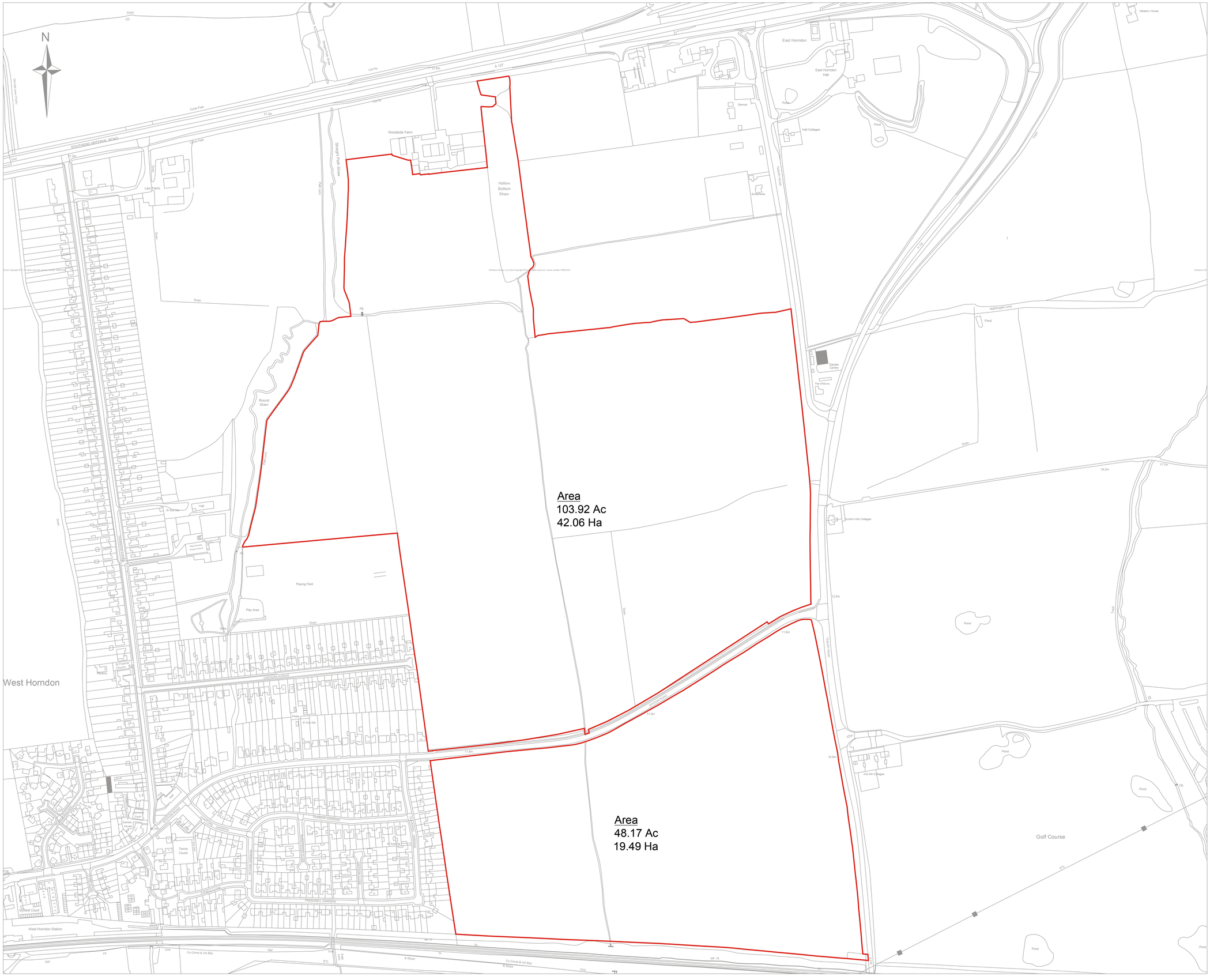

Total Area
152.09 Ac
61.55 Ha

Rev	Date	By	Description	Chk'd

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site:

West Horndon

title:

Site Location

scale: @A1	1:2500	drawn by:	JH
date:	03.02.15	checked:	EL

drawing no: **13035-01**

sheet no: **Sheet 1 of 1**

revision:

FS 53054 ISO 9001:2008
EMS 61929 ISO 14001:2004

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Odyssey Markides

LAND AT WEST HORNDON, BRENTWOOD

Representation about Dunton Garden Suburb Consultation

Report No. 13-158-08B
February 2015

LAND AT WEST HORNDON, BRENTWOOD

Representation about Dunton Garden Suburb Consultation

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DOCUMENT CONTROL SHEET

REV	ISSUE PURPOSE	AUTHOR	CHECKED	REVIEWED	APPROVED	DATE
	Draft	SRD	ACM	ACM	ACM	Feb '15
A	Final draft	SRD	ACM	ACM	ACM	Feb '15
B	Final for submission	SRD	ACM	ACM	ACM	Feb '15

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FIGURES

APPENDICES

1.0 INTRODUCTION

Background

1.1 Odyssey Markides (OM) have been appointed by Countryside to provide transport advice relating to a site at West Horndon in Essex. This report is therefore written by OM on behalf of Countryside.

1.2 Brentwood Borough Council (BrBC) are currently in the process of preparing their Local Plan, and have recently published the "Strategic Growth Options Consultations" document. The consultation period opened on 6 January 2015 and will close on 17 February 2015.

1.3 BrBC and Basildon Borough Council (BaBC) have identified the potential for a joint opportunity for a "Garden Suburb" at Dunton. Whilst this is not directly part of the Local Plan consultation, the Councils have jointly produced the "Dunton Garden Suburb Consultation" document which is open for comments and representations during the LP consultation period.

1.4 The purpose of this report is to represent the views of Countryside on the suitability of the Dunton Garden Suburb site with regards to transport.

Approach

1.5 **Section 2.0** of this report summarises the potential development of the site as set out in the "Dunton Garden Suburb Consultation" document.

1.6 **Section 3.0** sets out the existing conditions on the local highway network.

1.7 **Section 4.0** provides comments on the proposed development mix, layout and timescales.

1.8 **Section 5.0** sets out the anticipated trip generation and travel demand of the potential development.

1.9 **Section 6.0** discusses the implication of the potential development on the local highway network whilst **Section 7.0** discusses the impact on the public transport network.

1.10 **Section 8.0** contains a summary and conclusions.

2.0 DUNTON GARDEN SUBURB PROPOSALS

2.1 BrBC and BaBC have jointly produced the "Dunton Garden Suburb Consultation" document which seeks to explore the potential for cross boundary development of a site at Dunton in Essex.

2.2 The site is located between Laindon in Basildon Borough and West Horndon in Brentwood Borough. Approximately two thirds of the site are located in Brentwood Borough whilst the remainder is located within Basildon Borough.

2.3 The site is bounded to the north by the A127, to the west by the A128 and to the east by Lower Dunton Road. The London to Shoeburyness railway line runs adjacent to the southern site boundary. The site location is shown in **Figure 1**.

2.4 The current use of the site is mainly farmland as well as the Dunton Hills Family Golf Centre. The site also accommodates a small number of buildings, some of which are listed.

2.5 The consultation document suggest that the site could accommodate or provide:

- 4,000-6,000 houses
- Employment
- Gypsy and traveller pitches
- Community facilities
- Green space
- Integrated transport improvements
- New railway station along the southern boundary of the site
- Highway improvements

2.6 The consultation document acknowledges that commencement of development of the site is likely to take some eight years or more from any approval. It is therefore anticipated that first occupations will be no earlier than the mid 2020's.

3.0 EXISTING HIGHWAY NETWORK

3.1 The A127 runs roughly in an east-west alignment from Southend-on-Sea in the east to London in the west. Although not part of the trunk road network anymore, the A127 is a major route from the east coast of England towards London and therefore experiences high traffic flows throughout the day. In 2012 it carried in the order of 73,000[1] vehicles per day on some sections. In the vicinity of the site it carried around 62,600 vehicles a day.

3.2 The site is located between two major grade separated roundabout junctions on the A127, namely the Halfway House roundabout to the west and the Dunton roundabout to the east. Current access to the site is taken from the southwestern arm of the Dunton roundabout. Both the Halfway House and Dunton roundabouts have been identified as accident hotspots.[1]

3.3 The highway network in the vicinity of the site is shown in **Figure 2**.

3.4 OM commissioned Automatic Traffic Counts (ATCs) to be carried out at three locations in January 2015. They revealed that two-way flows along West Mayne, south of the junction with Lower Dunton Road, are around 1850 vehicles between 0700-0800 and around 2,000 vehicles between 1700-1800.

3.5 Two-way flows along West Mayne, east of the junction with the B1036, are around 930 vehicles in the morning and 920 vehicles in the evening whilst flows along the B1036 are around 1,040 vehicles in the morning and 1,350 vehicles in the evening. The observed traffic flows are shown in **Figure 3**.

[1] A127 – Corridor for Growth, An Economic Plan, March 2014

4.0 PROPOSED DEVELOPMENT MIX, LAYOUT AND TIMESCALES

4.1 The Dunton Garden Suburb consultation document sets out the potential development mix; however, it does not provide much detail. Nevertheless, it is considered that a development of the proposed size at Dunton will be required to provide a comprehensive mix of facilities in addition to the main residential element, such as:

- Reasonable amount and mix of employment uses
- Primary schools
- Secondary school
- Retail
- Sports pitches or other open green space
- Leisure facilities (e.g. pub / restaurant)
- New bus route or diversion of existing route
- Pedestrian infrastructure throughout the site and linking to existing infrastructure
- Highway improvements to mitigate development impact

4.2 As stated above, the consultation document suggests that development of the site would not take place until the mid 2020's. BrBC's Strategic Housing Market Assessment (SHMA) concluded at paragraph 1.3.5 that "*the dwellings projection figure for Brentwood is 362 per annum over the Plan period 2015 to 2030*."

4.3 However, Countryside's Strategic Growth Options representations, produced by Andrew Martin Planning, suggest that the SHMA considerably underestimates the future housing need in Brentwood Borough.

4.4 It is clear that in the order of 3,500 dwellings will be required within Brentwood Borough prior to the potential implementation of any development at Dunton based on the housing target set out in the SHMA. In reality the housing need is likely to be even higher as demonstrated in Countryside's representations. This could be provided by sites such as the Countryside site at West Horndon early on in the plan period.

5.0 TRIP GENERATION

5.1 The potential development of the site is likely to be residentially led with some, to date unquantified, employment and community facilities provided. Therefore the main element of the trip generation will be between 4,000 and 6,000 dwellings.

5.2 Given the potential for employment uses within the site there may be a small element of internalisation of trips, however it can be expected that a development of the size considered will generate in the order of one external car trip per two dwellings, i.e. a trip rate of approximately 0.5 trips/dwelling, during the peak hours. It is therefore anticipated that a development of 6,000 houses will generate around 3,000 peak hour car trips (external), in addition to any trips associated with the employment or community elements. Including any employment provision or community facilities the total trip generation could be considerably higher, depending on the quantum provided.

5.3 Of the residential peak hour trips, a large proportion is for commuting purposes. The 2011 Census data (Table ID QS703EW - Method of Travel to Work) suggests that, for the West Horndon and Laindon Park wards combined, 62% of residents drive to work. The Census data further suggests that 21% of residents use public transport to get to work. A small proportion walk or cycle. Combining the Census data with the estimated car trip generation of the site, the number of trips by other modes (ballpark figures) have been estimated, as shown in **Table 5.1**.

Table 5.1 Potential trip generation for Dunton Garden Suburb (ballpark figures)

Mode	Mode share	Trip Generation (6,000 dwellings)
Train	18%	865
Bus	3%	136
Motorcycle	1%	37
Car driver	62%	3,000
Car Passenger	6%	276
Bicycle	2%	92
Walk	7%	340
Other	3%	127
Total	**100%**	**4,873**

5.4 It is acknowledged that this methodology is not entirely accurate as different journey purposes will have different modal splits but for the purpose of this report it is considered an acceptable methodology.

5.5 The impact resulting from the trip generation of the proposed development on the local highway network and the public transport network will be discussed in the following chapters.

6.0 IMPACT ON THE LOCAL HIGHWAY NETWORK

Trip Distribution and Assignment

6.1 The consultation document suggests that the Dunton Garden Suburb development could potentially have three accesses onto the existing highway network; two onto the B148 West Mayne and one onto the B1036 Mandeville Way, as shown in **Figure 2**.

6.2 The A148 West Mayne connects directly to the A127 to the north of the site whilst the B1036 connects to the A13 to the south. Both, the A148 and the B1036, also provide access to Basildon to the east.

6.3 The latest available journey to work (J2W) data suggests that 46% of workers who live in Laindon Park and West Horndon wards work in Basildon Borough. Specifically, the majority work in Laindon Park and Fryerns wards. The distribution of journey to work trips is shown in **Figure 4**.

6.4 In numerical terms, based on the residential element of the proposals alone, it is estimated that around 1,250 cars will use the A127 towards London whilst around 1,000 will travel towards Basildon on the A127 during peak hours. The remainder is likely to use the B1036 towards the A13 or West Mayne towards Basildon. The provision of employment on site in addition to the residential development could result in significantly higher development flows than those assessed in this report.

6.5 The development traffic flows in the vicinity of the site along with traffic flows collected in January 2015 are shown in **Figures 5 and 6**.

6.6 ***The proposals for the Dunton Garden Suburb include three accesses, all of which load the development traffic onto the highway network along the eastern site boundary. It is estimated that the proposed development would generate at least in the order of 3,000 peak hour vehicle trips. The majority of peak hour vehicle trips will use the A127 towards London (1,250 vehicles per hour) or Basildon (1,000 vehicles per hour) while a small number will use***

local roads towards Basildon (500 vehicles per hour) or the A13 (250 vehicles per hour).

Highway impact

6.7 A development of the size of that proposed at Dunton Garden Suburb will have a significant impact on the local highway network, which can be broken down into:

- Impact on the access junctions and West Mayne
- Impact on Dunton roundabout and A127 slip roads
- Impact on the local highway network within Basildon

6.8 Following the assessment of the impact based on the access strategy set out in the consultation document, two alternative access options have been explored:

- Access onto the A128
- New access junction onto the A127

Impact on Access Junctions and West Mayne

Northern Access Junction

6.9 The northern access onto West Mayne appears to use the existing signal controlled junction of Lower Dunton Road with West Mayne. This junction is located along the dualled section of the B148 West Mayne and allows left and right turn inbound movement but only allows left turn outbound movements.

6.10 Based on the latest J2W data it is anticipated that there could be around 2,250 additional peak hour movements along the B148 West Mayne between the northern access and the Dunton roundabout, which are likely to be subject to strong tidality, i.e. the majority of vehicles will travel away from the site in the morning and towards the site during the evening peak hour.

6.11 Given the restricted movements and the location of the north site access junction it is likely that the majority of vehicles travelling via the A127 will use the northern site access, thereby adding potentially 2,250 vehicle movements per peak hour, or 38 vehicles per minute to the junction. The addition of such a significant amount of traffic will result in severe delays at the signalised junction.

Other Site Accesses

6.12 The second access off West Mayne is likely to be located along the single carriageway section between Lower Dunton Road and the B1036. The access onto the B1036 appears to be in the location of the existing three arm priority junction with Laindon Way.

6.13 It is anticipated that the two southern accesses will be mainly used by traffic travelling towards Thurrock Borough, Laindon or central Basildon via local roads. For the purpose of this report it has been assumed that around 500 vehicles will use the southern access onto West Mayne and 250 vehicles will use the access onto the B1036.

6.14 ***The vehicular access strategy for the Dunton Garden Suburb results in all development traffic using the B148 West Mayne or the B1036 Mandeville Way. The junction capacity at the site access junctions will be exceeded. It is therefore concluded that the access strategy set out in the consultation document is not suitable to serve a residentially-led mixed use development of up to 6,000 homes.***

Link Capacity of West Mayne

6.15 In accordance with TA79/99 West Mayne south of the Dunton roundabout is classified as an UAP1 road and a link capacity of around 3,350 vehicles per peak hour and direction. Given the observed northbound traffic flows of around 1,000 vehicles during the morning peak hour at this section of road, the addition of 2,250 vehicles in the peak hours in the future will result in traffic flows exceeding the theoretical link capacity.

6.16 ***In total, it is anticipated that around 2,250 vehicles will travel along the B148 West Mayne and through the Dunton roundabout, resulting in traffic flows along West Mayne in excess of the theoretical link capacity.***

Impact on Dunton Roundabout

6.17 The Dunton roundabout is a large five arm roundabout which connects the A127 with the B148 West Mayne. It also provides direct access to the Dunton Technical Centre.

6.18 The impact on the junction resulting from a large development such as the Dunton Garden Suburb is two-fold. Firstly, the addition of around 2,250 vehicle movements per peak hour, or 38 vehicles per minute, will result in long queues at the roundabout itself.

6.19 ATC data collected in January 2015 revealed that during the network peak hour of 0800-0900 around 1,000 vehicles travel northbound on the B148 towards the junction. The peak traffic period on that approach is 0700-0800 at around 1,300 vehicles.

6.20 The vast majority of development would travel northbound in the morning, thereby potentially trebling the current traffic flows towards the roundabout during the morning peak hour. It is expected that this will cause long delays at the junction.

6.21 In addition to the capacity at the roundabout itself, the slip road configuration is also dependent on level of traffic flows. The existing slip roads are of the simplest configuration, i.e. simple taper merges and diverges.

6.22 Based on traffic data collected in January 2015, it is estimated that the mainline traffic flow during the peak hour is currently between 2,000 and 3,000 vehicles in each direction.

6.23 TD22/06 sets out different slip road configurations for varying levels of mainline and merging or diverging traffic flows.

6.24 Based on mainline flows of between 2,000 and 3,000 vehicles and merging flows of around the same order (existing plus development flows), the required slip road configuration would be "Lane Gain with Ghost Island Merge" and "Lane Gain with Ghost Island Diverge" in accordance with Figures 2/3AP and 2/5AP of TD22/06. In other words, the slip roads would need to be widened to two lanes and the A12 would be required to be widened to three lanes in each direction in the vicinity of the junction.

6.25 Further assessments would be required to establish geometric requirements, land availability, and associated costs, however it is unlikely that the impact on the Dunton roundabout of the potential development flows could be fully mitigated without major changes to or even rebuilding of the Dunton roundabout.

6.26 ***The impact of the proposed Dunton Garden Suburb on the Dunton roundabout is two-fold. Firstly, the addition of the development traffic to the junction will cause long delays on the approaches to the Dunton roundabout. Secondly, the development will add significant volumes of traffic to the on-slips onto the A127, which the existing slip road configurations will not be able to cater for. It is unlikely that the necessary mitigation measures could be delivered within the existing structure of the junction and therefore major changes to or even rebuilding of the Dunton roundabout would be required.***

Impact on Local Highway Network

6.27 The addition of around 3,000 vehicle movements during peak hours will impact on the local highway network, in particular in the vicinity of the main employment areas within Basildon. Journey to work data suggest that the majority of people living in West Horndon or Laindon Park wards work in Laindon Park or Fryerns wards of Basildon. These can be reached via the A127 or the B148 West Mayne, St Nicholas Road and the A1235 to the east of the site.

6.28 The evidence base for the emerging Basildon Local Plan includes a Highway Impact Assessment which suggests that some junctions along the A1235 are already over capacity or will be in the future. It is acknowledged that the evidence base document takes account of a small amount of development traffic however the full Dunton Garden Suburb proposals are not included. Therefore,

the addition of the full Dunton Garden Suburb proposals will exacerbate the existing and future delays along the B148 and A1235 corridor and other local roads.

6.29 ***The proposed development would add in the order of 3,000 cars to the highway network in the peak hours, resulting in congestion along local roads, in particular through Basildon, along the B148 and A1235 corridor.***

Potential Access onto A128

6.30 As concluded previously the proposed access strategy for the Dunton Garden Suburb is not suitable for a development of that size. It is therefore anticipated that an alternative access strategy may be explored, which could include an access onto the A128 to the west of the Dunton Garden Suburb site.

6.31 The consultation document suggests that the built up area of the Dunton Garden Suburb is located in the eastern part of the site with the western part of the site being open space, recreational or green areas. An open water course runs through the western part of the site and some parts of the site are located within Flood Zone 3.

6.32 Due to the flooding risk, the western part of the site is clearly not suitable for built up development such as housing or employment. Providing an access road through flood zones 2 or 3 is costly both in terms of construction and maintenance, and hence it does not usually provide a viable access strategy.

6.33 Additionally, even if an access road was to be provided through the flood zone, this would most likely be a long straight road through recreational space, thereby impacting on users of the recreational space as well as wildlife. The road would be conducive to speeding thereby not creating a safe means of access.

6.34 ***The potential for an access off the A128 has been explored. However, it has been concluded that this is not a viable option due to the cost associated with the construction of the road through a flood zone as well as due to the impact on the recreational area located in the western part of the Dunton Garden Suburb site.***

Potential for New Junction on the A127

6.35 As set out above, the addition of the potential development traffic to the existing Dunton roundabout would result in long queues and the need for new slip roads whilst an access road onto the A128 is not a viable option due to the cost of construction through a flood zone.

6.36 It is anticipated that a potential developer may explore the option of providing a new junction for the proposed development onto the A127. For the purpose of this report, OM have done an initial assessment of this option which is presented in the following paragraphs.

6.37 Any potential site access directly onto the A127 would have to be between the existing junction of Halfway House and Dunton roundabouts. Both roundabouts are grade separated all movement junctions, i.e. they allow vehicles to access and leave the A127 in both directions whilst allowing the mainline traffic to flow freely.

6.38 The distance between the slip roads of the two roundabouts (weaving length) is currently approximately 1.5km.

6.39 The speed limit along the A127 between the two roundabouts is derestricted. In accordance with TA46/97 (Traffic Flow Ranges For Use In The Assessment Of New Rural Roads) and TD22/06 (Layout of Grade Separated Junctions), the A127 is therefore a rural all-purpose road.

6.40 In accordance with Table 4 of TD9/93 (Highway Link Design) the A127 near the site falls into road category 7A, which requires full grade separation of junctions. Therefore, TD22/02 Layout of Grade Separated Junctions applies.

6.41 The minimum distance between grade separated junctions in accordance with TD22/06 is largely governed by the length and type of merges and diverges (on and off slips) as well as the weaving lengths between the slip roads.

6.42 The length of any slip road is governed by the following factors:

- The type of slip road required in accordance with TD22/06
- The size of grade separated junction / width of mainline carriageway
- The level difference

6.43 The weaving length is measured between the merge and diverge tapers. It ensures that vehicles who merge with the mainline traffic flows can do so safely without interference from vehicles wishing to diverge, and vice versa.

6.44 At paragraph 4.36, TD22/06 states that the desirable minimum weaving length on rural all-purpose roads must be 1km. The current weaving length is 1.5km as mentioned previously and therefore satisfies the minimum weaving length requirement.

6.45 It is anticipated that any new grade separated access junction would be similar in size to the existing junctions. The slip roads at the existing junctions are simple taper merges and diverges (i.e. the simplest and shortest form of slip road) and in the order of 400-500m in length. The Dunton roundabout, the smaller of the two existing adjacent junctions is approximately 900m wide including the slip roads.

6.46 Therefore it is considered that a new junction of similar dimensions as the Dunton roundabout would result in weaving lengths of around 300m, i.e. (existing weaving length (1.5km) minus width of new junction (0.9km)) divided by 2), which is well below the desirable minimum weaving length of 1km.

6.47 ***The potential for a new access junction onto the A127 has been explored and it has been concluded that it is not possible to provide safe access to the Dunton Garden Suburb via a new grade separated junction onto the A127 due to junction spacing constraints.***

6.48 Following the assessment set out above it is concluded that the access strategy set out in the consultation document is not suitable for a development of the size of that proposed. Furthermore, the alternative access options explored present their own challenges and constraints. The challenges and constraints identified within the report are shown in **Figure 5**.

6.49 ***It is concluded that the access strategy presented in the consultation document is not suitable for a residentially-led development of 6,000 dwellings. An alternative access onto the A128 would be costly due to construction in the flood zone whilst an alternative access directly onto the A127 cannot be achieved safely due to junction spacing constraints.***

7.0 IMPACT ON PUBLIC TRANSPORT NETWORK AND SUSTAINABILITY

Bus Network

7.1 It is anticipated that a development of the size of that proposed at Dunton would provide a bus service from the site to the nearest town or employment centres as well as a railway station in order to encourage sustainable modes of travel to destinations beyond walking and cycling distance. In this case this is likely to be Basildon town and rail station.

7.2 There are currently a number of buses running through Laindon in the vicinity of the Dunton Garden Suburb although the peak hour spare capacity and slack in the timetable of these are not known. Furthermore it is not known whether the existing buses are subject to frequent delays due to large volumes of traffic. The existing bus routes are shown in **Figure 2**.

7.3 All new residential dwellings should be located within 400m of a bus stop, which, in this case, would result in a much longer bus route if any of the existing buses were to be diverted through the site.

7.4 The proposed development would generate in the order to 140 peak hour bus users, not including persons travelling by bus to a rail station.

7.5 It is therefore considered that any development at Dunton Garden Suburb would be required to provide a bus service, either as an extension to an existing route or a new route. The service should be in operation at first occupation of the site in order to establish sustainable travel patterns from “Day 1”. The details of the bus service should be discussed with local bus operators prior to the submission of a planning application.

7.6 ***It is anticipated that the proposed development at the Dunton Garden Suburb would provide a bus service between the site and Basildon.***

Rail Network

7.7 The consultation document includes the potential for a new railway station within the site boundary, located between West Horndon and Laindon railway stations, as shown in **Figure 2**.

7.8 OM have carried out a feasibility study for a new railway station in this location. The report concluded that it would be difficult to construct and operate a railway station at Dunton Garden Suburb. The full report is included in **Appendix A** while the reasons for the conclusions are summarised below:

- the railway embankment at the site is unsuitable;
- the gradient is too steep; and
- the railway is already so fully utilised that an additional station stop could not be incorporated into the timetable while retaining its safety and reliability.

7.9 Following OM's assessment it is therefore anticipated that residents at Dunton Garden Suburb would have to travel to one of the existing railway stations, such as West Horndon or Laindon.

7.10 **Table 5.1** suggests that there would be around 865 residents travelling by train, most of which would travel during peak hours. Given the location of the site in relation to the railway stations it is likely that at least 75% of those would drive to the station whilst the remainder might take the bus (if provided). Therefore the total number of car drivers generated by the development would increase from around 3,000 to approximately 3,600, adding to the already congested highway network.

7.11 ***A feasibility study about the potential for a new railway station within the Dunton Garden Suburb concluded that the construction and operation of a railway station would be difficult due to an unsuitable embankment, a steep gradient and a lack of slack in the timetable. Therefore, the proposed Dunton Garden Suburb residents would be required to travel to one of the existing railway stations. This will add around 600 cars to the already congested local highway network.***

8.0 CONCLUSIONS

8.1 The conclusion is that this proposal would face the following transport-related challenges:

Access

8.2 The site access strategy presented in the consultation document is deemed unsuitable for a development of the size of that proposed, due to the amount of traffic loaded onto the Dunton roundabout and the B148 link. We expect that there will also be capacity issues with each of the access junctions that have been proposed.

8.3 Two options for alternative access have been explored; onto the A128 to the west of via a new junction onto the A127.

8.4 Whilst it may be possible to provide an access junction onto the A128, the construction of the access road would be costly due to it being partly located in Flood Zone 3. Furthermore it would likely be a long straight road through open or green space without direct access, leading to safety concerns due to potential speeding.

8.5 It was concluded that it is not possible to provide a safe access junction onto the A127 due to junction spacing constraints.

Traffic Impact

8.6 A development of 6,000 dwellings, employment and associated infrastructure would result in a trip generation of at least 3,000 vehicle movements in the peak periods, based on the residential element alone, leading to congestion on the local highway network.

8.7 In particular, the Dunton roundabout and the A127 slip roads would be adversely affected, as well as local roads in Basildon, such as the A1235 corridor.

8.8 It is anticipated that the necessary mitigation measures at the Dunton roundabout cannot be delivered within the existing junction structure and that major changes or even rebuilding of the roundabout would be required to accommodate the traffic resulting from the Dunton Garden Suburb.

Buses

8.9 The development of Dunton Garden Suburb would require the provision of a bus service through the site.

Railways

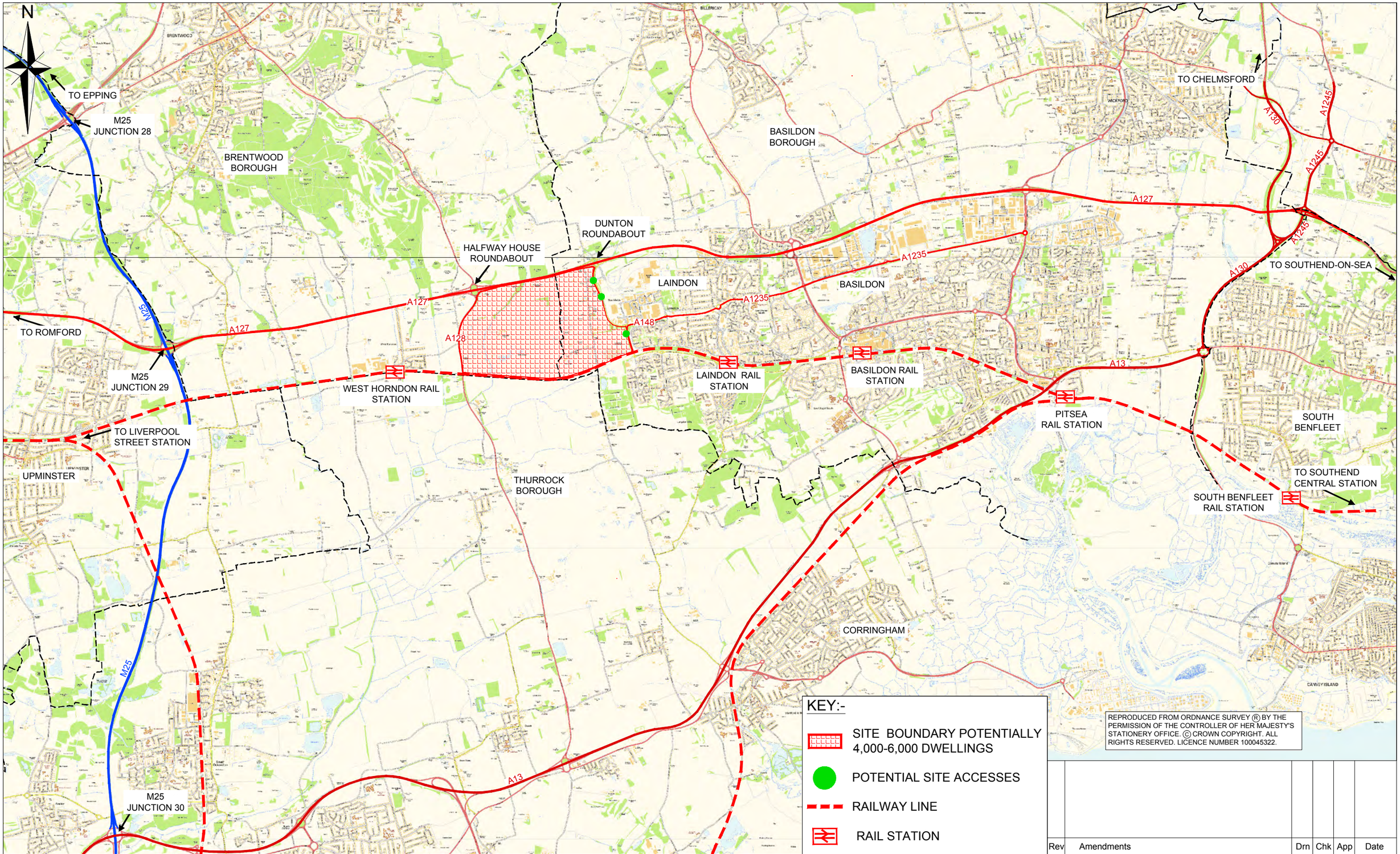
8.10 The consultation document suggests the construction of a new railway station within the site boundary. However, a feasibility study carried out by OM concluded that this would be very difficult to deliver due to unsuitable embankments, steep gradients and lack of slack in the timetable.

8.11 Instead, the residents of Dunton Garden Suburb would be expected to use the existing station of West Horndon or Laindon, adding around 400 additional cars to the already congested highway network.

Overall Conclusion

8.12 ***There are many uncertainties about the proposal and significant transport consequences are likely which (even if they are solvable) are likely to cost significant amounts of money.***

FIGURES



KEY:-

- SITE BOUNDARY POTENTIALLY 4,000-6,000 DWELLINGS
- POTENTIAL SITE ACCESSES
- RAILWAY LINE
- RAIL STATION

Rev	Amendments	Drn	Chk	App	Date

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Job Title: WEST HORNDON

Drawing Title: SITE LOCATION AND STRATEGIC HIGHWAY & RAIL NETWORK

Client: COUNTRYSIDE

Scale	Date	Designed
N.T.S	JAN 15	AB
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Job No	Drawing No	Rev
13-158	FIGURE 1	

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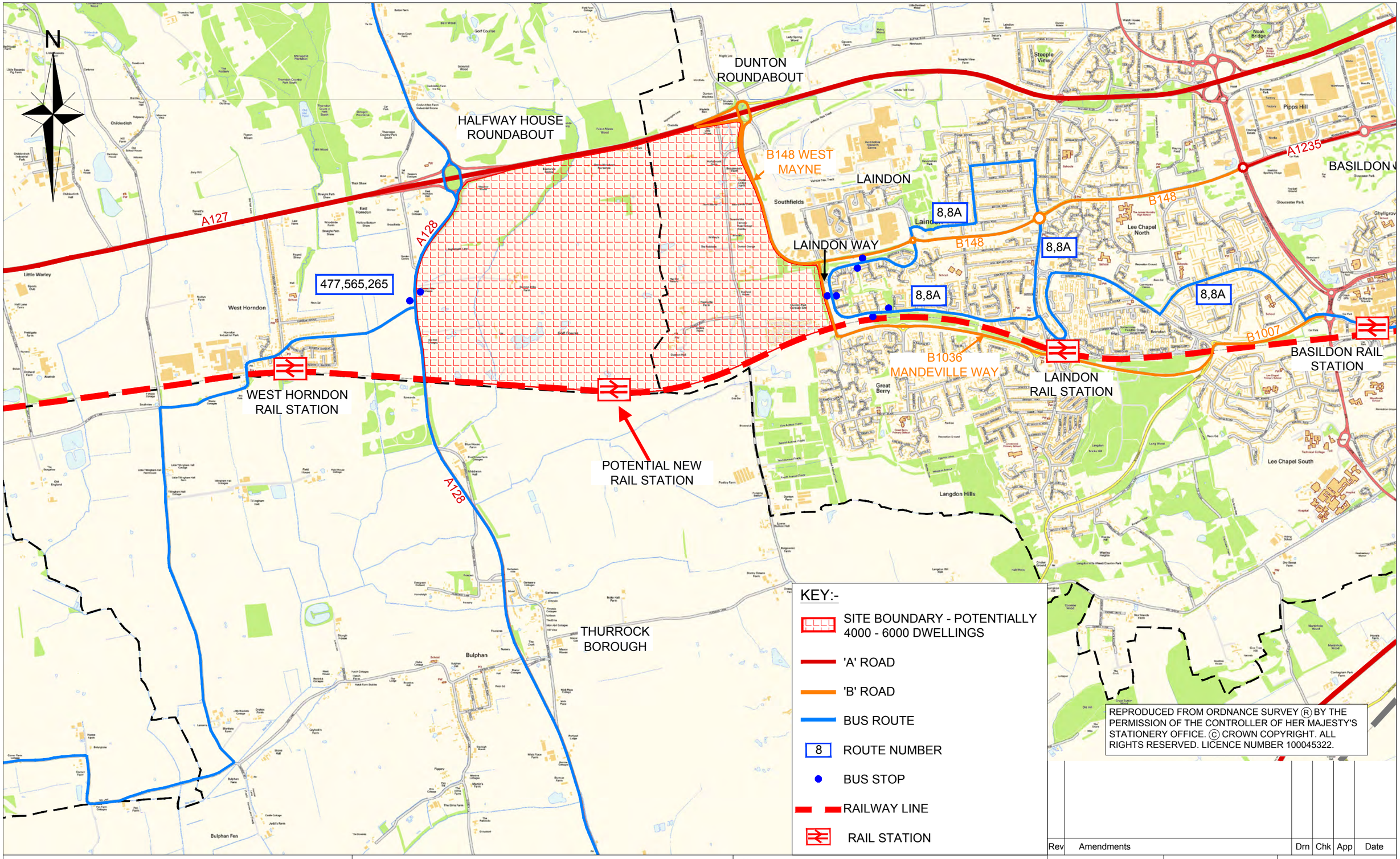

Rev	Amendments	Drn	Chk	App	Date

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Drawing Title: LOCAL HIGHWAY NETWORK & PUBLIC TRANSPORT

Client: COUNTRYSIDE

Scale	Date	Designed
1:25,000@A3	JAN 15	AB
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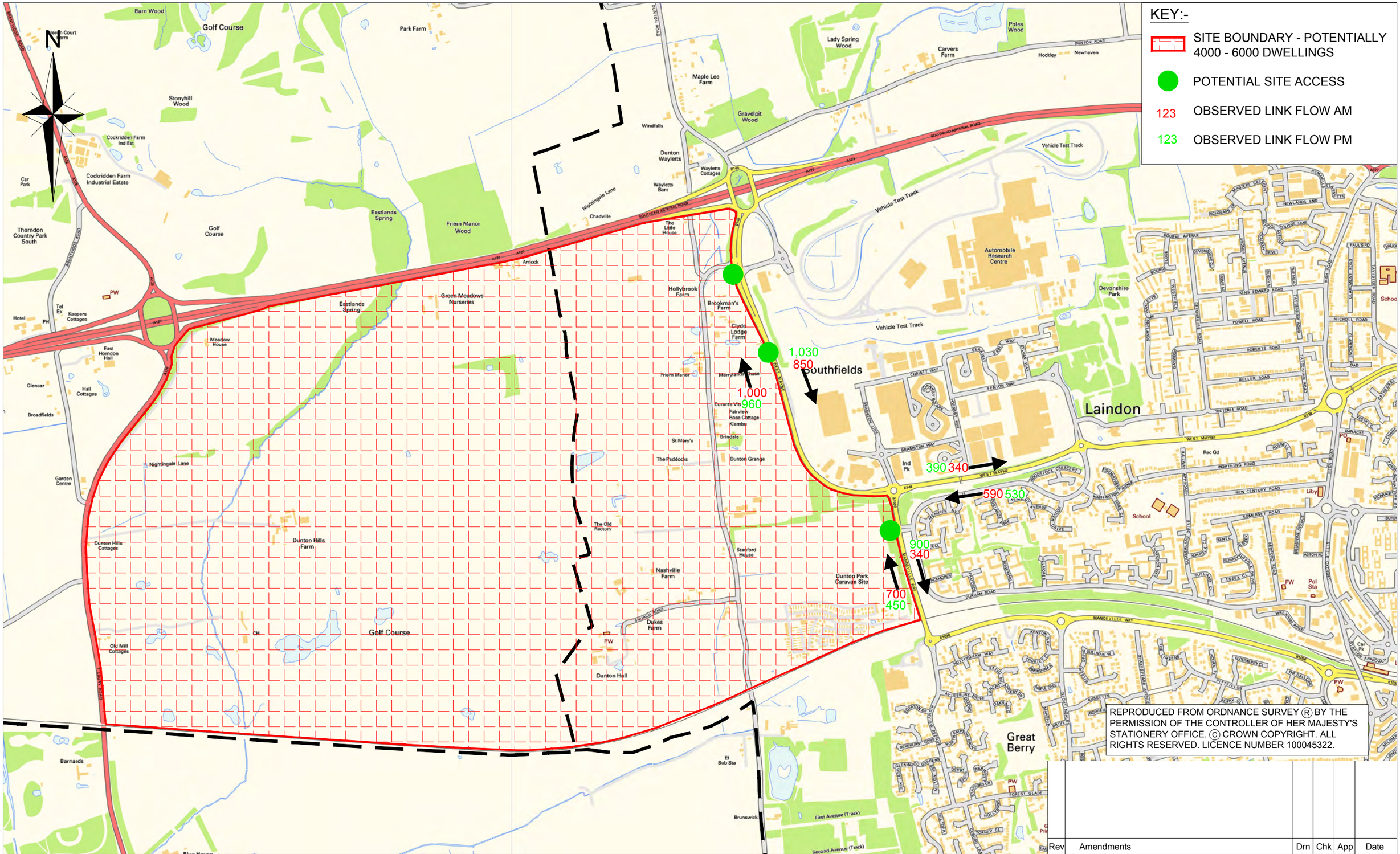
13-158	FIGURE 2	

P:\13-158 - West Horndon\Tech\Acad\DuntonGreen report\13-158 Fig 2 Local Highway & Public Transport.dwg



Rev	Amendments	Drn	Chk	App	Date

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Job Title: WEST HORNDON		Client: COUNTRYSIDE	
Drawing Title: OBSERVED LINK FLOWS			
Scale: 1:12,500@A3	Date: JAN 15	Designed: AB	
Drawn: AB	Checked: MS	Approved:	
Job No: 13-158	Drawing No: FIGURE 3		Rev:

P:\13-158 - West Horndon\Tech\Acad\DuntonGreen report\13-158 Fig 3 observed link flows.dwg