Land north of

Clayton Mills

Transport assessment - part 1 of 3

December 2018

i-Transport

gleeson

Land to the North of Clayton Mills, Hassocks

Transport Assessment – Part 1 of 3

Client: Gleeson Strategic Land

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SECTION 1 Introduction

1.1 Background

1.1.1 Gleeson Strategic Land has appointed i-Transport LLP to provide transport and highways advice in relation to an outline planning application for a strategic residential led mixed use development on land to the north of Clayton Mills, Hassocks. The application description is as follows:

> ***"Outline planning application with all matters reserved except for access for up to 500 new residential dwellings and land for a two-form entry primary school and community building, land for a bridleway link between Hassocks and Burgess Hill, associated infrastructure including informal open space, hard and soft landscaping, sustainable drainage features and a new site access onto Ockley Lane, alongside the provision of improved pedestrian access across the railway line."***

1.1.2 A site location plan is provided at **Figure 1.1**.

1.1.3 The site is allocated for development (500 new homes and a primary school) in the Mid Sussex District Plan (adopted March 2018) under Policy DP11 - Strategic Allocation to the north of Clayton Mills, Hassocks.

1.1.4 Paragraph 111 of the revised National Planning Policy Framework (updated July 2018) states that:

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

1.1.5 The Transport Assessment has been produced having regard to the guidance contained in the National Planning Practice Guidance (NPPG).

1.1.6 A separate Framework Travel Plan has also been prepared (i-Transport report ref: ITB11335-102 R). The primary purpose of the travel plan is to identify opportunities for the effective promotion and delivery of sustainable transport initiatives e.g. walking, cycling, public transport and home working, and through this to thereby reduce the demand for travel by less sustainable modes.

1.2 Scoping

1.2.1 In preparing the Transport Assessment, scoping discussions have been held with:

- The local highway authority, West Sussex County Council (WSCC);
- The local planning authority, Mid Sussex District Council (MSDC); and
- Network Rail (responsible for the safe and efficient running of the railway infrastructure).

1.3 Public Consultation

1.3.1 The proposed development has been the subject of public consultation, including:

- Workshop event with local stakeholders – 5 December 2017;
- Public exhibition – 16 May 2018; and
- One to one meetings with local residents living on Ockley Lane and Mackie Avenue in June 2018.

1.3.2 Comments and feedback obtained through the public consultation process have been used to inform the Transport Assessment.

1.4 Structure

1.4.1 The remainder of the Transport Assessment is set out in the following sections:

- Section 2 – Development Proposals;
- Section 3 – Policy Context;
- Section 4 – Existing Highway Network Conditions;
- Section 5 – Proposed Site Access, Parking and Servicing Arrangements;
- Section 6 – New Bridleway (Off Road Cycle Route) – Hassocks to Burgess Hill;
- Section 7 –Woodside Rail Crossing;
- Section 8 – Promoting Sustainable Transport Modes;
- Section 9 – Traffic Analysis Parameters;
- Section 10 –Traffic Impact Analysis; and
- Section 11 – Summary and Conclusions.

SECTION 2 Development Proposals

2.1.1 The application description is as follows:

> ***"Outline planning application with all matters reserved except for access for up to 500 new residential dwellings and land for a two-form entry primary school and community building, land for a bridleway link between Hassocks and Burgess Hill, associated infrastructure including informal open space, hard and soft landscaping, sustainable drainage features and a new site access onto Ockley Lane, alongside the provision of improved pedestrian access across the railway line."***

2.1.2 The illustrative masterplan is provided at **Appendix A**, whilst the access parameter plan is provided at **Appendix B**.

2.1.3 Vehicular access is proposed from Ockley Lane to the east of the site. In addition, pedestrian / cycle / emergency vehicle only access from Ockley Lane (in the location of the existing public right of way link to Ockley Lane to the south east (public footpath 5K)) is proposed.

2.1.4 A new bridleway (off road cycle route) between Hassocks and Burgess Hill is also proposed. This incorporates upgrading the public right of way link (public footpath 11K) between the site and Woodlands Road (via Clayton Mills) to a bridleway. The northern most section of the new bridleway running through the Burgess Hill Town Council owned Batchelors Farm is the subject of a separate planning application.

2.1.5 The existing public right of way (public footpath 5k) continues to the west of the site, crossing the railway line at the Woodside rail crossing. The applicant is discussing with Network Rail the most appropriate provision of improved pedestrian access across the railway line which is likely to result in a separate prior approval application (under Part 18 Class A of The Town and Country Planning (General Permitted Development) (England) Order 2015) being submitted for a new footbridge crossing of the railway line. This development will provide funding for the prior approval application and the improvement works.

2.1.6 A detailed review of the proposed site access arrangements is provided later in the Transport Assessment.

SECTION 3 Policy Context

3.1 Introduction

3.1.1 To provide the policy context for the Transport Assessment, this section provides an overview of the relevant national and local transport planning policy.

3.2 National

Revised National Planning Policy Framework (July 2018)

3.2.1 Section 9 of the revised National Planning Policy Framework (updated July 2018) discusses promoting sustainable transport. Paragraphs 108 – 111 sets out transport matters when considering development proposals.

3.2.2 Paragraph 108 states that:

> ***"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:***
>
> ***a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;***
>
> ***b) safe and suitable access to the site can be achieved for all users; and***
>
> ***c) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree."***

3.2.3 Paragraph 109 states that:

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

3.2.4 Paragraph 110 , makes it clear that:

> ***"Within this context, applications for development should:***
>
> ***a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;***
>
> ***b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;***

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

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

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

3.2.5 Finally, paragraph 111 states that:

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

3.3 Local

Mid Sussex District Plan 2014 – 2031

3.3.1 The Mid Sussex District Plan 2014 – 2031 was adopted in March 2018.

3.3.2 Policy DP11 – Strategic Allocation to the north of Clayton Mills, Hassocks covers the site. The full policy wording and accompanying text are provided at **Appendix C.**

3.3.3 Policy DP11 allocates strategic development on land to the north of Clayton Mills, Hassocks for the following land uses:

- Approximately 500 new homes;
- A new primary school; and
- Provision of permanent pitches for settled Gypsies and Travellers to contribute, towards the additional total identified need within the District commensurable with the overall scale of residential development proposed by the strategic development; or the provision of an equivalent financial contribution towards the off-site provision of pitches towards the additional total identified need within the District (or part thereof if some on-site provision is made) commensurate with the overall scale of residential development proposed by the strategic development.

3.3.4 Policy DP11 discusses a number of criterion for strategic mixed-use development in this location. In respect of transport matters it confirms that development will:

- Provide a suitable and safe access to the site from Ockley Lane and appropriate mitigation to support the development with regards to the Local and Strategic Road Network;
- Make provision for charging electric vehicles by installing a dedicated electrical socket suitable for charging electric vehicles at each residential unit (either internally such as within a garage, or externally at an allocated parking space) and making parking areas 'charger ready' by making it possible to install a dedicated electric vehicle charging device (such as fast chargers) at a later date;
- Make a financial contribution to secure improved public transport provision to Hassocks and Burgess Hill;
- Provide safe pedestrian/cycling routes within the development and to connect with existing residential areas, the services within Hassocks village centre, Hassocks railway station, and enhance the existing cycle route to Burgess Hill;
- Assess the implications of the development on pedestrian and cycle railway crossings and ensure that there is an agreed approach towards ensuring the provision of safe crossings; and
- Provide financial contributions to improve the existing open space, including improvements to the footpath, to the south of the site.

3.3.5 A summary of other relevant policies from the Mid Sussex District Plan 2014 – 2031 along with the WSCC's Transport Plan 2011 – 2026 are provided at **Appendix D.**

Burgess Hill Sustainable Transport Fund

3.3.6 Burgess Hill is situated just to the north of Hassocks.

3.3.7 Some £12.5 million is available from the Coast to Capital Local Enterprise Partnership and developers' contributions to deliver sustainable transport measures across Burgess Hill.

3.3.8 WSCC are also progressing proposals to dual the A2300 between the A23 and the west side of Burgess Hill. The majority of funding will be provided by central Government through the Coast to Capital Local Enterprise Partnership's Local Growth Fund.

SECTION 4 Existing Highway Network Conditions

4.1 Introduction

4.1.1 This section of the Transport Assessment describes the existing highway network conditions in the vicinity of the site, including the site location, local highway network and public rights of way.

4.2 Site Location

4.2.1 The site is located to the north of Hassocks village and is bordered by Ockley Lane to the east, the Clayton Mills development and Mackie Avenue to the south, the Brighton and London railway line to the west and agricultural land to the north.

4.3 Local Highway Network

Description

4.3.1 Ockley Lane routes in a broad north / south alignment on the east side of the site. To the south Ockley Lane provides a route as far as its junction with the B2116 Keymer Road (to the east of Hassocks village centre), whilst to the north Ockley Lane provides a route as far as its junction with the B2113 Keymer Road / Folders Lane in southern Burgess Hill. In the vicinity of the site, Ockley Lane has a footway on its west side as far north as the property called Barn Cottage (circa 90m to the north of where public footpath 5k meets Ockley Lane). Ockley Lane is subject to a 30mph speed limit to the south of broadly where the west side footway terminates and then north of this is subject to the national speed limit (60mph).

4.3.2 Grand Avenue forms a junction with Ockley Lane to the south of the site. Grand Avenue routes to the south west providing an alternative route to the B2116 Keymer Road / Hassocks village centre / A273. Grand Avenue typically has verges and footways on both sides of the carriageway is subject to a 30mph speed limit.

4.3.3 Ockley Lane forms a priority junction with the B2116 Keymer Road to the south of the site and the Grand Avenue junction. The B2116 Keymer Road routes in a broad east west alignment, routing to Ditchling to the east and / Hassocks village centre / A273 to the west. The B2116 is subject to a 30mph speed limit and has footway on both sides in Hassocks village centre.

4.3.4 On the west side of Hassocks, the B2116 / A273 junction takes the form of a 4-arm signal controlled junction – the junction is called the Stonepound Crossroads.

4.3.5 Lodge Lane forms a priority junction on the south side of the B2116 Keymer Road just to the east of the Ockley Lane junction. Lodge Lane routes in a broad north – south alignment forming a junction with the B2112 New Road to the south.

4.3.6 New Road routes in a broad east west alignment providing a route to Ditchling to the east and the A273 Clayton Hill / Brighton Road junction to the west.

4.3.7 To the north of the site, Ockley Lane provides forms a junction with the B2113 Keymer Road / Folders Lane in southern Burgess Hill. The B2213 turns into Station Road and then Queen Elizabeth Avenue in Burgess Hill Town Centre linking into the B2036 and beyond.

Ockley Lane Traffic Flows

4.3.8 **Table 4.1** identifies the existing traffic flows on Ockley Lane.

Table 4.1: Existing Traffic Flows on Ockley Lane

Time Period	Northbound	Southbound
	Traffic Flow	Traffic Flow
Morning Peak (0800 – 0900)	262	336
Evening Peak (1700 – 1800)	329	384
Daily (0000 – 2359)	3504	3470

Source: ATC Surveys, June 2017

Personal Injury Accident Analysis

4.3.9 Personal Injury Accident (PIA) data has been obtained from Sussex Safer Roads for the five-year period between 1 July 2013 and 30 June 2018.

4.3.10 The PIA data and a detailed review of the accident data is presented at **Appendix E** and is summarised in **Tables 4.2 – 4.4** below.

Table 4.2: Overall Accidents

Area	Fatal	Serious	Slight	Total
Hassocks Study Area	0	15	46	61
Burgess Hill Study Area	0	8	37	45
Total	**0**	**23**	**83**	**106**

Source: Sussex Safer Roads

Table 4.3: Summary of Accidents - Hassocks

Accident Locations – Hassocks				
New Road / Lodge Lane Crossroads	0	0	11	11
Keymer Road	0	3	4	7
Clayton Hill / New Road / Brighton Road	0	2	4	6
Stonepound Crossroads	0	1	5	6
Ockley Lane	0	2	3	5
Keymer Road / Grand Avenue	0	2	1	3
Brighton Road	0	0	3	3
New Road	0	0	3	3
Keymer Road / Orchard Lane	0	0	2	2
Keymer Road / Dale Avenue	0	1	1	2
Grand Avenue	0	1	1	2
London Road	0	0	2	2
Station Approach / Woodsland Road / Keymer Road Mini Roundabout	0	1	2	3
Keymer Road / Station Business Park	0	0	1	1
Keymer Road / The Minnels	0	0	1	1
Keymer Road / Clerks Acre	0	1	0	1
Keymer Road / Parklands Road	0	0	1	1
Keymer Road / Orion Parade	0	1	0	1
Stanford Terrace	0	0	1	1

Source: Sussex Safer Roads

4.3.11 The number, cause and severity of accidents in Hassocks are considered to be fairly typical of a study area of this scale and with the exception of one junction the detailed assessment does not identify any accident trends or patterns which would suggest that there are any significant safety issues. The exception is the New Road / Lodge Lane junction where there has been a number of accidents with a general pattern of drivers on Lodge Lane failing to judge the path or speed of traffic on New Road. A potential safety improvement scheme has been investigated at this junction as set out in Section 10 of this document.

Table 4.4: Summary of Accidents – Burgess Hill

Area	Fatal	Serious	Slight	Total
Accident Locations – Burgess Hill				
Queen Elizabeth Avenue / London Road Mini Roundabout	0	1	4	5
Victoria Way / London Road Mini Roundabout	0	0	4	4
Queen Elizabeth Avenue / Civic Way / Station Road / MSDC Car Park Roundabout	0	1	2	3
Keymer Road / Burgess Hill Girls School	0	1	2	3
Queen Elizabeth Avenue / The Brow	0	0	3	3
Station Road (Railway Bridge)	0	1	2	3
Station Road (West of Mill Road / Church Road Mini Roundabout)	0	0	3	3
Civic Way / Market Place Shopping Centre Car Park Exit	0	1	1	2
Junction Road / Silverdale Road / Keymer Road / Station Road Mini Roundabout	0	0	2	2
London Road / Portland Road	0	1	1	2
London Road / Station Road	0	0	2	2
Queen Elizabeth Avenue / Market Place Shopping Centre Car Park Entrance	0	0	2	2
Station Road (West of Queens Crescent)	0	1	1	2
Church Road	0	0	1	1
Folders Lane / Keymer Road Mini Roundabout	0	0	1	1
Mill Road	0	0	1	1
Station Road / Church Road / Mill Road Mini Roundabout	0	0	1	1
Keymer Road / Oak Hill Park	0	0	1	1
London Road / Carpet Right	0	0	1	1
London Road / The Brewers Arms	0	1	0	1
Queen Elizabeth Avenue / School Close	0	0	1	1
Station Road / Station Road	0	0	1	1

Source: Sussex Safer Roads

4.3.12 The number, cause and severity of accidents in Burgess Hill are considered to be fairly typical of a study area of this scale and the detailed assessment does not identify any accident trends or patterns which would suggest that there are any significant safety issues.

4.4 Public Rights of Way

4.4.1 There is a network of public rights of way that run within and close to the site as shown at **Appendix F**. In summary:

- Public footpath 5K – routes in a broad east west alignment through the site from Ockley Lane to the east to the A273 to the west crossing the railway line at the Woodside rail crossing;
- Public footpath 11K – routes in a broad north east south west alignment between the site and Woodsland Road via the Clayton Mills development; and
- Bridleway 6K – routes in a broad east west alignment along Mill Lane to the east of Ockley Lane.

SECTION 5 Proposed Site Access, Parking and Servicing Arrangements

5.1 Introduction

5.1.1 This section of the Transport Assessment summarises the proposed site access arrangements, parking and servicing arrangements in the following sub sections:

- Access from Ockley Lane;
- Parking provision; and
- Servicing arrangements.

5.1.2 The proposed new bridleway (off road cycle route) between Hassocks and Burgess Hill is summarised in Section 6 of the Transport Assessment.

5.1.3 The proposed grade separated public right of way crossing of the railway line (either a footbridge or a tunnel) where public footpath 5k crosses the railway line at the Woodside rail crossing to the west of the site is summarised in Section 7 of the Transport Assessment.

5.2 Access from Ockley Lane

Vehicular Access Arrangements

5.2.1 Vehicular access is proposed from Ockley Lane between Hawthorn Cottage and Barn Cottage as shown on i-Transport drawing no ITB11335-GA-006 Rev J.

5.2.2 The proposed junction is located within the delimited section of Ockley Lane approximately 90m to the north of the existing 30mph / 60mph speed limit change. There are no footways along Ockley Lane in the immediate vicinity of the junction - the west side footway on Ockley Lane terminates approximately 70m to the south of the proposed junction.

5.2.3 Key features of the proposed vehicular access from Ockley Lane are summarised below:

- Simple priority junction arrangement;
- Site access carriageway width of 6.1m to accommodate two large vehicles being able to pass each other;

- A layby on the north side of the access road in close proximity of Hawthorn Cottage – it is intended that the layby be available for use by service vehicles / deliveries for Hawthorn Cottage and Barn Cottage;
- 8m junction radii to Ockley Lane (the north side junction radii has a dropped kerb as it passes in front of the right of access to Hawthorn Cottage);
- Visibility splays of 2.4m x 120m;
- Forward visibility of 118m in the southbound direction to a vehicle turning right into the proposed access; and
- A footway on the south side of the access road with a cross over to a footway on the east side of Ockley Lane heading south to the existing / proposed bus stops and existing west side footway.

5.2.4 In terms of visibility splay provision at the proposed junction, Manual for Streets Publications 1 and 2 collectively confirm that:

- A set back distance (the "x" distance) of 2.4m should normally be used in most built up situations as this represents the reasonable maximum distance between the front of the car and the driver's eye;
- The distance that a driver who is about to exit from the minor arm can see to their left or right along the main alignment (the "y" distance) is based on the values for sight stopping distance. For simplicity, it has been previously measured along the nearside kerb line of the main arm, although vehicles will normally be travelling at a distance from the kerb line so a more accurate assessment of visibility is made by measuring to the nearside edge of the vehicle track. The measurement is taken from the point where this line intersects the centreline of the minor arm;
- The "y" distance is based on the values for sight stopping distance along the main alignment (for existing situations the stopping sight distance requirement is based on 85th percentile wet weather speed); and
- Where vehicle speeds are higher than 40mph for significant parts of the day that DMRB parameters for stopping sight distance are recommended (where vehicle speeds are lower than 40mph, Manual for Streets parameters for stopping sight distance are recommended).

5.2.5 Automatic traffic counters were installed on Ockley Lane to the north and south of the proposed site access in June 2017 – see **Appendix G**. The ATC to the south of the site access recorded an 85th%ile speed for northbound traffic (traffic approaching the proposed junction) of 40.2mph (64.7kph). The ATC to the north of the site access recorded an 85th%ile speed for southbound traffic (traffic approaching the proposed junction) of 43.0mph (69.2 kph). The survey period was predominantly dry so the actual 85th%ile wet weather speeds when taking into account the 2.5mph reduction will be lower at around 40.5mph.

5.2.6 WSCC has requested that the more onerous DMRB standards are used thus 2.4m x 120m visibility splays are proposed (70kph design speed as per DMRB).

5.2.7 The site access and visibility requirements are designed according to the existing vehicle speeds along Ockley Lane. However it is proposed that the development will provide a gateway feature to Hassocks to the north of the proposed access and also make a financial contribution (secured through a Section 106 agreement) to enable a traffic regulation order to be progressed to relocate the 30mph / 60mph speed limit change to the north of the proposed access. Such a feature would reduce the traffic speeds on the approach into Hassocks from the north.

5.2.8 An assessment has been made in relation to the spacing between the proposed junction and the private access to Hawthorn Cottage to the north. Manual for Streets 2 – Wider Application of the Principles discusses the spacing of junctions. Paragraphs 9.2.1 and 9.2.2 state:

> ***"In the past, guidance on minimum junction spacing has often been based on recommended stopping sight distances (SSD) for 85th percentile speeds. The reduction in SSD compared to previous practice means that junction spacing criteria determined on this basis should be reduced. However, in any event there appears to be little evidence that spacing criteria based on SSD are justified on safety or other grounds.***
>
> ***The need for and provision of junctions on new highway and additional junctions on existing routes should be assessed in the round considering a wide range of factors such as the need for access at particular locations, the impact on the size of development blocks, the potential for interaction between adjacent junctions and the consequent effect on user delay and road safety."***

5.2.9 The assessment of the proposed junction is set out below:

- Need for access at this location – to allow for a safe, suitable and deliverable access to the site;

- Potential for interaction between junctions – the access to Hawthorn Cottage is a lightly trafficked private access to a single dwelling (as opposed to a junction to an adopted road or road that serves a number of dwellings or other uses). The assessment therefore needs to be seen in this context. There is thus little potential for interaction between junctions. The proposed layby would assist accommodating any service / delivery vehicles for Hawthorn Cottage. It is acknowledged that there is the potential for vehicles waiting to turn out of the proposed junction and Hawthorn Cottage private access to be within the visibility splay of the other junction, however this is considered acceptable because its for a limited duration and the Hawthorn Cottage private access is very lightly trafficked as a private access and does not prejudice highway safety. Indeed, Manual for Streets 2 paragraph 10.7.1 confirms that parking in visibility splays in built up areas is quite common, yet it does not appear to create significant problems in practice. In this instance, we are not talking about parking in visibility splays, rather the potential for occasional vehicles obstructing visibility splays would be momentary and not prejudicial to highway safety; and
- User delay and road safety – the analysis demonstrates that the effects on user delay and road safety are acceptable (see Stage One Road Safety Audit summarised in paragraphs 5.2.15 – 5.2.16 below).

5.2.10 Given the above, the spacing between the proposed junction and the private access to Hawthorn Cottage to the north is therefore considered acceptable.

5.2.11 **Appendix H** provides a vehicle swept path analysis of the following vehicles at the proposed site access– refuse vehicle / estate car and delivery van / estate car. It is noted that the refuse vehicle crosses the centre line of Ockley Lane when turning to the north from the site access – but this is considered acceptable given the infrequent nature of such a movement.

Pedestrian / Cycle / Emergency Vehicle Access Arrangements

5.2.12 A separate pedestrian / cycle / emergency vehicle only access from Ockley Lane (in the location of the existing public right of way link to Ockley Lane to the south east (public footpath 5K)) is proposed as shown on i-Transport drawing no ITB11335-GA-006.

5.2.13 This is located in the 30mph section of Ockley Lane and ties into the existing footway on the west side of Ockley Lane providing a route to the bus stop just to the north and Hassocks to the south. Cyclists would be on-carriageway along Ockley Lane.

5.2.14 There is not currently a bus stop located on the eastern side of Ockley Lane to serve the southbound services - drawing ITB11335-GA-006 shows a proposed bus stop with hard standing / potential shelter on the east side of Ockley Lane.

Stage One Road Safety Audit

5.2.15 An independent Stage One Road Safety Audit (RSA) has been undertaken of the proposed site access arrangements from Ockley Lane. A copy of the Stage One RSA and associated Designer's Response is provided at **Appendix I**.

5.2.16 The auditor has confirmed that the amendments made to the drawing as shown in drawing no ITB11335-GA-006 (the drawing submitted with this application) addresses the road safety concerns identified. As such, there are no residual road safety concerns with the proposed arrangement.

5.3 Parking Provision

5.3.1 The provision of parking (car and cycle parking) for the proposed residential development and primary school will be a detailed matter the subject of reserved matters applications having regard to parking standards at the time of these applications, should outline planning permission be granted.

5.3.2 Any future reserved matters applications will have regard to the Policy DP11 requirement to make provision for charging electric vehicles by installing a dedicated electrical socket suitable for charging electric vehicles at each residential unit (either internally such as within a garage, or externally at an allocated parking space) and making parking areas 'charger ready' by making it possible to install a dedicated electric vehicle charging device (such as fast chargers) at a later date.

5.4 Servicing Arrangements

5.4.1 The illustrative Masterplan makes appropriate provision for refuse vehicles, other service vehicles and emergency vehicles.

5.4.2 Any future reserved matters applications will demonstrate in detail the arrangements for refuse vehicles, other service vehicles and emergency vehicles including appropriate vehicle swept path analysis.

5.5 Conclusion

5.5.1 In accordance with the requirements of Section 9 of the revised National Planning Policy Framework and the site specific requirements of Policy DP11, the proposals:

- Provide a suitable and safe access to the site from Ockley Lane; and
- Will make provision for charging electric vehicles.

SECTION 6 New Bridleway (Off Road Cycle Route) - Hassocks to Burgess Hill

6.1.1 The site is strategically positioned on the north side of Hassocks.

6.1.2 The proposed development affords the opportunity to provide a new bridleway (off road cycle route) between Hassocks and Burgess Hill. There are effectively four sections to the route as shown in **Figure 6.1**, namely (working from south to north):

- Section 1 - upgrading the public right of way link (public footpath 11K) to a bridleway between Woodsland Road and the site via Clayton Mills (Woodsland Road provides a safe walking and cycling route to the station and Hassocks village centre to the south);
- Section 2 – through the main site (DP11 allocation area);
- Section 3 – north of the main site (DP11 allocation area) as far north as Batchelors Farm; and
- Section 4 – through Batchelors Farm linking in with the existing bridleway network in southern Burgess Hill providing safe access towards Burgess Hill town centre, Burgess Hill Station and other parts of Burgess Hill.

6.1.3 Each section of the route is described in more detail below.

Section 1 - Upgrading the Public Right of Way link (Public Footpath 11K) to a Bridleway

6.1.4 A drawing showing the proposals to upgrade the public right of way link (public footpath 11K) to a bridleway between Woodsland Road and the site via Clayton Mills is provided at **Appendix J**.

6.1.5 The proposals include:

- Upgrade of Footpath 11K to bridleway to permit cycle use;
- Surface, drainage, lighting and signage improvements to Footpath 11K;
- Improved cycleway crossing of Oak Tree Drive; and
- Improvements to northern end of Woodsland Road including shared surface area.

Section 2 – through the Main Site (DP11 Allocation Area);

6.1.6 The route of the new bridleway (off road cycle route) through the proposed development is shown in the illustrative Masterplan at **Appendix B**.

6.1.7 The detail would be secured through any future reserved matters applications.

Section 3 – North of the Main Site (DP11 Allocation Area) as far north as Batchelors Farm

6.1.8 A new 3m bridleway (off road cycle route) is included as part of this planning application on the east side of the railway line and routing north of the main site (DP11 allocation area) as far north as Batchelors Farm.

6.1.9 The route overview (including Section 4 through Batchelors Farm) is shown at **Appendix K**.

6.1.10 The detail for Section 3 of the route is shown in drawings ITB11335-GA-021 – 025 which providie an attractive new off road route for pedestrian and cyclists.

Section 4 – through Batchelors Farm

6.1.11 The section of the new bridleway (off road cycle route) through Batchelors Farm is owned by Burgess Hill Town Council and is the subject of a separate planning application.

6.1.12 The proposals would see the existing footpath 60BH (which runs along the western side of the Batchelors Farm site) be upgraded to a 3m wide bridleway) as far as bridleways 19aBH and 18BH. By linking into bridleways 19aBH and 18BH this would provide a new off road cycle route between Hassocks and Burgess Hill, whilst also connecting in well with the Burgess Hill Green Circle Network.

6.1.13 Burgess Hill Town Council has agreed to the new bridleway (off road cycle route) through Batchelors Farm - see **Appendix L.**

6.2 Conclusion

6.2.1 In accordance with the site specific requirements of Policy DP11, the existing cycle route to Burgess Hill has been enhanced through a new bridleway (off road cycle route) between Hassocks and Burgess Hill on the east side of the railway line. This is viewed as a major benefit of the proposed development.

SECTION 7 Woodside Rail Crossing

7.1.1 Public footpath 5K routes in a broad east west alignment through the site from Ockley Lane to the east to the A273 to the west crossing the railway line at the Woodside rail crossing – see **Figure 7.1.**

7.1.2 Network Rail undertook a census count of pedestrian use at the Woodside rail crossing between 26 March 2018 – 15 April 2018 (covering Easter) - see **Appendix M**. The census showed the following pedestrian use:

- Average daily use – 7;
- Highest daily useage – 22; and
- Dog walkers – 32%.

7.1.3 In general, existing use of the Woodside rail crossing is therefore low.

7.1.4 The vast majority of everyday destinations in Hassocks for future residents of the proposed development are on the east side of the railway line. As such, the proposed residential development (itself being on the east side of the railway line) will add a negligible demand for trips over the Woodside rail crossing, although it is accepted new houses may generate some leisure / recreation / dog walking trips using the crossing. It is recognised that with the introduction of a new primary school there may be an increased demand for movements over the Woodside rail crossing from residents / pupils living on the west side of the railway line.

7.1.5 The applicant is discussing with Network Rail the most appropriate provision of improved pedestrian access across the railway line which is likely to result in a separate prior approval application (under Part 18 Class A of The Town and Country Planning (General Permitted Development) (England) Order 2015) being submitted for a new footbridge crossing of the railway line. This development will provide funding for the prior approval application and the improvement works.

7.1.6 This approach meets the site specific DP11 policy requirement of ensuring that there is an agreed approach towards ensuring the provision of safe rail crossings.

SECTION 8 Promoting Sustainable Transport Modes

8.1 Introduction

8.1.1 This section of the Transport Assessment summarises whether appropriate opportunities to promote sustainable transport modes can be – or have been - taken up. The analysis is covered in the following sub sections:

- Key destinations;
- Internalisation of journeys;
- Walking and cycling;
- Public transport; and
- Framework travel plan.

8.2 Key Destinations

8.2.1 In considering accessibility and promoting sustainable travel it is important to consider the reasons why future residents of the proposed development will make journeys. The Department for Transport's (DfT) National Travel Survey identifies the proportion of all trips by purpose as set out in **Table 8.1**.

Table 8.1: 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 NTS0409 Average number of trips by purpose and main mode: England NTS – 2017 Edition

8.2.2 Travel is therefore split across a number of different journey purposes.

8.2.3 The key local services and facilities for future residents of the proposed development are set out in **Figure 8.1** and summarised in **Table 8.2** below.

Table 8.2: Accessibility to Local Facilities

Facility	Destination	Reference
Leisure	On-Site Public Open Space	1
	On- Site Community Building	2
	On-Site Children's Play Area	3
	On-Site Community Orchard	4
	The Thatched Inn	L1
	Hassocks Library	L2
	The Greyhound	L3
	Adastra Park	L4
	Keymer and Hassocks Cricket Club	L5
	Keymer and Hassocks Sports and Social Club	L6
	Hassocks Sports Centre	L7
Retail	Hassocks Village Centre	-
	Keymer Local Centre	-
	Burgess Hill Town Centre	-
	Waitrose	R1
	Tesco	R2
	Retail Park	R3
	Sainsbury Local	R4
	Budgens	R5
Employment	South Down's Nurseries	E1
	Victoria Industrial Estate	E2
Education	On-Site Primary School	5
	Hassocks Infant School	ED1
	The Windmills Junior School	ED2
	Downlands Community School	ED3
	The Burgess Hill Academy	ED4
Healthcare	Hassocks Dental Surgery	H1
	Hassocks Health Centre	H2
Transport	Bus Stops	-
	Hassocks Railway Station	Railway Station 1
	Burgess Hill Railway Station	Railway Station 2

8.2.4 It can be seen from above that the local area includes many of the day-to-day facilities that residents would typically use, those located within Hassocks village centre to the south of the site including, shops, leisure and education facilities. Burgess Hill to the north also includes

further retail and leisure facilities and employment opportunities. The site is therefore well located in relation to everyday services and facilities.

8.2.5 The 2011 Census has also been analysed to assist in establishing wider commuting patterns for people living in the local area. **Table 8.3** below summarises the work destinations (excluding those that work at home) for residents of Hassocks.

Table 8.3: Journey to Work Destinations (All Modes)

Employment Destination	% of Employment Trips
Brighton	16.86%
Burgess Hill	12.96%
London	12.04%
Hassocks	11.15%
Haywards Heath	11.09%
Crawley	7.05%
Hurstpierpoint	5.50%
Lewes	3.24%
Ditchling Wivelsfield	2.59%
Other North	2.02%
Horsham	1.78%
Worthing	1.72%
East Grinstead	1.64%
Southwick / Shoreham-by-Sea	1.25%
Greater London	1.16%
Other West	1.13%
Other	6.81%
Total	**100.00%**

Source: 2011 Census Analysis

8.2.6 Around 17% of residents work in Brighton, whilst some 13% work in Burgess Hill. Some 11% of residents work within Hassocks itself (excluding working from home) and 11% work in Haywards Heath to the north. Some 12% work in London.

8.3 Internalisation of Journeys

8.3.1 In addition to some 500 dwellings, the illustrative masterplan allows for:

- A primary school;
- Community building;
- Public open space;
- Children's play areas;
- Park; and
- Community orchard.

8.3.2 The provision of a primary school, community building, public open space, children's play areas, park and community orchard on site provide the opportunity for many journeys to be contained within the site without impacting on the external transport network. It is clear that with the mix of land uses proposed there is the genuine opportunity to ensure a walkable neighbourhood is planned with the facilities being within a reasonable walking distance of all residential areas.

8.4 Walking and Cycling

8.4.1 The National Travel Survey 2017 (released September 2018) confirms that some 81% of all trips under 1 mile (circa 1.6km) are walk trips, whilst walking accounts for some 30% of all trips between 1 and under 2 miles (circa 1.6km – 3.2km) – see **Appendix N**.

8.4.2 The 1.6km distance is reflected in recent Chartered Institution of Highways and Transportation (CIHT) guidance 'Planning for Walking' (2015) which states:

> ***"Across Britain, approximately 80% of journeys shorter than 1 mile are made wholly on foot – something that has changed little in 30 years. The main reason for the decline in walking is the fall in the total number of journeys shorter than 1 mile, which has halved in thirty years. It is not that people are less likely to make short journeys on foot but rather that fewer of the journeys they make can be accomplished on foot. If destinations are within walking distance, people are more likely to walk if walking is safe and comfortable and the environment is attractive."***

8.4.3 Therefore, providing new homes within a mile of facilities and services will provide the greatest opportunity for trips to be made by walking. That is not to say that a mile is the maximum distance that people are prepared to walk, or that development must be located within a mile of everything. It is clear from the NTS data that around one-third of journeys between one and

two miles are undertaken on foot. This is supported by paragraph 2.3 of the DMRB TD91/05 'Provision for Non-Motorised Users', which identifies that walking is a 'normal' mode of transport for journeys undertaken within a range of up to two miles, as follows:

> ***"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".***

8.4.4 In terms of cycling journeys, the National Travel Survey sets out that the average journey distance by bike is some 4.9km, with the current average length of an employment trip being some 5.3km see **Appendix O**. Local Transport Note 02/08 'Cycle Infrastructure Design' (Department for Transport, 2008) (ref: CD5.9) sets out typical cycle trip distances at paragraph 1.5.1:

> ***"Urban networks are primarily for local journeys. In common with other modes, many utility cycle journeys are under three miles (ECF, 1998), although, for commuter journeys, a trip distance of over five miles is not uncommon. Novice and occasional leisure cyclists will cycle longer distances where the cycle ride is the primary purpose of their journey. A round trip on a way-marked leisure route could easily involve distances of 20 to 30 miles. Experienced cyclists will often be prepared to cycle longer distances for whatever journey purpose."***

8.4.5 Therefore, whilst the average 'commuter' trip is circa 5.3km, cycling distances for such journeys of more than 5 miles (circa 8km) is not uncommon.

8.4.6 Figure 8.2 shows that many of the local facilities set out in Table 8.2 are within a 1 mile (1.6km) radius of the site. All are within a 2 mile (3.2km) radius of the site. The local facilities are therefore reasonable walk distance for many future residents at the site.

8.4.7 Figure 8.3 shows that Hassocks, Burgess Hill, Hurstpierpoint and Ditchling are all within a 5km (3 mile) radius of the site and as such a reasonable cycle distance for many future residents at the site. Southern parts of Haywards Heath fall within the 8km (5 mile) cycle distance.

8.4.8 As set out in Section 6 of the Transport Assessment, a new bridleway (off road cycle route) between Hassocks and Burgess Hill is proposed.

8.4.9 As set out in Section 7 of the Transport Assessment, the applicant is discussing with Network Rail the most appropriate provision of improved pedestrian access across the Woodside rail crossing which is likely to result in a separate prior approval application being submitted for a new footbridge crossing of the railway line. This development will provide funding for the prior approval application and the improvement works.

8.4.10 To assess the ability of residents to safely and conveniently access local facilities by quality infrastructure a Pedestrian and Cycle Audit was carried out in Mid 2018 – see **Appendix P**.

8.4.11 The Audit considers the suitability of local walking and cycling routes, comprising:

Hassocks Village Centre

- Route 1 – Towards Hassocks Village Centre via Ockley Lane and Keymer Road;
- Route 2 – Towards Hassocks Village Centre and Hassocks Railway Station via Footpath 5K and 11K and Woodsland Road;
- Route 3 – Towards Hassocks Village Centre via Grand Avenue (and Public Footpath 21K); and

Other Routes

- Route 4 – Towards Keymer via Ockley Lane and Keymer Road.

8.4.12 The Audit demonstrates that, in general, existing walking and cycling infrastructure fulfils the needs of both pedestrians and cyclists in a safe and attractive manner. Notwithstanding this, the Audit identifies a series of possible improvement measures on some of the local routes which could be delivered and which would maximise opportunities for sustainable travel. These measures are outlined in **Table 8.4.**

Table 8.4: Proposed Walking and Cycling Improvements

Route	Improvement
Route 1 – Hassocks Village Centre via Ockley Lane and Keymer Road	• Provision of tactile paving along the route.
Route 2 – Hassocks Village Centre and Railway Station via Public Footpath 5K, 11K and Woodsland Road	• Upgrade the public right of way link (public footpath 11K) to Clayton Mills and beyond to Woodlands Road to a bridleway to enable cycle use; and • Provision of tactile paving along the route.
Route 3 – Hassocks Village Centre via Grand Avenue (and Public Footpath 21K)	• Provision of tactile paving along the route at Grand Avenue / Keymer Road.
Route 4 – Keymer Local Centre via Ockley Lane and Keymer Road	• No improvements identified

Source: Appendix P

8.5 Public Transport

Bus

8.5.1 The closest bus stop to the site is situated on Ockley Lane approximately 90m south of the site access, to the east of the site, and 85m north from the entrance of the public right of way. From this bus stop, services 33, 167 and 168 can be accessed and provide opportunities to travel by bus Monday to Saturday.

8.5.2 **Table 8.5** provides a summary of the locations served and their frequencies. **Figure 8.4** demonstrates the site's accessibility to the public transport network and the routing of the buses within the vicinity of the site.

Table 8.5: Local Bus Services

Route	Destinations	Bus Stop	Service Frequency	
			Weekday	Saturdays
33	Hurstpierpoint - Burgess Hill - Haywards Heath	Ockley Manor Farm	Every Hour. First departure at 0700. Last return from Haywards Heath at 1807.	Every Hour. First departure at 0806. Last return from Haywards Heath at 1252. Last return from Burgess Hill at 1725.
167	Burgess Hill - Hassocks - Ditchling - Offham - Lewes	Ockley Manor Farm	3 services – 1005, 1152, (Monday, and Thursday) and 1412 (Not Wednesday). Last return from Lewes at 1310 (Monday and Thursday) and 0915 (Not Wednesday).	-
168	Circular Route - Burgess Hill - Wivelsfield - East Chiltington - Ditchling - Burgess Hill	Ockley Manor Farm	Tuesday and Friday only (Circular Route) 3 services – 1019, 1240 and 1605.	-

Source: Compass Travel

8.5.3 There are opportunities to travel to a number of destinations by bus including Hurstpierpoint, Burgess Hill, Ditchling and East Chiltington.

8.5.4 Along Ockley Lane some 90m to the north of Public Footpath 11K a northbound bus stop is located on the western side of Ockley Lane. There is currently not a bus stop located on the

eastern side of Ockley Lane to serve the southbound services. This is proposed with hardstanding and a potential bus shelter – see drawing ITB11335-006. This will provide more opportunity for future residents to travel southbound towards Ditchling and will encourage a higher use of sustainable transport.

Rail

8.5.5 Hassocks Station is located some 1.9km west from the site access and can be accessed by directly by bus service 167 at the eastern entrance of the station or by bus service 33 and 167 on Keymer Road (Railway Bridge) as well as by walking or cycling. This station has access to 174 car park spaces, 4 accessible spaces and 154 cycle storage spaces.

8.5.6 **Table 8.6** shows the direct services from Hassocks Railway Station, including their typical frequency and journey time during both peak and off-peak periods.

Table 8.6: Rail Services

Destination	Service Frequency		
	Peak	Off Peak	Journey Time (approx..)
Brighton	3 - 4 per hour	4 per hour	12 minutes
Burgess Hill	4 per hour	4 per hour	4 minutes
Haywards Heath	4 per hour	4 per hour	10 minutes
Gatwick Airport	6 per hour	4 per hour	21 minutes
London Victoria	4 per hour	2 per hour	55 minutes

Source: National Rail

8.5.7 Key destinations from Hassocks Railway Station include Brighton, Burgess Hill, Haywards Heath and London.

8.5.8 In addition, Burgess Hill Station is located to the north of the site some 2.9km from the centre of the site. This station provides access to a car park and 64 cycle storage spaces. Key destinations from this station include Brighton and London.

8.5.9 It is proposed to provide a financial contribution to provide additional cycle parking at or within a reasonable walk distance of Hassocks Railway Station (including in Hassocks centre) and / or Burgess Hill Railway Station.

8.6 Framework Travel Plan

8.6.1 A separate Framework Travel Plan has also been prepared (i-Transport report ref: 11335-102 R). The primary purpose of the travel plan is to identify opportunities for the effective promotion and delivery of sustainable transport initiatives e.g. walking, cycling, public transport and home working, and through this to thereby reduce the demand for travel by less sustainable modes.

8.6.2 The overarching aims have been set in order to achieve a number of key transport objectives and targets. The key target of the FTP is to:

"To reduce the number of vehicle trips generated by the site (over a weekday 12-hour period and during the morning and evening peak hours periods) by 10%."

8.6.3 To meet this target 'soft' Travel Plan measures will be developed and promoted for the residents of the new development which will include:

- Measures to encourage new residents to walk and cycle;
- Measures to encourage the use of public transport;
- Measures to encourage future residents to car-share;
- Information provision; and
- A new resident's travel pack (including the offer of a travel voucher for every household (first owner of each dwelling only) with residents being able to choose from a menu of incentives to a value of £150 per household).

8.6.4 A Travel Plan Coordinator will be appointed to deliver the Travel Plan measures

8.7 Conclusion

8.7.1 In accordance with the requirements of Section 9 of the revised National Planning Policy Framework and the site specific requirements of Policy DP11, the proposals ensure that appropriate opportunities to promote sustainable transport modes can be taken up. The proposals provide safe pedestrian/cycling routes within the development and to connect with existing residential areas, the services within Hassocks village centre, Hassocks railway station, and enhance the existing cycle route to Burgess Hill. There is also an agreed approach towards ensuring the provision of a safe crossing at Woodside rail crossing.

8.7.2 In the context of the likely demands from the proposed development, existing public transport services (bus and rail) are adequate and appropriate. However, the development will improve access to public transport through the walking and cycling improvements, proposed Ockley Lane bus stop improvements, financial contribution to provide additional cycle parking at or within a reasonable walk distance of Hassocks Railway Station (including Hassocks centre) and / or Burgess Hill Railway Station along with travel plan measures. This therefore meets the site specific requirements of Policy DP11 in respect of public transport.

SECTION 9 Traffic Analysis Parameters

9.1 Introduction

9.1.1 The traffic analysis parametersare set out under the following sub headings:

- Existing conditions;
- Future year scenarios;
- Committed development;
- Background traffic growth;
- Future year traffic flows
- Residential development
- Primary school; and
- Future year traffic flows (with proposed development)

9.2 Existing Conditions

9.2.1 Weekday peak period classified turning counts were undertaken on Thursday 8 June 2017, supported by Automatic Traffic Count surveys over a week period. This is a neutral traffic survey month.

9.2.2 The traffic analysis study area within the transport assessment is summarised below:

Hassocks

- Ockley Lane / Site Access (proposed access junction so not surveyed but part of study area);
- Ockley Lane / Grand Avenue;
- Ockley Lane / Keymer Road;
- Keymer Road / Lodge Lane;
- Lodge Lane / New Road;
- Grand Avenue / Keymer Road;
- London Road / Keymer Road / Brighton Road / Hurst Road (Stonepound Crossroads);

Burgess Hill

- Folders Lane / Keymer Road Mini Roundabout;
- Keymer Road / Station Road / Junction Road / Silverdale Road Mini Roundabout;
- Station Road / Church Road / Mill Road Mini Roundabout; and
- Station Road / Civic Way / Queen Elizabeth Avenue / MSDC Car Park Roundabout.

9.2.3 The traffic surveys were analysed to determine the weekday peak hours which comprise:

- Morning peak hour – 07:45 – 08:45; and
- Evening peak hour – 17:00 – 18:00.

9.2.4 The existing (2017) weekday morning and evening peak hour traffic flows on the local highway network are shown on Figures TF1 and TF2 respectively.

9.3 Future Year Scenarios

9.3.1 Two over-arching future year scenarios for highway network operational assessment are assessed.

2022 – Development Year of Opening

9.3.2 The first future year is the initial opening year of the development, which is assumed to be the year when the first part of the development is open for occupation. For the purposes of the Transport Assessment, the opening year of the development is assumed to be 2022 which is robust because the development opening year is likely to be sooner than this. As such, in the first instance the assessment needs to establish 2022 local highway network conditions (without the proposed development), taking into account committed development traffic and appropriate background traffic growth.

9.3.3 Establishing the 2022 opening year local highway network conditions is important because this is then used as the base situation to establish whether the impact of the proposed development on the operation of the local highway network would be severe and if mitigating measures are warranted.

2031 – End of District Plan Period

9.3.4 The second future year is the assessment of a future horizon period at the end of the District Plan at 2031. The assessment needs to establish 2031 local highway network conditions taking

into account committed development traffic, proposed development traffic and appropriate background traffic growth. The 2031 analysis is provided to WSCC for information purposes only to inform their long term planning strategy.

9.4 Committed Development

9.4.1 Committed development has been split into:

- Development sites which have been granted planning permission but have not been built out at the time of the traffic surveys; and
- Allocated sites in the adopted District Plan which do not yet benefit from planning permission.

9.4.2 **Table 9.1** shows the permitted development sites that are included in the 2022 year of opening assessment (using information from their respective transport assessments):

Table 9.1: Committed Developments Benefitting from Planning Permission Considered in Traffic Analysis

Development	Number of Dwellings	Completions	Outstanding Homes
Hassocks Golf Club	130	0	130
West of London Road Hassocks	97	0	97
Additional homes at London Road	33	0	33
Keymer Tile Works	475	23	452
East of Kingsway	480	76	404
Kingsway east of Gerald Close	64	0	64
The Martletts	142	0	142
Little Park Farm	140	0	140
Highfield Drive	17	15	2
Chalkers Lane North	38	38	0
Chalkers Lane South	61	49	12
Stafford House, Keymer Road, Hassocks	14	0	14
Total	**1,661**	**201**	**1,490**

9.4.3 It is noted that on 29 November 2018 MSDC resolved to grant planning permission for a further 35 homes at Hassocks Golf Club in addition to the 130 dwellings that already have planning

permission (ref: DM/18/2616). The TA relating to that planning application quantifies the traffic generation of the additional homes using a more forensic method that takes account of affordable housing (which exhibits lower trip rates than private housing) – whereas the TA for 130 homes was based on private houses for robustness. The transport work identifies the changes in traffic as a result of the additional homes (compared to the previous transport assessment for 130 dwellings) as follows:

- Morning peak: - 4 vehicles per hour; and
- Evening peak: +14 vehicles per hour.

9.4.4 Therefore the analysis has identified that in the morning peak hour the transport assessment for 130 dwellings has over estimated by 4 vehicles the traffic generation compared with the actual 165 homes coming forward at the golf club. In the evening peak hour the actual 165 homes coming forward generates an additional 14 vehicles than assessed in the original transport assessment. Around 60% of the golf club development traffic routes through the Stonepound crossroads – so the 165 homes would see an additional 8 trips routing through Stonepound crossroads in the evening peak hour (around 1 vehicle every 7 – 8 minutes) – given this small number it does not equate to a noticeable increase in traffic flow on the highway network and as such has not been specifically allowed for in the analysis but has been included generally through growth and robust parameters elsewhere.

9.4.5 In addition to the consented developments listed above, the 2031 future year assessment includes the allocated sites in **Table 9.2** below (using their transport assessment work and / or appropriate assumptions if transport work is not available):

Table 9.2: Allocated Development Considered in Traffic Analysis

Development	Number of Dwellings
Station Goods Yard	70
The Brow, Burgess Hill	100
Burgess Hill Northern Arc	3,500
Total	**3,670**

Source: MSDC

9.4.6 The traffic flows from each committed development within the study area are provided at **Appendix Q.**

9.5 Appropriate Background Traffic Growth

9.5.1 Traffic growth rates taken from the TEMPRO database v7.2 have been used to calculate appropriate background traffic growth to the 2023 and 2028 future years.

9.5.2 The TEMPRO database provides an estimate of traffic growth that will occur as a result of trends in car ownership, population increases and economic factors. With the direct inclusion of committed development, 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 - see **Appendix R**.

9.5.3 The 2017 – 2022 growth rates have been adjusted by subtracting 1,460 (Table 9.1) households in Mid Sussex Output Areas 013-017 (i.e. the study area) from the future households. For the 2017 – 2031 growth rates a reduction of 1,660 future households in Mid Sussex Output Areas 013-017 has been applied. These are summarised in **Table 9.3**.

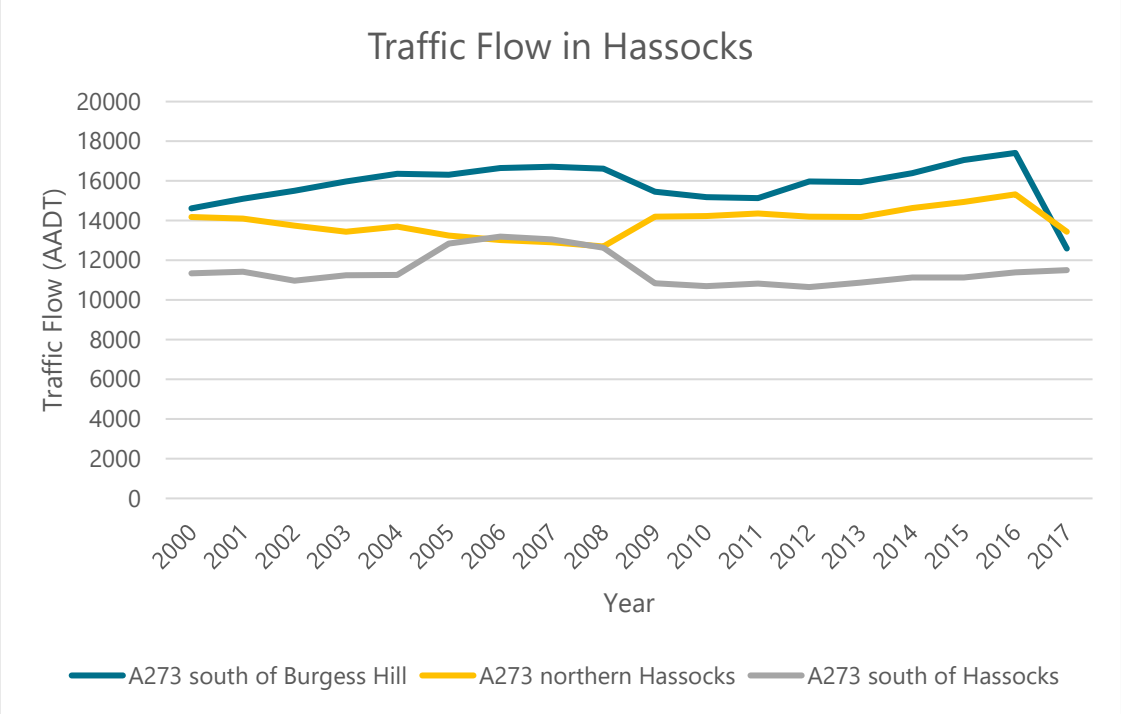
Table 9.3: Growth Rates

Growth Year	Morning Peak Period	Evening Peak Period
2017 – 2022	1.0295	1.0219
2017 – 2031	1.1091	1.1049

Source: TEMPRO v7.2

9.5.4 An analysis of traffic data from the DfT has shown that traffic flows on the highway network in and around Hassocks on the A273 have remained relatively flat (i.e. no traffic growth) for the five-year period between 2010 and 2017 inclusive – see Graph 9.1. It can be seen therefore that there is no real evidence of traffic growth in the Hassocks area. As such, the analysis is a robust and 'worst case' assessment of the future year scenarios.

Graph 9.1: Hassocks 2000-2017



Source: DfT Traffic Counts

9.6 Future Year Traffic Flows (Without Development)

9.6.1 The future year traffic flows without the proposed development area shown in the following figures:

- Figures TF3 and TF4 - 2022 with Consented Development Weekday Morning and Evening Peak Hours; and
- Figures TF5 and TF6 - 2031 with Consented and Allocated Development Weekday Morning and Evening Peak Hours.

9.7 Residential Development

Trip Rates

9.7.1 In order to undertake a robust assessment, survey data for residential developments comprising a similar number of privately-owned houses located in edge of town and suburban locations have been used to assess the likely traffic generation of the proposed development. The TRICS output can be found at **Appendix S.** The trip rates are presented in **Table 9.4** below

Table 9.4: Trip Rates for Private Houses

Type	Morning Peak			Evening Peak		
	In	Out	Total	In	Out	Total
Private (Per Dwelling)	0.142	0.419	0.561	0.379	0.219	0.598

Source: TRICS

Traffic Generation

9.7.2 The resultant peak hour vehicle trips for the proposed residential development of 500 dwellings are presented in **Table 9.5.**

Table 9.5: Traffic Generation – 500 dwellings

Type	Morning Peak			Evening Peak		
	In	Out	Total	In	Out	Total
Private (Per Dwelling)	71	210	281	189	110	299

Source: TRICS

9.7.3 The trip generation for the proposed residential development assumes provision of 100% private housing. This is robust because:

- The planning obligation will actually secure affordable housing provision. Private housing typically generates higher trip rates during weekday peak hours than affordable housing; and
- Some of the dwellings to be delivered on site will be apartments, although the TA assumes that all dwellings will be houses. Houses typically generate higher trip rates during weekday peak hours than apartments.

Traffic Distribution and Assignment

9.7.4 The distribution of residential development traffic has been undertaken using the following methodology:

- The distribution of commuting trips, which comprise 45% of all peak hour trips according to recent DfT data from the National Travel Survey, is in accordance with the employment destinations for local residents identified through the 2011 Census Journey to Work dataset; and
- The distribution of all other peak hour vehicle trips, i.e. the remaining 55%, is in accordance with a gravity model produced for this development.

9.7.5 A summary of the traffic distribution results (for work and non-work trips) is provided in **Table 9.6** with the full distribution model found in **Appendix T**.

Table 9.6: Distribution of Car Drivers

Destination	Employment Trips %	Non-Commuter Trips %	% All Trips Combined
Burgess Hill	6.89%	24.10%	30.99%
Brighton	8.09%	5.03%	13.13%
Haywards Heath	6.18%	4.42%	10.60%
Hassocks	2.55%	6.20%	8.76%
Crawley	4.00%	2.94%	6.95%
Hurstpierpoint	2.80%	1.72%	4.52%
Worthing	1.07%	2.77%	3.84%
Southwick / Shoreham-by-Sea	0.80%	2.59%	3.39%
Lewes	1.98%	1.39%	3.38%
Ditchling / Wivelsfield	1.45%	0.00%	1.45%
East Grinstead	0.84%	0.49%	1.34%
Peacehaven / Newhaven / Seaford	0.27%	0.97%	1.25%
Horsham	1.24%	0.00%	1.24%
Other North	1.18%	0.00%	1.18%
Other	5.63%	2.36%	7.99%
Total	**45.00%**	**55.00%**	**100.00%**

9.7.6 This analysis identifies that Burgess Hill is the main trip attractor, with some 30% of total travel demand, followed by Brighton (13%) and Haywards Heath (11%).

9.7.7 The residential development weekday morning and evening peak hour traffic flows on the local highway network are shown on Figures TF7 and TF8.

9.8 Primary School

9.8.1 The Transport Assessment includes a further assessment of the impact of both residential and school traffic combined.

9.8.2 A technical note setting out the traffic generation, distribution and assignment exercise for the proposed primary school is provided at **Appendix U**.

9.8.3 The traffic generation of the primary school is summarised in **Table 9.7**:

Table 9.7: Primary School Traffic Generation

Two-way Link Flow	Arrivals	Departures	Two-way
Morning Peak (0800-0900)			
Staff	21	0	21
Pupil Drop Off / Pick Up	83	69	152
Total	**104**	**69**	**173**
Evening Peak (1700-1800)			
Staff	0	11	11
Pupil Drop Off / Pick Up	0	0	0
Total	**0**	**11**	**11**

Source: i-Transport

Internalisation of Journeys

9.8.4 The provision of a primary school provides the opportunity for journeys to be contained within the site without impacting on the external transport network. Morning peak trips to school by pupils living within the development (internalised journeys) are thus 'double counted' and have been subtracted from the residential traffic flows.

9.8.5 The calculation of internalised journeys is set out in the Technical Note at **Appendix U** while the adjustment to the residential traffic flows is set out below in **Table 9.8**.

Table 9.8: Adjusted Trip Rates for Private Houses

Type	Morning Peak			Evening Peak		
	In	Out	Total	In	Out	Total
Residential Traffic Flows	71	210	281	189	106	295
Internal Trips	16	19	35	0	0	0
Adjusted Residential Traffic Flows	55	191	246	189	106	295

Source: TRICS

Traffic Distribution and Assignment

9.8.6 The methodology for distributing and assigning trips to school is set out in the Technical Note at **Appendix U**.

9.8.7 The overall proposed development (residential development and primary school) traffic flows are shown in the following figures:

- Figures TF9 – TF10 - Overall Proposed Development (Residential Development and Primary School) Morning and Evening Peak Hours.

9.8.8 Providing a new primary school in itself will not generate additional children or their travel demand. It will simply provide the destination for school trips that will be generated in any event by existing and committed development. The effect of the new school will therefore be to redistribute trips by pupils / parents around the highway network that are either already on the highway network or allowed for as part of committed development – it will not result in new trips.

9.8.9 The traffic analysis is therefore robust as it assumes school pupil trips are new and thus additional to the highway network whereas in reality that will not be the case.

9.9 Future Year Traffic Flows (with Development)

9.9.1 The following assessment years and scenarios have been used for this TA and are shown in the following figures:

- Figures TF11 – TF12 - 2022 with Consented Development and Proposed Residential Development Morning and Evening Peak Hours;
- Figures TF13 – TF14 - 2022 with Consented Development and Overall Proposed Development (Residential Development and Primary School) Morning and Evening Peak Hours;
- Figures TF15 – TF16 - 2031 with Consented / Allocated Development and Proposed Residential Development Morning and Evening Peak Hours; and
- Figures TF17 – TF18 - 2031 with Consented / Allocated Development and Overall Proposed Development (Residential Development and Primary School).

SECTION 10 Traffic Impact Analysis

10.1 Introduction

10.1.1 This section of the transport assessment analyses whether traffic generated by the proposed development will have any significant impacts on the operation of the highway network and, if so whether they can be cost effectively mitigated to an acceptable degree.

10.2 Link Flow Impact

10.2.1 **Tables 10.1** and **10.2** below provide a real number and % impact analyses of the proposed residential development on the highway network in the 2022 future year (year of opening) weekday for the morning and evening peak hours.

Table 10.1: Future Year Development Traffic Flow Impact – Morning Peak (0745 – 0845) – Proposed Residential Development Only

Two-Way Link Flow	2022 + Committed Development	Development Traffic (Residential Only)	% Impact
Hassocks			
Ockley Lane- South of Access	656	126	19.21%
Grand Avenue – West of Ockley Lane	271	20	7.38%
Keymer Road – Between Ockley Lane and Lodge Lane	784	87	11.10%
Keymer Road - West of Ockley Lane	708	19	2.68%
Lodge Lane – South of Keymer Road	466	74	15.88%
New Road – West of Lodge Lane	910	74	8.13%
Keymer Road – West of Grand Avenue	1116	39	3.49%
Keymer Road - East of Stonepound Crossroads	1,070	13	1.21%
London Road / Keymer Road / Brighton Road / Hurst Road (Stonepound Crossroads)	2,006	13	0.65%
Burgess Hill			
Ockley Lane – North of Access	656	155	23.63%
Keymer Road – North of Folders Lane	1,337	132	9.87%
Station Road – West of Junction Road	1,862	107	5.75%
Queen Elizabeth Avenue – West of Civic Way	1,510	61	4.04%

Source: Consultant Calculations

Table 10.2: Future Year Development Traffic Flow Impact – Evening Peak (1700 – 1800) – Proposed Residential Development Only

Two-Way Link Flow	2022 + Committed Development	Development Traffic (Residential Only)	% Impact
Hassocks			
Ockley Lane- South of Access	783	134	17.11%
Grand Avenue – West of Ockley Lane	329	21	6.38%
Keymer Road – Between Ockley Lane and Lodge Lane	804	92	11.44%
Keymer Road - West of Ockley Lane	572	22	3.85%
Lodge Lane – South of Keymer Road	500	79	15.80%
New Road – West of Lodge Lane	929	79	8.50%
Keymer Road – West of Grand Avenue	1009	41	4.06%
Keymer Road - East of Stonepound Crossroads	903	14	1.55%
London Road / Keymer Road / Brighton Road / Hurst Road (Stonepound Crossroads)	2,113	14	0.66%
Burgess Hill			
Ockley Lane – North of Access	783	166	21.20%
Keymer Road – North of Folders Lane	1,493	140	9.38%
Station Road – West of Junction Road	1,943	114	5.87%
Queen Elizabeth Avenue – West of Civic Way	1,552	65	4.19%

Source: Consultant Calculations

10.2.2 Tables 10.1 and 10.2 demonstrate that the biggest % increase in traffic is along Ockley Lane north and south of the proposed access ranging between 17% - 24% (126 – 166 vehicles in a peak hour). Lodge Lane sees an increase in traffic of around 16% (74 – 79 vehicles in a peak hour). Keymer Road in Hassocks (between Ockley Lane and Lodge Lane) sees an increase in traffic of around 11% (87 – 92 vehicles in a peak hour). All other increases are less than 10% of 2022 base flows.

10.2.3 **Tables 10.3** and **10.4** demonstrate the percentage impact and the number of additional vehicles on the highway network for the overall proposed development (residential and primary school).

Table 10.3: Future Year Development Traffic Flow Impact – Morning Peak (0745 – 0845) – Proposed Overall Development

Two-Way Link Flow	2022 + Committed Development	Development Traffic (Overall Development)	% Impact
Hassocks			
Ockley Lane- South of Access	656	252	38.41%
Grand Avenue – West of Ockley Lane	271	75	27.68%
Keymer Road – Between Ockley Lane and Lodge Lane	784	94	11.99%
Keymer Road - West of Ockley Lane	708	62	8.76%
Lodge Lane – South of Keymer Road	466	82	17.60%
New Road – West of Lodge Lane	910	71	7.80%
Keymer Road – West of Grand Avenue	1116	117	10.48%
Keymer Road - East of Stonepound Crossroads	1,070	45	4.21%
London Road / Keymer Road / Brighton Road / Hurst Road (Stonepound Crossroads)	2,006	45	2.24%
Burgess Hill			
Ockley Lane – North of Access	656	167	25.46%
Keymer Road – North of Folders Lane	1,337	134	10.02%
Station Road – West of Junction Road	1,862	99	5.32%
Queen Elizabeth Avenue – West of Civic Way	1,510	56	3.71%

Source: Consultant Calculations

Table 10.4: Future Year Development Traffic Flow Impact – Evening Peak (1700 – 1800) – Proposed Overall Development

Two-Way Link Flow	2022 + Committed Development	Development Traffic (Overall Development)	% Impact
Hassocks			
Ockley Lane- South of Access	783	141	18.01%
Grand Avenue – West of Ockley Lane	329	21	6.38%
Keymer Road – Between Ockley Lane and Lodge Lane	804	96	11.94%
Keymer Road - West of Ockley Lane	572	23	4.02%
Lodge Lane – South of Keymer Road	500	82	16.40%
New Road – West of Lodge Lane	929	82	8.83%
Keymer Road – West of Grand Avenue	1009	44	4.36%
Keymer Road - East of Stonepound Crossroads	903	15	1.66%
London Road / Keymer Road / Brighton Road / Hurst Road (Stonepound Crossroads)	2,113	15	0.71%
Burgess Hill			
Ockley Lane – North of Access	783	170	21.71%
Keymer Road – North of Folders Lane	1,493	143	9.58%
Station Road – West of Junction Road	1,943	117	6.02%
Queen Elizabeth Avenue – West of Civic Way	1,552	67	4.32%

Source: Consultant Calculations

10.2.4 Tables 10.3 and 10.4 demonstrate that the biggest % increase in traffic is in the morning peak hour as might be expected with the introduction of the primary school - along Ockley Lane north and south of the access increases ranging between 25% - 38% (167 – 252 vehicles). Grand Avenue sees an increase in traffic of around 28% (75 vehicles in a peak hour). Keymer Road in Hassocks (between Ockley Lane and Lodge Lane) sees an increase in traffic of around 12% (94 vehicles). Lodge Lane sees an increase in traffic of around 18% (82 vehicles). Keymer Road in Hassocks (west of Grand Avenue) sees an increase in traffic of around 10% (117 vehicles). Keymer Road in Burgess Hill sees an increase of around 10% (134 vehicles). All other increases are less than 10% of 2022 base flows.

10.2.5 The primary school traffic has been assessed as new to the highway network whereas in reality it will be already be allowed on the highway network just transferred to the new primary school so is worst case and impacts are likely to be less in reality.

10.3 Operational Analysis

10.3.1 This sub section of the transport assessment presents the results of the detailed modelling assessments of local junctions in the following scenarios:

- Existing (2017) Conditions;
- 2022 with Consented Development;
- 2022 with Consented Development and Proposed Residential Development; and
- 2022 with Consented Development and Overall Proposed Development (Residential Development and Primary School);

10.3.2 The 2031 future year analysis is summarised at the end of this section.

10.3.3 All priority junctions and roundabouts have been assessed using 'Junctions 9' software whereas traffic signal-controlled junctions have been assessed using JCT's LinSig 3.

10.3.4 All traffic modelling output files are provided at **Appendices V and W**.

10.4 Junctions in Hassocks

Ockley Lane / Site Access

10.4.1 **Table 10.5** summarises the operational assessment results for the proposed Ockley Lane / site access junction in the 2022 future year scenarios (year of opening).

Table 10.5: Ockley Lane / Site Access Junction

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2022 + Residential Development						
Site Access	0.42	1	12.21	0.23	<1	10.01
Ockley Lane	0.09	<1	4.97	0.26	1	5.91
2022 + Overall Proposed Development						
Site Access	0.55	1	17.11	0.26	<1	10.54
Ockley Lane	0.15	<1	5.46	0.26	1	5.91

Source: Junctions 9

10.4.2 The Ockley Lane / site access junction operates satisfactorily in the 2022 future year scenarios.

Ockley Lane / Grand Avenue

10.4.3 **Table 10.6** summarises the operational assessment results for the Ockley Lane / Grand Avenue junction in the existing (2017) and 2022 future year scenarios (year of opening).

Table 10.6: Ockley Lane / Grand Avenue

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2017 Observed						
Grand Avenue to Ockley Lane (North)	0.25	<1	7.37	0.17	<1	6.74
Grand Avenue to Ockley Lane (South)	0.16	<1	10.98	0.08	<1	11.00
Ockley Lane (North) to Ockley Lane (South) / Grand Avenue	0.18	<1	6.13	0.26	1	6.47
2022 + Consented Development						
Grand Avenue to Ockley Lane (North)	0.27	<1	7.56	0.20	<1	6.97
Grand Avenue to Ockley Lane (South)	0.17	<1	11.65	0.08	<1	11.55
Ockley Lane (North) to Ockley Lane (South) / Grand Avenue	0.22	<1	6.32	0.30	1	6.84
2022 + Consented Development + Residential Development						
Grand Avenue to Ockley Lane (North)	0.28	<1	7.86	0.23	<1	7.45
Grand Avenue to Ockley Lane (South)	0.18	<1	12.60	0.09	<1	12.66
Ockley Lane (North) to Ockley Lane (South) / Grand Avenue	0.26	1	6.18	0.33	1	7.07
2022 + Consented Development + Overall Proposed Development						
Grand Avenue to Ockley Lane (North)	0.34	<1	8.62	0.23	<1	7.46
Grand Avenue to Ockley Lane (South)	0.20	<1	14.26	0.09	<1	12.68
Ockley Lane (North) to Ockley Lane (South) / Grand Avenue	0.33	1	6.77	0.34	1	7.05

10.4.4 The Grand Avenue / Ockley Lane junction operates satisfactorily in all the 2022 future year scenarios.

Ockley Lane / Keymer Road

10.4.5 **Table 10.7** summarises the operational assessment results for the Ockley Lane / Keymer Road junction in the existing (2017) and 2022 future year scenarios (year of opening).

Table 10.7: Ockley Lane / Keymer Road – Existing Arrangement

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2017 Observed						
Ockley Lane to Keymer Road (East)	0.51	1	14.55	0.41	1	9.92
Ockley Lane to Keymer Road (West)	0.52	1	20.31	0.35	1	14.41
Keymer Road (East) to Keymer Road (West) and Ockley Lane	0.25	<1	7.27	0.51	1	10.82
2022 + Consented Development						
Ockley Lane to Keymer Road (East)	0.56	1	16.70	0.43	1	10.38
Ockley Lane to Keymer Road (West)	0.57	1	23.40	0.37	1	15.30
Keymer Road (East) to Keymer Road (West) and Ockley Lane	0.27	1	7.42	0.53	1	11.41
2022 + Consented Development + Residential Development						
Ockley Lane to Keymer Road (East)	0.76	3	30.67	0.50	1	12.35
Ockley Lane to Keymer Road (West)	0.72	2	40.51	0.38	1	18.87
Keymer Road (East) to Keymer Road (West) and Ockley Lane	0.32	1	7.89	0.66	2	15.47
2022 + Consented Development + Overall Proposed Development						
Ockley Lane to Keymer Road (East)	0.84	4	45.85	0.50	1	12.47
Ockley Lane to Keymer Road (West)	0.83	4	59.67	0.38	1	18.95
Keymer Road (East) to Keymer Road (West) and Ockley Lane	0.34	1	8.33	0.66	2	15.75

Source: Junctions 9

10.4.6 Although the Ockley Lane / Keymer Road junction operates within capacity in all the 2022 future year scenarios, development generated traffic begins to increase delays on the Ockley Lane arm of the junction during the morning peak hour (from 23 seconds / vehicle delay in the 2022 base

to 41 seconds / vehicle delay with the proposed residential development and 60 seconds / vehicle delay with the overall proposed development.)

10.4.7 A mitigation scheme is proposed to improve capacity at the Ockley Lane / Keymer Road junction by providing two lanes on the Ockley Lane approach to the junction– see drawing at **Appendix X.**

10.4.8 **Table 10.8** summarises the operational assessment results for the proposed improvement scheme at the Ockley Lane / Keymer Road junction in 2022 with the proposed development.

Table 10.8: Ockley Lane / Keymer Road – Proposed Improvement Scheme

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2022 + Consented Development + Residential Development						
Ockley Lane to Keymer Road (East)	0.67	2	21.19	0.52	1	12.82
Ockley Lane to Keymer Road (West)	0.58	1	23.35	0.43	1	0.43
Keymer Road (East) to Keymer Road (West) and Ockley Lane	0.32	1	7.92	0.66	2	0.66
2022 + Consented Development + Overall Proposed Development						
Ockley Lane to Keymer Road (East)	0.68	2	22.47	0.52	1	13.00
Ockley Lane to Keymer Road (West)	0.65	2	28.01	0.38	1	18.32
Keymer Road (East) to Keymer Road (West) and Ockley Lane	0.34	1	8.37	0.66	2	15.87

Source: Junctions 9

10.4.9 The proposed improvement scheme at the Ockley Lane / Keymer Road junction largely mitigates the impact of development generated traffic (from 23 seconds / vehicle delay in the 2022 base to when allowing for the improvement scheme 23 seconds / vehicle delay with the proposed residential development and 28 seconds / vehicle delay with the overall proposed development). The primary school traffic has been assessed as new to the highway network whereas in reality it will be already be allowed on the highway network just transferred to the new primary school so is worst case and impacts are likely to be less.

10.4.10 Development generated traffic can therefore be cost effectively mitigated to an acceptable degree at the Ockley Lane / Keymer Road junction. The residual cumulative impacts on the operation of the junction would thus not be severe.

Keymer Road / Lodge Lane

10.4.11 **Table 10.9** summarises the operational assessment results for the Keymer Road / Lodge Lane junction in the existing (2017) and 2022 future year scenarios (year of opening).

Table 10.9: Keymer Road / Lodge Lane

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2017 Observed						
Lodge Lane to Keymer Road (West and East)	0.36	1	11.47	0.53	1	14.12
Keymer Road (West) to Keymer Road (East) and Lodge Lane	0.65	2	13.44	0.43	1	8.88
2022 + Consented Development						
Lodge Lane to Keymer Road (West and East)	0.38	1	11.89	0.56	1	14.93
Keymer Road (West) to Keymer Road (East) and Lodge Lane	0.59	2	12.57	0.45	1	9.27
2022 + Consented Development + Residential Development						
Lodge Lane to Keymer Road (West and East)	0.42	1	12.67	0.65	2	18.90
Keymer Road (West) to Keymer Road (East) and Lodge Lane	0.71	3	16.99	0.51	1	10.27
2022 + Consented Development + Overall Proposed Development						
Lodge Lane to Keymer Road (West and East)	0.44	1	13.09	0.65	2	18.92
Keymer Road (West) to Keymer Road (East) and Lodge Lane	0.71	3	17.05	0.52	1	10.43

Source: Junctions 9

10.4.12 The Keymer Road / Lodge Lane junction operates satisfactorily in all the 2022 future year scenarios.

Lodge Lane / New Road

Crossroads

10.4.13 **Table 10.10** summarises the operational assessment results for the Lodge Lane / New Road crossroads in the existing (2017) and 2022 future year scenario (year of opening). A separate assessment for the priority junction for the west of the Lodge Lane fork has been undertaken.

Table 10.10: Lodge Lane / New Road

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2017 Observed						
Lodge Lane (South) to all other arms	0.09	<1	8.08	0.04	<1	8.71
New Road (East) and Lodge Road (South) to all other arms	0.21	<1	6.87	0.17	<1	5.91
Lodge Road (North) to all other arms	0.20	<1	7.46	0.15	<1	6.51
New Road (West) and Lodge Road (North) to all other arms	0.07	<1	5.04	0.04	<1	5.39
2022 + Consented Development						
Lodge Lane (South) to all other arms	0.09	<1	8.13	0.04	<1	8.75
New Road (East) and Lodge Road (South) to all other arms	0.22	<1	6.54	0.17	<1	5.88
Lodge Road (North) to all other arms	0.20	<1	7.04	0.15	<1	6.57
New Road (West) and Lodge Road (North) to all other arms	0.05	<1	4.98	0.04	<1	5.38
2022 + Consented Development + Residential Development						
Lodge Lane (South) to all other arms	0.09	<1	8.13	0.04	<1	8.75
New Road (East) and Lodge Road (South) to all other arms	0.22	<1	6.88	0.17	<1	5.88
Lodge Road (North) to all other arms	0.20	<1	7.57	0.15	<1	6.57

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
New Road (West) and Lodge Road (North) to all other arms	0.07	<1	4.98	0.04	<1	5.38
2022 + Consented Development + Overall Proposed Development						
Lodge Lane (South) to all other arms	0.09	<1	8.13	0.04	<1	8.75
New Road (East) and Lodge Road (South) to all other arms	0.22	<1	6.88	0.17	<1	5.88
Lodge Road (North) to all other arms	0.20	<1	7.57	0.15	<1	6.57
New Road (West) and Lodge Road (North) to all other arms	0.07	<1	4.98	0.04	<1	5.38

Source: Junctions 9

Western Priority Junction

10.4.14 **Table 10.11** summarises the separate assessment for the priority junction for the west of the Lodge Lane fork.

Table 10.11: Lodge Lane / New Road

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2017 Observed						
Lodge Lane to New Road	0.44	1	13.61	0.39	1	12.42
New Road (East) to Lodge Lane	0.0	0	0.0	0.0	0	0.0
2022 + Consented Development						
Lodge Lane to New Road	0.47	1	14.47	0.41	1	12.92
New Road (East) to Lodge Lane	0.0	0	0.0	0.0	0	0.0
2022 + Consented Development + Residential Development						
Lodge Lane to New Road	0.59	1	18.36	0.49	1	14.79
New Road (East) to Lodge Lane	0.0	0	0.0	0.0	0	0.0

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2022 + Consented Development + Overall Proposed Development						
Lodge Lane to New Road	0.58	1	18.03	0.49	1	14.79
New Road (East) to Lodge Lane	0.0	0	0.0	0.0	0	0.0

Source: Junctions 9

10.4.15 The Lodge Lane / New Road junction (crossroads and priority junction) operates within capacity in all the 2022 future year scenarios. As identified earlier, a number of accidents have occurred at this junction with a general pattern of drivers on Lodge Lane failing to judge the path or speed of traffic on New Road. As such, a potential safety improvement has been proposed. This would include safety enhancements along the B2112 New Road through signage, rumble strips and anti-skid surfacing all aimed at slowing drivers and raising awareness for drivers at the junction. These potential safety enhancements have been shown on a drawing which can be found in **Appendix Y.** These improvements would not have any impact on the operational analysis reported above.

Grand Avenue / Keymer Road

10.4.16 **Table 10.12** summarises the operational assessment results for the Grand Avenue / Keymer Road Junction in the existing (2017) and 2022 future year scenarios (year of opening).

Table 10.12: Grand Avenue / Keymer Road – Existing Arrangement

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2017 Observed						
Grand Avenue	0.60	1	25.62	0.48	1	17.76
Keymer Road	0.10	<1	5.71	0.20	<1	6.01
2022 + Consented Development						
Grand Avenue	0.68	2	32.34	0.55	1	20.49
Keymer Road	0.11	<1	5.70	0.20	<1	6.08
2022 + Consented Development + Residential Development						
Grand Avenue	0.74	3	39.10	0.58	1	21.80
Keymer Road	0.11	<1	5.63	0.20	<1	6.04
2022 + Consented Development + Overall Proposed Development						
Grand Avenue	0.80	3	49.50	0.59	1	22.81
Keymer Road	0.11	<1	5.60	0.21	<1	6.09

Source: Junctions 9

10.4.17 The Grand Avenue / Keymer Road junction operates within capacity in all the 2022 future year scenarios. However the Ockley Lane arm experiences increased delay due to the proposed development traffic.

10.4.18 To reduce this delay, a mitigation scheme has been proposed to improve capacity at the Grand Avenue / Keymer Road junction by providing two lanes on the Ockley Lane approach to the junction – see drawing at **Appendix Z.**

10.4.19 **Table 10.13** summarises the operational assessment results for the proposed improvement scheme at the Ockley Lane / Keymer Road junction in 2022 with the proposed development.

Table 10.13: Grand Avenue / Keymer Road – Proposed Mitigation

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2022 + Consented Development + Residential Development						
Grand Avenue to Keymer Road (East)	0.14	<1	11.93	0.13	<1	9.52
Grand Avenue to Keymer Road (West)	0.58	1	24.65	0.45	1	16.51
Keymer Road (East) to Keymer Road (West) and Grand Avenue	0.11	<1	5.62	0.20	<1	6.03
2022 + Consented Development + Overall Proposed Development						
Grand Avenue to Keymer Road (East)	0.15	<1	12.95	0.13	<1	9.60
Grand Avenue to Keymer Road (West)	0.63	2	28.63	0.47	1	17.09
Keymer Road (East) to Keymer Road (West) and Grand Avenue	0.11	<1	5.59	0.21	<1	6.08

Source: Junctions 9

10.4.20 The proposed improvement scheme at the Grand Avenue / Keymer Road junction mitigates the impact of development generated traffic.

10.4.21 Development generated traffic can therefore be cost effectively mitigated to an acceptable degree at the Grand Avenue / Keymer Road junction. The residual cumulative impacts on the operation of the junction would thus not be severe.

London Road / Keymer Road / Brighton Road / Hurst Road (Stonepound Crossroads)

10.4.22 The operation of the existing Stonepound Crossroads junction is summarised below:

Table 10.14: Operation of Existing Stonepound Crossroad

Scenario	Peak Hour	Total Junction Delay (PCU-Hours)	Practical Reserve Capacity (%)
2017 Observed	AM	55.59	-9.7
	PM	38.18	-1.7

Source: LinSig 3

10.4.23 The Stonepound Crossroad will be the subject of a mitigation scheme to be implemented in association with the permitted development on land west of London Road. The committed improvements (see drawing, illustrated at **Appendix AA)**, incorporate the following:

- Introduction of MOVA 6 with bus / HGV detector loops;
- Re-ordering of stages to better accommodate demand;
- Relocated right turn detectors on the A273 to reduce 'ghost calls'; and
- Creation of left turn filter on Hurst Road; and
- Widening and introduction of puffin crossing on Hurst Road and London Road.

10.4.24 The operation of the junction in 2022 with committed development, with the improvement scheme in place, is set out below:

Table 10.15: Operation of Stonepound Crossroad with Mitigation – 2022 with Committed Development

Scenario	Peak Hour	Total Junction Delay (PCU-Hours)	Practical Reserve Capacity (%)
2022 Committed Development (With Mitigation)	AM	82.7	-14.7
	PM	47.18	-5.5

Source: LinSig 3

10.4.25 The proposed residential development will not result in a significant increase in traffic flow at the Stonepound crossroads:

- During the morning peak: an additional 13 residential trips (a 0.64% increase or one trip every 4-5 minutes); and

- During the evening peak: an additional 14 residential trips (a 0.64% increase or one trip every 4 minutes).

10.4.26 The results of the operational assessments in 2022 with the proposed residential development are set out in **Table 10.16** below.

Table 10.16: Operation of Stonepound Crossroad with Mitigation – 2022 with Committed Development and Residential Development Traffic

Scenario	Peak Hour	Total Junction Delay (PCU-Hours)	Practical Reserve Capacity (%)
2022 Committed Development + Residential Development (With Mitigation)	AM	87.94	-15.0
	PM	49.36	-8.7

Source: LinSig 3

10.4.27 The proposed residential development will not have a significant impact on the operation of the Stonepound crossroads and the residual cumulative impacts on the road network would not be severe.

10.4.28 With the worst case assessment methodology used, the introduction of primary school traffic as new traffic to the highway network would result in increased delay at the Stonepound Crossroads. However, it is considered that many of the trips from the west side of Hassocks (west of the railway line) will already be either already on the highway network (ie already routing through the Stonepound crossroads to schools in Hassocks on the east side of thr railway line) or allowed for as committed development traffic (ie. west of London Road, Hassocks Golf Club etc). In addition, the ongoing work with Network Rail to identify improvements to the Woodside level crossing will improve pedestrian accessibility between the west side of Hassocks and the site offering the potential for modal shift away from car use. As such the development impacts reported in the table above are considered a reasonable assessment of overall development impacts.

10.4.29 It is noted that WSCC are progressing proposals to dual the A2300 between the A23 and the west side of Burgess Hill. The majority of funding will be provided by central Government through the Coast to Capital Local Enterprise Partnership's Local Growth Fund. This would potentially make the A2300 and A23 route to the south more attractive than the A273 through Hassocks thus offering the potential for relief and re routing away from the Stonepound crossroads.

10.5 Junctions in Burgess Hill

Folders Lane / Keymer Road Mini Roundabout

10.5.1 **Table 10.17** summarises the operational assessment results for Folders Lane / Keymer Road mini roundabout in the existing (2017) and 2022 future year scenarios (year of opening).

Table 10.17: Folders Lane / Keymer Road Mini Roundabout – Existing Arrangement

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2017 Observed						
Folders Lane	0.73	3	14.22	0.74	3	14.38
Keymer Road (S)	0.54	1	12.20	0.46	1	9.90
Keymer Road (N)	0.74	3	17.01	0.94	11	50.67
2022 + Consented Development						
Folders Lane	0.84	5	23.22	0.80	4	18.55
Keymer Road (S)	0.62	2	15.49	0.53	1	11.67
Keymer Road (N)	0.80	4	23.33	1.05	40	178.14
2022 + Consented Development + Residential Development						
Folders Lane	0.86	5	26.50	0.85	5	23.45
Keymer Road (S)	0.80	4	27.17	0.62	2	14.17
Keymer Road (N)	0.85	5	28.69	1.17	120	488.08
2022 + Consented Development + Overall Proposed Development						
Folders Lane	0.88	6	28.19	0.85	5	23.45
Keymer Road (S)	0.80	4	27.88	0.63	2	14.37
Keymer Road (N)	0.86	5	29.94	1.17	120	488.07

Source: Junctions 9

10.5.2 As shown in Table 10.17 in the evening peak hour the junction will operate at capacity in 2022 without development. The biggest development traffic impact would be observed in the evening on Keymer Road (North) where the RFC would increase to 1.17 (over capacity).

10.5.3 To mitigate this issue an improvement scheme has been proposed at the Folders Lane / Keymer Road junction – in simple terms this increases the diameter of the roundabout and widens all of the approach arms to increase capacity – see drawing at **Appendix BB.**

10.5.4 **Table 10.18** summarises the operational assessment results for the proposed improvement scheme at the Folders Lane / Keymer Road mini roundabout in 2022 with the proposed development.

Table 10.18: Folders Lane / Keymer Road Mini Roundabout– Proposed Mitigation

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2022 + Consented Development + Residential Development						
Folders Lane	0.64	2	7.84	0.63	2	8.08
Keymer Road (S)	0.45	1	6.14	0.36	1	4.95
Keymer Road (N)	0.47	1	4.72	0.65	2	6.74
2022 + Consented Development + Overall Proposed Development						
Folders Lane	0.64	2	8.02	0.63	2	8.08
Keymer Road (S)	0.46	1	6.19	0.36	1	4.98
Keymer Road (N)	0.47	1	4.76	0.65	2	6.74

Source: Junctions 9

10.5.5 Table 10.18 demonstrates that the proposed mitigation scheme overcomes the capacity issue at the junction.

Keymer Road / Station Road / Junction Road / Silverdale Road Mini Roundabout

10.5.6 **Table 10.19** summarises the operational assessment results for the Keymer Road / Station Road / Junction Road / Silverdale Road junction in the existing (2017) and 2022 future year scenarios (year of opening).

Table 10.19: Keymer Road / Station Road / Junction Road / Silverdale Road Mini Roundabout

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2017 Observed						
Silverdale Road	0.37	1	10.72	0.25	<1	9.82
Keymer Road	0.66	2	9.17	0.58	1	7.29
Station Road	0.63	2	7.82	0.83	5	16.15
Junction Road	0.62	2	11.53	0.43	1	8.43
2022 + Consented Development						
Silverdale Road	0.42	1	12.65	0.29	<1	11.62
Keymer Road	0.76	3	13.11	0.64	2	8.62
Station Road	0.68	2	9.18	0.95	12	37.41
Junction Road	0.73	3	16.12	0.52	1	10.54
2022 + Consented Development + Residential Development						
Silverdale Road	0.43	1	13.42	0.32	1	13.07
Keymer Road	0.85	5	19.83	0.68	2	9.57
Station Road	0.71	2	10.18	1.01	25	69.15
Junction Road	0.75	3	17.44	0.57	1	12.30
2022 + Consented Development + Overall Proposed Development						
Silverdale Road	0.44	1	16.34	0.32	1	13.07
Keymer Road	0.85	6	19.94	0.69	2	9.79
Station Road	0.71	3	10.16	1.01	25	69.15
Junction Road	0.76	5	18.28	0.57	1	12.31

Source: Junctions 9

10.5.7 The junction will operate within capacity in 2022 (without development traffic) although it is noted that Station Road will operate close to capacity in the evening peak hour. With the

addition of development traffic, the Station Road arm reaches capacity. However, this impact is not considered severe.

10.5.8 The impact on journey times on Station Road should be viewed in the context of wider journeys along the route through Burgess Hill (i.e. Station Road / Keymer Road) which will be improved as a result of the planned mitigation at the Folders Lane / Keymer Road junction. A summary of the anticipated journey time savings, along this corridor, with the proposed improvement works at the Folders Lane / Keymer Road junction compared to the 'do nothing' scenario in 2021 is presented in **Table 10.20.**

Table 10.20: Journey Time Savings – Station Road / Keymer Road / Silverdale Road / Junction Road Junction and Folders Lane / Keymer Road Junction

	Delay – All Arm (Seconds)	
	AM Peak Period	PM Peak Period
2022 – No Development	113	277
2022 – With Development and Mitigation at Folders Lane / Keymer Road	84	124
Time Savings	-29	-152

10.5.9 The Table 10.20 above demonstrate the improvements to the junction will provide journey time savings of approximately 30 seconds in the morning peak hour and 150 seconds in the evening peak hour, when compared to the existing highway layout at this junction. These savings are in excess of the increase in delay on the Station Road arm during the evening peak, which is anticipated to experience around 30 additional seconds, as a result of the development in 2022.

10.5.10 As such, journeys at the Station Road / Keymer Road / Silverdale Road / Junction Road Junction, and journeys along Station Road / Keymer Road are expected to benefit from time savings as a result of the improvement works.

Station Road / Church Road / Mill Road Mini Roundabout

10.5.11 **Table 10.21** summarises the operational assessment results for the Station Road / Church Road / Mill Road junction in the existing (2017) and 2022 future year scenarios (year of opening).

Table 10.21: Station Road / Church Road / Mill Road Roundabout

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2017 Observed						
Mill Road	0.75	3	26.03	0.70	2	24.28
Station Road (East)	0.56	1	5.56	0.42	1	4.09
Station Road (West)	0.51	1	6.14	0.60	2	7.46
Church Road	0.00	0	0.00	0.00	0	0.00
2022 + Consented Development						
Mill Road	0.79	3	29.72	0.89	6	56.21
Station Road (East)	0.63	2	6.32	0.47	1	4.50
Station Road (West)	0.53	1	6.38	0.71	2	9.99
Church Road	0.00	0	0.00	0.00	0	0.00
2022 + Consented Development + Residential Development						
Mill Road	0.87	5	42.86	0.97	9	86.88
Station Road (East)	0.71	2	8.28	0.50	1	4.73
Station Road (West)	0.58	1	7.28	0.77	3	12.47
Church Road	0.00	0	0.00	0.00	0	0.00
2022 + Consented Development + Overall Proposed Development						
Mill Road	0.87	5	42.18	0.97	9	86.90
Station Road (East)	0.70	2	8.20	0.50	1	4.78
Station Road (West)	0.58	1	7.28	0.77	3	12.57
Church Road	0.00	0	0.00	0.00	0	0.00

Source: Junctions 9

10.5.12 The Station Road / Church Road / Mill Road junction operates satisfactorily in all the 2022 future year scenarios.

Station Road / Civic Way / Queen Elizabeth Avenue / MSDC Car Park Roundabout

10.5.13 **Table 10.22** summarises the operational assessment results for the Civic Way / Queen Elizabeth Avenue / MSDC Car Park roundabout in the existing (2017) and 2022 future year scenarios (year of opening).

Table 10.22: Station Road / Civic Way / Queen Elizabeth Avenue / MSDC Car Park

Arm	Morning Peak			Evening Peak		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2017 Observed						
Station Road (East)	0.64	2	8.47	0.55	1	6.93
MSDC Car Park	0.16	<1	4.72	0.18	<1	4.77
Queen Elizabeth Avenue	0.39	1	3.40	0.43	1	3.61
Civic Way	0.22	<1	3.09	0.33	1	3.69
2022 + Consented Development						
Station Road (East)	0.75	3	12.06	0.63	2	8.50
MSDC Car Park	0.19	<1	5.35	0.20	<1	5.24
Queen Elizabeth Avenue	0.43	1	3.60	0.51	1	4.23
Civic Way	0.26	<1	3.40	0.44	1	7.81
2022 + Consented Development + Residential Development						
Station Road (East)	0.81	4	16.28	0.66	2	9.38
MSDC Car Park	0.20	<1	5.74	0.22	<1	5.50
Queen Elizabeth Avenue	0.44	1	3.74	0.54	1	4.54
Civic Way	0.27	<1	3.51	0.46	1	5.24
2022 + Consented Development + Overall Proposed Development						
Station Road (East)	0.81	4	16.00	0.67	2	9.57
MSDC Car Park	0.20	<1	5.71	0.22	<1	5.51
Queen Elizabeth Avenue	0.44	1	3.73	0.54	1	4.54
Civic Way	0.27	<1	3.51	0.46	1	5.24

Source: Junctions 9

10.5.14 The Civic Way / Queen Elizabeth Avenue / MSDC Car Park roundabout operates satisfactorily in all the 2022 future year scenarios.

10.6 Summary

10.6.1 In accordance with the requirements of Section 9 of the revised National Planning Policy Framework and the site specific requirements of Policy DP11, the analysis has demonstrated that the development does not have any significant impacts on the transport network except in the following locations where cost effective mitigation is proposed:

- Ockley Lane / Keymer Road junction – capacity improvement;
- Lodge Lane / New Road junction – safety improvement;
- Grand Avenue / Keymer Road – capacity improvement; and
- Folders Lane / Keymer Road Mini Roundabout – capacity improvement.

10.6.2 The residual cumulative impacts on the operation of the road network are not severe.

SECTION 11 Summary and Conclusions

11.1 Summary

Background

11.1.1 Gleeson Strategic Land has appointed i-Transport LLP to provide transport and highways advice in relation to an outline planning application for a strategic residential led mixed use development on land to the north of Clayton Mills, Hassocks. The application description is as follows:

> ***"Outline planning application with all matters reserved except for access for up to 500 new residential dwellings and land for a two-form entry primary school and community building, land for a bridleway link between Hassocks and Burgess Hill, associated infrastructure including informal open space, hard and soft landscaping, sustainable drainage features and a new site access onto Ockley Lane, alongside the provision of improved pedestrian access across the railway line."***

11.1.2 The site is allocated for development (500 new homes and a primary school) in the Mid Sussex District Plan (adopted March 2018) under Policy DP11 - Strategic Allocation to the north of Clayton Mills, Hassocks.

Site Access, Parking and Servicing Arrangements

11.1.3 Vehicular access is proposed from Ockley Lane between Hawthorn Cottage and Barn Cottage. Key features of the proposed vehicular access from Ockley Lane are summarised below:

- Simple priority junction arrangement;
- Site access carriageway width of 6.1m to accommodate two large vehicles being able to pass each other;
- A layby on the north side of the access road in close proximity of Hawthorn Cottage – it is intended that the layby be available for use by service vehicles / deliveries for Hawthorn Cottage and Barn Cottage;
- 8m junction radii to Ockley Lane (the north side junction radii has a dropped kerb as it passes in front of the right of access to Hawthorn Cottage);
- Visibility splays of 2.4m x 120m;

- Forward visibility of 118m in the southbound direction to a vehicle turning right into the proposed access; and
- A footway on the south side of the access road with a cross over to a footway on the east side of Ockley Lane heading south to the existing / proposed bus stops and existing west side footway.

11.1.4 A separate pedestrian / cycle / emergency vehicle only access from Ockley Lane (in the location of the existing public right of way link to Ockley Lane to the south east (public footpath 5K)) is proposed. This is located in the 30mph section of Ockley Lane and ties into the existing footway on the west side of Ockley Lane providing a route to the bus stop just to the north and Hassocks to the south. Cyclists would be on-carriageway along Ockley Lane.

11.1.5 A bus stop is proposed on the eastern side of Ockley Lane to serve the southbound services.

11.1.6 A Stage One Road Safety Audit has been undertaken identifying no residual safety concerns with the access proposals from Ockley Lane submitted with this application.

11.1.7 The provision of parking (car and cycle parking) for the proposed residential development and primary school will be a detailed matter the subject of reserved matters applications having regard to parking standards at the time of these applications, should outline planning permission be granted.

11.1.8 Any future reserved matters applications will have regard to the Policy DP11 requirement to make provision for charging electric vehicles by installing a dedicated electrical socket suitable for charging electric vehicles at each residential unit (either internally such as within a garage, or externally at an allocated parking space) and making parking areas 'charger ready' by making it possible to install a dedicated electric vehicle charging device (such as fast chargers) at a later date.

11.1.9 The illustrative Masterplan makes appropriate provision for refuse vehicles, other service vehicles and emergency vehicles. Any future reserved matters applications will demonstrate in detail the arrangements for refuse vehicles, other service vehicles and emergency vehicles including appropriate vehicle swept path analysis.

11.1.10 In accordance with the requirements of Section 9 of the revised National Planning Policy Framework and the site specific requirements of Policy DP11, the proposals:

- Provide a suitable and safe access to the site from Ockley Lane; and

- Will make provision for charging electric vehicles.

New Bridleway (Off Road Cycle Route) between Hassocks and Burgess Hill

11.1.11 There is the opportunity to provide a new bridleway (off road cycle route) between Hassocks and Burgess Hill. There are effectively four sections to the proposed route (working from south to north), namely:

- Section 1 - upgrading the public right of way link (public footpath 11K) to a bridleway between Woodsland Road and the site via Clayton Mills (Woodsland Road provides a safe walking and cycling route to the station and Hassocks village centre to the south);
- Section 2 – through the main site (DP11 allocation area);
- Section 3 – north of the main site (DP11 allocation area) as far north as Batchelors Farm – new 3m wide bridleway proposed; and
- Section 4 – through Batchelors Farm linking in with the existing bridleway network in southern Burgess Hill providing safe access towards Burgess Hill town centre, Burges Hill Station and other parts of Burgess Hill - Batchelors Farm is owned by Burgess Hill Town Council and this section of the new route is the subject of a separate planning application. The proposals would see the existing footpath 60BH (which runs along the western side of the Batchelors Farm site) be upgraded to a 3m wide bridleway).

11.1.12 In accordance with the site specific requirements of Policy DP11, the existing cycle route to Burgess Hill has been enhanced through a new bridleway (off road cycle route) between Hassocks and Burgess Hill on the east side of the railway line. This is viewed as a major benefit of the proposed development.

Woodside Rail Crossing

11.1.13 In general, the existing use of the Woodside rail crossing is low – average daily use of 7 pedestrians across the Easter period in 2018.

11.1.14 The vast majority of everyday destinations in Hassocks for future residents of the proposed development are on the east side of the railway line. As such, the proposed residential development (itself being on the east side of the railway line) will add a negligible demand for trips over the Woodside rail crossing, although it is accepted new houses may generate some leisure / recreation / dog walking trips using the crossing. It is recognised that with the

introduction of a new primary school there may be an increased demand for movements over the Woodside level crossing from residents / pupils living on the west side of the railway line.

11.1.15 The applicant is discussing with Network Rail the most appropriate provision of improved pedestrian access across the railway line which is likely to result in a separate prior approval application (under Part 18 Class A of The Town and Country Planning (General Permitted Development) (England) Order 2015) being submitted for a new footbridge crossing of the railway line. This development will provide funding for the prior approval application and the improvement works.

11.1.16 This approach meets the site specific DP11 policy requirement of ensuring that there is an agreed approach towards ensuring the provision of safe rail crossings.

Promoting Sustainable Transport Modes

11.1.17 In addition to some 500 dwellings, the illustrative masterplan allows for:

- A primary school;
- Community building;
- Public open space;
- Children's play areas;
- Park; and
- Community orchard.

11.1.18 The provision of a primary school, community building, public open space, children's play areas, park and community orchard on site provide the opportunity for many journeys to be contained within the site without impacting on the external transport network. It is clear that with the mix of land uses proposed there is the genuine opportunity to ensure a walkable neighbourhood is planned with the facilities being within a reasonable walking distance of all residential areas.

11.1.19 The local facilities in Hassocks are all within a 2 mile (3.2km) radius of the site, whilst many are also within a 1 mile (1.6km) radius, and as such a reasonable walk distance for many future residents at the site. Hassocks, Burgess Hill, Hurstpierpoint and Ditchling are all within a 5km (3 mile) radius of the site and as such a reasonable cycle distance for many future residents at the site. Southern parts of Haywards Heath fall within the 8km (5 mile) cycle distance.

11.1.20 In addition to the proposed new bridleway (off road cycle route) between Hassocks and Burgess Hill and improvements to the Woodside level crossing, a series of improvements to the existing highway infrastructure to assist pedestrian and cyclists are proposed as outlined below.

Proposed Highway Improvements - Walking and Cycling Improvements

Route	Improvement
Route 1 – Hassocks Village Centre via Ockley Lane and Keymer Road	Provision of tactile paving along the route.
Route 2 – Hassocks Village Centre and Railway Station via Public Footpath 5K, 11K and Woodsland Road	Upgrade the public right of way link (public footpath 11K) to Clayton Mills and beyond to Woodlands Road to a bridleway to enable cycle use; and Provision of tactile paving along the route.
Route 3 – Hassocks Village Centre via Grand Avenue (and Public Footpath 21K)	Provision of tactile paving along the route at Grand Avenue / Keymer Road.

11.1.21 The closest bus stop to the site is situated on Ockley Lane approximately 90m south of the site access, to the east of the site, and 85m north from the entrance of the public right of way. From this bus stop, services 33, 167 and 168 can be accessed and provide opportunities to travel by bus Monday to Saturday.

11.1.22 There are opportunities to travel to a number of destinations by bus including Hurstpierpoint, Burgess Hill, Ditchling and East Chiltington.

11.1.23 Hassocks Station is located some 1.9km west from the site access and can be accessed by directly by bus service 167 at the eastern entrance of the station or by bus service 33 and 167 on Keymer Road (Railway Bridge) as well as by walking or cycling. This station has access to 174 car park spaces, 4 accessible spaces and 154 cycle storage spaces. Key destinations from Hassocks Railway Station include Brighton, Burgess Hill and London.

11.1.24 In addition, Burgess Hill Station is located to the north of the site some 2.9km from the centre of the site. This station provides access to a car park and 64 cycle storage spaces. Key destinations from this station include Brighton and, London.

11.1.25 It is proposed to provide a financial contribution to provide additional cycle parking at or within a reasonable walk distance of Hassocks Railway Station (including Hassocks centre) and / or Burgess Hill Railway Station.

11.1.26 A separate Framework Travel Plan has also been prepared (i-Transport report ref: 11335-102 R). The primary purpose of the travel plan is to identify opportunities for the effective promotion and delivery of sustainable transport initiatives e.g. walking, cycling, public transport and home working, and through this to thereby reduce the demand for travel by less sustainable modes.

11.1.27 In accordance with the requirements of Section 9 of the revised National Planning Policy Framework and the site specific requirements of Policy DP11, the proposals ensure that appropriate opportunities to promote sustainable transport modes can be taken up. The proposals provide safe pedestrian/cycling routes within the development and to connect with existing residential areas, the services within Hassocks village centre, Hassocks railway station, and enhance the existing cycle route to Burgess Hill.

11.1.28 In the context of the likely demands from the proposed development, existing public transport services (bus and rail) are adequate and appropriate. However, the development will improve access to public transport through the walking and cycling improvements, proposed Ockley Lane bus stop improvements, financial contribution to provide additional cycle parking at or within a reasonable walk distance of Hassocks Railway Station (including Hassocks centre) and / or Burgess Hill Railway Station along with travel plan measures. This therefore meets the site specific requirements of Policy DP11 in respect of public transport.

Traffic Impact

11.1.29 The proposed residential development will generate around 300 vehicular trips each highway network peak hour. The trip generation for the proposed residential development assumes provision of 100% private housing. This is robust because:

- The planning obligation will actually secure affordable housing provision. Private housing typically generates higher trip rates during weekday peak hours than affordable housing; and
- Some of the dwellings to be delivered on site will be apartments, although the TA assumes that all dwellings will be houses. Houses typically generate higher trip rates during weekday peak hours than apartments.

11.1.30 Traffic associated with the primary school along with the resultant internalisation of some residential journeys has also been allowed for within the traffic analysis.

11.1.31 Providing a new primary school in itself will not generate children or their travel demand. It will simply provide the destination for school trips that will be generated in any event by existing and committed development. The effect of the new school will therefore be to redistribute trips by pupils / parents around the highway network that are either already on the highway network or allowed for as part of committed development – it will not result in new trips.

11.1.32 The traffic analysis is therefore robust as it assumes school pupil trips are new and thus additional to the highway network whereas in reality that will not be the case.

11.1.33 In accordance with the requirements of Section 9 of the revised National Planning Policy Framework and the site specific requirements of Policy DP11, the analysis has demonstrated that the development does not have any significant impacts on the transport network except in the following locations where cost effective mitigation is proposed:

- Ockley Lane / Keymer Road junction – capacity improvement;
- Lodge Lane / New Road junction – safety improvement;
- Grand Avenue / Keymer Road – capacity improvement; and
- Folders Lane / Keymer Road Mini Roundabout – capacity improvement.

11.1.34 The residual cumulative impacts on the operation of the road network are not severe.

11.2 Conclusions

11.2.1 In conclusion:

- Suitable and safe access is proposed from Ockley Lane;
- Development will make provision for charging electric vehicles (through any reserved matters applications);
- A new bridleway (off road cycle route) between Hassocks and Burgess Hill is proposed. This is viewed as a major benefit of the proposed development. The section within Batchelors Farm to the north (Burgess Hill) is the subject of a separate planning application;

- The applicant is discussing with Network Rail the most appropriate provision of improved pedestrian access across the railway line which is likely to result in a separate prior approval application (under Part 18 Class A of The Town and Country Planning (General Permitted Development) (England) Order 2015) being submitted for a new footbridge crossing of the railway line. This development will provide funding for the prior approval application and the improvement works;
- The proposals ensure that appropriate opportunities to promote sustainable transport modes can be taken up. The proposals provide safe pedestrian/cycling routes within the development and to connect with existing residential areas, the services within Hassocks village centre, Hassocks railway station, and enhance the existing cycle route to Burgess Hill;
- The significant impacts from the development on the transport network (in terms of capacity and congestion and on highway safety) are cost effectively mitigated to an acceptable degree; and
- The residual cumulative impacts on the road network are not severe.

11.2.2 The proposals therefore meet the requirements of Section 9 (Promoting Sustainable Transport) of the revised National Planning policy Framework and the site specific transport requirements of Mid Sussex District Plan Policy DP11.

11.2.3 There are therefore no transport grounds for refusing the application.

i-Transport

Cover sketch by Richards Urban Design