

Chalcroft Nursery, Bersted

Transport Statement

Client: Landform Bersted Ltd

i-Transport Ref: AI/IN/ITB14224-002 R

Date: 24 July 2020

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i-Transport LLP

Grove House
Lutyens Close
Chineham Court
Basingstoke
Hampshire
RG24 8AG

www.i-transport.co.uk

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SECTION 1 Executive Summary

- 1.1 Landform Bersted Ltd has appointed i-Transport LLP to provide highways and transport advice for the proposed re-development of Chalcroft Nursery. The proposal comprises the modernisation of the existing commercial offering and the provision an additional 1,542 sqm of commercial space (including B1(b), B1(c), B8 and A1 land uses), 20 residential dwellings, landscaping, infrastructure and a new vehicular access.
- 1.2 The development site is located to the west of Chalcroft Lane and provides an existing commercial offering that includes a garden centre and nursery, an aquatic sales centre and a charity furniture outlet. The existing uses on the site are accessed from Chalcroft Lane via Ffairfach Close.
- 1.3 Paragraph 108 of the NPPF identifies the three key transport criteria that decisions on development proposals should take account of. These are whether:
- The opportunities for sustainable travel have been appropriately 'taken up';
 - Safe and suitable access can be achieved; and
 - Improvements can be undertaken within the transport network that cost effectively limit the impacts of the development.
- 1.4 Vehicular access is proposed from Chalcroft Lane. The proposed access arrangements have been designed in accordance with the relevant design guidance contained in the Manual for Streets and delivers suitable geometry and visibility to ensure the safe movement of vehicles. Upon first occupation of the residential dwellings, the existing access to the Chalcroft Nursery will be stopped up and access to both the residential and commercial elements of the development will be achieved via the new site access junction.
- 1.5 The development will deliver car and cycle parking in line with the relevant adopted guidance and will promote a site layout that has been developed in accordance with the principles of Manual for Streets.
- 1.6 The site is located within a reasonable walking distance of bus stops which provide a regular service to wider destinations including Bognor Regis, Littlehampton and Chichester. Bognor Railway Station is located approximately 2.2km to the south of the site and provides further opportunities for travel to destination further afield including Portsmouth, Brighton and London Victoria.
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- 1.7 Future residents of the proposed development will have the opportunity to access a range of everyday destinations by a choice of different travel modes. Walking is a realistic means of travel to and from the site, with well-connected routes providing direct access to local facilities which are located within a short walk of the site. Residents of the development will also benefit from a range of facilities provided on within wider 'West of Bersted' Strategic Allocation when it comes forward.
- 1.8 Everyday services and facilities are located in the vicinity of the site and within reasonable cycle distance; local road conditions are conducive to on-carriageway cycling.
- 1.9 The proposed development is forecast to generate some 35 vehicular movements during the morning peak hour and 32 vehicular movements during the evening peak hour, representing a net increase of 26 and 20 movements during the morning and peak hours respectively. The impact of the net development traffic generation on the local highway represents a proportional increase of circa 3% on Chalcroft Lane to the north and south of the site access.
- 1.10 An operational assessment of the proposed priority junction has been undertaken using Junctions 9 to model its performance. The assessment demonstrates that the proposed junction will not result in queuing or delay on Chalcroft Lane.
- 1.11 The access has also been designed to provide access to a limited number of units associated with the Chalcroft Fields parcel of the West of Bersted residential development allocation SD3. It is not the intention for the access to provide onward connectivity to the main link road provided through the wider application. While this is not a matter for determination as part of the planning application for the proposed development, a Supplementary Information Technical Note (ref: ITB14224-006 TN) has been submitted alongside the application to demonstrate that the proposed development would not prejudice any future development proposal.
- 1.12 The Arun Transport Study (EBR 2017) assessed the impact of allocated development upon the operation of the wider strategic highway network. To mitigate the impact of development proportional financial contributions are required towards the delivery of identified mitigation schemes at a total of 7 locations.
- 1.13 In conclusion, the proposed development has been tested against the three key transport tests set out in the National Planning Policy Framework. This TS has demonstrated that the proposed development:

- Appropriate takes up the opportunities for sustainable travel; future residents have a choice of transport modes available to them to undertake day-to-day activities;
- Provides safe and suitable access for all users; and
- Does not have a 'severe' residual cumulative impact upon the operation of the local highway network.

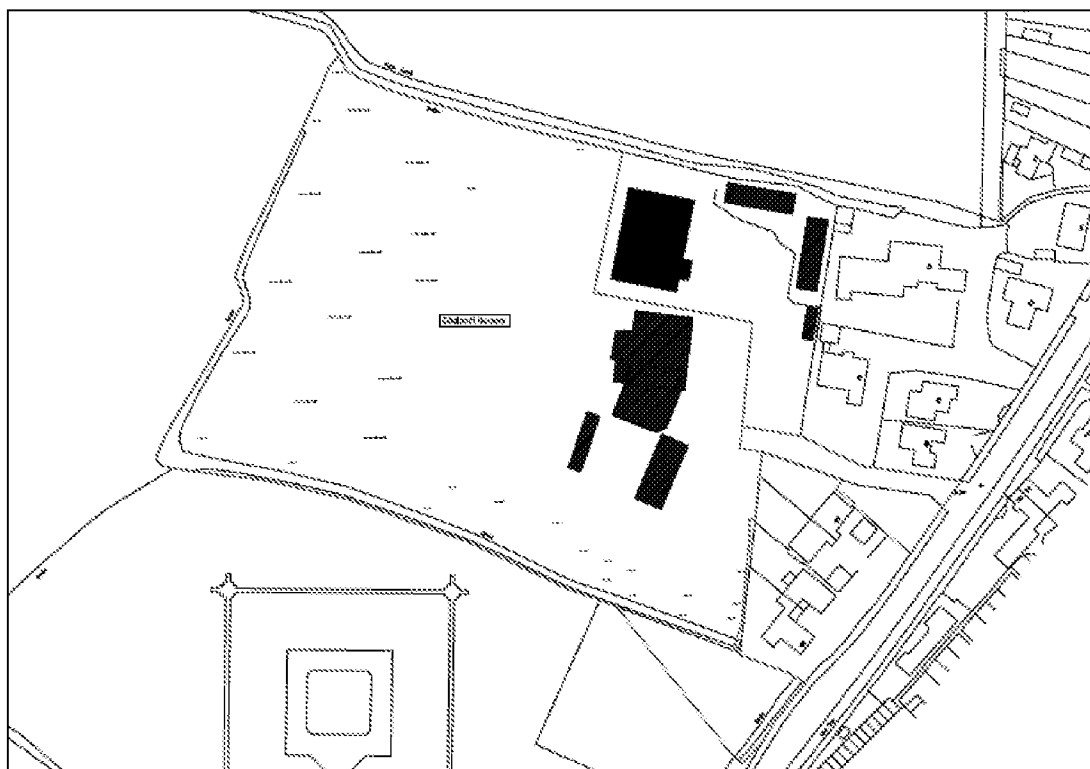
1.14 On that basis, and in accordance with paragraph 109 of the NPPF, the development is acceptable in transport terms.

SECTION 2 Introduction

2.1 Background

- 2.1.1 Landform Bersted Ltd has appointed i-Transport LLP to provide highways and transport advice for the proposed re-development of Chalcroft Nursery. The proposal comprises the modernisation of the existing commercial offering and the provision an additional 1542 sqm of commercial space (including B1(b), B1(c), B8 and A1 land uses), 20 residential dwellings, landscaping, infrastructure and a new vehicular access.
- 2.1.2 The development site is located to the west of Chalcroft Lane and provides an existing commercial offering that includes a garden centre and nursery, an aquatic sales centre and a charity furniture outlet. The existing uses on the site are accessed from Chalcroft Lane via Ffairfach Close.
- 2.1.3 The site is bounded by agricultural land to the north and west. The surrounding area further north, east and south of the site is predominantly residential in nature. An extract of the Site Location Plan 01304_S-08 P1 detailing the red line boundary of the site, prepared by JTP, is shown in **Image 2.1**.

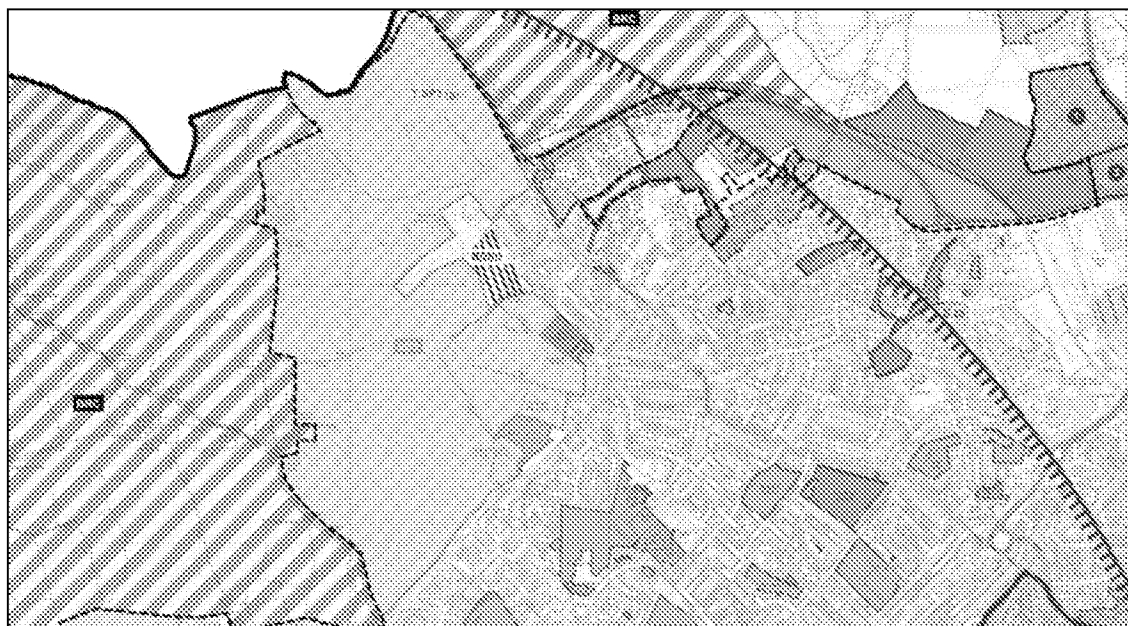
Image 2.1: Site Location Plan Extract



Source: JTP Drawing 01304_S-08 P1

- 2.1.4 The site forms a part of the wider 'West of Bersted' Strategic Allocation, which is identified in the Adoption Arun Local Plan 2011 – 2031 (2018) under policy H SP2a (SD3). The whole West of Bersted allocation has been identified as being able to deliver at least 2,500 dwellings over the plan period. An extract of the Western Policy Map identifying the location of the SD3 allocation and nearby consented development is shown in **Image 2.2**.

Image 2.2: Extract of Site Allocation Plan



Source: Adoption Arun Local Plan (2018) and Consultants' annotations

2.2 Scope of Report

- 2.2.1 This Transport Statement (TS) has been prepared to accompany an outline planning application with all matters reserved except access. The TS considers the three key transport tests outlined in paragraphs 108 of the National Planning Policy Framework (NPPF) (2019), which are also reflected in local transport policy. These tests are as follows:

- Can the opportunities for sustainable travel modes be appropriately taken up?
- Can safe and acceptable access be provided?
- Will the traffic impacts be acceptable?

- 2.2.2 Paragraph 109 of the NPPF then goes on to state:

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

2.3 Structure of Report

2.3.1 The remainder of this report is structured as follows:

- Section 2 reviews the relevant national and local transport policy;
- Section 3 sets out the development proposals;
- Section 4 provides an overview of the existing transport conditions on the local transport network in the vicinity of the site;
- Section 5 considers the accessibility of the site relative to local facilities;
- Section 6 provides an assessment of the likely transport impact of the development proposals, including the traffic impact on the local roads;
- Section 7 sets out the operational assessment of the proposed site access junction considers the mitigation requirements of the proposed development; and
- Section 8 summarises the findings of this TS.

SECTION 3 Policy Context

3.1 Introduction

- 3.1.1 This section of the TS summarises the national and local transport policies that provide the context for the transport appraisal of the development proposal.

3.2 National Transport Policy

National Planning Policy Framework (2019 Revision)

- 3.2.1 The revised NPPF sets out the Government's planning policies and how these are expected to be applied. It also constitutes guidance for local planning authorities and decision takers both in drawing up plans and as a material consideration in determining applications.

- 3.2.2 The NPPF stresses that at the forefront of planning is the 'presumption in favour' of sustainable development. Paragraph 9 states:

"at the heart of the Framework is a presumption in favour of sustainable development".

- 3.2.3 The NPPF requires in paragraph 111 and that all developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment.

- 3.2.4 Paragraph 108 presents the primary transport tests for new development proposals, stating that plans and specific applications for development should ensure 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."

- 3.2.5 Paragraph 109 of the revised NPPF presents a demanding test for assessing transport impacts. Only if there would be an 'unacceptable impact on highway safety' or when residual cumulative impacts are 'severe' should proposals be refused on transport grounds.

- 3.2.6 On this basis, planning permission for development should be approved unless a) the proposal is not consistent with development plan policies; b) where any adverse impacts 'significantly and

demonstrably' outweigh the benefits; or c) the specific policies within the NPPF indicate that the proposal should be restricted.

- 3.2.7 In accordance with NPPF, this TS has been produced to accompany the planning application and assesses the scheme against these key transport tests.

3.3 Local Transport Policy

Adoption Arun Local Plan 2011-2031 (July 2018)

- 3.3.1 In July 2018, Arun DC adopted a new Local Plan which sets out the vision for Arun District to 2031. The Plan identifies the vision for Arun district to 2031.

- 3.3.2 The proposed development site forms part of the wider 'West of Bersted' Strategic Allocation, which is identified in the adopted Arun Local Plan 2011 – 2031 (2018) under policy H SP2a (SD3). The whole West of Bersted allocation has been identified as being able to deliver at least 2,500 dwellings over the plan period as well as providing some employment uses. Redevelopment of the site therefore has policy support.

- 3.3.3 The Local Plan identifies a series of policies relating to transport, including:

"Policy T SP1 – Transport and Development - This identifies that development sites will be supported where they:

- ***Are designed to reduce the need to travel by car, but make provision for safe access to the site for all travel modes;***
- ***Give priority to pedestrian and cycle movements;***
- ***Incorporate appropriate levels of parking in line with WSCC Guidance;***
- ***Are supported by effective and deliverable Transport Assessments and Travel Plans; and***
- ***Explain how development can:***
 - ***Accommodate deliveries and servicing;***
 - ***Give priority to pedestrian and cycle movements and have access to high-quality public transport;***
 - ***Create safe and secure layouts for all users;***
 - ***Incorporate electric charging infrastructure; and***
 - ***Consider the needs of people with disabilities."***

"Policy T DM1 – Sustainable Travel and Public Rights of Way – This identifies that proposals for new development must:

- *Be located where they are close to sustainable travel opportunities which link to key destinations;*
- *Contribute to the extension of public transport services;*
- *Make provision for pedestrian and cycling facilities; and*
- *Contributes to provision of a joined-up cycle and PROW network."*

3.3.4 The adopted Arun Local Plan is supported by an extensive evidence base that includes the Arun Transport Study Stage 3 (2017 Enterprise Bognor Review). The study assesses the impact of the Local Plan development strategy on the strategic transport network and identifies improvement schemes that are required to mitigate the impact of allocated development. Chapter 6 of the study apportion the level of impact that each of the allocated development sites will have upon the junctions, and Chapter 7 identifies the associated costs. The junctions associated with the West of Bersted development are summarised in **Table 3.1**, utilising the 'high estimate' cost.

Table 3.1: West of Bersted Infrastructure Contribution Requirements

Junction No.	Junction	Type	Cost (High Estimate)	Impact	West of Bersted Contribution
2	A27 / A259 (Bognor Road Roundabout)	Capacity	£915,000	57%	£521,550
7	A27 / A29 (Fontwell Eastern Roundabout)	Capacity	£595,000	10%	£59,500
17	A29 / A259 Rowan Way	Capacity	£620,000	38%	£235,600
18	A29 / A259 Felpham Relief Road	Capacity	£638,000	35%	£216,920
23	A259 / B2187 (Littlehampton West - Tesco)	Capacity	£334,000	14%	£46,760
20	A259/B2132 Cornet Corner	Safety	TBD	47%	TBD
21	A259/B2233 Oystercatcher	Safety	TBD	21%	TBD

Source: Arun Transport Study Stage 3 (2017 EBR Version)

3.3.5 This Transport Statement has been prepared in accordance with policies SP1 and DM1 and, where necessary, informed by the Arun Transport Study Stage 3.

West Sussex County Council's Transport Plan 2011-2026

3.3.6 The West Sussex County Council (WSCC) Local Transport Plan 3 was published in February 2011 and sets out a long-term strategy and implementation plan for making improvements to the transport system throughout the county over the next 20 years.

3.3.7 The strategy for Arun is to provide improvements to the transport system to tackle the identified transport issues as and when funding becomes available. To ensure that the regeneration aspirations of the plan are delivered, and the identified transport issues are addressed, they will ensure that all new scheme and developments contribute and support, in some way, to the following:

- ***increasing use of sustainable modes of transport;***
- ***improving network efficiency in order to improve journey times and air quality;***
- ***improving safety for all road users;***
- ***discouraging HGVs from using unsuitable roads; and***
- ***improving accessibility between communities within the District.***

3.3.8 This TS has been prepared in accordance with the strategies set out in the Local Transport Plan and provides a comprehensive assessment of the impacts of the development proposal.

Arun Parking Standards Supplementary Planning Document (2020);

3.3.9 This SPD outlines Arun District Council's approach to parking at new developments (both residential and commercial) and should be used to help determine the level of parking at new developments. The SPD provides guidance on levels of car parking, cycle parking and electric vehicle infrastructure.

3.3.10 The document is based upon the 'West Sussex County Council Guidance on Parking at New Developments May 2019' (WSCC GPND) with a few exceptions. The SPD therefore seeks to define and formalise these standards in order to give them greater weight when considering planning applications.

3.3.11 The parking standards are based on Parking Behaviour Zones. The proposed development falls within 'Zone 2 – Peri-Rural'. A summary of the parking standards for the residential and commercial uses for the proposed development site are summarised in **Table 2.2** and **2.3** respectively.

Table 3.2: Residential Car and Cycle Parking Standards – Zone 2

No. Of Bedrooms	No. of Habitable Rooms	Car Parking Provision	Cycle Parking Provision
1	1-3	2	1
2	4	2	1
3	5-6	2	2
4+	7+	3	2

Source: ADC Parking Standards Supplementary Planning Document, January 2020

Table 3.3: Car and Cycle Parking Standards for Non-Residential Developments

Use Class	Vehicular Parking Standard	Cycle Parking Standard
A1	1 space per 14sqm	1 space per 100sqm for staff and 1 space per sqm for customers
B1	1 space per 30sqm Up to threshold of 500sqm in less accessible areas	1 space per 150sqm for staff and 1 space per 500sqm for visitors
B8	1 space per 100sqm	1 space per 500sqm for staff and 1 space per 1000sqm for visitors

Source: ADC Parking Standards Supplementary Planning Document, January 2020

- 3.3.12 It should be noted that the parking ratios for commercial development are for guidance purposes only, and that the Parking SPD requires that the parking strategy be informed by a site specific assessment.

West Sussex Walking and Cycling Strategy 2016 – 2026

- 3.3.13 WSCC has developed a Walking and Cycling Strategy to outline the design and safety principles for walking and cycling, recognising the different needs of users, and identifies and prioritises potential infrastructure improvements for the County.
- 3.3.14 In relation to Bersted and the surrounding area, the Strategy identifies potential improvements to local cycle routes between Chichester and Bognor Sea front in the vicinity of Chalcraft Lane and West Meads Drive.
- 3.3.15 Section 3 and 4 of this TS sets out how connections to the local cycle routes will be made.

Relevant Transport Guidance

3.3.16 The TA has also been prepared with due regard to relevant 'industry standard' practice and guidance documents, including:

- DfT's 'Manual for Streets' (MfS) and 'Manual for Streets 2' (MfS2);
- The Design Manual for Road and Bridges (DMRB);
- Sustrans 'Design Manual';
- National Travel Survey (NTS) data;
- WSCC's 'Transport Assessment Methodology' (TAM); and
- Local Transport Notes (LTNs), including on walking and cycling routes

3.4 **Summary**

3.4.1 Paragraph 108 of the NPPF identifies the three key transport criteria that decisions on development proposals should take account of. These are whether:

- The opportunities for sustainable travel have been appropriately 'taken up';
- Safe and suitable access can be achieved; and
- Improvements can be undertaken within the transport network that cost effectively limit the impacts of the development.

3.4.2 These criteria are reflected in local policy. This TS has therefore been prepared to assess the development proposal against these criteria.

3.4.3 It is noted that the site forms part of the wider West Bersted Allocation SD3 in the Arun District Council Local Plan. The associated Arun Transport Study assesses the impact of local plan development on the strategic network and apportions infrastructure costs to each of the housing allocations.

3.4.4 The remainder of this TS demonstrates how the proposals comply with the identified national and local transport policy.

SECTION 4 Development Proposals

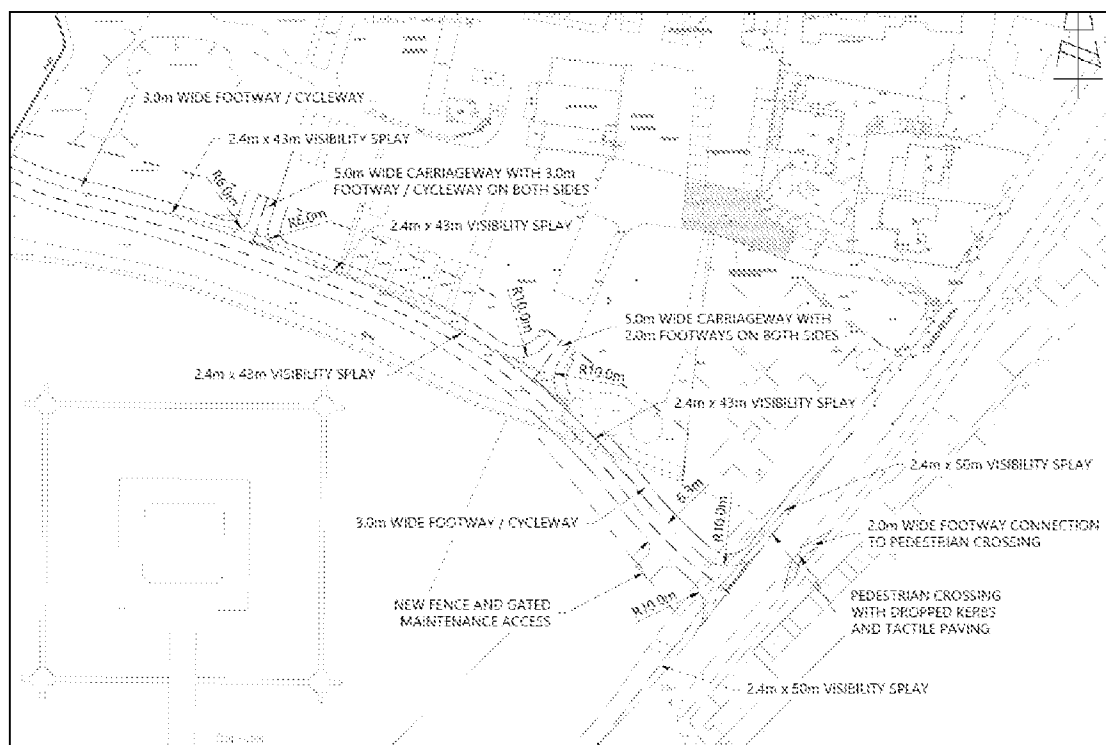
4.1 Introduction

- 4.1.1 The planning application is parameter based and in outline, with only access to be determined as a detailed matter. The proposed development comprises 1,542 sqm of new commercial space, of which a maximum of 199sqm will be in an A1 use class with the remainder a flexible use in classes B1 (b and c) and B8 uses, 20 residential dwellings, modernisation and reconfiguration of the nursery, associated landscaping, infrastructure and a new vehicular access.
- 4.1.2 An illustrative site layout accompanies the planning application to demonstrate how the development can be accommodated on the site; however, consent is not being sought for the layout of the buildings at this time, with matters relating to the internal layout to be determined as part of a future Reserved Matters Application (RMA).
- 4.1.3 Nevertheless, the layout will be designed in line with key guidance contained within the DfT's 'Manual for Streets' 1 and 2, West Sussex's County Council's 'Local Design Guide – Supplementary Guidance for Residential Development Proposals' or any other relevant standards or guidance at the time of submission.

4.2 Site Access Strategy

- 4.2.1 The existing garden centre and nursery, aquatics centre and other ancillary uses on the site are accessed from Chalcroft Lane via Ffairfach Close. As part of the redevelopment of the site, the Ffairfach Close access will continue to be used for the enabling element of the development (e.g. reconfiguration and provision of the commercial uses on the site) while a new purpose built priority junction in Chalcroft Lane will be constructed and brought into use prior to first occupation of the residential dwellings.
- 4.2.2 The proposed access arrangements are presented in **Drawing ITB14244-GA-001 Rev B** and prepared in part by Cannon Consulting Engineers; an extract of the drawing is provided as **Image 4.1**. Upon first occupation of the residential dwellings, the existing Ffairfach Close access will be stopped up and all site access, including that to the commercial element of the site, will be achieved via the new priority junction. From the access road, access to the residential and commercial parcels will be provided via separate priority junctions.

Image 4.1: Extract of Site Access Arrangement



Source: ITB14224-GA-001 Rev A

- 4.2.3 Visibility splays of 2.4m x 50m have been identified on the access drawing, in accordance with the recorded 85th percentile speed of 33mph; in practice, the visibility splay extends beyond this distance.
- 4.2.4 A dropped kerb tactile paving crossing of Chalcraft Lane has been provided immediately to the north of the access. Due to the gradient of the verge on the opposite side of Chalcraft Lane, angled connecting paths have been provided to minimise the impact of the gradient. The crossfall of the connecting footway will be considered further at the S278 detailed design phase of the access works.
- 4.2.5 To increase the distance of the access road from No 98 Chalcraft Lane immediately to its north, and to enable a landscape buffer to be provided between the access road and the cemetery to the south, no pedestrian provision is made on the southern side of the access road carriageway. Pedestrian provision is not required on this side of the carriageway as there is no existing pedestrian infrastructure to the south of the access road that requires connecting infrastructure from the development, nor a pedestrian desire line to be accommodated. On that basis, the landscaped buffer is considered to offer greater overall benefit.

- 4.2.6 Maintenance access to the retained SSE land, which is currently achieved directly from Chalcroft Lane, is to be provided from the site access road via a simple crossover to a field gate access. Maintenance access to this field will be an infrequent occurrence.
- 4.2.7 The new access has been designed to facilitate access to the wider Landform landholding that forms part of the West of Bersted housing allocation included in the adopted Arun Local Plan. This parcel of land has the potential to accommodate circa 230 homes, equating to some 8% of the West of Bersted allocation. It should be noted that it is not the intention to promote or seek consent for cross boundary vehicular connectivity (other than bus links and access for emergency vehicles) as part of the wider site, and the proposed access has been designed to accommodate traffic associated with a limited number of dwellings only.
- 4.2.8 In accordance with the WSCC Road Safety Audit Policy, a Stage 1: Road Safety Audit has been commissioned and is to be submitted as a standalone document.

4.3 Site Layout and Parking

Site Layout

- 4.3.1 Whilst the details of the site layout will be determined as part of a future RMA, the 'principles' of the site layout have been considered to provide context to the application and to demonstrate how the development can be brought forward.
- 4.3.2 The site layout has been designed in accordance with contemporary design guidance, namely DfT's *'Manual for Streets'* and West Sussex County Councils *'Local Design Guide'*. The illustrative site Masterplan accompanying the planning application demonstrates how the development can be delivered on the land.

4.4 Parking

- 4.4.1 Future reserved matters application would provide details of the vehicular parking provision, however, parking will be provided with reference to the Arun District Council Parking Standards Supplementary Planning Document or the prevailing standards at the time of the application.

Residential

- 4.4.2 The illustrative site layout for the residential element of the site has been informed by Arun's adopted standards and car parking provided on the basis of the ratios set out in **Table 4.1**.

Table 4.1: Arun SPD Parking Ratios

No. Of Bedrooms	No. of Habitable Rooms	Car Parking Provision	Cycle Parking Provision
1	1-3	2	1
2	4	2	1
3	5-6	2	2
4+	7+	3	2

Source: Arun District Council Parking Standards (2020)

Commercial

- 4.4.3 Under the Companies Act 2006, businesses are obliged to minimise their effect on the environment. In support of this obligation and in line with the West Sussex Transport Plan, both the Arun District Council Supplementary Parking Document (January 200) and the West Sussex County Council Guidance on Parking at New Developments (August 2019) document seek to control the availability of car parking for commercial development. Guidance on parking ratios are provided within the documents and those relevant to the development are set out in **Table 4.2**:

Table 4.2: Guidance Ratios for Non-Residential Parking

Use	Car Parking Ratio	Cycle Parking Ratio
A1 Retail	1 space per 14sqm	Staff: 1 space per 100sqm Customers: 1 space per 100 sqm
B1 Business	1 space per 30sqm	Staff: 1 space per 200sqm Visitors: 1 space per 1000sqm
B8	1 space per 100sqm	Staff: 1 space per 500sqm Visitors: 1 space per 1000 sqm

Source: ADC Supplementary Parking Standards (January 2020)

- 4.4.4 However, the guidance documents recognise that parking requirements will vary greatly between sites, and that the ratios provided should only be used as initial guidance. The amount of parking provided should instead be based upon the following factors:
- The developments land-use;
 - The trip rate associated with the development; and
 - The user group of staff/visitors to the site.

4.4.5 On this basis, and while the layout is only illustrative at this stage and subject to change as part of a future RMA, a parking accumulation assessment has been used to inform the car parking strategy of both the retained and re-provided/new commercial buildings. The assessment has been informed by the trip rates derived for the site, which are discussed in detail in **Section 7** of this TS.

4.4.6 The assessment identifies that peak parking demand will occur between the hours of 13:00 and 14:00, with the potential for up to 71 vehicles parked on site at any one time. Given the nature of the uses it is recognised that there may be seasonal variation within the figures, particularly given the presence of a garden nursery on the site which will attract more visitors during periods of good weather. Therefore, a total of 99 parking spaces have been provided to allow for any seasonal fluctuations in demand. The detailed accumulation assessment is provided at **Appendix A**.

Cycle Parking

4.4.7 Future RMAs would provide details of cycle parking provision. Adequate cycle parking facilities would be provided for the proposed dwellings in secure covered parking, such as within a garage or cycle store. Accordingly, cycle parking would be provided to comply with the relevant standards, as set out above in **Tables 4.1** and **4.2**.

4.5 **Waste and Recycling Collection**

4.5.1 Swept path analysis of the site access junction has been undertaken based on a 12m refuse collection vehicle. The analysis is presented in **Drawing ITB14224-GA-002 Rev A** and demonstrates that safe and suitable access can be achieved.

4.5.2 The design of the illustrative layout has been informed by vehicular swept path analysis to ensure that suitable provision refuse collection. As part of future RMAs, the refuse collection arrangements within the site will continue to be designed with regard to the guidance in Section 6.8 of Manual for Streets (MfS) guidance and Arun District Councils web-based guidance. The layout will include street widths and turning heads of sufficient size to allow a refuse vehicle to enter, turn and exit the development in forward gear.

4.5.3 Where refuse vehicle access is restricted, bin collection points will be provided to meet the carry distance requirements given in Section 6 of MfS, i.e. 25m from collection point to refuse vehicle

and 30m from individual dwellings to the collection point. It is understood that to enable collection of refuse from private roads, ADC requires the following criteria to be met:

- Roads must be of a sound construction, to a suitable hard surface free of potholes and obstructions;
- The road must not be less than 3 metres wide, with no obstructions from overhanging trees or shrubs etc;
- There must be a minimum of 5.5 metres height clearance with no obstructions from overhanging branches or cables; and
- When a through road does not exist, a turning area must exist. A 12-metre-long vehicle must be able to turn around in 3 manoeuvres or less.

4.5.4 The commercial element of the site will be subject to private commercial refuse collection arrangements. However, the criteria of both Manual for Streets and Arun District Council will also been applied to this parcel.

4.6 **Emergency Vehicles**

4.6.1 The illustrative layout has been designed to accommodate emergency vehicle access requirements. Any layout submitted as part of a future RMA will continue to comply with Section 5.4 and 5.5 of the WSCC Design Guide and the Building Regulations Approved Document B -- Fire Safety. These documents require that:

- Access to be provided for a fire tender to within a maximum of 45m of the furthest point of every property;
- A fire tender will not be required to reverse more than 20m;
- Turning facilities to be provided where there are no-through-vehicular routes and reversing distance exceeds 20m;
- Emergency access routes have a 3.7m clear width; and
- Occasional pinch points (e.g. at a gateway) are acceptable, to a minimum width of 3.1m.

4.7 Summary

- 4.7.1 Vehicular access is proposed from Chalcroft Lane. The proposed access arrangements have been designed in accordance with the relevant design guidance contained in the Manual for Streets and delivers suitable geometry and visibility to ensure the safe movement of vehicles.
- 4.7.2 Upon first occupation of the residential dwellings, the existing access to the Chalcroft Nursery will be stopped up and access to both the residential and commercial elements of the development will be achieved via the new site access junction.
- 4.7.3 Swept path analysis has been undertaken to ensure that the junction is suitable for use by refuse and emergency vehicles.
- 4.7.4 A 3m foot/cycle way is provided adjacent to the site access road; a dropped kerb and tactile paving crossing is proposed to assist crossing manoeuvres over Chalcroft Lane.
- 4.7.5 The development will deliver car and cycle parking in line with the relevant adopted guidance and will promote a site layout that has been developed in accordance with the principles of Manual for Streets.
- 4.7.6 In this regard, it is demonstrated that the site will deliver safe and suitable access, and that the proposed development compiles with the paragraph 108 of the NPPF.

SECTION 5 Existing Conditions

5.1 Introduction

- 5.1.1 This section of the TS describes the existing transport conditions in the area, including the opportunities for walking, cycling and the use of public transport. The existing highway conditions are also reviewed to provide a baseline for the TS.

5.2 Walking and Cycling

Chalcroft Lane

- 5.2.1 Chalcroft Lane forms the site frontage and routes north towards North Bersted and south towards Aldwick. Continuous footways are provided on both sides of Chalcroft Lane in the vicinity of the site, ranging from circa 2.0-2.5m and 1.6-1.8m on the western and eastern sides of the carriageway respectively. Additionally, the eastern footway is separated from the carriageway by a grass verge measuring circa 3m in width.
- 5.2.2 Dropped kerbs and tactile paving forms a crossing of Chalcroft Lane Approximately 80m to the north of the Chalcroft Lane/Ffairfach Close junction, with additional provision some 45m further north. Furthermore, a signal-controlled pedestrian crossing is provided across Chalcroft Lane just to the north of Central Avenue.
- 5.2.3 Both footways continue north with dropped crossing points provided across the minor arms of priority junctions with Chalcroft Lane. The Chalcroft Lane / B2259 Chichester Road double mini roundabout provides dropped kerb crossing facilities and pedestrian refuge islands on all arms of the junction with the exception of North Bersted Street.
- 5.2.4 To the south of Ffairfach Close, both footways continue for approximately 120m, after which the western footway ceases. The eastern footway continues, separated from the carriageway by a grass verge. It should be noted that street lighting is provided along the extent of Chalcroft Lane and good natural surveillance is provided by existing residential properties.

B2259 Chichester Road

- 5.2.5 The B2259 Chichester Road connects with Chalcroft Lane at the Royal Oak public house, routing south east towards South Bersted and north west to North Bersted.

- 5.2.6 To the north west of Chalcroft Lane, continuous footways are provided on both sides of the carriageway measuring circa 2.5m. A pedestrian controlled signal crossing is provided approximately 105m to the north west of the mini roundabout outside the Royal Oak public house. All of the junctions along Chichester Road provide dropped kerbs, with some larger junctions also providing tactile paving and pedestrian refuge islands. A shared footway/cycleway is provided just to the north of the ESSO garage on both sides of the carriageway in addition to a Toucan crossing facility.
- 5.2.7 Continuing north to the Chichester Road/Elbridge Avenue/A259/North Bersted Bypass, the footway/cycleways are initially routed around the roundabout separated from the carriageway by large areas of vegetation before returning to the carriageway edge. Uncontrolled crossing points comprising dropped kerbs and tactile paving are provided on the Elbridge Avenue and North Bersted Bypass arms of the roundabout. The shared footway/cycleway on the western side of the carriageway continues north from the roundabout along the A259 and terminates just south of the junction with Babsham Lane, at which point Toucan crossing facilities are provided.
- 5.2.8 Eastbound from the Royal Oak public house, continuous footways are provided on both sides Chichester Road measuring between approximately 2-3m. Dropped kerbs are provided at all the minor arms of junctions along the route, with the majority of junctions also providing tactile paving. It should be noted that street lighting is present along Chichester Road in addition to good natural surveillance from surrounding properties.

Central Drive / Central Avenue

- 5.2.9 Central Drive and Central Avenue are located to the east of Chalcroft Lane. Footways are provided on both sides of the carriageway measuring between 1.5-3.0m on both sides of the carriageway and street lighting is provided. At its eastern extent, Central Avenue connects with Chichester Road, providing access to a range of local facilities and services via a junction that provides dropped kerbs, tactile paving and a pedestrian refuge island. Again, street lighting is provided along the extent of this route.

Greencourt Drive

- 5.2.10 Greencourt Drive is a posted 20mph residential zone that connects to Central Drive and Central Avenue to the north and South Way and Collyer Avenue to the south. Footways are provided on both sides of the carriageway, measuring approximately 2.5m in width on both sides. Greencourt

Drive is street lit along its extent and lined with residential properties on both sides which provide a good level of natural surveillance. This route provides a quick, convenient and safe route to Southway Primary School, Regis School and The Arena Sports Centre.

Collyer Avenue

5.2.11 Collyer Avenue continues from Greencourt Drive from the west and heads eastwards through a residential area towards Bognor Regis Rail Station. Footways measuring approximately 2m are provided along the extent of Collyer Avenue with dropped kerbs and tactile paving across most junctions in addition to traffic calming measures such as high friction red coloured road surfacing.

5.2.12 Street lighting is provided along the extent of Collyer Avenue, again, with good natural surveillance from surrounding residential properties. Collyer Avenue serves as one of the main connections between the site and Bognor Regis Rail Station for pedestrians and cyclists.

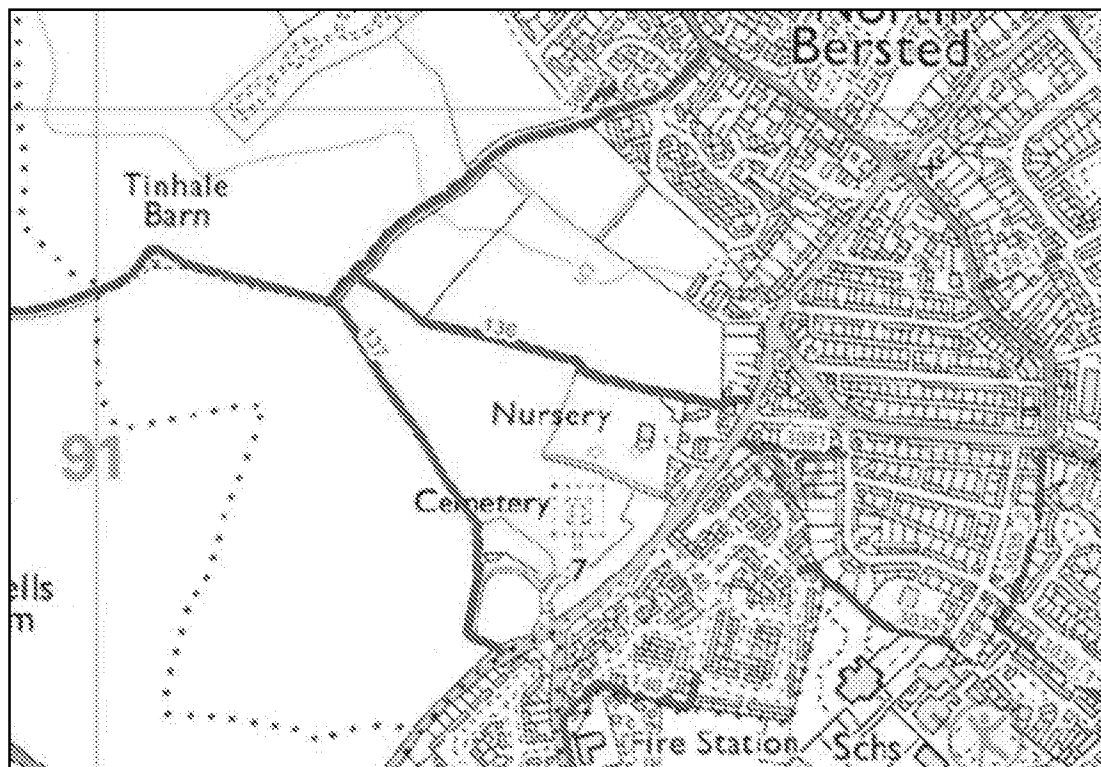
Fairlands

5.2.13 Fairlands is a short residential street connecting Chichester Road to the west with Hazel Road to the east. Dropped kerbs, tactile paving and a pedestrian refuge island is provided at the junction between Fairlands and Chichester Road. Footways are provided on both sides of the carriageway measuring approximately 2m on both sides. Traffic calming features comprising speed pillows are present along Fairlands and Hazel Road further east which are intended to slow vehicles, thus having a beneficial affect for pedestrians and cyclists.

5.3 **Public Rights of Way (PROW)**

5.3.1 The PROW network in the vicinity of the site is presented in shown in **Image 5.1**.

Image 5.1: Extract from PROW Map



Source: WSCC I-Map

5.3.2 There is a network of PROW footpaths within the vicinity of the site. Footpath 136 runs across the northern boundary of the site, providing a connection to Chalcraft Lane to the east and joining the road circa 5m north of the Chalcraft Lane / Central Drive junction. Footpath 3035 runs between Stroud Green Drive and South Way, providing a quicker route to the local schools from the site.

5.3.3 To the west of the application site, Footpath 136 provides a connection to a wider network of PROW:

- Footpath 137 connects to Chalcraft Lane to the west of Chalcraft Lane cemetery;
- Footpath 134 runs along the northern edge of the site, providing a connection to B2259 Chichester Road via Newbarn Lane. A financial contribution of £50,000 was secured as part of development BE/92/15 to provide enhancements to this route for use as a bridleway;

5.3.4 Consequently, it can be seen there is good pedestrian permeability within the local area as well as opportunities for future residents to access the PROW network for leisure purposes.

5.4 Public Transport

Bus

- 5.4.1 The closest bus stops to the site are located on the B2259 Chichester Road, circa 600m from the centre of the site. These stops are served by the regular bus service 700. There is flag and pole and timetable information provided at these stops. **Table 5.1** provides a summary of local bus services.

Table 5.1 Summary of Bus services

Service	Route	Service Frequency		
		Weekdays	Saturdays	Sundays
700	Littlehampton – Chichester	15-minute service	15-minute service	½ Hourly Service

Source: Traveline southeast

- 5.4.2 The Coastliner 700 service provides a genuine opportunity to travel to key destinations including Chichester and Littlehampton and provides a realistic alternative to using the car to travel to these destinations given the direct and frequent nature of the service.
- 5.4.3 In addition to the 700 service, Stagecoach U7 provides a less frequent route between Chichester and Bognor, including stops at University campuses in both Bognor and Chichester.

Rail

- 5.4.4 Bognor Railway Station is located approximately 2.2km to the southeast of the site and provides rail services operated by southem. **Table 5.2** summarises existing services from the station.

Table 4.2: Bognor Rail services

Destination	Service Frequency			Average Journey Time
	Weekdays	Saturdays	Sundays	
Chichester	4 services	4 services	3 services	20 mins
Littlehampton	2 services	2 services	1 service	21 mins
Portsmouth	3 services	3 services	3 services	1 hr
Southampton	2 services	2 services	1 service	1hr 20 mins

Destination	Service Frequency			Average Journey Time
	Weekdays	Saturdays	Sundays	
Brighton	2-3 services	2 services	2 services	1 hr 5 mins
London	3-4 services	3 services	2 services	1 hr 45 mins

Source: National Rail

- 5.4.5 The railway station is located within a reasonable cycling distance and can be access by public transport, therefore, there is a good opportunity for future users of the site to undertake linked trips to the site.

5.5 Local Highway Network

Chalcroft Lane

- 5.5.1 The site lies to the north west of Chalcroft Lane, a single carriageway road which is largely residential in nature. The carriageway is circa 7.3m wide, has street lighting and is subject to a 30mph speed limit. The road provides a key route between the areas of North Bersted and Aldwick. Traffic data was collected by means of an Automatic Traffic Count (ATC) in November 2018 and the outputs are summarised in **Table 5.3**

Table 5.3: Chalcroft Lane – Typical Traffic Conditions

	Northbound	Southbound
AM Peak (08:00-09:00)	669 vehicles	563 vehicles
PM Peak (17:00-18:00)	613 vehicles	700 vehicles
Daily (00:00 – 00:00)	8,089 vehicles	8,318 vehicles
Average Speed	28.9 mph	29.5 mph
85 th Percentile Speed	33.1 mph	33.2 mph

Source: ATC Data – November 2018

- 5.5.2 At present, Chalcroft Lane provides a connection to the B2259, and then on to the A259, for residents in the Aldwick, Bersted and Bognor Regis area. The West of Bersted allocation SD3 includes the provision of a new link road to the A259 from Lower Bognor Road, which will redistribute existing movements and decrease baseline traffic flows along Chalcroft Lane.

B2259 Chichester Road

- 5.5.3 The B2259 Chichester Road extends from the A259 North Bersted Bypass to the north of the site to the roundabout between the A29 / B2259 Hotham Way / B2166 to the south east of the site and provides a key route to South Bersted and areas of Bognor Regis. The B2259 is a single carriageway distributor road providing access to many residential streets. The road width varies, but typically measures circa 6.5-7.3m, has street lighting and is subject to a 30mph speed limit.

Central Drive / Central Avenue

- 5.5.4 Central Drive and Central Avenue are residential single carriageway roads located to the east of Chalcroft Lane that provide direct frontage access to adjacent properties. The roads are broadly aligned from east to west and provide access towards the local centre of Bersted.
- 5.5.5 The carriageways of both roads are circa 7.3m in width, although it is noted that on-street parking widely occurs which reduces the usable width of the carriageway. The roads are subject to a 30mph speed limit, are street lit and have a 7.5 tonne weight restriction.

5.6 **Personal Injury Accident Data Analysis**

- 5.6.1 Personal Injury Accident (PIA) data has been obtained from Sussex Police for the most recent five-year period available (between 1 May 2015 and 30 April 2020) for the area shown in **Image 4.2**.

Image 5.2: Proposed PIA Study Area



Source: Consultants' image

5.6.2 In total, there were 45 recorded collisions, of which 6 were recorded as serious in nature and 39 were slight in nature, no fatal collisions were recorded within the study area. A summary of the location, nature and severity of the personal injury accidents is provided in **Table 4.4** while the full reports are included as **Appendix B**.

Table 5.4: Personal Injury Accident Data Summary

Location	Severity			Description
	Slight	Serious	Total	
Chalcroft Lane in vicinity of access	2	0	2	Both shunt type accidents when vehicles drove into the rear of a vehicle waiting to turn into Chalcroft Nurseries.
Chalcroft Lane / West Meads Drive	3	0	3	Two collision occurred when vehicles turning right failed to see oncoming traffic and one was a shunt type collision.

Location	Severity			Description
	Slight	Serious	Total	
Chalcroft Lane south of W Meads Drive	1	1	2	The serious collision occurred when a vehicle went to overtake a car and collided with another vehicle which was already overtaking. The slight collision occurred when a vehicle pulled out behind a parked vehicle into the path of an oncoming vehicle.
Chalcroft Lane / Lower Bognor Road Roundabout	3	0	3	All three collisions involved vehicles failing to give way to users (cyclists) already on the roundabout
Chalcroft Lane / Central Drive	2	1	3	Two slight collisions occurred when drivers failed to give way to existing users and the serious PIA was a shunt type collision.
Chalcroft Lane north of Central Drive	2	0	2	The slight collision occurred when a vehicle pulled out of side road into the path of an oncoming vehicle and the other when a child rode into a car reversing slowly from its driveway.
Chalcroft Lane / Chichester Road / North Bersted Street	11	1	12	Of the 12 collisions, 7 occurred when drivers failed to see existing users on the roundabout, one was a shunt type collisions of a serious nature, and two occurred when cars failed to see pedestrians crossing. A further two occurred when drivers lost control of their vehicles resulting in a collision.
B2259 Chichester Road (north of North Bersted Street)	3	0	3	One collision was a shunt type, another occurred when a driver failed to give way to an existing road user and another occurred when a driver failed to stop a pedestrian crossing and collided with a pedestrian.
B2259 Chichester Road / North Bersted Bypass Roundabout	3	0	3	All slight collisions were of a slight nature
B2259 Chichester Road north of North Bersted Bypass Roundabout	2	1	3	Two collisions occurred between cyclists and vehicles traveling in the same direction, including the serious collision. The other slight collision was a shunt type accident.
B2259 Chichester Road (in proximity to local shops)	7	2	9	Of the 9 collisions, two were serious, these occurred when a driver took evasive action to avoid a collision with another vehicle and collided with a utilities box and the other occurred when a car collided with a cyclist. The slight collisions occurred for a variety of reasons including shunt type accidents, failing to give way to existing users and pedestrians stepping out into the path of cars.
Total	39	6	45	-

5.6.3 Of the 45 recorded incidents, two accidents classed as 'slight' occurred in proximity to the proposed access and were recorded to be a result of driver error. Of course, any accident resulting in injury is to be regretted and safety matters should never be taken lightly; this is reflected in national planning policy.

- 5.6.4 A review of the records indicate that both accidents were identified as being shunt type collisions; highway conditions contributing to such incidents are typically associated with restrictions to forward visibility (e.g. on a bend with dense vegetation) resulting in the following driver having insufficient stopping sight distance to a stationary vehicle. In this instance, Chalcraft Lane has a straight alignment and forward visibility is in excess of that required to slow to a stop.
- 5.6.5 However, it should be noted that the existing access is to be stopped up and a new purpose-built access will be introduced prior to first occupation of the residential units. This access will be more prominent and should increase the awareness of other road users to its presence.
- 5.6.6 Whilst there is a small cluster of collisions recorded at the Chalcraft Lane / Chichester Road / North Bersted Street junction, a review of the nature of these collisions does not identify any highway defect contributing to the accidents. The proposed development will only result in a marginal increase of traffic at this junction; the proposed development will not have a material impact upon the operation of the junction.

5.7 Summary

- 5.7.1 The site is located within close proximity to a network of existing and proposed walking and cycling facilities which offer safe and convenient routes to local services and facilities.
- 5.7.2 The site is located within a reasonable walking distance of bus stops which provide a regular service to wider destinations including Bognor Regis, Littlehampton and Chichester. Bognor Railway Station is located approximately 2.2km to the south of the site and provides further opportunities for travel to destination further afield including Portsmouth, Brighton and London Victoria.
- 5.7.3 The site is well connected to the local highway network and a review of personal injury data does not indicate any specific highway safety problem on the local highway network.

SECTION 6 Accessibility

6.1 Introduction

6.1.1 Paragraph 108 of the NPPF sets out that development proposals should ensure that:

“Opportunities for sustainable transport modes have been taken up depending on the nature and location of the site to reduce the need for major transport infrastructure”

6.1.2 This section of the TA considers the accessibility of the site to key local services and facilities by walking, cycling and public transport and should be read in conjunction with the Accessibility Plan provided at **Figure 1**.

6.2 Journey Purpose and Key Destinations

6.2.1 In promoting sustainable transport, it is important to consider the reasons why future residents of the proposed development will make journeys.

6.2.2 The Department for Transport’s (DfT) National Travel Survey identifies the reasons people travel. The proportion of all trips by purpose (by all modes) is summarised in **Table 6.1**.

Table 6.1: Proportion of Trips per Year by Journey Purpose

Journey Purpose	Proportion of Trips
Leisure	26%
Shopping	19%
Commuting / Business	18%
Education / Escort Education	12%
Personal Business	10%
Other Escort	9%
Other (including Just Walk)	6%

Source: Table TSG8104 (NTS0409) of Transport Statistics Great Britain – 2017 Edition

6.2.3 Leisure, shopping and education journeys account for more than half of all journeys made. Commuting represents around 18% of all travel.

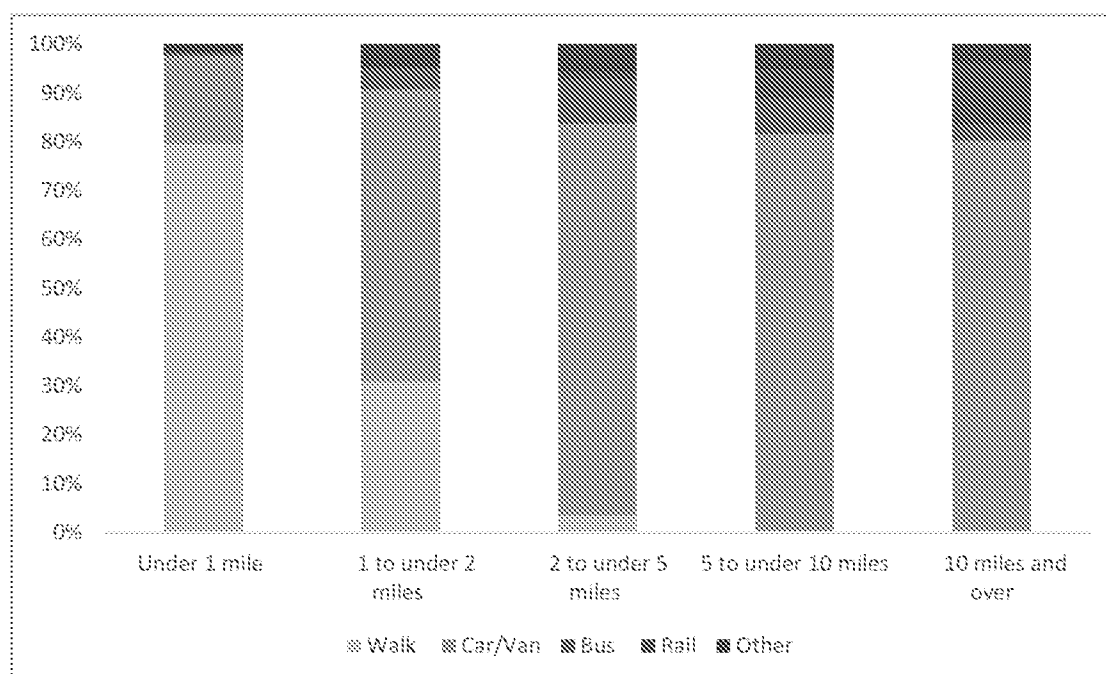
Walking Distances

6.2.4 Paragraph 4.4.1 of the Manual for Streets states:

“Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes’ (up to about 800 m) walking distance of residential areas which residents may access comfortably on foot. However, this is not an upper limit and PPG13 states that walking offers the greatest potential to replace short car trips, particularly those under 2km. MfS encourages a reduction in the need to travel by car through the creation of mixed-use neighbourhoods with interconnected street patterns, where daily needs are within walking distance of most residents.”

6.2.5 This is corroborated by the National Travel Survey (NTS) 2018 which identifies the mode share journeys of different lengths (**Image 6.1**) and confirms that the vast majority (80%) of trips of up to one mile (1.6km) are undertaken on foot.

Image 6.1: Proportion of Trips per Year by Journey Purposes (all modes)



Source: National Travel Survey, England, 2018

6.2.6 A walking distance of up to 1.6km is identified to offer the greatest potential to replace car trips, and this is therefore considered to be a ‘reasonable’ walking distance.

6.2.7 It is important to note that 2km is not however a maximum walking distance. Historically, the Design Manual for Roads and Bridges (DMRB) TD91/05 “Provision for Non-Motorised Users” at paragraph 2.3 has stated that:

“Walking is used to access a wide variety of destinations including educational facilities, shops, and places of work, normally within a range of up to 2 miles. Walking and rambling can also be undertaken as a leisure activity, often over longer distances”.

6.2.8 Whilst TD91/05 has been superseded there is no evidence to suggest that isn’t still the case.

6.2.9 On this basis, it is reasonable to consider a journey of 2 miles / 3.2km as a 'maximum' walking distance for most day-to-day journeys.

6.2.10 Against this background research, the following distances have been used for assessing the likelihood of walking journeys to and from the site:

- 1.6km – reasonable walking distance; and
- 3.2km – maximum walking distance.

Cycling Distances

6.2.11 DMRB TA 91/05 "Provision For Non-Motorised Users" paragraph 2.11 states:

"Cycling is used for accessing a variety of different destinations, including educational facilities, shops and places of work, up to a range of around 5 miles. Cycling is also undertaken as a leisure activity, often over much longer distances. As well as being a mode of transport in its own right, cycling frequently forms part of a journey in combination with cars and public transport."

6.2.12 Paragraph 1.5 in the Department for Transport's (DfT) Local Transport Note 2/08 'Cycle Infrastructure Design' (October 2008) states that:

"Urban networks are primarily for local journeys. In common with other modes, many utility cycle journeys are under three miles (4.8km) (ECF, 1998), although for commuter journeys, a trip distance of over 5 miles (8km) is not uncommon."

6.2.13 Data provided within the National Travel Survey demonstrates that the average distance per journey by bike is approximately 4.4km, with the current average length of an employment and leisure cycle trip some 5.2km.

6.2.14 For the purpose of this assessment, a 5km cycling distance is considered to represent a 'reasonable' cycle distance, with 8km considered to be 'maximum' cycling distance.

6.3 Accessibility to Local Facilities

6.3.1 Bersted offers a good range of local facilities and services which future residents of the site are likely to visit on a day to day basis. These are summarised in **Table 6.2** and shown on **Figure 1**.

Table 6.2: Key Destinations and Services

Purpose	Destination	Total Distance (m)	Walking Journey Time (mins)	Cycle Journey Time (mins)
Leisure	Jubilee Recreation Ground	270	3	1
	Bersted Village Hall	270	3	1
	Newtown Sports & Social Club	1000	12	4
	The Royal Oak Public House	950	11	4
	The Arena Sports Centre	1150	14	4
Retail	Nisa Local & Post Office	1000	12	4
	Tesco Express	1050	13	4
	Spar Euro Garage Bognor Regis	1450	17	5
	Co-op Food	1950	23	7
	Chichester Road Shops	900	11	3
Employment	South Bersted Business Park	2350	28	9
	Durban Park	2450	29	9
	Castlegrove Business Park	2550	30	10
	Arun Business Park	2850	34	11
Education	The Regis School	1150	14	4
	Stepping Stone Pre-School	1200	14	5
	Southway Primary School	1200	14	5
	Bognor School	1450	17	5
	Barton's Primary School	1450	17	5
	Nyewood CofE Infants School	1550	18	6
	Nyewood CofE Junior School	1550	18	6
Healthcare	Ramsdens Pharmacy	900	11	3
	West Meads doctors Surgery	1350	16	5
	Bersted Green Surgery	1750	21	7
Transport	Royal Oak Bus Stops	1050	13	4

Source: Consultants Estimates

Key:

	Comfortable walking distance (1.6km) / Reasonable cycle distance (5km)
	Acceptable walking distance (3.2km) / Commuter cycle distance (8km)

- 6.3.2 Table 5.2 demonstrates that there are a wide range of everyday facilities within a comfortable or acceptable walking distance of residents including education, convenience retail, healthcare, a range of leisure facilities and employment opportunities. All of the services and facilities outlined in Table 5.2 are within a reasonable cycling distance.
- 6.3.3 As set out in Section 3, the proposed development will form part of the wider 'West of Bersted' Strategic Allocation which will bring forward a number of community uses such as new educational and sporting facilities, a community hub, and incorporate planned new employment provision. Once completed this strategic site will provide further opportunity for existing and new residents to access services and facilities.
- 6.3.4 A Travel Plan Statement (ref: ITB14224-005 TPS) has been submitted with the application in order to encourage the uptake of sustainable modes of transport by residents of the proposed development.

6.4 Summary

- 6.4.1 Future residents of the proposed development will have the opportunity to access a range of everyday destinations by a choice of different travel modes. Walking is a realistic means of travel to and from the site, with well-connected routes providing direct access to local facilities which are located within a short walk of the site. Residents of the development will also benefit from a range of facilities provided on within wider 'West of Bersted' Strategic Allocation when it comes forward.
- 6.4.2 Everyday services and facilities are within a reasonable cycle distance from the site, and local road conditions are conducive to on-carriageway cycling.
- 6.4.3 Future residents of the proposed development therefore have the opportunity to access a range of destinations by choice of sustainable modes. The proposed development is located where the need to travel will be minimised and the use of sustainable transport modes can be maximised in line with NPPF requirements, and a Travel Plan Statement has been submitted with the application that sets out a framework of means to encourage the uptake of sustainable modes of transport by residents of the development.

SECTION 7 Traffic Impact

7.1 Introduction

7.1.1 This section of the TA summarises the traffic impact of the proposed development.

7.2 Observed Traffic Flows

7.2.1 Data collection was commissioned to be undertaken in November 2018 in order to establish baseline data on Chalcroft Lane in the vicinity of the proposed access. The surveys were undertaken for a week between 20 November 2018 and 26 November 2018 and recorded the directional speed and volume of traffic. The survey outputs are provided at **Appendix C**.

7.3 Existing Trip Generation

7.3.1 The site currently contains lawful and permitted A1 retail land use, comprising a garden centre and nursery, aquatics centre as well as charity furniture outlet. The existing garden centre and nursery have a floor area of 698m²; the aquatics centre has a Retail Floor Area (RFA) of 83m²; and the furniture outlet has an RFA of 650m². There is also a poly-tunnel, ancillary to the garden centre and nursery, of some 260m². Consequently, the existing site has a total RFA of 1691m².

Nursery and Aquatic Centre

7.3.2 The TRICS database has been interrogated for a garden centre site in a suburban / edge of town location in the UK (excluding Greater London) to provide an estimate of the trips generated by the existing garden centre. The TRICS database does not contain any aquatics centres, therefore, it is assumed this element of the site operates as an extension of the garden centre as it is not uncommon for aquatics centres and garden centres to be combined.

7.3.3 The trip rates and resulting trip generation are set out in **Table 7.1** and **7.2** respectively. It should be noted that the polytunnel is ancillary to the garden centre and therefore the floor area associated with this land use does not generate any trips. However, in accordance with TRICS Best Practice Guidance, an allowance of 750m² of outdoor area associated with the garden centre and nursery has been made in addition to the identified internal RFA. The total number of trips associated with the garden centre and nursery and aquatics centre is therefore based on an existing floor area of 1,531m².

Table 7.1: Nursery and Aquatics Centre Trip Rates

Time	Trip Rate (per 100sqm)		
	Arrivals	Departures	Two-Way
Weekday Morning Peak	0.299	0.112	0.411
Weekday Evening Peak	0.093	0.205	0.298

Source: TRICS

Table 7.2: Nursery and Aquatics Centre Trip Generation

Time	Trip Generation (781m ² internal + 750m ² external)		
	Arrivals	Departures	Two-Way
Weekday Morning Peak	4	2	6
Weekday Evening Peak	1	3	4

Source: TRICS and Consultants Calculations

- 7.3.4 **Table 7.2** demonstrates that the nursery and aquatics centre would be expected to generate six two-way vehicle movements during the morning, and four movements during the evening, peak periods. This equates to on average circa one vehicle movement every 10 to 15 minutes during peak network conditions.

Furniture Outlet

- 7.3.5 The TRICS database has been interrogated for non-food out of town store surveys. The sites used to generate a trip rate include a 'Magnet' and wholesale wine store; while these are not directly comparable with the outlet furniture store they provide a robust trip rate as it is likely that these stores would have a slightly higher trip rate/generation.
- 7.3.6 The trip rates and resulting trip generation for the 650m² store are set out in **Table 7.3** and **7.4** respectively.

Table 7.3: Retail Furniture Outlet Trip Rates

Time	Trip Rate (per 100sqm)		
	Arrivals	Departures	Two-Way
Weekday Morning Peak	0.248	0.186	0.434
Weekday Evening Peak	0.621	0.683	1.304

Source: TRICS

Table 7.4: Retail Furniture Outlet Trip Generation

Time	Trip Generation (650m ²)		
	Arrivals	Departures	Two-Way
Weekday Morning Peak	2	1	3
Weekday Evening Peak	4	4	8

Source: TRICS and Consultants Calculations

- 7.3.7 **Table 7.4** demonstrates that the retail furniture outlet would be expected to generate three two-way vehicle movements during the morning peak and eight two-way movements in the evening peak period. This equates to on average circa one vehicle movement every 20 minutes in the morning peak and one vehicle movement every seven to eight minutes in the evening peak

Total Existing Trip Generation

- 7.3.8 The total trip generation of the existing site is shown in **Table 7.5**.

Table 7.5: Existing Trip Generation

Time	Trip Generation		
	Arrivals	Departures	Two-Way
Weekday Morning Peak	6	3	9
Weekday Evening Peak	5	7	12

Source: TRICS and Consultant calculations

- 7.3.9 **Table 7.5** demonstrates that the existing site would currently be expected to generate nine two-way vehicle movements during the morning peak and twelve two-way movements in the evening peak period. This equates to on average circa one vehicle movement every six minutes in the morning peak and one vehicle movement circa every five minutes in the evening peak.

7.4 Proposed Trip Generation

Residential Development

- 7.4.1 The adopted The Arun Local Plan (2011-2031) was supported by a Transport Study Stage 3 Report prepared by Systra. The report identifies trip rates obtained from the TRICS database to calculate origin and destination trip rates for residential developments for the AM Peak (0800-

0900) and PM Peak (1700-1800) modelled hours. A summary of the residential trip rates (for dwellings / houses only) used in the modelling report are set out in **Table 7.6** below:

Table 7.6: Vehicle Trip Rates from Arun Transport Study Stage 3 Report for Houses

Time	Trip Rate (per dwelling)		
	Arrivals	Departures	Two-Way
Residential – Weekday Morning Peak	0.315	0.115	0.430
Residential – Weekday Evening Peak	0.112	0.298	0.410

Source: TRICS

7.4.2 In examining the Arun Local Plan, the Inspector stated that “**realistic trip rates**” (ref: para 199, Report to Arun District Council, 4 July 2018) have been applied and that “**...the Council has applied robust and consistent parameters relating to base flows, trip generation and assessing severe impacts**” (ref: para 126, Report to Arun District Council, 4 July 2018). The Inspector concluded that the trip rates used in the Local Plan’s evidence base are sound.

7.4.3 Based on the trip rates set out in **Table 7.6** the forecast number of trips to be generated by the proposed development (20 dwellings) is set out in **Table 7.7**.

Table 7.7: Anticipated Trip Generation (20 dwellings)

Time	Trip Generation (20 dwellings)		
	Arrivals	Departures	Two-Way
Residential – Weekday Morning Peak	6	2	8
Residential – Weekday Evening Peak	2	6	8

Source: TRICS and Consultant calculations

7.4.4 **Table 7.7** demonstrates that the proposed residential development is anticipated to generate eight to nine two-way vehicle movements during the morning and evening peak periods. This equates to on average just over one vehicle movement every minute during the busiest periods of the day.

Nursery and Aquatics Centre

7.4.5 It is proposed to increase the floor area of the nursery from 698m² to 750m² and the aquatics centre from 83m² to 130m², taking the combined Retail Floor Area to 880m². As with the existing trip generation, the polytunnel is considered ancillary to the nursery and thus has not been included in the trip generation calculation but an additional 750m² has been allowed for external

areas, in accordance with TRICS Best Practice Guidance. The anticipated number of trips to be generated by the proposed nursery and aquatics centre is set out in **Table 7.8**, based on a total floor area of 1,630m².

Table 7.8: Forecast Trip Generation (Nursery and Aquatics Centre)

Time	Trip Generation (880m ² internal + 750m ² external)		
	Arrivals	Departures	Two-Way
Commercial – Weekday Morning Peak	5	2	7
Commercial – Weekday Evening Peak	2	3	5

7.4.6 **Table 7.8** demonstrates that the nursery and aquatics centre element of the development is anticipated to generate five to seven two-way vehicle movements during the morning and evening peak periods. This equates to on average circa just over one vehicle movement every eight and a half to 12 minutes during the busiest periods of the day.

Furniture Outlet

7.4.7 It is proposed to reduce the floor area of the furniture outlet from 650m² to 615m². The trip rates and resulting trip generation for the proposed store are set out in **Table 7.9**.

Table 7.9: Anticipated Trip Generation (Furniture Retail Outlet)

Time	Trip Generation		
	Arrivals	Departures	Two-Way
Weekday Morning Peak	2	1	3
Weekday Evening Peak	4	4	8

Source: TRICS and Consultants Calculations

7.4.8 **Table 7.9** demonstrates that the retail furniture outlet will not change from the existing trip generation. Therefore, it is anticipated that the furniture outlet will continue to generate three two-way vehicle movements during the morning peak and eight two-way movements in the evening peak period. This equates to on average circa one vehicle movement every 20 minutes in the morning peak and one vehicle movement every seven to eight minutes in the evening peak.

New Commercial Units

7.4.9 It is proposed to provide 1,471m² of new commercial floorspace as units with flexible land uses (B1(b), B1(c) and B8).

7.4.10 To derive trip rates for these uses, small industrial estates within TRICS have been reviewed and filtered, the resulting trip rates are provided in **Table 7.10** and the resulting trip generation is provided in **Table 7.11**.

Table 7.10: Commercial Units Trip Rates

Time	Trip Rate (per 100sqm)		
	Arrivals	Departures	Two-Way
Weekday Morning Peak	0.626	0.466	1.092
Weekday Evening Peak	0.28	0.413	0.693

Source: TRICS

Table 7.11: Commercial Units Trip Generation

Time	Trip Generation		
	Arrivals	Departures	Two-Way
Weekday Morning Peak	9	7	16
Weekday Evening Peak	4	6	10

Source: TRICS and Consultants Calculations

7.4.11 **Table 7.11** demonstrates that the commercial units are anticipated to generate 10-16 two-way vehicle movements during the morning and evening peak periods. This equates to on average circa just over one vehicle movement three to six minutes during the busiest periods of the day.

New A1 Land Use

7.4.12 The trips associated with the new A1 land uses have been derived from the existing retail outlet on the site. It is anticipated that there will be a further 199m² of A1 land use in addition to the nursery and aquatics centre previously set out. The trip generation associate with this part of the development is set out in **Table 7.12**.

Table 7.12: A1 Land Use Trip Generation

Time	Trip Generation		
	Arrivals	Departures	Two-Way
Weekday Morning Peak	1	0	1
Weekday Evening Peak	0	1	1

Source: TRICS and Consultants Calculations

Total Development

7.4.13 The total trip generation of the proposed development (i.e. both trips generated from the residential and commercial elements combined) is set out in **Table 7.13**.

Table 7.13: Forecast Trip Generation (Total Development)

Use	Morning Peak Period			Evening Peak Period		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Residential Development	6	2	8	2	6	8
Nursery and Aquatics Centre	5	2	7	2	3	5
Furniture Outlet	2	1	3	4	4	8
New B1 / B8 Land Uses	9	7	16	4	6	10
New A1 Land Uses	1	0	1	0	1	1
Total Development	23	12	35	12	20	32

7.4.14 **Table 7.13** demonstrates that the total development would generate 32 to 35 two-way vehicle movements during the morning and evening peak periods. This equates to on average circa just over one vehicle movement every two minutes during the busiest periods of the day.

7.5 Net Trip Generation

7.5.1 **Table 7.14** compares the trip generation of the existing and proposed uses:

Table 7.14: Trip Generation – Net Change

Time	Morning Peak Period			Evening Peak Period		
	Arrival	Departure	Two-Way	Arrival	Departure	Two-Way
Existing Use	6	3	9	5	7	12
Proposed Use	23	12	35	12	19	32
Net Change	17	9	26	7	12	20

Source: Consultant's Calculations

7.5.2 Overall, **Table 7.14** identifies that the proposal will result in a net increase in the number of trips to/from the site when compared with the existing use during the highway network peak hours. The net increase in the morning peak hour would be circa 26 two-way vehicle movements and in the evening peak 20 vehicle movements. This equates to on average circa one additional vehicle movement every two to three minutes in the peak periods. Consequently, the proposed development proposals would have a negligible effect on the local highway network.

7.6 Vehicular Trip Distribution and Assignment

Residential Development

7.6.1 The likely journey purpose for the generated car driver peak hour trips can be identified using the National Travel Survey (NTS) 2019 (*DfT*). The proportion of peak hour trips by journey purpose by car is presented in **Table 7.15**.

Table 7.15: Proportion of Peak Hour Trips by Journey Purpose (Car Driver Only)

Trip Purpose	AM Peak (0800-0900)	PM Peak (1700-1800)
Commuting/Business	37.6%	43.9%
All Other Journey Purposes	62.4%	56.1%
Total	100%	100%

Source: Car driver trip start time by trip purpose (Monday to Friday only): Great Britain, 2014/18, National Travel Survey, *DfT*, 2019

- 7.6.2 Some 38% of the total vehicular trips generated by the residential development will be for employment journeys in the morning peak hour period. The remaining 62% of the vehicle trips will be all other purposes, including education, shopping, leisure and personal business trips. In the evening peak hour, 44% of journeys are employment related with other journeys comprising 56% of the total vehicular trips.
- 7.6.3 For the purpose of this assessment, the analysis has been undertaken on the basis that 44% of the total vehicular trips generated by the residential development will be for employment journeys and the remaining 56% of the vehicle trips will be for all other purposes for both the morning and evening peak hours. This provides a robust estimate because it assumes a greater proportion of non-local journeys.
- 7.6.4 To provide an accurate assessment of the likely distribution of traffic from the site, separate methodologies have been applied to consider the destinations of commuting and business trips to other trip purposes:
- For commuting and business trips, the 2011 National Census Journey to Work statistics (for car drivers) has been used. This dataset identifies existing resident's employment locations and thus existing commuting patterns; and
 - For other journey purpose trips, a P/T^2 gravity model has been produced using the population of key urban areas (from the 2011 Census) within a 30-minute drive time of the site (estimated from Google Maps Directions facility).
- 7.6.5 The two sets of data have then been combined to generate a single set of distribution parameters by destination to inform the development trip assignment.
- 7.6.6 The combined employment and other journey purpose destinations which residents are anticipated to travel to are summarised in **Table 7.16**.

Table 7.16: Distribution of Car Drivers

Destination	Percentage of Combined Trips (%)
Bognor Regis	21.1%
North Bersted	18.0%
Aldwick	13.5%
Chichester	10.8%
Littlehampton	4.6%
Pagham	3.8%

Destination	Percentage of Combined Trips (%)
Felpham	3.5%
North Mundham	3.3%
Westergate / Eastergate	3.0%
Ford	2.3%
Westhampnett	1.8%
West Wittering	1.2%
Horsham	1.2%
Other - North	1.1%
Portsmouth	1.0%
Worthing south	1.0%
Havant	1.0%
Southbourne	1.0%
Other	6.8%
Total	100.0%

- 7.6.7 It can be seen from **Table 7.16** that the greatest attractor of combined employment and other trips is Bognor Regis (21%) followed by North Bersted (18%) Aldwick (13%) and Chichester (11%).
- 7.6.8 To determine the routing of vehicle trips to these destinations, trips have been assigned to the road network based on the quickest route from the site to the destination location, which is identified using the Google Maps 'Directions' Facility. Within the Directions facility, a start time for journeys of 08:00 has been utilised to reflect peak period traffic conditions.
- 7.6.9 In some cases, a single route option is identified by the assessment. However, for some destinations, the assessment identifies multiple routes. In these cases, development trips have been assigned to the possible routes based upon the journey times identified, with the quickest route assigned a larger number of trips.
- 7.6.10 **Table 7.17** provides a summary of the assignment of development generated trips from the proposed site access.

Table 7.17: Summary of Proposed Residential Development Traffic Assignment

Description of Route out of Development Site	% Traffic	Morning Peak			Evening Peak		
		Out	In	Two-Way	Out	In	Two-Way
Chalcroft Lane N	62.7%	4	1	5	1	4	5
Chalcroft Lane S	37.3%	2	1	3	1	2	3

Source: Consultant's Calculations

7.6.11 Based on the above, approximately 63% of development traffic will route to/from the north of the access on Chalcroft Lane, equating to circa 4-5 two-way movements in the morning peak and evening peaks. To the south of the access on Chalcroft Lane it is anticipated that there the development will generate 2-3 two-way movements in the morning peak and evening peaks. On this basis, the traffic impact on the local highway network equates to less than one vehicle movement every 10 minutes to the north of the access and approximately one vehicle movement every 20-30 minutes to the south of the access during the busiest periods of the day.

7.6.12 A copy of the full distribution and assignment model is included as **Appendix D**.

Commercial Development

7.6.13 The vehicle trips associated with the A1 commercial land uses have been distributed to/from the development site in line with the existing travel patterns observed on Chalcroft Lane. An ATC Survey was undertaken on Chalcroft Lane in November 2018. The observed traffic flows and direction of travel on Chalcroft Lane during the peak hours is summarised in **Table 7.18**.

Table 7.18: Summary of Proposed Commercial Development Traffic Distribution and Assignment

Direction of Travel	Morning peak		Evening peak	
	Flow (Vehicles)	Percentage (%)	Flow (Vehicles)	Percentage (%)
Chalcroft Lane Northbound	650	53.7%	593	44.3%
Chalcroft Lane Southbound	560	46.3%	747	55.7%
Two Way	1,210	100.0%	1,340	100.0%

7.6.14 The observed traffic flows demonstrate that in the morning peak hour the majority of traffic is travelling northbound on Chalcroft Lane, with approximately 54% of traffic travelling north and

46% travelling south. In the evening peak hour, the majority of traffic is travelling southbound on Chalcroft Lane, with approximately 56% of traffic travelling south and 44% travelling north. It is on this basis that traffic has been distributed from the site access onto the local highway network.

7.6.15 **Table 7.19** provides a summary of the assignment of development generated trips from the proposed site access.

Table 7.19: Summary of Proposed Commercial Development Traffic Assignment

Description of Route out of Development Site	% Traffic	In	Out	Two-Way
Morning Peak				
Chalcroft Lane N	53.70%	9	5	14
Chalcroft Lane S	46.30%	8	5	13
Evening Peak				
Chalcroft Lane N	44.30%	4	6	11
Chalcroft Lane S	55.70%	6	7	13

Source: Consultant's Calculations

7.6.16 A copy of the full distribution and assignment model is included as **Appendix D**.

7.7 Proportional Impact Assessment

7.7.1 The net development traffic has been compared to the baseline traffic flows on Chalcroft Lane to consider the proportional impact of the development and is set out in **Table 7.20**.

Table 7.20: Proportional impact of local highway network

Junction	Observed Flows 2018		Net Development Trips		Proportional Impact	
	AM	PM	AM	PM	AM	PM
Chalcroft Lane Northbound	650	593	19	16	3%	3%
Chalcroft Lane Southbound	560	747	16	16	3%	2%
Two Way	1,210	1,340	36	32	3%	2%

- 7.7.2 The assessment demonstrates that the impact of the net development traffic generation on the local highway network represents a proportional increase of circa 3% on Chalcroft Lane to the north and south of the site access.
- 7.7.3 This demonstrates that the proposed development will have a minimal impact on the local highway network. Nevertheless, a junction capacity assessment has been undertaken at the proposed site access (see **Section 8**) to demonstrate that the proposed access will operate within capacity and will not cause any material queuing or delay on Chalcroft Lane.

SECTION 8 Operational Assessment

8.1 Introduction

8.1.1 Using the parameters established in Section 6 of this Transport Statement, analysis has been undertaken at the proposed site access junction to determine its ability to accommodate the additional traffic from the proposed development.

8.1.2 The assessment has been undertaken for the weekday morning and evening peak hours of 0900-1000 and 1700-1800 (determined from the observed traffic flows in Nov 2018) as assessment periods. The priority junction has been assessed using the industry standard TRL software Junctions 9.

8.2 Assessment Years and Traffic Growth

8.2.1 In line with the WSCC 'Transport Assessment Methodology', traffic impact assessments for the proposed opening year for the development (2023) and for five years from the submission of a planning application (2025) have been undertaken. In addition, a sensitivity test has undertaken for the future year of 2031, which accords with the end of the adopted local plan period.

8.2.2 With the direct inclusion of committed development (see **Section 8.3**), the addition of an unadjusted TEMPRO based growth rate will lead to a double counting of traffic, with TEMPRO already including allowances for traffic growth arising from local developments. To remove (or in this case reduce) the potential for double counting of traffic growth, the Alternative Assumptions function within TEMPRO has been used to manually adjust the level of growth, removing development assumptions from TEMPRO.

8.2.3 **Table 8.1** demonstrates that the existing assumptions within TEMPRO estimate an increase of 193 households in Arun 012 (which cover the development) between 2018 and 2023.

8.2.4 Due to the volume of housing developments that has been included in committed development (1,194 dwellings which exceeds the level of growth identified by TEMPRO), all housing development growth has been removed by using the alternative assumptions function in relation to the local growth rates.

8.2.5 Despite the proposed increase in A1 Commercial Floor Area, no adjustments have been made to the future number of jobs within TEMPRO and therefore this represents a robust assessment.

Table 8.1: TEMPRO Assumptions

Scenario	Area	Existing H/Holds	Future H/Holds	Existing Jobs	Future Jobs
2018 – 2023					
Existing Assumptions	Arun 012	3,413	3,606	2,771	2,818
Alternative Assumptions	Arun 012	3,413	3,413	2,771	2,818
2018-2025					
Existing Assumptions	Arun 012	3,413	3,677	2,771	2,835
Alternative Assumptions	Arun 012	3,413	3,413	2,771	2,835

Source: TEMPRO and Consultant calculations

- 8.2.6 Using this methodology, **Table 8.2** below summarises the growth factors which have been applied to the 2018 observed traffic flows to derive the 2023 and 2025 peak hour traffic flows.

Table 8.2: Calculated Local Peak Period Growth Rates

Growth Period	Time Period	Growth Rate
2018-2023	AM Peak	1.0255
	PM Peak	1.0203
2018-2025	AM Peak	1.0345
	PM Peak	1.0280

Source: TEMPRO and Consultant Calculated

- 8.2.7 The calculated growth rates equate to approximately 2% growth between 2018 and 2023 in both peak periods and 3% growth in the peak periods between 2018 and 2025.
- 8.2.8 A sensitivity test for the future year of 2031 has also been undertaken. Using the same methodology, growth factors for 2033 have been calculated and are presented in **Table 8.3**.

Table 8.3: Calculated Local Peak Period Growth Rates 2018 - 2031

Growth Period	Time Period	Growth Rate
2018-2031	AM Peak	1.0586
	PM Peak	1.0495

Source: TEMPRO and Consultant Calculated

8.2.9 The calculated growth rates equate to approximately 5-6% growth between 2018 and 2031 in the peak periods.

8.3 Committed Development

8.3.1 Committed developments within the area have been identified and listed below:

- Landform Southwest of New Barn Lane – 99 dwellings;
- Church Commissioners land Southeast of New Barn Lane – 50 dwellings;
- Land North of Seftor Road, Pagham - 280 dwellings;
- Land South of Summer Lane & West of Pagham Road Pagham – 400 dwellings;
- Land North of Hook Lane, Pagham – 300 dwellings; and
- Church Barton House Horns Lane, Pagham – 65 dwellings.

8.3.1 As such, a total of 1,194 dwellings have been included within committed development.

8.3.2 The committed development traffic flows on Chalcraft Lane have been obtained from the Transport Assessments for each scheme and included in addition to the TEMPRO growth factors applied to the observed traffic data, providing a robust assessment of future traffic growth.

8.3.3 A summary of the total committed development vehicle trips is shown on **Figure TF3-4** with the 2025/2031 plus committed development traffic flows shown on **Figures TFS-8** for the morning and evening peaks respectively.

8.4 Junction Capacity Assessment

8.4.1 Vehicular access to the proposed development site will be achieved from Chalcraft Lane and take the form of a simple priority junction. The junction arrangement is shown on Drawing ITB14224-GA-001 Rev A and the outputs of the Junctions 9 assessments are summarised in **Table 8.4** and the full outputs are provided at **Appendix E**.

Table 8.4: Site Access with Chalcraft Lane Results

	Morning Peak (0800-0900)			Evening Peak (1700-1800)		
	Queue	Delay (s)	Max RFC	Queue	Delay (s)	Max RFC
2018 Baseline						
Access	0	0	0.00	0	11	0.02
Chalcraft Lane	0	4	0.01	0	4	0.01
2023 Base with Committed Developments						
Access	0	0	0.00	0	12	0.02
Chalcraft Lane	0	4	0.01	0	4	0.01
2023 with Committed Developments and Proposed Development						
Access	0	11	0.04	0	12	0.07
Chalcraft Lane	0	4	0.05	0	4	0.03
2025 with Committed Developments and Proposed Development						
Access	0	11	0.04	0	13	0.07
Chalcraft Lane	0	4	0.05	0	4	0.03
2031 with Committed Developments and Proposed Development						
Access	0	13	0.06	0	13	0.07
Chalcraft Lane	0	4	0.05	0	4	0.03

Source: Junctions 9

- 8.4.2 The results demonstrate that the proposed access will operate well within capacity in all scenarios with little queuing or delay on any arm.

Strategic Junction Assessments

- 8.4.3 The Arun Transport Study Stage 3 Report identifies twelve strategic junction locations that will be subject of a severe capacity impact (without mitigation) as a result of the development strategy set out in adopted Arun Local Plan. A further two junctions were identified as having an unacceptable safety impact.
- 8.4.4 Chapter 4 of the Arun Transport Study Stage 3 identifies improvement schemes that are required to mitigate the impact of the Local Plan development strategy. Chapter 6 of the Study apportions the level of impact that each of the allocated development sites will have upon the junctions, and Chapter 7 identifies the cost (ranging from low to high estimates) associated with the improvement schemes.
- 8.4.5 **Image 8.1** summarises the junction locations that are deemed to be impacted by the allocated development SD3: West of Bersted.

Image 8.1: Junctions Identified for Improvement Affected by West of Bersted Development



Source: Consultant

8.4.6 **Table 8.5** summarises the junctions affected by the West of Bersted allocation, the 'high estimate' scheme cost, the percentage impact that the allocation has on the junction and the value of the contribution required to be provided by the development through Section 106/278 Agreement. The proposed development of 20 dwellings however only accounts for less than 1% (0.8%) of the total West of Bersted Allocation (2,500 dwellings), as such, the mitigation costs for the allocation have been pro-rata for the development.

Table 8.5: Strategic Junction Improvements

Junction No.	Junction	Type	Cost (High Estimate)	Impact	West of Bersted Contribution	Proposed Contribution
2	A27 / A259 (Bognor Road Roundabout)	Capacity	£915,000	57%	£521,550	£4,172
7	A27 / A29 (Fontwell Eastern Roundabout)	Capacity	£595,000	10%	£59,500	£476
17	A29 / A259 Rowan Way	Capacity	£620,000	38%	£235,600	£1,885
18	A29 / A259 Felpham Relief Road	Capacity	£638,000	35%	£216,920	£1,735
23	A259 / B2187 (Littlehampton West - Tesco)	Capacity	£334,000	14%	£46,760	£374

Junction No.	Junction	Type	Cost (High Estimate)	Impact	West of Bersted Contribution	Proposed Contribution
20	A259/B2132 Comet Corner	Safety	TBD	47%	TBD	TBD
21	A259/B2233 Oystercatcher	Safety	TBD	21%	TBD	TBD

Source: Arun Stage 3 Transport Study Report (Systra, 2017) and consultant calculations

- 8.4.7 Whilst the need safety improvements for the 'Comet Corner' and 'Oystercatcher' junctions have been identified as part of the Arun Transport Study Stage 3 Report. Paragraph 5.3.2 of the Study establishes that the preferred long-term options are a junction improvement at Comet Corner and a roundabout at the Oystercatcher.

8.5 Summary

- 8.5.1 An operational assessment of the proposed priority junction has been undertaken using Junctions 9 to model the performance of the junction. The assessment demonstrates that the proposed junction will not result in queuing or delay on Chalcroft Lane.
- 8.5.2 The Arun Transport Study assessed the impact of allocated development upon the operation of the wider strategic highway network. To mitigate the impact of development proportional contributions are required towards the delivery of identified mitigation schemes at a total of 7 junctions.
- 8.5.3 On this basis, the proposed development complies with the requirements of the NPPF and does not result in a 'severe' residual impact upon the operation of the highway network.

SECTION 9 Summary and Conclusions

9.1 Summary

- 9.1.1 Landform Bersted Ltd has appointed i-Transport LLP to provide highways and transport advice for the proposed re-development of Chalcroft Nursery. The proposal comprises the modernisation of the existing commercial offering and the provision an additional 1,542 sqm of commercial space (including B1(b), B1(c), B8 and A1 land uses), 20 residential dwellings, landscaping, infrastructure and a new vehicular access.
- 9.1.2 The development site is located to the west of Chalcroft Lane and provides an existing commercial offering that includes a garden centre and nursery, an aquatic sales centre and a charity furniture outlet. The existing uses on the site are accessed from Chalcroft Lane via Ffairfach Close.
- 9.1.3 Paragraph 108 of the NPPF identifies the three key transport criteria that decisions on development proposals should take account of. These are whether:
- The opportunities for sustainable travel have been appropriately 'taken up';
 - Safe and suitable access can be achieved; and
 - Improvements can be undertaken within the transport network that cost effectively limit the impacts of the development.
- 9.1.4 Vehicular access is proposed from Chalcroft Lane. The proposed access arrangements have been designed in accordance with the relevant design guidance contained in the Manual for Streets and delivers suitable geometry and visibility to ensure the safe movement of vehicles. Upon first occupation of the residential dwellings, the existing access to the Chalcroft Nursery will be stopped up and access to both the residential and commercial elements of the development will be achieved via the new site access junction.
- 9.1.5 The development will deliver car and cycle parking in line with the relevant adopted guidance and will promote a site layout that has been developed in accordance with the principles of Manual for Streets.
- 9.1.6 The site is located within a reasonable walking distance of bus stops which provide a regular service to wider destinations including Bognor Regis, Littlehampton and Chichester. Bognor Railway Station is located approximately 2.2km to the south of the site and provides further

opportunities for travel to destination further afield including Portsmouth, Brighton and London Victoria.

- 9.1.7 Future residents of the proposed development will have the opportunity to access a range of everyday destinations by a choice of different travel modes. Walking is a realistic means of travel to and from the site, with well-connected routes providing direct access to local facilities which are located within a short walk of the site. Residents of the development will also benefit from a range of facilities provided on within wider 'West of Bersted' Strategic Allocation when it comes forward.
- 9.1.8 Everyday services and facilities are located in the vicinity of the site and within reasonable cycle distance; local road conditions are conducive to on-carriageway cycling. A Travel Plan Statement has been submitted with the application which seeks to promote the uptake of sustainable modes of transport by residents of the proposed development.
- 9.1.9 The proposed development is forecast to generate some 35 vehicular movements during the morning peak hour and 32 vehicular movements during the evening peak hour, representing a net increase of 26 and 20 movements during the morning and peak hours respectively. The impact of the net development traffic generation on the local highway represents a proportional increase of circa 3% on Chalcroft Lane to the north and south of the site access.
- 9.1.10 An operational assessment of the proposed priority junction has been undertaken using Junctions 9 to model its performance. The assessment demonstrates that the proposed junction will not result in queuing or delay on Chalcroft Lane.
- 9.1.11 The access has also been designed to provide access to a limited number of units associated with the Chalcroft Fields parcel of the West of Bersted residential development allocation SD3. It is not the intention for the access to provide onward connectivity to the main link road provided through the wider application. While this is not a matter for determination as part of the planning application for the proposed development, a Supplementary Information Technical Note (ref: ITB14224-006 TN) has been submitted alongside the application to demonstrate that the proposed development would not prejudice any future development proposal.
- 9.1.12 The Arun Transport Study (EBR 2017) assessed the impact of allocated development upon the operation of the wider strategic highway network. To mitigate the impact of development proportional financial contributions are required towards the delivery of identified mitigation schemes at a total of 7 locations.

9.2 Conclusions

9.2.1 The proposed development has been tested against the three key transport tests set out in the National Planning Policy Framework. This TS has demonstrated that the proposed development:

- Appropriate takes up the opportunities for sustainable travel; future residents have a choice of transport modes available to them to undertake day-to-day activities;
- Provides safe and suitable access for all users; and
- Does not have a 'severe' residual cumulative impact upon the operation of the local highway network.

9.2.2 On that basis, and in accordance with paragraph 109 of the NPPF, the development is acceptable in transport terms.

FIGURES

DRAWINGS

APPENDIX A. Parking Accumulation Assessment

APPENDIX B. PIA Data

APPENDIX C. ATC Data

APPENDIX D.Distribution and Assignment Model

APPENDIX E. Junctions 9 Outputs

