Castle Point Plan

Reference number GB01T23H92

25/07/2025

GREEN BELT SITES ASSESSMENT

CASTLE POINT PLAN

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1. INTRODUCTION

1.1.1 SYSTRA has been appointed by Castle Point Borough Council (CPBC) to provide Transport and Highways advice in relation to the emerging Castle Point Plan (CPP). The emerging CPP will have an end date of 2043 and is being prepared in accordance with the requirements of the National Planning Policy Framework (NPPF) December 2024 and associated Regulations.

1.1.2 SYSTRA has previously prepared the Transport Assessment Scoping Document (July 2024) which has supported the Regulation 18 consultation in relation to the emerging CPP. Subsequent to this consultation being concluded, CPBC have identified their preferred spatial strategy and a full Transport Assessment (TA) is being prepared in accordance with a scope which has been discussed and agreed with CPBC and Essex County Council (ECC) Highways officers. The TA will set out details of the expected transport demands and impacts associated with the proposed allocation sites identified within the full draft Local Plan, and the proposed mitigation measures which will be provided for walking, cycling, public transport and vehicular traffic in response to these impacts. The mitigation measures, whilst primarily designed to address Local Plan requirements, are being designed to also be compatible with wider ECC transport strategies and policy, including Local Transport Plan (LTP) 4, the Essex Bus Service Improvement Plan (BSIP) and Castle Point Bus Network Review, and the Castle Point Local Cycling and Walking Infrastructure Plan (LCWIP).

1.1.3 Prior to December 2024, the emerging CPP was being prepared to comply with the requirements of the previous version of the NPPF and its associated calculation method for housing demand via Objectively Assessed Need (OAN). The adoption of the current version of the NPPF in December 2024 has incorporated a revised methodology for calculating the OAN, and as such this has increased the total amount of new housing which the OAN indicates should be planned for within Castle Point per year.

1.1.4 Due to the already high density of development within the borough, the “core” (Option 1a) sites which have been included in the Regulation 18 consultation and emerging Regulation 19 plan and its evidence base are primarily small or medium-sized sites and the total amount of housing which is considered to be deliverable on these sites falls below both the previous and current OAN figures.

1.1.5 The Regulation 18 documents (including the TA Scoping report) therefore identified additional sites within the Green Belt which could potentially provide further housing. However, no formal Green Belt review had been conducted at that time and the comments made (at paragraphs 7.2.111 to 7.2.116 of the TA Scoping report) were restricted to a basic summary of their existing relationships to the transport and highway networks.

1.1.6 Subsequent to the adoption of the current NPPF, SYSTRA has been instructed to provide a more detailed appraisal of an updated list of potential Green Belt sites which has been provided by the Council. This information consists of the geographic boundaries of each site, its developable area, and its capacity at a density of 40 dwellings per hectare. (One site, GB3 Land South of Charfleets, is identified for employment use and is stated to have a capacity of 33,750sqm mixed employment floorspace; and sites N1 (Janda Fields) and N2 (Orchard Place) do not have capacity estimates associated with them). Whilst many of the sites have been retained from the analysis carried out at Regulation 18, some have been amended or removed. The reference numbers assigned to the sites as part of that assessment have been

amended as a result and the updated reference numbers provided by the Council have therefore been used for the purposes of this assessment.

1.1.7 The sites have been identified in two "tranches"; the first largely represents potential strategic (i.e. larger) sites, whilst the second largely represents potential "non-strategic" (i.e. smaller) sites. The distinction in each tranche is not absolute; there are some small sites in the first tranche and two large sites in the second tranche. Certain sites in Tranche 1 lie in proximity to a site or sites in Tranche 2; this is noted in Table 1 below and in the relevant discussions of each site within the body of the report.

1.1.8 For the avoidance of doubt, the lands at North East Thundersley (north of Manor Trading Estate) have previously been ruled out from consideration as part of the emerging CPP due to multiple issues which are outside of the remit of CPP to resolve, therefore they have not been included in this study.

1.1.9 The sites which are therefore included in this Report are as follows:

Table 1. Green Belt Sites for Site Level Evidence Review (Tranche 1)

SITE REFERENCE	SITE NAME	CAPACITY (40 DPH) / FLOORSPACE (SQM)	PROXIMITY TO TRANCHE 2 SITES
GB1	West of Canvey Road	392	
GB2	East of Canvey Road	400	GB17, GB35
GB3	Land South of Charfleets	33,750 sqm	GB30
GB4	Land off Glebelands	169	GB30
GB5	West of Benfleet (Jotmans)	1,308	GB20, GB29
GB6	Land between Felstead Road and Catherine Road	159	GB20, GB29
GB8	South of Hadleigh	954	
GB9	Oak Tree Farm	71	GB19, GB26, GB27, GB28
GB10	South East of Daws Heath (Brook Farm)	539	
GB11	South West of Daws Heath (Solby Wood)	517	GB21, GB22, GB23,GB24
GB12	The Chase	521	GB21, GB22, GB23,GB24, GB32
GB13	East of Rayleigh Road	481	

GB13a	East of Rayleigh Road - reduced	322	
GB14	South of Daws Heath Road	90	
GB15	North of Grasmere Road	113	GB33
N1	Janda Fields		
N2	Orchard Place		
N3	East of Manor Trading Estate	141	

Table 2. Green Belt Sites for Site Level Evidence Review (Tranche 2)

SITE REFERENCE	SITE NAME	CAPACITY (40 DPH)	PROXIMITY TO TRANCHE 1 SITES
GB17	Land off Grange	55	GB2
GB18	Land off Goldfinch Lane	65	
GB19	Land North of Thundersley Church Road and East of Downer Road North	64	GB9
GB20	Land to the East of St Michaels Road	506	GB5, GB6
GB21	Land off Hill Top Avenue	614	GB11, GB12
GB22	Land Between Essex Way and Vicarage Hill	127	GB11, GB12
GB23	Land to the rear of 329 Benfleet Road	82	GB11, GB12
GB24	Land off Shipwrights Close	54	GB11, GB12
GB26	Land to rear of Beaucroft and Sunray, Bassenthwaite Road	10	GB9
GB27	Land between Glen Haven and Ye Oaks, Bassenthwaite Road	4	GB9
GB28	Land Adjacent 298 Church Road	5	GB9
GB29	170 Bramble Road	15	GB5, GB6

GB30	Ragwood Riding Centre, Daws Heath Road	13	GB3, GB4
GB31	Land off Netherfield	12	
GB32	Land off Glyders	61	GB12
GB33	Land south of Fleet Roundabout, Roscommon Way	6	GB15
GB34	Land west of Kingsley Lane	36	
GB35	Grandview Stables, Grandview Road	29	GB2

1.1.10 The appraisal of these sites is set out in the following sections of the report.

2. MULTI-CRITERIA ASSESSMENT

2.1.1 To conduct the site-specific assessments, a bespoke multi-criteria assessment table has been developed and used as agreed upon with CPBC to assess the existing and proposed transport infrastructure surrounding the various Green Belt sites. This takes into account the proximity of the sites to existing transport networks, and assesses the extent to which this will be improved throughout the Local Plan with the implementation of schemes such as the Local Cycle Walking Implementation Plan (LCWIP), and similarly SYSTRA's proposed Initial Schedule of Interventions (ISI). The assessment is structured to first examine each site in the context of existing transport provision, and then to appraise what additional measures the site in question could support. For the purposes of this report each site has been considered individually; the impact of different combinations of sites is expected to be considered once the Council has had an opportunity to determine which site combinations would be feasible to deliver, and to screen out any sites which have clear constraints in either transport terms or for other reasons.

2.1.2 The assessment tables are provided in full at Appendix A. The criteria used have been identified using examples from other emerging Local Plans and are based on information which can be discerned from available public sources.

2.1.3 It should be noted in particular that the current future assessment does not seek to project directly in terms of changes or improvements to public transport availability and frequency. This is because, at the *individual site level*, the ability of sites of the proposed scale to support significant increases in public transport services is considered to be limited. Further comment on how this could be assessed in greater detail is provided below.

2.1.4 The sites have been assessed against three possible scenarios in terms of their expected trip generation and associated modal shift, in comparison with the "business as usual" trip rates which have been applied in the emerging Regulation 19 TA report and its associated strategic and local highway modelling. "No Change" indicates that there is an insufficient basis to predict a reduction in car-based travel; "moderate reduction" reflects a modest anticipated reduction in car-based trips (5%) from the baseline, and "significant reduction" represents a

situation where there is specific evidence to justify a more substantial reduction in car-based trips (15%). These percentages reflect SYSTRA's experience from working on other Local Plans and from producing and assessing Travel Plans for residential-led and mixed development sites where the associated mode targets have needed to be linked to the provision of on-site and off-site transport infrastructure and services. The sites have been scored against both their existing transport context (i.e. infrastructure and services already present) and potential future provision, based on the scale of the site itself and the measures identified in the Schedule of Interventions which is described in the Regulation 18 and emerging Regulation 19 TA reports.

2.1.5 Having been initially grouped together by geographic location, the green belt clusters have been adjusted based on size, if for example one site is significantly larger in capacity than another site it would otherwise be grouped with, then the sites have been separated. This enables sites in close proximity to one another to be scored collectively, but for differences between large and small sites to be identified and reflected in the scoring, particularly with regard to future scenarios.

2.1.6 The categorisation of each site is indicated in Table 3 and Table 4, and the detailed multi-criteria table is displayed in full in Appendix A.

Table 3. Multi-Criteria Analysis – Site Scores Summary (Tranche 1)

CLUSTER NAME	SITE NAME/REF	EXISTING CATEGORY	FUTURE CATEGORY
Canvey Island West	GB1 – West of Canvey Road GB2 – East of Canvey Road	Tier 3: 70% Car	Tier 2: 65% Car
Canvey Island Southwest	GB3 – Land South of Charfleets	Tier 3: 70% Car	Tier 3: 70% Car
Benfleet – North of London Road	GB4 – Land off Glebelands	Tier 1: 55% Car	Tier 1: 55% Car
Benfleet – South of London Road	GB5 – West of Benfleet	Tier 2: 65% Car	Tier 2: 65% Car
East Benfleet	GB6 – Lb Felstead Road and Catherine Road	Tier 3: 70% Car	Tier 2: 65% Car
Hadleigh – South of New Road	GB8 – South of Hadleigh	Tier 3: 70% Car	Tier 3: 70% Car
Hadleigh – Oak Tree Farm	GB9 – Oak Tree Farm	Tier 2: 65% Car	Tier 2: 65% Car

CLUSTER NAME	SITE NAME/REF	EXISTING CATEGORY	FUTURE CATEGORY
Hadleigh – North of New Road	GB10 – South East of Daws Heath (Brook Farm) GB11 – South West of Daws Heath (Solby Wood)	Tier 2: 65% Car	Tier 2: 65% Car
Kiln Road	GB12 – The Chase	Tier 2: 65% Car	Tier 2: 65% Car
North Hadleigh – East of Rayleigh Road	GB13 – East of Rayleigh Road	Tier 2: 65% Car	Tier 2: 65% Car
North Hadleigh – South of Daws Heath Road	GB14 – South of Daws Heath Road	Tier 3: 70% Car	Tier 2: 65% Car
Northwest Thundersley	GB15 – East of Manor Trading Estate N3 – North of Grasmere Road	Tier 3: 70% Car	Tier 3: 70% Car
North Thundersley – Castle Point Boundary	N1 – Janda Fields N2 – Orchard Place	Tier 3: 70% Car	Tier 3: 70% Car

Table 4. Multi-Criteria Analysis – Site Scores Summary (Tranche 2)

CLUSTER NAME	SITE NAME/REF	EXISTING CATEGORY	FUTURE CATEGORY
Northwest Thundersley	GB17 - Land off Grange GB18 - Land off Goldfinch Lane GB26 - Land to the Rear of Beaucroft and Sunray GB27 - Land Between Glen Haven and Ye Oaks	Tier 3: 70% Car	Tier 3: 70% Car
Thundersley – North of Hart Road	GB34 - Land West of Kingsley Lane	Tier 3: 70% Car	Tier 2: 65% Car

CLUSTER NAME	SITE NAME/REF	EXISTING CATEGORY	FUTURE CATEGORY
	GB35 - Grandview Stables		
North Benfleet – North of London Road	GB19 - Land North of Thundersley Church Road and East of Downer Road North	Tier 2: 65% Car	Tier 2: 65% Car
Hadleigh – South of Daws Heath Road	GB30 – Ragwood Riding Centre	Tier 3: 70% Car	Tier 3: 70% Car
Hadleigh – South of Bramble Road	GB29 – 170 Bramble Road	Tier 3: 70% Car	Tier 3: 70% Car
Hadleigh – East of St Michaels Road	GB20 – Land to the East of St Michaels Road	Tier 3: 70% Car	Tier 3: 70% Car
Thundersley – South of Kiln Road	GB31 – Land off Netherfield	Tier 3: 70% Car	Tier 2: 65% Car
South of Benfleet Road	GB23 – Land to the rear of 329 Benfleet Road GB24 – Land off Shipwrights Close	Tier 3: 70% Car	Tier 3: 70% Car
Thundersley Glen	GB21 – Land off Hill Top Avenue	Tier 3: 70% Car	Tier 3: 70% Car
Essex Way	GB22 - Land Between Essex Way and Vicarage Hill GB32 - Land off Glyders	Tier 1: 55% Car	Tier 2: 65% Car
Canvey Island – South of Fleet Roundabout	GB33 – Land South of Fleet Roundabout	Tier 3: 70% Car	Tier 3: 70% Car

2.1.7 From the summary tables, it can be observed that a significant number of sites would not currently be expected to demonstrate any reduction in car-based trip rates as a result of the measures within their direct control, or those included in the current Schedule of

Interventions, and with one exception, the remaining sites can only justify a modest reduction based on the information currently available.

2.1.8 These conclusions have been reached due to the following specific observations:

- Several of the sites are located some distance from measures identified in the Schedule of Interventions, so additional connections would be required to further improve the associated score.
- Most of the sites are, in isolation, too small to directly fund material improvements to bus access, therefore only the general improvements associated with the Option 1a transport strategy are assumed to be viable. This would be expected to change with assessment of one or more further options with multiple sites included.
- The strategic and local junction modelling of the highway networks indicates that there will be several locations which see significant increases in delay in both the reference case and current Option1a modelled scenarios; there is very limited capacity to physically make improvements for public transport (or indeed for general traffic) and therefore it is anticipated that public transport journey times will increase. As such it is difficult to justify major shifts from car use to public transport use on the basis of the current evidence

2.1.9 It is therefore considered that further discussion is required specifically with regard to the wider public transport strategy, with particular reference to journey time reliability and how further feasible improvements can be identified which would generate a more significant overall reduction in car-based trips. SYSTRA is currently undertaking further work with assistance from ECC and an update to this study will be provided once this information is available.

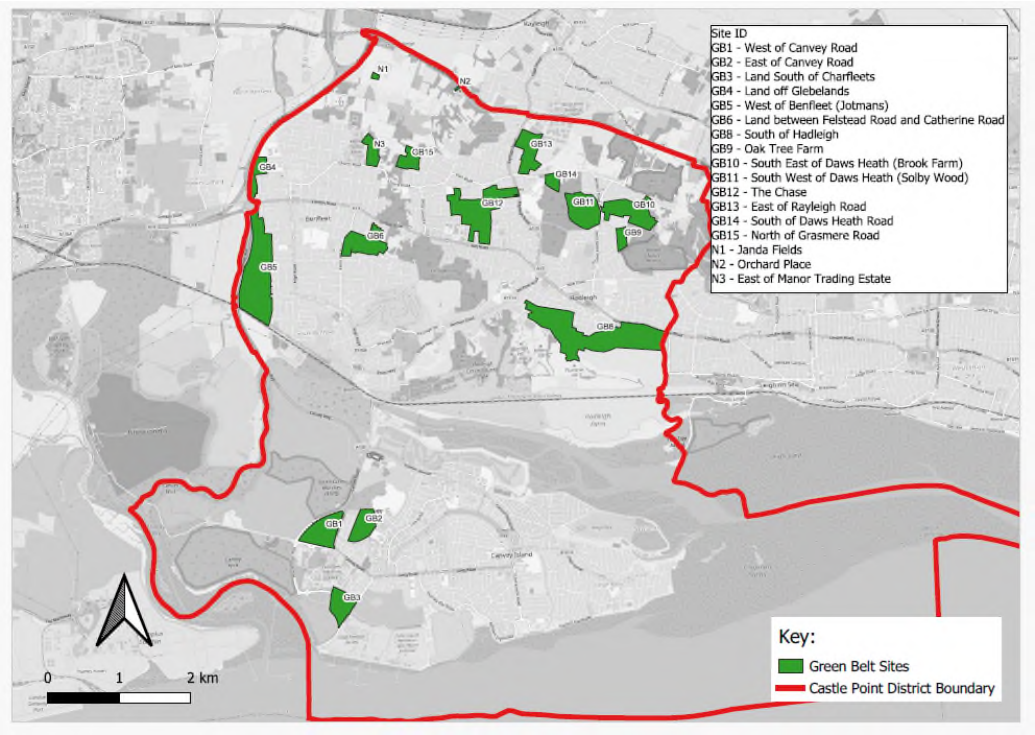
2.1.10 The next section of the report considers each of the identified sites in greater detail. The strategic sites in Tranche 1 have been appraised in terms of their likely method of access, with a concept drawing provided for the location considered to be most suitable for this purpose. This does not prevent alternative proposals being put forward by site developers at later stages of the Local Plan process, but is intended to help identify those sites where providing a suitable access for the volume of development intended will be challenging, and to explain which constraints are present to create this situation.

3. STRATEGIC GREEN BELT SITES

3.1 Site Locations

3.1.1 The sites within the Green Belt which have been identified as strategic green belt sites for consideration are displayed in **Figure 1** below.

Figure 1. Strategic Green Belt Provision

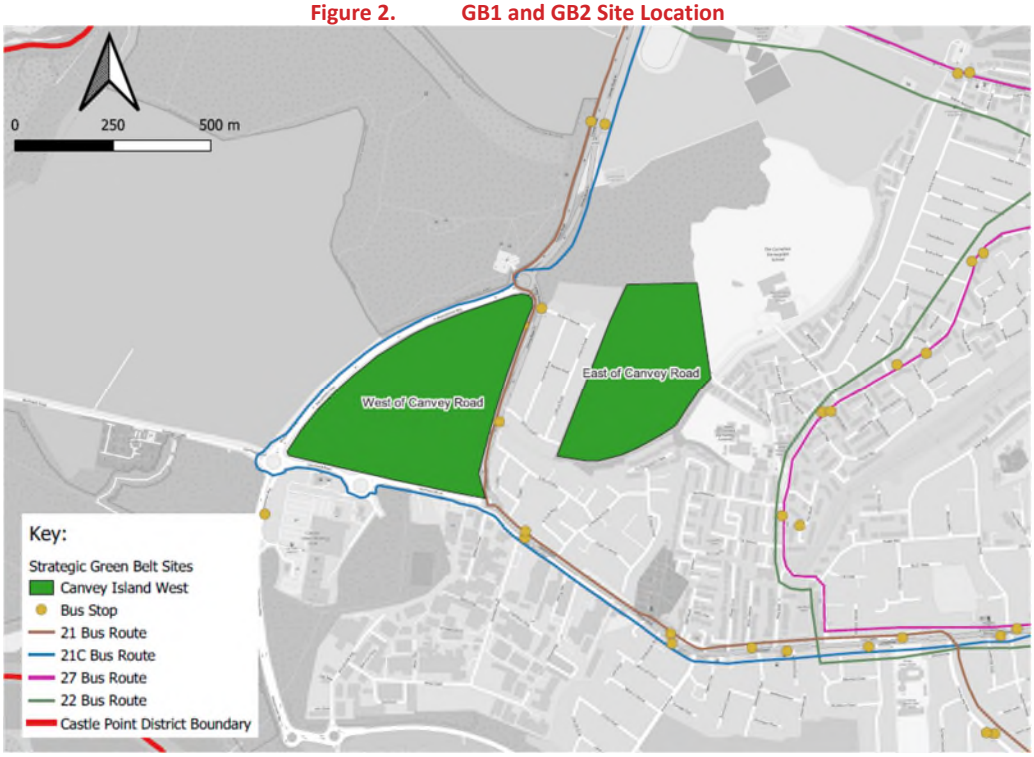


3.2 Canvey Island – West

3.2.1 Two sites (GB1 and GB2) are located with the area of the Canvey Island West cluster; these are the Land West of Canvey Road (GB1), Land East of Canvey Road (GB2) sites. The combined capacity of the sites is 792 dwellings. There is no employment land associated with the sites. Site GB2 is located in proximity to the non-strategic sites GB17 and GB35 (discussed later in this report).

3.2.2 The sites are displayed in **Figure 2** below. Located south of the Canvey Way roundabout, the two sites are located adjacent to the Canvey Road.

Figure 2. GB1 and GB2 Site Location



3.2.3 There are six bus stops located directly adjacent to the two sites along Canvey Road. Three of these stops include a bus shelter and seating, the remaining three are comprised of a bus flag and pole.

3.2.4 The 21 and 21C bus routes are directly accessible from the sites. These provide access to Hadleigh and Great Wakering.

3.2.5 The sites are located in the vicinity of the A130 Canvey Road/Rosscommon Way, Roscommon Way/Northwick Road, and A130 Canvey Road/Northwick Road junctions.

Expected Development Impacts

3.2.6 The multi-modal trip generation calculations for the housing sites are presented in **Table 5** below. The trip rates used have been adjusted by the criteria discussed in the Site Group Assessment.

Table 5. GB1 and GB2 Site Trip Generation

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land West of Canvey Road	392	AM Peak	210	185	11	98	9	3
		PM Peak	204	177	9	66	9	2
Land East of Canvey Road	400	AM Peak	215	189	11	100	9	3

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
		PM Peak	207	180	9	68	9	2

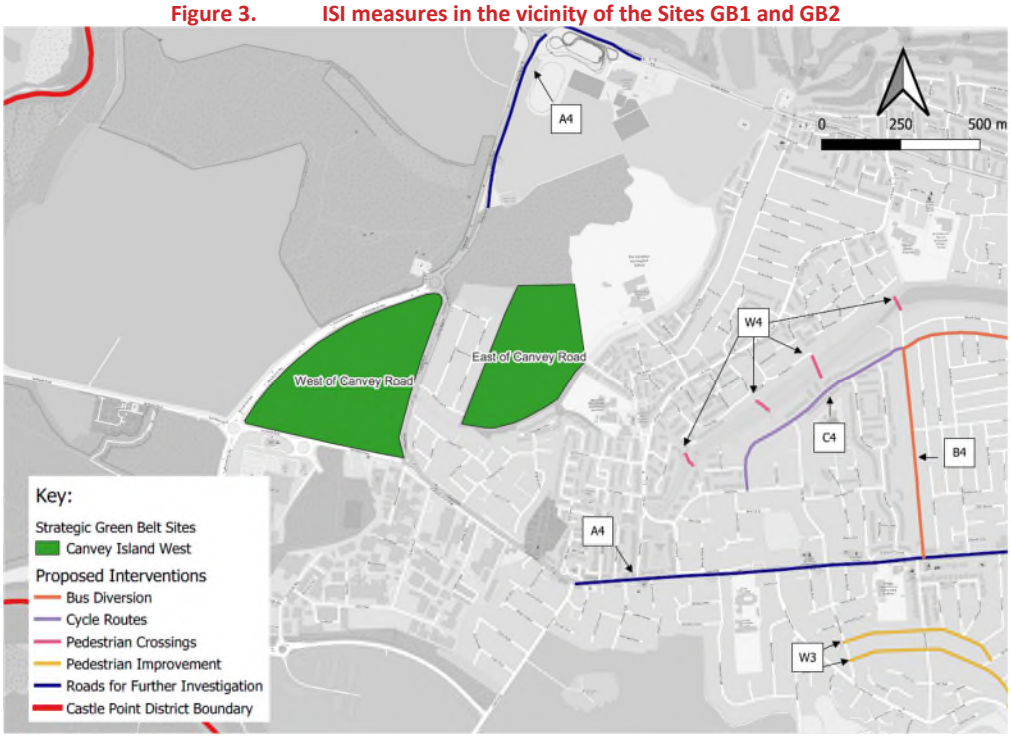
3.2.7 As shown above, both sites are predicted to generate a relatively high number of car trips on the local road network, with the Land East of Canvey Road site generating 189 additional car trips in the AM peak and Land West of Canvey Road generating a similar 185 car trips. The sites collectively could generate 198 pedestrian trips in the AM peak (100 for Canvey East and 98 for Canvey West), implying that there is potential for active travel to be further encouraged at this site.

Potential Mitigation Measures

3.2.8 It is noted that the ISI has not previously considered significant interventions in the direct vicinity of the identified green belt sites as the urban capacity sites within Option 1a (with the exception of the West Canvey Broad Location) are concentrated toward the centre of Canvey Island. However, Long Road is highlighted in the ISI as a location for corridor-based mitigation (which would be of particular importance for the West Canvey Broad Location), comprising upgrading of existing pedestrian and cycle facilities where feasible and a focus on addressing the impacts of exiting peak hour congestion associated with east-west vehicle movement. The increased proposed volumes of development within the West Canvey Broad Location are expected to provide funding for further improvement in this area and this is currently being explored.

3.2.9 The relationship of the green belt sites to the ISI measures is shown in **Figure 3** below.

Figure 3. ISI measures in the vicinity of the Sites GB1 and GB2



3.2.10 Expanding growth on Canvey Island to include one or more of the identified green belt sites would necessitate the development of improved walking and cycling connections to link up with Long Road and the surrounding area. The promotion of local trips to help reduce the additional demand for private vehicle movement on and off of Canvey Island would be a necessary part of the sites' transport proposals. The wider improvement of bus access to Canvey, including connections to Benfleet rail station north of Canvey Island, would potentially be supported by an increase in the potential customer base associated with the growth at these sites. SYSTRA is presently engaged in examining these specific issues in the light of the expanded West Canvey proposals.

3.2.11 As indicated in **Figure 3** above, there are a number of potential interventions identified within the ISI which have been developed to enhance the pedestrian and cycle infrastructure in the area, including the pedestrian crossings over Canvey Dyke to enhance permeability, and the cycle route proposed along Cedar Road/Waarden Road, located approximately 750m to the southeast of the East of Canvey Road site.

Means of Access

3.2.12 The most likely locations for the main access point for each site (pedestrians, cyclists and vehicles) have been identified and concept design sketches have been prepared (drawing 23H92-SYS-P-XX-101-02 (GB1) for site GB1 and drawing 23H92-SYS-P-XX-102-02 (GB2) for site GB2). The location for these access points has been identified based on available boundaries of the site with the local highway network; this exercise is intended to confirm whether, in principle, an access which conforms with the necessary design guidance (the Essex Highway Design Guide / Manual for Streets) could be delivered; this is the case for both sites GB1 and GB2. The final position of the main access (plus the provision of any secondary access points, including those solely for pedestrian and cyclist use) will need to be determined via initial master planning work, should the sites be taken forward as part of the Local Plan process.

Potential for Modal Shift

3.2.13 As noted in the Site Group Assessment, off-road cycle routing is proposed along Long Road/Canvey Road through the centre of the sites within the LCWIP. This could encourage some modal shift toward active travel. It is considered that, on the basis of currently identified mitigations which could be supported by the sites, there are sufficient grounds to expect a moderate reduction in car trips (i.e. from Tier 3 to Tier 2). This could increase further depending on the extent of provision which would be brought forward for the extended West Canvey site.

Conclusion

3.2.14 The key conclusions which can be drawn in relation to the sites under consideration are summarised in the table below.

Table 6. Sites GB1 and GB2 – Summary of Conclusions

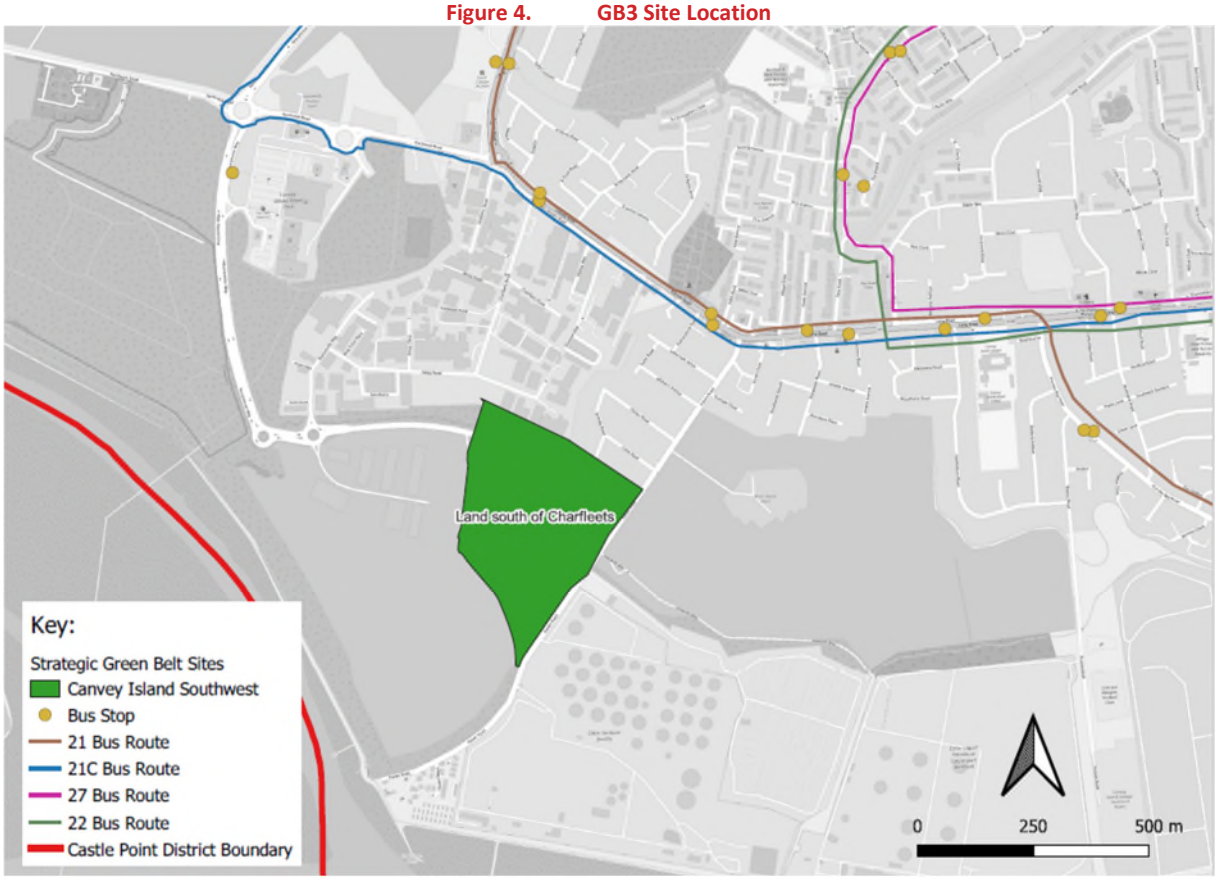
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	Compliant Access achievable in principle	Yes
Sustainability (inherent)	Limited due to scale of development and distance to existing facilities	Not without Mitigation
Sustainability (with potential Mitigation)	Modest level of modal shift (5%) anticipated with provision for walking, cycling and public transport	Yes, with mitigation
Safety	No inherent safety issues, subject to mitigation measures being developed to required standards	Yes
Road Network Residual Impacts (estimated)	Expected to be impacts primarily on A130 corridor which may require mitigation	Yes

3.2.15 It is therefore considered that, on the basis of the analysis undertaken, the sites could in principle be developed in a manner which would meet the needs of NPPF paragraphs 110 and 115. However this would be subject to further work to determine whether the required mitigation can be funded by the sites, either in a stand-alone capacity or as part of a wider set of proposals incorporating other Local Plan sites (particularly GB3 and the West Canvey broad allocation site).

3.3 Canvey Island – Southwest

3.3.1 The Canvey Island Southwest cluster is formed solely of the GB3 site (Land South of Charfleets). Comprised of 33,750sqm of industrial space, the site is located to the southwest of the Haven Road/Roscommon Way junction. The site location with the existing transport infrastructure is shown in **Figure 4** below.

Figure 4. GB3 Site Location



Existing Transport Infrastructure

3.3.2 Site GB3 is located approximately 500 metres to the south of the Edith Road Bus Stop, which is comprised of shelter and seating. The 21 and 21C bus services are accessible from this bus stop. These services provide access to Hadleigh and Great Wakering.

Expected Development Impacts

3.3.3 Due to the industrial use-class of this site, the trip generation of the Land South of Charfleets site has not been considered at this time.

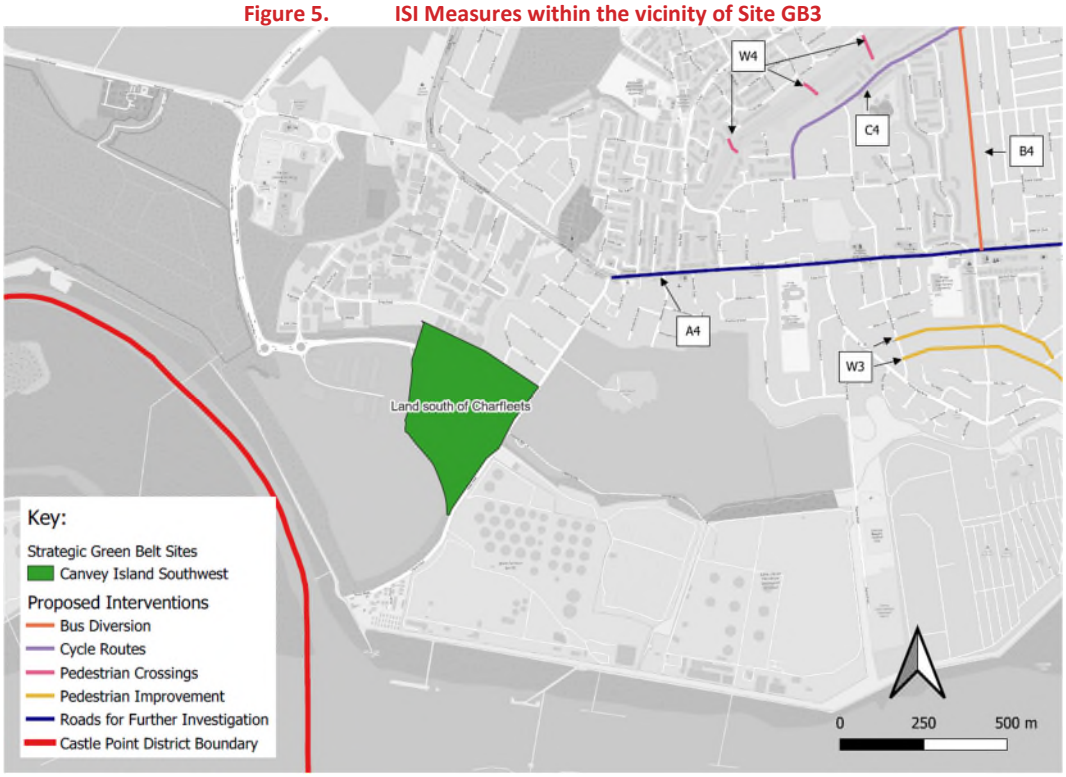
3.3.4 Means of Access

3.3.5 The most likely locations for the main access point for the site (pedestrians, cyclists and vehicles) has been identified and concept design sketches have been prepared (drawing 23H92-SYS-P-XX-103-02 (GB3). The location for this access point has been identified based on available boundaries of the site with the local highway network; this exercise is intended to confirm whether, in principle, an access which conforms with the necessary design guidance (the Essex Highway Design Guide / Manual for Streets) could be delivered; this is the case for site GB3. The final position of the main access (plus the provision of any secondary access points, including those solely for pedestrian and cyclist use) will need to be determined via initial masterplanning work, should the site be taken forward as part of the Local Plan process.

Potential Mitigation Measures

3.3.6 As described in the previous section assessing sites GB1 and GB2, the ISI highlights Long Road as a potential location for upgrading existing pedestrian and cycle facilities where feasible. The closest proposed interventions within the ISI are presented in **Figure 5** below.

Figure 5. ISI Measures within the vicinity of Site GB3



3.3.7 As shown above, there are no currently proposed interventions within close proximity of the Land South of Charfleets site aside from the aforementioned upgrade studies surrounding Long Road; further work is currently being undertaken in connection with the West Canvey broad location site. It is however envisaged that Haven Road would be suitable to serve pedestrian and cycle connectivity to this corridor.

Potential for Modal Shift

3.3.8 Due to the only current proposed upgrade surrounding the site being the proposed upgrades surrounding Long Road, and the intended use of this site primarily for employment uses, it has initially been considered that any discount to the current trip rates for vehicles should be applied to this site for further assessment or modelling purposes would need additional support. Considering the analysis for sites GB1 and GB2, and the further work being undertaken in relation to the West Canvey Broad Location, it is considered that a modest degree of modal shift (i.e. Tier 2) would be achievable. Long Road itself is noted to experience a degree of congestion in the AM and PM peaks in the vicinity of the site, and this should be considered when progressing with the development of any cycling upgrade.

Conclusion

3.3.9 The key conclusions which can be drawn in relation to the site under consideration are summarised in the table below.

Table 7. Site GB3 – Summary of Conclusions

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	Compliant Access achievable in principle	Yes
Sustainability (inherent)	Limited due to scale of development and distance to existing facilities	Not without Mitigation
Sustainability (with potential Mitigation)	Modest level of modal shift (5%) anticipated with provision for walking, cycling and public transport	Yes, with mitigation
Safety	No inherent safety issues, subject to mitigation measures being developed to required standards	Yes
Road Network Residual Impacts (estimated)	Expected to be impacts primarily on A130 corridor which may require mitigation	Yes

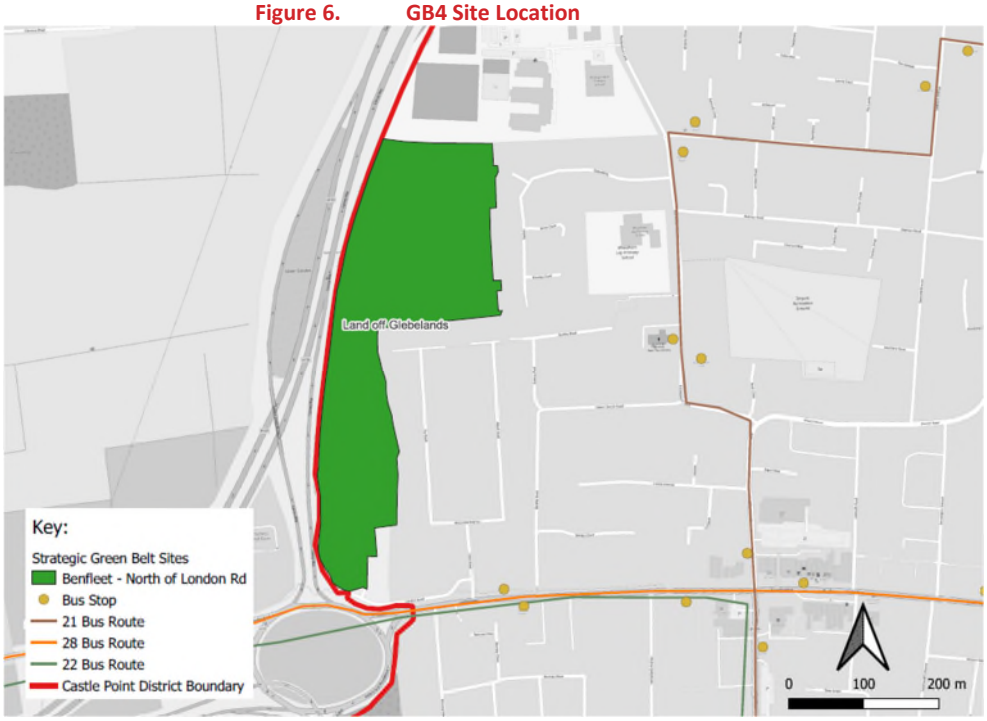
3.3.10 It is therefore considered that, on the basis of the analysis undertaken, the sites could in principle be developed in a manner which would meet the needs of NPPF paragraphs 110 and 115. However this would be subject to further work to determine whether the required mitigation can be funded by the sites, either in a stand-alone capacity or as part of a wider set of proposals incorporating other Local Plan sites (particularly GB1 and GB2 and the West Canvey broad allocation site).

3.4 Benfleet – North of London Road

3.4.1 The Benfleet North of London Road cluster is formed solely of the GB4 site (Land off Glebelands). The site is estimated to have the potential to accommodate 169 dwellings, there is no corresponding employment use-class proposal associated with the site.

3.4.2 The site with its surrounding transport infrastructure is shown in **Figure 6** below.

Figure 6. GB4 Site Location



3.4.3 As shown, the site is served by three bus routes in close proximity; the 21, 22, and 28. The two closest bus stops are located on London Road, to the west of Bartley Road. Both bus stops include bus shelters with seating, and located approximately 300 metres to the east of the site.

3.4.4 Additional bus stops are located along Rushbottom Lane, providing access to the 21 bus route. The bus stops are approximately 550 metres to the east of the site, and include a flag and pole.

3.4.5 The site is located immediately to the north of the A130/A13 Sadlers Farm junction. The baseline modelling work reported in the draft Castle Point Local Plan TA indicates that this junction experiences significant congestion at present; this is supported by Google's traffic data indicating significant congestion and queuing at this location in both peak periods. The future year reference case and "with Local Plan" models indicate that this situation is expected to continue as demand for travel through this junction increases. This appraisal is also made for the adjacent Tarpots junction, which in principle could serve as an alternative access point but would experience similar severe congestion issues.

Expected Development Impacts

3.4.6 The multi-modal trip generation calculations for this site is presented in the table below. This does not account for potential modal shift associated with proposed mitigation measures (discussed below).

Table 8. Site GB4 Trip Generation

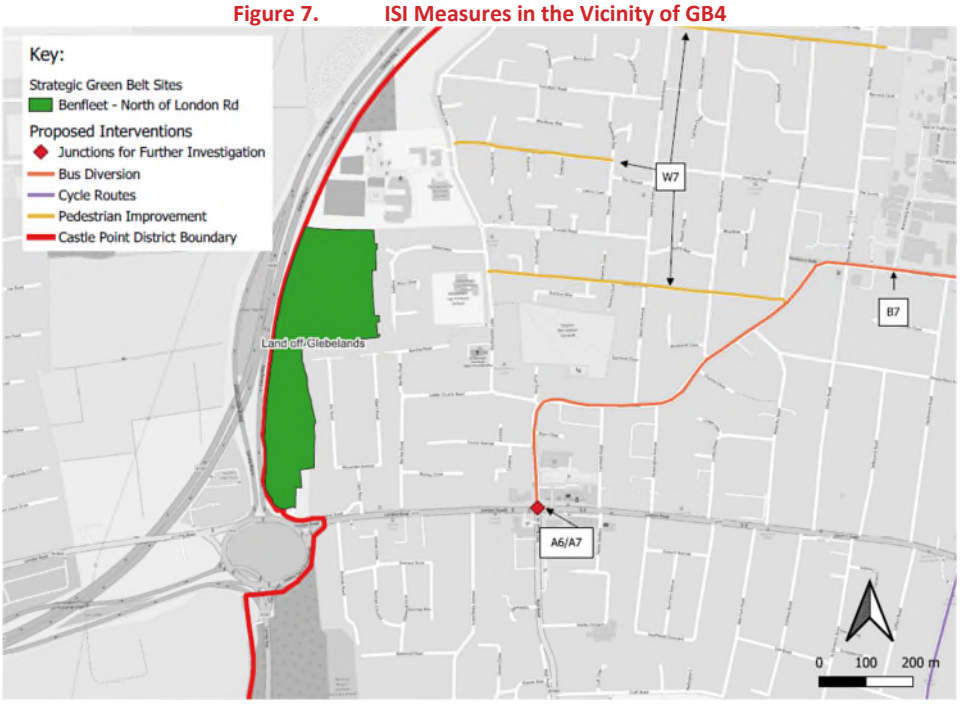
SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land off Glebelands	169	AM Peak	91	80	5	43	4	1
		PM Peak	88	76	4	29	3	1

3.4.7 As shown , the site is predicted to generate up to 80 additional car trips in the AM peak, and 76 in the PM peak.

Potential Mitigation Measures

3.4.8 The relationship of the green belt site with the measures in the ISI are shown geographically in **Figure 7** below.

Figure 7. ISI Measures in the Vicinity of GB4



3.4.9 As shown above, pedestrian improvements are suggested along Woodside Avenue, Eversley Road, and Overton Road (ISI ref. W7), in close proximity to the east of the site. Additionally, the site is in close proximity to the Tarpots Corner junction, which has been previously identified within the ISI as an accident hotspot (ISI ref. A6/A7).

3.4.10 Despite the existing congestion, the proximity of the strategic road networks means that car-based travel is likely to remain an attractive mode for residents at this site. The creation of a genuinely attractive alternative would require substantial investment into new bus routes as diverting or extending existing routes would be difficult given the existing challenges caused by network congestion and the impacts to overall journey time reliability. Walking and cycling

improvements would benefit local journeys but would not realistically be able to significantly reduce demand at the nearby junctions.

3.4.11 The site's distance from the nearest rail station (South Benfleet) means that cycling or bus travel would be the only realistic sustainable options to make a connection for longer-distance trips which would otherwise be made by car. The ISI has identified that introducing material upgrades to High Road for cyclists would be very challenging due to the busy, multi-use nature of the road and the funding of a sufficiently frequent bus service from the quanta of development envisioned would be difficult.

Means of Access

3.4.12 The most likely location for the main access point for the site (pedestrians, cyclists and vehicles) has been identified and concept design sketches have been prepared (drawing 23H92-SYS-P-XX-104-02 (GB4). The location for this access point has been identified based on available boundaries of the site with the local highway network; this exercise is intended to confirm whether, in principle, an access which conforms with the necessary design guidance (the Essex Highway Design Guide / Manual for Streets) could be delivered.

3.4.13 The points of potential connection to this site from the existing highway network are extremely limited, as they lie at the ends of small residential cul-de-sacs. Dimensions of the available road widths are included on drawing 23H92-SYS-P-XX-104-02 (GB4) to demonstrate this for the location considered to be least constrained. The amount of additional traffic which would need to pass through these small streets to reach the site is a significant concern with no obvious means of mitigation. It is also questionable whether suitable access could be provided for larger vehicles, including refuse collection and similar servicing. The site is also considered too isolated and small to support any bus service penetration.

3.4.14 Notwithstanding the above, the final position of the main access (plus the provision of any secondary access points, including those solely for pedestrian and cyclist use) will need to be determined via initial master planning work, should the site be taken forward as part of the Local Plan process.

Potential for Modal Shift

3.4.15 As described, whilst a series of upgrades have been identified within the ISI which emphasise active travel, due to the location of the site along the strategic road network, the principal mode of travel is unlikely to shift significantly away from private car. This is exasperated by the complexity of upgrading High Road immediately to the south of the site, due to the busy, multi-use nature of the road. As such, it is not considered that there is evidence to support a future reduction in car trip rates from the baseline (Tier 2) Scenario. The Tier 2 ranking for the site in its current state is based on the surrounding area and its existing services; however expected modest reduction from the baseline trip rates is not considered to be sufficient to overcome the other issues which have been identified.

Conclusion

3.4.16 The key conclusions which can be drawn in relation to the site under consideration are summarised in the table below.

Table 9. Site GB4 – Summary of Conclusions

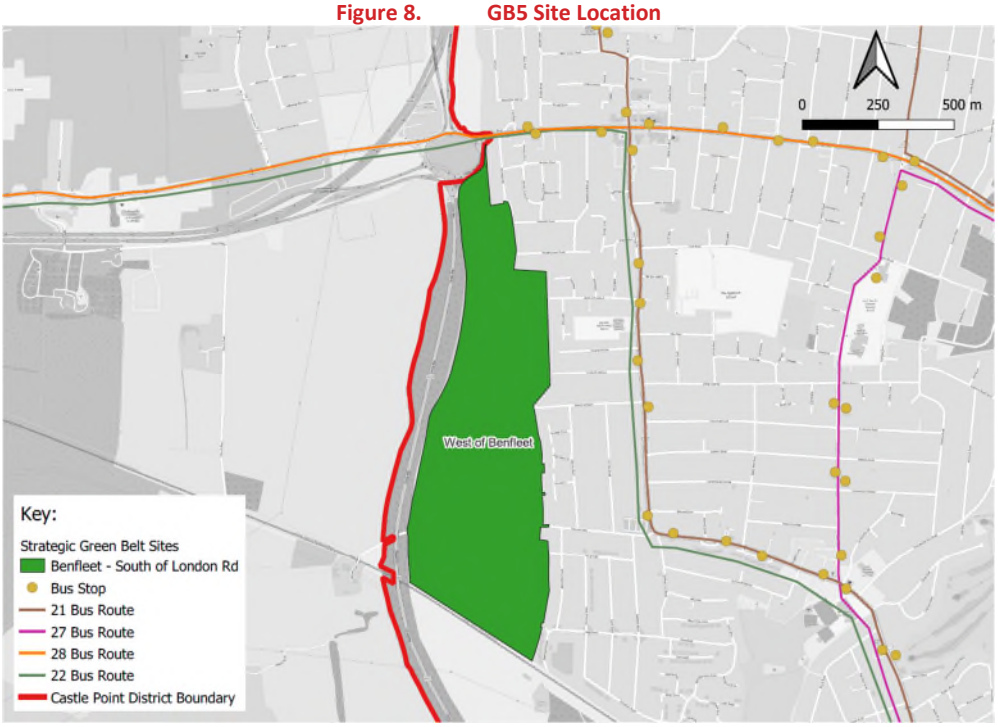
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	No direct access to distributor road; high volumes of traffic would have to use existing residential streets	No
Sustainability (inherent)	Modest sustainability due to services in surrounding area, but bus access would be poor	No
Sustainability (with potential Mitigation)	Limited potential for meaningful mitigation measures	No
Safety	Substantially increased traffic on local residential streets is a major concern	No
Road Network Residual Impacts (estimated)	Substantial traffic would be added to A13 corridor, Sadlers Farm and Tarpots junctions; very limited scope for capacity increases	No

3.4.17 It is therefore considered that, on the basis of the analysis undertaken, the sites could not be developed in a manner which would meet the needs of NPPF paragraphs 110 and 115.

3.5 Benfleet – South of London Road

3.5.1 The Benfleet, South of London Road cluster is comprised only of site GB5 (West of Benfleet). This is located immediately to the south of the previously described site GB4, with London Road to the north and Canvey Way to the west. The site is estimated to have the potential to accommodate 1,308 dwellings, its location with surrounding transport infrastructure is shown in **Figure 8** below.

Figure 8. GB5 Site Location



3.5.2 Similarly to site GB4, three bus routes are available in close proximity to the site, the 21, 22 and 28. There are two bus stops located adjacent to the site on London Road, to the west of Bartley Road. Both bus stops include bus shelters with seating. These are located approximately 300 metres to the east of the site.

3.5.3 Additional bus stops are located along High Road, providing access to the 21 and 22 bus routes. The bus stops are approximately 400 metres to the east of the site, and include shelter and seating.

3.5.4 The site is located in close proximity to the A130 Canvey Way/Jotmans Lane and the A130/A13 Sadlers Farm junctions. As is also discussed in relation to the Northwest Thundersley site, both junctions have been previously tested in the 2033 Reference Case scenario, the A130/A13 Sadlers Farm reported “Green” across both AM and PM peaks, whereas the A130 Canvey Way/Jotmans Lane reports “Green” in the AM peak, but “Amber” in the PM peak. However, more recent discussions with ECC Highways have indicated that increasing demand at these locations is leading to greater levels of delay .This is further evidenced by Google traffic data indicating significant congestion and queuing at these junctions in both peak periods.

3.5.5 Three further previously tested junctions are located along High Road, with the Tarpots Corner, B1006 High Road/Jotmans Lane, and B1006 High Road/Wavertree Road all in close proximity. The B1006 High Road/Jotmans Lane and B1006 High Road/Wavertree Road report “Green” RAG ratings across both AM and PM peaks, whereas the Jotmans Corner junction shows a ”Red” RAG rating across both AM and PM peaks indicating substantial queuing and delay are experienced at this junction.

Expected Development Impacts

3.5.6 The multi-modal trip generation for the site is shown in **Table 10** below. This does not account for the potential modal shift associated with mitigation measures.

Table 10. Site GB5 Trip Generation

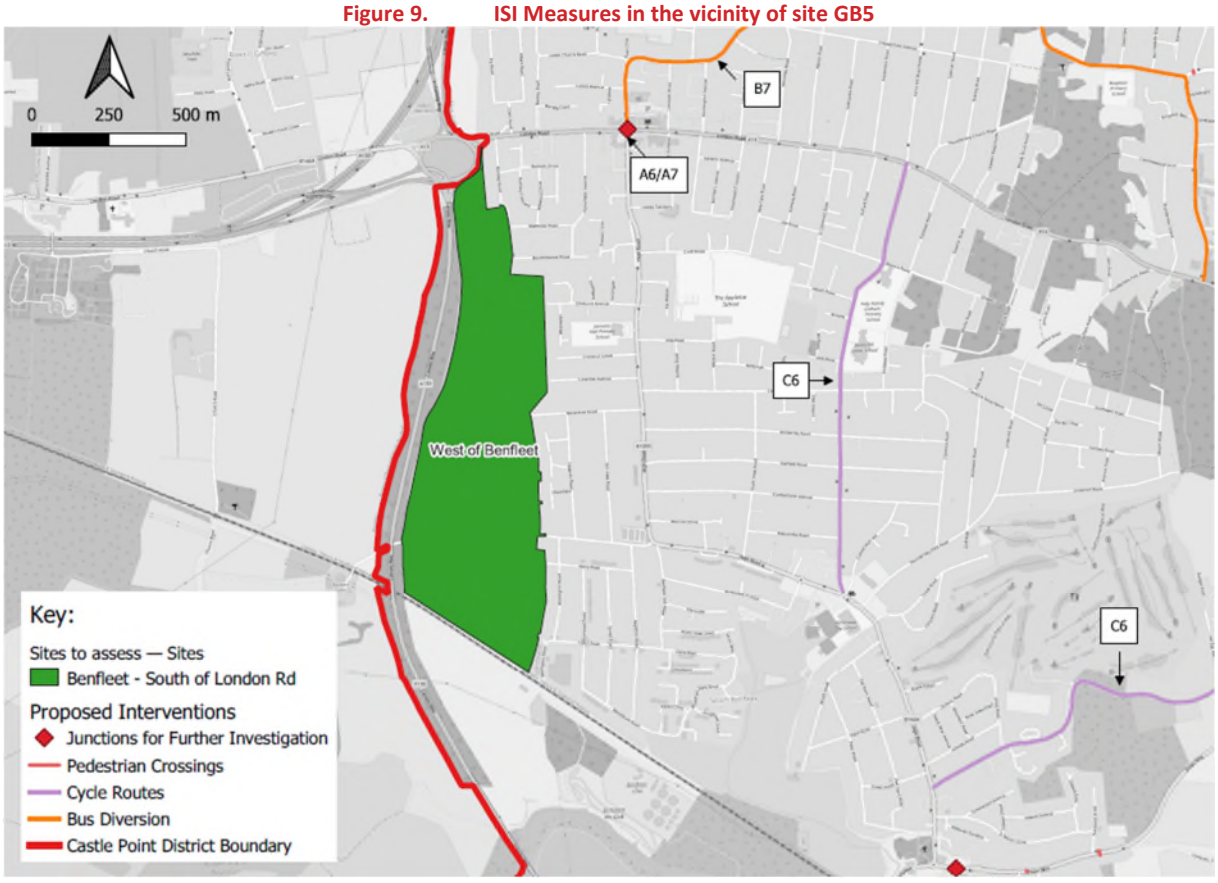
SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land West of Benfleet (Jotmans)	1308	AM Peak	703	619	34	325	33	9
		PM Peak	679	589	28	219	34	5

3.5.7 As shown above, due to the scale of the site, the West of Benfleet site is anticipated to generate up to 619 additional car trips in the AM peak, and 589 in the PM peak. There is the potential for up to 325 pedestrian trips in the AM peak and 219 in the PM peak. This indicates an opportunity for promoting further trips to be undertaken by active modes.

Potential Mitigation Measures

3.5.8 The relationship of the green belt site to the ISI measures is shown geographically in **Figure 9** below.

Figure 9. ISI Measures in the vicinity of site GB5



3.5.9 Whilst interventions such as cycle upgrades are proposed along Kents Hill Road (ISI ref C6), it is shown that these are not in close proximity to the site, located approximately 1.1km to the east.

3.5.10 Similarly to site GB4, the proximity to the strategic road network is likely to create significant issue for the West of Benfleet development, with car-based travel likely to still remain as a dominant mode of travel to and from the site.

Means of Access

3.5.11 The most likely location for the main access point for the site (pedestrians, cyclists and vehicles) has been identified and concept design sketches have been prepared (drawing 23H92-SYS-P-XX-105-01 (GB5). The location for this access point has been identified based on available boundaries of the site with the local highway network; this exercise is intended to confirm whether, in principle, an access which conforms with the necessary design guidance (the Essex Highway Design Guide / Manual for Streets) could be delivered.

3.5.12 In a very similar manner to site GB4, the points of potential connection to this site from the existing highway network are extremely limited, as they almost exclusively lie at the ends of small residential cul-de-sacs. The most likely point of connection is to Jotmans Lane; this small road crosses Site GB5 but is of extremely limited dimension, as shown on drawing 23H92-SYS-P-XX-105-01 (GB5). The amount of additional traffic which would need to pass through the surrounding streets to reach the site is a very significant concern with no obvious means of mitigation (a site of this size would be expected to have multiple points of vehicular access, but all are subject to constraints similar to, or worse than, those shown on drawing 23H92-SYS-P-XX-105-01 (GB5); the impacts of this traffic on potential measures to support sustainable transport would be difficult to address. It is also questionable whether suitable access could be provided for larger vehicles, including refuse collection and similar servicing. The site is also considered too isolated and small to support any bus service penetration.

3.5.13 The site promoter has additionally proposed that a direct access could be provided from the adjacent A130. A “full” access (i.e. allowing all movements) would create a number of major technical issues, in terms of the separation of any access from the Sadlers Farm Roundabout and the creation of additional delay to traffic using the A130 to travel to and from Canvey Island. (Even if the access were to be placed at the southern end of site GB5, the data from the strategic model indicates that queues at Sadlers Farm would potentially extend back to this point in the peak hours and a similar impact is likely to be observed at the new junction with queues extending back toward Sadlers Farm roundabout itself. As a roundabout junction would be required, the A130 would need to be realigned to enable the whole of the roundabout to be accommodated within the site; this would have the effect of “sterilising” most or all of the land to the west of the re-aligned carriageway, and reducing the corresponding capacity of the site.

3.5.14 A simpler “left in, left out” junction would be more feasible from a technical perspective and would require less land. However, the additional journey time for vehicles wishing to travel north would be considerable, given the current and expected congestion at the A130 Canvey Way roundabout to the south which vehicles would have to use to access the northbound A130 carriageway. Traffic approaching from the south would similarly need to circulate around the Sadlers Farm roundabout to access the site from this location and negotiate the congestion at this junction, as well as adding directly to it. In practice, a substantial volume of

trips (primarily those seeking to head east) would not use this junction but would instead seek to travel via the established residential streets as described above.

3.5.15 It cannot therefore be ascertained at present whether any form of junction directly with the A130 would be acceptable in either technical or policy terms.

3.5.16 Notwithstanding the above, the final position of the main access (plus the provision of any secondary access points, including those solely for pedestrian and cyclist use) will need to be determined via initial master planning work, should the site be taken forward as part of the Local Plan process.

Potential for Modal Shift

3.5.17 As is the case with site GB4, due to the location of the site along the strategic road network and the other identified constraints to provision of attractive alternatives, the primary mode of travel surrounding it is unlikely to shift significantly away from car. This is furthered by the complexity of upgrading High Road to the east of the site to provide a step-change in provision for sustainable modes. Additionally, the site is not in close proximity to any of the currently proposed schemes within the ISI.

Conclusion

3.5.18 The key conclusions which can be drawn in relation to the site under consideration are summarised in the table below.

Table 11. Site GB5 – Summary of Conclusions

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	No direct access is considered to be feasible at present to the adjacent distributor road; high volumes of traffic would have to use existing residential streets	No
Sustainability (inherent)	Modest sustainability due to services in surrounding area, but bus access would be poor	No
Sustainability (with potential Mitigation)	Limited potential for meaningful mitigation measures	No
Safety	Substantially increased traffic on local residential streets is a major concern	No

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Road Network Residual Impacts (estimated)	Substantial traffic would be added to A13 corridor, Sadlers Farm and Tarpots junctions; very limited scope for capacity increases	No

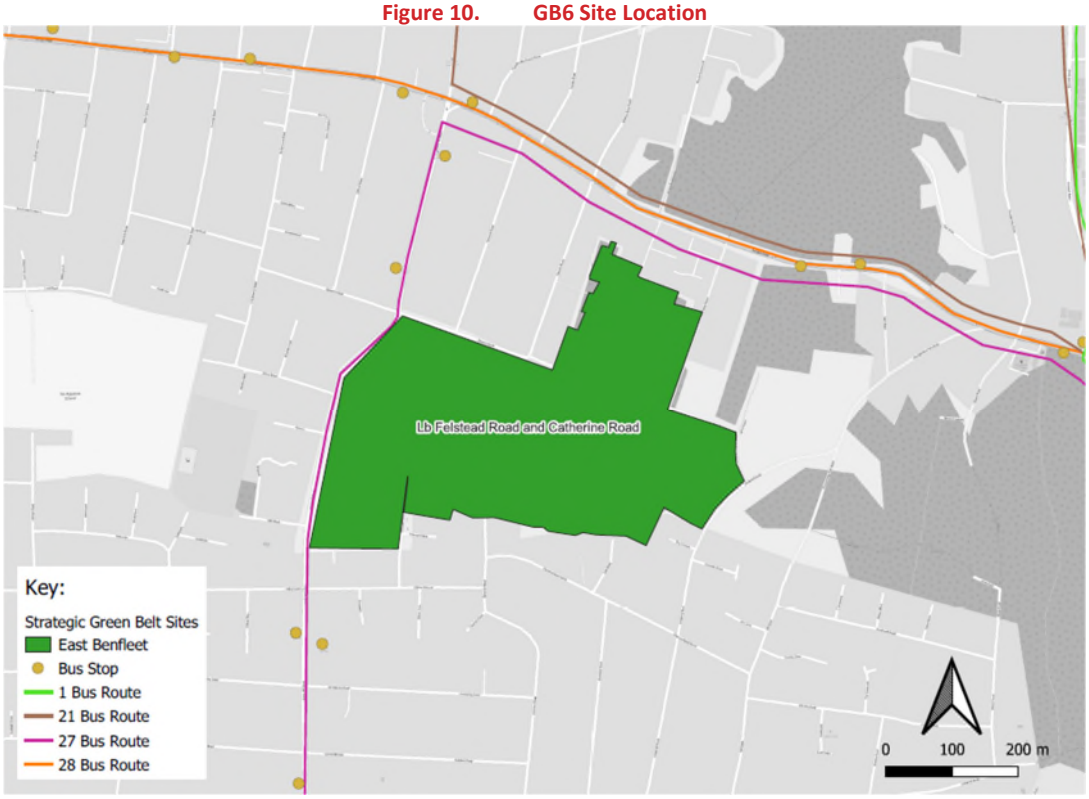
3.5.1 It is therefore considered that, on the basis of the analysis undertaken, the sites could not be developed in a manner which would meet the needs of NPPF paragraphs 110 and 115.

3.6 East Benfleet

3.6.1 Figure 10 below shows the green belt site (GB6) located within the East Benfleet cluster area. The site is known as Land bordering Felstead Road and Catherine Road, and has an estimated capacity of 159 dwellings.

3.6.2 The site covers the current locations of the Kents Hill Junior School and Holy Family Catholic Primary School, and its location and surrounding transport infrastructure is shown in **Figure 10** below.

Figure 10. GB6 Site Location



Existing Transport Infrastructure

3.6.3 As indicated in the figure above, three bus routes are accessible within the immediate vicinity of the site; the 21, 27, and 28, providing access to Canvey, Basildon, Southend and Hadleigh. The 27 bus route runs north-south along the western boundary of the site, and all three aforementioned services run east-west along A13 London Road to the north of the site.

3.6.4 Two bus stops are located in the immediate vicinity of the site on its northwestern corner along Kents Hill Road. These are served by the 27 bus route. The southbound bus stop includes bus caging, shelter and seating, whereas the northbound stop includes bus caging and a flag and pole. Two bus stops are located approximately 300m to the east of the site. The westbound bus stop is comprised of a bus shelter, seating, flag and pole, and bus caging, whereas the eastbound stop is comprised of a bus shelter, flag and pole, and bus caging.

3.6.5 The site lies approximately 300m to the south of the London Road/Kents Hill Road junction and approximately 450m to the southwest of the A13 London Road/Kenneth Road junction. The London Road/Kents Hill Road junction to the west is indicated to have moderate levels of congestion in the CPP TA baseline reference case, whereas the A13 London Road/Kenneth Road junction demonstrates significant queuing and delay in the AM and PM peaks across all modelled scenarios. At the A13 London Road/Kents Hill Road, Additionally, Google Maps data indicates significant vehicular slowdown on the Kents Hill Road northbound entry into the junction, with minimal congestion indicated elsewhere on the local network.

Expected Development Impacts

3.6.6 The anticipated trip generation from the Land Between Felstead Road and Catherine Road site is shown in **Table 12** below.

Table 12. Site GB6 Trip Generation

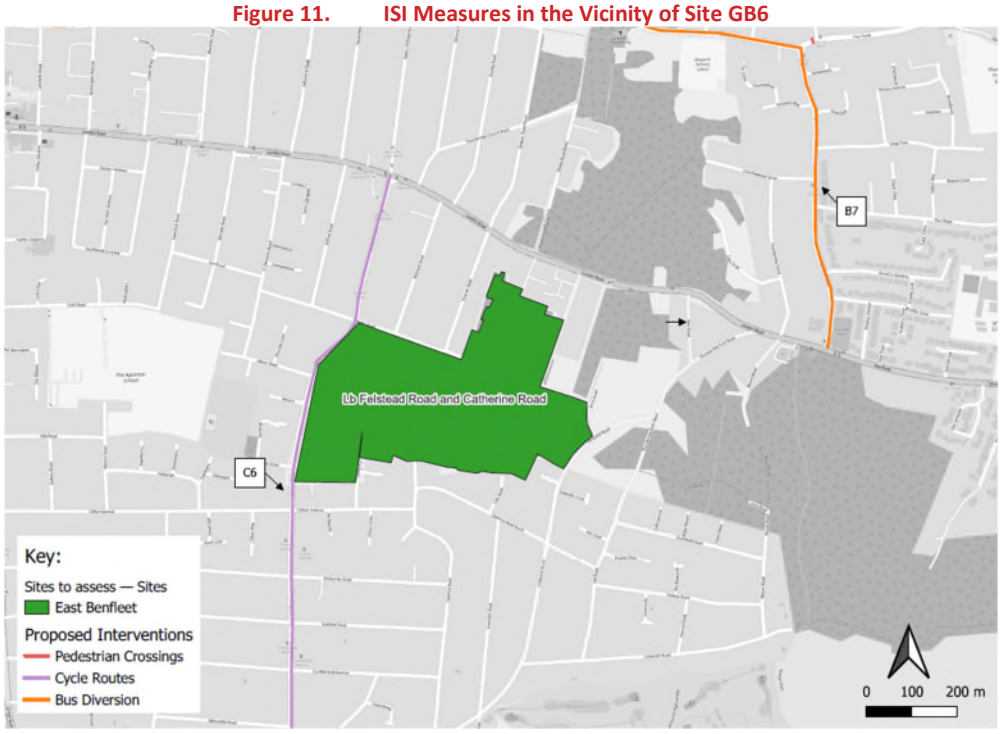
SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land Between Felstead Road and Catherine Road	159	AM Peak	85	75	4	40	3	1
		PM Peak	83	72	4	26	3	1

3.6.7 As shown, the site is anticipated to generate a maximum of 75 private car trips in the AM peak.

Potential Mitigation Measures

3.6.8 The relationship of this site to the ISI measures is shown geographically in **Figure 11** below.

Figure 11. ISI Measures in the Vicinity of Site GB6



3.6.9 Within SYSTRA's Initial Schedule of Interventions, the site is located immediately east of the proposed cycle route north-south along the Kents Hill Road. This is proposed to improve cycle accessibility between London Road to the north, and the Benfleet Station area to the south, ending at High Road (ISI ref. C6).

Means of Access

3.6.10 The most likely locations for the main access point for the site (pedestrians, cyclists and vehicles) has been identified and concept design sketches have been prepared (drawing 3H92-SYS-P-XX-106-01 (GB6). The location for this access point has been identified based on available boundaries of the site with the local highway network; this exercise is intended to confirm whether, in principle, an access which conforms with the necessary design guidance (the Essex Highway Design Guide / Manual for Streets) could be delivered; this is the case for site GB6. The final position of the main access (plus the provision of any secondary access points, including those solely for pedestrian and cyclist use) will need to be determined via initial master planning work, should the site be taken forward as part of the Local Plan process.

Potential for Modal Shift

3.6.11 The proposed upgrade of the cycle routing along Kents Hill Road to the west of the site as proposed within the ISI is shown to be possible with the widening of the road. Combined with internal measures to be developed as part of the masterplan it is considered that a moderate reduction in car trips (Tier 2 as evidenced by the main assessment table) would be expected as a result of the proposed improvements.

Conclusion

3.6.12 The key conclusions which can be drawn in relation to the site under consideration are summarised in the table below.

Table 13. Site GB6 – Summary of Conclusions

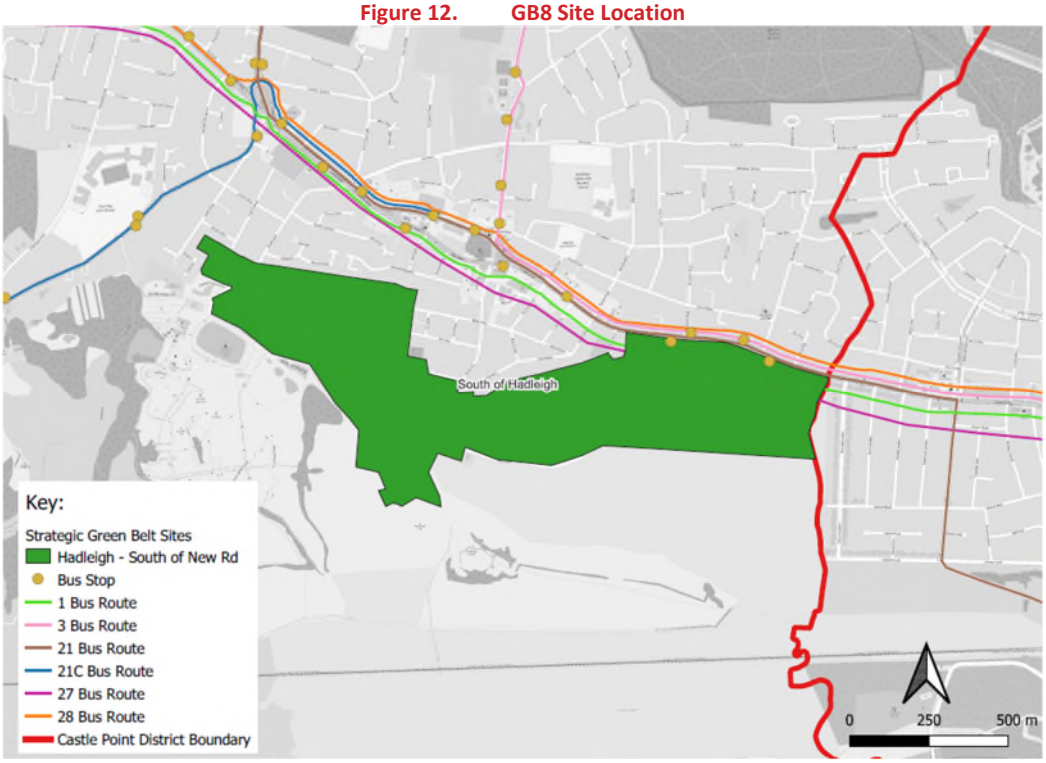
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	A compliant access is considered to be achievable in principle	Yes
Sustainability (inherent)	Compatible with a modest reduction in car trip rates from the baseline position	Yes
Sustainability (with potential Mitigation)	Some improvement but not likely (in isolation) to result in a material change	Yes
Safety	Connects to local and distributor routes; some impact from increased car trips but this would not be expected to result in a material change to safety (ISI may improve safety matters slightly)	Yes
Road Network Residual Impacts (estimated)	Scale of development for this site in isolation would not be expected to create significant residual impacts	Yes

3.6.13 It is therefore considered that, on the basis of the analysis undertaken, the site could in principle be developed in a manner which would meet the needs of NPPF paragraphs 110 and 115. However this would be subject to further work to determine whether the required mitigation can be funded by the sites, either in a stand-alone capacity or as part of a wider set of proposals incorporating other Local Plan sites.

3.7 Hadleigh – South of New Road

3.7.1 The Hadleigh South of New Road (GB8) green belt area is displayed in **Figure 12** below. The site is estimated to have the potential to provide up to 954 dwellings. As shown the site is bordered by High Road to the north, and Hadleigh Castle Country Park to the south.

Figure 12. GB8 Site Location



Existing Transport Infrastructure

3.7.2 As indicated in the figure above, four bus stops are located adjacent to the site's northeastern border. All four bus stops have shelters, seating, and caging, and 3 stops also have a flag pole.

3.7.3 Five bus routes route along A13 London Road along the development site's northern perimeter. These bus routes are the 1, 3, 21, 27 and 28. Additionally, the 21C is accessible a short distance to the northwest from the Morrisons Bus Stop, approximately 700 metres to the northwest of the site. These bus routes provide access to Basildon, Canvey, Chelmsford, and Southend.

3.7.4 The site is in close proximity to the identified key junctions of London Road/New Road/Chapel Lane, and London Road/Rectory Road (Hadleigh Gyratory North and South arms). available Google traffic data indicates some congestion across both of these junctions in both AM and PM peaks and this is reflected in the baseline and reference case modelling undertaken to inform the CPP TA.

3.7.5 Additionally, the Vic House Corner junction (A129 Rayleigh Road/A13 London Road/A13 Kiln Road/Benfleet Road) is located approximately 550 metres to the north of the site. It is noted that Google traffic data indicates some existing congestion at the entry to the circulatory across all arms in both AM and PM peaks, which again is reflected in the CPP modelling work.

Expected Development Impacts

3.7.6 The multi-modal trip generation for the South Hadleigh site is indicated in **Table 14** below.

Table 14. GB8 Site Trip Generation

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land South of Hadleigh	954	AM Peak	465	404	31	271	30	7
		PM Peak	452	384	24	195	27	4

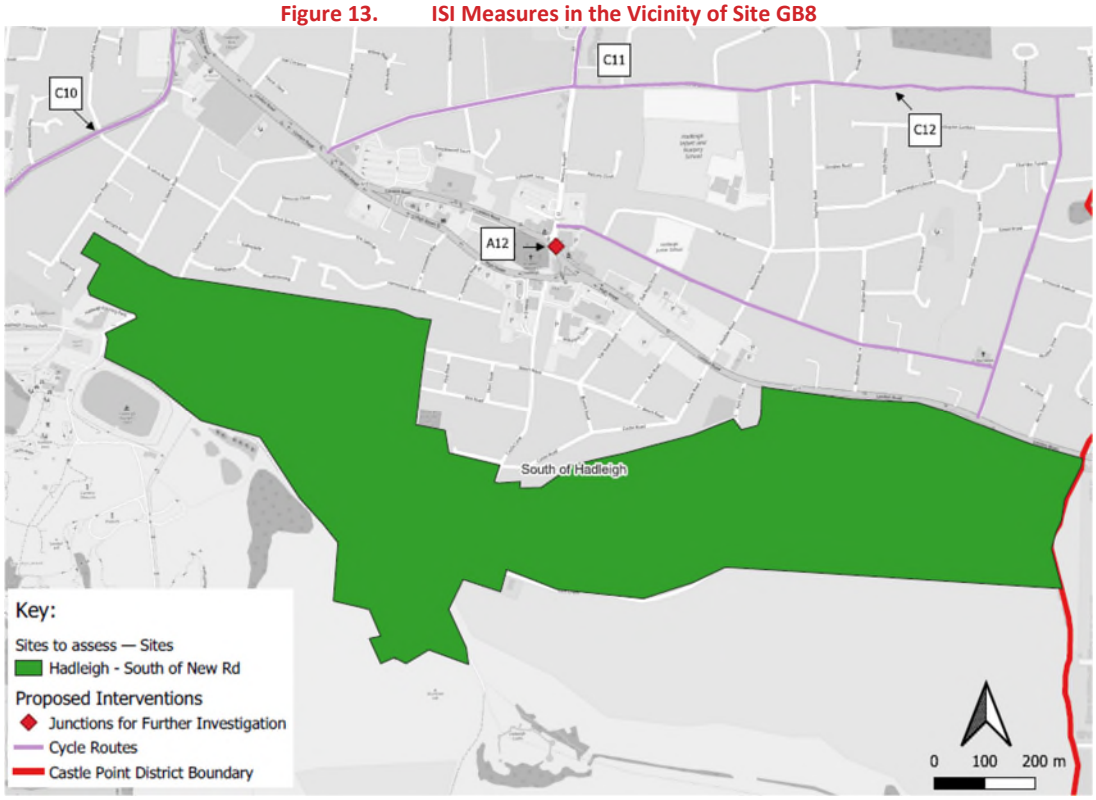
3.7.7 As indicated above, due to the significant scale of the site, up to 404 additional private car trips are anticipated in the AM peak, and 384 in the PM peak. Additionally, 271 pedestrian trips are anticipated in the AM peak and 195 in the PM peak. This indicates some potential to encourage additional modal shift toward active modes.

Potential Mitigation Measures

3.7.8 Within SYSTRA's proposed Initial Schedule of Interventions, potential mitigation is identified to the west of the site, through proposed cycle routes located east and northbound along Church Road/Woodfield Road, and southwest-bound along Scrub Lane/New Road (ISI ref. C12).

3.7.9 The location of the site in relation to the ISI measures is shown geographically in **Figure 13** below.

Figure 13. ISI Measures in the Vicinity of Site GB8



3.7.10 Connections between the site and the A13 London Road will require additional consideration if the site is to be taken forward in the Local Plan; additional cycle connections would need to be identified to connect existing and potential future routes, however general site connectivity via the existing network is considered to be good.

3.7.11 Access to the bus stops on A13 London Road from the southernmost areas of the site is a potential constraint on of bus usage by future residents of this part of the site – this is discussed further below.

Means of Access

3.7.12 The most likely locations for the main access point for the site (pedestrians, cyclists and vehicles) has been identified and concept design sketches have been prepared (drawing 3H92-SYS-P-XX-108-01 (GB8). The location for this access point has been identified based on available boundaries of the site with the local highway network; this exercise is intended to confirm whether, in principle, an access which conforms with the necessary design guidance (the Essex Highway Design Guide / Manual for Streets) could be delivered; this is the case for site GB8 (it is noted that some re-arrangement will be required for the existing bus stops on the A13 London Road). The final position of the main access (plus the provision of any secondary access points, including those solely for pedestrian and cyclist use) will need to be determined via initial master planning work, should the site be taken forward as part of the Local Plan process.

3.7.13 It is recognised that there are other constraints in regards to the part of the site identified as most suitable for access, most notably in regards to the current parkland provision and ecological matters. Those parts of the site closest to Chapel Lane and Castle Lane (Plots A, B and D) could potentially be served with much smaller access points where the plot frontage aligns with these roads; however, both of these roads are single carriageway residential streets with on-street parking and narrow sections, and there is no real scope to expand the capacities of the junctions of Chapel Lane and Castle Lane with the A13 corridor. Therefore, even if both of these potential access points were brought forward it is not currently anticipated that there would be enough capacity to allow the whole of the proposed site to be served for access in this manner. (The constraints of Chapel Lane and Castle Lane would additionally present challenges for securing suitable bus access).

3.7.14 There remain, therefore, significant concerns over serving the whole of the proposed site without direct access to the A13 corridor.

Potential for Modal Shift

3.7.15 While it is noted that the site is located to the south of London Road, the wider proposals for cycle infrastructure to the north and west of the site could encourage modal shift towards active travel. North-south cycle routing along Woodfield Road could increase permeability to the northeast of the borough, whilst the proposed southwest-northeast routing along Benfleet Road is to improve accessibility to Benfleet Station. However, the distances to be travelled by these modes mean that, in practice, it is not presently considered that these would be sufficient to create a meaningful shift away from the baseline (Tier 3) assumptions.

3.7.16 With regard to the comments previously made in relation to public transport improvements, it is considered that this site would stand to benefit significantly from improved bus access including access into and through the site. However, this would need to be carefully considered against any potential disruption to, or competition with, established bus routes on the adjacent A13 corridor.

Conclusion

3.7.17 The key conclusions which can be drawn in relation to the site under consideration are summarised in the table below.

Table 15. Site GB8 – Summary of Conclusion

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	A compliant access (from a design perspective) is achievable from the A13. However, other constraints may make this difficult to achieve.	Not yet clear
Sustainability (inherent)	Limited due to site location and distance required to reach existing services.	Not without Mitigation
Sustainability (with potential Mitigation)	Limited if only walking, cycling and internalisation are considered. A comprehensive bus strategy could present significant improvements.	Yes, but subject to further PT and Access work
Safety	No significant existing concerns	Yes
Road Network Residual Impacts (estimated)	Impacts to the A13 corridor would require careful consideration, there are concerns over the ability of Chapel Road to carry the necessary traffic without some form of direct access to the A13.	Dependent on access arrangements

3.7.18 It is therefore considered that, at present, further work would be required to examine alternative access strategies for the site before firm recommendations can be made. On this basis, at present it is not possible to demonstrate that the site could be developed in compliance with the requirements of NPPF Paragraphs 110 and 115.

3.8 Hadleigh – Oak Tree Farm

3.8.1 The Oak Tree Farm region of Hadleigh is comprised solely of the Oak Tree Farm site (GB9). This is located to the east of Daws Heath Road, immediately to the east of Central Avenue. The site location is indicated in **Figure 14** below.

Figure 14. GB9 Site Location

Existing Transport Infrastructure

3.8.2 As indicated above, the No. 3 bus route is accessible approximately 400m to the southwest of the site. The bus stop includes a flag and pole.

3.8.3 The nearest previously assessed road junction to the site is the Rectory Road/Scrub Lane/New Road junction approximately 600m to the south of the site, which received a "Green" rating across both AM and PM peaks in the 2033 Reference Case testing. This indicates that the local road network within the 2033 Reference Case performs without significant delay; the available traffic data from google maps indicates no significant delays in the AM peak with some minor delays in the PM peak.

Expected Development Impacts

3.8.4 The multi-modal trip generation for the site is indicated in **Table 16** below.

Table 16. GB9 Site Trip Generation

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Oak Tree Farm	71	AM Peak	40	35	2	16	1	0
		PM Peak	39	34	1	11	1	0

3.8.5 As indicated above, the site is anticipated to generate up to 35 additional private car trips in the AM peak and 34 in the PM peak.

Potential Mitigation Measures

3.8.6 As part of SYSTRA's proposed Schedule of Interventions, a series of potential mitigation measures have been identified along Daws Heath Road. These are indicated in **Figure 15** below.

Figure 15. ISI Measures in the Vicinity of Site GB9

3.8.7 As indicated above, the site is in located approximately 450m to the northeast of the proposed cycle routing along Daws Heath Road. This improves connectivity towards London Road to the south.

Means of Access

3.8.8 The most likely locations for the main access point for the site (pedestrians, cyclists and vehicles) has been identified and concept design sketches have been prepared (drawing 23H92-SYS-P-XX-109 (GB9). The location for this access point has been identified based on available boundaries of the site with the local highway network; this exercise is intended to confirm whether, in principle, an access which conforms with the necessary design guidance (the Essex Highway Design Guide / Manual for Streets) could be delivered.

3.8.9 The main point of access to the site would be via an extension of Poors Lane. At the point where the site abuts the highway, Poors Lane becomes a very narrow track which currently serves (presumably strictly limited) vehicular access to the adjacent nature reserve. As is shown on the drawing, this route could be extended and upgraded, but this would impact upon the existing pedestrian and cycle access to the reserve area. Care will need to be taken to ensure that the provision of access on to Poors Lane does not damage the adjacent areas (and alternative provision will need to be made to the existing turning area presumably used by refuse and other large vehicles). It is also recognised that Poors Lane to the west of the site is a residential street; however, the proposed number of new dwellings (71) is not considered to be so high as to be unreasonable to serve via this route.

3.8.10 Notwithstanding this, the final position of the main access (plus the provision of any secondary access points, including those solely for pedestrian and cyclist use) will need to be determined via initial masterplanning work, should the site be taken forward as part of the Local Plan process.

Potential for Modal Shift

3.8.11 Due to the relatively wide and smooth surfacing of Daws Heath Road and its general proximity to the site, it is considered that a modest modal shift toward cycling is realistic. The pedestrian crossings proposed across Daws Heath Road also encourage active travel. However, the small size of the site means that, in isolation, it is not likely to achieve any significant internalisation of trips. As such it is considered that the site would remain in Tier 3 with regards to the modal shift assumptions.

Conclusion

3.8.12 The key conclusions which can be drawn in relation to the site under consideration are summarised in the table below.

Table 17. Site GB9 – Summary of Conclusions

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	Possible in principle but subject to further assessment of impacts to Poors Lane	Possible but not confirmed

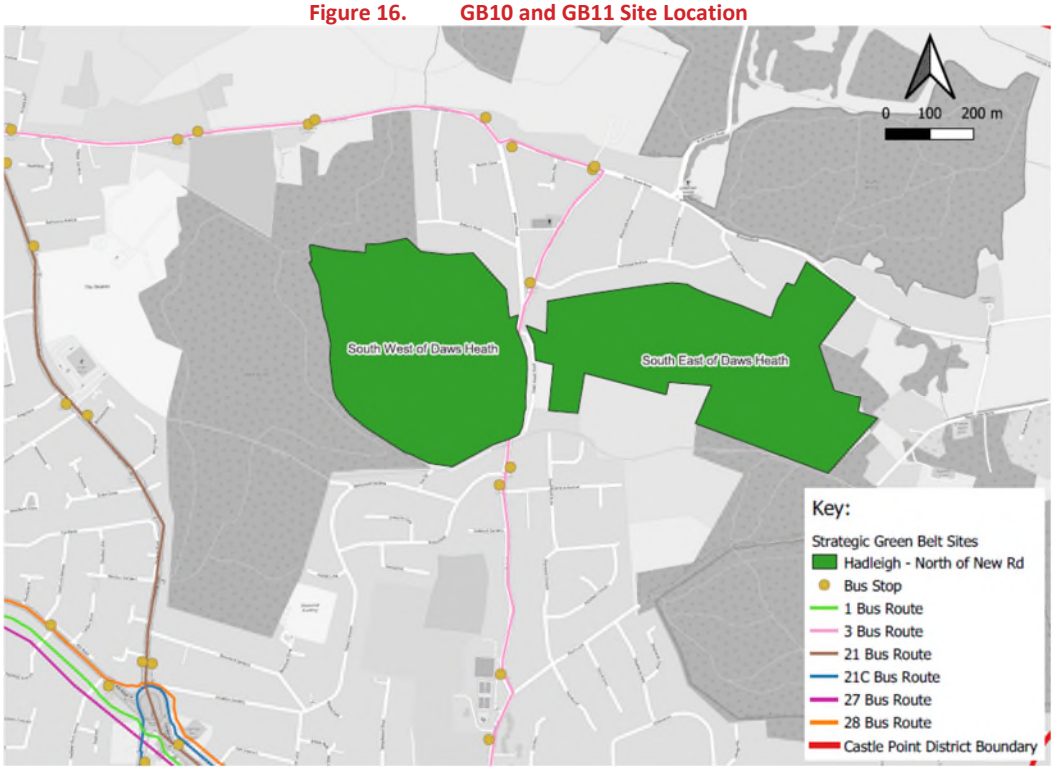
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Sustainability (inherent)	Small site but with good connectivity to existing walking and cycle networks	Yes
Sustainability (with potential Mitigation)	Potential for local improvements (not sufficient for a step-change in mode choice, but sufficient for purposes of NPPF)	Yes
Safety	Impacts of additional traffic on Poors Lane and surrounding narrow residential streets requires further analysis	Possible but not confirmed
Road Network Residual Impacts (estimated)	Main impacts to Daws Heath Road – unlikely to be material in case of site in isolation	Yes (but wider cumulative impacts need additional consideration)

3.8.13 It is therefore considered that, on the basis of the analysis undertaken, the site could in principle be developed in a manner which would meet the needs of NPPF paragraphs 110 and 115. However this would be subject to further work to determine whether a suitable form of access can be achieved from Poors Lane, and that the required mitigation can be funded by the sites, either in a stand-alone capacity or as part of a wider set of proposals incorporating other Local Plan sites.

3.9 Hadleigh – North of New Road

3.9.1 Located a short distance to the north of the Oak Tree Farm site, the Hadleigh North of New Road cluster is comprised of 1,056 dwellings, split across two adjacent sites (GB10 and GB 11). The existing surrounding transport infrastructure is indicated in **Figure 16** below.

Figure 16. GB10 and GB11 Site Location



Existing Transport Infrastructure

3.9.2 As indicated above, the 3 bus route is accessible between the two sites, along Daws Heath Road. The Central Avenue bus stop is located between the two sites, and includes a shelter with flag and pole.

Expected Development Impacts

3.9.3 The multi-modal trip generation for the sites is indicated in **Table 18** below.

Table 18. GB10 and GB11 Trip Generation

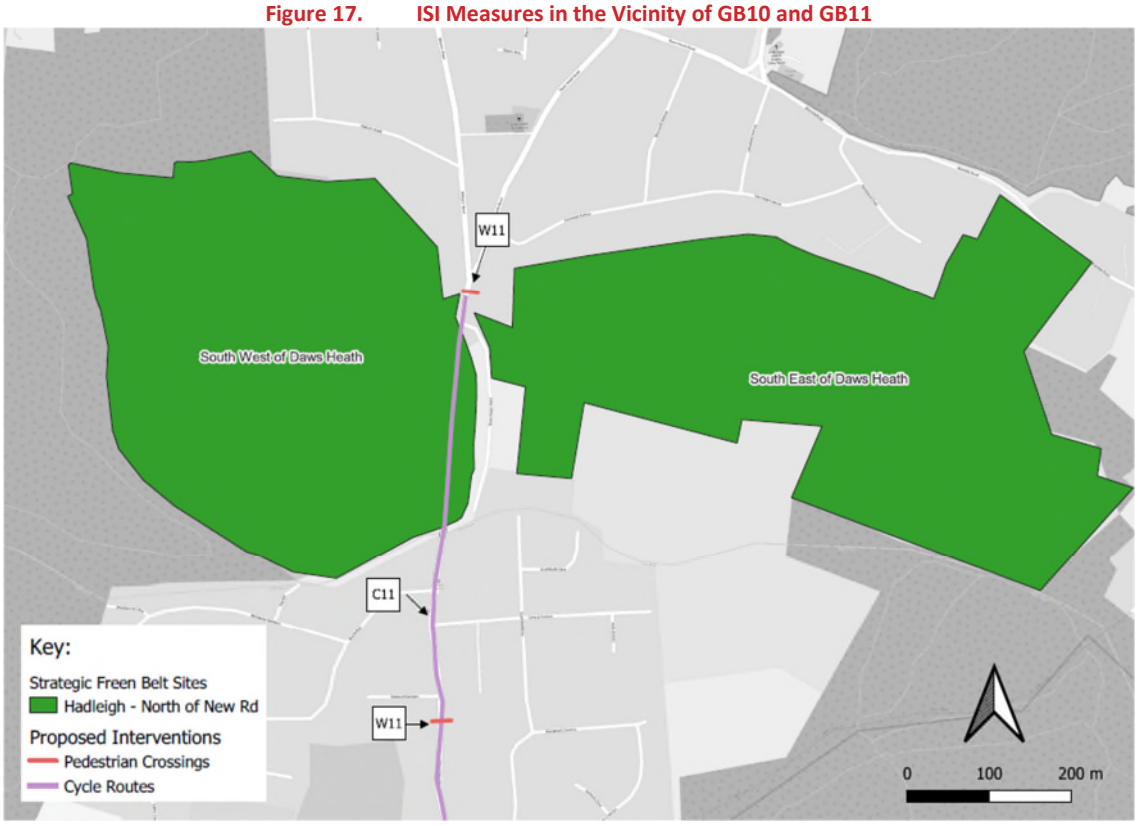
SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land South East of Daws Heath (Brook Farm)	539	AM Peak	290	255	15	133	13	4
		PM Peak	281	243	11	91	12	2
Land South West of Daws Heath (Solby Wood)	517	AM Peak	279	245	13	130	13	4
		PM Peak	269	233	11	87	12	2

3.9.4 As indicated above, both sites are predicted to generate a significant number of private car trips onto the local road network, with the Land South East of Daws Heath (Brook Farm) site generating slightly more traffic.

Potential Mitigation Measures

3.9.5 The potential mitigation measures as identified within SYSTRA's ISI are indicated in **Figure 17** below.

Figure 17. ISI Measures in the Vicinity of GB10 and GB11



3.9.6 As shown in the figure above, SYSTRA's ISI proposes cycle routing is north-south along Daws Heath Road, running in between the sites. As previously noted in the commentary surrounding the GB9 site, the proposed cycle routing continues east-west on London Road to the south.

3.9.7 To improve pedestrian accessibility, two pedestrian crossings are proposed in the vicinity of the sites across Daws Heath Road (ISI ref W11).

Means of Access

3.9.8 The most likely locations for the main access point for each site (pedestrians, cyclists and vehicles) have been identified and concept design sketches have been prepared (drawing 23H92-SYS-P-XX-101-10 (GB10) for site GB10 and drawing 23H92-SYS-P-XX-DWG-119-01&02 (GB11) for site GB11). The location for these access points has been identified based on available boundaries of the site with the local highway network; this exercise is intended to confirm whether, in principle, an access which conforms with the necessary design guidance (the Essex Highway Design Guide / Manual for Streets) could be delivered.

3.9.9 For site GB10, there is a lack of direct points of contact between the site boundary and the highway network. The most feasible location is to the north of the site on to Bramble Road; at present this takes the form of a narrow rural lane and whilst it would be possible to create a compliant access junction in principle, there would be major concerns with the use of this route by any substantial volume of additional traffic. There is no current direct access or frontage of the site on to Daws Heath Road which could accommodate the necessary visibility splays and therefore purchase of additional properties would be required to achieve an access in this location. It is recommended that this should be explored further as a priority if the site is taken forward as Bramble Lane is likely to act as a constraint on development in the absence of this.

3.9.10 For site GB11, the site directly abuts Daws Heath Road and no issues are foreseen with providing an access within the eastern frontage of the site.

3.9.11 Notwithstanding the above, the final position of the main access for each site (plus the provision of any secondary access points, including those solely for pedestrian and cyclist use) will need to be determined via initial masterplanning work, should the sites be taken forward as part of the Local Plan process.

Potential for Modal Shift

3.9.12 The scale of these two sites and their proximity to Daws Heath Road and its existing bus corridor means that there is sufficient evidence to justify the inclusion of both sites within Tier 2 of the main assessment. With the implementation of the proposed active travel measures identified in the ISI, connectivity is expected to be improved toward London Road to the south, and beyond to the eastern region of Castle Point. However, due to the distances to be travelled by these modes it is not considered (at present) that there would be sufficient additional impact from these measures to move the sites into Tier 1. Bringing bus services into the sites would increase the expectation of modal shift but the ability to do this efficiently without impacting negatively on existing services would require further examination.

Conclusion

3.9.13 The key conclusions which can be drawn in relation to the sites under consideration are summarised in the table below.

Table 19. Sites GB10 and GB11 – Summary of Conclusions

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	Can be achieved for GB11; extremely challenging for GB10	GB11 Yes; GB10 No (without further land acquisition)

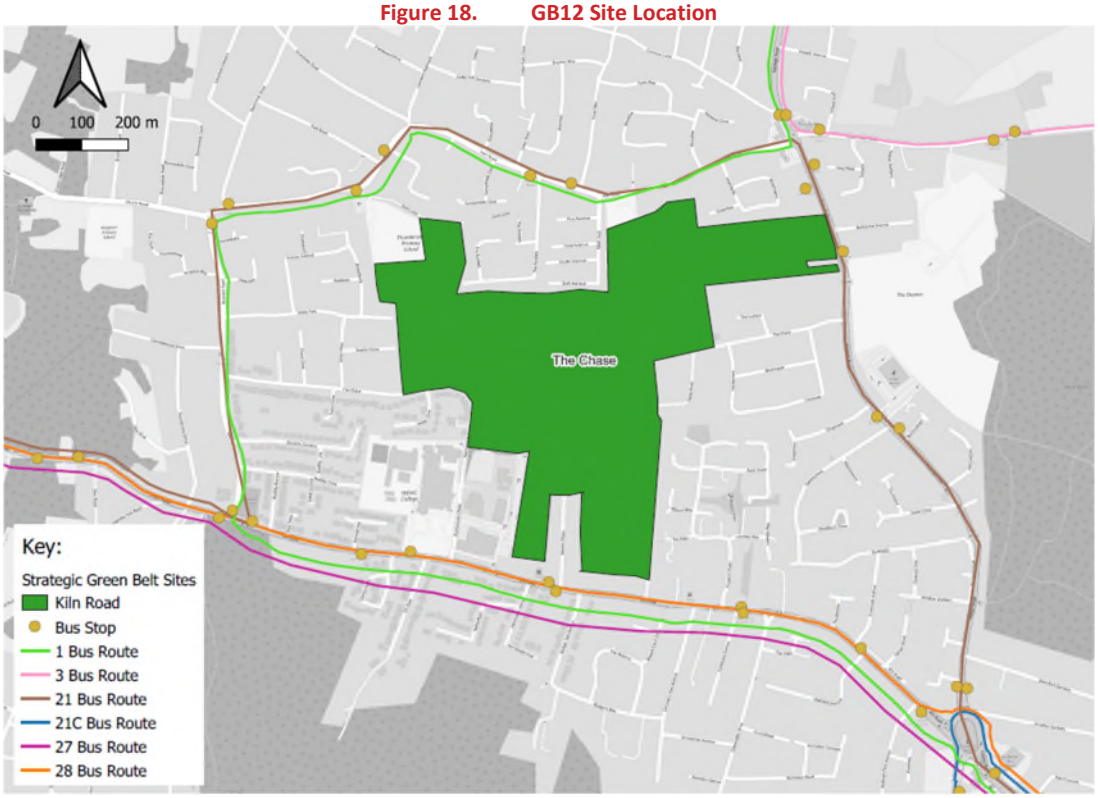
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Sustainability (inherent)	Sites are reasonably well positioned for access to existing services but on-site provision for education etc. would be required	Yes, with appropriate masterplanning
Sustainability (with potential Mitigation)	Significant potential for modal shift if proposed ISI measures are implemented	Yes
Safety	Volumes of traffic added to Daws Heath Road would potentially lead to increased risks (see below)	Not yet clear
Road Network Residual Impacts (estimated)	Daws Heath Road would see a substantial uplift in traffic if both sites developed; likely to cause tension between provision for vehicles and provision for sustainable modes	Requires further analysis but remains a risk

3.9.14 On the basis of the above it is considered that Site GB11 would be capable in principle of being developed in accordance with the requirements of NPPF, but there is greater doubt regarding site GB10. The relationship of these two sites to one another would require careful further consideration as they have the potential to support one another, but their cumulative residual impacts would still be expected to result in increased delays and congestion on and around Daws Heath Road.

3.10 Kiln Road

3.10.1 **Figure 18** below indicates the site located within the identified Kiln Road area. The area is comprised of The Chase (GB12), and has an estimated capacity of 512 dwellings. The site is bordered by Kiln Road along its southern border, Rayleigh Road to the east, Hart Road to the north, and Kenneth Road to the west.

Figure 18. GB12 Site Location



Existing Transport Infrastructure

3.10.2 As indicated above, the Kiln Road cluster is situated between Kiln Road to the south and Hart Road to the north. There are three bus routes (1, 27 and 28) accessible to the south of the site. The 21 bus route is accessible along Hart Road to the north and A129 Rayleigh Road to the east of the site. Additionally, the 3 bus route is accessible at the junction of Daws Heath Road/Hart Road, approximately 240m to the north of the northeastern corner of the development site.

3.10.3 Two bus stops are located to the south of the development site on A13 Kiln Road, adjacent to Warren Chase. Both bus stops include a bus shelter, flag and pole and bus caging. The eastbound bus stop also has seating available. The bus stop to the east of the development site, on A129 Rayleigh Road includes a flag and pole, with bus caging. Of the four bus stops located to the north of the site on Hart Road; of the two located to the west of Triton Way, the eastbound stop includes a flag and pole and caging, whereas the westbound stop includes of shelter, seating, flag and pole and bus caging.

3.10.4 The junctions of Woodmans Arms, Vic House Corner, Church Road/Kenneth Road/Hart Road, and A13 London Road/Kenneth Road are located at the four junctions surrounding the site, along Hart Road to the north and A13 Kiln Road to the south. The Woodmans Arms junction (located approximately 180m to the north of the northeastern corner of the site) and A13 London Road/Kenneth Road (located approximately 650m to the west of the southern boundary of the site) are both noted to be demonstrating congestion in the current baseline and reference case CPP modelling, which is also supported by data from Google Maps, particularly on the southern and eastern arms of the Woodmans Arms junction in the AM

peak. Similarly the A13 London Road/Kenneth Road junction experiences some slow moving traffic in the AM peak, with no evidence of congestion in the PM peak.

3.10.5 Additionally, Google Maps traffic data suggests no significant congestion surrounding Church Road/Kenneth Road/Hart Road, and that whilst there is some slow moving on the entry arms to Vic House Corner, the junction circulatory and surrounding arms generally also operate with relatively limited congestion. It is noted that the reference case modelling does show increases in queuing and delay at these locations (as would be expected).

Expected Development Impacts

3.10.6 The multi-modal trip generation calculations for the identified housing sites are presented in the table below.

Table 20. GB12 Site Trip Generation

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
The Chase	521	AM Peak	280	246	13	130	13	4
		PM Peak	271	235	11	86	12	2

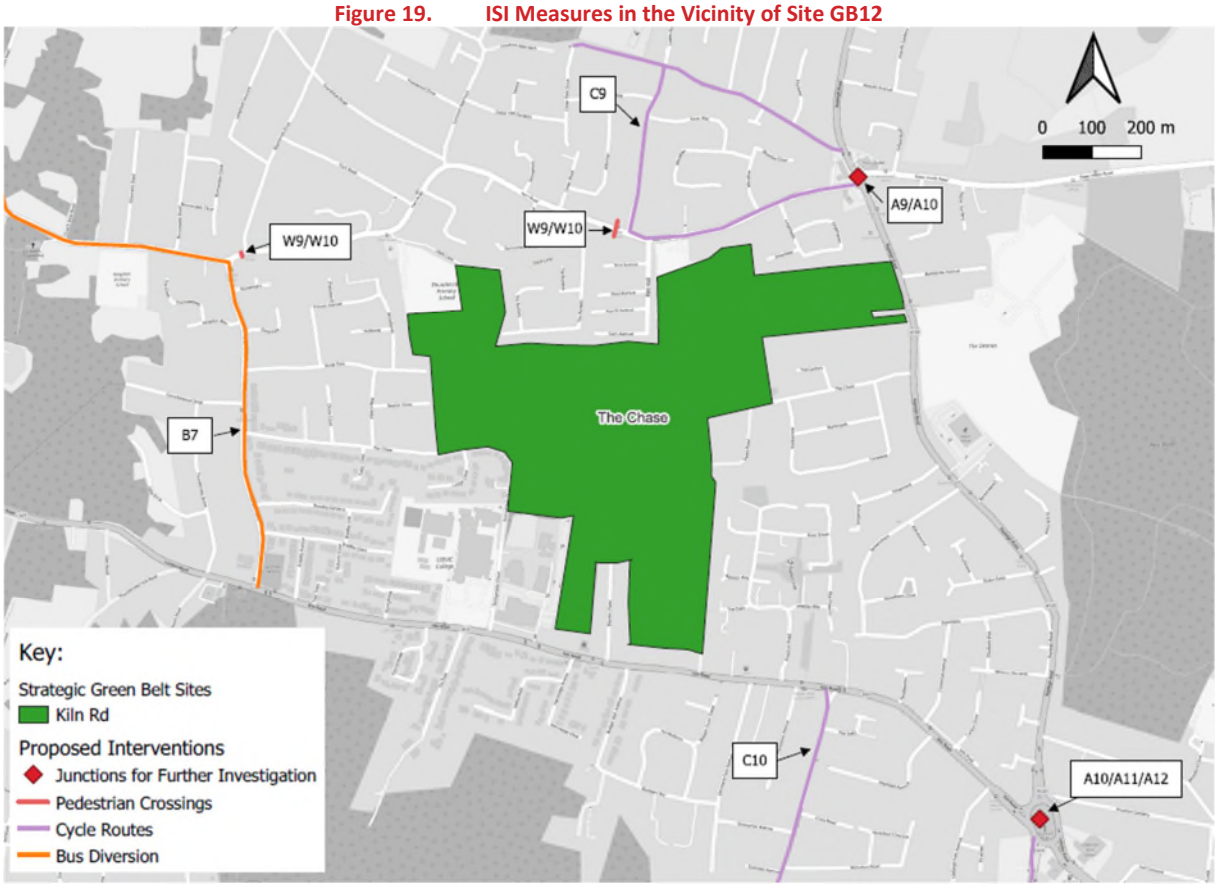
3.10.7 There are a significant number of vehicle trips associated with the potential development of the site, with up to 246 private vehicle trips in the AM peak and 235 trips in the PM peak.

Potential Mitigation Measures

3.10.8 A series of cycle routes are proposed in the surrounding area within SYSTRA's Initial Schedule of Interventions. Cycle route improvements are proposed to the south along Shipwrights Drive located a short distance to the southeast of the site (ISI ref C10). Additionally, to the northeast of the site a cycle route is proposed along the easternmost extent of Hart Road, Common Lane and Triton Way (ISI ref C9/C10).

3.10.9 The relationship of the green belt sites to the ISI measures is shown geographically in **Figure 19** below.

Figure 19. ISI Measures in the Vicinity of Site GB12



3.10.10 The Schedule of Interventions also identifies two demarcated pedestrian crossings along Hart Road in order to improve safety (ISI ref W9/W10). The eastern proposed crossing is located along the site's northern boundary.

3.10.11 The Vic House Corner and Woodmans Arms junctions are both highlighted within the Schedule of Interventions as areas for further study, based on the high number of collisions which have occurred there. The introduction of the green belt site would be expected to increase trips through this junction further and therefore additional targeted mitigation at these locations is likely to be required.

Means of Access

3.10.12 The most likely locations for the main access point for the site (pedestrians, cyclists and vehicles) has been identified and concept design sketches have been prepared (drawing 23H92-SYS-P-XX-111-01 (GB12). The location for this access point has been identified based on available boundaries of the site with the local highway network; this exercise is intended to confirm whether, in principle, an access which conforms with the necessary design guidance (the Essex Highway Design Guide / Manual for Streets) could be delivered.

3.10.13 The site is bisected by The Chase and therefore multiple potential points of access exist from this frontage. An example has been shown for the western side of the site demonstrating what a compliant access would require in terms of dimensions, however, there is considerably

more scope for variation in the access arrangements for this site than for the majority of other sites under consideration.

3.10.14 Notwithstanding this, the final position of the main access (plus the provision of any secondary access points, including those solely for pedestrian and cyclist use) will need to be determined via initial master planning work, should the site be taken forward as part of the Local Plan process.

3.10.15 It has been advised that multiple land owners are involved with this strategic site. As has been noted above, the site has areas of frontage which allow for flexibility in where a compliant access can be positioned. It is therefore recommended that any future masterplan development for this site considers ways in which different land owners' parcels could operate to provide vehicular or pedestrian/cycle access.

Potential for Modal Shift

3.10.16 Whilst the measures implemented through the ISI are intended to encourage modal shift to the north and the south of The Chase, as previously noted the level of congestion surrounding the Vic House Corner and Woodmans Arms junctions remains a significant concern, and is likely to impact upon the reliability of public transport services. As such it is considered that the application of the "moderate modal shift" (Tier 2) trip rates to the calculations for this site remains appropriate.

Conclusion

3.10.17 The key conclusions which can be drawn in relation to the site under consideration are summarised in the table below.

Table 21. Site GB12 – Summary of Conclusions

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	A compliant access is achievable in principle; depending on the arrangement of land parcels, additional options are likely to be feasible	Yes
Sustainability (inherent)	Reasonably good access to local services and networks	Yes
Sustainability (with potential Mitigation)	Good potential for off-site upgrades but the potential for modal shift is likely to be constrained by existing congestion and safety issues	Yes

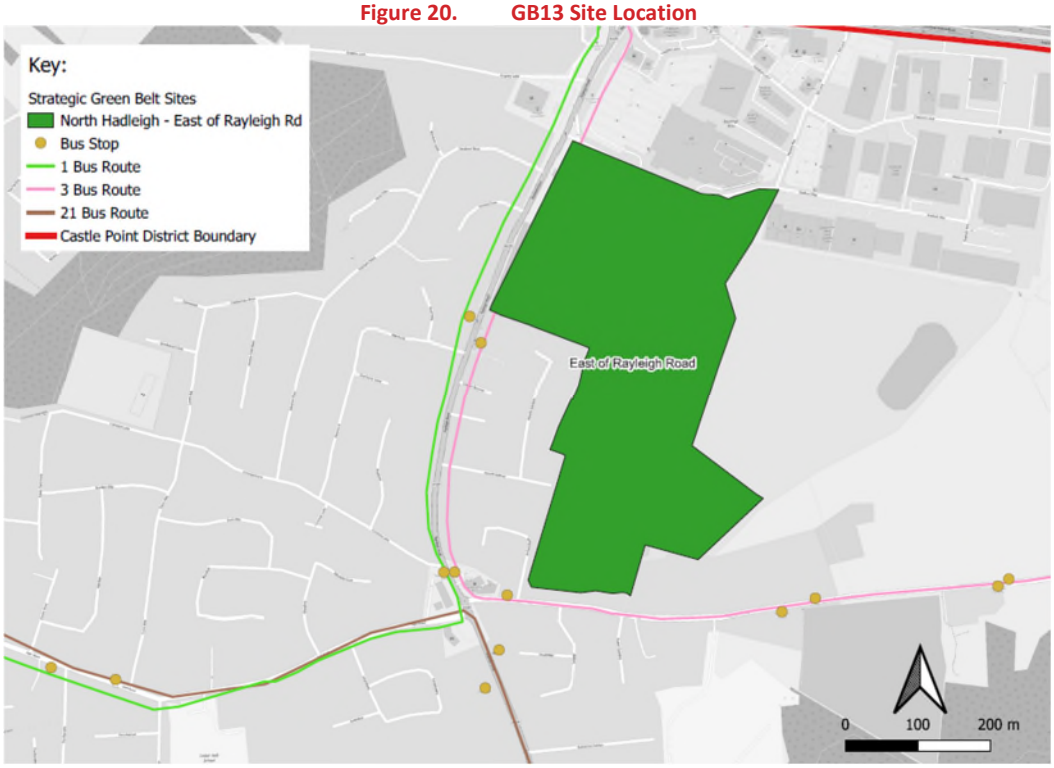
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Safety	Vic House Corner and Woodmans Arms junctions have indicated safety concerns which are likely to require further appraisal.	Yes, subject to mitigation
Road Network Residual Impacts (estimated)	Expected issues at Woodmans Arms, and adjacent London Road junctions	Not yet clear

3.10.18 On the basis of the above it is considered in principle that the site could be brought forward in a manner compatible with the requirements of NPPF. However, substantial issues regarding existing network capacity and safety matters would need to be addressed, and it is not clear whether this would be achievable in the context of the scale of proposed development and its ability to fund appropriate measures.

3.11 North Hadleigh – East of Rayleigh Road

3.11.1 The North Hadleigh – East of Rayleigh Road area is comprised of the Land East of Rayleigh Road site (GB13). This site has an estimated upper capacity of 481 dwellings, however there is an alternative reduced capacity of 322 dwellings (referred to as option GB13a). The location and surrounding transport infrastructure is shown in **Figure 20** below.

Figure 20. GB13 Site Location



Existing Transport Infrastructure

3.11.2 The site is well located for access to bus routes 1 and 3, which are served by multiple stops on A129 Rayleigh Road. Route 21 can also be accessed via stops at the junction of the A129, Daws Heath Road and Hart Road. The bus routes provide direct access to the other areas of Castle Point, Southend, and Chelmsford. The stops at the A129 / Daws Heath Road / Hart Road (also known as the Woodmans Arms junction) have shelters and laybys, whereas the stops on the A129 Rayleigh Road have bus flags and cage markings. The current frequency of route 3 is limited and this acts as a current constraint on available bus capacity in this area.

3.11.3 The site has direct frontage onto local distributor routes such as theA129 but there is no existing dedicated cycle infrastructure in the vicinity. However, the adjacent networks of existing residential streets offer potential alternative routes for cyclists making local journeys.

3.11.4 The site is in relatively close proximity to the A127 Rayleigh Weir junction and site GB13 in particular would potentially experience some disruption to access in the peak periods as a result of traffic queuing back along the A129 Rayleigh Road. Data from the CPP modelling indicates significant delays, particularly for traffic travelling north-south through the junction. Similarly, the Woodmans Arms junction currently experiences delays in the peaks based on CPP modelling and Google traffic data, therefore the addition of further traffic associated with the green belt sites (on top of the expected growth associated with the Option 1a sites) would increase the pressure at this location. The relatively complex layout of the junction (two adjacent mini-roundabouts) means that options to improve capacity will need to be carefully considered in terms of the balance of traffic flows across the junction as a whole and impacts of changes to queuing and delay on the different arms.

Expected Development Impacts

3.11.5 The anticipated trip generation from the East of Rayleigh Road site, both in the upper and reduced capacity, is indicated in **Table 22** below.

Table 22. Site GB13 Trip Generation

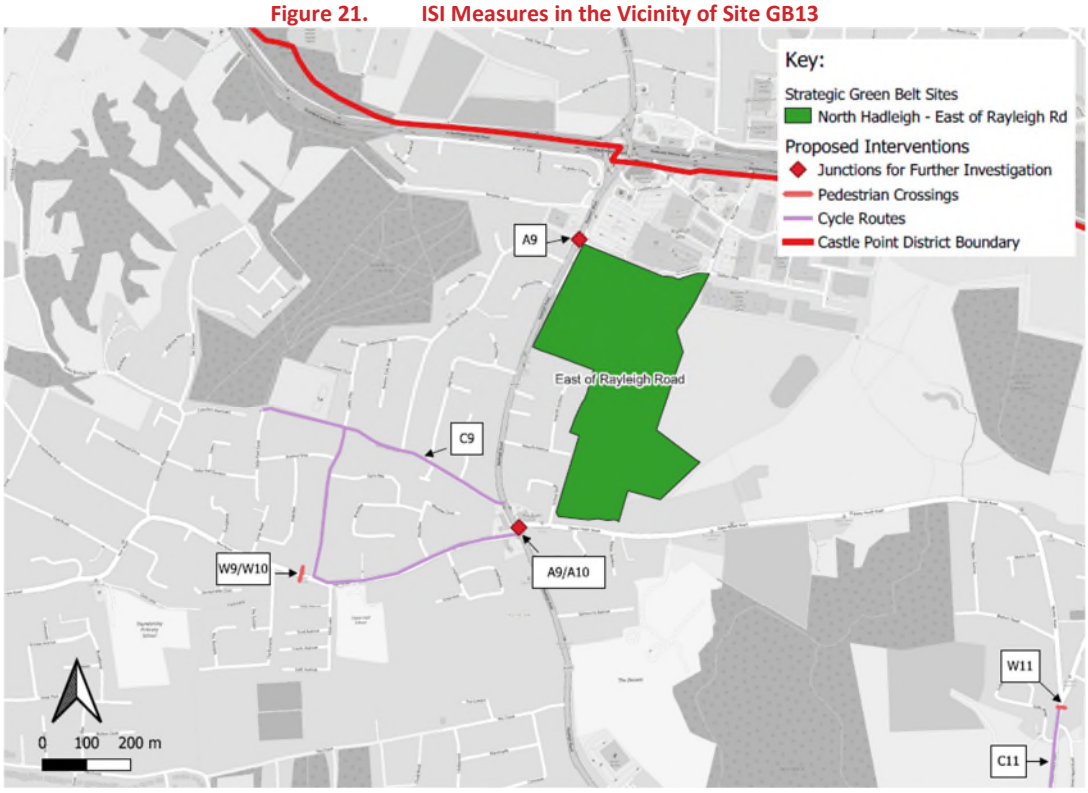
SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
East of Rayleigh Road	481	AM Peak	270	240	11	112	10	3
		PM Peak	261	228	8	73	10	2
East of Rayleigh Road (Reduced – GB13a)	322	AM Peak	181	160	7	75	7	2
		PM Peak	175	153	5	49	6	1

3.11.6 The East of Rayleigh Road is predicted to generate a maximum of 240 car trips in the AM peak and 228 in the PM peak.

Potential Mitigation Measures

3.11.7 The relationship of this site to the ISI measures is shown geographically in **Figure 21** below.

Figure 21. ISI Measures in the Vicinity of Site GB13



3.11.8 The identified ISI measures in the vicinity of the site would improve sustainable connectivity in the immediate area; the expected demand for movement via the identified locations and routes would be expected to significantly increase. However the inclusion of one or both of the identified green belt sites would create an additional source of funding and could in turn enable more ambitious measures to be considered.

3.11.9 It is anticipated that this green belt sites would increase demand for bus travel and connectivity to rail, but that new routes or route alterations would not be necessary given the existing provision of bus stops and destinations served; instead, additional funding to strengthen existing services would be envisaged.

3.11.10 The site would have good access to services in and around Thundersley, and additionally the connections north to Rayleigh would offer alternative modes for reaching Southend and towards London, increasing the potential range of journeys able to be made by sustainable means. As a counterpoint, the proximity of Rayleigh Weir and access to strategic road links may potentially encourage the use of private car. that said, existing and future peak hour congestion may reduce the attractiveness.

Means of Access

3.11.11 The site has direct frontage to the A129 at its north-western corner and it is considered that there is sufficient space for a compliant access design to be achieved. However, the successful operation of this access is likely to be affected by congestion on the A129.

Potential for Modal Shift

3.11.12 The site offers potential for modal shift through the proximity of several bus routes along Rayleigh Road. Additionally, the implementation of proposed cycle routing to the west (ISI ref. C9) to encourage active travel in this location. It is noted that the existing congestion surrounding the Rayleigh Weir and Woodmans Arms junctions are likely to worsen with the development of the site. As such it is considered that the application of the Tier 2 trip rates (moderate modal shift away from car use) is appropriate for this site on the basis of the current evidence.

Conclusion

3.11.13 The key conclusions which can be drawn in relation to the site under consideration are summarised in the table below.

Table 23. Site GB13 – Summary of Conclusions

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	Physically feasible in terms of space and design requirements, but	Possibly, but significant

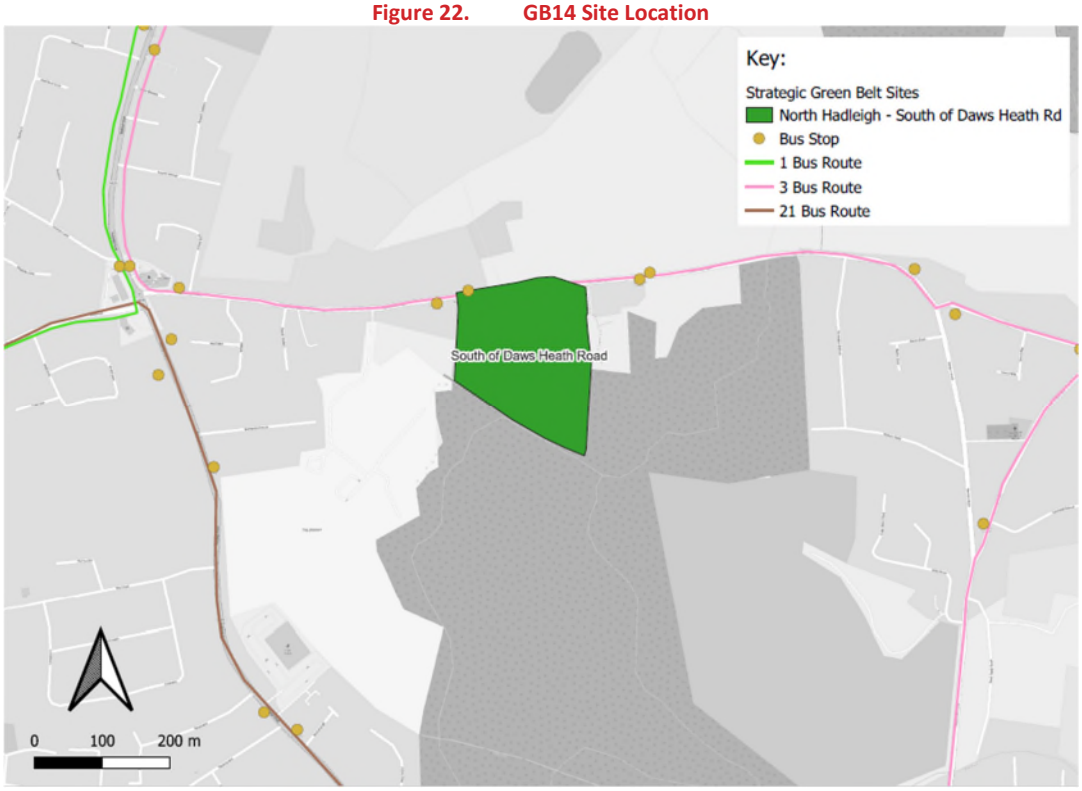
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
	expected congestion on A129 would directly affect access in the peaks.	questions remain
Sustainability (inherent)	The site has access to a mix of bus services, walking and cycling infrastructure, albeit with some PT capacity limitations at present	Yes (subject to mitigation)
Sustainability (with potential Mitigation)	Bus frequency upgrades and ISI measures would improve provision and potential uptake of sustainable modes	Yes
Safety	A129 corridor is extremely busy and improvement to pedestrian and cycle infrastructure could exacerbate conditions for vehicles	Further analysis required
Road Network Residual Impacts (estimated)	Impacts to A129 corridor (already heavily congested) and A127 Rayleigh Weir junction; limited physical capacity for improvements	Significant potential issues to be resolved

3.11.14 On the basis of the above it is considered in principle that the site could possibly be brought forward in a manner compatible with the requirements of NPPF. However, substantial issues regarding existing network capacity (particularly congestion on the A129) would need to be addressed, and it is not clear whether this would be achievable in the context of the scale of proposed development and its ability to fund appropriate measures. Caution must therefore be exercised in terms of further analysis or consideration of this site.

3.12 North Hadleigh – South of Daws Heath Road

3.12.1 Located a short distance to the southwest of the previously considered GB13 site, the North Hadleigh – South of Daws Heath Road area is comprised of the South of Daws Heath Road site (site GB14). The site has a potential capacity of 90 dwellings. The location of the site and surrounding infrastructure is shown in **Figure 22** below.

Figure 22. GB14 Site Location



3.12.2 As shown in the figure above, the No. 3 bus route travels east-west along the site's northern perimeter; the current frequency of this service is limited. The bus stops immediately to the northwest of the site include bus flags and cage markings.

3.12.3 Additionally, the 1 and 21 bus routes are accessible from the previously noted bus stops surrounding the Daws Heath/Rayleigh Road junction.

Expected Development Impacts

3.12.4 The anticipated trip generation from the South of Daws Heath Road site is shown in **Table 24** below.

Table 24. South of Daws Heath Road Trip Generation

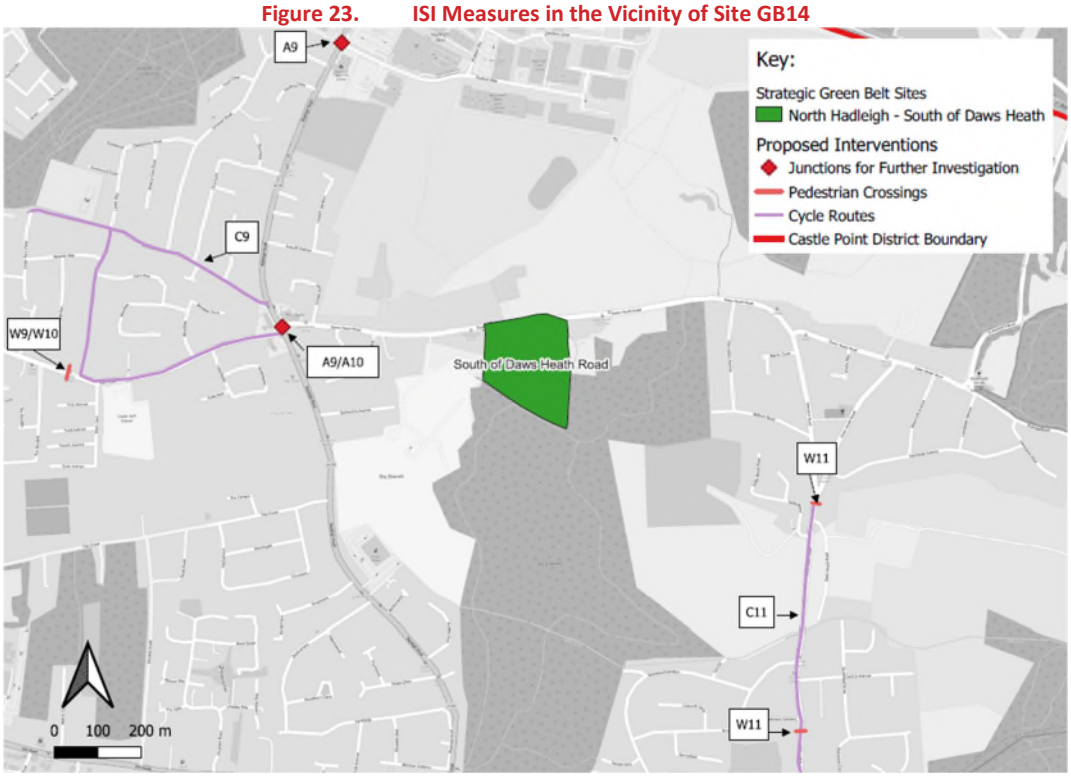
SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land South of Daws Heath Road	90	AM Peak	51	45	2	21	2	1
		PM Peak	49	43	2	14	2	0

3.12.5 As shown above, the vast majority of trips predicted from the site will use private car. In the AM peak this is evidenced through 45 out of 51 anticipated trips being undertaken using this mode.

Potential Mitigation Measures

3.12.6 The relationship of the green belt site to the ISI measures is shown geographically in **Figure 23** below.

Figure 23. ISI Measures in the Vicinity of Site GB14



3.12.7 As indicated above, there are a series of proposed cycle routes both to the west and southeast of the site. Whilst there is no direct accessibility to either of these routes, the cycle routes will increase accessibility toward Thundersley Common to the northwest and the A13 London Road to the south.

Means of Access

3.12.8 The most likely locations for the main access point for the site (pedestrians, cyclists and vehicles) has been identified and concept design sketches have been prepared (drawing 23H92-SYS-P-XX-114-02 (GB14). The location for this access point has been identified based on available boundaries of the site with the local highway network; this exercise is intended to confirm whether, in principle, an access which conforms with the necessary design guidance (the Essex Highway Design Guide / Manual for Streets) could be delivered. It is considered that this is the case for Site GB14, with the access to be provided on Daws Heath Road at the southern edge of the site.

3.12.9 The final position of the main access (plus the provision of any secondary access points, including those solely for pedestrian and cyclist use) will need to be determined via initial master planning work, should the site be taken forward as part of the Local Plan process.

Potential for Modal Shift

3.12.10 The site in its current form would not be expected to be able to generate any real modal shift from the baseline position. The expected mitigation measures would improve the situation,

but given the limited capacity of this site in its own right, it is not considered that this would result in a noticeable shift from Tier 3 in isolation. However, this has the potential to change further if the sites in this area are considered collectively rather than individually as has been done for the purposes of this report.

Conclusion

3.12.11 The key conclusions which can be drawn in relation to the site under consideration are summarised in the table below.

Table 25. Site GB14 – Summary of Conclusions

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	An acceptable access design is achievable in principle for the volume of development which is under consideration.	Yes
Sustainability (inherent)	The site has access to some bus services, walking and cycling infrastructure, but is relatively distant from other local services	Possibly, given the scale of development proposed
Sustainability (with potential Mitigation)	Bus frequency upgrades and ISI measures would improve provision and potential uptake of sustainable modes; however this is subject to sufficient funding being available, which is in question due to the limited capacity of the site	Possible but not demonstrated at present
Safety	The site in isolation would not be expected to create any specific safety issues for any mode, or to materially affect existing safety conditions	Yes
Road Network Residual Impacts (estimated)	Impacts from this development site in isolation would be relatively modest and would not be expected to materially impact on any key junctions	Yes

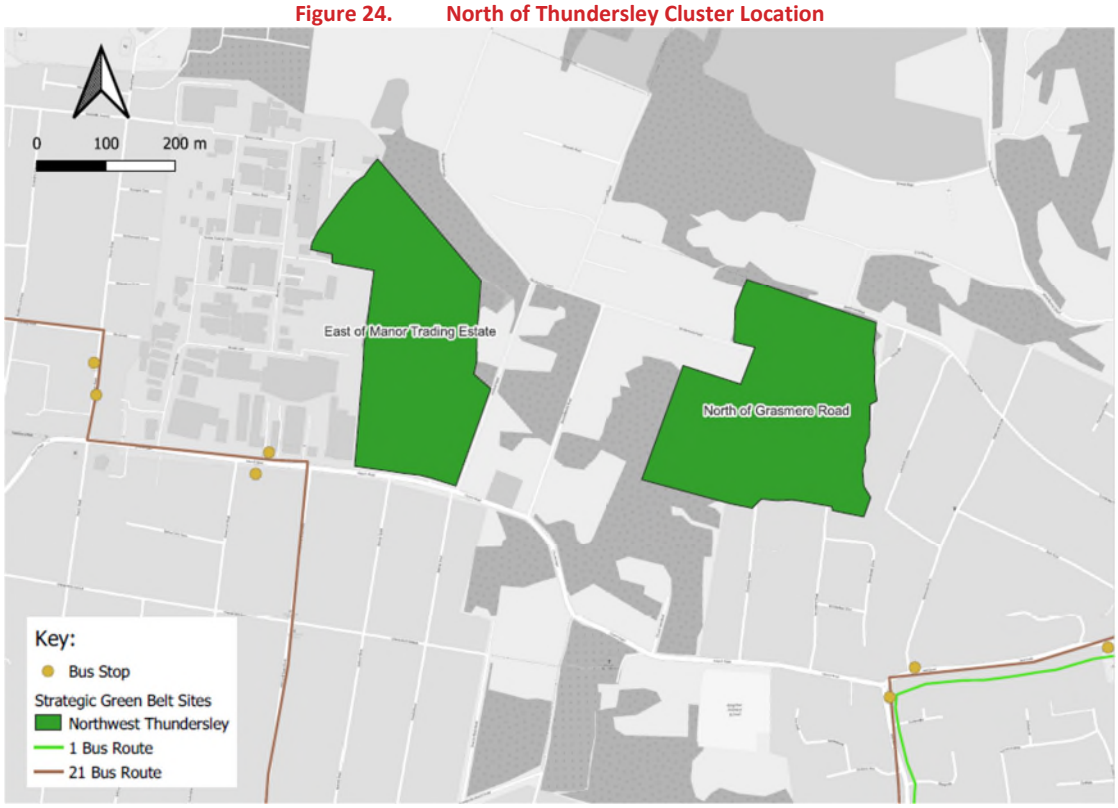
3.12.12 On balance, it is considered that this site could be developed in principle in a manner consistent with the requirements of NPPF paragraphs 110 and 115. However, achieving any

material improvement to car trips solely as a result of this development and the measures it could realistically support is not expected.

3.13 North of Thundersley

3.13.1 The cluster is located to the north of Church Road. It is comprised of the North of Grasmere (GB15) and East of Manor Trading Estate (N3) sites. The North of Thundersley identified region is comprised of 253 dwellings (113 dwellings in site GB15 and 141 dwellings in site N3). **Figure 24** below shows the location of the North of Thundersley cluster.

Figure 24. North of Thundersley Cluster Location



3.13.2 The two bus stops located to the southwest on Church Road are include a flag and pole, and the two bus stops at the Kenneth Road/Church Road junction to the southeast are include bus shelters and seating. None of the bus stops contain RTPI screens.

3.13.3 The 1 and 21 bus routes are accessible from these bus stops, facilitating access to Southend and Rayleigh.

3.13.4 Church Road/Kenneth Road/Hart Road junction is the nearest major junction, and is indicated to be approaching capacity in the current peak and at capacity in the 2040 reference case models.

Expected Development Impacts

3.13.5 The multi-modal trip generation calculations for the identified housing sites are presented in **Table 26** below.

Table 26. Site N3 and GB15 Trip Generation

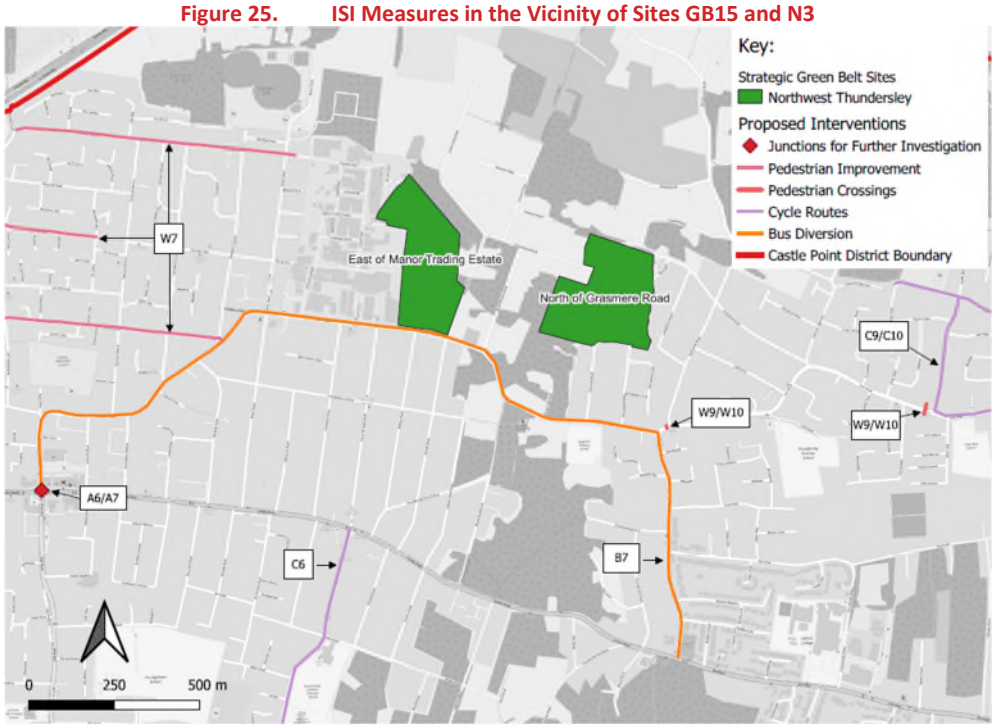
SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
East of Manor Trading Estate	141	AM Peak	79	70	3	33	3	1
		PM Peak	77	67	2	21	3	1
North of Grasmere Road	113	AM Peak	64	56	2	26	2	1
		PM Peak	61	54	2	17	2	0

3.13.6 As indicated above, the East of Manor Trading Estate site is anticipated to generate up to 70 trips by private car in the AM peak, with the Grasmere Road site producing slightly fewer.

Potential Mitigation Measures

3.13.7 The relationship of the green belt sites to the ISI measures is shown geographically in **Figure 25** below.

Figure 25. ISI Measures in the Vicinity of Sites GB15 and N3



3.13.8 Within the SYSTRA ISI, the sites are located in close proximity to the potential bus route diversion / extension along Church Road (ISI ref. B7), and in close proximity to the pedestrian footpath improvements along Woodside Avenue, Eversley Road, and Overton Road (ISI ref. W7). These sites have potential to integrate with ISI measures initially developed to support

the Option 1a sites in this area and would represent a tangible increase in potential passengers for an amended bus service. The sites also have multiple potential points of connection to the existing highway network; careful site design could seek to maximise permeability for sustainable modes which controlling access for vehicles, so as to reduce the potential for rat-running behaviour. These factors mean that, whilst the sites would inevitably generate some additional car traffic, there are mitigation options which could encourage multiple modes, additional off-site connections could be established and improved which would also benefit existing residents and would help to offset increases in delay at local junctions.

Means of Access

3.13.9 The most likely locations for the main access points for the sites (pedestrians, cyclists and vehicles) has been identified and concept design sketches have been prepared (drawings 23H92-SYS-P-XX-115-02 (GB15) and 23H92-SYS-P-XX-118-02 (N3).The location for these access points have been identified based on available boundaries of the site with the local highway network; this exercise is intended to confirm whether, in principle, an access which conforms with the necessary design guidance (the Essex Highway Design Guide / Manual for Streets) could be delivered.

3.13.10 For Site GB15, the available points of access are all in highly constrained locations at the end of small residential streets. The access through from the existing Grasmere Road at the southern edge of the site has been shown in the drawing as an example; Grasmere Road is both narrow and steep and whilst the road could be extended into the site (and widened within in) the existing road and associated on-street residential parking would act as a significant constraint with no obvious remedy.

3.13.11 Access to site N3 is considerably more straightforward. The most obvious point of access is via Church Road; it is proposed that the most suitable location for a new access would be adjacent to the existing ECL Benfleet day centre, with that existing access replaced with a new access road from which the centre would have a new direct access to their car park, and potential conflict between the existing access and the new development road would be avoided. This arrangement is demonstrated on the corresponding drawing.

3.13.12 The final position of the main accesses (plus the provision of any secondary access points, including those solely for pedestrian and cyclist use) will need to be determined via initial master planning work, should the site be taken forward as part of the Local Plan process.

Potential for Modal Shift

3.13.13 Whilst the sites will inevitably lead to an increase in traffic on the road network, it is expected that the integration of the measures noted within the ISI will enable a modest shift (to Tier 2 trip rates) to be achieved.

Conclusion

3.13.14 The key conclusions which can be drawn in relation to the sites under consideration are summarised in the table below.

Table 27. Sites GB15 and N3 – Summary of Conclusions

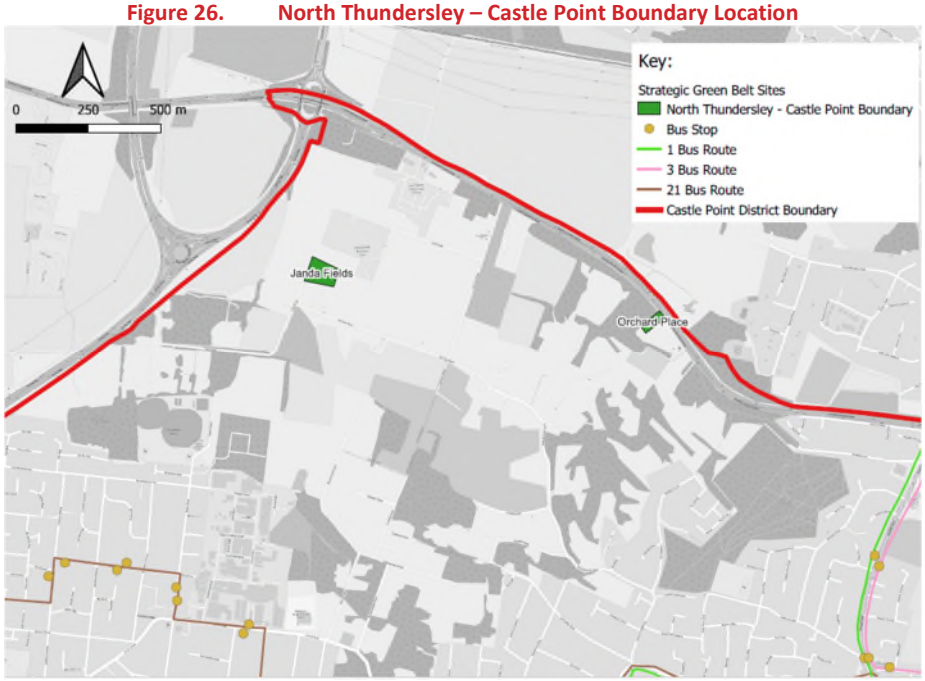
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	A suitable access point either exists or could feasibly be delivered.	Yes
Sustainability (inherent)	Limited existing provision for sustainable modes and local services	No, but could be addressed via mitigation
Sustainability (with potential Mitigation)	ISI identifies a number of potential interventions. The bus route improvements would be expected to benefit several sites (but would be difficult to achieve for just these sites in isolation)	Yes, but extent of possible mitigation requires further analysis
Safety	Safety impacts on residential streets, Tarpots and Kenneth Road require further consideration	Further analysis required
Road Network Residual Impacts (estimated)	Main impacts would be to surrounding residential roads and A13 at Tarpots and Kenneth Road. These junctions are indicated as experiencing significant congestion from the current strategic modelling and the impacts of the additional traffic from these sites would need to be appraised.	Not clear – further appraisal necessary

3.13.15 On the basis of the above, there are indications that these sites could be brought forward in a manner consistent with the requirements of NPPF; however, significant questions remain with regard to impacts on the A13 and the extent to which these sites could fund required mitigation measures.

3.14 North Thundersley – Castle Point Boundary

3.14.1 The North Thundersley - Castle Point Boundary cluster is located to the north of the Castle Point region, a short distance to the south of the A127, and southeast of the A1245. The cluster is comprised of the Janda Fields (Site N1) and Orchard Place (Site N2) sites. No residential capacity has been provided for the sites; this is due to their identification as potential Gypsy and Traveller sites, with capacity for up to 18 caravans Their location is indicated in **Figure 26** below.

Figure 26. North Thundersley – Castle Point Boundary Location



3.14.2 As indicated in the figure above, both sites are located within an area with very little surrounding roads or infrastructure. Access for the Orchard Place site is to come directly to the southwest of the A127, and the Janda Fields access will be taken from the northeast of the minor Fane Road.

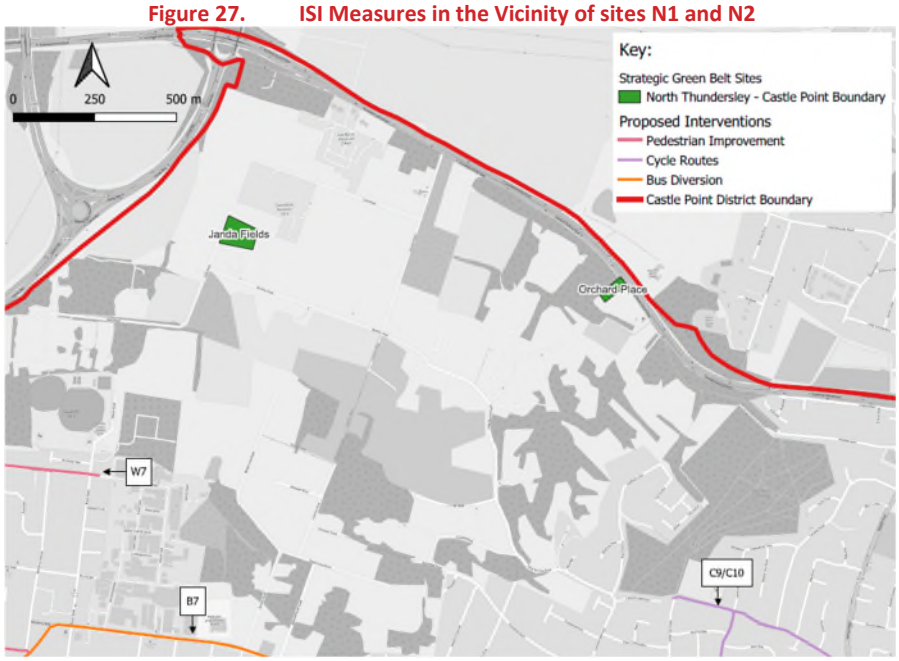
3.14.3 In terms of accessibility to bus services , the 1 and 3 bus routes are accessible approximately 1.1km to the southeast of the Orchard Place site along Rayleigh Road. The 21 route along Church Road is the closest bus route accessible to the Janda Fields site approximately 2.1km to the south.

3.14.4 Due to no fixed residential dwellings being proposed, no trip generation has been undertaken for these sites.

Potential Mitigation Measures

3.14.5 The proposed ISI measures in the vicinity of the sites are indicated in **Figure 27** below.

Figure 27. ISI Measures in the Vicinity of sites N1 and N2



3.14.6 As shown above, the ISI measure in closest proximity to the sites is the proposed pedestrian improvement along Woodside Avenue, approximately 2.8km walking distance to the southwest of the Janda Fields site.

Means of Access

3.14.7 The most likely locations for the main access points for the sites (pedestrians, cyclists and vehicles) has been identified and concept design sketches have been prepared for Site N1 (drawing 23H92-SYS-P-XX-116-02 (N1)). The location for this access point has been identified based on available boundaries of the site with the local highway network; this exercise is intended to confirm whether, in principle, an access which conforms with the necessary design guidance (the Essex Highway Design Guide / Manual for Streets) could be delivered.

3.14.8 For site N2, it is anticipated that the existing access to this site will be retained with minor amendment; as such a "new" access drawing is not considered to be required for the purposes of this study.

3.14.9 For Site N1, the site itself provides sufficient space for an access to be provided. However, as noted above, the surrounding street network is of relatively poor quality and would not be attractive for any modes other than the car. It would not be possible to provide bus access to a standard which would be appropriate for residential development; however this is unlikely to be a material concern if the sites are to be used for Gypsy and Traveller provision..

3.14.10 The final position of the main accesses (plus the provision of any secondary access points, including those solely for pedestrian and cyclist use) will need to be determined via initial master planning work, should the site be taken forward as part of the Local Plan process. This work will need to reflect the needs of caravans and similar vehicles to move into and out of the sites.

Potential for Modal Shift

3.14.11 As indicated above, the potential for modal shift at these sites is extremely limited, due to their separation from the majority of the populated areas within Castle Point, their small physical extents (limiting their ability to fund any other meaningful improvements or on-site services) and the proposed mitigation measures. With Orchard Place being located directly to the south of the A127, it is unlikely that any significant modal shift away from private vehicle would occur. Given the scale of feasible provision for Gypsy and Traveller use, this is not considered likely to represent a barrier to development for this specific use.

Conclusion

3.14.12 The key conclusions which can be drawn in relation to the sites under consideration are summarised in the table below. This is in reference specifically to the acceptability of these sites as Gypsy and Traveller provision with a maximum of 18 pitches.

Table 28. Sites N1 and N2

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	Achievable in principle, however testing for movement of caravans and similar vehicles will be required.	Yes subject to tracking checks for caravans
Sustainability (inherent)	Very limited potential for development to support movement other than by car.	No, but this is not considered to be material given the proposed specific use
Sustainability (with potential Mitigation)	Very limited potential for additional mitigation	No, but this is not considered to be material given the proposed specific use
Safety	The developments would not be expected to generate significant volumes of movement (however checks would need to be made for any tight turns for caravans using the residential network to reach each site)	Yes, subject to relevant checks

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Road Network Residual Impacts (estimated)	The developments would not be expected to generate significant volumes of movement and thus would not be expected to create a material impact in transport terms	Yes

3.14.13 It is concluded that, whilst these sites would not be suitable for general residential use, their stated capacity for use for Gypsy and Traveller pitches would not result in a significant increase in vehicle use and therefore their application for this specific purpose would not be considered to be in conflict with NPPF paragraphs 110 and 115.

4. NON-STRATEGIC GREEN BELT SITES

4.1.1 The following section indicates the green belt sites deemed non-strategic. With the exception of four sites, all of these sites are under 100 dwellings in capacity and therefore their individual impacts would be expected to be limited. **Figure 28** and **Figure 29** below provide an overview of the site locations, and **Table 14** indicates their anticipated capacity.

Figure 28. Non-Strategic Green Belt Sites (North)

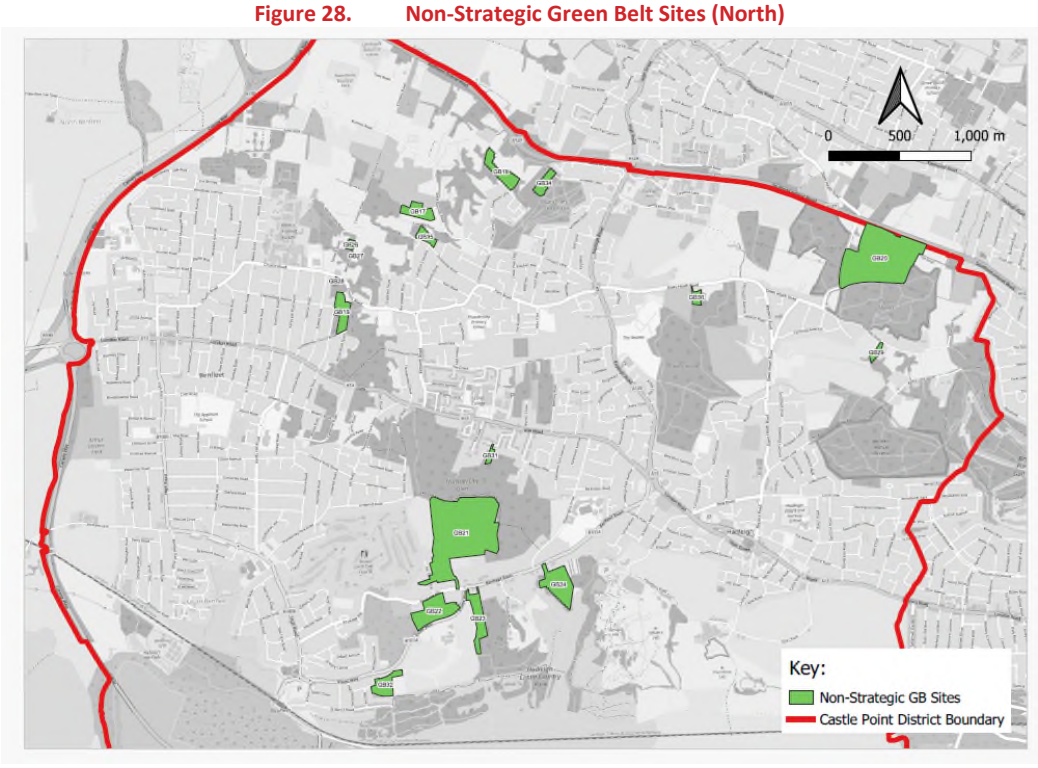
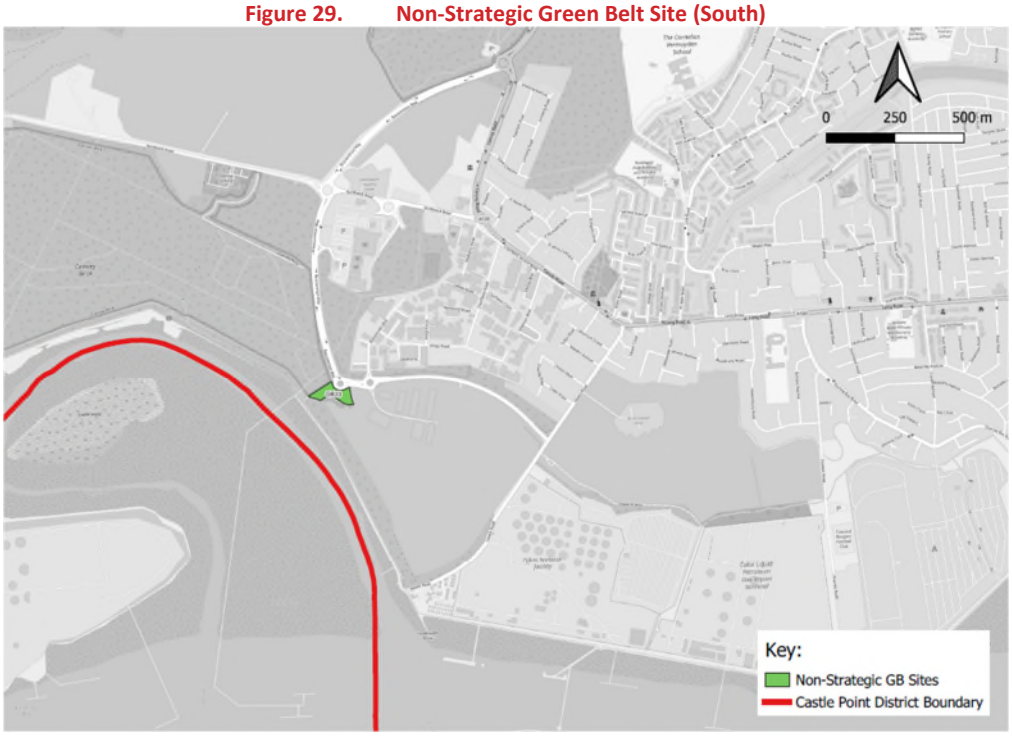


Figure 29. Non-Strategic Green Belt Site (South)



4.1.2 As with the strategic sites, the non-strategic sites have been organised into clusters by geographic area. Those two sites which are significantly larger than the others have been considered separately. The table below indicates these clusters.

Table 29. Non-Strategic Green Belt Site Clusters

CLUSTER	SITE ID	SITE NAME	CAPACITY
Northwest Thundersley	GB17	Land off Grange	55
	GB18	Land off Goldfinch Lane	65
	GB26	Land to the Rear of Beaucroft and Sunray	10
	GB27	Land Between Glen Haven and Ye Oaks	4
North Benfleet – North of London Road	GB19	Land North of Thundersley Church Road and East of Downer Road	64
	GB28	Land Adjacent to 298 Church Road	5

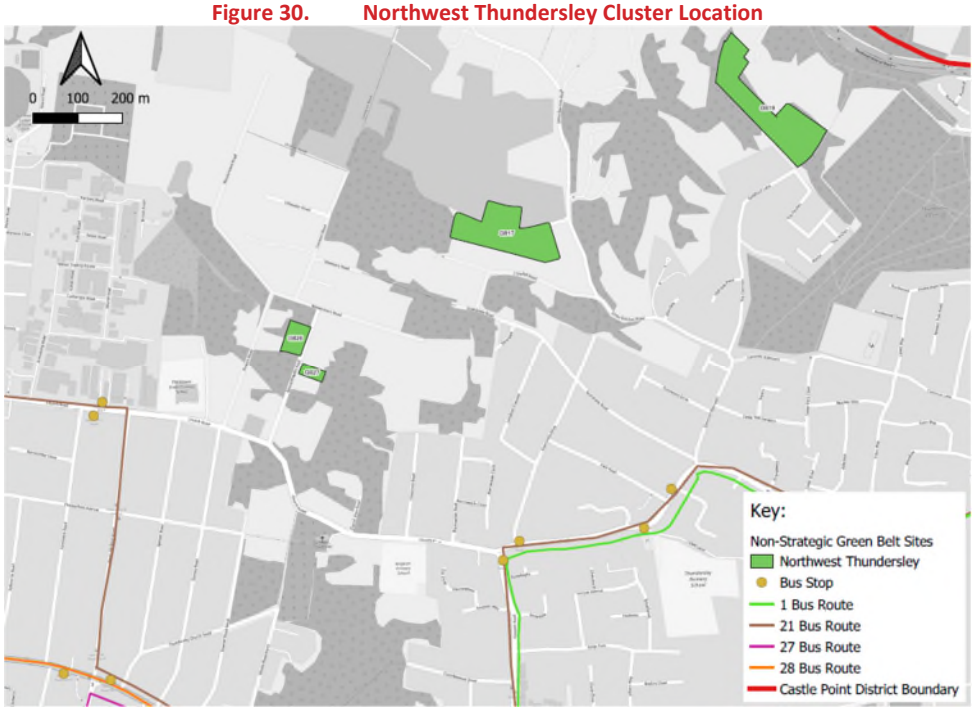
CLUSTER	SITE ID	SITE NAME	CAPACITY
Hadleigh – East of St Michaels Road	GB20	Land to the East of St Michaels Road	506
Thundersley Glen	GB21	Land off Hilltop Avenue	614
Essex Way	GB22	Land Between Essex Way and Vicarage Hill	127
	GB32	Land off Glyders	61
South of Benfleet Road	GB23	Land to the Rear of 329 Benfleet Road	82
	GB24	Land off Shipwrights Close	54
Hadleigh - South of Bramble Road	GB29	170 Bramble Road	15
Hadleigh – South of Daws Heath Road	GB30	Ragwood Riding Centre	13
Thundersley – South of Kiln Road	GB31	Land off Netherfield	12
Canvey Island – South of Fleet Roundabout	GB33	Land South of Fleet Roundabout	6

4.1.3 The following section provides commentary on the non-strategic green belt clusters and their surrounding infrastructure.

4.2 Northwest Thundersley

4.2.1 The Northwest Thundersley cluster is comprised of four sites; Land off Grange (GB17), Land off Goldfinch Lane (GB18), Land to the Rear of Beaucroft and Sunray (GB26), and Land Between Glen Haven and Ye Oaks (GB27). The combined capacity of the four sites is 134 dwellings, and the location of the sites and their surrounding infrastructure is shown in **Figure 30** below.

Figure 30. Northwest Thundersley Cluster Location



4.2.2 As shown above, the four sites are located a significant distance away from the main residential areas of Castle Point. The bus routes in closest proximity to the sites are the 1 and 21. The 1 bus route is accessible approximately 500m to the southwest of the GB26 and GB 27 sites at the Hazelmere Road bus stop. Both east and westbound stops include a flag and pole.

Expected Development Impacts

4.2.3 The expected trip generation from the proposed sites are reported in **Table 30** below.

Table 30. Northwest Thundersley Trip Generation

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land off Grange	55	AM Peak	31	27	1	13	1	0
		PM Peak	30	26	1	8	1	0
Land off Goldfinch Lane	65	AM Peak	37	32	1	15	1	0
		PM Peak	35	31	1	10	1	0
Land to rear of Beaucroft and	10	AM Peak	6	5	0	2	0	0

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Sunray, Bassenthwaite Road		PM Peak	5	5	0	2	0	0
Land between Glen Haven and Ye Oaks, Bassenthwaite Road	4	AM Peak	2	2	0	1	0	0
		PM Peak	2	2	0	1	0	0

4.2.4 As shown above, the Land off Grange and Land off Goldfinch Lane sites are anticipated to generate significantly more trips than the Bassenthwaite Road sites. The peak number of private car trips is indicated from the Land off Goldfinch Lane site, with 32 forecast in the AM peak.

Additional Commentary

4.2.5 The small sites at Bassenthwaite Road would deliver very small amounts of housing which would not be expected to result in any material impacts from a transport perspective. Of the two larger sites the site at Goldfinch Lane would be accessed from a continuation of Goldfinch Lane itself, whereas the site at Grange can only presently be accessed via a narrow track. Both of these larger sites are remote from any existing services (including public transport) and the distances involved in creating suitable links would make corresponding funding difficult to achieve in the context of these sites as stand-alone developments.

4.2.6 The Grange site lies in proximity to site GB2, however making sustainable connections between the two would be challenging. The small sites lie in proximity to site GB9 and would stand to benefit from (and potentially contribute to) improvements made in association with this site if it is taken forward.

Summary and Conclusion

4.2.7 The key conclusions which can be drawn in relation to the sites under consideration are summarised in the table below.

Table 31. Sites GB17, GB18, GB26 and GB27

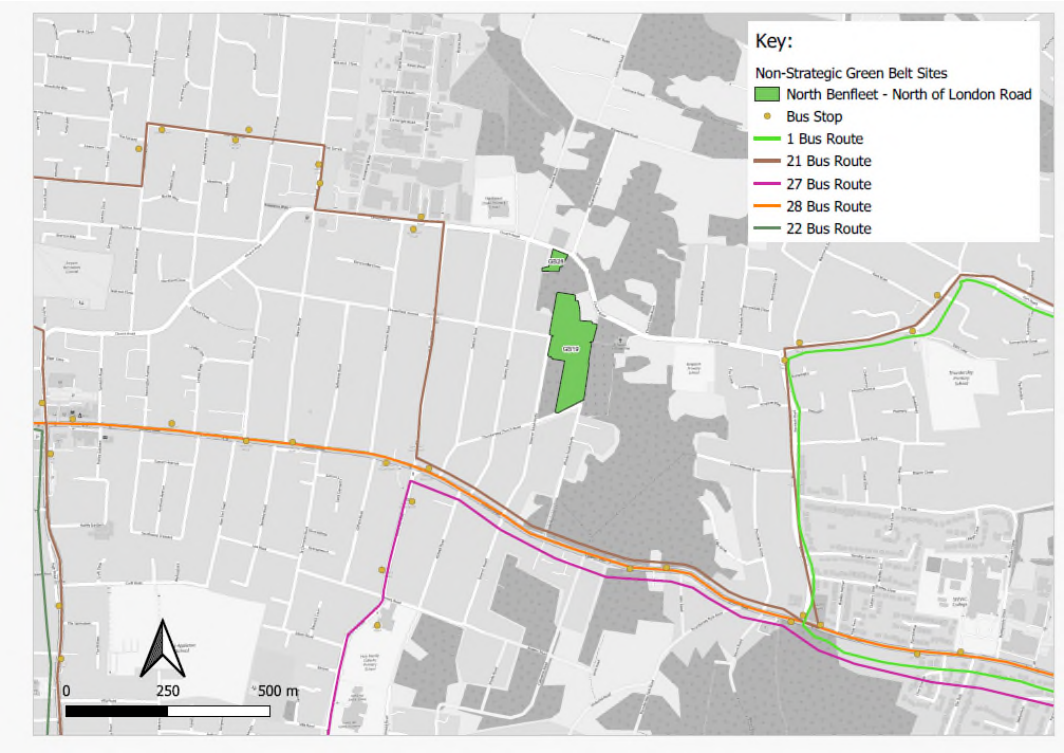
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	Feasible for sites GB26 and GB27. GB18 is isolated from surrounding networks and achieving access would be difficult. GB17 would require further assessment in regards to the impact of development trips on Goldfinch Lane.	Yes for GB17, GB26 and GB27; no for GB18
Sustainability (inherent)	GB26 and GB27 are well located for access to existing networks and services. GB17 and GB18 are remote from any existing services.	Yes for GB26 and GB27; No for GB17 and GB18
Sustainability (with potential Mitigation)	None of the sites is expected to be able to deliver significant mitigation of their impacts.	No, but less of an issue for GB26 and GB27
Safety	Addition of traffic to narrow lanes and residential roads is a concern for GB17 and GB18.	Additional Assessment required
Road Network Residual Impacts (estimated)	Cumulative impacts would add to traffic on Hart Road, Kenneth Road, and the A129 corridor.	Additional Assessment required

4.2.8 It is considered on the basis of the above that the small sites GB26 and GB27 could be delivered in accordance of the requirements of NPPF. There is insufficient evidence to make a case at present for the larger sites and significant constraints would apply to any development at these sites.

4.3 North Benfleet – North of London Road

4.3.1 The North Benfleet – North of London Road cluster is located to the southwest of the previously described Northwest Thundersley non-strategic cluster. It is comprised of two sites (GB19, and GB28). Sites GB19 and GB28 are located in close proximity to the south of Church Road. The combined capacity of the sites is 69 dwellings, and the location of the sites is shown in **Figure 31** below.

Figure 31. North Benfleet – North of London Road Cluster Location



4.3.2 As shown above, the 21 bus route is in close proximity to both sites GB19 and GB28, with the Hazelmere Road bus stop located approximately 400m to the west of site GB28. Additionally the Kents Hill Road North bus stop is located approximately 350m to the southwest of site GB19, which provides access to the 21, 27 and 28 bus routes. The bus stop provides shelter and seating.

Expected Development Impacts

4.3.3 The predicted trip generation from the cluster are reported in the table below.

Table 32. North Benfleet – North of London Road Trip Generation

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land North of Thundersley Church Road and East of Downer Road North	64	AM Peak	34	30	1	17	1	0
		PM Peak	34	29	1	11	1	0
Land Adjacent to 298 Church Road	5	AM Peak	3	2	0	1	0	0
		PM Peak	3	2	0	1	0	0

4.3.4 As shown above, the Land North of Thundersley site is anticipated to generate the highest number of private cars onto the surrounding road network, with 30 in the AM peak and 29 in the PM peak.

Summary and Conclusions

4.3.5 The key conclusions which can be drawn in relation to the sites under consideration are summarised in the table below.

Table 33. Sites GB19 and GB28

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	Access achievable in principle from Rhoda Road North and Church Road	Yes
Sustainability (inherent)	Would integrate with existing surrounding residential development; access to some services on London Road	Yes
Sustainability (with potential Mitigation)	Could be integrated with existing residential areas and contribute to some minor pedestrian / cycle upgrades, plus improve permeability in the wider area for these modes	Yes
Safety	Scale of development would not lead to any inherent safety concerns from transport impacts	Yes
Road Network Residual Impacts (estimated)	Not expected to lead to any material impacts to the road network	Yes

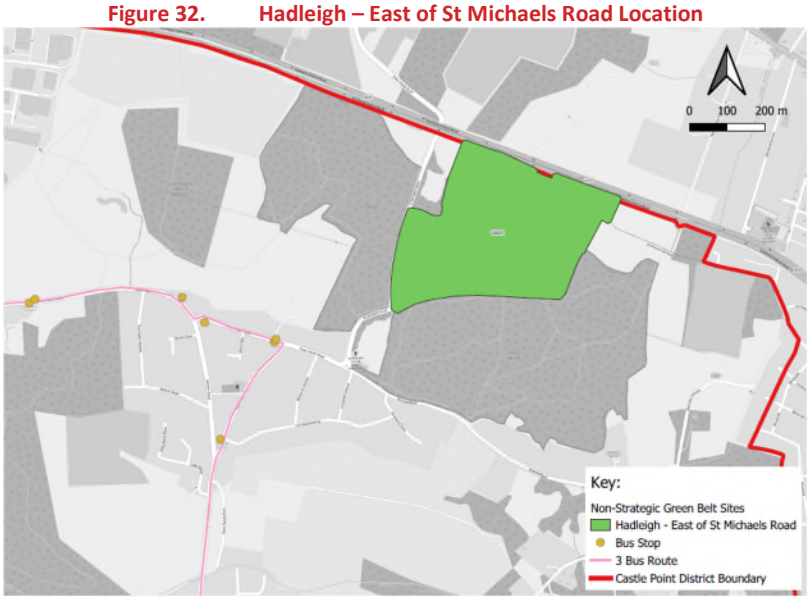
4.3.6 It is therefore considered on the basis of the above that these two sites could in principle be developed in accordance with the requirements of NPPF. These sites also lie in proximity to strategic green belt site GB9 and would therefore benefit from (and potentially contribute to) improvements which would be brought forward in relation to this site.

4.4 Hadleigh – East of St Michaels Road

4.4.1 Site GB20, Land to the East of St Michaels Road, is located on the northeastern boundary of the Castle Point region. The site is large in comparison to many of the other non-strategic green belt sites, with a stated capacity of 506 dwellings; as such, additional comments are

provided in relation to access and potential for modal shift. The location of the site is shown in the figure below.

Figure 32. Hadleigh – East of St Michaels Road Location



4.4.2 As shown in the figure above, the site is in close proximity to the No. 3 bus route. This is accessible from the bus stop located approximately 400m to the southwest of the site. The eastbound stop includes a shelter and seating, whereas the westbound stop includes of a flag and pole.

Expected Development Impacts

4.4.3 The expected development impacts of the cluster are reported in the table below.

Table 34. Hadleigh – East of St Michaels Road Trip Generation

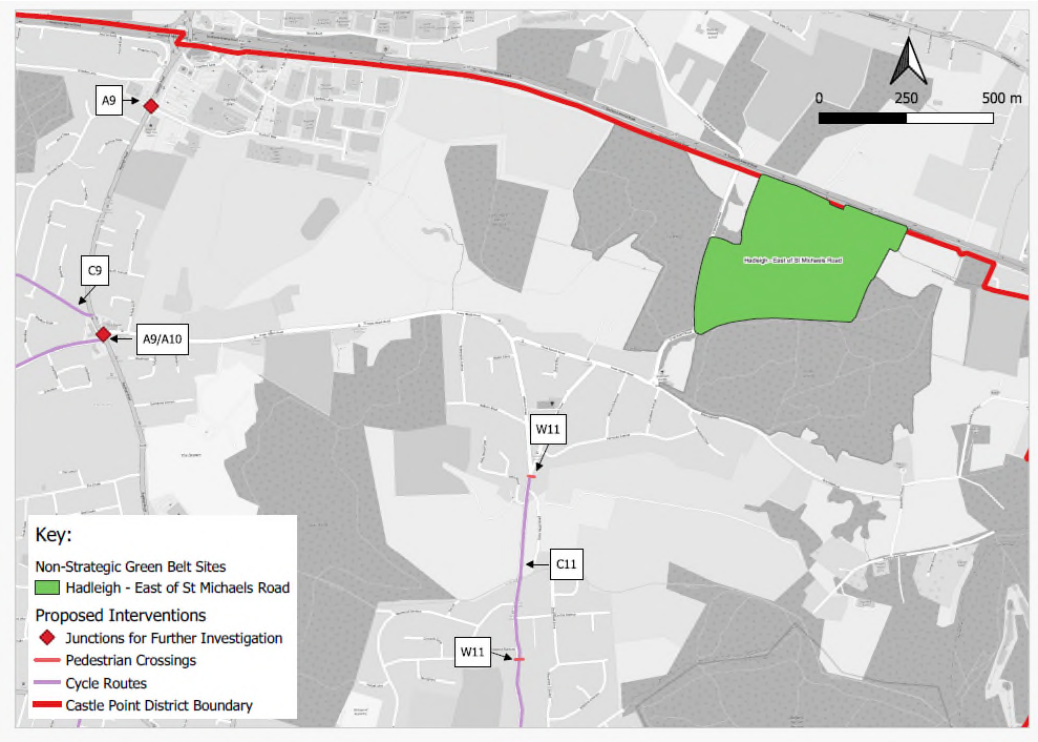
SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land to the East of St Michaels Road	506	AM Peak	284	252	11	117	11	4
		PM Peak	275	240	9	77	10	2

4.4.4 As shown above, the site is anticipated to generate a significant number of private car trips on the local road network, with a maximum of 252 car driver trips generated in the AM peak and 240 car driver trips in the PM peak.

Potential Mitigation Measures

4.4.5 The relationship of this site to the ISI measures is shown geographically in **Figure 33** below.

Figure 33. ISI Measures in the vicinity of Site GB20



4.4.6 The site lies within a connecting distance of a number of potential cycle route improvements. However, as is described below, substantial existing constraints would make it extremely difficult in practice to physically extend these connections to reach the site.

Means of Access

4.4.7 The main access route to the site would be from St Michaels Road from Bramble Road. Bramble Road lacks footpaths for much of its length and is only just wide enough for two-way vehicle movements; St Michaels Road is similarly configured. This would present multiple issues in terms of providing safe pedestrian and cycle access to and from the site, would be unsuitable for bus access and the proposed quantum of development would add over 200 vehicle movements in each peak to the existing residential street network.

Potential for Modal Shift

4.4.8 With a capacity of 500 dwellings it is not expected that this site would be able to support any on-site services (the difficulty of access would additionally make it unsuitable for any service or activity generating significant inbound trips, such as a new school). It is therefore considered that the potential for modal shift associated with this site is minimal, as reflected in its Tier 3 ranking.

Conclusion

4.4.9 The key conclusions which can be drawn in relation to the sites under consideration are summarised in the table below.

Table 35. Site GB20

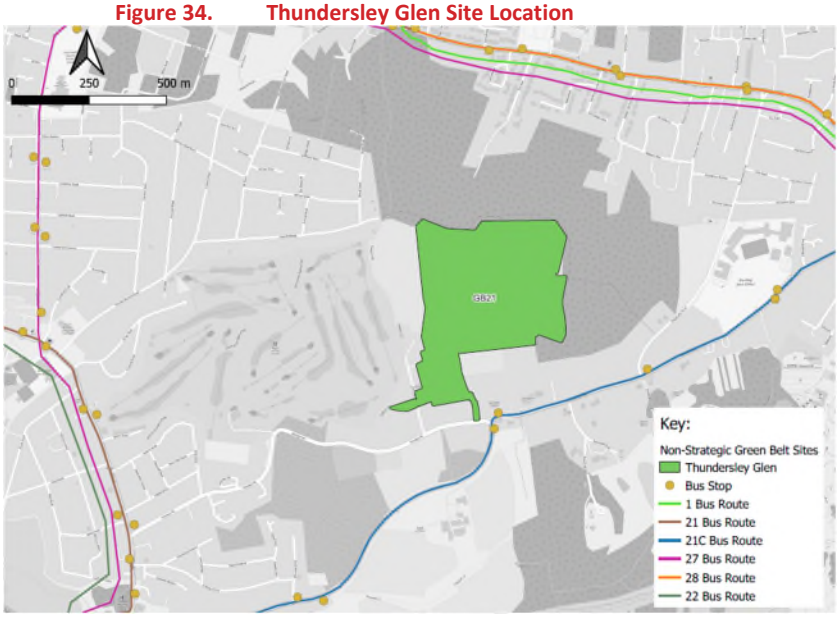
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	Only one point of access, which connects to a constrained immediate highway network with no opportunities for material improvement	No
Sustainability (inherent)	Site would be distant from existing services and too small / remote to provide its own.	No
Sustainability (with potential Mitigation)	Very little mitigation is feasible to provide due to existing constraints.	No
Safety	Provision of safe routes for pedestrians, cyclists and public transport is not possible due to lack of highway land and existing development layout.	No
Road Network Residual Impacts (estimated)	Impacts to St Michaels Road, Bramble Road and connected residential street network would be significant due to lack of existing capacity.	No

4.4.10 It is therefore considered that, on the basis of the above, Site GB20 would not be possible to develop in a manner consistent with the requirements of NPPF paragraphs 110 and 115.

4.5 Thundersley Glen

4.5.1 The Thundersley Glen site (GB21) is located centrally within the Castle Point region. Comprised of the Land off Hill Top Avenue site, this is comprised of 614 dwellings. The site location is shown in the figure below. The site lies in close proximity to non-strategic sites GB22, GB23 and GB24.

Figure 34. Thundersley Glen Site Location



4.5.2 As shown in the figure above, whilst there are a number of bus routes available along Kents Hill Road to the west and London Road to the north, the 21C is the only bus route available immediately to the south of the site. This bus stop is comprised of caging, with no flag and pole.

Expected Development Impacts

4.5.3 The predicted impact of the proposed cluster are shown in the table below.

Table 36. Thundersley Glen Trip Generation

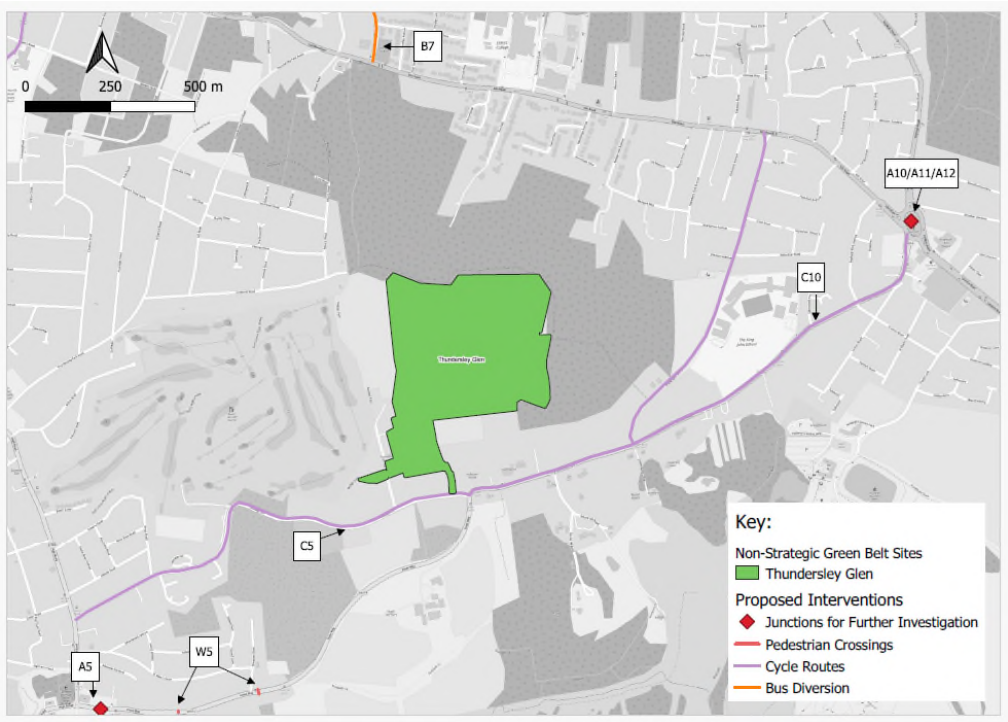
SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land off Hill Top Avenue	614	AM Peak	345	306	14	142	13	4
		PM Peak	333	291	10	93	12	2

4.5.4 The Land off Hill Top Avenue site is anticipated to generate a significant number of private vehicles onto the local road network, with 306 in the AM peak, and 291 in the PM peak. There is scope to encourage modal shift towards active modes, with 142 pedestrian trips anticipated in the AM peak and 93 in the PM peak.

Potential Mitigation Measures

4.5.5 The relationship of this site to the ISI measures is shown geographically in **Figure 35** below.

Figure 35. ISI Measures in the vicinity of Site GB21



4.5.6 The site would connect directly to the potential cycle corridors (C5 and C10) and would in principle be well placed to help fund and deliver these improvements.

Means of Access

4.5.7 The site as shown includes the existing Hilltop Farm private access. This is currently an unadopted residential access route which is flanked by residential properties, including where it meets Vicarage Hill; as a minimum the properties to either side of the existing access would need to be acquired and demolished to create sufficient space for a suitable access to be created for the scale of development which the site could accommodate. The proximity of this access to the existing junction of Vicarage Hill and Benfleet Road remains a risk as it is unlikely that a right turn pocket could be created and the impacts of queuing traffic (particularly in the PM peak) would need to be carefully investigated.

Potential for Modal Shift

4.5.8 The site in isolation would not automatically be expected to provide on-site services; however, if it were to be developed alongside some or all of GB22, GB23 or GB24, it would have potential to make some provision (for education, health, or local retail) which could also serve surrounding residential areas. The site is approximately 1 mile from Benfleet Station, which is within a reasonable cycling distance and walkable for a fit adult. However, the gradients in this area mean that this potential is likely to be best supported over time through the increased use of e-bikes.

Conclusion

4.5.9 The key conclusions which can be drawn in relation to the sites under consideration are summarised in the table below.

Table 37. Site GB21 – Summary of Conclusions

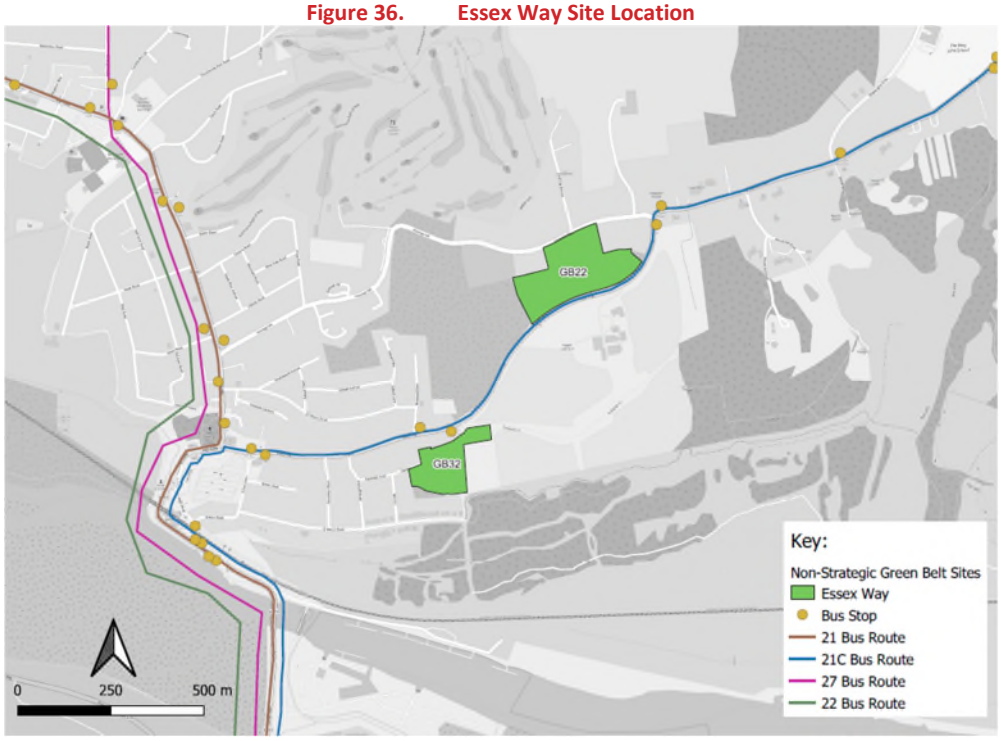
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	A suitable access would be reliant on the removal of adjacent existing residential properties from the Hilltop Farm access, and the impacts to the adjacent road junction being appropriately managed	Not clear at present
Sustainability (inherent)	Site in isolation not expected to directly provide local services, but access to Benfleet would offer a range of opportunities	Yes
Sustainability (with potential Mitigation)	ISI measures would improve access for sustainable modes. Bus frequency of connections to Benfleet (hourly) would require further consideration	Yes (improves when combined with other nearby sites)
Safety	Substantial increases to vehicular traffic would be expected, this would need to be assessed as part of access design and wider off-site appraisal	Not clear at present
Road Network Residual Impacts (estimated)	Substantial increases to vehicular traffic would be expected, with main impacts seen on B1014. Junction with A13 to the north would also require additional appraisal.	Not clear at present

4.5.10 It is considered that there is potential for site GB21 to be development in a manner which would be compliant with the requirements of the NPPF. However, some significant questions remain, particularly around the means of access. The site has good potential to work in conjunction with other nearby non-strategic sites in terms of supporting sustainable transport improvements.

4.6 Essex Way

4.6.1 The Essex Way cluster is comprised of two sites, GB22 and GB32, located to the north and south of Essex Way, the sites have a combined capacity of 188 dwellings. The site location is shown in the figure below. Site GB22 is in proximity to strategic sites GB11 and GB12, whilst GB32 is in proximity to strategic site GB12 only.

Figure 36. Essex Way Site Location



Expected Development Impacts

4.6.2 The predicted highway impact of the cluster are presented in the table below.

Table 38. Essex Way Trip Generation

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land Between Essex Way and Vicarage Hill	127	AM Peak	68	60	4	31	3	1
		PM Peak	66	57	3	21	3	1
Land off Glyders	61	AM Peak	33	29	1	15	1	0
		PM Peak	31	27	1	11	1	0

4.6.3 The Land Between Essex Way and Vicarage Hill site is anticipated to generate up to 60 trips by private car in the AM peak, and 57 in the PM peak. In the AM peak, a significant number of pedestrian trips are forecast of up to 31 trips; over 50% of the total private vehicle trips.

Additional Commentary

4.6.4 Site GB22 has more than one option available for its principle access; gradients at the site means that some earthworks would potentially be required. GB32 would take access from a continuation of Glyders.

4.6.5 It is noted that existing pedestrian and cycle access to GB22 is limited and there would be challenges in creating a high quality pedestrian and cycle link through to Benfleet. However the actual distance to be travelled from both of these sites to Benfleet station is well within typical acceptable distances.

Summary and Conclusion

4.6.6 The key conclusions which can be drawn in relation to the sites under consideration are summarised in the table below.

Table 39. Sites GB22 and GB32

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	Both sites have suitable means of access which could be provided via development.	Yes
Sustainability (inherent)	Physical distances to Benfleet station (and surrounding services) are within reasonable walking and cycling times. Improvements would be required to create an attractive route from GB22.	Yes
Sustainability (with potential Mitigation)	Sites together could provide some limited local service improvements	Yes
Safety	Addition of traffic to Vicarage Hill could create conflict with pedestrian and cycle activity.	Yes (may require mitigation via creation of walking / cycling route)

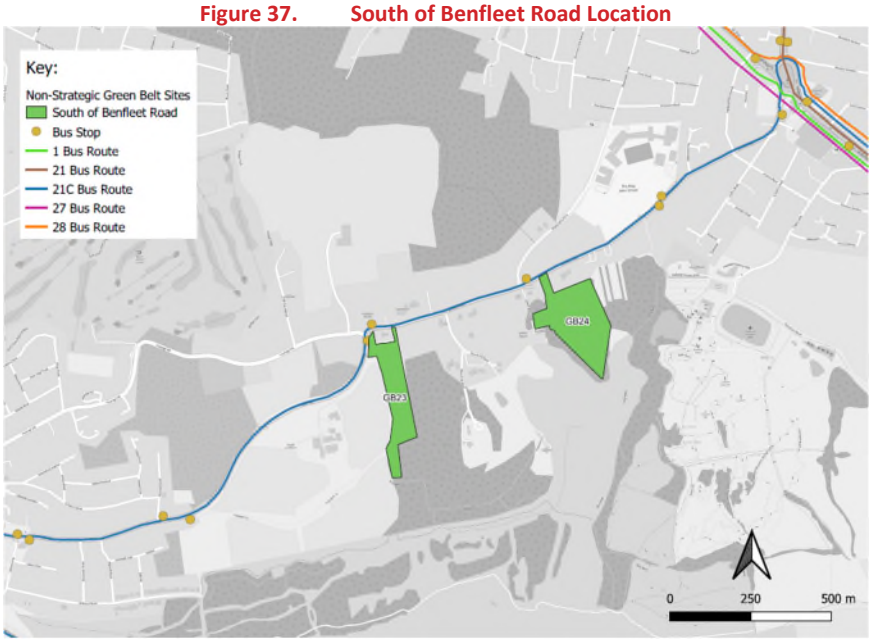
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Road Network Residual Impacts (estimated)	Traffic added to network could increase congestion around Benfleet station and at B1014 / Vicarage Hill junction.	Yes (but may require targeted mitigation)

4.6.7 It is concluded on the basis of the above that these sites could be brought forward in compliance with the requirements of NPPF. There is good potential for benefits to be increased if these sites are developed in conjunction with strategic sites GB11 and/or GB12.

4.7 South of Benfleet Road

4.7.1 The South of Benfleet Road cluster is comprised of two sites, GB23 and GB24. They are located along the southern side of the northeastern section of Benfleet Road, and the total capacity of the two sites is 136 dwellings. The location of the sites are shown in the figure below.

Figure 37. South of Benfleet Road Location



4.7.2 Similarly to the previously described clusters, the 21C bus route is accessible along the northern perimeter of the sites along Benfleet Road. The bus stops by both sites are comprised of a flag and pole.

Expected Development Impacts

4.7.3 The predicted development impacts of the cluster are shown in the table below.

Table 40. South of Benfleet Road Trip Generation

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land to the rear of 329 Benfleet Road	82	AM Peak	46	41	2	19	2	1
		PM Peak	45	39	1	12	2	0
Land off Shipwrights Close	54	AM Peak	30	27	1	13	1	0
		PM Peak	29	26	1	8	1	0

4.7.4 The Land to the rear of 329 Benfleet Road site is anticipated to generate more private car trips than the Land off Shipwrights Close site, with 41 in the AM peak and 39 in the PM peak, compared to 27 in the AM peak and 26 in the PM peak generated by the Land off Shipwrights Close site.

Additional Commentary

4.7.5 It is not clear from the available information whether sufficient frontage exists for the land to the rear of 329 Benfleet Road to accommodate a suitable site access point. For the land off Shipwrights Close, there is insufficient information available to determine whether a suitable access could be provided.

4.7.6 The sites have access to the 21C bus route, but are otherwise remote from other public transport services.

Summary and Conclusion

4.7.7 The key conclusions which can be drawn in relation to the sites under consideration are summarised in the table below.

Table 41. Sites GB23 and GB24 – Summary of Conclusions

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	Unclear whether this can be achieved for either site.	Further work required

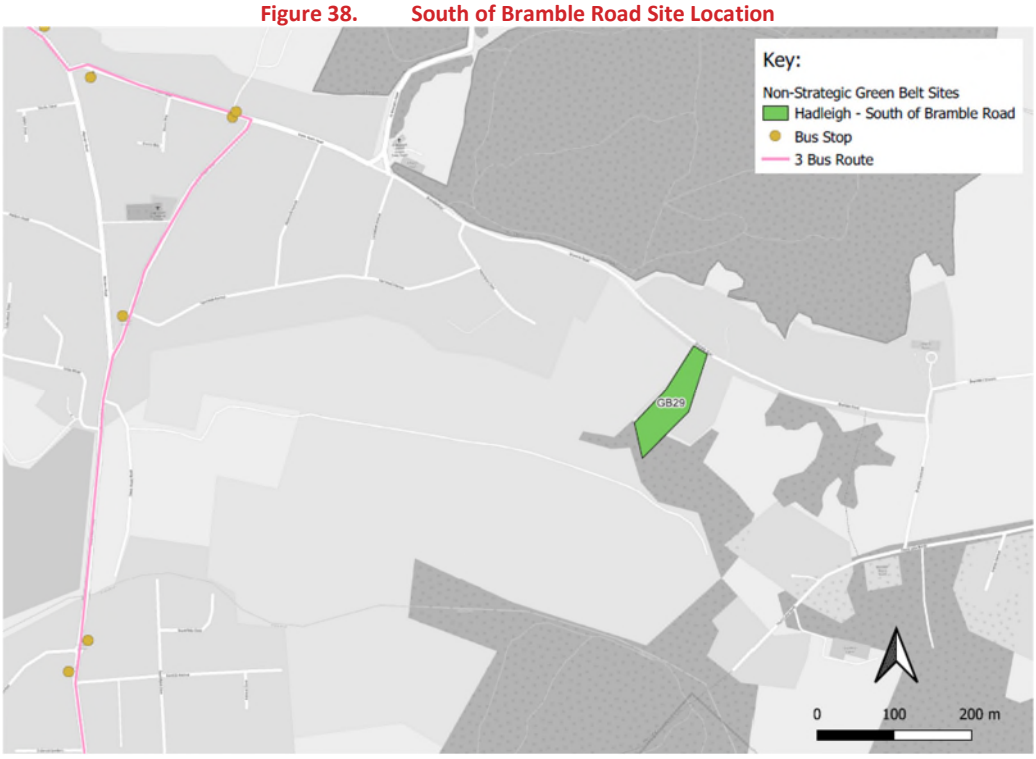
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Sustainability (inherent)	The sites are remote from existing services, including public transport services	No (but may be addressed through mitigation)
Sustainability (with potential Mitigation)	Sites are unlikely to support significant mitigation on their own, but have some additional potential in combination with sites GB11 and GB12	Dependent on strategic green belt sites
Safety	Impacts to Benfleet Road and A13 junction would need to be considered	Further analysis required
Road Network Residual Impacts (estimated)	Cumulative impacts from both sites would add to congestion at A13 and on B1014 (evidenced from strategic modelling)	Further analysis required

4.7.8 On the basis of the above, it is considered that these sites would have the best chance of being developed in accordance with the requirements of NPPF if sites GB11 and GB12 were also to come forward. Significant questions remain over whether these sites could be classified as sustainable when developed in isolation.

4.8 Hadleigh – South of Bramble Road

4.8.1 The Hadleigh – South of Bramble Road region is comprised solely of site GB29, 170 Bramble Road. This is comprised of 15 dwellings. The site location is shown in **Figure 38** below.

Figure 38. South of Bramble Road Site Location



4.8.2 As shown above, the GB29 site is located to the south of Bramble Road to the northeast of the Castle Point region. The No 3 bus route is in closest proximity, accessible approximately 650m to the west of the site, at the Daws Heath Road/Bramble Road junction. The bus stop on the eastbound side of the road is comprised of a flag and pole, and the bus stop on the westbound side is comprised of a flag and pole.

Expected Development Impacts

4.8.3 The expected development impacts of the cluster are indicated in **Table 42** below.

Table 42. South of Bramble Road Trip Generation

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
170 Bramble Road	15	AM Peak	8	7	0	3	0	0
		PM Peak	8	7	0	2	0	0

4.8.4 As shown above, due to the relatively small scale of the site it is predicted that approximately 7 private vehicle trips would be generated in both the AM and PM peaks.

Summary and Conclusion

4.8.5 The key conclusions which can be drawn in relation to the site under consideration are summarised in the table below.

Table 43. Site GB29 – Summary of Conclusions

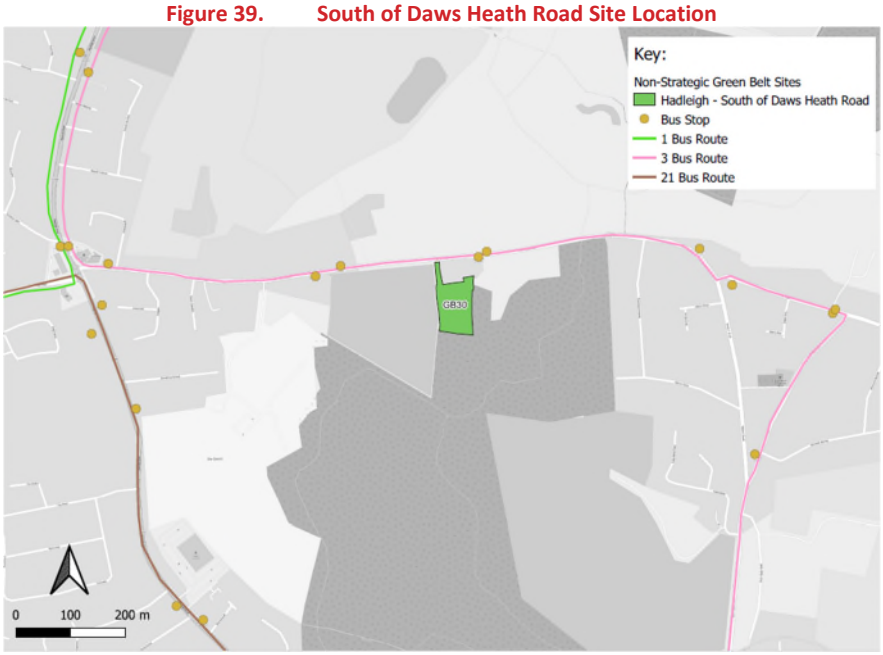
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	A suitable means of access is considered to be feasible for the site (via connection to the existing residential street network). However, as has been observed in relation to Site GB5, Bramble Lane itself is narrow and constrained	Yes (subject to further design work)
Sustainability (inherent)	The site is remote from any existing services. The site would not be large enough to provide any services themselves.	No, but the overall impacts of the site are expected to be limited
Sustainability (with potential Mitigation)	Very limited mitigation would be feasible to provide for this site due to viability expectations. (Mitigation may however come forward in association with strategic sites GB5 and GB6, if progressed.	No, but the overall impacts of the site are expected to be limited
Safety	The addition of 15 properties served from Bramble Road would not be a major concern.	Yes
Road Network Residual Impacts (estimated)	A suitable means of access is considered to be feasible for the site (via connection to the existing residential street network)	Yes

4.8.6 On the basis of the above it is considered that this site could be developed in a manner compliant with the requirements of NPPF; however this may be affected by decisions made in connection with site GB5.

4.9 Hadleigh – South of Daws Heath Road

4.9.1 The Hadleigh – South of Daws Heath Road cluster is comprised of Site GB30 (Ragwood Riding Centre), located to the northeast of the Castle Point region. This is comprised of 13 dwellings. The site location is shown in **Figure 39** below.

Figure 39. South of Daws Heath Road Site Location



4.9.2 As shown above, the Ragwood Riding Centre is located immediately to the south of the No 3 bus route. The bus stops located immediately to the northeast of the site are comprised of a flag and pole.

Expected Development Impacts

4.9.3 The expected development impacts of the cluster are shown in **Table 44** below.

Table 44. South of Daws Heath Road Trip Generation

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Ragwood Riding Centre	13	AM Peak	7	6	0	3	0	0
		PM Peak	7	6	0	2	0	0

4.9.4 As shown above, due to the small scale of the site it is indicated that approximately 7 private vehicle trips would be generated in both the AM and PM peaks.

Summary and Conclusion

4.9.5 The key conclusions which can be drawn in relation to the site under consideration are summarised in the table below.

Table 45. Site GB30 – Summary of Conclusions

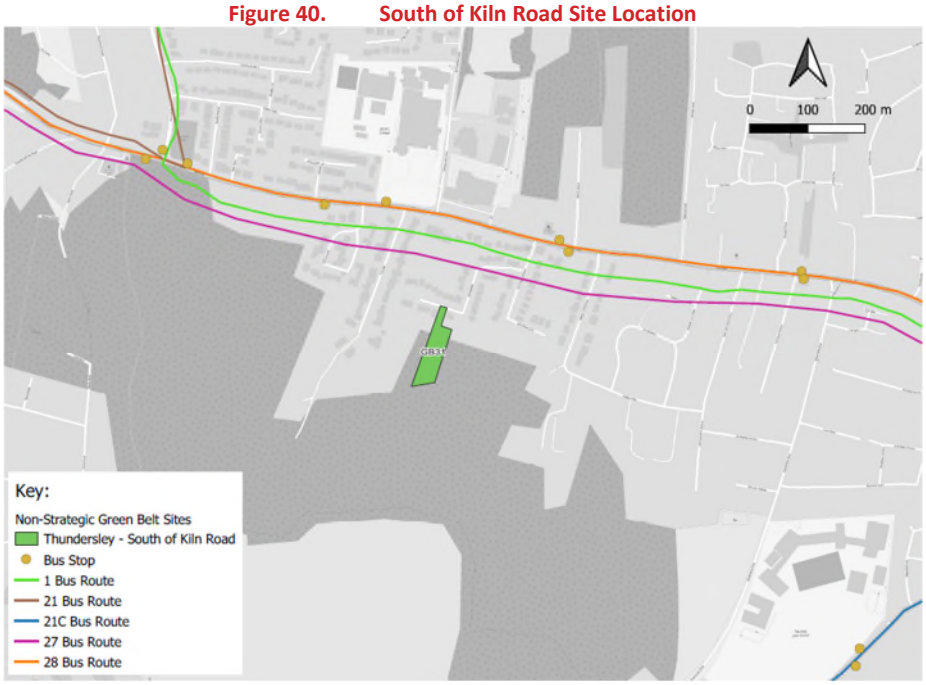
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	A suitable means of access is considered to be feasible for the site (via connection to the existing residential street network)	Yes
Sustainability (inherent)	The site is remote from any existing services. The site would not be large enough to provide any services themselves.	No, but the overall impacts of the site are expected to be limited
Sustainability (with potential Mitigation)	Very limited mitigation would be feasible to provide for this site due to viability expectations. (Mitigation may however come forward in association with strategic sites GB3 and GB4, if progressed.	No, but the overall impacts of the site are expected to be limited
Safety	The addition of 13 properties served from Daws Heath Road would not be a major concern.	Yes
Road Network Residual Impacts (estimated)	A suitable means of access is considered to be feasible for the site (via connection to the existing residential street network)	Yes

4.9.6 On the basis of the above it is considered that the site could be brought forward in a manner consistent with the requirements of NPPF.

4.10 Thundersley – South of Kiln Road

4.10.1 The South of Kiln Road site is comprised of one site, GB31 Land off Netherfield. The site is comprised of 12 dwellings, and the site location is shown in **Figure 40** below.

Figure 40. South of Kiln Road Site Location



4.10.2 There are three bus routes accessible a short distance to the north of the site, with routes 1, 27 and 28 accessible approximately 300m to the north of the site at the Warren Chase bus stop. Shelter and seating are available at both eastbound and westbound stops.

Expected Development Impacts

4.10.3 The expected development impacts of the cluster are reported in **Table 46** below.

Table 46. South of Kiln Road Trip Generation

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land off Netherfield	12	AM Peak	7	6	0	3	0	0
		PM Peak	6	5	0	3	0	0

4.10.4 As shown above, due to the small scale of the site it is predicted that approximately 7 private vehicle trips would be generated in the AM peak and 6 in the PM peak.

Summary and Conclusion

4.10.5 The key conclusions which can be drawn in relation to the site under consideration are summarised in the table below.

Table 47. Site GB31 – Summary of Conclusions

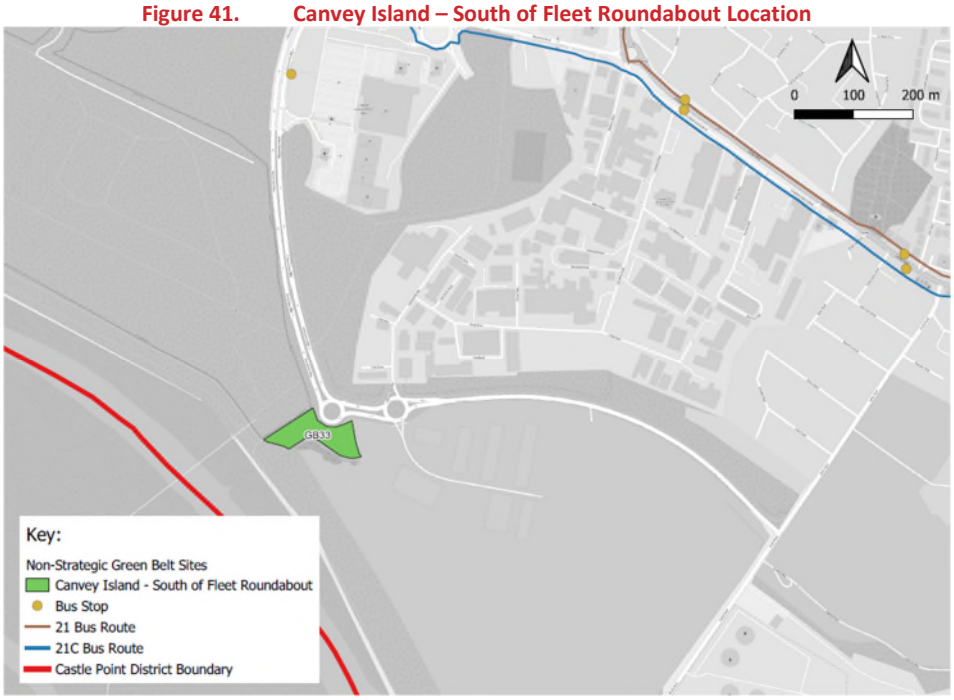
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	A suitable means of access is considered to be feasible for the site (via connection to the existing residential street network)	Yes
Sustainability (inherent)	The site adjoins existing residential areas and has access to services on Kiln Road The site would not be large enough to provide any services themselves.	Yes
Sustainability (with potential Mitigation)	Very limited mitigation would be feasible to provide for this site due to viability expectations.	No, but the overall impacts of the site are expected to be limited
Safety	Netherfield Road is a residential street but the addition of 12 properties served from it would not be a major concern.	Yes
Road Network Residual Impacts (estimated)	Trip generation for this site will be very limited and will not lead to any material impacts on the transport network	Yes

4.10.6 It is therefore considered that this site could be brought forward in a manner consistent with the NPPF.

4.11 Canvey Island – South of Fleet Roundabout

4.11.1 The Canvey Island South of Fleet Roundabout cluster is comprised of site GB33 (Land South of Fleet Roundabout). Located to the southwest of Canvey Island, this site is in close proximity to the southwestern boundary of Castle Point. The site is considered to have capacity for 6 dwellings, and its location is shown in **Figure 41** below. It is noted that an alternative employment use is also being considered for this site.

Figure 41. Canvey Island – South of Fleet Roundabout Location



4.11.2 As shown above, the site is located a significant distance away from the nearest bus route, the 21C. The bus stop is located approximately 1km to the north of the site.

Expected Development Impacts

4.11.3 The expected development impacts of the cluster are reported in the table below.

Table 48. South of Fleet Roundabout Trip Generation

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land south of Fleet Roundabout, Roscommon Way	6	AM Peak	3	3	0	1	0	0
		PM Peak	3	3	0	1	0	0

4.11.4 As shown above, due to the small scale of the site it is predicted that approximately 3 private car trips would be generated in both the AM and PM peaks.

Summary and Conclusion

4.11.5 The key conclusions which can be drawn in relation to the sites under consideration are summarised in the table below.

Table 49. Site GB33 – Summary of Conclusions

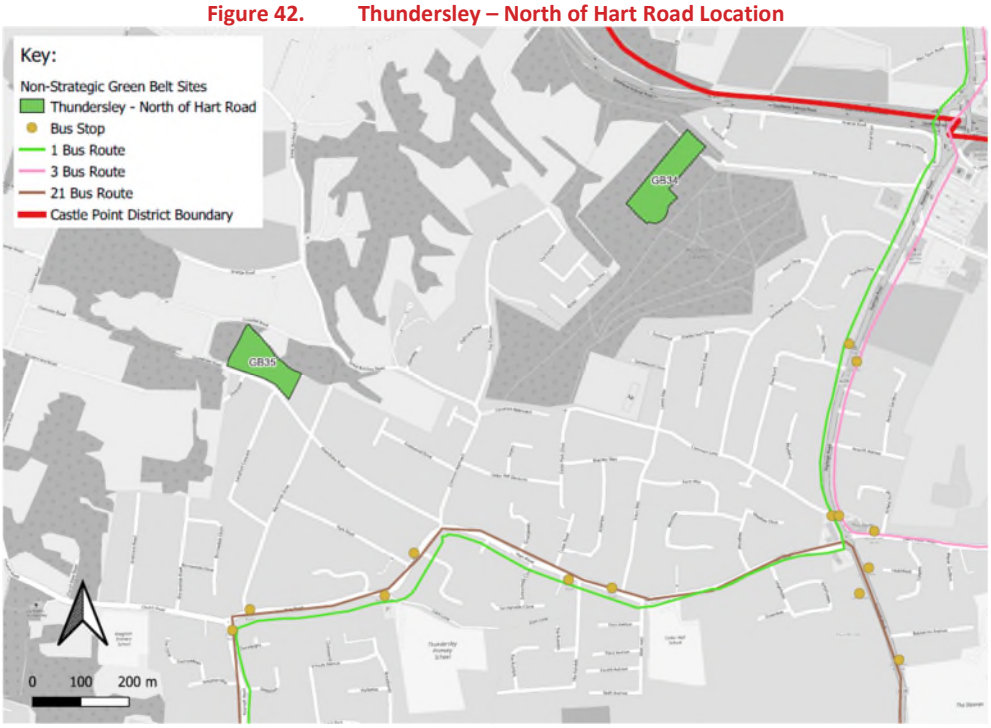
TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	A suitable means of access is achievable in principle (this would be taken from the adjacent roundabout, the costs of this however may be prohibitive given the limited proposed development)	Yes (in principle)
Sustainability (inherent)	The site would have access to adjacent walking and cycling networks and bus services	Yes
Sustainability (with potential Mitigation)	No direct mitigation would be required for this site.	Yes
Safety	No change is expected to safety issues as a result of the development of this site for either residential or employment use.	Yes
Road Network Residual Impacts (estimated)	The limited size of the site means that no significant impacts are expected on the road network.	Yes

4.11.6 It is therefore considered that this site could be brought forward in a manner which is compliant with the requirements of the NPPF.

4.12 Thundersley – North of Hart Road

4.12.1 The Thundersley – North of Hart Road cluster is comprised of sites GB34 and GB35 (Land West of Kingsley Lane and Grandview Stables). The sites are located to the north of the Castle Point region, and are comprised of 65 dwellings. The sites' location is shown in **Figure 42** below.

Figure 42. Thundersley – North of Hart Road Location



4.12.2 As shown above, the bus routes in closest proximity to the sites are bus routes 1 and 3. These are located approximately 400m to the east of the Land West of Kingsley Lane site. The bus stop is comprised of bus shelter and seating.

Expected Development Impacts

4.12.3 The expected development impacts of the cluster are shown in **Table 50** below.

Table 50. Thundersley – North of Hart Road Trip Generation

SITE	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Land west of Kingsley Lane	36	AM Peak	19	17	1	9	1	0
		PM Peak	19	16	1	6	1	0
Grandview Stables, Grandview Road	29	AM Peak	16	14	1	7	1	0
		PM Peak	15	13	0	5	1	0

4.12.4 The Land West of Kingsley Lane site is predicted to generate up to 17 private car trips in the AM peak and 16 private car trips in the PM peak. The Grandview Road site is predicted to generate up to 16 private car trips in the AM peak and 13 private car trips in the PM peak.

Additional Commentary

4.12.5 Access to site GB34 would be via Kingsley Lane. Whilst an access design has not been drafted, is considered that available street view data indicates that an access suitable for the volume of traffic expected would be achievable. Similarly it is considered that a suitable access to GB35 could be achieved via Grandview Road (however, Grandview Road itself is very narrow and in poor condition so some improvements to this route for all modes are expected to be required).

Summary and Conclusion

4.12.6 The key conclusions which can be drawn in relation to the sites under consideration are summarised in the table below.

Table 51. Sites GB34 and GB35 – Summary of Conclusions

TRANSPORT CRITERIA	SUMMARY OF APPRAISAL	COMPLIANT WITH NPPF PARAGRAPHS 110 AND 115
Means of Access	A suitable means of access is considered to be feasible for both sites.	Yes, with wider access road improvements for GB35
Sustainability (inherent)	The sites adjoin existing residential areas but there is a lack of nearby services. The sites would not be large enough to provide any services themselves.	No, but the overall impacts of the site are expected to be limited
Sustainability (with potential Mitigation)	Very limited mitigation would be feasible to provide for these sites due to viability expectations.	No, but the overall impacts of the site are expected to be limited
Safety	Some concerns exist over Grandville Road in its current state	Yes, but only if improvement to Grandville Road is possible (GB35)
Road Network Residual Impacts (estimated)	Trip generation for these sites will be very limited and will not lead to any material impacts on the transport network	Yes

4.12.7 On the basis of the above it is considered that these sites could be brought forward broadly in line with the requirements of NPPF. However, given their scale and location, development of these sites would result in car-dependent developments.

5. SUMMARY & CONCLUSION

5.1.1 This Report has been produced as an assessment of potential green belt sites within Castle Point, in terms of their anticipated transport impacts and ability to be developed in accordance with the principles of NPPF Paragraphs 110 and 115. This report has considered the proposed quantums of development associated with each site, the surrounding road network, and proposed mitigations as identified within SYSTRA's ISI prepared for the CPP.

5.1.2 A Site Group Assessment has also been undertaken in order to calculate bespoke trip rates, based on the surrounding transport infrastructure.

5.1.3 It has been determined that due to existing congestion surrounding the Castle Point region, development of any of the sites would increase congestion levels on the surrounding road network. However certain sites, due to their proximity to existing, proposed or plausible active travel infrastructure or bus routes, are deemed more suitable for development given their greater potential for modal shift.

5.1.4 The sites that have shown the greatest potential for modal shift away from private car include South of Hadleigh (GB8) Land Southwest and Southeast of Daws Heath (GB10 and GB11), and Land East of Rayleigh Road (GB13). However, further detailed appraisal would be required if any of these sites (or any others within the study) were to be taken forward as potential allocations within the CPP; overall the Green Belt sites assessment has shown that any substantial increase in development within the Borough would present considerable challenges in terms of the operation and resilience of the existing transport networks.

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