



*G-11900.95*

# **Gallows Way/Ware Road, Hertford**

## **Feasibility Study**

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Date: December 2017  
Status: Final



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# Gallows Way/Ware Road, Hertford

## Feasibility Study - Stage1

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# 1 Executive Summary

This study has been undertaken to address the concerns raised in a petition from residents living around the junction of Ware Road-Stanstead Road, Hertford. There has long been an ongoing concern surrounding the impact of inconsiderate on-street parking within the community locally.

The petition reads:

*“We, the residents of Ware Road, Hertford and all the roads in the surrounding area, request that East Herts District, Local Planning Authority impose an immediate suspension on all planning decisions that involve residential parking provision, and call on Hertfordshire County Council Highways to complete their comprehensive traffic and parking study as soon as possible – to look at the serious problems we are experiencing in relation to road safety, resulting from congestion, problem parking and speeding vehicles.”*

The study area identified from the received petition included, Foxholes Avenue, Woodlands Mount, Cromwell Road, Kings Road and Burleigh Road. Investigations will measure speed and volume data to determine current traffic levels and associated average speeds alongside comprehensive parking stress surveys to determine the level of on street parking against the parking saturation levels for the area.

Construction and consequent occupation of a new housing development (Liberty Rise), which presents a change from the former Hertford Police Station, is thought to have resulted in an increased demand for on-street parking outside the development, on Ware Road and surrounding side roads, which is also causing footway obstruction through inconsiderate parking behaviour.

High levels of parking and instances of footway obstruction parking could impact on both traffic flow and road safety. However, it is important to be mindful of the need to find a balance between the conflicting parking requirements of residents, commuters, visitors and school traffic.

Several study area pre-survey inspections were undertaken in mid-September 2017 during term-time to familiarise the authors with the parking levels at various times of day and thus determine the scope of the study area.

Vehicle speed and volume data for the section of Ware Road covered by this study is included in **Appendix C**.

Parking occupancy/stress surveys were undertaken, using video survey, to identify the extent of the on-street parking at various times of the day compared to the available parking capacity of the highway asset. These are shown in **Appendix E**.

The results of the parking occupancy/stress survey infer that throughout the day the on-street parking is far below saturation capacity. They observe that the parking reaches saturation levels at or after the evening peak traffic times and remain at these levels until the morning peak traffic times. This implies that the vast majority of parking overnight are resident's vehicles.

It is during these times that the majority of instances of inconsiderate parking and footway obstruction are also observed. This was notably along Ware Road in the immediate vicinity of the new development.

Outside of these times there are observations of visibility splays at junctions being obscured by parked vehicles for sustained periods.

It is noted that the Decision Notice granted by The Planning Inspectorate for the former Hertford Police Station redevelopment, refers to 'the effect on traffic and parking' and recommends that the 258 spaces provided would be sufficient for the size of development.

It is highly likely that any such measures would cause vehicles to be displaced further afield. Part of the requirement of this study will be to understand what the impact of implementing any identified options will be on the wider on-street parking picture.

The Highway Authority is currently in consultation on the provision of a Traffic Regulation Order (TRO) for No Waiting At Any Time at the junction access for the recent development of the former Hertford Police Station site.

The options considered to mitigate the measured parking situation of this project are:

1. Ware Road realignment
2. Junction protection
3. Burleigh Road parking area
4. Ware Road Residential Parking Zone (RPZ)
5. Additional off-street car parking
6. Constables Way Visitor Parking
7. Parking Restrictions along highway where footway obstruction/parking has been identified
8. Do Nothing

The recommendation of this report is to pursue (Option 2) junction protection measures to safeguard the visibility splays at the associated junctions during all situations, enforceable by East Herts District Council.

Long term, this offers the most effective mitigation to the parking stress along Ware Road, without presenting a protracted cost or notable reduction in on-street parking opportunity to the effected residents.

It is not recommended in the short term to formalise the current parking situation at the end of Burleigh Road as this is not considered to be cost-effective and may present higher construction cost at the design/build phase due to utilities or drainage complications.

Should the stakeholders be in support of this scheme, the next steps to implement the outlined project would be to undertake detailed design, including further construction and costing investigation, towards identifying a final design and bill of quantities for client and contractor consideration and promote formal consultation.

## 2 Introduction

This study has been undertaken to address the concerns raised in a petition from residents living around the junction of Ware Road-Stanstead Road, Hertford. The petition was presented to East Herts District Council (EHDC) and the local County member – Andrew Stevenson. There has long been an ongoing concern surrounding the impact of inconsiderate on-street parking within the community locally. Recently, this consensus has increased with the volume, reduction in junction visibility and instances of footway obstruction being more often reported to the Council and local County member.

The study area identified from the received petition included, Foxholes Avenue, Woodlands Mount, Cromwell Road, Kings Road and Burleigh Road. This study will investigate the highway environment to identify measurable problems in response to the requests of the sustained petition. Any measured problems will be explained alongside identified mitigation options with recommendations presented on the most efficient and effective outcome.

Investigations will measure speed and volume data to determine current traffic levels and associated average speeds alongside comprehensive parking stress surveys to determine the level of on street parking against the parking saturation levels for the area.

Consideration will need to include the impact of future developments along Ware Road, as well as any issues identified in local School Travel Plans, including pick up and drop off facilities for Wheatcroft School.

The report identifies options that are feasible, in terms of likely costs, time scales and buildability. Our aim is to identify any improvements that can be made to the on-street parking management and to identify the impact on the wider highway environment of any identified measures.



### 3 Background

A petition was received, containing 349 signatures, calling for EHDC to suspend planning decisions on development applications involving residential parking provision. It also requested that Hertfordshire County Council (HCC) undertakes a comprehensive traffic and parking study to investigate congestion, speeding and problem parking.

The petition reads:

*“We, the residents of Ware Road, Hertford and all the roads in the surrounding area, request that East Herts District, Local Planning Authority impose an immediate suspension on all planning decisions that involve residential parking provision, and call on Hertfordshire County Council Highways to complete their comprehensive traffic and parking study as soon as possible – to look at the serious problems we are experiencing in relation to road safety, resulting from congestion, problem parking and speeding vehicles.”*

Construction and consequent occupation of a new housing development (Liberty Rise), which presents a change from the former Hertford Police Station, is thought to have resulted in an increased demand for on-street parking outside the development, on Ware Road and surrounding side roads, which is also causing footway obstruction through inconsiderate parking behaviour.

A nearby primary school also presents a destination for some peak time traffic journeys and associated parking stresses on the existing highway network. The promotion of sustainable journeys, especially for school generated trips, is a key objective for the highway authority. The speed and volume of traffic can be a direct obstruction to the safe crossing of main roads and therefore a deterrent to promoting walking and cycling.

While there are no immediately obvious speeding problems with this key route between Ware and Hertford, there is some evidence of prior speed non-compliance, with safety cameras having been previously installed along the route. The road clearly carries high levels of both motorised and Non-Motorised User (NMU) traffic, with few facilities apart from two controlled pedestrian crossings.

With road traffic incidents being reported in the vicinity of the development and associated junctions there is a concern that increases in indiscriminate parking close to these junctions are contributing to those incidents.

High levels of parking and instances of footway obstruction parking could impact on both traffic flow and road safety. However, it is important to be mindful of the need to find a balance between the conflicting parking requirements of residents, commuters, visitors and school traffic.

## 4 Study Objectives

The feasibility study aims to provide a recommendation that would fulfil the following overarching LTP objectives:

- Support economic development and planned growth;
- Improve transport opportunities and achieve behavioural change in modal choice; and,
- Enhance quality of life, health and the natural, built and historic environment.

The recommended option should also contribute towards the following UTP objectives:

- Improve connectivity between transport modes to allow for greater transport flexibility.
- Promote active travel modes throughout the study area to encourage active and healthy lifestyles.

Objectives of this report, from the project sponsor, are to investigate improving the on-street parking management surrounding the development site and nearby school and residential streets. This would primarily look at how and where to accommodate the on-street parking volumes generated by the surrounding dwellings.

## 5 Study Area

### 5.1 Existing Environment

The section of Ware Road, Hertford, under review within this study is situated around its junction with Stanstead Road (B1502) as well as its junctions with the Cromwell Road, Kings Road, Burleigh Road Woodland Mount, Woodlands Road and Foxholes Avenue, as illustrated in **Figure 1, 2 and 3** below:

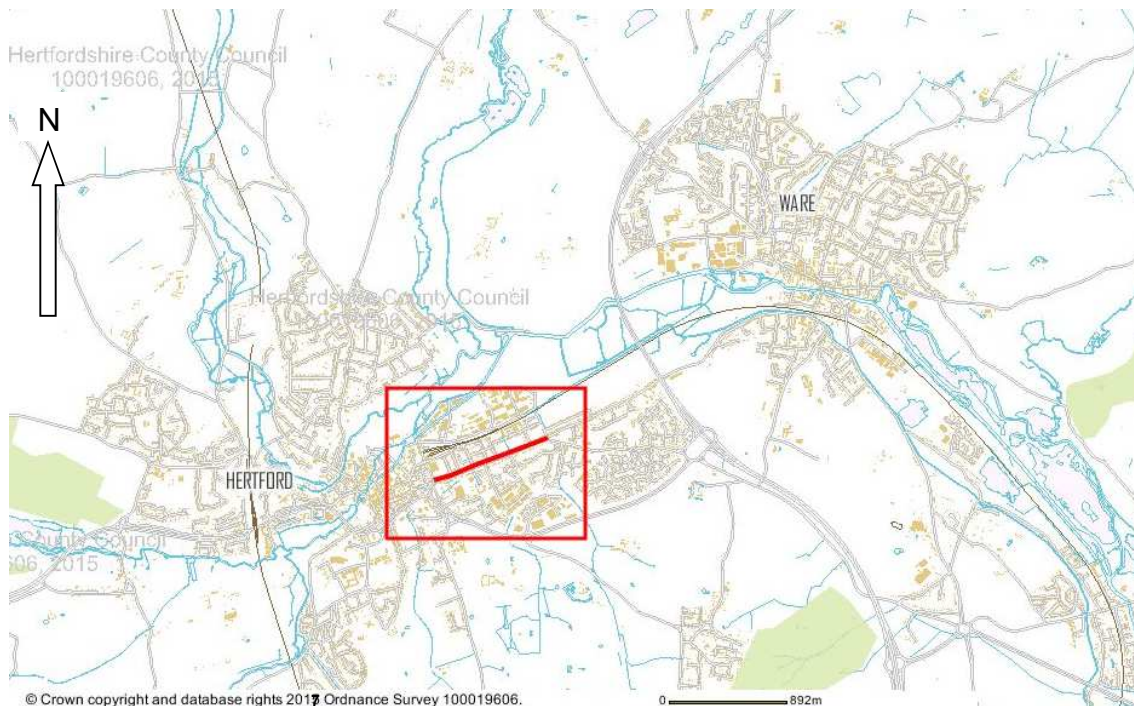
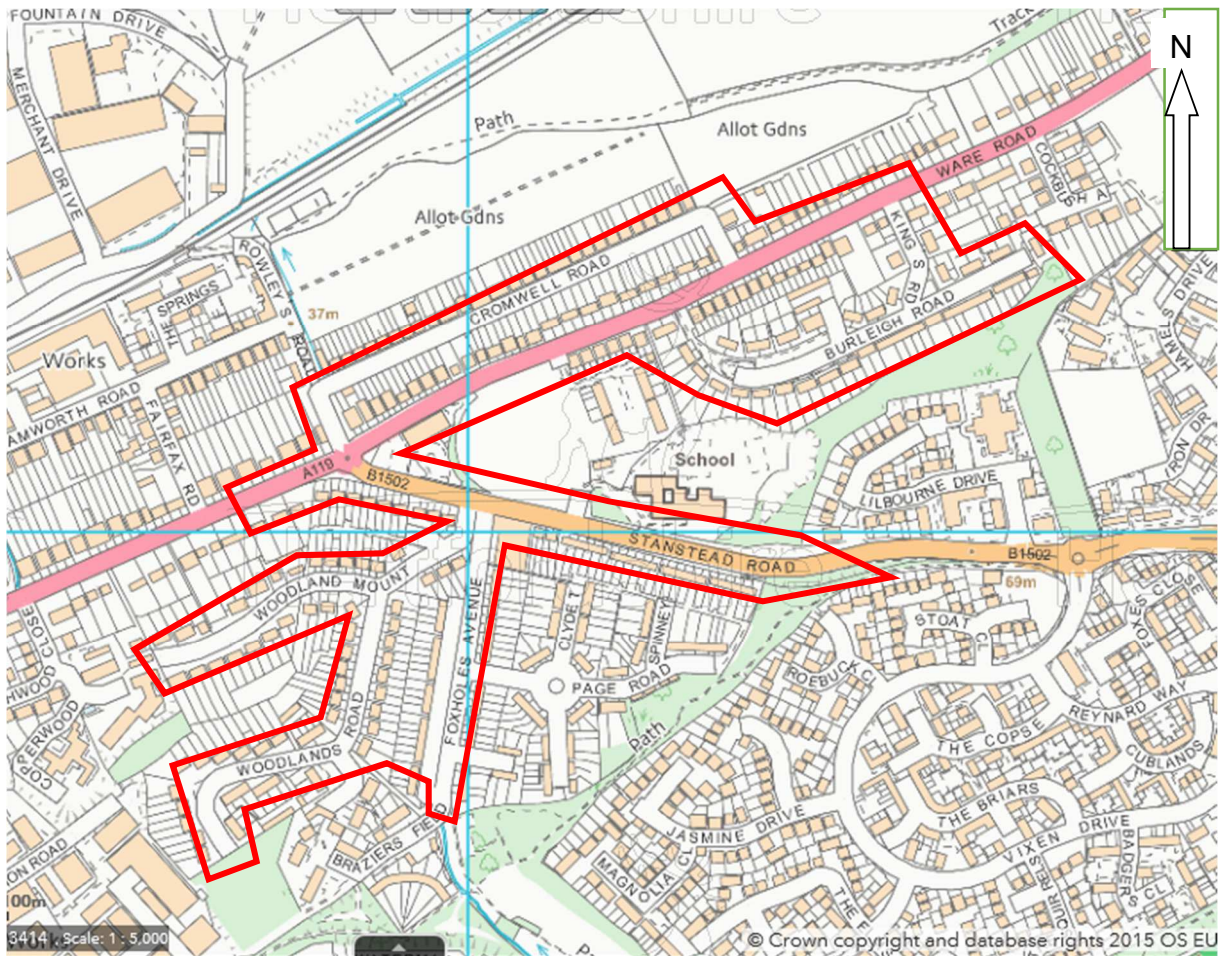


Figure 1 - Location Plan



Figure 2 - Key Sites Plan





**Figure 3 - Scheme Location Plan (Derived from Petition Extent)**

Ware Road is an A-road local distributor running from northeast to southwest and provides the primary direct link between the towns of Ware and Hertford. It is of single carriageway design with wide lanes of 3m with a right turn lane for the western third of the route. It also has wide footways averaging 3m.

The majority of the adjacent land use is residential with many of the frontages accommodating off street parking accessed via vehicle crossovers on the footway. Sporadically positioned along the southern side of the route are some large industrial and commercial units with bell mouth accesses and in addition there are similar business units to the rear of the residential sections along Ware Road.

The northern side of the road sits within the Hertford conservation area and consists of predominantly Victorian residential units, as is the residential network that runs towards the north up to the railway line. However, within Tamworth Road there are a number of business premises with accesses on to that road.

To the south, the environment starts with more modern residential properties set back from the highway and is not within the conservation area. Towards the town, the

environment transitions along this side into industrial, commercial and office properties.

The highway boundary runs along property frontages on both sides of the road, a highway boundary plan is included in **Appendix A**.

### Highway Features and Restrictions

The A119 Ware Road, from Stanstead Road to its interaction with Ware Road footpath 031, is a Classified Principal A road and its hierarchy is denoted as a Main Distributor, measuring 1277m in length, with a posted speed limit of 30 mph. The CONFIRM Road Section Number is A1193/35 with Unique Street Reference Number (USRN) 12421019.

The existing environment contains mainly of residential and connects to Wheatcroft School with a minority of small businesses, all fronting Ware Road. For the majority of its length it is a single carriageway road with an average width of 7.3m, kerbed on both sides of the carriageway, with footways on both sides. Footway widths vary along its length, with build outs at certain points providing up to 4m of useable footway in places.

The section of Ware Road in question is urban in nature and sits between a roundabout junction and an interurban route to Ware, accommodating bus stops and crossing points, and is street lit throughout. A typical view of the street scene is demonstrated in **Plate 1** below.





Plate 1 – Street scene of Ware Road, direction of Hertford town centre

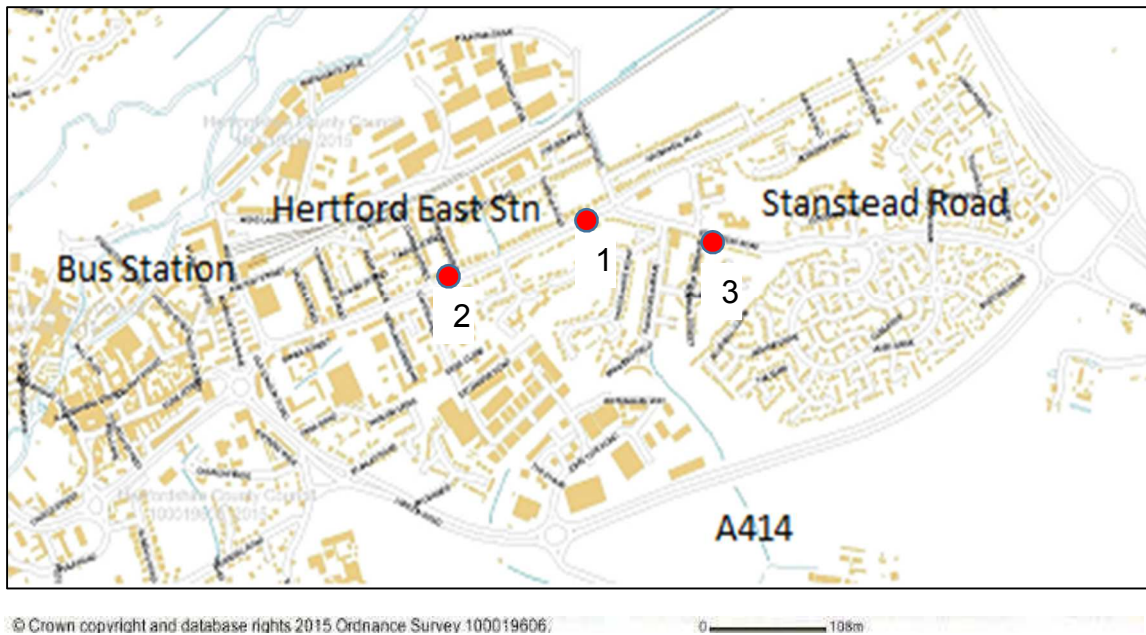


Figure 4 - Plate Location Plan

The bus stops are a combination of off line and on street facilities and are all constructed to current DDA requirements. Street lighting is of standard existing column types, all 12m in height and enhanced to current LED requirements with new lanterns on existing brackets. The lanes are separated by a standard centre line with chevron hatching at right turn lanes.

The horizontal alignment of this principal road is generally straight. Along this 30mph road there has evidently been a speed compliance issue in the past, with a speed camera positioned in both directions, one outside 65 Ware Road and the other outside 126 Ware Road, illustrated in **Plate 2**.



**Plate 2 – Speed Cameras on Ware Road**

There is no discernible change in vertical alignment along the length of this section of Ware Road. However, the topography to the south of the road does rise with a fairly steep incline, evidenced by some side roads accommodating salt bins.

Limited waiting restrictions between the hours of Mon – Sat, 8am to 6pm are in place, largely from the junction with the B1502 towards Hertford town centre, although there are no waiting restrictions from this junction towards Ware town. Stanstead Road also has limited waiting restrictions from its junction with Ware Road to the pedestrian crossing outside Wheatcroft School, illustrated in **Plate 3**.

The same limited waiting restrictions are in place on all the entrances to the adjacent side streets close to this primary junction. This would dissuade commuters and school traffic from parking in this area. There are no other waiting restrictions along the remainder of these associated side roads or any part of Kings Road and Burleigh Road. The only residential parking zone within the study area are the laybys on Stanstead Road, Mon – Sat, 8am to 6pm.



Plate 3 – On street laybys and pedestrian crossing, Stanstead Rd

## 5.2 Land and Legal considerations

The highway maintainable at public expense runs between the property frontages on both sides of the road, a highway boundary plan is included in **Appendix A**.

There is one pending and one approved planning application along the section of Ware Road in question, for residential redevelopment. By the former Renault garage located south west of Nags Head Close.



## **5.3 Facilities for Non-Motorised Users (NMUs)**

### **5.3.1 Pedestrian Facilities**

As previously observed, there are side roads on average every 100m many with dropped kerbs, but not all with tactile paving denoting informal crossing points.

### **5.3.2 Cycling and Equestrian Facilities**

There are no cycling facilities and no equestrian facilities on Ware Road or the surrounding highway environment in the vicinity. However, cyclists were observed on the carriageway travelling in both directions on the day of the site visit.

## **5.4 Passenger Transport Facilities**

The bus stops along Ware Road are a mixture of off line and on street facilities and all comply with current DDA requirements, with raised kerbs, bus cages and shelters. These cages all have existing green High Friction Surfacing, which appears to be being left to fade rather than being replenished alongside the cage markings. There are no bus lanes along this carriageway.

The bus services that serve these stops are:

311, 312, 331, 341, 351, 383, 384, 390, 395, 524, M3 as well as the 724 Greenline to London Airports.

The route serves as a gateway to the Hertford East rail station to London Liverpool Street.

## 6 Data and Analysis

### 6.1 Data

#### 6.1.1 Study Type

Several study area pre-survey inspections were undertaken in mid-September during term-time to familiarise the authors with the parking levels at various times of day and thus determine the scope of the study area.

The early evening inspection confirmed parking levels significantly increased within the study area. Quantitative surveys – a speed & volume survey of Ware Road & Stanstead Road, and car counts within the study area at multiple times of day – were deemed the most appropriate methods of collection. Questionnaire-type surveys were discounted due to sample-size bias.

Accident data is also included to test any connection between accidents within the study area and parking levels.

#### 6.1.2 Data Collection

Personal Injury Collision (PIC) data and plan, covering a five-year period from April 2012 to April 2017, is included in **Appendix B**.

Vehicle speed and volume data for the section of Ware Road covered by this study is included in **Appendix C**, as a summary table (a full data set is available on request).

This was obtained from 31 October 2017 and 6 November 2017 as part of this commission. A plan identifying the specific locations of the collection devices is shown in **Appendix D**.

Pedestrian and cycle data was not commissioned for the study area.

Parking occupancy/stress surveys were undertaken, using video survey, to identify the extent of the on-street parking at various times of the day compared to the available parking capacity of the highway asset. These are shown in **Appendix E**. Whilst only one 24-hour period of data is usually required, three days were taken to ensure any traffic anomalies could be managed. The survey was undertaken on 07, 08 & 09 November 2017. The streets surveys comprised of;

- B1502 Stanstead Road from Wheatcroft school to the junction with Ware Road;
- A119 Ware Road between the junction with Stanstead Road and the junction with Kings Road;
- Crowell Road – Entire Length;
- Kings Roads & Burleigh Road – Entire Length;

- Woodland Mount & Woodlands Road – Entire Length; and,
- Foxholes Avenue – Entire Length.

The study was conducted at recognised times determined to identify vehicle user types. The hours of survey were between the hours of;

- 8am and 9am; (school morning peak)
- 12pm and 1pm; (commuters)
- 3pm and 4pm; (school afternoon peak)
- 5pm and 6pm; (commuter/resident changeover)
- 8pm and 6am; (resident parking)

## 6.2 Data Analysis

### 6.2.1 Personal Injury Collision (PIC) Data

The recorded PIC data covering the period of July 2012 to December 2017 shows there to have been eleven recorded accidents within the study area (see **Appendix B**). Eight are considered slight and three serious, the latter all sited on Ware Road.

The three serious accidents all occur within early 2017. There does not appear to be any other trends arising from the data.

### 6.2.2 Speed and Volume Data

Vehicle speed and volume data was taken over the period of a week, between 31 October 2017 and 6 November 2017, within school term time. The locations of the data collection points can be found in **Appendix C**.

Observing results from the daily 12 hr average flows on Ware Road, the traffic volume is approximately 5045 vehicles per day in the northeast-bound direction and 3697 vehicles per day in the southwest-bound direction.

From the daily 12 hr average flows on Stanstead Road, the traffic volume is approximately 3675 vehicles per day in the eastbound direction and 3556 vehicles per day in the westbound direction.

While the morning week day period hourly flows, for Ware Road, are comparable for most part, it is determined that the AM northeast-bound peak period is between 08.00 and 09.00, with a peak flow of approximately 425 vehicles per hour. The AM southwest-bound peak period is between 07.00 and 8.00, with a peak flow of approximately 425 vehicles per hour.

The weekday PM peak period, for Ware Road northeast-bound, is between 16:00 and 18:00, with an hourly peak flow between 17:00 and 18:00 of approximately 600 vehicles per hour. Southwest bound the PM hourly peak flow is 360 vehicles per hour.

While the morning week day period hourly flows, for Stanstead Road, are comparable for most part, it is determined that the AM eastbound peak period is between 07.00 and 12:00, with a peak flow of approximately 290 vehicles per hour. The AM westbound peak period is between 07.00 and 9.00, with a peak flow of approximately 400 vehicles per hour.

The weekday PM peak period, for Stanstead Road eastbound, is between 16:00 and 18:00, with an hourly peak flow between 17:00 and 18:00 of approximately 560 vehicles per hour. Westbound the PM hourly peak flow is 360 vehicles per hour.

Using the daily average from each speed survey, the mean speed is 25 mph on Ware Road and 26 mph on Stanstead Road. These are below the Association of Chief Police Officers parameters, indicating the posted speed limit of 30 mph is correct, in accordance with the HCC Speed Management Strategy, which uses the mean speed for setting speed limits. It has to be noted that the highest recorded speeds were over 60mph on both roads. However, should be noted that these were outside peak hours with the majority of speeding recorded was overnight. These instances represent less than 1% of the total volume of traffic movements on these sections of highway.

Therefore, there is no current requirement to change the speed limit or provide further traffic calming measures.

**Table 1**, below shows the average mean and 85%ile speeds at the two locations measured on Ware Road over a five-day Mon-Fri period, in free flow conditions for both the 12-hr and 24-hour observations. The 85%ile speed indicates the speed at which 85% of vehicles are travelling at or below. Mean speeds are used for considering speed limits under the HCC Speed Management Strategy.

**Table 1 – 12hrs & 24 hrs Mean and 85%ile Speeds at Ware Road**

Ware Road Site 20171241							
Ware Road A northeast		Ware Road A southwest		Ware Road A northeast		Ware Road A southwest	
12 hr		12 hr		24 hr		24 hr	
85%	Mean	85%	Mean	85%	Mean	85%	Mean
31.7	25.9	33.4	27	32.4	26.5	34.1	27.8
30.6	25.3	33	26.6	32	26.1	33.8	27.5
30.6	25.4	32.7	26.3	31.8	26.1	33.5	27.1
30.5	25.3	32.5	26.5	31.9	26.1	33.6	27.4
31.4	26.1	32.2	26.1	32.4	26.9	33.3	27
<b>30.96</b>	<b>25.60</b>	<b>32.76</b>	<b>26.50</b>	<b>32.10</b>	<b>26.34</b>	<b>33.66</b>	<b>27.36</b>
Ware Road Site 20171242							
Ware Road B northeast		Ware Road B southwest		Ware Road B northeast		Ware Road B southwest	
12 hr		12 hr		24 hr		24 hr	
85%	Mean	85%	Mean	85%	Mean	85%	Mean
31.9	26.2	28.6	23.3	32.4	26.7	29.1	23.9
31.5	26	28.3	22.9	32.2	26.5	29.1	23.6
32	26.2	27.5	21.9	32.8	26.8	28.5	22.8
30.9	25.6	28.3	22.6	31.9	26.2	28.9	23.2
31.6	26	27.5	21.7	32.1	26.4	28	22.2
<b>31.58</b>	<b>26.00</b>	<b>28.04</b>	<b>22.48</b>	<b>32.28</b>	<b>26.52</b>	<b>28.72</b>	<b>23.14</b>

<b>Ware Road Site 20171241</b>							
Ware Road A northeast		Ware Road A southwest		Ware Road A northeast		Ware Road A southwest	
12 hr		12 hr		24 hr		24 hr	
85%	Mean	85%	Mean	85%	Mean	85%	Mean
31.7	25.9	33.4	27	32.4	26.5	34.1	27.8
30.6	25.3	33	26.6	32	26.1	33.8	27.5
30.6	25.4	32.7	26.3	31.8	26.1	33.5	27.1
30.5	25.3	32.5	26.5	31.9	26.1	33.6	27.4
31.4	26.1	32.2	26.1	32.4	26.9	33.3	27
<b>30.96</b>	<b>25.60</b>	<b>32.76</b>	<b>26.50</b>	<b>32.10</b>	<b>26.34</b>	<b>33.66</b>	<b>27.36</b>
<b>Ware Road Site 20171242</b>							
Ware Road B northeast		Ware Road B southwest		Ware Road B northeast		Ware Road B southwest	
12 hr		12 hr		24 hr		24 hr	
85%	Mean	85%	Mean	85%	Mean	85%	Mean
31.9	26.2	28.6	23.3	32.4	26.7	29.1	23.9
31.5	26	28.3	22.9	32.2	26.5	29.1	23.6
32	26.2	27.5	21.9	32.8	26.8	28.5	22.8
30.9	25.6	28.3	22.6	31.9	26.2	28.9	23.2
31.6	26	27.5	21.7	32.1	26.4	28	22.2
<b>31.58</b>	<b>26.00</b>	<b>28.04</b>	<b>22.48</b>	<b>32.28</b>	<b>26.52</b>	<b>28.72</b>	<b>23.14</b>

**Table 1**, below shows the average mean and 85%ile speed at the two locations measured on Stanstead Road over a five-day Mon-Fri period, in free flow conditions.

<b>Stanstead Road Site 95/595319</b>							
Stanstead Road A west		Stanstead Road A east		Stanstead Road A west		Stanstead Road A east	
12 hr		12 hr		24 hr		24 hr	
85%	Mean	85%	Mean	85%	Mean	85%	Mean
35.1	27.7	37.4	30.8	35.8	29	38.4	31.5
36.8	29.9	39	32.5	37.9	30.8	39.5	33
35.6	27.5	38.4	31.9	37.3	29	39.2	32.5
35.7	29.9	37.5	30.8	37.3	30.9	38.5	31.6
35.3	27	37.7	31.4	36	28.3	38.5	32
<b>35.70</b>	<b>28.40</b>	<b>38.00</b>	<b>31.48</b>	<b>36.86</b>	<b>29.60</b>	<b>38.82</b>	<b>32.12</b>

<b>Stanstead Road Site 20171243</b>							
Stanstead Road B west		Stanstead Road B east		Stanstead Road B west		Stanstead Road B east	
12 hr		12 hr		24 hr		24 hr	
85%	Mean	85%	Mean	85%	Mean	85%	Mean
28.2	24	25.6	21.4	28.4	24.1	26.6	21.9
28.3	24.1	26.5	21.7	28.4	24.2	27.1	22.3
28.2	23.9	25.8	21	28.4	24.2	26.8	21.7
28.2	23.9	25.8	21.5	28.3	24.1	26.8	22.1
27.9	23.7	26.7	21.7	28.3	24	27	22.1
<b>28.16</b>	<b>23.92</b>	<b>26.08</b>	<b>21.46</b>	<b>28.36</b>	<b>24.12</b>	<b>26.86</b>	<b>22.02</b>

**Table 1 – 12hrs & 24hrs Mean and 85%ile Speed at Stanstead Road**

The Parking occupancy/stress surveys were taken as videos that did not include mapping vehicle points of origins of journeys, a summary of these can be seen in **Appendix E**. However, an overview of the survey findings is shown in **Table 3**, overleaf. This summary specifies the measured parking capacity of each road in the study, indicating the number of spaces available to park vehicles along its length, accounting for dropped kerbs, waiting restrictions, and judgement as to whether parking is suitable at the location etc.

Each road has its parking levels considered against these saturation levels and shown as a percentage of that comparison.

<b>Parking Occupancy/Stress Survey</b>								
Observations compared to Saturation Capacities as spaces occupied ( <b>bold</b> ) and as percentage ( <i>italic</i> )								
Observations areas can be seen in Appendix F								
<b>Survey Date:</b> Wednesday 8 November 2017								
Hour	Ware Rd	Stanstead Road	Foxholes Ave	Woodland Road	Woodland Mount	Cromwell Rd	Page Road	Kings Rd /Burleigh Rd
0800	<b>59</b> spaces used ( <i>44 % of available spaces used</i> )	<b>6</b> (75)	<b>31</b> (52)	<b>19</b> (46)	<b>32</b> (70)	<b>68</b> (76)	<b>29</b> (76)	<b>39</b> (51)
1200	<b>72</b> (53)	<b>6</b> (75)	<b>31</b> (52)	<b>17</b> (41)	<b>24</b> (52)	<b>80</b> (90)	<b>24</b> (63)	<b>37</b> (49)
1500	<b>63</b> (47)	<b>6</b> (75)	<b>34</b> (57)	<b>21</b> (51)	<b>30</b> (65)	<b>70</b> (79)	<b>25</b> (66)	<b>42</b> (55)
1800	<b>56</b> (41)	<b>8</b> (100)	<b>20</b> (33)	<b>21</b> (51)	<b>28</b> (61)	<b>73</b> (82)	<b>22</b> (58)	<b>37</b> (49)
Overnight	<b>83</b> (61)	<b>8</b> (100)	<b>59</b> (98)	<b>34</b> (83)	<b>43</b> (93)	<b>103</b> (115)	<b>22</b> (58)	<b>85</b> (111)
Total parking spaces	<b>135</b>	<b>8</b>	<b>60</b>	<b>41</b>	<b>46</b>	<b>89</b>	<b>38</b>	<b>76</b>

Table 3 – Parking Stress Summary

The results of the parking occupancy/stress survey infer that throughout the day the on-street parking is far below saturation capacity. They observe that the parking reaches saturation levels at or after the evening peak traffic times and remain at these levels until the morning peak traffic times. This implies that the vast majority of parking overnight are residents' vehicles.

It is during these times that the majority of instances of inconsiderate parking and footway obstruction are also observed. This was notably along Ware Road in the immediate vicinity of the new development.

Outside of these times there are observations of visibility splays at junctions being obscured by parked vehicles for sustained periods.

Parking along Stanstead Road is confined to the RPZ and neighbouring parking laybys, with no observed contravention of the marked waiting restrictions.

It is clear from the observations that the main route of Ware Road is heavily parked at night and the side roads of Cromwell Road, Burleigh Road, Woodland Mount,



Woodlands Road and Foxholes Avenue are more so, to levels in excess of their 100% saturation levels. Any parking management implemented within these roads will both reduce the status quo parking capacity and displace these vehicles further along Ware Road.

Our assessment assumptions of the parking capacity of each road is based on the length of road, catering for 5.5m per parked car where unobstructed by environment or restrictions, then removing dropped kerb lengths from this measurement.

### **6.2.3 Asset Assessment**

During the site visit consideration was given to the general condition of the highway assets. The overall condition of the carriageway is good. However, from an asset management perspective the current level of deterioration indicates some intervention could be required. There is a consistent amount of lateral cracking across the section with localised spalling and potholes at junctions. The following maintenance points were observed on site:

- The footways are generally in sound condition.
- The highway drainage gullies are all in need of cleaning, most are filled with detritus.
- The street lighting has been upgraded under the A roads LED upgrade programme.
- All bus stops are to current DDA requirements.

## **6.3 Stakeholder Feedback and Evaluation**

### **6.3.1 East Herts District Council Local Planning Authority**

East Herts District Council as Local Planning Authority (LPA) provided details including the Section 106 Agreement, Section 278 Agreement, applicable Decision Notices and other pertinent information related to residential development of the former Hertford Police Station.

It is noted that the Decision Notice granted by The Planning Inspectorate refers to 'the effect on traffic and parking' and recommends that the 258 spaces provided would be sufficient for the size of development.

The LPA confirmed the alteration of the planning to construct 85 dwellings instead of the proposed hotel and nursing home, with parking management plans conditioned. This results in a provision of 251 spaces, including 179 spaces for 180 flats, including no provision for allocated parking for Registered Social Landlord-owned dwellings.

### **6.3.2 HCC Area Highway Manager**

The HCC Area Highway Manager was approached to discuss the study, and provided confirmation of the proposal to install a no-waiting restriction TRO at the Ware Road-Gallows Hill junction. This has been proposed to resolve a visibility issue with emerging vehicles. The presence of site notices was noted during the survey.

### **6.3.3 East Herts District Council Parking Services**

East Herts District Council Parking Services (PS) was consulted in mid-October to discuss the study area extent, the proposed data method of collection, plus potential benefits of a Resident Parking Zone scheme.

The opinion was that the study area should be inclusive of the existing RPZ as a control to test whether the issue was linked to commuters, and the Page Road residential estate served by Foxholes Avenue should be included.

PS were unaware of issues surrounding visitors to the residential development, but anecdotally confirmed that parking appears to have increased following occupation.

PS dismissed the installation of extensive TROs along Ware Road owing to the potential of increased speeding as a result, but supported the clearing of parking near sensitive areas (notably the Cromwell Road-Ware Road junction).

### **6.3.4 HCC Development Management**

The Development Management Team confirmed the active status of the Section 278 Agreement, and provided a copy of the Stage 3 Road Safety Audit. This raised issue with vehicles parking on the footway in Ware Road, and associated lack of visibility.

In October 2017, Barratt Homes' appointed engineers accepted the issues raised in the Stage 3 Road Safety Audit.

At the time of writing, the Certificate of Maintenance associated with the Section 278 Agreement has not been issued.

### **6.3.5 Local Residents**

As part of the pre-inspection site surveys, ad hoc residents' opinion was requested regarding the parking situation in and around the study area. There was unanimous confirmation that the parking in the area has worsened.

One resident raised the issue of the Visitor Parking bays within the former Hertford Police Station development; said bays are only useable by visitors who had been granted a permit by the resident. The lack of vehicles within the allocated visitor bays was noted during the parking surveys.

We will engage with the local County Members to discuss their consideration of the recommendations of this report. All feedback will be shared with the Programme & Strategy Managers towards any final decision.

#### **6.4 Problem Verification**

This appears to be a straight forward review of the existing infrastructure along the main route to identify what can be done to improve the parking management along this gateway route into the busy County town.

Consideration can be given to the options of; RPZ, Waiting Restrictions and kerb realignment; to provide parking facilities to both manage parking and reduce instances of footway obstruction.

It is highly likely that any such measures would cause vehicles to be displaced further afield. Part of the requirement of this study will be to understand what the impact of implementing any identified options will be on the wider on-street parking picture.

No further improvement is required for the bus stop and lighting along this route, as it has already been upgraded.

The Highway Authority is currently in consultation on the provision of a Traffic Regulation Order (TRO) for No Waiting at Any Time at the junction access for the recent development of the former Hertford Police Station.

## 7 Design Options and Assessment

### 7.1 Options

The options considered to achieve the objectives of this project are:

1. Ware Road realignment
2. Junction protection
3. Burleigh Road parking area
4. Ware Road Residential Parking Zones (RPZ)
5. Additional off-street car parking
6. Constables Way Visitor Parking
7. Parking Restrictions along highway where footway obstruction/parking has been identified
8. Do Nothing

### 7.2 Option Assessment

These eight options are each assessed below with the analysis identifying which are considered viable and which are not.

#### 7.2.1 Option 1 Assessment – Ware Road Alignment

It is clear that the pedestrian route along Ware Road, surrounding its junction with Stanstead Road, towards the town centre is well used. The need for parking along this road is high due to the volume of properties and the limited off-street parking facilities.

In a similar approach to the build outs along the rest of Ware Road towards Hertford town centre, we have looked at the possibility of the realignment of Ware Road. This would be to formalise the on-street parking areas and to reduce footway obstruction. It would require a reduction in footway width to the north kerb and potentially an increase in footway width to the south kerb. The proposed road alignment can be seen in **Appendix F**.

The alignment itself would be costly and may require the diversion of utility apparatus as well as drainage laterals. More detailed utility searches would be required to determine this. The civils work would be extensive and may be outside of

the scope of this project. This option is considered to provide the most robust solution to most users, but would be costly to implement.

This realignment option could be looked at long term in conjunction with discussing a residents parking scheme.

### **7.2.2 Option 2 Assessment – Junction Protection**

It was noted during a number of site visits that visibility was obscured at many of the junctions and turning heads within the study area. We have considered the effectiveness of using double yellow lines to offer the best potential to maintain clear sight lines at these intersections, especially at peak times of the day.

The advantage of using localised junction protection is that the impact on the loss of on-street parking is limited. The disadvantages of using this option are that they will rely on compliance from the public and may require enforcement.

In terms of safety, we recommend using junction protection around key areas along Ware Road, these being the junctions with Cromwell Road and Kings Road where visibility was worst affected. If the highway authority were not already in consultation on the access with Gallows Hill, this would be included in our recommendation.

Turning within turning heads at some of the residential cul-de-sacs was heavily restricted due to the saturated parking levels. We have taken in consideration for the movement of emergency vehicles and feel that it is appropriate to introduce parking restrictions in a number of these areas, as shown on **Appendix F**.

According to the vehicle speed and data survey, we have determined that the visibility sightlines for Ware Road have a requirement of 43m; this has determined that the proposed double yellow lines need to exceed this length as shown on **Appendix F**.

### **7.2.3 Option 3 Assessment – Burleigh Road Parking Area**

This option has been considered to formalise the verge parking area at the end of Burleigh Road as it is suggested that there is a need for additional parking spaces in this area. Such measures could be used as a 'stop & drop' area for children attending Wheatcroft School, with the entrance to the school being adjacent on Ware Road.

These facilities would only be effective under the management of teaching staff from the school and potentially incorporating parking restrictions. As such, this option would need to be explored in collaboration school as part of their school travel plan.

We have investigated the possibility of removing the turning movement island and introducing extra spaces to formalise the parking area, this will give us some additional hardstanding as a parking area. Ahead of a topographic 3D survey, it is

considered that overcoming level changes and drainage could require extensive engineering in this area.

This would not be a cost-effective solution to formalise the parking in the area due to the limited number of additional space that could be achieved.

Lining in the area could be remarked to formalise the parking, this will benefit the safety of pedestrian and NMU users in the surrounding area.

#### **7.2.4 Option 4 Assessment – Ware Road Residential Parking Zone (RPZ)**

It has been requested that we investigate the potential of employing RPZ to provide on-street parking for residents only. The surveys of the area observed what cars have been parking on the streets and the times they have been occupying these areas.

The option to employ a RPZ in the area would require bays to be marked and residents to buy into a scheme to display a valid permit to park within that zone. The larger the area covered by a zone, the more likely users are to find parking space when they require it. Our recommendation would therefore be to use a single zone for the whole study area.

The advantages of this scheme would be that only permit holders could park without penalty. The disadvantages are that, with so much demand, there would not be enough space for all those with permits to find a space in peak times.

#### **7.2.5 Option 5 Assessment – Additional Off-Street Car Parking**

Due to the capacity problems, specifically on Ware Road and Cromwell Road, there is benefit in displacing these vehicles to additional off-street parking areas. An area identified that could accommodate these vehicles is the allotments to the north of Cromwell Road.

With both the impact on the community and the cost of implementing the works being high, this is not considered to be a viable scheme independent of any other. However, it may be considered as part of any future redevelopment of that site.

#### **7.2.6 Option 6 Assessment – Constables Way Visitor Parking**

The parking survey revealed the lack of occupation within the 24 unallocated spaces within the Liberty Rise site. Follow-up discussion with the company overseeing the parking management confirmed the use of the visitors' bays is via a permit provided to a resident. These are deliberately limited in number by the management company.

Ad hoc discussion with residents during the pre-assessment phase confirmed that any second vehicle owned by a resident is stored on-street in the local area to avoid the unnecessary use of a visitor's permit.

An option to enter into discussion with the parking managers should be encouraged to open up of the use of the bays to residents and remove the demand from the local area.

### **7.2.7 Option 7 Assessment – Parking Restrictions along highway where footway obstruction/parking have been identified**

This option was advised by a member of the highways team, it was suggested that cars parked on the footway currently were to have new restrictions such as double yellow lines. This will prevent vehicles from mounting the footway and causing an obstruction to pedestrian movements.

This could be used as a reasonable option if the residents agree but due to the lack of parking in the area, it is likely that this option will be strongly opposed.

The disadvantage of using double yellow lines is that they will rely on compliance from the public and may require enforcement.

### **7.2.8 Option 8 Assessment – Do Nothing**

'Do Nothing' is always considered an option in these projects to ensure that change is not injected for the sake of doing 'something'.

## **7.3 Safety Advice**

A Stage 3 Road Safety Audit, on the redevelopment of the former Hertford Police Station, was undertaken in February 2017 by HCC's Road Safety Engineering Team. The Audit raised the issue of inappropriate parking on Ware Road resulting in a loss of footway and subsequent risk of collision with vehicles and/or pedestrians. This has been incorporated within Option 1 above.

A Designer's Response was provided in October 2017 by Barratt Homes' appointed engineers and confirmed that all issues are accepted by the developer and mitigation would be undertaken at their expense.

A copy of the Safety Audit is shown in **Appendix G**.

## 7.4 Costs

Cost estimates have only been drawn up for Options 1, 2, 3, and 4. The estimate has been calculated, based on the HST rates for 2017/18. Option 7 would likely cost the same as Option 2.

- Cost estimate for Option 1 – Ware Road Realignment is approximately £88,000
  - » Assumptions are made that; there would be no other utility services to divert
  - » Changes with the signal equipment would also not be required.
  - » Drainage is unaffected outside of new laterals, frames and covers.
- The cost estimate should be broken down into the following elements:

<b>Ware Road realignment</b>	<b>Cost (including 10% contingency)</b>
Physical works	£70,000
CST (Opus Arup) design fees for the delivery phase (IWP stages 3, 4 & 5)	£10,000
HST (Ringway) design fees for the delivery phase	£800
Accommodation works such as Stats Diversions	Assuming zero
Contingencies to cover any unknowns and/or uncertainty	£7,000

- Cost estimate for Options 2 – Junction Protection & Option 4 – Residential Parking Zone are similar due to the predominantly TRO and road marking nature of these options. Estimates are approximately £15,000 each.
  - » Assumptions are made that there would be no utility services to divert
- The cost estimate should be broken down into the following elements:

<b>Junction Protection &amp; Ware Road RPZ</b>	<b>Cost (including 10% contingency)</b>
Physical works	£3,500
CST (Opus Arup) design fees for the delivery phase (IWP stages 3, 4 & 5)	£10,000
HST (Ringway) design fees for the delivery phase	£500
Accommodation works such as Stats Diversions	Assuming zero
Contingencies to cover any unknowns and/or uncertainty	£1,500



- Cost estimate for Option 3 – Burleigh Road Parking Area is around £15,000
  - » Assumptions are made that; there would be no other utility services to divert
  - » No changes to the existing retaining structure
  - » No changes to the drainage
- The cost estimate should be broken down into the following elements:

<b>Burleigh Road Parking Area</b>	<b>Cost (including 10% contingency</b>
Physical works	£10,000
CST (Opus Arup) design fees for the delivery phase (IWP stages 3, 4 & 5)	£2,500
HST (Ringway) design fees for the delivery phase	£800
Accommodation works such as Stats Diversions	Assuming zero
Contingencies to cover any unknowns and/or uncertainty	£2,000

Alongside this is the consideration that moving the crossing as a whole would not be cost effective.

- Cost estimates for Options 5 and 6 are not currently possible to identify as these would be largely dependent on officer time to negotiate with partner organisations to achieve collaboration towards changes in use of non-highway land.

## 7.5 Risks

Below is a list of assumptions that have been made, in considering this project:

- Currently we have no information on underground statutory undertaker's plant, or existing drainage network condition.
- The impact on future development has not been included. Whilst localised development is proposed further along Ware Road, the draft LTP4 document confirms a proposed Hertford bypass and thus the potential for future development as a result of a change in road categorisation.
- Any works arising from the Section 278 Agreement and/or the Stage 3 Road Safety Audit have not been included at the time of writing. It is unknown what form they will take.

- The installation of an RPZ is subject to East Herts District Council's RPZ policies, and should be considered as a potential solution once consultation is undertaken and a minimum 51% approval confirmed.

**Assumptions include:**

Our assessment of the parking capacity of each road is based on the length of road catering for 5.5m per parked car, where unobstructed by environment or restrictions and removing dropped kerb lengths from this measurement.

Remaining junction protection and 'no waiting at any time' remains unchanged.

Residents would be willing to pay for a permitted parking scheme, subject to a successful consultation process.

## **8 Conclusion and Recommendations**

### **8.1 Conclusions**

In conclusion to the consideration of the options outlined; it is considered that the most cost-effective improvements are to be gained from Option 2. This should be a relatively straight forward process through design and consultation to achieve the improvements in junction safety that are sought to reduce the likelihood of incidents occurring in peak parking times.

### **8.2 Recommendation**

The recommendation of this report is to pursue junction protection (Option 2) measures to safeguard the visibility splays at the associated junctions during all situations, enforceable by East Herts District Council.

Long term, this is the most effective mitigation to the parking stress along Ware Road, without presenting a protracted cost or notable reduction in on-street parking opportunity to the affected residents.

It is not recommended to formalise the current parking situation at the end of Burleigh Road as this is not considered to be cost-effective and may present higher construction cost at the design/build phase due to utilities or drainage complications.

### **8.3 Action Plan**

Should the stakeholders be in support of this scheme, the next steps to implement the outlined project would be to undertake detailed design, including further construction and costing investigation, towards identifying a final design and bill of quantities for client and contractor consideration and promote formal consultation.

## 9 References

We have referred to the following sources while preparing this report:

- LTN 02/87
- LTN 01/89
- TSRGD 2002
- Traffic Signs Manual Chapter 4
- Manual for Streets
- DETR – Guidance on the use of tactile paving
- Roads in Herts 3<sup>rd</sup> Edition
- Hertfordshire County Council's Speed Management Strategy – March 2015
- Entran Ltd Transport Assessment 2009
- Barratt Homes Transport. Addendum REPORT REF. NO N640-01A, PROJECT NO. N640, JULY 2013
- HCC LTP 4 (Draft)

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