

# Local Plan Technical Report

## 2018/2019 Infrastructure Delivery Plan Appendices

### **Part 6:** Transport – West of London Colney

Appendices 24 to 25

Appendix 24: Transport Extract of West of London Colney Landowner/Developer  
Representations Regulation 19 Consultation (October 2018)

**Representations**

On behalf of  
Hertfordshire County Council

October 2018

Prepared by  
Vincent and Gorbings



## 2.0 SITE ASSESSMENT

### Site location

- 2.1 The Broad Location (BL) site (as identified in the Draft Local Plan) is located south of Napsbury and to the west of London Colney (Plan 5241/500). The area shown on plan 5241/500 and 5241/501 is slightly larger than the allocation defined on Policy Map 4. The area proposed in this representation includes land south of the proposed allocation to ensure that sufficient land can be made available for other uses (Country Park and community playing fields) and to ensure that there is sufficient land for surface water attenuation to meet the needs of the housing allocation.

### Land ownership

- 2.2 The BL site (including the additional land to the south) is largely in the ownership of the County Council (Plan 5241/501) amounting to 49.95ha. There are some small parcels of the BL site not in HCC ownership, namely South Farm Cottages on the south-western boundary of the site and South Lodge. These areas are shown as excluded from the site location and site identification plans. They are also excluded from the masterplan. The removal of these areas leads to a slight reduction in the area of land available for the housing allocation.
- 2.3 The BL site is currently held under agricultural tenancies which can be terminated if the County Council wishes to use the land for another use other than agriculture for which planning consent has been obtained.

### Buildings and uses

- 2.4 The only buildings on the BL site comprise South Farm Cottages (outside the ownership of the County Council), and South Lodge (outside the ownership of the County Council). Barley Mo Farm and Fir Tree Farm lie on the land south of the BL site.

### Vegetation

- 2.5 The BL site has some trees along the boundary of the site in the north-eastern corner abutting Shenley Lane with isolated trees in other locations on the site. There is an area of recently planted block woodland in a parcel on the western site boundary.
- 2.6 No tree survey has been undertaken on any part of the BL site. This would be required at the detailed masterplan and application stages.
- 2.7 There are a number of hedgerows on the site along existing field boundaries, along rights of way and informal footpaths and on the eastern boundary to Shenley Lane.

### Rights of Way and informal footpaths

- 2.8 There is a bridleway along the agricultural access track which curves through the southern part of the site and forms the southern boundary to the BL site. This route runs from Shenley Lane through the site and then turns south to pass beneath the M25. A public footpath diverges from the bridleway in the south western corner of the site and runs to the west to the railway line. A further short public footpath runs across the south eastern corner of the site, from Shenley Lane at the point where the road crosses the River Colne, to the north west to connect with the bridleway near South Lodge. There is also some informal use of the agricultural tracks and field edges for dog walking. These are shown on Plan 5241/502.



- 2.35 The heritage assessment concludes that the proposed BL masterplan development will result in a minor change (of less than substantial harm) to the agricultural setting of the Conservation Area. The retention of the central vista, sympathetic design and treatment of new build are important mitigation measures. There are no impacts on listed buildings. The interface between the Registered Park and Garden and the new development requires careful consideration and it is considered that the height of the new development along the north-eastern boundary should be as low as possible with effective boundary screening introduced to provide a visual barrier. Similarly, the height, materials palette and vegetation choice along the eastern edge of the development will require careful consideration. Subject to sympathetic design and placement, the report concludes that the proposal will not impact on the significance of the Registered Park and Garden and any impact on its setting will be minor. The edge of the masterplan development is 50m south of a locally listed building (The Birches) at Napsbury Park. The interface between the development and this locally listed building will require careful consideration with similar height and material palette considerations. It is recommended that the materials palette utilised resonates with those locally listed buildings in the vicinity. Careful consideration will need to be given to the height and density of the school building development to ensure the impact on setting is considered minor and therefore less than substantial.

### Sustainable access and highway capacity

- 2.36 A Transport Appraisal (October 2018) has been undertaken by Stomor Ltd. Following on from the initial means of access and sustainability appraisal in 2009, Stomor Ltd have undertaken a further appraisal of sustainable access opportunities and highway capacity on both the local and wider networks to fully investigate a proposed development of up to 500 dwellings, 2fe primary school and an 8fe secondary school.
- 2.37 The current appraisal has been undertaken in a significantly different policy context to the version undertaken in 2009, which can be summarised as follows:
- HCC Local Transport Plan 4 has recently been adopted by Hertfordshire County Council and it recognises that significant growth is expected in the county whilst also recognising that dependence on car use and building more roads to encourage more car use will result in serious consequences;
  - LTP 4 recognises that there is huge potential for travel by 'other modes' within towns and between adjacent towns. A user hierarchy is now set out by HCC which promotes access by sustainable modes as a priority.

### Existing and future trip generation:

- 2.38 Census 2011 and research data from schools in Harpenden and St Albans indicate that there is likely to be significant trip generation by sustainable modes of transport to/from the site. Further Census 2011 data and consideration of the site's location in close proximity to a range of services/facilities and nearby towns suggests that there is significant potential for additional travel by sustainable modes to/from the site.
- 2.39 With regard to motor traffic, HCC have provided access to their area wide 'Comet' traffic model for St Albans district, including London Colney and the A414. This model tests the impact of the growth predicted in the current St Albans Local Plan (i.e. excluding the broad location site) between 2014 and 2031 and includes a range of committed development (including potential upgrades to the A414).
- 2.40 The Comet model has provided 'base year' and 'without development' link flow data for roads in the vicinity of the site as well as giving an indication of any capacity constraints in 2014 and 2031. Therefore, the Comet model confirms the significant growth expected in the area to 2031.

- 2.41 The Comet model also allows estimation of growth for each link. 2018 junction traffic counts have been undertaken in the AM, school PM and network PM peaks and the Comet derived growth used to factor the junction counts to 2031.
- 2.42 Trip generation forecasts have been undertaken on the basis of site proposals for residential development (up to 500 units) using the TRICS database, a 2fe primary school (using data gathered for a similar size school in St Albans) and an 8fe secondary school (using data gathered from town-wide research in Harpenden). A nominal amount of trip generation for all modes has been estimated for the potential care home development on the site. Potential development traffic has been assigned to the network based on the observed turning counts for housing and 2fe primary schools.
- 2.43 For the 8fe secondary school 50% of the proposed catchment is planned to come from London Colney and 50% from St Albans. The 50% London Colney catchment traffic has been assigned using turning count data. The 50% St Albans catchment traffic is assumed to travel to/from the north.

#### **Means of access – overview:**

- 2.44 There is currently no access to the site (apart from a farm track) and bridleway that runs along the southern edge of the site from Shenley Lane.
- 2.45 Accident data has been consulted to determine whether there are any specific issues regarding general highway safety relating to the geometry and visibility along Shenley Lane or wider area which might affect access options. The data indicates that there are no specific safety concerns in the vicinity or on the stretch of Shenley Lane likely to be required to access the site.
- 2.46 It is understood that a traffic calming scheme is proposed for Shenley Lane to help manage traffic speed. Implementation of this scheme is unlikely to materially affect the ability to access the site.
- 2.47 In order to demonstrate the site's sustainable location and access credentials, a means of access plan has been designed alongside the indicative masterplan to show how pedestrian and cycle access to/from and within the site will prioritise access on foot/by bicycle. Additional appraisal has been undertaken of the existing pedestrian and cycle infrastructure and journey times to/from the site from London Colney to underline its potential for access on foot/by bicycle.

#### **Pedestrian and cycle access:**

- 2.48 The means of access includes making use of the existing signalised crossing on Shenley Lane (north of the site) as well as providing a new signalised crossing (south of the site) for pedestrians/cyclists. Additional enhancements could include upgrading the footway on the east side of Shenley Lane to allow pedestrian and cycle access between crossings. This upgrade would also connect Kings Road to St Annes Road and, potentially the byway alongside the River Colne.
- 2.49 Potential upgrades to improve pedestrian/cycle access along Kings Road. St Annes Road and the byway adjacent to the River Colne would enable access to/from the site from London Colney on foot/by bicycle.

**Public Transport access:**

- 2.50 Bus services along Shenley Lane operate approximately hourly. It is unlikely that the capacity on an hourly service will be sufficient for the proposed development so a service upgrade to at least half hourly is proposed. In addition, upgrades to local bus stops on Shenley Lane will encourage use of services.
- 2.51 Rail access is likely to be required via St Albans City (to the north) or Elstree & Borehamwood stations (to the south). The potential sustainable transport upgrades set out above are designed to assist access to stations, especially the increased bus frequency.

**Vehicular access:**

- 2.52 For vehicular access a single roundabout junction has been designed to serve the site. It is located between the access to Telford Road and Walsingham Way (both to the east of the site).
- 2.53 A plan illustrating the proposed means of access by all modes has been prepared by Stomor Ltd (and is included in their transport appraisal) which would serve a proposed residential development, primary and secondary schools. The access is designed to accommodate buses, coaches and waste/commercial vehicles.
- 2.54 Emergency access could be provided either by use of wide carriageway/verge or, potentially, emergency access via proposed shared use foot/cycle ways or bridleway along southern boundary of the site.

**Highway network impact:**

- 2.55 Consideration has also been given to the existing and future traffic conditions on the wider road network using data from the HCC Comet model 2014 and 2031, observed turning count data from 2018 and the trip generation data summarised above. The following junctions have been appraised for 2031 where all development is assumed to be complete and occupied:
- Site access roundabout on Shenley Lane.
  - Shenley Lane junctions with Kings Road and St Anne's Road.
  - Harper Lane/Bell Lane roundabout.
  - Shenley Lane junction with the A414 link.
- 2.56 The HCC Comet model indicates that, in 2014, the Shenley Lane/Bell Lane junction is likely to operating at or close to capacity in the AM peak. This is consistent with our 2018 observations.
- 2.57 A further appraisal of the above junctions indicates that in 2031:
- Site access – operates in capacity in all peaks
  - Shenley Lane junction with Kings Road operates over capacity 'with' development in the AM peak (Kings Road arm)
  - Shenley Lane junction with St Anne's Road operates over capacity 'with' and 'without' development in the AM peak (St Anne's Road arm)
  - Harper Lane/Bell Lane roundabout operates over capacity 'with' and 'without' development in the AM peak and 'with' development in both PM peaks.
  - Shenley Lane junction with the A414 link operates over capacity in the AM peak 'with' and 'without' development.

- 2.58 The HCC Comet model indicates that in 2031 there are likely to be capacity issues at the A414 junction adjacent to the Shenley Lane link in both AM and PM network peak 'without' development. In addition, the Bell Lane roundabout is likely to be operating over capacity in the AM and PM peaks 'without' development.
- 2.59 The baseline and predicted traffic growth for the area suggests that there are significant capacity challenges likely to occur 'without' development. These are matters for the highway authority to address.
- 2.60 It is understood that a study is to be undertaken of the future role of the A414 by HCC. Further consideration of access to the A414 with traffic from the broad location site should be undertaken in this context.
- 2.61 Further appraisal of highway capacity has been undertaken in the context of recent LTP 4 policy. The policy approach now adopted in Hertfordshire is clearly focussed on promoting access by sustainable modes rather than providing additional highway capacity.
- 2.62 It is unlikely that sufficient highway capacity could be provided to meet all predicted future demand in the area.
- 2.63 Therefore, improving sustainable transport services and facilities is considered to be the most effective and policy compliant way forward and best way to accommodate the travel demands of the broad location site.

### Flood risk

- 2.64 A Flood risk statement (October 2018) has been undertaken by Stomor Ltd and is submitted as part of these representations.
- 2.65 The Environment Agency (EA) Indicative floodplain Map of the area has been obtained from their official web site. It shows that the majority of the site lies within Flood Zone 1 with a low probability of flooding. However, a small proportion of the site at the south side lies within Flood Zones 2 and 3 (land to the south of the east-west bridleway). A plan is included in the Stomor report which shows this area.
- 2.66 The River Colne is an EA designated Main River and runs adjacent to the southern boundary of the site, running in a north east-south west direction. A culverted section of the London Colney Stream, which is also an EA designated Main River, runs southwards along Shenley Lane, adjacent to the south western boundary of the site.
- 2.67 The development area should be restricted to the land north of the bridleway. If development does not occupy any area within the existing flood plain, or existing ground levels are not raised, then flood plain compensation will not be required. The drainage strategy (based on the topographical survey and known development layout is set out in more detail below).
- 2.68 Several historic flooding incidents associated with the River Colne in the vicinity of the site have been recorded, with the most recent event occurring in 2014. However, none of these flooding events extended to the proposed development area.

### Drainage

- 2.69 Drainage proposals for the site have been included within the Flood Risk Statement which has been produced by Stomor Ltd and is submitted as part of these representations.

- 2.97 The assessment concludes that noise levels on the area shown for education use on the masterplan should meet the upper 60dB criterion for external areas set out in BB93 with some areas also meeting the upper 55dB criterion for playground and playing fields. However, noise barriers of a significant height would be required to reduce noise levels across the entire playing field area to meet the 55dB criterion and to have some areas meet the more stringent 50dB criterion for outdoor teaching areas. The form of mitigation to achieve this objective will need more consideration at the detailed masterplan stage and detailed planning application stage. Noise levels within the proposed school buildings should meet the internal noise criteria set out in BB93.
- 2.98 The Vibration assessment (October 2018) has been undertaken by Resound Acoustics Ltd. Vibration levels measured at the site adjacent to the railway are significantly below the level at which adverse comments are likely.
- 2.99 An air quality assessment (October 2018) has been undertaken by Resound Environment Ltd.
- 2.100 Site specific background UK-AIR and monitoring results from the wider area suggest that air quality in London Colney is generally good. There are, however, areas where the annual mean concentration of NO<sub>2</sub> is approaching or exceeding the AQS. However, as the BL site is in a rural location, background pollution concentrations are likely to be well below the AQS's.
- 2.101 The construction of the proposed development could give rise to emissions that may cause some dust soiling effects on adjacent uses. However, by adopting appropriate mitigation measures to reduce emissions and their potential effects, there should be no significant residual impacts.
- 2.102 The development is not predicted to lead to the exposure of any new receptors to unacceptable levels of pollution and is determined to be acceptable in terms of its impact on, and sensitivity to, local air quality.
- 2.103 The BL development is expected to comply with all relevant air quality policy and air quality should not, therefore pose any significant obstacles to the allocation or development process.

## Conclusions

- 2.104 The following conclusions can be drawn from the site assessment:
- The BL site is located south of the former Napsbury Hospital site which has now been redeveloped for residential use and is known as Napsbury Park
  - The BL site is in single ownership as part of a wider County Council agricultural holding let on tenancies which can be terminated if permission for an alternative use can be obtained as such it is available for development
  - The BL site is currently in the Green Belt, adjoining the Napsbury Park Conservation Area (lying immediately to the north) and the Registered Park and Garden being located mainly north of the BL site but with parts encroaching into parcels along the northern boundary and the north/south footpath bisecting the site. It is about 50m away from a locally listed building. The masterplan impacts on the heritage assets are likely to be acceptable subject to careful design and use of complementary materials palettes at the planning application stage.
  - The landscape and visual assessment of the BL site concludes that the BL site is of low to medium landscape quality and value and medium sensitivity to the type of development proposed with the masterplan development having initially slight to moderate adverse effects on landscape character (declining over time) with the provision of a more robust and greener western edge around the proposed school playing fields and the provision of

new community playing fields and an area of country park in the southern part of the site alongside the river

- The BL site has medium potential for prehistoric evidence and high potential for medieval -early post medieval occupation around Barley Mo Farm and Fir Tree Farm. It is recommended that any future planning applications during the plan period are accompanied by a geo-physical survey which may result in further intrusive investigations being required. The playing fields proposed as part of the masterplan would need to be supported by such work.
- There are no significant ecological constraints to the site although the hedges on the should be retained in any development and some of the buildings and trees on and around the site have potential for bat roosting (should there be any proposal to demolish buildings or fell trees a bat survey should be undertaken); other surveys will need to be undertaken at the point of planning application
- The site is likely to generate demand for travel by a range of modes of transport. It is located within walking and cycling distance of a range of services and facilities and the proposed schools will be accessible on foot/by bicycle by existing residential development in London Colney. The site will also be served by an existing bus service (approximately hourly frequency) between St Albans and Borehamwood.
- A package of enhancements is proposed that could address with the predicted demand for travel by sustainable modes and promote increased use of such modes in line with national and local policy. A new pedestrian/cycle crossing of Shenley Lane is included in the access strategy for the site as well as proposed enhancements to existing infrastructure in London Colney to promote access on foot/by bicycle. It is also proposed to improve the frequency of the existing bus service to half hourly as well as local bus stop facilities.
- The most suitable form of vehicular access to the site will be a three-arm roundabout from Shenley Lane. This means of access can accommodate predicted traffic flows in 2031 'with' development and is designed to promote bus access to the site.
- Several junctions on the highway network in the local area have been assessed as being at or close to capacity in one or more peaks both 'without' and 'with' development in 2031. Some of this capacity constraint is reflected in the highway authority's own strategic traffic model in both 2014 and 2031.
- It is unlikely that enough highway capacity could be found to meet demand even for the 'without' development scenario.
- The package of sustainable transport measures and a possible contribution towards safety focused highway improvements is considered the most effective way of accommodating travel demand of the proposed development. This approach complies with current national and local policy.
- Existing drainage easements run north/south through the centre of the site and partly along the south. These easements will need to be protected from built residential development although footpaths/roads and cycleways are acceptable across the easements
- The southern part of the site, to the south of the Bridleway, lies within Flood Zones 2 and 3 and may be liable to flooding and thus should be protected from built development and raising of existing levels
- Foul flows from the proposed development could discharge by gravity to the existing public sewer system within the site
- The site can be suitably drained to provide adequate storage for the 1 in 100- year storm plus 40% allowance for climate change, through the use of SuDS

- It is considered that services can be provided to the site and some services (gas, BT and electricity) may require lowering/diverting as a result of the proposed access
- There are no noise, vibration or air quality constraints that would prevent development of the site although development should be set back 10m from Shenley Lane and some parts of the housing BL site might require noise attenuation.

2.105 The site constraints arising from the site assessment are shown on Plan 5241/502.



supported by Hertfordshire County Council (3 x 4 special needs dwellings being more appropriate for management than 10 units)

- Detailed specifications for the land use requirements for extra care housing schemes have not yet been developed by Hertfordshire County Council and at this preliminary stage of master planning it is reasonable to utilise site areas based on experience elsewhere
- A site area for the extra care housing requirement has been developed through site area analysis of Park Side View, Chiltern Road St Albans (35 flat extra care housing scheme built in 2012 and managed by North Hertfordshire Homes); the estimated site area requirement for a 50 flat extra care housing scheme on the BL site would be approximately 0.64ha (which could accommodate lightly more extra care dwellings if this was required by ACS at the point of detailed master plan or a planning application)
- Special needs housing would need to be pepper potted throughout the development in groups of 4 dwellings and therefore 12 dwellings are proposed

## Design Principles

3.6 The following design principles have been incorporated into the preparation of the masterplan:

- Creating an attractive, high quality development which is well integrated into its surroundings with variable density levels to accommodate a minimum 440 dwellings, extra care housing and special needs accommodation within the housing allocation
- Retaining existing trees, hedgerows and other landscape features where possible and the group of pine trees fronting Shenley Lane and the hedgerow running north/south through the site that is part of the Registered Park and Garden designation
- Creating a legible layout which maximises the opportunities for linkages to the surrounding areas to maximise the opportunities for integration with existing communities with pedestrian, foot/cycleway networks maximizing the opportunity for sustainable transport
- Ensuring a satisfactory relationship to adjoining properties both to the north and to the east of the BL allocation
- Retention of important vistas from Napsbury Park through to Shenley Lane, land to the south and beyond
- Proposing new landscaping and a new Country Park to avoid harsh edges to the proposed development and to create a defensible Green Belt boundary to the south of the development
- Creating an education campus which will enable the provision of a 2FE primary school and 8FE secondary school in accordance with BB103 standards and in accordance with CS brief
- Providing a site for extra care housing

## Design features

3.7 The masterplan 5241/504/A illustrates a proposal which meets the requirements of Policy Broad Location Policy S6ix).



### 3.8 The masterplan illustrates the following design features:

- Retention of existing farm track running north- south creating footpath/cycleway through site to ensure retention of connection to bridleway running along southern site boundary and to Napsbury Park and to retain an essential part of the Historic Park and Garden designation
- Perimeter informal woodland structural planting (including some evergreen planting) in groups around all site boundaries to ensure filtered views of built development
- Tree planting along the western boundary of the school building zone together with tree planting to the west which will frame, protect and enhance the views out to Shenley Hospital which are to be respected and protected as part of the setting of the Conservation Area and Registered Park and Garden
- Structural green corridors with formal planting running east-west through the development providing footpath/cycleway network linking all areas of the development to Shenley Lane and links to the north-south footpath/cycleway and to the east-west bridleway along the southern site boundary.
- Smaller green corridors with formal planting (10m in width) running along all the road corridors through the site framing and reducing the impact of the roads through the development
- Open space on northern site boundary at junction of vistas to break the line of development along the northern boundary
- Retention of existing hedges running along Shenley Lane (eastern site boundary); north south along existing farm track/footpath and east west in the north western corner of the site
- Roundabout from Shenley Lane serving an appropriate class of access to the development which is positioned midway between Telford Road (to the north) and Walsingham Way (to the south)
- Internal roundabout to serve larger parcels of residential development
- Residential development will be orientated towards the public realm and focused on landscaped areas and the supervision of public footpaths and cycleways
- Residential density areas establishing those parts of the site that can be developed at a higher density (where landscape impact is less sensitive) and those parts of the site that need to be developed at a lower density (where landscape impact is more sensitive)
- Larger built forms (extra care housing and secondary school) closer to the existing larger buildings of Napsbury Hospital
- Smaller built forms (primary school) closer to the urban edge and country park to reduce impact on the landscape
- Integration of Sustainable Urban Drainage systems and the provision of a balancing pond to the south to provide surface water attenuation (swales and other measures can be introduced at the detailed design stage)

## Residential development

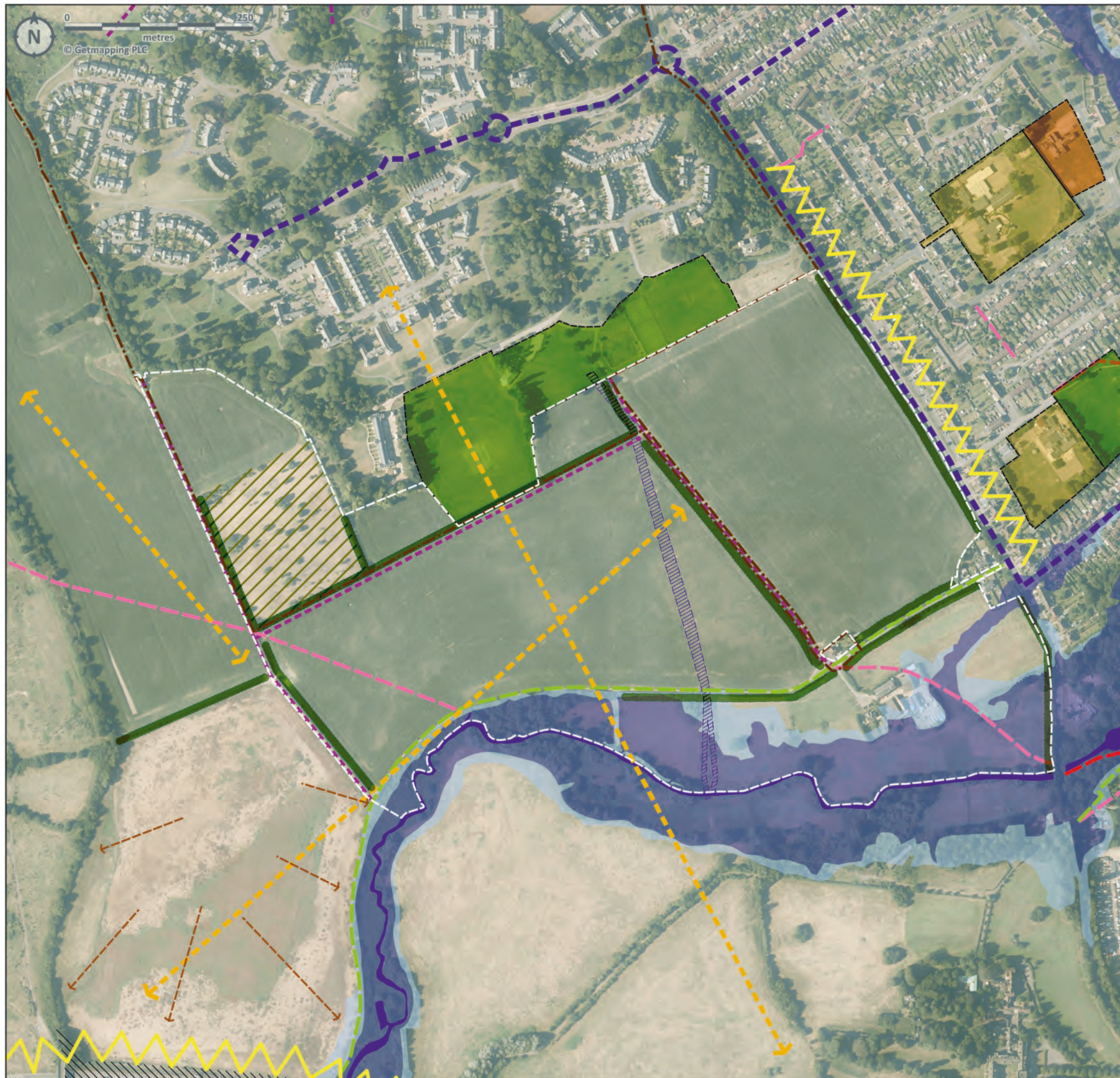
### 3.9 The masterplan (5341/504/A) illustrates a development comprising:

- High density residential development area (175 dwellings)

## 4.0 SUMMARY AND CONCLUSIONS

- 4.1 Land west of London Colney has been identified as a Broad Location (BL) for development in the St Albans City and District Draft Local Plan for Publication (Regulation 19 stage).
- 4.2 The majority (aside of some private dwellings) of the BL site allocated land is in the ownership of Hertfordshire County Council.
- 4.3 A number of technical and environmental studies were commissioned to support the preparation of a preliminary masterplan to test deliverability and developability of the land allocation:
- Archaeological desk-based Assessment
  - Air Quality Assessment
  - Preliminary Ecological Assessment
  - Flood Risk Statement
  - Heritage Assessment
  - Landscape and Visual Assessment
  - Noise and Vibration Assessment
  - Transport Appraisal
  - Services Investigation Report
- 4.4 The technical and environmental studies conclude that there are no significant impediments to development. The studies did identify site constraints which have been considered in the preparation of the preliminary masterplan for the site.
- 4.5 The preliminary masterplan indicates the 450 dwellings can be accommodated (with variable density levels) within the housing allocation (including 12 special needs dwellings and 50 extra care housing dwellings). It has been demonstrated that the area identified in the Publication Draft Plan is of sufficient size to accommodate the number of dwellings identified in the policy with no boundary amendments required.
- 4.6 The preliminary masterplan indicates that a site can be identified for an 8FE secondary school and a 2FE primary school. It has been demonstrated that the area identified in the Publication Draft Plan is of sufficient size to accommodate the required site areas for the educational uses with no boundary amendments required.
- 4.7 The preliminary masterplan indicates that open spaces and woodland can be accommodated within the BL areas retained in the Green Belt with a potential extension to the existing woodland in the north-west corner of the BL land allocation with no boundary amendments required.
- 4.8 In order to accommodate the community playing fields (if these were to be accessible to existing London Colney residents as well as new residents) and a country park it is likely that the boundary of the land allocation needs to be extended to the south to include the areas identified on the masterplan.
- 4.9 It is concluded that, subject to detailed design, the uses listed in the Broad Location Policy S6ix) can be accommodated within the proposed allocation with no serious impediments to development. It is recommended that the southern site boundary is extended to accommodate the country park and community playing fields as proposed on the masterplan.





- SITE BOUNDARY  
49.95ha
- SIGNIFICANT HEDGEROWS
- NEWLY PLANTED NATIVE WOODLAND
- COMMUNITY BUILDINGS
- OPEN SPACE
- EDUCATIONAL FACILITIES
- HISTORIC PARK & GARDEN
- BUND AREAS
- FLOOD ZONE 3
- FLOOD ZONE 2
- EASEMENT
- NOISE SOURCES
- VISIBILITY LINES
- SLOPE
- RESTRICTED BYWAY
- BRIDLEWAY
- PUBLIC FOOTPATH
- INFORMAL PATH
- BUS ROUTES

## LAND WEST OF LONDON COLNEY BROAD LOCATION

Site constraints

PROJECT NO	DRAWING NO	REV
5241	502	
DRAWN	DATE	SCALE
HNA	OCTOBER 2018	1:5000

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- SITE BOUNDARY  
49.95ha
- RESIDENTIAL  
(HIGH DENSITY: 50dph = 175 DWELLINGS)
- RESIDENTIAL  
(MEDIUM DENSITY: 40dph = 193 DWELLINGS)
- RESIDENTIAL  
(LOW DENSITY: 30dph = 32 DWELLINGS)
- EXTRA CARE HOUSING  
(50 DWELLINGS 0.64ha)
- SECONDARY SCHOOL BUILDING ZONE  
(4.65ha)
- SCHOOL PLAYING FIELDS  
(SECONDARY SCH: 9.18ha PRIMARY SCH: 0.78ha)
- PRIMARY SCHOOL BUILDING ZONE  
(1.30ha)
- SCHOOL BUILDING LOCATIONS
- SCHOOL PARKING AREAS
- ALL WEATHER PITCHES
- ACCESS ROADS
- FOOTPATH/CYCLEWAYS
- EASEMENT
- CHILDREN'S PLAY AREAS
- SURFACE WATER ATTENUATION  
(0.76ha)

**REVISION A:**  
Care home and special needs housing site combined to extra care housing  
HNA/11-10-2018

## LAND WEST OF LONDON COLNEY BROAD LOCATION

Preliminary masterplan

PROJECT NO	DRAWING NO	REV
5241	504	A
DRAWN	DATE	SCALE
HNA	OCTOBER 2018	1:5000

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Appendix 25: Stomor Land West of London Colney Broad Location Transport  
Appraisal (October 2018)



## Transport Appraisal

*for*

Land West of London Colney Broad Location,  
London Colney

Grid Reference: 516895E, 203580N

*Prepared for*

Vincent & Gorbing

*on behalf of*

Hertfordshire County Council

October 2018

Reference: ST2779/TA-1809-Land West of London Colney-Rev 0

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<i>Revision</i>	<i>Author</i>	<i>Checked by</i>	<i>Issue Date</i>
<i>0</i>	<i>SAY</i>	<i>DGS</i>	<i>12/10/18</i>

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### APPENDICES

- A Land west of London Colney broad location preliminary masterplan  
(Vincent & Gorbing Drawing No. 5241 504)
- B Highway Boundary Plans (HCC)
- C Facilities Plan - Drawing ST-2779-11
- D Pedestrian Accessibility – Drawing ST-2779-12
- E Cycling Accessibility – Drawing ST-2779-13
- F Accident Data Summary (HCC - 1/1/13 to 31/12/17)
- G Means of Access – Drawing ST-2779-02
- H 'Without Development' Traffic Flow Diagrams 2031 – Drawing ST-2779-14
- I 'With' Development Traffic Flow Diagrams 2031 - Drawing ST-2779-15

## 1. Introduction

1.1.1. Stomor Ltd. has been commissioned by Vincent & Goring, on behalf of Hertfordshire County Council (HCC), to prepare a Transport Appraisal (TA) for the potential allocation of land to the west of London Colney for residential and education purposes.

1.1.2. St Albans City and District Council (SADC) are currently preparing a new local plan. The St Albans Plan Publication Draft is the subject of public consultation (4 September-17 October 2018). In that Publication Draft a Broad location for development has been identified on land to the west of London Colney. This proposed allocation seeks to “provide an urban extension of London Colney and a new secondary school to enhance the sustainability of London Colney as a small town”. In order to satisfy this objective, the plan sets out proposals to secure this delivery:

1. Masterplanned development led by the Council in collaboration with local communities, and other stakeholders
2. Minimum capacity 440 dwellings
3. The 440 dwelling figure above includes one 50+ home Flexi-care scheme and 10 units to provide special needs accommodation, in accordance with Policy L2
4. Minimum 40% Affordable Housing in accordance with Policy L3
5. Minimum overall net density 40 dwellings per hectare
6. Housing size, type and mix as set out in Policy L1 and Appendix 6
7. Retention of important trees and landscape features
8. Recreation space and public open space
9. A site for and appropriate contributions towards an 8FE secondary and 2FE primary all through school, including early years provision
10. Transport network (including walking and cycling links) and public transport services upgrades/improvements
11. 3% homes to be self-build housing
12. Sufficient assets to provide sustainable management of community facilities, open spaces and parklands
13. Excellence in design, energy efficiency and water management
14. Appropriate renewable energy production and supply mechanisms”

1.1.3 The Draft local plan establishes the boundaries of the broad Location in Policy Map 4:



1.1.4 The land identified white is to accommodate the housing allocation and the land hatched is to remain in the Green Belt for future education use.

1.1.5 This Transport appraisal assesses the potential transport and access constraints and the likely impact generated by the proposed land allocation. Information prepared in this report has been used to inform the preparation of the masterplan report prepared by Vincent and Gorbing.

1.1.6 The site is located immediately to the south west of the B5378 Shenley Lane in London Colney. A preliminary masterplan prepared by Vincent & Gorbing is provided in **Appendix A**. The site is currently undeveloped and in use as agricultural land.

1.1.7 The masterplan prepared by Vincent and Gorbing, shows locations of housing and schools alongside the access strategy for the site. This will be submitted in support of the allocation of the broad location site in the SADC Local Plan. This Transport Appraisal forms part of this supporting information.

1.1.8 In order to demonstrate a robust appraisal this report will investigate the access and sustainable transport demand for development of up to 500 dwellings, a 2FE Primary School, an 8FE Secondary School, 50+ home care and special needs housing provision.

## 2. Policy Appraisal

### 2.1. National Policy

2.1.1. The National Planning Policy Framework (NPPF) was published by the Department for Communities and Local Government in July 2018. The NPPF primary objective is to promote the delivery of sustainable development, achieving a balance of economic, social and environmental objectives.

2.1.2. With specific regard to transport issues, the NPPF requires at paragraph 102 that *‘Transport issues should be considered from the earliest stages of plan-making and development proposals so that:*

*a) the potential impacts of development on transport networks can be addressed;*

*b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;*

*c) opportunities to promote walking, cycling and public transport use are identified and pursued;*

*d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and*

*e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high quality places”.*

2.1.3. The following appraisal identifies the potential impact of the broad location site in transport terms, it demonstrates how opportunities for using existing infrastructure can be used, how technology might contribute towards managing travel demand (i.e. via home working) and how opportunities for promoting sustainable modes of travel have not only been taken up but are positively promoted as a realistic alternative to using private motor vehicles. The environmental impacts of travel demand created by the broad location site have been carefully considered and a key influence on the promotion of sustainable transport modes.

2.1.4. Finally, this appraisal demonstrates that, whilst the design of the broad location site is currently at masterplan stage, the initial layout of the site actively promotes access to, from and within the site by sustainable modes of transport as a priority.

## 2.2. Local Policy

2.2.1. HCC (i.e. the Highway Authority) has recently adopted its fourth Local Transport Plan (LTP4). This LTP contains policy that is entirely relevant to considering the broad location site and how it should be accessed.

2.2.2. From the outset LTP is clear that, to respond to growth by allowing continued dependence on car use and building more roads to encourage more car use will result in serious consequences. Most significantly LTP4 identifies that there is huge potential for travel by 'other modes' both within towns and between adjacent towns.

2.2.3. With regard to policy, LTP4 sets out a 'Transport User Hierarchy' as its Policy 1. It requires the '*greater and safer use of sustainable transport modes*' in HCC promoted schemes and strategies as well as development proposals where '*the hierarchy should apply to the planning and design of new developments, as recommended in Manual for Streets*'. Policy 1 states that HCC will "*in the design of any scheme and development of any transport strategy consider in the following order:*

- *Opportunities to reduce travel demand and the need to travel*
- *Vulnerable road user needs (such as pedestrians and cyclists)*
- *Passenger transport user needs*
- *Powered two-wheeler (mopeds and motorbikes) user needs*
- *Other motor vehicle user needs"*

2.2.4. Policy 2 of LTP4 indicates that HCC will seek to "*encourage the location of new development in areas served by, or with the potential to be served by, high quality passenger transport facilities so they can form a real alternative to the car and where services can be accessed by walking and cycling.*"

2.2.5. LTP4 considers new development directly within Policy 5 (Development Management). It states that HCC will work with development promoters and the District and Borough councils to "*Ensure the location and design of proposals reflect the Transport User Hierarchy and encourage movement by sustainable transport modes and reduced travel demand*".

- 2.2.6. Policy 5 also clarifies that access arrangements should be ‘*safe, suitable for all people....and adhere to the county council’s Highway Design Standards*’. Developer mitigation measures will be secured “*to limit the impacts of development on the transport network*” and developments will only be resisted where “*the impact of development is considered to be severe*”, in line with national policy set out in the NPPF.
- 2.2.7. Subsequent polices in LTP4 promote accessibility and specific modes of travel (i.e. walking, cycling and public transport). LTP4 confirms that more than 8 out of 10 people live in urban areas, with a range of subsequent statistics from Hertfordshire that support the concept of promoting sustainable modes of transport (see Figure 1 below).

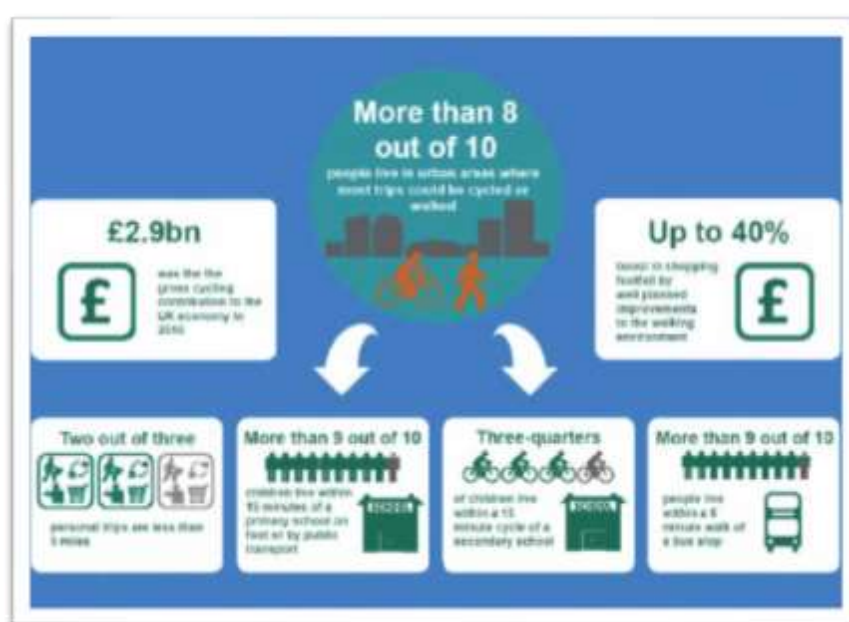


Figure 1: Extract from HCC LTP4

- 2.2.8. Finally, LTP4 policy seeks to promote environmental improvements via reductions in impact of transport (e.g. air quality, noise, light pollution, protect/enhance public spaces). These elements of LTP4 are directly linked to the user hierarchy and promoting more sustainable modes of transport.
- 2.2.9. This appraisal will demonstrate that the masterplan for the broad location site and consideration of access to the site (including off-site transport improvements) has been designed with LTP4 policy as a guiding principle, especially with regard to the potential for trips within London Colney and to adjacent towns being undertaken by sustainable modes of travel rather than relying on the private car.

- 2.2.10. Access to the broad location site has been designed in accordance with the Highway Authority's current guidance, '**Roads in Hertfordshire**' with an access suitable to serve a development as set out in paragraph 1.1.2. The masterplan for the broad location site sets out an indicative access strategy within the site. It is anticipated that the detailed design will also accord with 'Roads in Hertfordshire' as well as policy in LTP4 and 'Manual for Streets'.

### 3. Existing Conditions

#### 3.1. Existing Site Information

- 3.1.1. The broad location site covers a gross area of approximately of 49.95ha, located on the south west side of London Colney.
- 3.1.2. The broad location site directly adjoins Napsbury Park to the north. The southern boundary directly abuts an existing bridleway and agricultural/open land, and the western edge of the site abuts agricultural/open land. The eastern boundary of the broad location site is Shenley Lane with London Colney itself extending eastwards from Shenley Lane as viewed from the site.
- 3.1.3. Currently, direct access to the broad location site off Shenley Lane is only possible via a single point of access which serves farm buildings and is for agricultural use. Access is possible indirectly via Bridleway 04, which runs east to west along the southern boundary of the site connecting Shenley Lane to rights of way and informal tracks to the west and south.
- 3.1.4. An historical right of access existed running north west to south east through the site between Napsbury Park and Bridleway 04. This access is not shown on HCC's Rights of Way map so for the purpose of this appraisal it is assumed that no access is possible through the site directly to/from Napsbury Park.

#### 3.2. Existing Access Overview

- 3.2.1. As previously confirmed, the only direct vehicular access to the site off Shenley Lane is for agricultural purposes,
- 3.2.2. As the site abuts Shenley Lane to the east, this is the main connection point to the local highway network and transport services. Highway Boundary information is provided in **Appendix B**, identifying the areas of land maintainable at public expense in the vicinity of the site.

3.2.3. The main highway characteristics for Shenley Lane immediately adjacent to the broad location site are as follows:

*Shenley Lane*

- Pedestrian footway on eastern side of Shenley lane for entire length;
- Footway/cycleway adjacent to north east corner of site connecting signalised crossing on Shenley Lane for access between Napsbury Park and London Colney;
- Existing bus stops adjacent to the north east corner of the broad location site serving north and southbound services;
- Approximately hourly bus service 657 using Shenley Lane to service St Albans and Harpenden to the north and Elstree and Borehamwood to the south via the centre of London Colney.
- Shenley Lane is approximately 6.5m width along extent of eastern boundary of site;
- Central hatching and splitter islands with 30mph speed limit (NB it is understood that additional traffic calming features are proposed for this section of Shenley Lane to assist speed limit compliance)
- Four priority junctions on the east side of Shenley Lane in the vicinity of the site;
- Four arm roundabout junction to Napsbury Park approximately 330m north west of the site.

3.3. Pedestrians and Cyclists

- 3.3.1. The pedestrian network on Shenley Lane and all roads connecting Shenley Lane to the centre of London Colney is good insofar as it generally consists of complete footways on both sides of the road with footway widths generally being 1.5 - 2.0m wide. In some locations there is verge separation between footway and carriageway.
- 3.3.2. There are generally dropped kerbs and tactile paving at most crossing points with signalised and/or zebra crossing facilities across High Street/Barnet Road in the centre of London Colney. A local facilities plan is shown in **Appendix C** and appraisal of the local footway and cycle network in **Appendix D and E**.
- 3.3.3. A shared pedestrian/cycle signalised crossing is provided across Shenley Lane just to the north west of the broad location site. Therefore, the road carrying the most significant volume of traffic in the area is provided with a signal-controlled crossing point for pedestrians and cyclists.



- 3.3.4. The only exception to this standard of pedestrian footway provision is Shenley Lane at the broad location site as there is currently no need for a footway on the west side of Shenley Lane.
- 3.3.5. The majority of residential roads within London Colney are relatively lightly trafficked so pedestrians are able to cross within gaps in traffic. Visibility is generally good with the main constraint being some footway parking in some locations.
- 3.3.6. With regard to specific provision for cyclists, the most relevant facility is a section of shared use off-road pedestrian/cycle route connecting the north side of Kings Road to Napsbury Avenue and the public recreation ground to the north. A shared use facility is also provided from Shenley Lane into and through the Napsbury Park development.
- 3.3.7. Kings Road and St Annes Road have some traffic calming to seek to keep vehicle speeds low and help promote safe access on foot and by bicycle.
- 3.3.8. Observations in the area during a weekday morning peak period indicated reasonable use of the local footway network by children walking to local schools or bus stops in the centre of London Colney. Some children were also observed cycling north on footways on High Street towards secondary schools in St Albans as well as walking north on Shenley Lane for the same purpose.
- 3.3.9. Some use of the shared use crossing facility on Shenley Lane was observed by pedestrians and cyclists with the signals called infrequently.

#### 3.4. Existing Public Transport Facilities

- 3.4.1. The broad location site is located next to existing bus service 657 which runs along Shenley Lane. There are existing bus stops to the north and south of the site on Shenley Lane with facilities ranging from shelters and raised 'bus boarder' kerbs to simple flag only stops.
- 3.4.2. Additional bus services are located within the centre of London Colney, approximately 10-15 minutes' walk from Shenley Lane via Kings Road. Whilst this distance is beyond the recommended distance to a bus stop (400 metres), the frequency of services using the centre of London Colney and range of destinations served (see Table 1 below) may encourage slightly longer walk distances to bus stops.
- 3.4.3. London Colney does not have a railway station so the nearest rail services are located in St Albans, Radlett, Elstree & Borehamwood and Park Street.

3.4.4. Table 1 summarises the bus services serving the site as of September 2018. It summarises route number, days of operation, frequency and key destinations. Services in the centre of London Colney are also included.

Service	Route	Monday-Friday	Saturday	Sunday/Bank Holiday
657	Harpenden, St Albans, St Albans City Station, London Colney (centre), Shenley Lane, Borehamwood, Elstree & Borehamwood Station	Generally hourly between 0632 and 1922 (southbound)  Generally hourly between 0653 and 1942 (northbound)	Generally hourly between 0829 and 1925 (southbound)  Generally hourly between 0850 and 1844 (northbound)	No service either direction
84	Barnet (High Barnet station, New Barnet underground), Potters Bar (station & centre), London Colney (centre), St Albans Station, St Albans  <i>Walk time 10-15 mins from site</i>	Generally every 15-20 minutes between 0729 and 2001. Half hourly or less frequent before 0729 and after 2001 until 2343 (southbound)  Generally every 15-20 minutes between 0647 and 1716. Half hourly or less frequent before 0647 and after 1716 until 2240 (northbound)	Generally every 15-20 minutes between 0928 and 1753. Half hourly or less frequent before 0928 and after 1753 until 2323 (southbound)  Generally every 15-20 minutes between 0744 and 1622. Half hourly or less frequent before 0744 and after 1622 until 2240 (northbound)	Generally half hourly between 0900 and 1809. Less frequent after 1809 until 2322 (southbound)  Generally half hourly between 0815 and 1715. Less frequent after 1715 until 2238 (northbound)
602	Welwyn Garden City, Hatfield, Hatfield University (x2 campuses), St Albans station, St Albans (centre) London Colney (centre), Radlett, Bushey station, Watford station, Watford (centre)  <i>Walk time 10-15 mins from site</i>	Generally half hourly between 0548 and 1903 with less frequent services to 2223 (southbound)	Generally half hourly between 0700 and 1912. With two less frequent services until 2212 (southbound)	Generally hourly between 0754 and 1741. With one additional service at 2002 (southbound)

Table 1 – London Colney Bus Services Summary

- 3.4.5. In addition, school service 358 runs along Shenley Lane between Borehamwood and Oaklands providing access to Nicholas Breakspear School via London Colney.
- 3.4.6. Table 1 demonstrates that the broad location site is served directly by an hourly service and, indirectly via 10-15 walk or change of bus service within London Colney, by a high frequency service to key destinations north and south of London Colney.
- 3.4.7. Based on existing services the journey times to key destinations by bus are as follows:
- St Albans City Railway Station - approximately 25 minutes;
  - St Albans Town Centre - approximately 30 minutes;
  - Borehamwood - approximately 25 minutes; and
  - Elstree and Borehamwood Station - approximately 35 minutes.

### **Rail Links**

- 3.4.8. There is no railway station in London Colney but there are several stations accessible nearby as follows:
- St Albans City - approximately 25 minutes by bus, 20 minutes by bicycle;
  - St Albans Abbey - approximately 16 minutes by bicycle;
  - Elstree & Borehamwood - approximately 25 minutes by bus;
  - Park Street - approximately 15 minutes by bicycle; and
  - Radlett – approximately 17 minutes by bicycle.
- 3.4.9. St Albans City Station is on the Thameslink line and offers the best frequency rail service with direct links to London St Pancras, Luton and Bedford as well as through London services to Farringdon, City Thameslink, London Bridge and on to Gatwick Airport and Brighton. Changing at Bedford will allow connections to the midlands. St Pancras provides links to the wider national and international rail network. Access to international airports is possible via Luton and Gatwick Airport stations. More local journeys are available to Radlett, Elstree & Borehamwood and north London (Mill Hill, Hendon, West Hampstead and Kentish Town).
- 3.4.10. There is a high frequency service between St Albans City and central London. For example, there are 10 services timetables to arrive at City Thameslink or London Bridge between 0800 and 0841. Service stopping patterns vary towards London. Services to

Luton and Bedford are less frequent but there are still 5 services timetabled to arrive from St Albans between 0757 and 0837.

- 3.4.11. Park Street and St Albans Abbey stations are part of the Abbey Line providing local services between St Albans and Watford running at a service frequency of approximately every 45 minutes.

### 3.5. Local Highway Network

- 3.5.1. The broad location site is located on the south west side of the B5378 Shenley Lane. Shenley Lane is approximately 6.5m wide as it passes the site and is subject to a 30mph speed limit along its entire length within London Colney.
- 3.5.2. Shenley Lane connects to the A414 approximately 1.1 kilometres north west of the broad location site. The junction with the A414 is a simple 'left in, left out' arrangement for westbound traffic to/from the A414. A ghost island right turn lane is provided from Shenley Lane to enable right turning traffic to access the A414 westbound.
- 3.5.3. Traffic using Shenley Lane to access the A414 eastbound continues north on Shenley Lane, over the A414 then turns right to access the A414 via an eastbound slip lane.
- 3.5.4. The A414 is a strategic route through Hertfordshire, connecting Hemel Hempstead to Hertford via M1 and A1(M) so it carries a substantial amount of traffic. It is also used as a route to connect the A1(M) with the M25 for traffic heading south west to north east and vice versa.
- 3.5.5. There are four priority junctions on the east side of Shenley Lane opposite or in close proximity to the broad location site. The junction with Kings Road provides a ghost island right turn land to enable right turns off Shenley Lane towards the centre of London Colney.
- 3.5.6. All other junctions along this section of Shenley Lane are simple priority junctions serving residential areas/schools. St Annes Road provides a link through to the centre of London Colney as well as serving residential areas.
- 3.5.7. Shenley Lane runs south east from the broad location site, crossing over the M25. Approximately 1 kilometre south east of the broad location site is a four arm roundabout junction between Shenley Lane, Bell Lane, Shenleybury and Harper Lane. This junction helps distribute traffic to/from junction 22 of the M25 to the east, Shenley and

Borehamwood to the south and Colney Street and Radlett to the south west. The roundabout has a single lane of approach on all four arms.

3.5.8. Observations of traffic flows during one weekday morning period suggests the following:

- There is a significant amount of eastbound traffic exiting the A414 and travelling south east on Shenley Lane to the Bell Lane roundabout (assumed to avoid congestion at the London Colney five arm roundabout junction on the A414);
- There is peak time congestion at the Shenley Lane/Bell Lane/Harper Lane/Shenleybury roundabout. Observations suggest this is simply due to the volume of traffic using this junction generally rather than on any particular arm of the junction;
- The Shenley Lane junctions with the A414 and all other local junctions adjacent to the broad location site operate within capacity and no significant queuing or delay was observed;
- Traffic flow on adjacent residential roads is relatively light with on-street parking and/or traffic calming helping to manage speeds;
- St Anne's Road provides a link/'rat run' between High Street/Barnet Road and Shenley Lane. Traffic flows are relatively light and speeds are controlled by on-street parking/traffic calming; and
- Flows on High Street/Barnet Road were observed to be modest and did not give rise to significant congestion or delay to bus services.

### 3.6. Traffic Flows on links and junctions within the Study Area

3.6.1. Two main sources of traffic data have been used for the links and junctions in the vicinity of the broad location site. Classified junction turning traffic counts were carried out by ATR in September 2018 to cover the AM and PM school and PM network peak periods.

3.6.2. The following junctions were counted on 12<sup>th</sup> September 2018:

- Junction 1a (J1a) – A414 eastbound and access lane;
- Junction 1b (J1b) – A414 westbound and entry/exit.
- Junction 2 – Shenley Lane priority junction with A414 westbound link
- Junction 3 – Shenley Lane roundabout with Goldring Way/Napsbury Avenue
- Junction 4 – Shenley Lane priority junction with Kings Road

- Junction 5 – Shenley Lane priority junction with St Annes Road
  - Junction 6 – Shenley Lane roundabout with Bell Lane/Shenleybury/Harper Lane
- 3.6.3. The junction counts were carried out during the periods 0700 - 1000 hours and 1430 – 1900 hours. Traffic count data is available on request.
- 3.6.4. The traffic flow data was analysed to determine the peak hours. Whilst there are minor variations in peaks between junctions, in general the peak hours on the highway network are considered to be as follows:
- AM Peak: 08.00 – 09.00
  - PM School Peak: 15.00 – 16.00
  - PM Network Peak: 17.00 – 18.00
- 3.6.5. The Base Year traffic turning movements (i.e. 2018) are available on request along with queue length surveys.
- 3.6.6. In addition to the observed traffic flows summarised above, HCC provided access to their 'Comet' strategic traffic model for the St Albans district (including London Colney). This model provides link flows on roads in the surveyed area for 2014 and 2031.
- 3.6.7. For the purposes of this appraisal, the potential development on the broad location site is assumed to be fully complete and occupied by 2031, to tie in with data available from the Comet model.
- 3.6.8. The Comet model includes all known growth and transport infrastructure to cover the current St Albans Local Plan period to 2031. A new run of the Comet model is planned for late 2018 to include the emerging Local Plan growth information to 2036 but for the purposes of this appraisal the current Comet data is considered to be robust with regard to future traffic flow predictions and committed development assumptions.
- 3.6.9. With regard to future committed development the Comet model includes the proposed railfreight depot location to the east of the broad location site and its large signalised roundabout access on the A414. In addition, the Comet model assumes the London Colney junction on the A414 is upgraded to a 'hamburger' style roundabout giving priority to east-west flows, helping to reduce congestion for strategic flows but making access from other arms more onerous.

- 3.6.10. The Comet data has been used to identify growth changes between 2014 and 2031. As the Comet model is bespoke to Hertfordshire, growth rates can go up or down depending on the level of development predicted and the effects of transport infrastructure.
- 3.6.11. Comet derived growth rate has been calculated for all links in the study area and then applied to the observed junction flows extracted from the manual classified counts for junctions 1 to 6 (see paragraph 3.6.2).
- 3.6.12. Consequently, there is no single growth factor that can be applied over a specific time period as would be case if TemPro was used. The Comet derived growth rates are considered robust and the most appropriate way of identifying growth on the local highway network.
- 3.6.13. Comet derived growth rates (2014-2031) have been calculated and applied to each link in the study area. Manual turning count data has then been adjusted to 2031 levels using the Comet link growth factor and observed turning count proportions.
- 3.6.14. As the Comet model data starts in 2014 the growth factor applied to the 2018 observed data has been adjusted on the assumption that nearly 25% of the 2014-2031 Comet timescale has passed.
- 3.6.15. Comet data is presented in Passenger Car Units (PCUs), so all observed turning count data has been converted to PCUs to ensure consistency of modelled data.
- 3.6.16. Typically, Base Year (i.e. 2018) traffic flows would be modelled to identify how junctions are currently operating. However, given that that the broad location site is proposed to be allocated in the Local Plan and that the Comet output is 'Volume/Capacity %' in both 2014 and 2031, the Comet data is used to provide an initial appraisal of the performance of the local highway network based on link capacities.
- 3.6.17. Table 2 summarises the Comet 2014 data, showing volume as a percentage of capacity as an indicator of link performance. The 'worst case' link<sup>1</sup> results are used as an indicator of potential capacity issues at junctions. The link data at the site access is also included for reference.

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<sup>1</sup> Entry and exit link data are reviewed as several junctions are close together so it is considered appropriate to use exit data as a potential junction capacity indicator.

HCC Comet link flows (Vol-Cap %)	AM peak 0800-0900	Inter-peak <sup>2</sup> 1000-1600	PM peak 1700-1800
J1a	44%	47%	49%
J1b	42%	48%	49%
J2 <sup>3</sup>	34%	19%	34%
J3	63%	33%	60%
J4	46%	33%	60%
Site Access	48%	29%	44%
J5	48%	38%	45%
J6	94%	46%	83%

Table 2 – Comet model link flow capacity data summary 2014

- 3.6.18. Table 2 shows that in 2014, J6 (Shenley Lane/Bell Lane roundabout) was likely to be operating over-capacity in the AM peak and approaching theoretical capacity in the PM peak. All other link flow data indicates the local highway network was operating well within capacity in all peak periods in 2014.
- 3.6.19. Queue length data (available on request) taken from the 2018 classified junction counts indicates that J6 continues to experience capacity problems in the AM peak with possible capacity problems in both PM peaks, albeit less acute.
- 3.6.20. For all other junctions, queue length surveys did not indicate any significant capacity problems in 2018.
- 3.6.21. Therefore, for the purposes of this appraisal the local highway network in the study area is considered to be currently operating within capacity with the exception of J6 in the AM peak and possibly both PM peaks. Future appraisal of the highway network will be based on appraisal of the 'With' and 'Without Development' scenarios in 2031 to coincide with the Comet model period.

<sup>2</sup> 'Interpeak Average 1000-1600' – this does not directly correspond with PM school peak data but is the only data available in the Comet model.

<sup>3</sup> Including A414 link



### 3.7. Personal Injury Accident Records

- 3.7.1. Personal Injury (PI) Accident data for the study area in the vicinity of the site has been obtained from Hertfordshire Highways for the period 1<sup>st</sup> Jan 2013 – 31<sup>st</sup> Dec 2017. A summary map is provided in **Appendix F**.
- 3.7.2. Inspection of the data shows that there were three slight PI accidents on Shenley Lane adjacent to the proposed site access in this period plus a further slight accident just south of the St Annes Road junction. This number and severity of accidents is not considered to be significant.
- 3.7.3. Two serious PI accidents occurred at or close to the Napsbury Park access, one at the Shenley Lane/Goldring Way roundabout and another further west on Goldring Way itself. Whilst the severity of both accidents may give cause for concern, two in five years at separate locations is not considered significant.
- 3.7.4. Five slight PI accidents were recorded at the Shenley Lane junction with the link to the A414. Capacity analysis set out in this report suggests that this junction will require consideration as part of a wider A414 study. Whilst five slight PI accidents in five years is not especially significant given the volume of traffic using this junction, any safety issues arising could be considered as part of an A414 study.
- 3.7.5. West of the Shenley Lane/A414 link, four PI accidents were recorded in this five-year period – two slight and two serious. This section of road consists of a bend which narrows (as it crosses the A414 via overbridge) with a residential access road on the bend to the west. In this context the number of accidents recorded is relatively light. Our observations suggest that management of foliage could be improved to ensure forward visibility is maintained. Other measures to slow vehicles speeds on the bend may assist vehicles entering/exiting the side road and assist pedestrian access.
- 3.7.6. On St Annes Road, one slight and one serious PI accident were recorded in five years, both in separate locations. This accident rate is not considered to be significant.
- 3.7.7. No PI accidents were recorded on Kings Road during this period.

### 3.8. Traffic Speed

- 3.8.1. As it has been agreed with HCC that this appraisal can be based on a combination of traffic data from 2018 Manual Classified Turning Counts and HCC Comet Model link flow data, speed data has not been gathered.

- 3.8.2. It is understood that HCC are proposing to implement a traffic calming scheme along Shenley Lane in the vicinity of the broad location site so, for the purposes of this appraisal, we have assumed speed limit compliance in a future 'with development' scenario.
- 3.8.3. Detailed design of the broad location site accesses may require speed data to determine appropriate visibility can be achieved. Initial design indicates that visibility requirements can be achieved, subject to detailed design.

#### 4. Broad Location Site Means of Access

- 4.1.1. The access strategy set out below is based on balancing National and Local policy and appraisal of local travel demands and impact. Current policy seeks to promote access by sustainable modes of transport, which is reflected in the access strategy. A means of access drawing is included in **Appendix G**.

#### 4.2. Pedestrian and Cyclist Means of Access

- 4.2.1. The site will be designed so as to prioritise access on foot and by bicycle by promoting desire lines for pedestrians. This approach will be applied to routes within the site (e.g. between houses and schools) as well as to locations outside the site.
- 4.2.2. A network of footways and shared use/foot/cycleways will permeate the site, connecting the key land uses within the site and providing safe and convenient access for pedestrians and cyclists. Design speeds of 20mph will be applied to internal roads and crossings will seek to prioritise access on foot/by bicycle.
- 4.2.3. A new shared foot/cycleway will be provided along the Shenley Lane frontage which will connect to several pedestrian/cycle routes accessing the site. The overall objective will be to provide desire line convenient access for pedestrians/cyclists to reach the existing signalised crossing on Shenley Lane (to the north of the site) and a new signalised crossing of Shenley Lane (to the south of the site).
- 4.2.4. On the east side of Shenley Lane, it is proposed to upgrade the existing footway to shared use to connect to both signalised crossings, linking the existing shared use facility to the north of Kings Road with St Annes Road.
- 4.2.5. It may also be necessary to consider raised table crossings across junctions from Kings Road to St Annes Road to help keep vehicle speeds low adjacent to this shared use route and manage turning vehicles.

- 4.2.6. In addition, it is proposed to extend the shared use route on the east side of Shenley Lane as far as the public Byway running along the south side of the River Colne. The Byway itself may need upgrading to allow traffic free access on foot/by bicycle to the south and east of London Colney.
- 4.2.7. The pedestrian network within London Colney is considered to be of good quality so no additional improvements are considered necessary to enable access to services and facilities within the town.
- 4.2.8. It may be necessary to upgrade traffic calming measures or provide cycling infrastructure on Kings Road and St Annes Road in order to ensure that each route is a safe and convenient options for cyclists to use to and from the site.
- 4.2.9. It is unlikely that a shared use, off-road pedestrian/cycle facility could be achieved along both roads due to footway and carriageway width constraints and on-street parking. If this is to be achievable it is recommended that it forms part of a wider strategy for London Colney as led by the Local Transport Plan.
- 4.2.10. The proposed access arrangements for pedestrians and cyclists provides good quality, safe and convenient access within the site and to/from key destinations in London Colney.
- 4.2.11. Where required, signalized crossing facilities will be provided over the heavily trafficked Shenley Lane with a combination of shared use foot/cycle way provision or upgraded traffic calming on other key routes outside the site.

#### 4.3. Public Transport Means of Access

- 4.3.1. Bus service frequency on Shenley Lane is currently hourly. Destinations served include the centre of London Colney, Napsbury, St Albans and Borehamwood which are considered appropriate for local journeys by public transport. Consideration should be given to the frequency of the existing service and whether it could be increased to half hourly as a result of the broad location site being developed in line with the Local Plan requirements.
- 4.3.2. The level of bus service frequency may potentially influence the strategy for accessing. Two options are proposed with regard to promoting access by public transport.
- 4.3.3. Firstly, the central site access is designed with sufficient width and turning space to allow access into the site by buses and coaches.

- 4.3.4. Bus stops will be provided on the central access road with safe and convenient pedestrian/cycle access to them. Stops will be designed to the latest standards with regards to accessibility, shelter and real time information.
- 4.3.5. As an alternative, the second option for promoting access by public transport will be to upgrade existing stops on Shenley Lane to modern standards of shelter, accessibility and real time information provision. The majority of the site would be within 400m walk of one of the existing stops, making access on foot a viable option.

#### Motor Vehicle Means of Access

- 4.3.6. Motor vehicle access to the site is proposed via a new three-arm roundabout off of Shenley Lane. The roundabout will be designed to provide sufficient capacity for the traffic generated by the potential development on the site and predicted flows on Shenley Lane in 2031.
- 4.3.7. The access into the site will be designed as a boulevard with split lanes each being 6m wide. These lane widths provide operational flexibility to allow buses or other vehicles to stop on the carriageway without blocking access.
- 4.3.8. A central island on the site access will enable a pedestrian/cycle refuge to be provided to enable safe access across the site access. The site access and internal roads design speed will be 20mph. The site will be permeated by safe crossing points for pedestrians and cyclists prioritising desire lines on foot and by bicycle. The combination of design speed and desire lines promotes access on foot/by bicycle.
- 4.3.9. The access road will connect to an internal roundabout where it will split to serve northern and southern parts of the broad location site. This also allows separate approaches to be provided to both schools.
- 4.3.10. Within the site the split access roads will be a minimum of 6.75m wide to enable bus and coach access within the site and to schools. This width also allows ease of access by waste, commercial and emergency vehicles.
- 4.3.11. The proposed access arrangements provide the simplest and most efficient option in highway terms, also helping to encourage access on cycle and foot by providing direct access to existing nearby services and facilities.

## 5. Appraising the Impact of the Proposed Development

### 5.1. Trip Generation and Assignment Overview

5.1.1 For both schools the following assumptions have been made throughout the appraisal of mode share as follows:

- The 2FE primary school catchment area consists of the broad location site plus some children from locations immediately adjacent to the site within London Colney and Napsbury (i.e. within walking/scooting distance)
- The 8FE secondary school catchment area consists of the broad location site plus all of London Colney (journeys within walking and/or cycling distance) as well as some external catchment (locations unspecified).

5.1.2 Subsequent advice from HCC Education confirmed that up to 50% of pupils for the new 8FE secondary school would come from London Colney, the remainder being from St Albans and surrounding villages/towns.

5.1.3 For the residential element of the broad location site, it is assumed that the peak time mode of travel is as shown in 2011 Census 'Journey to Work' mode share data (no other locally gathered information is available).

5.1.4 To inform the appraisal of trip generation, 2011 Census 'Location of usual residence and place of work' data has been used with the St Albans Super Output Area 018 used (i.e. London Colney and Napsbury). This information provides an overview of where residents of the broad location site are likely to travel to work (at local authority district level).

5.1.5 It should be noted that there is some overlap between peak time travel to work and to school, especially for journeys undertaken by private motor vehicle. It is also worth noting that the location of a secondary school in the broad location site is likely to result in change of travel patterns for secondary school pupils currently travelling outside London Colney for secondary education (i.e. to St Albans and elsewhere).

5.1.6 For the care home element of the broad location site, information on trip generation has been used from other similar projects in Hertfordshire. This type of land use is relatively small and is unlikely to generate significant peak hours traffic.

## 5.2. Primary and secondary schools trip generation and assignment

- 5.2.1. In order to identify likely mode share and trip generation for both schools several data sources have been reviewed. For the 2FE primary school average mode share data gathered over four years from a similarly located 2FE primary school in Berkhamsted has been used.
- 5.2.2. This school is located on the edge of Berkhamsted with a local catchment area immediately adjacent to the school and the bulk of children living within 1 kilometre. This data is considered robust to use for the broad location site primary school, based on the assumption that its catchment will be taken from the broad location site housing and nearby existing residential areas (within 1 kilometre).
- 5.2.3. Table 3 summarises the mode share and trips for the potential 2FE primary school for both pupils and staff with trips shown for both combined.

<b>Peak Period</b> (school roll 450, 41 staff)	<b>Pupil Mode Share</b>	<b>Staff Mode Share</b>	<b>Trips</b>
Walk	46.1%	30%	219
Cycle	3.5%	2.4%	17
Car, car share, park & stride	43.4%	72.3%	129*
Scoot	2.7%	-	12
Unknown	3.6%	-	16

*Table 3: 2FE primary school mode share and trip generation.*

- 5.2.4. The vehicle trips (denoted\*) have been adjusted to take into account previously surveyed child occupancy rates in St Albans (1.4 children per car). In addition, it has been assumed that 15% of trips will be by vehicles already on the network, 'passing' the school on another journey purpose (i.e. to work, for leisure purposes). This figure varies dependent on location, but experience indicates it can be between 10% and 25% and without some allowance there is a risk of double counting some trips by car. Finally, the vehicle trips are adjusted to allow for average absence rates (most recent figures from the Department for Education indicate a national figure of 4.3%).
- 5.2.5. Primary school vehicle trips are assigned to the site access and network based on observed turning count proportions for the Shenley Lane junctions with St Annes Road and Kings Road (see Table 11). As these trips are local this is considered the most appropriate way of assigning trips.

5.2.6. For the 8FE secondary school, we have utilised previous research work undertaken by Stomor for identifying a new secondary school location in Harpenden. This research analysed existing secondary school catchments and mode choice. This research recognised that secondary schools have wider, more varied catchment areas but the context for a new secondary school in Harpenden is similar to the context of the broad location site.

5.2.7. Our Harpenden research identifies likely mode share based on distance from school as set out in Table 4 below.

Mode	0-1km	1-2km	2-5km	5km+
Walk/Cycle	95%	79%	20%	0%
Car/Taxi	5%	17%	34%	57%
Bus	0%	4%	46%	43%

Table 4: Secondary school mode share based on distance from school

5.2.8. Advice from HCC confirmed that an 8FE secondary school roll will equate to 1,560 pupils (including sixth form) and that 50% of the secondary school's catchment would come from within London Colney and 50% of the catchment would be from St Albans.

5.2.9. Traffic generated by the 50% of the catchment within London Colney is considered likely to use the local distribution observed at the Shenley Lane junctions with Kings Road and St Annes Road (see Table 11). The 50% catchment from St Albans is considered likely to arrive and depart mainly via Shenley Lane.

5.2.10. Based on 780 pupils living within London Colney and 780 living in St Albans, the mode share for the secondary school has been calculated and summarised in Tables 5 and 6. The proportion of pupils within each geographical catchment shown in Tables 5 and 6 has been estimated based on proportion of built area within each area.

Mode	0-1km	1-2km
Walk/Cycle	494	205
Car/Taxi	15	25
Bus	0	10

Table 5: Secondary school mode share based on 50% of catchment within London Colney

Mode	2-5km	5km+
Walk/Cycle	16	0
Car/Taxi	16	232
Bus	36	302

Table 6: Secondary school mode share based 50% of catchment from St Albans

5.2.11. The car/taxi trips have been adjusted to take into account pupil car occupancy levels, 'existing 'pass by' trip diversion and pupil absence rates set out in paragraph 5.2.4. Table 7 summarises the overall total adjusted trip generated by the 8FE secondary school.

Mode	Trips
Walk/Cycle	715
Car/Taxi	288
Bus	348

Table 7: Secondary school total estimated trip generation

5.2.12. Staff trips have been incorporated into the overall trip generation although it has been assumed that the majority of staff arrive before the AM peak.

### 5.3. Residential development trip generation and assignment

5.3.1. For the purposes of identifying residential trips an initial appraisal has been made of Census 2011 'Journey to Work' data for London Colney<sup>4</sup>. Table 8 summarises the likely mode share for peak time work based trips to/from the site.

Peak Period (population 1250, 68% economically active)	2011 Census Mode Share	Trips
Underground, metro, light rail, tram	1.6	11
Train	8.5	59
Bus, minibus, coach	5.0	35
Taxi	0.4	3
Motorcycle, scooter, moped	0.9	6
Driving car or van	69.6	484
Passenger in car or van	4.9	34
Bicycle	1.6	11
On foot	7.0	49
Other	0.5	4

Table 8: Census 2011 Mode Share

<sup>4</sup> This analysis calculated number of residents based on household size derived from Census 2011 data with mode share applied to the economically active proportion (also Census 2011 derived) of residential population of the broad location site



- 5.3.2. It is assumed that the initial part of train/underground/tram/metro trips is accounted for in other 'local' modes (i.e. car, cycle or bus journeys to nearby stations). The proportion of trips by 'local' modes is broadly in line with overall mode share for Hertfordshire, albeit with car or van driving and bus use slightly higher and walking and cycling proportions slightly lower.
- 5.3.3. It should be noted that Census 2011 data indicates 4% of London Colney residents 'work at or from home'. This has not been allowed for in Table 8 but is an important consideration and is considered later in this appraisal.
- 5.3.4. With regard to vehicle trips Table 8 indicates that the residential development on the site would generate 494 private vehicle trip journeys to work (taxi, motorcycle/moped/scooter/ and driving car or van). Trips by passengers in cars/vans are assumed to be included within this total.
- 5.3.5. We have referred to the TRICS database to identify how many motor vehicle trips may be undertaken in a specific peak hour (0800-0900 and 1700-1800 being, typically, the main peak hours for journeys to work).
- 5.3.6. Table 9 summarises TRICS rates used, including school and network PM peaks (the full TRICS data is available on request) and Table 10 shows the motor vehicle trips generated from TRICS data.

Motor Vehicles	Arrivals	Departures	Two-Way
AM (0800 – 0900)	0.163	0.398	0.561
PM1 (1500 – 1600)	0.264	0.198	0.462
PM2 (1700 – 1800)	0.387	0.174	0.561

Table 9: TRICS derived trip rates for motor vehicles

	Arrivals	Departures	Two-Way
AM (0800 – 0900)	82	199	281
PM1 (1500 – 1600)	132	99	231
PM2 (1700 – 1800)	194	87	281

Table 10: Motor Vehicle Trips – up to 500 dwellings

- 5.3.7. The Census derived trip generation in Table 8 identifies 494 private vehicle trips generated by the site (i.e. assumed to be 'departures' only in the AM peak and arrivals in the PM peak). The TRICS based analysis from Tables 9 and 10 shows 199 'departures' in the AM peak and 194 'arrivals' in the PM peak.

- 5.3.8. The Census derived trips are not confined to a specific peak hour. If it is assumed the 199 AM peak TRICS derived departures account for the 0800-0900 period of the AM peak, this would leave 295 private vehicle trips across the AM peak 'shoulders' (0700-0800 and 0900-1000) as well as some trips occurring 'off-peak' (i.e. for part time employees). The reverse would be expected in the PM peak, covering the peak 'shoulders' 1600-1700 and 1800-1900 either side of the main peak hour with some additional 'off-peak' travel.
- 5.3.9. Based on this analysis and with the Census trips spread as described above, the TRICS derived trip generation is considered robust and suitable for use in this appraisal.
- 5.3.10. With regard to assignment of residential traffic generated by the broad location site, the 2018 observed turning count data for the Shenley Lane junctions with Kings Road and St Annes Road has been used to assign traffic at the site access. Turning proportions were calculated using the Mean of both sets of data. These movements are likely to reflect local traffic originating from London Colney residents.
- 5.3.11. Passing flow data from the HCC Comet model was considered for assignment purposes but our own observations on site suggest there may be a significant element of 'rat running' strategic traffic using Shenley Lane to avoid the A414 London Colney roundabout congestion. Use of Census 2011 data was also considered but it requires significant assumptions regarding journey to work routing so the use of locally observed turning counts is considered the most robust data source.
- 5.3.12. Table 11 shows the assignment proportions derived from observed turning counts. **Appendices H and I** show the resulting traffic flows based on combining the trip generation data with the assignment proportions.

		To								
		Shenley Lane (N)	Site Access	Shenley Lane (S)	Shenley Lane (N)	Site Access	Shenley Lane (S)	Shenley Lane (N)	Site Access	Shenley Lane (S)
From		AM Peak			PM School			PM Peak		
	Shenley Lane (N)		59.5			57.5			48	
	Site Access	40		60	45.5		54.5	51.5		48.5
	Shenley Lane (S)		40.5			42.5			52	

Table 11: % Peak hour residential traffic assignment at site access (to be read left to right)

5.3.13. Assignment of residential traffic at all other junctions in the study area was based on observed turning count proportions from base year 2018 traffic flows.

#### 5.4. Extra care housing development trip generation and assignment

5.4.1 The care home element of the broad location site is unlikely to generate a significant amount of peak time trips and very low vehicle trip numbers. We have previously assessed traffic generated by similar facilities elsewhere in Hertfordshire, so vehicle trip generation has been based on this work and the same assignment proportions used as for the residential development set out above.

5.4.2 Sustainable transport trip generation is also likely to be low at peak times. Table 12 estimates trips by sustainable modes at peak times. Further information would be required on occupancy and visitor/staff numbers to provide more accurate trip assumptions.

Vehicle trips	Arrivals	Departures
Walk	5	5
Bicycle	2	2
Bus	1	1

Table 12: Extra care housing sustainable trips

- 5.4.3 Table 13 summarises the extra care housing vehicle trips. Figures have been uplifted by 10% to allow for a small number of trips likely to be generated by the special needs accommodation.

Vehicle trips	Arrivals	Departures
AM (0800 – 0900)	3	6
PM1 (1500 – 1600)	3	3
PM2 (1700 – 1800)	3	9

Table 13: Extra care housing vehicle trips

## 5.5. Appraisal Years and Peak Hours

- 5.5.1. This appraisal is based on assessing the travel demands of the broad location site when fully occupied. As we have used the HCC Comet model it is considered appropriate to use the 2031 future year of that model to base the appraisal on as this is the extent of modelled Local Plan *and* committed development information in the London Colney area. It is likely that all development will be built and occupied by 2031.
- 5.5.2. The travel demands of the broad location site are compared as ‘with’ and ‘without’ development scenarios in 2031 for junction appraisal purposes. Base year 2014 network performance is summarised in Table 2 to give an indication of current performance.
- 5.5.3. Peak hours are dictated mainly by the HCC Comet model data. We have also reviewed the observed turning count peak flows to confirm peak hours. The peak hours data in the turning counts varies by location but for the purposes of appraisal the highest peak hours flows have been taken for each site and Table 14 summarises the assumed peak hours.

Peak Period	Peak Hour
AM Peak	0800 to 0900
PM School Peak	1500 to 1600
PM Network Peak	1700 to 1800

Table 14: Peak hours assessed

## 5.6. Background Traffic Growth

- 5.6.1. Discussion with HCC concluded that using a TemPro growth factor for the study area would be likely to under-estimate growth in the study area. In addition, the HCC Comet model would provide traffic data for 2014 and 2031 so a growth factor for each link could be calculated from this data.

- 5.6.2. Using the Comet model would allow the use of different growth factors for each link across the study area, including where flows are predicted to reduce due to infrastructure improvements making a particular link less attractive to use.
- 5.6.3. On this basis Comet model growth increases/decreases between 2014 and 2031 have been applied to observed turning count data. Growth figures have been factored to allow for approximately 25% of the Comet model period passing (i.e. 2014-2018).
- 5.6.4. However, it should be noted that link flows can vary significantly either side of a junction but without turning flow data the calculated growth from a link applied to turning movements may over or underestimate growth.

## 5.7. Study Area

- 5.7.1. The study area is based on the observed 2018 turning count data. We have reviewed the data and concluded that the study area for the broad location site should focus on Junction 2 (and potential congestion causing queues back onto the A414 exit slip lane) as well as Junctions 3 – 6, as junctions close to the Site Access (which is also included in the study area). The following studies the junctions included in the study area:

- Junction 2 – Shenley Lane priority junction with A414 westbound link
- Junction 3 – Shenley Lane roundabout with Goldring Way/Napsbury Avenue
- Junction 4 – Shenley Lane priority junction with Kings Road
- Junction 5 – Shenley Lane priority junction with St Annes Road
- Junction 6 – Shenley Lane roundabout with Bell Lane/Shenleybury/Harper Lane

- 5.7.2. Junctions 1a and 1b are excluded as neither provide full junctions with the A414 and any significant capacity issues arising from traffic on the A414 is likely to be addressed as part of HCCs study and strategy for this route. The appraisal of Junction 2 would provide an indication of any capacity issues to consider at the A414.

## 5.8. Heavy Goods Vehicles

- 5.8.1. The vehicle trip generation summarised above allows for HGVs as all traffic data is converted to PCUs for analysis.
- 5.8.2. However, we would not expect a significant number of HGVs to be generated by any of the potential land uses on the broad location site.

## 5.9. Appraisal of Travel Demand - Sustainable Transport

- 5.9.1. Based on the trip generation predictions in sections 5.2 and 5.3 of this report, our appraisal of the number of trips on foot and by bicycle is that there is likely to be capacity on existing and proposed means of access facilities to accommodate these trips.
- 5.9.2. Appendices D and E show the accessibility of the broad location site on foot and by bicycle with the access strategy designed to promote safe and convenient access by enhancing the coherence and directness of pedestrian and cycle access.
- 5.9.3. Table 15 shows the number of trips to local destinations from London Colney for work purposes, accessible on foot, by bicycle or public transport. It indicates that the majority of trips to work in the local area have the potential to be undertaken by sustainable modes of transport.

<b>2011 Census Travel to Work destination</b>	<b>No.</b>	<b>%</b>
St Albans district	1,561	38.2
Hertsmere district (Borehamwood)	391	9.6
Barnet	210	5.1
Central London (via railway stations)	501	12.3
<i>Sub-total</i>	<i>2,663</i>	<i>65.2</i>
Other destinations	1,427	34.8
<i>Total</i>	<i>4,090</i>	<i>100</i>

Table 15: Census 2011 Travel Work Location Summary

- 5.9.4. Subject to implementation of Travel Plans for schools and residential developments it is likely that the pedestrian and cycle facilities proposed could accommodate significant extra demand beyond the levels identified in this appraisal.
- 5.9.5. Where demand grows, this is likely to increase the use of the existing and proposed signalised crossings of Shenley Lane. The implications for traffic flows may need to be considered but it is assumed that pedestrian and cycle use will be prioritised in line with national and local policy.
- 5.9.6. With regard to bus access, our initial analysis indicates that there is unlikely to be sufficient capacity on existing bus services, which currently operate hourly to/from the site. The broad location site will generate more demand for trips by bus to/from St Albans

and locations to the south of London Colney for residents travelling and pupils in particular.

- 5.9.7. Therefore, it is recommended that enhanced bus frequency is provided on the St Albans-London Colney-Borehamwood corridor. Section 5.11 of this report considers sustainable transport infrastructure and service improvements in more detail.

#### *Technology improvements*

- 5.9.8. We have not considered the effects of the following on trip generation, but all would have positive impacts on managing travel demand, promoting sustainable access and reducing vehicle trips:

- *Home working* - there has been a growth in proportion of home working between 2001 and 2011 Censuses. This is likely to result in less peak time travel. We have not assumed any further increase and the potential impact on trip generation by the broad location site. It is likely that the amount of peak time trips is an over-estimate based on home working growth trends;
- *Remote working* – there is growing potential for remote working in ‘neutral’ locations (or ‘hubs’) provided with technology to enable employees to work from a location closer to home without having to travel to the workplace at peak times. There is potential for such facilities to be included within the broad location site to benefit future and existing residents;
- *Travel Plans (TP)* - TPs should be prepared to support all proposed land uses on the broad location site. They will help promote and establish use of more sustainable modes of travel, car sharing and encourage less individual use of private car travel;
- *‘Connected buses’* – Bus operators are increasingly recognising the potential for attracting customers to use buses by providing free WIFI and mobile device charging facilities. This may encourage more use of buses where work tasks can be undertaken as part of the journey. This is also increasingly attractive for school children for social networking and connecting to online entertainment;

- *Real time information* – The availability of live, ‘real time’ travel information (i.e. public transport, traffic) is increasingly available online and accessible at home and on mobile devices. It is likely that this information will improve and become more widespread;
- *Demand responsive travel* – Bus operators are increasingly promoting ‘demand responsive’ services that allows users to request journeys to/from locations within a defined area. Services and vehicles do not operate on fixed routes and are flexible. This may be of particular use to rail commuters whose journey times may need to be more flexible.

5.9.9. Looking further ahead, it is possible that transport provision may evolve into the ‘Mobility as a Service’ concept. This concept would allow users to pay a subscription and travel demand is met when requested by a variety of mode opportunities. This is likely to provide more shared transport, blurring the boundaries of car sharing, taxis and public transport use. Therefore, travel demand may be met by fewer vehicles.

#### 5.10. Appraisal of Travel Demand – Motor Vehicles

5.10.1. We have undertaken an initial appraisal of the likely impact of predicted motor vehicle trips on the junctions within the study area. This appraisal has considered the capacity of the junctions assessed in all three peak hours in the ‘With’ and ‘Without’ development scenario in 2031.

5.10.2. A base year appraisal of capacity has not been undertaken as the HCC Comet model results for 2014 provide a benchmark for current capacity.

5.10.3. In all cases the potential increase in traffic will be over 5%. On this basis we have undertaken more detailed appraisal of the study area junctions. The Junctions 9 modelling software package has been used to undertake detailed junction appraisal.

5.10.4. Table 16 compares the peak hours performance of each junction ‘with’ and ‘without’ development. This appraisal shows the worst ‘Ratio of Flow to Capacity (RFC)’ figure for each junction in both scenarios for each peak, with estimated average queue lengths also shown (‘Q’). Some junctions have results that show more than one arm over capacity, but Table 16 summarises the worst result only to provide an overview of performance.



- 5.10.5. In undertaking the appraisal, the site access was shown to perform within capacity. As Junction 3 is a larger roundabout with similar traffic flows it has been assumed it would also operate within capacity, so no further appraisal has been undertaken at this stage.

Junction	Scenario	Junction Capacity Summary					
		2031					
		RFC			Q		
		AM	PM1	PM2	AM	PM1	PM2
J2 A414/ Shenley Lane	Without Development	2.95	0.49	0.62	66	1	2
	With Development	Unc <sup>5</sup>	0.66	0.84	202	2	5
J4 Shenley Lane/ Kings Road	Without Development	0.38	0.23	0.33	1	1	1
	With Development	1.80	0.37	0.45	19	1	1
Site Access	With Development	0.84	0.60	0.60	5	2	2
J5 Shenley Lane/ St Annes Road	Without Development	0.98	0.31	0.44	11	1	1
	With Development	1.27	0.43	0.51	43	1	1
J6 Shenley Lane/ Bell Lane	Without Development	1.21	0.75	0.81	112	3	4
	With Development	1.31	0.93	0.93	182	10	11

Table 16: 2031 Potential development traffic junction modelling summary

- 5.10.6. Modelling analysis that results in an RFC of 0.85 or greater indicates that the junction is approaching theoretical capacity. Results showing RFCs over 1.0 indicate a junction is operating significantly over capacity, worsening as the number increases to a point where results are beyond classification.
- 5.10.7. Table 16 demonstrates that the development impact varies between locations, peak hours and years. Where modelling results show junctions to be significantly over capacity with excessive queues, it is likely that drivers will adjust routes and/or journey times to avoid delay caused (assuming no mitigation is implemented).
- 5.10.8. It should be noted that this appraisal assumes 500 dwellings on the broad location site, slightly higher than the 'minimum 440 dwellings' set out in the proposed Local Plan allocation. This appraisal marginally over-estimates traffic demand on this basis.

<sup>5</sup> Result is beyond Junctions 9 classification

5.10.9. The following commentary summarises the modelling results:

- Junction 2 A414 LINK/Shenley Lane – operates significantly over capacity in the AM peak for both ‘with’ and ‘without’ development scenarios. Capacity constraints likely to result in queuing vehicles extending back onto A414.
- Junction 4 Shenley Lane/Kings Road – operates over capacity in the AM peak in the with development scenario. This will result in delays to vehicles exiting Kings Road in both directions.
- Site Access – operates within capacity in all scenarios. The design of the access could be amended to provide some additional capacity if required.
- Junction 5 – Shenley Lane/St Annes Road – operates over capacity in the AM peak in both ‘with’ and ‘without’ development scenarios, resulting in delay for vehicles exiting St Annes Road.
- Junction 6 – Shenley Lane/Bell Lane roundabout – operates over capacity in the AM peak in both ‘with’ and ‘without’ development scenarios as well as in both PM peaks ‘with’ development. Table 2 also indicates that this junction operates over capacity in the AM peak in 2014.

5.10.10. For the purposes of comparison, the HCC Comet model analysis for 2031 is summarised in Table 17 below. It provides a guide as to the links likely to experience capacity problems ‘without’ development.

HCC Comet link flows (Vol-Cap %)	AM peak 0800-0900	Inter-peak <sup>6</sup> 1000-1600	PM peak 1700-1800
J1a	59%	57%	52%
J1b <sup>7</sup>	96%	61%	91%
J2 <sup>8</sup>	61%	58%	55%
J3	69%	30%	58%
J4	45%	31%	41%
Site Access	42%	31%	41%
J5	48%	34%	50%
J6	106%	71%	110%

Table 17 – Comet model link flow capacity data summary 2031

5.10.11. Table 17 indicates that in the ‘without’ development scenario in 2031, some capacity issues are predicted in the AM and network PM peaks at the A414/Shenley Lane link, potentially affecting J2 due to the short length of this link. In addition, AM and network PM peak link capacity issues are predicted at J6, ‘without’ development.

5.10.12. Our appraisal of Junctions9 modelling results is set out below. It considers each junction separately, but it should be noted that a more comprehensive approach to managing travel and promoting sustainable access is required (NB to accord with national and local policy).

#### Junction 2 - A414 LINK/Shenley Lane

5.10.13. The modelling results indicate that there are forecast to be capacity problems at this junction in the ‘without’ and ‘with’ development scenarios. However, as the Comet model

<sup>6</sup> ‘Interpeak Average 1000-1600’ – this does not directly correspond with PM school peak data but is the only data available in the Comet model.

<sup>7</sup> The figures shown are for the link from Shenley Lane to the A414

<sup>8</sup> Including A414 link

predicts capacity problems on the section of the link road connecting to the A414, our appraisal is that this junction will require significant highway authority intervention

5.10.14. The capacity appraisal for this junction includes significant amounts of car-based traffic to/from St Albans, carrying secondary school age children to the broad location site. Given the predicted AM congestion at this junction it is likely that some of this traffic will take alternative routes (e.g. via Junction 4 Kings Road or Junction 5 St Annes Road (however, note the results and analysis below of those junctions)).

5.10.15. Therefore, in reality, it is unlikely that traffic congestion and delay will materialise at the levels shown by the modelling as drivers are likely to re-route and/or travel at different times to avoid congestion.

5.10.16. It is understood that HCC are undertaking a study of the future role of the A414<sup>9</sup> and it is considered that this will identify the best way of managing/accommodating future traffic demand at this junction as part of a strategic route strategy. Further detailed appraisal of this junction will be required in order to determine its role and layout if it is to accommodate both local and strategic traffic.

5.10.17. Development of the broad location site could potentially contribute towards any mitigation identified in the forthcoming HCC study. It is considered that resources from the development are best used towards providing sustainable transport measures to promote access by such modes and to accord with current policy.

#### Junction 4 – Shenley Lane/Kings Road

5.10.18. This junction is predicted to experience AM peak capacity constraints in the 'with' development scenario. These capacity constraints are predicted on Kings Road rather than on the main traffic flow route along Shenley Lane. Predicted queuing would appear to be manageable.

5.10.19. The level of delay and predicted queuing in the AM peak is lower than for Junction 2 so it is likely that this junction will attract additional traffic, diverting from Junction 2 for trips to/from St Albans.

5.10.20. However, it is noted that the A414 London Colney roundabout is planned to be upgraded to a 'Hamburger' style junction, improving capacity for east-west through traffic and

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<sup>9</sup> It is assumed that this will be prepared in 2019 to be informed by the next planned version of the Comet model due in late 2018

increasing delay for access from other roads, making them, and routing via High Street and Kings Road, less attractive to use.

- 5.10.21. Initial appraisal of this junction indicates that there may be some scope for increasing capacity by providing more flare at the junction with Shenley Lane. Our analysis of the existing policy position and likely future travel demand for the site clearly indicates that improvements to sustainable transport would be preferable. It is also possible that some minor congestion/delay may even contribute towards influencing travel choices for local journeys in favour of sustainable modes.

#### Site Access

- 5.10.22. The results of this modelling show the site access to operate within capacity albeit in the AM peak the results are close to exceeding the 0.85 RFC figure considered to be the effective capacity of the junction.
- 5.10.23. Care has been taken not to provide excessive capacity at this junction in order to strike a balance between providing a safe and efficient site access and sustainable transport options. Provision of excessive access capacity is likely to help encourage journeys by private car.

#### Junction 5 – Shenley Lane/St Annes Road

- 5.10.24. Our appraisal of this junction indicates that St Annes Road will experience congestion in the AM peak in 'with' and 'without' development scenarios. In a similar manner to Junction 4, the main flows along Shenley Lane are not predicted to be affected significantly. Consequently, the need for and benefit of mitigation at this junction is questionable (also as per Junction 4) given the policy focus on sustainable transport.
- 5.10.25. St Annes Road was observed to be a 'rat run' between the centre of London Colney and Shenley Lane. It is considered likely that this will increase up to 2031 to avoid congestion elsewhere (possibly also attracting traffic routing away from either Junctions 2 or 6 to avoid congestion). This partly explains the predicted capacity issues in the 'without' development scenario.

#### Junction 6 – Shenley Lane/Bell Lane Roundabout

- 5.10.26. This junction currently experiences capacity constraints. This is confirmed by our own observations and the 2014 HCC Comet model data also indicates this is the case,

especially in the AM peak. The 2031 Comet data confirms that capacity problems are expected to worsen and extend to the network PM peak.

5.10.27. Our appraisal of this junction predicts capacity problems ‘without’ and ‘with’ development in the AM peak. In both PM peaks our appraisal suggests capacity problems ‘with’ development but with manageable queue lengths. In the ‘without’ development scenario our appraisal indicates the junction operating within capacity but approaching the theoretical capacity in the PM network peak.

5.10.28. The Comet data predicts 2031 capacity constraints ‘without’ development in the network PM peak which is not totally at odds with the finding of our appraisal.

5.10.29. As an existing problem predicted to worsen in the ‘without’ development scenario, it is unlikely that mitigation of the development impact would provide significant, cost effective benefits. We do not consider that capacity improvements to this junction by the broad location site would be in line with current policy and that resources should be focussed on improving sustainable transport infrastructure.

#### 5.11. Proposed Improvements to Access and Transport Services

5.11.1. The broad development location site will generate a mix of travel demands to and from the site as well as within. A significant amount of this travel demand will be via motor vehicle and the traditional approach to accommodating this demand would be to identify additional capacity that could potentially be provided on the highway network where necessary, either in full or by way of mitigating the impact of the broad location site traffic only.

5.11.2. London Colney is located between the A414 and M25 with several settlements within close proximity. As a consequence the area is characterised by significant amounts of traffic at peak times. A significant increase in traffic is predicted to 2031 with resulting capacity constraints on junctions in the area, as identified in this appraisal.

5.11.3. National and local transport policy is focussed on promoting sustainable modes of transport in order to reduce the impact of traffic growth, both locally and on a global environmental scale.

5.11.4. In order to ensure the broad location site is developed with the most sustainable modes of transport promoted first, a package of measures are proposed in order to promote access on foot, by bicycle and by public transport as a matter of priority. The following

summarises the proposed access strategy, with further information set out after each item:

- A. Network of shared pedestrian/cycle routes within the broad location site including possibly upgrading Bridleway 04 to allow all weather, 24 hour access and providing a new controlled pedestrian/cycle crossing on Shenley Lane to the south east of the site:

*Reason: to promote safe and convenient access to/from the site on foot/by bicycle to/from the south and east of London Colney.*

- B. Upgrade of footway on the east side of Shenley Lane to shared pedestrian/cycle use between Kings Road and the Byway at the River Colne:

*Reason: to promote safe and convenient access to/from the site on foot/by bicycle to/from the central area of London Colney. This route will link both existing and proposed signalised crossings on Shenley Lane and extend south to the Byway at the River Colne to enable access to/from the south east of London Colney.*

- C. Work with local bus operator to seek to increase existing bus service frequency from hourly to at least half-hourly with provision of high-quality bus stop facilities within the site or, alternatively, upgrades to stops on Shenley Lane:

*Reason: to promote access by public transport to locations within London Colney and, especially, St Albans, Elstree and Borehamwood (including railway station interchange for journeys to London, Luton and Bedford). Increased bus service frequency will also help promote access to the 8FE secondary school on the broad location site. Upgraded stops will encourage use of services, especially if shelter, raised kerbs and 'real time' information is provided.*

- D. Further upgrade of traffic calming and/or provision of cycle facilities on St Annes Road and Kings Road to promote pedestrian and cycle access:

*Reason: to promote access on/foot by bicycle to/from the centre and main residential areas of London Colney and to the schools within the broad location site. This will also enable access to the higher frequency bus services in London Colney.*

- E. Upgrade Byway alongside the River Colne and Bridleway on southern boundary of site to link to upgraded shared use facilities on Shenley Lane and the site directly:

*Reason: to promote access on/foot by bicycle to/from the centre and main residential areas of London Colney and to the schools within the broad location site. This will also enable access to the higher frequency bus services in London Colney.*

- F. Provision of Travel Plans to promote sustainable travel to/from residential and school development:

*Reason: the promotion and management of sustainable travel via Travel Plans will support the provision of infrastructure and help reduce reliance on car trips.*

- G. Contribution towards improvements to the local highway network, focussed on promoting safety, especially at the Shenley Lane A414 access:

*Reason: subject to the HCC study of the future of the A414, a contribution could be made to enhancements to the A414 access via Shenley Lane and/or some minor improvements to the western end of Shenley Lane (A414 overbridge crossing) to ensure visibility is maintained and manage traffic speeds.*

## 6. Conclusions

- 6.1.1. Stomor Ltd. has been commissioned by Vincent & Goring, on behalf of Hertfordshire County Council (HCC), to prepare a Transport Appraisal (TA) for the potential development of land (the 'broad location site') to the west of London Colney for residential and education purposes.
- 6.1.2. St Albans City and District Council (SADC) are currently preparing a new local plan. The St Albans Plan Publication Draft is the subject of public consultation (4 September-17 October 2018). In that Publication Draft a Broad location for development has been identified on land to the west of London Colney. This proposed allocation seeks to "provide an urban extension of London Colney and a new secondary school to enhance the sustainability of London Colney as a small town".



- 6.1.3. This Appraisal has been undertaken in the context of recently adopted policy in Hertfordshire County Council's Local Transport Plan 4 which acknowledges the significant growth planned for Hertfordshire, that the travel demands of this growth cannot be met by providing highway capacity and that the priority should be to promote sustainable modes of transport and safety.
- 6.1.4. This appraisal considers the potential trips generated by the broad location site by all modes of transport. It proposes means of access to/from the site by all modes of transport, with clear preference for promoting access on foot, by bicycle and by public transport.
- 6.1.5. This appraisal considers advice from Hertfordshire County Council on the potential secondary school size and catchment. This concludes that up to 50% of the catchment would be from London Colney and 50% from St Albans.
- 6.1.6. Appraisal of the impact of the travel demands of the broad location site have been based around a review of existing sustainable transport infrastructure/services, the accessibility of the site by these modes and the impact of potential traffic generated. The latter appraisal has been assisted by use of data extracted from the Hertfordshire County Council 'Comet' traffic model for the area (with appraisal years of 2014 and 2031).
- 6.1.7. The overall conclusion of this appraisal can be summarised as follows:
- There is considerable scope for promoting access to/from the site by sustainable modes of transport via use of existing infrastructure and upgrades to both infrastructure and services;
  - An access strategy for the site should place considerable emphasis on improving bus service frequency and providing high quality bus stops within the site (or improvements to stops on Shenley Lane), providing direct pedestrian/cycle access within the site with upgrades off-site (e.g. new crossing of Shenley Lane, upgraded shared use links on Shenley Lane, public Byway at the River Colne and Bridleway adjacent to the site along with improvements along Kings Road and St Annes Road);

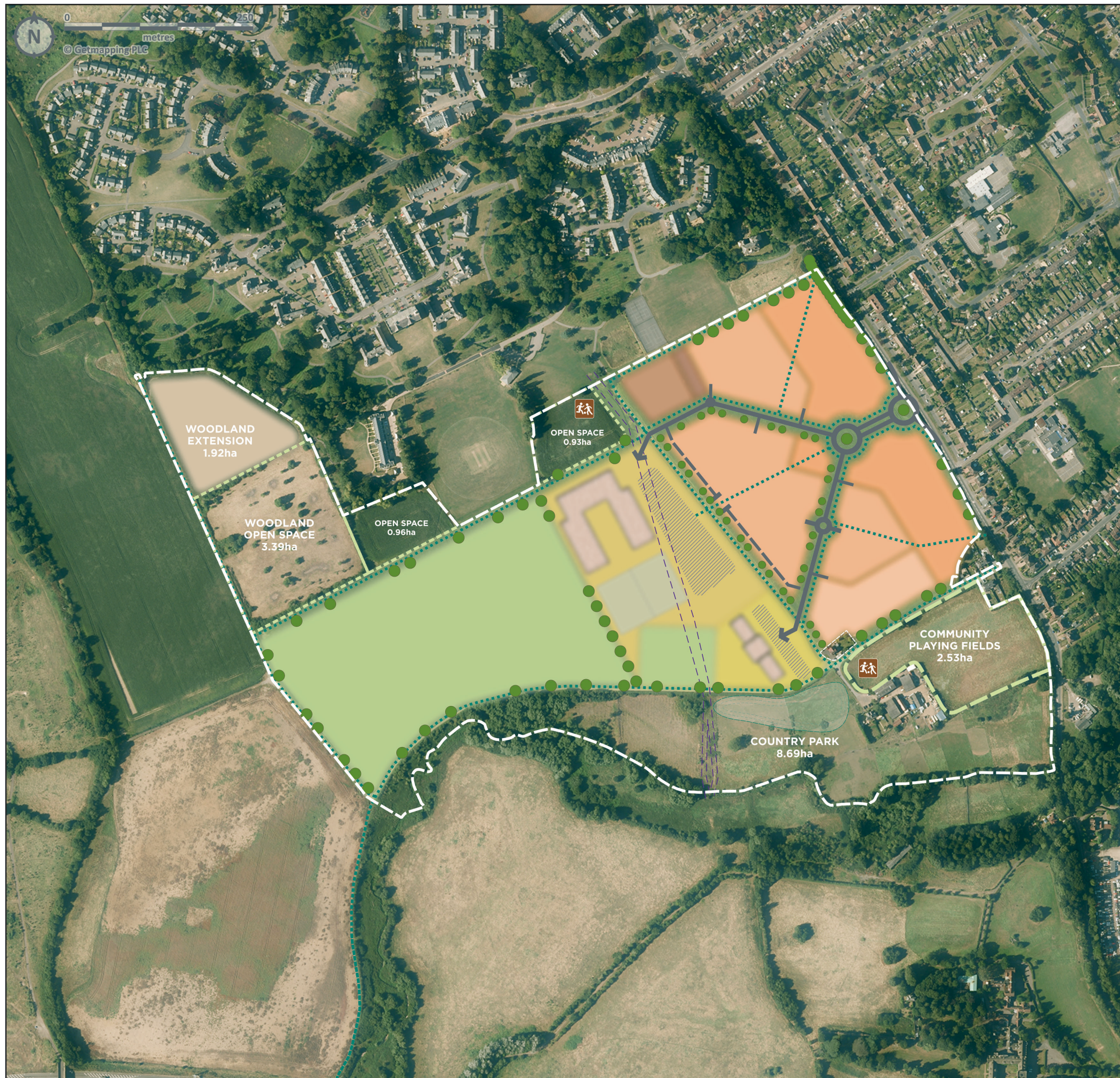
- The predicted traffic growth in the study area (based on the Comet model link flows) indicates that there are likely to be capacity problems at the junctions of Shenley Lane/A414 link junctions and worsening capacity problems at the Shenley Lane/Bell Lane roundabout junctions in the 'without' development AM peak scenario by 2031;
- The Comet model confirms that the above capacity issues are likely to arise 'without' development in 2031;
- The predicted development traffic is likely to further worsen capacity issues at the above two junctions and give rise to localised AM peak capacity constraints at Kings Road and St Annes Road;
- The last five year's accident information indicates no current significant safety concerns in the study area.

- 6.1.8. Appraisal of traffic generation alongside background traffic growth (based on the Comet model) indicates that there is likely to be peak time congestion (especially in the AM peak) by 2031.
- 6.1.9. It is unlikely that the broad location site could mitigate this traffic impact either entirely or to the extent that the mitigation would have a noticeable effect, particularly where 'without' development congestion is also predicted. It is also not considered to be in accordance with current policy and promoting sustainable access is considered the best way of accommodating the significant local, short distance traffic demands of residents and pupils.
- 6.1.10. With regard to the A414, it is understood that a wider study of this route is being undertaken by HCC. The broad location site could contribute towards any improvements arising from this study.
- 6.1.11. The overall conclusions of this appraisal are that the broad location site is capable of being delivered provided it is supported by significant sustainable transport provision, including off-site upgrades and bus frequency enhancements in accordance national and, especially, with LTP 4 policy. Travel Plans should also form a central part of promoting sustainable access.

- 6.1.12. The provision of sustainable transport enhancements seeks to promote less use of the private car by promoting good quality alternatives. This differs from traditional methods of predicting and providing highway capacity which is likely to be difficult to achieve, expensive and will undermine the provision of sustainable transport modes.







- SITE BOUNDARY  
49.95ha
- RESIDENTIAL  
(HIGH DENSITY: 50dph = 175 DWELLINGS)
- RESIDENTIAL  
(MEDIUM DENSITY: 40dph = 193 DWELLINGS)
- RESIDENTIAL  
(LOW DENSITY: 30dph = 32 DWELLINGS)
- CARE HOME (0.42ha)
- SPECIAL NEEDS HOUSING (0.22ha)
- SECONDARY SCHOOL BUILDING ZONE  
(4.65ha)
- SCHOOL PLAYING FIELDS  
(SECONDARY SCH: 9.18ha PRIMARY SCH: 0.78ha)
- PRIMARY SCHOOL BUILDING ZONE  
(1.30ha)
- SCHOOL BUILDING LOCATIONS
- SCHOOL PARKING AREAS
- ALL WEATHER PITCHES
- ACCESS ROADS
- FOOTPATH/CYCLEWAYS
- EASEMENT
- CHILDREN'S PLAY AREAS
- SURFACE WATER ATTENUATION  
(0.76ha)

## LAND WEST OF LONDON COLNEY BROAD LOCATION

Preliminary masterplan

PROJECT NO	DRAWING NO	REV
5241	504	
DRAWN	DATE	SCALE
HNA	OCTOBER 2018	1:5000

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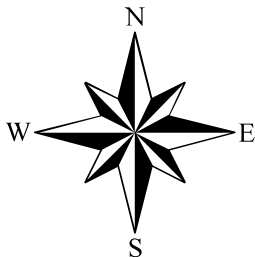


0 105 210 420 630 840 Meters

# Shenley Lane & Goldring Way, London Colney

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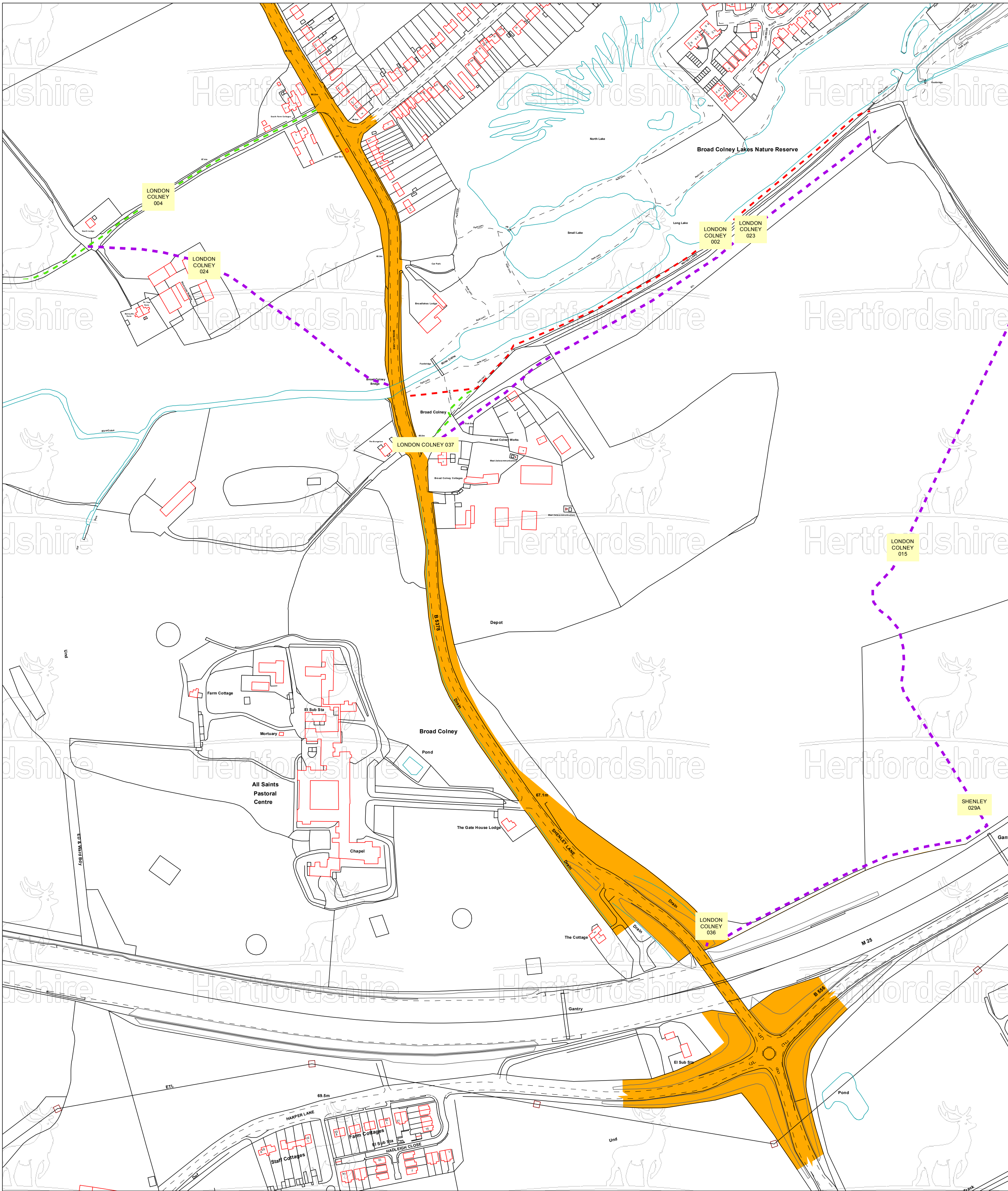
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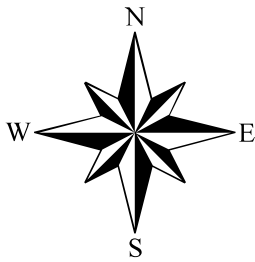


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# Shenley Lane, London Colney

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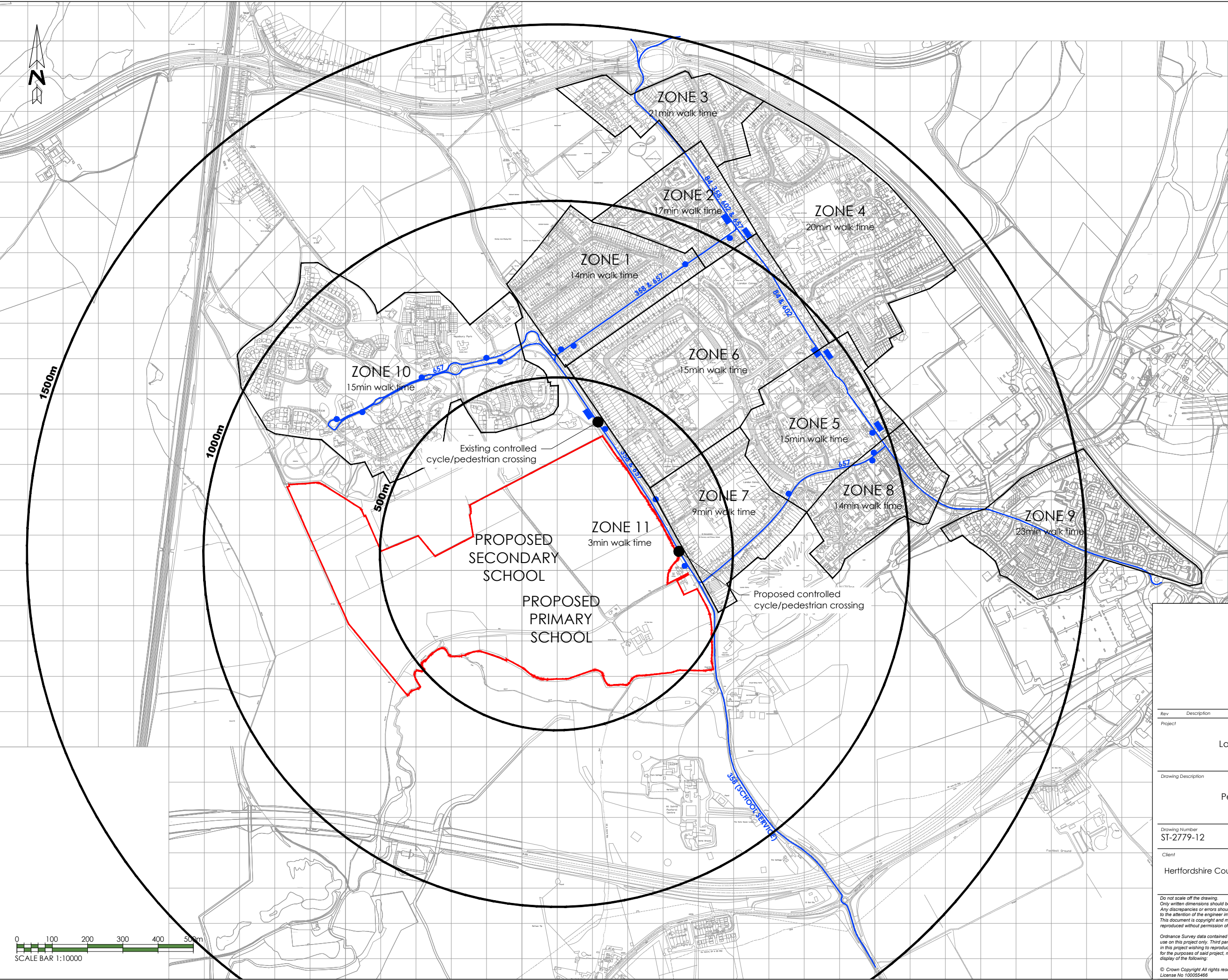












Note:  
Walk times have been calculated from the centre of the zone to the proposed location of the schools.

Key

- Broad Location Site
- Bus Route
- Bus Stop - with Shelter
- Bus Stop - without Shelter

Rev	Description	Date	Drawn	Checked
Project				
Land West of London Colney				
Drawing Description				
Pedestrian Accessibility Plan				
Drawing Number	Scale	Date	Drawn by	Checked by
ST-2779-12	1:10,000@A3	02.10.18	SIV	SAY
Client		Architect		
Hertfordshire County Council		Vincent & Gorbin		







Note:

Cycle times have been calculated from the centre of the zone to the proposed location of the schools.

Key

- Broad Location Site
- Potential Infrastructure Upgrades

Rev	Description	Date	Drawn	Checked
Project				
Land West of London Colney				
Drawing Description				
Cycling Accessibility Plan				
Drawing Number	Scale	Date	Drawn by	Checked by
ST-2779-13	1:10,000@A3	02.10.18	SIV	SAY
Client		Architect		
Hertfordshire County Council		Vincent & Gorbin		

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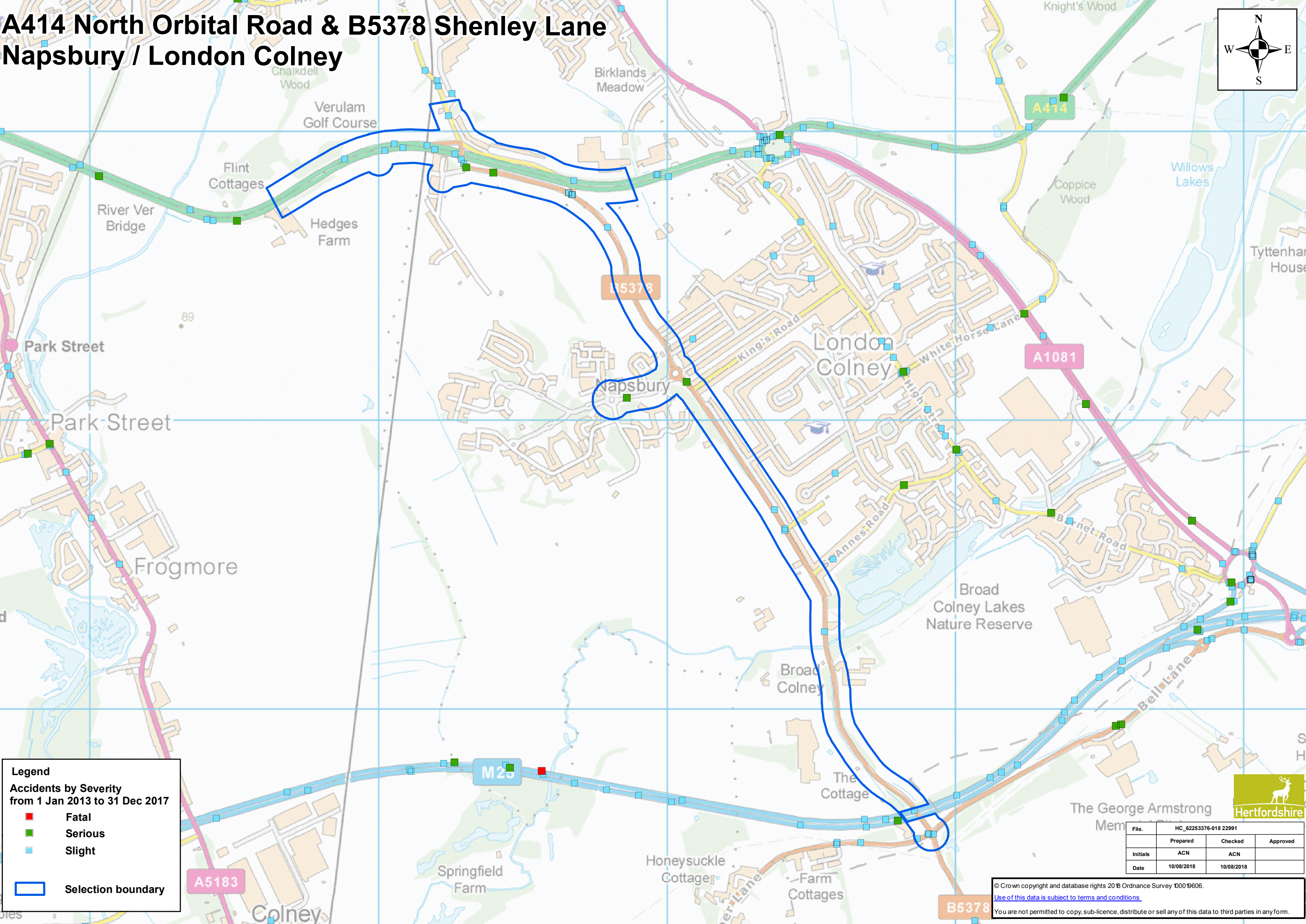
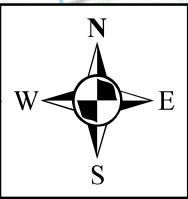
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# A414 North Orbital Road & B5378 Shenley Lane Napsbury / London Colney



**Legend**  
**Accidents by Severity**  
**from 1 Jan 2013 to 31 Dec 2017**

Fatal

Serious

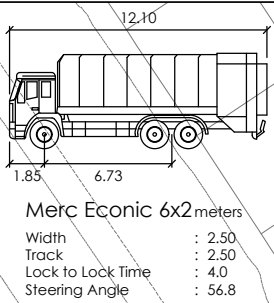
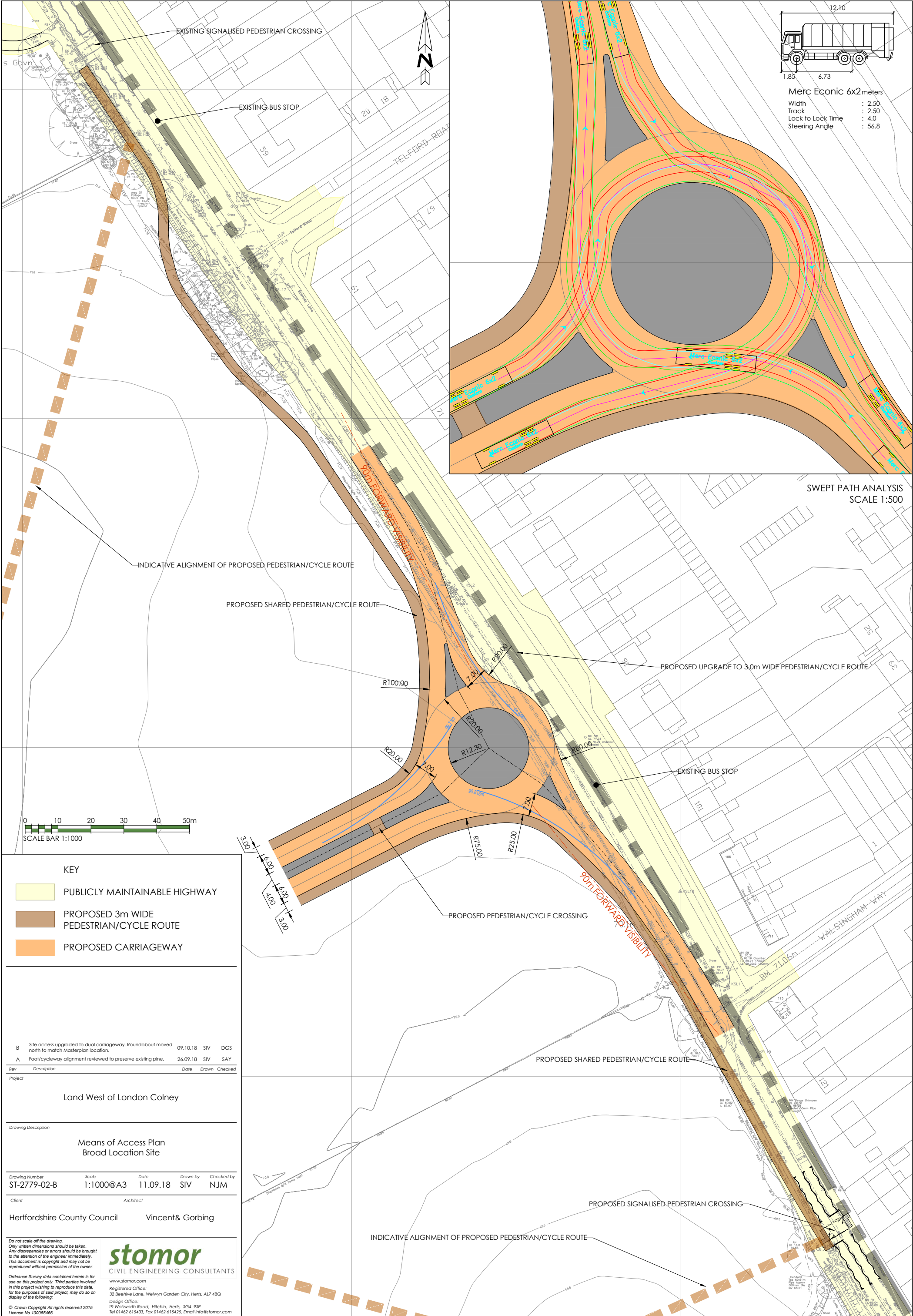
Slight

Selection boundary

File.	HC_62253376-018 22991		
	Prepared	Checked	Approved
Initials	ACN	ACN	
Date	10/08/2018	10/08/2018	







SWEPT PATH ANALYSIS  
SCALE 1:500

- KEY
- PUBLICLY MAINTAINABLE HIGHWAY
  - PROPOSED 3m WIDE PEDESTRIAN/CYCLE ROUTE
  - PROPOSED CARRIAGEWAY

B	Site access upgraded to dual carriageway. Roundabout moved north to match Masterplan location.	09.10.18	SIV	DGS
A	Foot/cycleway alignment reviewed to preserve existing pine.	26.09.18	SIV	SAY
Rev	Description	Date	Drawn	Checked
Project				

Land West of London Colney

Drawing Description

Means of Access Plan  
Broad Location Site

Drawing Number	Scale	Date	Drawn by	Checked by
ST-2779-02-B	1:1000@A3	11.09.18	SIV	NJM

Client Architect  
Hertfordshire County Council Vincent & Goring

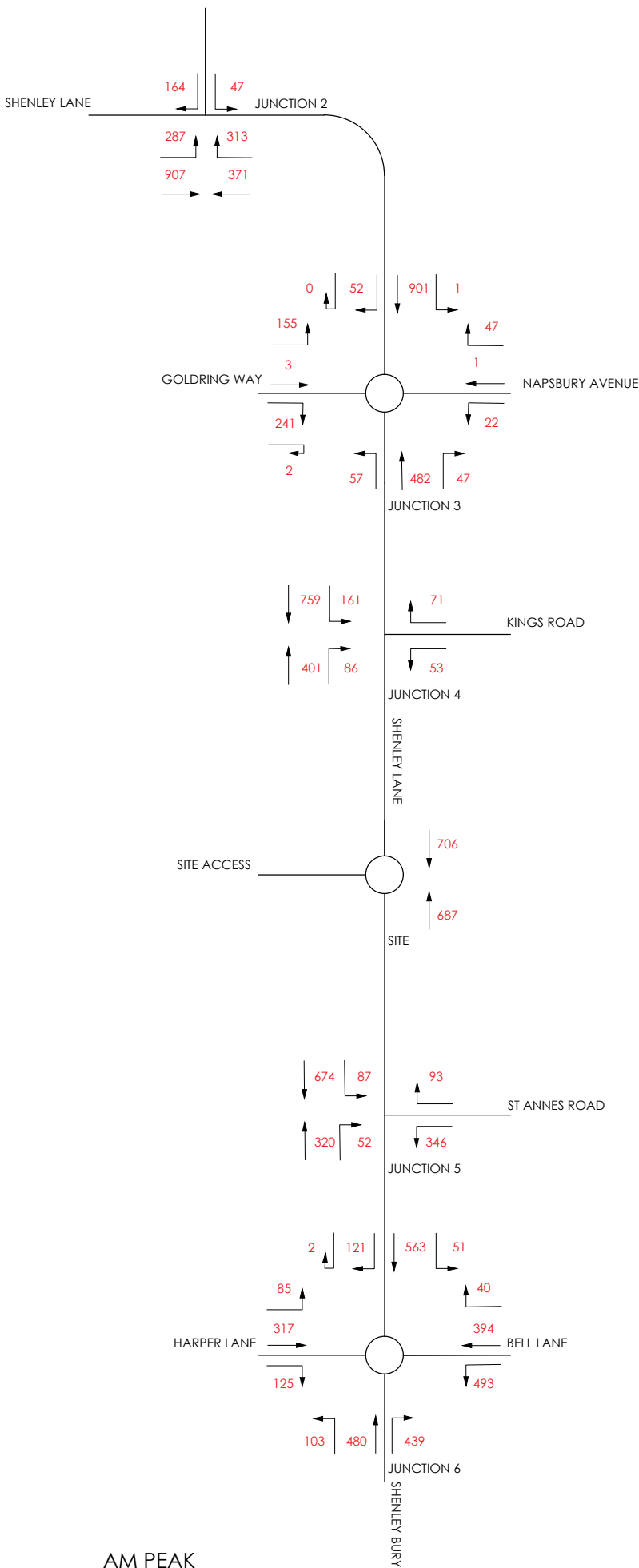
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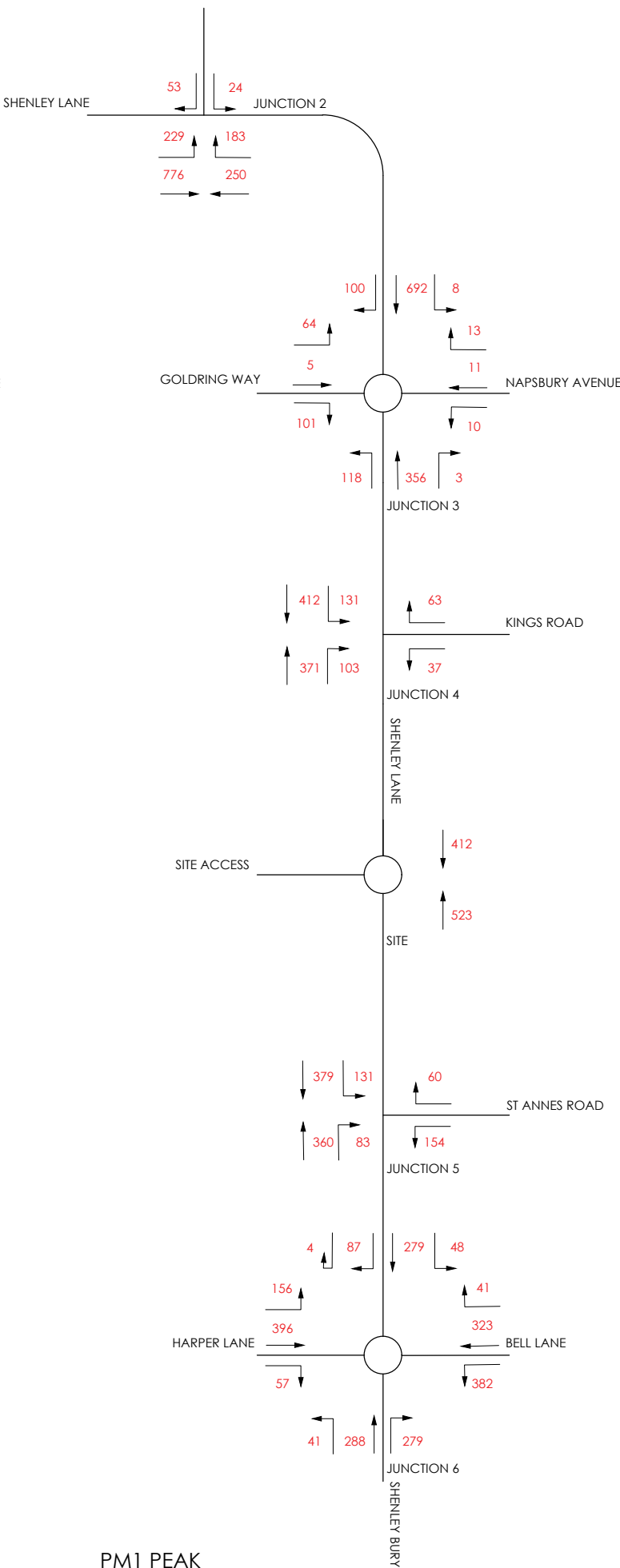
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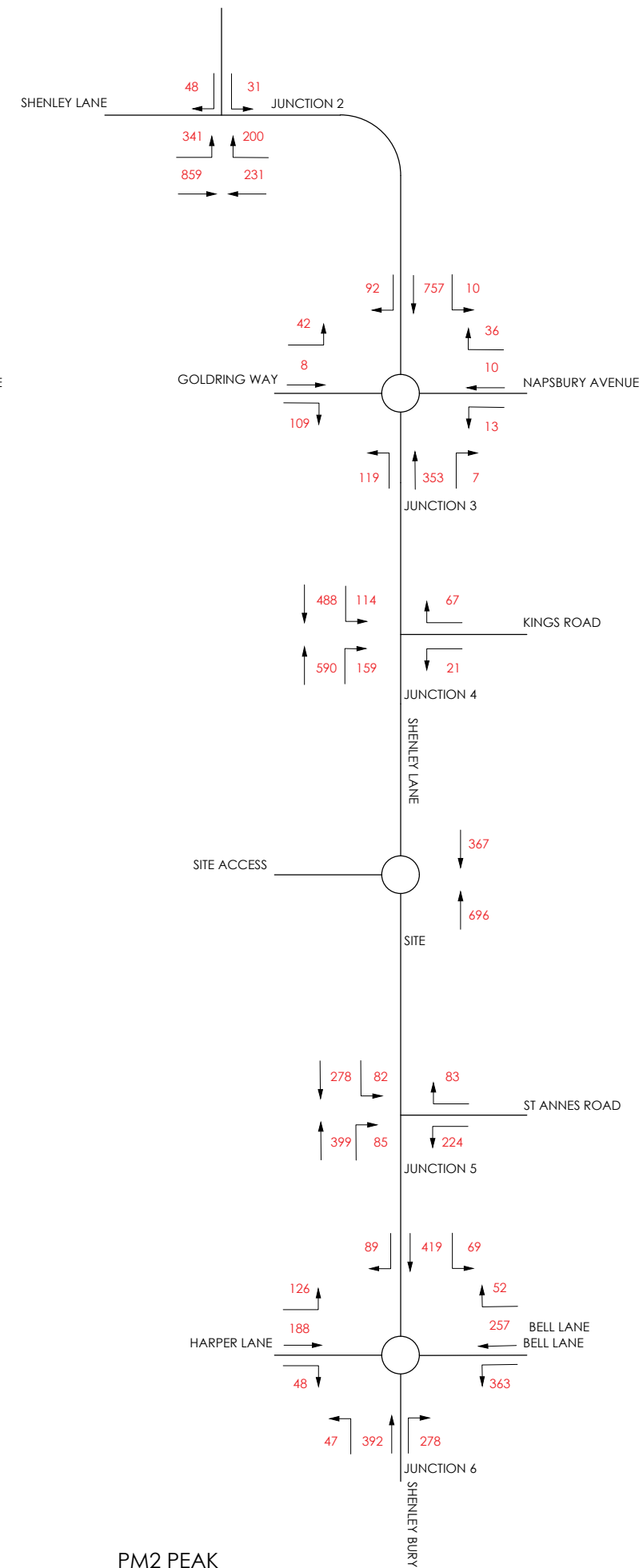




AM PEAK



PM1 PEAK



PM2 PEAK

Rev	Description	Date	Drawn	Checked
Project				
Land West Of London Colney				
Drawing Description				
Traffic Diagram 2031 Without Development				
Drawing Number	Scale	Date	Drawn by	Checked by
ST-2779-14	NTS@A3	05.10.18	SIV	SAY
Client		Architect		
Hertfordshire County Council		Vincent & Gorbng		

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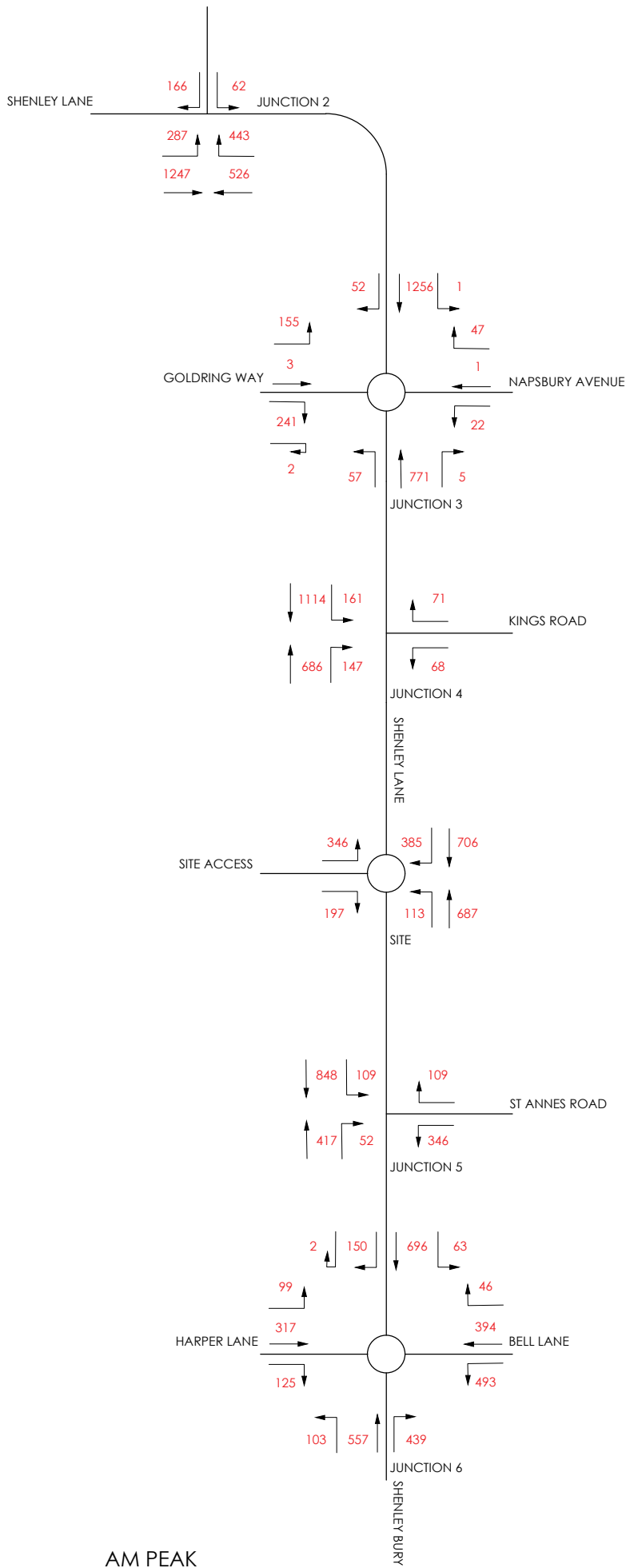
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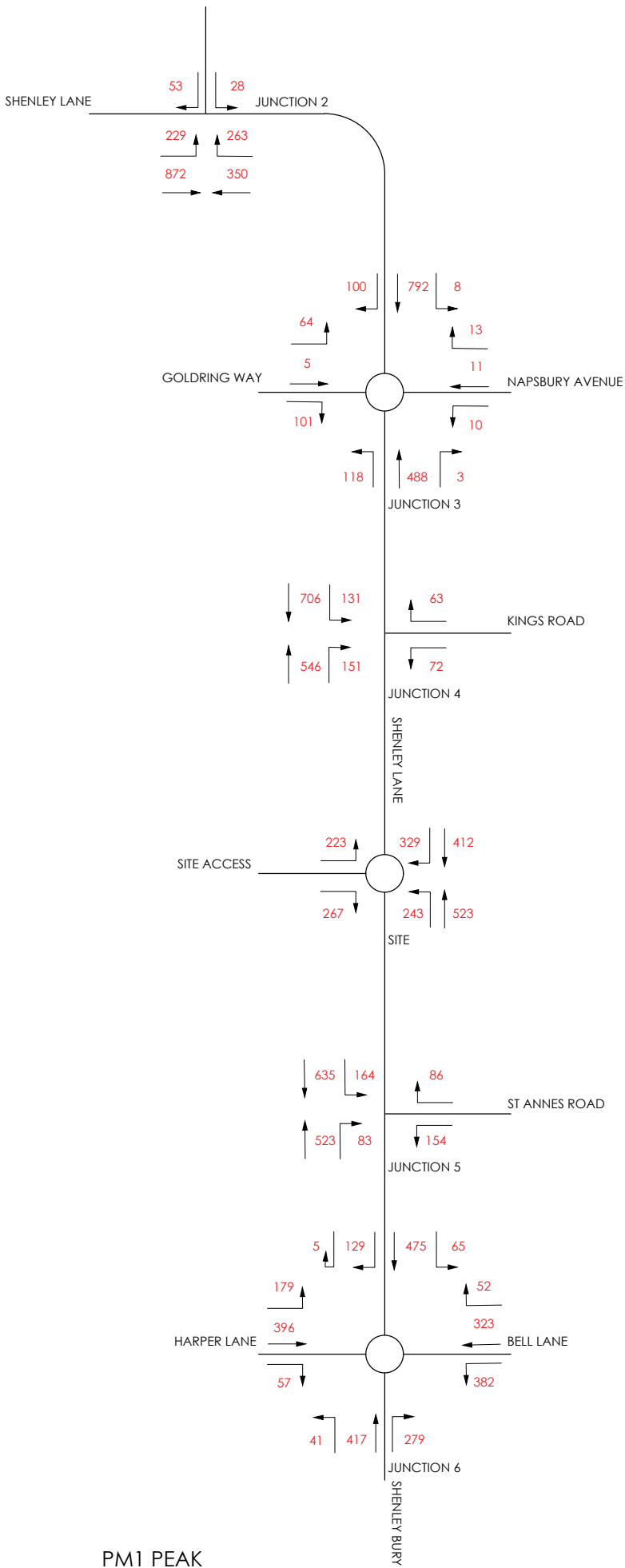
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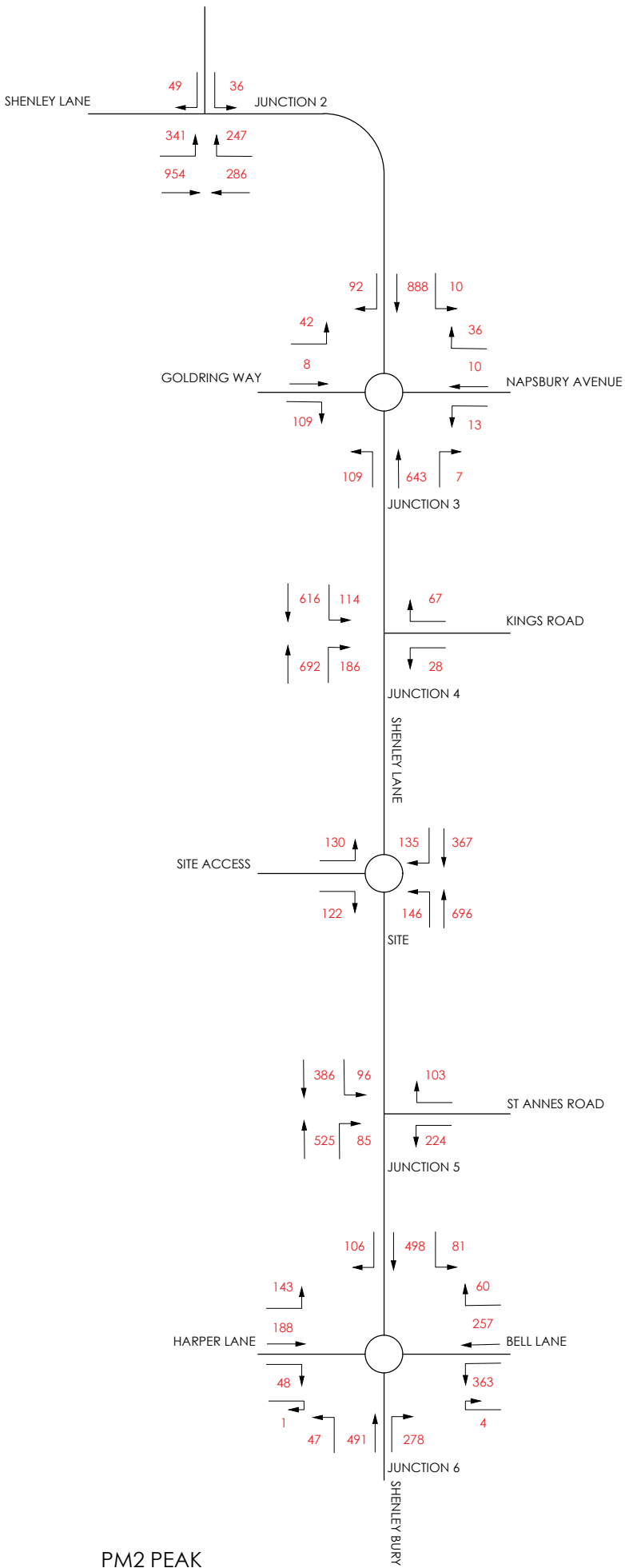




AM PEAK



PM1 PEAK



PM2 PEAK

Rev	Description	Date	Drawn	Checked
Project				
Land West Of London Colney				
Traffic Diagram 2031 With Development				
Drawing Number	Scale	Date	Drawn by	Checked by
ST-2779-15	NTS@A3	05.10.18	SIV	SAY
Client	Architect			
Hertfordshire County Council	Vincent & Gorbng			

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