This footway/cycleway runs for approximately 1.1km from Peak Lane/Oakcroft Lane/May's Lane junction in the south to the Rowan Way/Peak Lane/Longfield Avenue Roundabout in the north. Pedestrian conditions on Peak Lane are demonstrated in **Photographs 4** and **5**.

Photograph 4: Pedestrian Conditions on Peak Lane

Photograph 5: Pedestrian Conditions on Peak Lane

4.9 The shared foot/cycleway features 'shared pedal cycle and pedestrian route' signposts, as demonstrated in **Photograph 5.**

4.10 Dropped kerbs and tactile paving are provided at the Peak Lane/Oakcroft Lane/May's Lane priority junction as well as a shared dropped kerb pedestrian/cycle refuge island crossing located circa 50m north of this priority junction, as demonstrated in **Photographs 6** and **7**.

Photograph 6: Crossing over Oakcroft Lane

Photograph 7: Crossing on Peak Lane

4.11 To the south of the Peak Lane/Oakcroft Lane/May's Lane priority junction the shared footway/cycleway ceases and becomes an on-road route along May's Lane.

4.12 To the north, the shared footway/cycleway continues along the eastern side of Peak Lane towards Fareham.

May's Lane

4.13 May's Lane is flanked by on-road cycle lanes in both directions circa 1m in width which are also demarcated by a red surfacing and on-road lining. The routes are signposted along May's Lane which is also supported by c. 2m wide footways on both sides which experience little to no gradient change and is maintained to a good standard. **Photographs 8** and **9** highlight conditions on May's Lane.

Photograph 8: Cyclist Conditions on May's Lane

Photograph 9: Pedestrian Conditions on May's Lane

4.14 Opposite the Stroud Green Lane/May's Lane junction there is an entrance to a footpath which connects with Spartan Close to the west. A concrete bollard is in place to restrict motor vehicles from using the route. This route demonstrated in **Photographs 10** and **11** may be used by future residents accessing from the pedestrian link onto Marks Tey Road and is considered an attractive route for potential site users given it is well overlooked by neighbouring properties and is of a bound surface.

Photograph 10: Footpath off May's Lane

Photograph 11: Footpath off May's Lane

4.15 The May's Lane footways continue to flank both sides of the carriageway and features dropped kerbs at priority T-junctions such as the St Mary's Road/May's Lane junction, as shown in **Photograph 12**. **Photograph 13** demonstrates the general arrangement for approximately 650m of May's Lane from the Oakcroft Lane/May's Lane priority T-junction in the north to c.25m south of the Windemere Avenue/May's Lane priority T-junction in the south. The end of the on-road cycle lanes is demonstrated in **Photograph 14**.

4.16 The Green Road/May's Lane priority T-junction corners are completely tarmacked, as demonstrated in **Photograph 15**, offering a large area for pedestrians to cross Green Road safely.

Photograph 12: St Mary's Road/May's Lane junction

Photograph 13: Conditions on May's Lane

Photograph 14: End of On-road Cycle Route

Photograph 15: Green Road/May's Lane Junction

4.17 Continuing south on May's Lane, south of the Green Road/May's Lane priority T-junction footways vary in width up to c.3m wide. Footways are still subject to little or no gradient change and are maintained to a high level of condition. The Croft/May's Lane priority T-junction conditions are demonstrated in **Photograph 16** and show a dropped kerb arrangement in place to aid safe pedestrian crossing. Similar conditions are present at the Ditton Close May's Lane priority T-junction, as shown in **Photograph 17**.

Photograph 16: The Croft/May's Lane junction

Photograph 17: Ditton Close/May's Lane Junction

4.18 Approximately 130m north of the Titchfield Road/May's Lane/Gosport Road Roundabout is a pedestrian refuge island with dropped kerbs and tactile paving (**Photograph 18**). The pedestrian refuge island is likely to be utilised by future residents accessing Gosport Road and Crofton Secondary School. May's Lane pedestrian infrastructure conditions continue towards Stubbington Village Centre with c.2m wide footways in good condition as demonstrated in **Photograph 19**.

Photograph 18: Pedestrian Refuge Island Crossing 150m north of Titchfield Road/May's Lane/Gosport Road Roundabout

Photograph 19: Conditions on May's Lane

4.19 The May's Lane arm of the Titchfield Road/May's Lane/Gosport Road Roundabout features a pedestrian refuge island crossing with tactile paving (**Photograph 20**). Similarly, to the pedestrian refuge island located c.130m north of the roundabout, residents are likely to utilise the crossing as a safer point to cross May's lane, when accessing Gosport Road and destinations towards the east.

Photograph 20: Pedestrian Refuge Island Crossing at Titchfield Road/May's Lane/Gosport Road Roundabout

4.20 To access Stubbington Village Centre from May's Lane, pedestrians can either cross at the pedestrian refuge crossing to the west on Titchfield Road (**Photograph 21**) or use the signalised crossing to the east on Gosport Road (**Photograph 22**).

Photograph 21: Pedestrian Refuge Island Crossing on Titchfield Road

Photograph 22: Signalised Crossing on Gosport Road

4.21 Once in the village centre there are further examples of pedestrian crossing locations and the footways again experience little to no change in gradient, are well maintained are circa 2.0-2.5m wide. Pedestrian conditions in the village centre are demonstrated in **Photographs 23** and **24**.

Photograph 23: Conditions in Village centre

Photograph 24: Conditions in Village Centre

Marks Tey Road

4.22 Local footpath 509 runs adjacent to the southern site boundary and the development proposes a connection on to this footpath to allow access to the site via Marks Tey Road. This link provides a shorter route for those travelling south towards the village centre or local schools.

4.23 Marks Tey Road is flanked by a c.1.5m wide footway on the northern edge of the carriageway between the beginning of footpath 509 and Newton Close. From Newton Close, which is supported by a c.2m wide footway on the western edge of the carriageway there is a pedestrian link onto St Mary's Road.

4.24 Alternatively, Marks Tey Road continues west from footpath 509 with c.2m wide footways on both sides and forms a priority junction onto Titchfield Road where there is a signalised junction with a 'walk with' dropped kerb crossing point to allow pedestrians to continue travelling on the western side of Titchfield Road. Conditions around Marks Tey Road are demonstrated in **Photographs 25 – 28**.

Photograph 25: Footpath 209

Photograph 26: Marks Tey Road Conditions

Photograph 27: Newton Close

Photograph 28: Pedestrian Link onto St Mary's Road

St Mary's Road

4.25 St Mary's Road is residential in nature and flanked by c.2m wide footways on both sides of the carriageway which are subject to gentle gradients, reasonable conditions and street lighting. Approximately 170m east of the Newton Close/St Mary's Road pedestrian link, St Mary's Road forms a priority junction with May's Lane with dropped kerbs to aid pedestrians crossing. Conditions on St Mary's Road to the east of the Newton Close footpath are highlighted in **Photographs 29** and **30**.

Photograph 29: Conditions on St Mary's Road (East)

Photograph 30: St Mary's Road/May's Lane Junction

4.26 To the west, St Mary's Road connects with Titchfield Road via a priority junction. Again c.2m wide footways are provided on both sides of the carriageway with sections separates from the carriageway by c.1m wide grass verges. Footways are well lit by streetlamps and experience no change in gradient. Conditions on the western side of St Mary's Road are provided in **Photographs 31** and **32**.

Photograph 31: Conditions on St Mary's Road (West)

Photograph 32: Conditions on St Mary's Road (West)

4.27 In addition to the routes reviewed above, to access the catchment Infant and Junior Schools a number of additional roads are required depending on the route which could include:

- Marks Tey Road (West), Titchfield Road and Cuckoo Lane
- Titchfield Road, Canterbury Road, Deal Close, Rectory Close, Cutlers Lane and Vicarage Lane
- Stubbington Green, Park Lane, Bells Lane and Cuckoo Lane (south)

Only routes with suitable pedestrian infrastructure have been included.

Titchfield Road and Cuckoo Lane

4.28 For residents exiting the site via the southern footpath link to access the school they could travel west along the pedestrian infrastructure on Marks Tey Road (**Photograph 33**) onto Titchfield Road and cross at the existing dropped kerb crossing at the signalised junction with Cuckoo Lane (**Photograph 34**) and travel south along Cuckoo Lane.

Photograph 33: Conditions on Marks Tey Road (West)

Photograph 34: Crossing at Tichfield Road/Cuckoo Lane

4.29 Cuckoo Lane runs north to south and provides pedestrian and vehicular access to the Crofton Anne Dale Infant and Junior Schools. Cuckoo Lane is supported by c.2m wide footway on both sides of the carriageway which is also separated by a c.1m wide grass verge to help enhance the pedestrian environment. Regular street lighting is present and the change in gradient is small. Conditions along Cuckloo Lane and at the site access are provided in **Photographs 35 - 38**.

Photograph 35: Conditions on Cuckoo Lane

Photograph 36: Conditions on Cuckoo Lane

Photograph 37: Conditions on Cuckoo Lane

Photograph 38: School Access onto Cuckoo Lane

Titchfield Road, Canterbury Road, Deal Close, Rectory Close, Cutlers Lane and Vicarage Lane

4.30 An alternative route travels south along Titchfield Road. A signalised crossing supported by dropped kerbs and tactile paving is provided c. 15m north of the Titchfield Road/St Mary's Road priority junction (**Photograph 39**). This crossing may be used by residents to travel on the western side of Titchfield Road. Titchfield Road is flanked by footways that vary in width but remain a minimum of circa 2m and is supported by regular lighting columns. Conditions along this section of Titchfield Road are demonstrated in **Photograph 40**.

Photograph 39: Signalised Crossing on Titchfield Road north of St Mary's Road

Photograph 40: Conditions on Titchfield Road (south of St Mary's Road)

4.31 Approximately 350m south of the Titchfield Road signalised crossing is the Titchfield Road/Canterbury Road priority T-junction. Canterbury Road and Deal Close are flanked on both sides of the carriageway by c.1.5m wide footways with a c.1m wide grass verge. Footways on Canterbury Road and Deal Close are well maintained, well-lit by streetlamps and experience no change in gradient, as demonstrated in **Photographs 41** and **42**. There is a pedestrian link, as shown in **Photograph 43**, between Deal Close and Rectory Close to continue travelling towards the school. The pedestrian link is circa 1.5m wide and is well overlooked by adjacent properties. A c. 1.5m wide footway flanks the northern side of Rectory Close and connects pedestrians onto Cutlers Lane (**Photograph 44**).

Photograph 41: Conditions on Canterbury Road

Photograph 42: Conditions on Deal Close

Photograph 43: Pedestrian Link from Deal Close

Photograph 44: Conditions on Rectory Close

4.32 From Rectory Close, pedestrians would cross Cutlers Lane, which is supported by c. 2m wide footways on both sides, 1m grass verges and regular street lighting (see **Photograph 45**) to access Vicarage Lane. A dropped kerb crossing is provided on Cutlers Lane (see **Photograph 46**).

Photograph 45: Conditions on Cutlers Lane

Photograph 46: Crossing on Cutlers Lane

4.33 Once onto Vicarage Lane pedestrians can continue south towards Park Lane which provides a rear access to the school. Vicarage Lane features a c. 1.5m wide footway on the western side of the carriageway. The footway ends adjacent to Glamis Court on Vicarage Road for a short distance of 90m which acts a shared surface arrangement due to anticipated low vehicle flows. Vicarage Lane continues south and connects onto the Park Lane footway/cycleway. Conditions along this stretch are provided in **Photographs 47 – 50.**

Photograph 47: Conditions on Vicarage Lane

Photograph 48: Conditions on Vicarage Lane

Photograph 49: Conditions on Park Lane

Photograph 50: Rear access from Park Lane

Stubbington Green, Park Lane, Bells Lane and Cuckoo Lane (south)

4.34 A third alternative route travels through the village centre utilising Stubbington Green, Park Lane and Cuckloo Lane. Pedestrians would cross Gosport Road at the signalised crossing identified in **Photograph 22** and travel through the village centre along Stubbington Green. As previously highlighted, the village centre is well equipped for pedestrian movements including plentiful crossing points, wide footways and adequate street lighting.

4.35 Pedestrians would use the zebra crossing on Stubbington Green (**Photograph 24**) to access Park Lane. Park Lane is supported by a pedestrian footway on the northern carriageway or a footpath which is separated from the carriageway by a brick wall on the southern side. Park Lane continues west as a shared footway/cycleway. Once on Park Lane, residents could access the school through the rear entrance off Park Lane or continue south and connect onto Bells Lane and then Cuckoo Lane.

4.36 Bells Lane is supported by footways on both side of the carriageway, with the northern side separated from the main carriageway by a grass verge. The footways measure circa 2.0m in width are of a gentle gradient and have regular street lighting. The footway on Bells Lane connects directly onto the pedestrian infrastructure on Cuckoo Lane where the pedestrian environment is similar with footways on both sides, circa 2m wide, grass verges separating the footway from the main carriageway, gentle gradients and street lighting. Conditions along this route are demonstrated in **Photographs 51 – 54**.

Photograph 51: Conditions on Park Lane near Stubbington Village Centre

Photograph 52: Conditions on Park Lane (south of rear access)

Photograph 53: Conditions on Bells Lane

Photograph 54: Conditions on Cuckoo Lane (South)

4.37 To access the catchment secondary school, Crofton School, the additional stretch of highway utilised would include Gosport Road. To access Gosport Road pedestrians could utilise Gosport Road or Stubbington Green (the latter of which has been assessed previously and is provided with pedestrian crossings with a pedestrian refuge crossing on Stubbington Green.)

4.38 From the Titchfield Road/May's Lane/Gosport Road Roundabout, pedestrians would continue on the north eastern side of Gosport Road to travel south onto the Gosport Road/Stubbington Lane/Stubbington Green Roundabout. This section of Gosport Road is provided with footways on both sides of the carriageway circa, 2m in width with gentle gradients and regular street lighting. There is a small priority junction with Burnt House Lane which requires crossing, however, there are dropped kerbs in the vicinity to aid crossings.

4.39 Alternatively, pedestrians could cross at the signalised crossing to the east of the Titchfield Road/May's Lane/Gosport Road Roundabout (**Photograph 22**), travel on the southern/western side of the carriageway and re-cross Gosport Road using the signalised crossing on the Gosport Road north arm of the Gosport Road/Stubbington Lane/Stubbington Green Roundabout to continue on the northern side of Gosport Road to access Crofton School. Conditions along this stretch of Gosport Road are provided in **Photographs 55 – 57**.

Photograph 55: Conditions on Gosport Road

Photograph 56: Conditions on Gosport Road

Photograph 57: Signalised Crossing Proximity of Stubbington Green Roundabout

4.40 From the Gosport Road/Stubbington Lane/Stubbington Green Roundabout, Gosport Road continues east for 700m to the Crofton School and continues east until it culminates at the Gosport Road/Newgate Lane/Rowner Road/Broom Way Roundabout. The 700m section which connects with the school is flanked with continuous pedestrian footways on both sides of the carriageway which vary in width between c. 1.5m-2m with parts of both sides also separated from the main carriageway by a grass verge. Street lighting is also present along this stretch, provided at regular intervals. Travelling on the northern side of the carriageway (most convenient for site users), there is a single crossing at the Harold Road/Gosport Road junction which is equipped with dropped kerbs and tactile paving. The existing route towards the catchment secondary school is therefore considered acceptable. Conditions long Gosport Road are provided in **Photographs 58** and **59.**

Photograph 58: Conditions on Gosport Road (east of roundabout)

Photograph 59: Conditions on Gosport Road (east of roundabout)

4.41 The above review to the Crofton Anne Dale Infant and Junior Schools, Crofton Secondary School and Stubbington Village Centre confirms that the pedestrian routes are safe, attractive and convenient. Routes are provided with footways of sufficient widths, gentle gradients, verges to separate from the main carriageway in some instances, regular street lighting, being well overlooked for the majority and a number and variety of crossing points. Given that there are a number of routes to access these facilities it considered that the existing network is more than adequate to serve the proposed development.

4.42 Through the previous application, HCC provided comments on the route to school and concern of vehicles parking on Bells Lane and the potential requirement for mitigation measures. Bells Lane is subject to parking restrictions for its majority, with double yellow lines on both the northern and southern sides of the carriageway from Solent Close to Cuckoo Lane. On the southern side, the double yellow lines continue to Angelus Close. Measures are therefore already in place to discourage parking along Bells Lane.

4.43 In addition, HCC's previous comments raise concern over the number of families driving to the schools. HCC's Schools, Colleges & Workplaces Travel Planning Manager has been contacted and has provided modal split data for the most recent academic year for Crofton Anne Dale Infant and Junior Schools. The survey included 247 response for the infant school and 381 responses for the junior school. A summary of the data and the calculated average is provided in Table 5.

Mode of Transport	Crofton Anne Dale Infant Numbers	Crofton Anne Dale Infant Percentage	Crofton Anne Dale Junior Numbers	Crofton Anne Dale Junior Percentages	Average Percentage
Walk	125	50.6%	176	46.2%	48.4%
Cycle	1	0.4%	22	5.8%	3.1%
Bus/Taxi	1	0.4%	3	0.8%	0.6%
Car Alone	119	48.2%	147	38.6%	43.4%
Car Share	1	0.4%	33	8.7%	4.5%
Total	247	100%	381	100%	100%

Table 5: Crofton Anne Dale Infant and Junior School Method of Travel to School (March 2019)

4.44 The results of the modal splits suggest that the majority of pupil's travel to/from school via walking, with 43.4% of pupils arriving by car alone. The above assessments demonstrate that the walking route to the schools is safe, attractive and convenient and therefore walking can be promoted as the main travel mode. There are also of course on-going travel planning measures by these schools to reduce vehicle trips to the school and manage legally enforceable inappropriate parking by school parents.

4.45 The lack of pedestrian crossing facilities on May's Lane was also raised, however the above review confirms that the existing routes and infrastructure are considered sufficient with a number of crossing points provided on May's Lane to allow access to both sides of the carriageway, particularly close to the Tichfield Road/May's Lane/Gosport Road Roundabout which connects with the village centre where two crossings are provided within c.120m if each other. No further crossings are considered necessary or proposed to support this application beyond the immediate vicinity of the site access which will assist with connections to the local bus stops.

Public Rights of Way Network

4.46 The Public Rights of Way (PROW) network has also been considered as part of this RTA and is demonstrated in **Figure 7** with the site location highlighted in red.

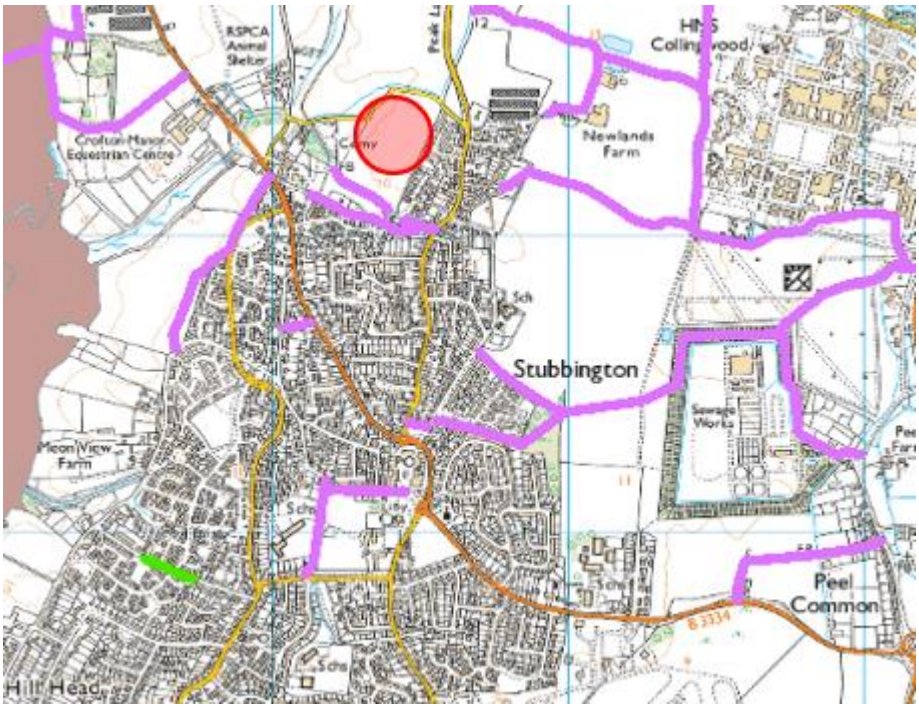

Figure 7: Local PROW Network

4.47 **Figure 7** demonstrates the site is well located being within close proximity of the local PROW network. Of particular importance, this demonstrated Footpath 509 with connects onto Marks Tey Road, footpath 66 which connects onto May's Lane from Marks Tey Road, footpath 61 from Vicarage Close onto Peak Lane and footpath 60 which is Peak Lane.

Cycle Network

4.48 The site is also within close proximity of National Cycle Network Route 236 which runs from Cosham to Portchester and Southampton to Lyndhurst. This route provides a high level of infrastructure connecting future site users to the settlement boundaries of both Fareham in the north and Stubbington in the south. The NCN routes in the site vicinity are demonstrated in **Figure 8**.

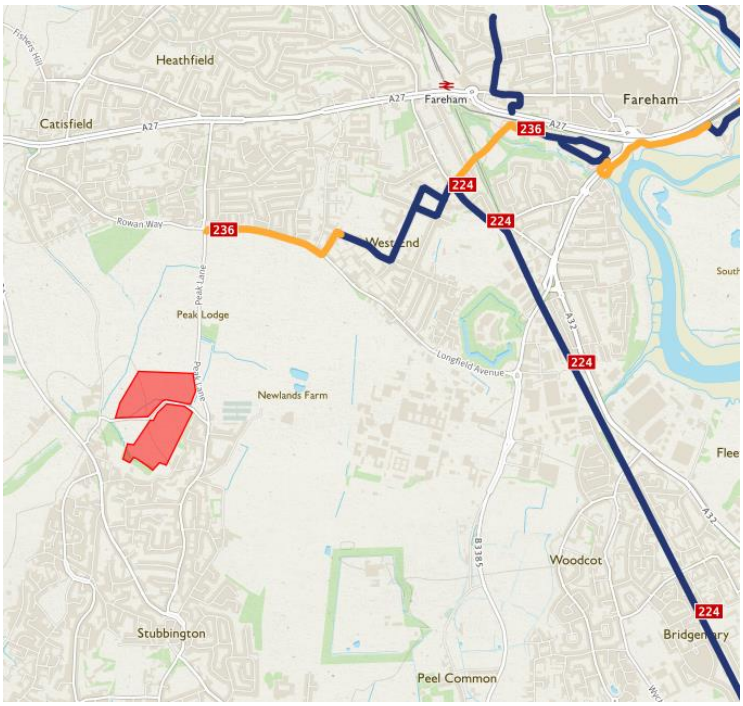

Figure 8: NCN Cycle Routes

4.49 In addition, FBC's Cycle Map demonstrates the local cycle routes and identifies the off-road track and on-road cycle lane along May's Lane/Peak Lane (in blue) as well the route via Oakcroft Lane and Burnt House Lane which are considered as a 'link road convenient for cyclists' (in yellow). The map with the site location identified is demonstrated in **Figure 9**.

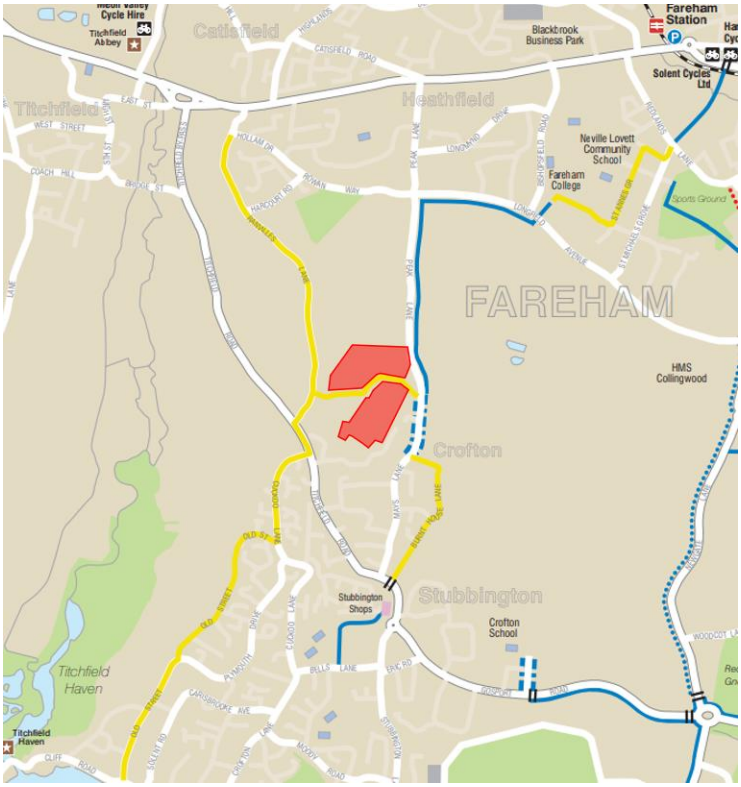

Figure 9: FBC Cycle Map

4.50 This local cycle map clearly highlights that the site is well placed to support cycling being located directly onto the local cycle network. This includes Oakcroft Lane (which the site crosses) and Peak Lane which serves the sites access. Using these key routes, the site is seen to connect with Stubbington Village Centre to the south as well as Fareham Railway Station to the north. Given that FBC have confirmed the local routes are considered acceptable no further review into the suitability of existing cycle infrastructure has been completed.

Bus Services

4.51 The closest bus stops to the site are located on May's Lane, circa 560m to the east for the northbound bus stop (via Peak Lane) and 680m for the southbound bus stop (via Peak Lane) (measured from the centre of the site). Both bus stops are therefore within a 10-minute walk from the centre of the site. Both bus stops are accessible using the existing pedestrian infrastructure on May's Lane with a new dropped kerb and refuge island crossing located close to the proposed site access to facilitate access onto the eastern side of Peak Lane/May's Lane and an existing dropped kerb and refuge island crossing located circa 50m to the north of the May's Lane/Oakcroft Lane junction. The bus stops are therefore considered accessible to serve the proposed development following the implementation of a new crossing point and using the existing infrastructure.

4.52 These bus stops are provided with a single flag and pole as well as timetable information, as demonstrated in **Photographs 60** and **61**. A summary of the local bus services is provided in **Table 6**.

Photograph 60: Northbound Bus Stop

Photograph 61: Southbound Bus Stop

Bus Number	Bus Stop	Route	Operator	Frequency		
				Mon-Fri	Sat	Sun
X5	May's Lane	Southampton – Warsash – Fareham - Gosport	First Buses	Hourly	Hourly	Hourly
21	Stubbington Village	Fareham – Peel Common – Stubbington – Hill Head	First Buses	Every 2 hours (8:45-18:55)	Every 2 hours (8:45-13:10)	No Service
193*	May's Lane	Gosport – Lee on Solent – Stubbington – Itchen College	Xela Bus	1 service a day (08:13)	No Service	No Service
620*	Stubbington Village	Stubbington – Barton Peveril College	Bluestar	1 service a day (14:25)	No Service	No Service

Table 6: Local Bus Services
*Education Only Service

4.53 Additional bus services are available within Stubbington Village Centre from the 'Stubbington Village' bus stop. This stop is located a c. 16-minute walk via the pedestrian access onto May's Lane or a 6-minute cycle via Oakcroft Lane (taken from the centre of the site). The pedestrian and cyclist infrastructure previously reviewed are considered acceptable to promote bus stops in this location. This stop which serves all directions is provided with a layby, sheltered seating and timetable information.

4.54 Furthermore, an additional 12 bus services are available from Fareham Bus Station with routes towards Portsmouth, Gosport, Wickham, Whiteley and Southampton.

4.55 Through the previous planning application at this site HCC highways requested contacted was made with First Bus regarding 21/21A service to ensure the bus service continued. Such contact was made and is attached as **Appendix D** for reference, however, this confirmed that the service is a Hampshire Tendered service and is run to their specification and funded by HCC and thus confirmation should be sought from HCC. Contact was then made with HCC's Passenger Transport Team who confirmed there is no intention to withdraw funding for their service at the present time or near future but was unable to give a time frame for how long funding may continue. This correspondence is also attached as **Appendix D**. It is worth highlighting that the X5 Solent Ranger service is within closer proximity to the development site and is therefore likely to be a more readily accessible service. It is not the responsibility or the ability of this proposed development to ensure the bus service continues, but greater potential patronage resulting from this development can only be positive in this regard.

4.56 HCC also requested measures to upgrade the bus stops on May's Lane be explored due to the distance of the bus stops. Any upgrade measures would not alter the distance of the stops from the site to encourage the use of public transport services as suggested in HCC's previous comments. Mitigation measures are not considered necessary at the bus stops, with the decision instead made to improve the walking routes towards these stops as part of this application.

Railway Services

4.57 Fareham Railway Station is located approximately 3.7km north of the proposed site and is accessible via a 10-minute journey on the aforementioned Solent Ranger X5 bus service. The railway station is equipped with 266 sheltered and secure bicycle spaces, a 154-space car park, a manned ticket office Monday-Sunday, customer help points, CCTV, toilets and waiting rooms.

4.58 Fareham Railway Station provides direct access to destinations including Portsmouth Harbour (26-minute journey), London Waterloo (2-hour journey), Southampton Central (35-minute journey), Brighton (1 hour 30-minute journey) and Cardiff Central (3-hour journey).

4.59 In addition, Portsmouth Harbour Railway Station is located approximately 8.5km south/east of the site and is accessible via a 45-minute journey on the aforementioned Solent Ranger X5 bus service. The station provides direct services to destinations including Southampton Central (45-minute journey), Brighton (1 hour 22-minute journey), London Waterloo (1 hour 40-minute journey), London Victoria (2 hour journey), and Cardiff Central (3 hours 20-minute journey). The station benefits from similar facilities to those provided at Fareham Railway Station, including 38 cycle parking spaces.

Summary of Site Accessibility

4.60 The review of site accessibility clearly demonstrates that the proposed development is well located to support a sustainable development. There is a good pedestrian and cycle network to access key local amenities including Stubbington Village Centre and the local schools. A full review of the pedestrian and cyclist infrastructure towards these facilities has been completed which confirms that the existing infrastructure is sufficient to provide access given this includes wide footways, adequate crossing facilities, shallow gradients and regular street lighting.

4.61 In addition to the pedestrian and cycle infrastructure, the site is also well supported by public transport opportunities with bus stops located in close proximity of the site which provide access to key travel destinations including Fareham, Portsmouth and Gosport. Fareham Railway Station is also located 3.7km to the north, accessible via 10-minute bus journey. From here, further afield destinations including London, Brighton and Cardiff Central are accessible.

4.62 The site is therefore well located to support sustainable travel.

5. PROPOSED DEVELOPMENT

5.1 The proposed development would consist of 209 residential dwellings with a mix of 40% affordable housing and 60% private housing. A summary of the accommodation schedule in provided in **Table 7**, whilst the proposed site layout is attached as **Appendix A**.

Size of Dwelling	Affordable Unit Numbers	Private Unit Numbers	Total
1 Bedroom	4	0	4
2 Bedroom	42	29	71
3 Bedroom	32	78	110
4 Bedroom	4	20	24
TOTAL	82	127	209

Table 7: Accommodation Schedule

Access Arrangement

5.2 The site would be served by a single vehicular access point onto Peak Lane (the principle of which was agreed through pre-application discussions). As part of the development proposals, a new road will be constructed between the access to the site and Peak Lane which is demonstrated in the site layout attached as **Appendix A**.

5.3 The type of access required has been established using the likely trip generation for the site and an Automated Traffic Count (ATC) survey undertaken along Peak Lane in the vicinity of the proposed access in October 2018. The recorded traffic flows demonstrated from this survey are shown in **Table 2**, and are attached as **Appendix B**.

5.4 The survey results confirmed higher northbound flows in the AM (0800-0900) peak traveling towards Fareham and the A27/M27 with the reverse demonstrated in the PM (1700-1800) peak. The distribution of traffic from the proposed access is therefore expected to follow these observed travel trends, as demonstrated within **Section 6** of this RTA.

5.5 The current 5-day 24-hour average daily volume of traffic on Peak Lane is marginally over the 13,000 major arm thresholds stated in CD123 for the requirement of a right turn lane (13,062). Given this, the strategic nature of Peak Lane and the trip generation from the proposed site, a right turn lane access is required for access in this location.

5.6 The position of the access has been carefully considered in order to ensure that a right turn lane of appropriate geometries can be accommodated given the proximity of the Stubbington Bypass to the north and land constraints to the south.

5.7 The right turn lane will be provided to sufficient geometries in line with the CD123 standards and the recorded speeds and vehicle flows shown in **Appendix B**. The right turn lane will be provided to 3.5m in width (para 6.10 of CD123) with a deceleration length of 55m, inclusive of a 15m taper length, and a 10m turning length. Minimum of 3.5m wide through lane widths are maintained both northbound and southbound on Peak Lane at the ghost island right turn lane to allow the continuous flow of vehicles along this strategic route as requested by HCC highway officers during pre-application discussions and in accordance with paragraph 6.8 of CD123. .

5.8 The bellmouth access itself will be supported by a 6m wide access road with 10m corner radii. The proposed access arrangements ensure that larger service and emergency vehicles can access and egress the site effectively whilst being able to pass vehicles concurrently on the internal access road.

5.9 Additionally, at the request of HCC highways officers a pantechnicon construction vehicle has also been demonstrated as safely accessing and egressing the site. The proposed access arrangements have been designed in accordance with CD123 standards, the recorded speeds along the site frontage and through extensive pre-application discussions with HCC highways officers.

5.10 From the previous application the access now has single lane entry and exit which is considered suitable to serve the reduced scale of development. Swept path analysis still demonstrates that this amendment can accommodate a vehicle waiting at the access whilst larger vehicles access the site. The proposed access arrangements are demonstrated in **Appendix H** with vehicle tracking are included as **Appendix I**.

5.11 Visibility splays onto Peak Lane have been demonstrated to distances of 2.4m x 132m in the primary direction and 2.4m x 124m in the secondary direction in accordance with the recorded 85th percentile speeds of 46.4mph northbound and 44.8mph southbound (see **Appendix J**). These visibility splays have been calculated using HCC's TG3 Technical Guidance Note and sight stopping distance calculator. The splays are demonstrated as achievable within land controlled by the application, public highway or proposed public highway following the implementation of the Peak Lane/Stubbington Bypass Signalised Junction.

5.12 It is noted that HCC requested visibility splays to be provided to an x-distance of 4.5m. The proposed access is for residential use only and will not provide access for larger HGV traffic and the greatest size vehicles entering the site will be servicing vehicles which will visit the site infrequently once a week. Although the access will provide a potential route through to Peak Lane from Oakcroft Lane a 7-day ATC survey undertaken in October 2018, indicates that HGV's do not use this route with 99% of traffic using Oakcroft Lane falling into BIN classifications 1 and 2 relating to motorcycle and car traffic, as demonstrated within **Appendix B**.

5.13 This data is likely reflective of the nature of Oakcroft Lane as a rural unlit and narrow route therefore making it an unattractive route for larger vehicles. HGV's are therefore unlikely to use the minor arm of the access subsequently reducing the need for a greater x-distance. HCC raised no concerns with the 2.4m in the previous planning application on this site where access was assessed and for a larger scale development.

5.14 Once constructed the Stubbington Bypass and its associated signalised junction between Peak Lane and the Bypass will be located approximately 115m north of the proposed site access location. It is reasonable to expect that the 85th percentile vehicle speeds on the major arm will be reduced following the implementation of this junction as vehicles approaching the junction from the south will slow and vehicles travelling southbound on Peak Lane from the junction will either have slowed at the junction or have stopped altogether at the signals. When compared to the recorded 85th percentile speeds and based on the existing highway layout speeds are likely to be higher than the future year scenario given that vehicles have a direct fairly straight route from the Rowan Way/Peak Lane/Longfield Avenue Roundabout south into Stubbington Village. For the reasons outlined above a 2.4m x-distance is considered appropriate for a development and access of this nature in line with CD 123 guidance.

5.15 These splays have been demonstrated as achievable and contained wholly within the extent of the highway as demonstrated in **Appendix J**.

5.16 A Stage 1 Road Safety Audit (RSA) has been undertaken as part of this application which has raised 8 comments against the design. A number of the comments reference items which will be reviewed at the detailed design stage. Other comments have been fully addressed within the Designers Response. The Stage 1 RSA and associated Designers Response is attached as **Appendix K**.

5.17 A 3m wide shared footway/cycleway would be provided on the southern edge of the proposed bellmouth access which will connect to a new crossing to the south of the access. It is proposed that this crossing point will be supported by a 3m wide refuge island to ensure that pedestrians and cyclists can cross Peak Lane safely and in line with HCC pre-application feedback, the refuge island and supporting tactile paving has been provided to 3m in width allowing for cyclists to also use this crossing point. The crossing island width has increased from 2.5m to 3m from the previous application which was agreed with HCC highway officers following the previous planning application and is considered acceptable given the width of the footway/cycleway is 3m and it is not a staggered crossing. The 3m width is also considered acceptable against HCC's Standards Details Note for Guidance (February 2016) which states that the 'if the crossing forms part of an off-road cycle route, the central refuge should be an absolute minimum of 2.1m wide … and preferably not less than 2.5m … to comfortably accommodate the full length of a standard bicycle without overhang the carriageway'. The refuge island will also act as a gateway feature to the village of Stubbington in line with the existing forms of traffic calming in this location, including the change in speed limit.

5.18 Pedestrian visibility splays from this crossing point have been demonstrated in Appendix L and as per HCC's comments on the previous application, the splays have been shown with a 2.5m x-distance to accommodate the use of cyclists also. The visibility splays are demonstrated as achievable within land owned by the client or public highway. This has resulted in the slight relocation of the crossing and further narrowing of the through lanes on Peak Lane which still remain adequate at 3.0m (as beyond the turning lane section of the access design).

5.19 The proposed access road will dissect Oakcroft Lane approximately 55m from the eastern boundary of the site and 165m west of the junction of Oakcroft Lane and Peak Lane/May's Lane.

5.20 It is proposed that driving rights will be prohibited along Oakcroft Lane for a short section west between the existing residential dwellings which are accessed from Peak Lane/May's Lane junction and east of the proposed development site. A new turning head would be provided in this location to ensure that the existing residential dwellings can continue to be serviced effectively. These works would restrict vehicular access into the proposed development from the Oakcroft Lane/Peak Lane junction, however pedestrian and cycle links could remain with bollards provided to enforce the prohibition of driving rights.

5.21 To the west Oakcroft Lane will connect to the access road in the form of a T-junction with priority given to vehicles travelling north-south into and out of the site over those travelling from the Oakcroft Lane/Ranvilles Lane junction. This is due to the anticipated flows associated with the development being higher than those on Oakcroft Lane. This arrangement would also support the prevention of Oakcroft Lane as a rat run with priority given to the development arm meaning vehicles on Oakcroft Lane may have to stop to give way and thus delay their travel journey. This arrangement is shown on the site layout included as Appendix A.

5.22 In summary the proposed highway access works include the following:

- Bellmouth access onto Peak Lane 6m wide with 10m radii;
- 3m widening of Peak Lane along the site frontage and within public highway to include a 3.5m wide and 65m long ghost island right turn lane into the proposed access;
- 3m wide footway/cycleway connection on the eastern edge of the bellmouth to connect to existing infrastructure including a new refuge island of significant width to allow cyclists and pedestrians to cross the Peak Lane carriageway safely;
- Access road into the development from the proposed access point on Peak Lane south into the site dissecting Oakcroft Lane;
- Prohibit driving rights along Oakcroft Lane to the east of the proposed access road and provision of new turning head to allow for refuse and delivery vehicle manoeuvre, with bollards proposed for enforcement; and
- Implementation of new priority T-junction between the proposed access road and Oakcroft Lane West.

Internal Layout and Parking

5.23 Matters relating to the internal site layout, such as servicing vehicle movements and parking provision is addressed within the Planning Statement and Design and Access Statement supporting this planning application.

6. TRIP GENERATION AND ASSSIGNMENT

Trip Generation

6.1 In order to establish the number of vehicle trips the proposed development could generate, the industry standard TRICS database has been consulted. By comparing the site to those with similar characteristics, it is possible to calculate the spread and volume of trips across the day. Whilst the development would include a mix of both affordable and private dwellings the development has been considered on the TRICS database as wholly private to ensure a robust trip generation assessment. The TRICS database has been used to establish the total person trips from the proposed site.

6.2 The specific TRICS parameters are outlined below with the outputs attached as **Appendix E** and a summary of the total per person trip rate identified in **Table 8**.

- Edge of Town and Suburban Locations
- Sites in England and Wales (excluding Greater London)
- 40-500 Units
- Residential Private Houses
- Monday-Friday Surveys only
- Sites without Travel Plan

	AM Peak (0800-0900)		PM Peak (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
Trip Rate (person)	0.213	0.824	0.688	0.277

Table 8: Proposed Person Trip Rate (all modes combined)

6.3 In order to establish an accurate vehicle trip generation from the proposed site, the total person trip generation displayed in **Table 8**, has been applied to the 2011 national census 'Method of Travel to Work' data for the Stubbington Census Ward encompassing the development (E02004739: Fareham 013). A summary of this census data is displayed in **Table 9**.

Mode of Travel	E02004739: Fareham 013
Train	2%
Bus, minibus or coach	3%
Motorcycle, scooter or moped	2%
Driving a car or van	64%
Passenger in a car or van	6%
Bicycle	11%
On Foot	11%
Other	1%

Table 9: Method of Travel to Work (E02004739: Fareham 013)

6.4 Table 9 shows that 64% of trips forecast to be generated by the proposed development would most likely be undertaken by private vehicle drivers with the remaining percentage made up of public transport and alternative travel modes.

6.5 The 64% of car drivers has been applied to the total person trip rates displayed in Table 8 to provide an overall vehicle trip generation for the proposed site. These trips rates are displayed in Table 10 and are considered to accurately reflect the likely traffic movements from the proposed site based on pre-application discussions with HCC highways officers. These trip rates and the above calculations also remain as per the previous planning application at this site where HCC Highways confirmed that the 'methodology is accepted' and 'the proposed person trip rates are considered robust'.

	AM Peak (0800-0900)		PM Peak (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
Trip Rate (person)	0.213	0.824	0.688	0.277
Total Trips (209 Units)	45	172	144	58
64% Driving – Vehicle Trip Generation	28	110	92	37

Table 10: Proposed Trip Generation

6.6 Table 10 demonstrates a total of 138 two-way vehicle movements in the AM (0800-0900) peak period and 129 two-way vehicle movements in the PM (1700-1800) peak period. As the existing site is greenfield land the proposed trip generation would be considered as additional trips onto the wider transport network.

Trip Assignment

6.7 Having estimated the number of trips likely to be generated by the site, traffic distribution diagrams have been created using the 2011 'Location of usual residence and place of work' for the E02004739: Fareham 013 Mid-Layer Output area. The full Census data is attached as Appendix F.

6.8 Following pre-application discussions with HCC highways officers it was noted that consideration should be given to vehicles turning left out of the development site and travelling on Oakcroft Lane to connect with Titchfield Road in the west and continue north to the Titchfield Gyratory where these vehicles could connect with the A27. Although this route is not considered to be the most direct for vehicles looking to travel west on the A27 it is noted through discussions that there are existing concerns regarding rat-running along Oakcroft Lane. For this reason, and to ensure a robust assessment of the trip distribution from the site, 50% of vehicles anticipated to be connecting with the A27 and travelling west have been re-directed onto Oakcroft Lane travelling west and connecting to Titchfield Road.

6.9 Based on this assessment it is proposed that 19% of traffic exiting the site would turn left onto Oakcroft Lane and continue to Titchfield Road in the west. 57% of development traffic would turn left out of the development from the proposed access on Peak Lane moving north on Peak Lane towards the Rowan Way/Peak Lane/Longfield Avenue Roundabout. From this point 4% of departures would turn right onto Longfield Avenue whereas 19% would turn left onto Rowan Way connecting with the A27 to the west and 33% would continue straight at this junction connecting with the A27, turning right at the Peak Lane/A27 Signalised Junction and head east on the A27.

6.10 It is anticipated that 24% of departures from the site would turn right travelling south on Peak Lane towards Stubbington Village turning left at the Titchfield Road/May's Lane/Gosport Road Roundabout and continuing onto the Gosport Road/Stubbington Lane/ Stubbington Green Roundabout further south.

6.11 When taking into account the proposed Stubbington Bypass it is likely that the distributions from the site (as well as existing movements) will alter significantly on a positive basis. Given that the bypass will connect the site to Gosport in the east and the A27 in the west it is proposed that the traffic that would travel west on the A27 (19%) would connect directly to the bypass turning left at the Peak Lane/Stubbington Bypass Signalised Junction, with the remaining 37% continuing straight to the Rowan Way/Peak Lane/Longfield Avenue Roundabout. At this point 33% would continue straight onto the A27 with 4% turning right onto Longfield Avenue as demonstrated in the scenario without the bypass.

6.12 The proposed development distributions have been informed through pre-application discussions with HCC highway officers, the full distributions with and without the bypass are shown in **Appendix G**, with the full census data attached as **Appendix F**.

6.13 These vehicle distributions remain as per the previous planning application given that HCC highways at the time raised no concerns with the distributions, albeit the vehicle numbers have reduced due to the reduction in dwellings proposed on site.

7. JUNCTION CAPACITY ANALYSIS

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

Scope of Assessment

7.2 The spatial scope of the highway impact assessment required to support the development was informed by pre-application liaison with HCC highways officers upon review of the distribution of vehicle trips onto the highway network. Therefore, the following junctions have been identified as requiring assessment:

- Proposed Site Access onto Peak Lane
- Rowan Way/Peak Lane/Longfield Avenue Roundabout
- Peak Lane/A27 Signalised Junction
- Ranvilles Lane/A27
- Titchfield Road/May's Lane/Gosport Road Roundabout
- Gosport Road/Stubbington Lane/Stubbington Green Roundabout
- Peak Lane/Stubbington Bypass Signalised Junction

7.3 Through the previous planning application, percentage impact assessments were completed at the Peak Lane/A27 Signalised Junction, Titchfield Road/May's Lane/Gosport Road Roundabout and Gosport Road/Stubbington Lane/ Stubbington Green Roundabout. HCC have confirmed that despite the minor increase in traffic movements these three junctions should be subject to a modelling exercise. These junctions have therefore been included in the scope of this RTA.

7.4 Whilst the scenarios assessed in this RTA remain similar to the previous Transport Assessment (document reference 048.0013/TA/3), updated flows have been obtained for the 'with bypass' scenarios due to the additional junctions included in the assessment. In order to understand the impact of the bypass, the AM and PM '2019 Do Minimum' flows and the AM and PM '2019 Do Something 1 (Bypass) flows have been compared to understand the percentage change. These flows are included within Appendix H of HCC's Stubbington Bypass Transport Assessment.

7.5 To understand the impact of the proposed development on the Peak Lane/Stubbington Bypass Signalised Junction, the junction model has been obtained from HCC. HCC have confirmed that the baseline flows included in this model are for 2036. It is therefore assumed that this baseline includes all committed development. Therefore, only two scenarios have been assessed for this junction; Baseline 2036 and Baseline 2036 + Proposed Development.

7.6 Baseline traffic surveys were undertaken in 2018 for the majority of junctions assessed and therefore TEMPro growth factors have been applied to obtain the 2025 future year scenarios in order to establish the future impact of the development traffic on the local road network. For the Gosport Road/Stubbington Lane/Stubbington Green Roundabout, 2017 data from the Land at Old Street, Stubbington Transport Assessment (planning application reference: P/17/1451/OA) has been used and factored up. This development is discussed in more detail later in this chapter. TEMPro Growth Factors used within this RTA are demonstrated in **Table 11**.

E02004739	2017-2018	2018-2025
AM Peak	1.0128	1.1055
PM Peak	1.0127	1.1051

Table 11: TEMPro Growth Factors

7.7 Geometric Take Off drawings have not been prepared for any junctions as this has not been requested from HCC for previous planning applications which Paul Basham Associates have worked on. Where possible, junction geometries replicate model outputs submitted as part the HCC Stubbington Bypass TA or other nearby planning applications.

7.8 Updated traffic distribution diagrams have been provided for all scenarios given the addition of junctions which are provided in **Appendix M**. To confirm, **Table 12** identifies the modelling scenarios and junctions included within this RTA, which follow the previously agreed principles of 5-years post application and 2036 for the Bypass/Peak Lane signalised junction.

	Site Access/Peak Lane Junction	Rowan Way/Peak Lane/Longfield Avenue Roundabout	Ranvilles Lane/A27	Peak Lane/Stubbington Bypass Signalised Junction	Peak Lane/A27 Signalised Junction	Titchfield Road/Mays Lane/Gosport Road Roundabout	Gosport Road/Stubbington Lane/Stubbington Green Roundabout
Baseline 2018		x	x		x	x	x
Baseline 2025		x	x		x	x	x
Baseline 2025 + CD		x	x		x	x	x
Baseline 2025 + CD + PD	x	x	x		x	x	x
Baseline 2025 with Bypass		x	x		x	x	x
Baseline 2025 with Bypass + CD		x	x		x	x	x
Baseline 2025 with Bypass + CD + PD		x	x		x	x	x
Baseline 2025 + CD + Newlands Farm + PD (without bypass)		x	x		x	x	x
Baseline 2025 + CD + Newlands Farm + PD (with bypass)		x	x		x	x	x
Baseline 2036 with Bypass				x			
Baseline 2036 with Bypass + PD				x			

Table 12: Junction Modelling Scenarios

7.9 For the following junctions, the 'with Bypass' scenarios include amended geometries as per the HCC Stubbington Bypass TA. These geometries therefore reflect the outputs in the HCC Stubbington Bypass TA:

- Titchfield Road/May's Lane/Gosport Road Roundabout
- Gosport Road/Stubbington Lane/Stubbington Green Roundabout

7.10 Amendments to these junctions have been proposed as part of the bypass application to decrease their capacity in an attempt to encourage diversion of traffic towards use of the bypass.

Committed Development

7.11 In order to provide a robust assessment of the capacity of the local junctions, committed developments in the vicinity of the site have also been taken into consideration. The following committed developments have been taken into consideration when assessing the proposed development impact on the local road network:

Proposed Stubbington Bypass

7.12 Stubbington Bypass to the north of Stubbington will run directly to the north of the proposed development. The application (application reference: P/15/0718/CC) was granted permission in October 2015.

7.13 The Bypass application was supported by a TA prepared by HCC's Economy, Transport and Environment Department, which detailed the existing (and forecasted future) transport conditions in the area, the bypass proposals and the resulting implications on forecast traffic flow, details of the proposed junctions to be implemented as part of the bypass and a mitigation strategy.

7.14 As detailed in the TA, the Bypass routes 'from a location on the B334 Titchfield Road opposite the 'Titchfield Nurseries' glasshouses and routes in an east-west direction across the northern edge of Stubbington to Newlands Farm. From here it routes in a south-easterly direction and then broadly north-south direction to the west of the Peel Common Sewage Treatment Works and the east of Crofton School, before joining the B334 Gosport Road at a location in between Rome Farm Cottages and Marks Road and opposite the Solent EZ.'

7.15 Full funding has now been secured for the bypass and a public inquiry took place in November 2018 as a result of two objections relating to the bypass' Compulsory Purchase Order (CPO) and Side Roads Order (SRO).

7.16 Construction works on the Bypass began in early 2020 with the works proposed to be finished in Spring 2022. This scheme has therefore been treated as committed infrastructure.

Land at Old Street, Stubbington (ref: P/17/1451/OA)

7.17 An outline planning application was submitted in November 2017 by Bargate Homes (P/17/1451/OA) for the development of 160 dwellings including a mix of both affordable and private dwellings with access from the existing junction of Old Street and Plymouth Drive and a new access onto Old Street.

7.18 Although the planning application went to appeal, and the appeal was subsequently dismissed in January 2019, the proposed development flows and traffic generation put forward by the Transport Assessment prepared by WSP from this site have been considered in this assessment and included in the 2025 future year scenario to provide a worst-case and robust scenario for the purposes of the capacity assessment.

Newlands Farm, Fareham (ref: P/15/1279/OA)

7.19 An outline application by Hallam Land Management (application reference: P/15/1279/OA) was submitted in 2015 for consideration by Fareham Borough Council for a development on land to the south of Longfield Avenue for a development including up to 1,027 homes, a health care centre, retail units, primary school, permissive footpaths and cycleways and a care home.

7.20 Vehicular access to the residential development would be via a new priority junction on Longfield Avenue, including further access points onto Peak Lane and the Stubbington Bypass.

7.21 It is understood that the trip rates and distributions associated with this scheme have been previously agreed by HCC highways and it is proposed that the junction capacity assessments for their future year 2026 have been included within this RTA, but under the 2025 scenarios.

7.22 Whilst this planning application was withdrawn in February 2020 it remains included within the assessment as a Sensitivity Test.

Modelling Parameters Summary

7.23 To confirm, flows for 'Land West of Old Street' have been taken from Appendix G of the Transport Assessment (document reference: A098608) prepared by WYG whilst flows for Newlands Farm have been taken from Appendix G of the Newlands Farm Transport Assessment (document reference: 1301-63/TA/02) as taken from Fareham Borough Council's planning portal.

7.24 Baseline 2017 flows for the Gosport Road/Stubbington Lane/Stubbington Green Roundabout have been taken from Appendix G of the 'Land West of Old Street' application with appropriate TEMPro growth factors applied (**Table 11**).

7.25 Additional scenarios are included within the assessment to account for likely re-distribution of vehicle trips following the implementation of the Bypass. Baseline 2025 traffic movements and proposed development traffic movements have been adjusted to accommodate the redistributed vehicle movements. This has been completed by reviewed the percentage change in traffic flow between the DM and DS1 scenarios included within the HCC Stubbington Bypass TA.

7.26 Where possible previously agreed model and junction parameters have been used.

7.27 Where appropriate updated geometries are provided which include works proposed as part of the Stubbington Bypass.

7.28 The peak periods used in this assessment and taken from the traffic counts are 0800-0900 for the AM peak and 1700-1800 for the PM peak, except the Peak Lane Stubbington Bypass Signalised Junction which has a PM peak of 1600-1700 as confirmed by HCC.

Junction Modelling Software

7.29 Modelling has been completed using Junctions 9 software for both priority junctions and roundabouts, with LinSig used to model signalised junctions. The outputs provide a Ratio of Flow to Capacity (RFC) for Junctions 9 and Degree of Saturation (DoS) for LinSig as well as maximum queue lengths associated with each arm of the junction. RFC values exceeding 0.85 or DoS values of 90% signify the point at which capacity is being approached and the potential to improve capacity at the junction should be explored, whilst RFC values of 1.00 or DoS values of 100% represent the junction operating at capacity. For Junctions 9, each scenario has been modelled using the 'One Hour' profile demand data type in order to synthesise peak hour turning counts.

7.30 The method used to estimate traffic generation of the proposed development and to account for future year traffic flow is considered as a worst-case scenario for the following reasons:

- The junction capacity assessment does not quantify the impact that the Travel Plan (submitted alongside this RTA) could have on the reduction of single vehicle trips from the proposed development, which could achieve a modal shift towards a more sustainable travel strategy;
- The percentage share of HGV vehicle movements on both the major and minor arms of each junction have been set at a default of 10%. In reality, the share of HGV traffic through these points is likely to be much lower; and
- The trip rates are for 100% private dwellings, when in fact there is a high proportion (40%) of affordable units.

Modelling Results

7.31 The junctions previously modelled with the site's previous planning application are assessed first which also includes a review of HCCs comments on these junctions and how the model has been updated to reflect these comments.

Previously Modelled Junctions

Site Access/Peak Lane Junction

7.32 The site access was modelled in the previous planning application; however, HCC requested some minor amendments to the model this includes:

- Major arm width geometries – Updated to remove the inclusion of ghost island right turn lane width in the overall carriageway width
- Multiple models for scenarios – Updated to provide all scenarios in one model
- No 2018 baseline model provided – It is not possible to provide this given this is not an existing junction, which is why the junction has only been modelled for the '2025 Plus Committed Development Plus Proposed Development' scenario

7.33 Geometries for the site access have also been updated as per Paras 5.2 - 5.16 to reflect the changes to the design.

7.34 The updated modelling results are outlined in **Table 13**, with the Junction 9 output included as **Appendix N**.

	AM (0800-0900)			PM (1700-1800)		
	RFC	Max Q (Vehs)	Max Delay (s)	RFC	Max Q (Vehs)	Max Delay (s)
Site Access	0.39	0.6	22.98	0.09	0.1	10.88
Peak Lane South	0.05	0.1	10.33	0.09	0.1	6.49

Table 13: Site Access/Peak Lane Junction Modelling

7.35 The modelling results demonstrate that the site access operates sufficiently under capacity with the highest RFC of 0.39 occurring in the AM (0800-0900) peak on the access arm. Maximum vehicle queues remain low with less than 1 vehicle and delays are also modest at circa 23 seconds. Whilst the model cannot be validated as it is not existing, the junction has excessive spare capacity and should therefore not raise any operational concerns.

7.36 The modelling results also confirm that the changes to the site access general arrangement from the previous application, including the single lane exit arm does not have an impact on the performance of the junction and therefore this revised arrangement is considered suitable to serve the proposed development.

Rowan Way/Peak Lane/Longfield Avenue Roundabout

7.37 HCC requested amendments to this junction through previous comments. HCC's referenced discrepancies of the junction geometries, in particular flare lengths. A full review of all geometries has been completed.

7.38 Model scenarios have also been combined into a single model output to ease review. This junction also includes the sensitivity assessment with Newlands Farm as highlighted in Table 12. The model outputs are summarised in Table 14, with the full Junctions 9 outputs attached as Appendix O.

Scenarios	Arms	AM (0800-0900)			PM (1700-1800)		
		RFC	Max Q (Vehs)	Max Delay (s)	RFC	Max Q (Vehs)	Max Delay (s)
Baseline 2018	Peak Lane North	0.57	1.3	11.52	0.69	2.2	18.27
	Longfield Avenue	0.84	5.1	17.59	0.29	0.4	3.84
	Peak Lane South	0.49	0.9	8.21	0.55	1.2	6.68
	Rowan Way	0.90	7.0	56.63	1.35	103.0	630.64
Baseline 2025	Peak Lane North	0.63	1.7	13.58	0.76	3.0	23.44
	Longfield Avenue	0.95	13.1	42.18	0.32	0.5	4.10
	Peak Lane South	0.58	1.3	10.77	0.62	1.6	8.18
	Rowan Way	1.02	17.7	125.65	1.61	195.1	1195.63
Baseline 2025 + CD	Peak Lane North	0.63	1.7	13.58	0.76	3.0	23.44
	Longfield Avenue	0.95	13.1	42.18	0.32	0.5	4.10
	Peak Lane South	0.58	1.3	10.77	0.62	1.6	8.18
	Rowan Way	1.02	17.7	125.65	1.31	195.1	1195.63
Baseline 2025 + CD + PD	Peak Lane North	0.64	1.7	13.92	0.78	3.3	25.46
	Longfield Avenue	1.00	26.1	74.01	0.34	0.5	4.21
	Peak Lane South	0.6	1.5	11.59	0.64	1.8	8.76
	Rowan Way	1.04	21.7	147.61	1.71	234.7	1425.40
Baseline 2025 with Bypass	Peak Lane North	0.51	1.0	10.33	0.53	1.1	10.94
	Longfield Avenue	0.57	1.3	6.47	0.30	0.4	4.01
	Peak Lane South	0.36	0.6	5.90	0.32	0.5	4.48
	Rowan Way	0.62	1.6	15.20	0.57	1.3	12.52
Baseline 2025 with Bypass + CD	Peak Lane North	0.51	1.0	10.33	0.57	1.3	13.23
	Longfield Avenue	0.57	1.3	6.47	0.30	0.4	3.98
	Peak Lane South	0.36	0.6	5.90	0.32	0.5	4.48
	Rowan Way	0.62	1.6	15.20	0.77	3.2	23.06
Baseline 2025 with Bypass + CD + PD	Peak Lane North	0.51	1.0	10.53	0.60	1.4	14.34
	Longfield Avenue	0.60	1.5	7.03	0.32	0.5	4.05
	Peak Lane South	0.37	0.6	6.19	0.32	0.5	4.54
	Rowan Way	0.64	1.7	16.09	0.82	4.3	29.33
Baseline 2025 + CD + Newlands Farm + PD	Peak Lane North	0.90	7.6	44.37	0.92	8.7	54.80
	Longfield Avenue	1.04	38.5	101.46	0.37	0.6	4.66
	Peak Lane South	0.71	2.3	16.15	0.79	3.7	15.21
	Rowan Way	1.17	44.3	285.20	2.11	336.0	2243.87
Baseline 2025 with Bypass + CD + Newlands Farm + PD	Peak Lane North	0.53	1.1	11.12	0.66	1.9	18.84
	Longfield Avenue	0.72	2.6	10.16	0.39	0.6	4.53
	Peak Lane South	0.44	0.8	7.06	0.43	0.8	5.50
	Rowan Way	0.69	2.1	19.42	0.92	8.3	56.92

Table 14: Rowan Way/Peak Lane/Longfield Avenue Roundabout Modelling

7.39 The results of the capacity assessment at the Rowan Way/Peak Lane/Longfield Avenue Roundabout demonstrates that in the Baseline 2018 scenario the roundabout is approaching capacity in the AM (0800-0900) peak on the Peak Lane North arm and operating significantly over capacity on the Peak Lane North arm in the PM (1700-1800) with a maximum RFC of 0.90 and 1.35 respectively.

7.40 When factored up to the Baseline 2025 future year scenarios these RFC values increase, however the Peak Lane South arm also appears to approach capacity in the AM (0800-0900) peak with an RFC of 0.95. When the Baseline 2025 Plus Committed Development and Baseline 2025 Plus Committed Development Plus Proposed Development the highest RFC increase is on the Peak Lane North arm in the PM (1700-1800) with an increase of 0.1. Increases are also experienced in the delay and queue values however these appear to be exponentially increasing due to the capacity constraints and as such is unlikely to reflect on the ground conditions.

7.41 Given the existing issues at this roundabout in both the Baseline 2018 and Baseline 2025 future year scenarios an increase in RFC of 0.05 in the AM (0800-0900) peak and 0.1 in the PM (1700-1800) peak associated with the proposed development on the worst affected arms is not considered to represent a severe impact on this roundabout.

7.42 However, the assessment also demonstrates that the implementation of the Stubbington Bypass would alleviate capacity concerns on this roundabout by diverting traffic off this roundabout and onto the Bypass for vehicles travelling north towards the A27 and south towards Gosport. The modelling results confirm that with the impact of the bypass considered the junction operates within capacity in all scenarios, including the traffic associated with Newlands Farm, although Newlands Farm does force the junction to operate close to capacity.

7.43 The assessment at this junction therefore confirms that the impact of this development cannot be considered serve given the minimal increase in RFC, queue and delay values and that the impact of the Stubbington Bypass alleviates the existing capacity constraints at this junction.

Ranvilles Lane/A27 Junction

7.44 HCC's comments on the Ranvilles Lane/A27 junction were similar to the above and therefore the model has been updated to have one model to reflect all relevant scenarios which ensures there is consistency across the models.

7.45 Geometries at this junction have also been reviewed and updated however, these did previously replicate the geometries proposed as part of the Newlands Farm 'Response to HCC' (May 2018) document which included updated model outputs within their Appendix C. The updated modelling results of this junction are outlined in **Table 15**, whilst the full outputs are attached as **Appendix P**.

Scenarios	Arms	AM (0800-0900)			PM (1700-1800)		
		RFC	Max Q (Vehs)	Max Delay (s)	RFC	Max Q (Vehs)	Max Delay (s)
Baseline 2018	Ranvilles Lane	1.30	74.3	546.00	0.54	1.2	16.42
	A27 West	0.74	3.2	26.32	1.34	259.5	1211.86
Baseline 2025	Ranvilles Lane	1.52	140.6	1055.13	0.84	3.9	49.20
	A27 West	0.87	8.2	37.17	1.55	481.6	1677.52
Baseline 2025 + CD	Ranvilles Lane	1.52	140.6	1055.13	0.84	4.9	49.20
	A27 West	0.87	8.2	37.17	1.55	526.7	1677.52
Baseline 2025 + CD + PD	Ranvilles Lane	1.58	161.6	1190.90	0.86	1.4	64.66
	A27 West	0.88	9.3	39.29	1.59	482.1	1676.34
Baseline 2025 with Bypass	Ranvilles Lane	0.41	0.7	14.11	0.59	1.4	18.17
	A27 West	0.71	2.8	25.12	1.24	182.1	787.76
Baseline 2025 with Bypass + CD	Ranvilles Lane	0.41	0.7	14.11	0.59	1.4	18.17
	A27 West	0.71	2.8	25.12	1.24	182.1	787.76
Baseline 2025 with Bypass + CD + PD	Ranvilles Lane	0.47	0.9	15.51	0.59	1.4	18.17
	A27 West	0.71	2.8	25.12	1.24	182.1	787.76
Baseline 2025 + CD + Newlands Farm	Ranvilles Lane	2.02	351.0	2543.91	1.14	30.4	270.07
	A27 West	0.92	13.7	47.72	1.97	936.7	2514.96
Baseline 2025 with Bypass + CD + Newlands Farm + PD	Ranvilles Lane	0.80	3.6	40.31	0.76	3.0	31.44
	A27 West	0.78	4.1	29.77	1.36	257.5	1260.82

Table 15: Ranvilles Lane/A27 Junction Modelling

7.46 The modelling results of the Ranvilles Lane/A27 junction demonstrates that this junction experiences capacity issues in the Baseline 2018 scenario on the Ranvilles Lane arm in the AM (0800-0900) peak and the A27 West arm in the PM (1700-1800) peak associated with right turns into Ranvilles Lane.

7.47 RFC, queue and delay values increase in the Baseline 2025 flows due to the background increase of traffic at a junction already subject to capacity issues. However, when the 'before' development traffic and 'after' development traffic scenarios are compared the RFC's only increase by a maximum of 0.06 in the AM peak on the Ranvilles Lane arm. Larger increases are experienced in delay and queue lengths however this does not necessarily represent what may happen in practice as these values are exponentially affected in the model when capacity issues are already present.

7.48 With the impact of the bypass introduction, the capacity issues in the AM (0800-0900) peak are removed entirely and the junction is shown to operate within capacity for all scenarios. Again, modest increases in RFC are demonstrated as a result of the development traffic, i.e. 0.06 on the Ranvilles Lane arm which only equates to a queue increase of 0.2 and 1.4 second increase in delay.

7.49 In the PM peak, with the impact of the bypass the A27 West still experiences capacity concerns with an RFC of 1.24 in the Baseline 2025 with Bypass scenario. With the addition of committed development and proposed development traffic no further increases in RFC, delay or queue lengths are demonstrated.

7.50 The modelling assessment demonstrates that the proposed development would not have severe impact on the operation this junction without or with the Bypass, but does confirm that the Bypass alleviates some of the existing capacity concerns, particular in the AM (0800-0900) peak.

Peak Lane/Stubbington Bypass Signalised Junction

7.51 The geometries for the Peak Lane/Stubbington Bypass have been confirmed as accepted given the modelling matches the proposed layout, operation and staging set out in the HCC Stubbington Bypass TA.

7.52 HCC previously requested clarity on the design years of the assessment. The model provided by HCC includes baseline flows from 2036 and has a PM peak of 1600-1700 which has been kept for consistency. It is therefore considered that given this future year is 16 years ahead the application year this should include all committed development such as Old Street and Newlands Farm. The model has therefore been re-run with the Baseline 2036 scenario and Baseline 2036 + Proposed Development scenario to understand the impact of the proposed development. The modelling results are summarised in **Table 16**, whilst the full LinSig outputs are attached as **Appendix Q**.

Scenarios	Arms	AM (0800-0900)			PM (1600-1700)		
		DoS	Max Q (Vehs)	Delay (s)	DoS	Max Q (Vehs)	Delay (s)
Baseline 2036	Stubbington Bypass East	77.6%	16.1	60.1	71.8%	13.9	58.1
	Peak Lane South	66.8%	3.9	61.6	64.6%	3.7	62.3
	Stubbington Bypass West	71.9%	9.8	61.4	73.3%	14.3	43.7
	Peak Lane North	16.1%	1.0	43.0	36.6%	2.4	46.7
Baseline 2036 + PD	Stubbington Bypass East	79.7%	16.5	60.1	71.8%	13.9	58.1
	Peak Lane South	79.3%	5.7	68.5	72.3%	4.4	67.6
	Stubbington Bypass West	73.9%	10.0	63.1	73.3%	14.3	44.9
	Peak Lane North	16.1%	1.0	43.0	36.9%	2.4	46.7

Table 16: Peak Lane/Stubbington Bypass Signalised Junction Modelling

7.53 The modelling results of the Peak Lane/Stubbington Bypass junction demonstrates that this junction operates sufficiently within capacity with and without the addition of traffic associated with the proposed development.

7.54 As expected, the Peak Lane South arm experiences the greatest increase in DoS, queue and delay values, however these increases remain modest such as a 7 second increase in delay. Queues on the Peak Lane South arm equate to circa 6 PCU's which totals to a 36m queue length (when using a robust PCU estimate of 6m). A 36m queue would therefore not cause any issues with the proposed access arrangement given that the Bypass junction is located circa 115m to the north of the proposed access. Therefore, the capacity of the Peak Lane/Stubbington Bypass signalised junction is not anticipated to have any impact on the proposed development access in terms of operation or safety.

Additional Junctions

7.55 The following junction assessments are additional to those included within the sites previous planning application and associated Transport Assessment as requested by HCC.

Titchfield Road/May's Lane/Gosport Road Roundabout

7.56 The existing geometries for this roundabout have been taken from HCC's Stubbington Bypass TA, as per the modelling outputs attached as their Appendix I. It is anticipated that 24% of development traffic is anticipated to travel through this junction. A summary of the modelling outputs is included within **Table 17**, whilst the full outputs are attached as **Appendix R**. As referenced in Para 7.9, where the impact of the bypass is included updated geometries have been included as per HCC's Stubbington Bypass TA. A separate model has been completed for these geometries, however, the outputs are still included in **Appendix R**.

Scenarios	Arms	AM (0800-0900)			PM (1700-1800)		
		RFC	Max Q (Vehs)	Max Delay (s)	RFC	Max Q (Vehs)	Max Delay (s)
Baseline 2018	Mays Lane	0.32	0.5	4.62	0.43	0.7	6.22
	B3334	0.82	4.5	13.84	0.80	3.8	12.15
	Titchfield Road	0.51	1.0	6.96	0.55	1.2	6.10
Baseline 2025	Mays Lane	0.36	0.6	5.10	0.49	1.0	7.42
	B3334	0.91	8.9	25.77	0.88	7.0	20.49
	Titchfield Road	0.59	1.4	8.64	0.62	1.6	7.26
Baseline 2025 + CD	Mays Lane	0.36	0.6	5.10	0.49	1.0	7.42
	B3334	0.91	8.9	25.77	0.88	7.0	20.49
	Titchfield Road	0.59	1.4	8.64	0.62	1.6	7.26
Baseline 2025 + CD + PD	Mays Lane	0.39	0.6	5.31	0.50	1.0	7.57
	B3334	0.92	9.4	27.06	0.90	8.1	23.47
	Titchfield Road	0.59	1.4	8.74	0.63	1.7	7.49
Baseline 2025 + CD + PD + Newlands Farm	Mays Lane	0.42	0.7	5.62	0.54	1.1	8.08
	B3334	0.95	13.9	38.30	0.97	17.0	45.74
	Titchfield Road	0.61	1.6	9.36	0.65	1.9	8.43
Baseline 2025 with Bypass*	Mays Lane	0.82	4.3	26.47	0.65	1.9	14.80
	B3334	0.28	0.4	5.76	0.57	1.3	9.61
	Titchfield Road	0.20	0.3	5.47	0.33	0.5	6.43
Baseline 2025 with Bypass + CD*	Mays Lane	0.82	4.3	26.47	0.65	1.9	14.80
	B3334	0.28	0.4	5.76	0.57	1.3	9.61
	Titchfield Road	0.20	0.3	5.47	0.33	0.5	6.43
Baseline 2025 with Bypass + CD + PD*	Mays Lane	0.86	5.6	33.10	0.67	2.0	15.42
	B3334	0.28	0.4	5.83	0.59	1.4	10.27
	Titchfield Road	0.20	0.3	5.50	0.33	0.5	6.57
Baseline 2025 with Bypass + CD + PD + Newlands Farm*	Mays Lane	0.87	6.0	35.43	0.68	2.1	15.97
	B3334	0.30	0.4	5.99	0.61	1.6	10.78
	Titchfield Road	0.21	0.3	5.55	0.34	0.5	6.66

Table 17: Titchfield Road/May's Lane/Gosport Road Roundabout Modelling
*With altered geometries

7.57 The modelling results of the Titchfield Road/May's Lane/Gosport Road Roundabout demonstrate that when assessing the existing geometries capacity issues at the roundabout would be present on the Gosport Road B3334 arm prior to any committed development or proposed development traffic added. The results of adding the PD traffic to the Baseline 2025 + CD scenario results in 0.01 increase of RFC in the AM (0800-0900) peak period and 0.02 in the PM (1700-1800) peak period. The corresponding increase in queue length is a maximum of 1 vehicle and a maximum increase in delay of 3 seconds. Such increases are considered modest and therefore the impact of the proposed development on this junction is considered acceptable.

7.58 When the vehicle trips associated with Newlands Farm are added to the existing geometries further increases in RFC, queue and delay are experienced in both peak periods however the RFC values remain below 1.0.

7.59 Following the implementation of the bypass, works are proposed at this junction to constrain the geometries which in turn would encourage more vehicles to travel along the Bypass and avoid this junction. The modelling results with the Bypass and altered geometries improve the operation of this junction with RFCs in all scenarios and peaks below 1.0, highest queue values of 6 vehicles and delay of 36 seconds.

7.60 Given that works are already proposed at this junction, and the assessment of the improvements at this junction with revised flows associated with the bypass demonstrate the roundabout operating within capacity, the impact of the proposed development on this roundabout is considered acceptable.

Gosport Road/Stubbington Lane/Stubbington Green Roundabout

7.61 Similar to the Titchfield Road/May's Lane/Gosport Road Roundabout, geometries have been taken from HCC's Stubbington Bypass TA and where the impact of the bypass is included the geometries have been updated to reflect those outlined by HCC as part of the wider mitigation. A summary of the modelling results is outlined in Table 18, with the full outputs attached as Appendix S.

Scenarios	Arms	AM (0800-0900)			PM (1700-1800)		
		RFC	Max Q (Vehs)	Max Delay (s)	RFC	Max Q (Vehs)	Max Delay (s)
Baseline 2018	Gosport Road North	0.56	1.3	5.36	1.00	26.2	65.25
	Gosport Road East	0.58	1.4	6.51	0.58	1.3	7.66
	Stubbington Lane	0.69	2.2	11.8	0.58	1.4	8.11
	Stubbington Green	0.80	3.5	51.74	0.79	3.4	35.10
Baseline 2025	Gosport Road North	0.62	1.6	6.21	0.90	7.7	23.16
	Gosport Road East	0.66	1.9	8.22	0.56	1.3	6.59
	Stubbington Lane	0.81	4.0	20.29	0.67	2.0	10.92
	Stubbington Green	1.12	20.7	240.48	0.98	12.3	112.13
Baseline 2025 + CD	Gosport Road North	0.63	1.7	6.43	1.13	99.1	215.29
	Gosport Road East	0.67	2.0	8.42	0.67	2.0	10.00
	Stubbington Lane	0.86	5.5	26.26	0.69	2.1	11.20
	Stubbington Green	1.22	29.4	336.45	1.01	14.4	128.68
Baseline 2025 + CD + PD	Gosport Road North	0.65	1.8	6.8	1.13	102.3	228.70
	Gosport Road East	0.68	2.1	8.71	0.69	2.1	10.36
	Stubbington Lane	0.86	5.7	27.39	0.70	2.3	11.96
	Stubbington Green	1.24	31.0	355.64	1.04	18.1	157.22
Baseline 2025 + CD + PD + Newlands Farm	Gosport Road North	0.67	2.0	7.18	1.14	109.8	266.09
	Gosport Road East	0.71	2.4	9.75	0.74	2.7	12.36
	Stubbington Lane	0.91	8.3	38.94	0.78	3.3	16.38
	Stubbington Green	1.41	44.0	514.08	1.21	39.4	325.97
Baseline 2025 with Bypass*	Gosport Road North	0.88	6.2	37.08	1.16	62.8	289.53
	Gosport Road East	0.26	0.4	7.77	0.50	1.0	11.91
	Stubbington Lane	0.48	0.9	8.97	0.67	2.0	15.13
	Stubbington Green	0.34	0.5	7.51	0.56	1.2	12.50
Baseline 2025 with Bypass + CD*	Gosport Road North	0.90	7.4	45.06	1.18	67.0	317.53
	Gosport Road East	0.29	0.4	8.01	0.55	1.2	13.40
	Stubbington Lane	0.54	1.1	10.04	0.70	2.2	16.28
	Stubbington Green	0.35	0.5	7.85	0.57	1.3	12.87
Baseline 2025 with Bypass + CD + PD*	Gosport Road North	0.95	10.9	62.33	1.19	72.7	352.04
	Gosport Road East	0.30	0.4	8.19	0.57	1.3	14.05
	Stubbington Lane	0.54	1.2	10.21	0.72	2.5	17.68
	Stubbington Green	0.36	0.6	7.92	0.58	1.3	13.44
Baseline 2025 with Bypass + CD + PD + Newlands Farm*	Gosport Road North	0.97	14.2	78.35	1.25	89.2	462.06
	Gosport Road East	0.36	0.6	9.10	0.62	1.6	15.46
	Stubbington Lane	0.59	1.4	11.29	0.79	3.6	24.00
	Stubbington Green	0.37	0.6	8.24	0.60	1.5	15.05

Table 18: Gosport Road/Stubbington Lane/Stubbington Lane Roundabout Modelling
*With altered geometries

7.62 The junction capacity assessment at this roundabout demonstrates that the Stubbington Green arm appears to have capacity problems in the Baseline 2025 scenario before any committed development or proposed development traffic is added. With the addition of the proposed development traffic the RFC value on this arm increases by 0.02 in the AM (0800-0900) peak and 0.03 in the PM (1700-1800) peak. This corresponds to a vehicle queue increase of 3 vehicles and increase delay of 29 seconds in the PM (1700-1800) peak. All other arms in the AM peak operate under capacity.

7.63 In the PM peak the Gosport Road North arm also experiences a higher RFC with an increase of 0.23 associated with the committed development traffic. No further increases in RFC are experienced with the addition of the development traffic although delays increase modestly by 13 seconds and queue values by 2. It is therefore considered that the impact of the development on this roundabout is modest and cannot be considered severe against the baseline positions.

7.64 When the HCC revised geometries are assessed, the junction operates under capacity in the AM (0800-0900) peak on all arms of the roundabout and under all scenarios. In the PM (1700-1800) peak RFCs are above 1.0 in the Baseline 2025 with Bypass scenario (1.16) and thus before any committed development or proposed development traffic is added. The RFC marginally increases by 0.03 when the committed development and proposed development traffic added. Similar to the May's Lane/Titchfield Road/Gosport Road Roundabout, the works proposed at this junction by HCC as part of the Stubbington Bypass are to deliberately constrain this junction which will encourage more vehicles to use the Bypass. It is therefore expected that the RFC values at this junction are high. No mitigation is therefore proposed nor considered necessary at this junction above and beyond what is already secured as part of the Bypass scheme.

Peak Lane/A27 Signalised Junction

7.65 The previous Transport Assessment identified that 33% of development traffic is anticipated to route through this junction, however, due to the strategic nature of this road which is subject to high traffic volumes this would only result in a maximum increase in traffic flows of 2.5%. These values also do not consider the impact of the bypass which would reduce development related and existing traffic routing through this junction. However, HCC have confirmed previously that an assessment of this junction should be included.

7.66 This junction was assessed as part of HCC's Stubbington Bypass TA and therefore the LinSig model outputs for this junction have been reviewed. The geometries, staging, phasing and signal times have therefore been replicated where possible from these modelling outputs for the Peak Lane and A27 arms. A summary of the modelling results are demonstrated in **Table 19**, with the full LinSig outputs attached as **Appendix T**.

Scenarios	Arms	AM (0800-0900)			PM (1700-1800)		
		DOS	Max Q (Vehs)	Max Delay (s)	DOS	Max Q (Vehs)	Max Delay (s)
Baseline 2019	A27 Westbound	67.9%	6.9	41.9	57.4%	5.8	30.2
	Peak Lane	71.5%	9.9	23.4	55.7%	4.3	22.6
	A27 Eastbound	68.4%	8.6	46.7	57.6%	6.8	38.3
Baseline 2025	A27 Westbound	78.8%	8.3	49.3	74.5%	12.3	34.0
	Peak Lane	77.1%	11.9	25.3	76.5%	6.8	35.3
	A27 Eastbound	75.6%	10.3	51.5	76.0%	11.5	46.9
Baseline 2025 + CD	A27 Westbound	74.9%	8.0	44.6	74.5%	12.3	34.0
	Peak Lane	79.1%	12.3	27.3	76.5%	6.8	35.3
	A27 Eastbound	75.6%	9.9	51.5	76.0%	11.5	46.9
Baseline 2025 + CD + PD	A27 Westbound	78.8%	8.3	49.3	77.2%	12.6	36.4
	Peak Lane	79.9%	13.3	26.8	76.6%	7.2	34.8
	A27 Eastbound	80.6%	10.5	58.6	76.0%	12.0	46.9
Baseline 2025 + CD + PD + Newlands Farm	A27 Westbound	78.8%	8.3	49.3	77.2%	12.6	36.4
	Peak Lane	79.9%	7.5	26.8	76.6%	7.2	34.8
	A27 Eastbound	80.6%	10.5	58.6	76.0%	12.0	46.9
Baseline 2025 with Bypass	A27 Westbound	74.6%	7.5	46.2	64.7%	9.4	32.2
	Peak Lane	72.6%	10.2	23.9	63.5%	5.7	40.1
	A27 Eastbound	71.1%	9.7	46.7	65.7%	10.3	37.6
Baseline 2025 with Bypass + CD	A27 Westbound	74.6%	7.5	46.2	64.7%	9.4	32.2
	Peak Lane	72.6%	10.2	23.9	63.0%	5.7	40.2
	A27 Eastbound	71.1%	9.7	46.7	65.7%	10.3	37.6
Baseline 2025 with Bypass + CD + PD	A27 Westbound	74.6%	7.5	46.2	69.4%	10.7	32.8
	Peak Lane	79.0%	12.4	26.2	66.2%	6.1	41.7
	A27 Eastbound	75.6%	9.9	51.5	68.8%	10.3	40.1
Baseline 2025 with Bypass + CD + PD + Newlands Farm	A27 Westbound	74.6%	7.5	46.2	69.4%	10.7	32.8
	Peak Lane	75.6%	11.4	25.2	66.2%	6.1	41.7
	A27 Eastbound	75.6%	9.9	51.5	68.8%	10.3	40.1

Table 19: Peak Lane/A27 Signalised Junction Modelling

7.67 The LinSig modelling results demonstrate that the Peak Lane/A27 Signalised Junction operates within capacity for all scenarios. There is an increase in DoS values between the Baseline 2018 and Baseline 2025 scenarios as a result of the increase in background traffic movements which equates to a circa 10% increase in the AM (0800-0900) and 17% in the PM (1700-1800).

7.68 The addition of the proposed development traffic in the Baseline 2025 scenarios demonstrates modest increases in RFC with the highest of 3.9% in the AM (0800-0900) peak on the A27 Westbound arm and 2.7% in the PM (1700-1800) peak, also on the A27 Westbound arm. Minimal increases in queue lengths and delay are also seen, circa 1 PCU increase and 7 second increase. The modelling assessment (without the impact of the bypass) therefore demonstrates that the proposed development would not have a severe impact on the operation of this junction.

7.69 When the impact of the bypass is considered the DoS values appear to marginally reduce in the AM (0800-0900) peak with bigger decreases in the PM (1700-1800). The impact of the development is again seen to be minimal with the junction operating below capacity.

Summary

7.70 In summary, the updated modelling results demonstrate that the proposed development would not have a severe impact on the operation of the existing junctions, with junction capacity improving following the implementation of the Stubbington Bypass. A summary has been provided in **Table 20** which compares 5 of the 7 junctions modelled, all which have the same scenarios. This table includes the single highest RFC/DoS value from each junction in each peak and compares the Baseline 2025 + CD and Baseline 2025 + CD + PD scenarios without and with the Stubbington Bypass. Green coding represents under capacity, orange approaching capacity and red over capacity threshold relative to modelling software.

Single Highest RFC/DoS	Without Bypass				With Bypass			
	Baseline 2025 + CD		Baseline 2025 + CD + PD		Baseline 2025 + CD		Baseline 2025 + CD + PD	
	AM	PM	AM	PM	AM	PM	AM	PM
Rowan Way/Peak Lane/Longfield Avenue Roundabout	1.02	1.31	1.04	1.71	0.57	0.77	0.64	0.82
Ranvilles Lane/A27	1.52	1.55	1.58	1.59	0.71	1.24	0.71	1.24
Titchfield Road/Mays Lane/Gosport Road Roundabout	0.91	0.88	0.92	0.90	0.82	0.65	0.86	0.67
Gosport Road/Stubbington Lane/Stubbington Green Roundabout	1.22	1.33	1.24	1.13	0.90	1.18	0.95	1.19
Peak Lane/A27 Signalised Junction	79.1%	76.5%	80.6%	76.6%	74.6%	65.7%	79.0%	69.4%

Table 20: Junction Modelling Summary

7.71 Table 20 demonstrates that significant capacity improvements are provided through the construction of the Bypass, with only the Ranvilles Lane/A27 Junction and Gosport Road/Stubbington Lane/Stubbington Green Roundabout having capacity issues with the Bypass in place. The assessment at the Ranvilles Lane/A27 junction demonstrates that it is the increase in background traffic movements which causes constraints, with the development not affecting RFC values and cannot therefore be seen to have a severe impact on junction operation.

7.72 Works are proposed at the Gosport Road/Stubbington Lane/Stubbington Green Roundabout (as well as the Titchfield Road/May's Lane/Gosport Road Roundabout) to deliberately constrain this junction to encourage vehicles to use the Stubbington Bypass. No improvements are therefore deemed necessary at this junction as this would undermine the consented approach to encourage use of the Bypass. The capacity assessment also demonstrates that the addition of development traffic at this junction results in modest increases in RFC values and could therefore not be considered severe.

7.73 The Peak Lane/Stubbington Bypass Signalised Junction is also demonstrated to operate within capacity and therefore the traffic impact of the proposed development at this junction is considered acceptable.

7.74 The Peak Lane/Site Access Junction is demonstrated to operate sufficiently below capacity with low RFC, queue and delay values.

8. SUMMARY AND CONCLUSIONS

8.1 This Revised Transport Assessment has been prepared by Paul Basham Associates on behalf of Persimmon Homes to support a full planning application for 209 residential units at land to the west of Peak Lane, Stubbington. The scope of this RTA has been guided by pre-application feedback with HCC on a scoping note as well as comments made in regard to an earlier planning application on this site (application reference: P/19/0301/FP).

8.2 This RTA reflects on the reduction in unit numbers following planning application refusal in August 2019 and addresses all outstanding highway comments associated with that application.

8.3 The site is well located to connect onto the local road network of Oakcroft Lane and Peak Lane which connects with Stubbington Village Centre to the south and Fareham Town Centre to the north. In addition, strategic routes including the A27 and M27 are within close proximity of the development site.

8.4 Personal Injury Accident data for the most recent 5-year period has been reviewed as per the scope confirmed in the pre-application submission and confirms there are no highway design issues at the junctions assessed.

8.5 The site is located within a highly accessible area to the north of Stubbington Village and south of Fareham. The proposed development site is bordered by a continuous footway/cycleway on Peak Lane along the eastern carriageway which connects the site to Stubbington Village. The local pedestrian and cycle network has been thoroughly reviewed, particularly along routes to local catchment schools and the village centre. This confirms that the existing network is more than adequate to support sustainable development. There are several key local amenities within Stubbington Village including convenience store, eateries, library, sports clubs and educational facilities. In addition, residents of the proposed development would be able to easily access public transport services which run along May's Lane in close proximity of the site. Further public transport services are also available from Stubbington Village Centre.

8.6 The proposed development would consist of 209 residential dwellings with a mix of 40% affordable housing and 60% private housing. The development proposes a mixture of dwelling sizes with 4 1-bedroom units, 71 2-bedroom units, 110 3-bedroom units and 24 4-bedroom units.

8.7 The development would be served by a single vehicular access facilitated by a ghost island right turn lane which has been designed in accordance with CD 123 regulations. The access would be of a bellmouth arrangement 6m wide supported by 10m corner radii and a 3m wide footway/cycleway flanking the southern side of the access road. This footway/cycleway connects onto a new proposed section of footway/cycleway along Peak Lane with a new refuge island crossing providing access onto the existing pedestrian/cycle infrastructure on Peak Lane. The access principles remain broadly comparable to that submitted with the 2019 application and pre-application scoping note except there is one lane on exit and amendments have been made to address HCC's previous comments. Visibility from the proposed access has been assessed in accordance with recorded 85th percentile speeds and are demonstrates as achievable to the nearside kerb line.

8.8 A further pedestrian link from the site is also proposed at the southern boundary of the site onto Marks Tey Road. This access provides a more direct route from the site for pedestrians wishing to travel south towards Stubbington Village.

8.9 The trip generation assessment completed for the development has been calculated using Method of Travel data from the most recent census in line with HCC highway officers' suggestions. The trip rates presented in this RTA remain as per those agreed within the previous planning application and demonstrate that the proposed development is likely to generate 138 vehicle trips in the AM (0800-0900) peak and 129 vehicle trips in the PM (1700-1800) peak. These vehicle trips have been distributed across the local road network in accordance with the distributions reviewed as part of the previous planning application and pre-application in line with 'Travel to Work' 2011 Census data. In order to provide a conservative approach when undertaking a review of the proposed development impact a number of vehicle trips have been anticipated to be re-directed west onto Oakcroft Lane from the development subsequently connecting with Titchfield Road in the west.

8.10 Junction capacity analysis has been completed at 7 local junctions including the site access. The junction models and scenarios reflect the revised planning application for 209 units and also accommodate HCC Highway comments on the previous planning application Transport Assessment modelling results. This includes revised geometries, confirmation of scenarios and combining scenarios into one model output.

8.11 The results of the junction capacity analysis demonstrate that the proposed development would not have a severe impact on the operation of the local road network. Whilst following the implementation of the Stubbington Bypass two junctions appear to have capacity constraints, one of these is deliberate due to modifications to constrain the junction and encourage more vehicles to use the Stubbington Bypass. The other junction experiences capacity concerns before development traffic added, and with the addition of development related traffic there is no increase in RFC, queue or delays values and thus the impact of the development cannot be considered severe.

8.12 This Revised Transport Assessment has demonstrated that the proposed development would not have a significant impact on the operation of the local highway network. We would therefore encourage HCC and FBC to look favourably upon the highway matters of this application.