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NORTH ESSEX GARDEN COMMUNITIES

CONCEPT FEASIBILITY STUDY

VOLUME 2 - OPPORTUNITIES AND CONSTRAINTS

JUNE 2016

NORTH ESSEX GARDEN COMMUNITIES

CONCEPT FEASIBILITY STUDY
OPPORTUNITIES AND CONSTRAINTS

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Interim Reporting

Vol.1
Baseline Compendium

Vol.2
Opportunities and Constraints

Vol.3
Garden Communities Concept Options and Evaluation

Opportunities and Constraints - Contents

01 Introduction

1.1 Introduction

1.1 Introduction

Colchester Borough Council, Braintree District Council and Tendring District Council are collaborating, alongside Essex County Council, to identify an agreed strategic approach to the allocation and distribution of large scale housing led mixed use development, including employment opportunities and infrastructure provision, in the form of potential “Garden Communities”.

The Garden Communities initiative is a Central Government response to the urgent need to increase the level of housing development in the UK. The intention of the Garden Communities programme is to provide high quality homes, new transport improvements, good schools, jobs and community amenities to be delivered in a strategic and sustainable way. The four councils are in agreement that the Town and Country Planning Association’s (TCPA) Garden City Principles provide a valuable initial framework for achieving new settlements that are inclusive and provide genuinely affordable, well designed homes, local jobs and schools, integrated transport systems, high standards of green infrastructure and promotion of health within and beyond the emerging local plan period for each area by 2032/2033. In response the councils are exploring the potential to establish new settlements in the form of North Essex Garden Communities, for which four broad search areas have been identified by the councils for further consideration. This is in the context of the duty placed under the Localism Act 2011 on neighbouring authorities to cooperate on key strategic cross boundary issues in the preparation of their local plans.

As part of their investigation and analysis of the Garden Communities opportunity and its application and suitability to North Essex, the Councils commissioned AECOM to undertake a ‘Garden Communities Concept Feasibility Study’. The outcome of this study is presented in four volumes:

1. Baseline Compendium
2. Opportunities and Constraints
3. Options and Evaluation
4. Garden Communities Charter

This document presents the Opportunities and Constraints mapping; a synthesis of the key opportunities and constraints arising from the analysis and understanding of the evidence base presented in the Baseline Compendium.

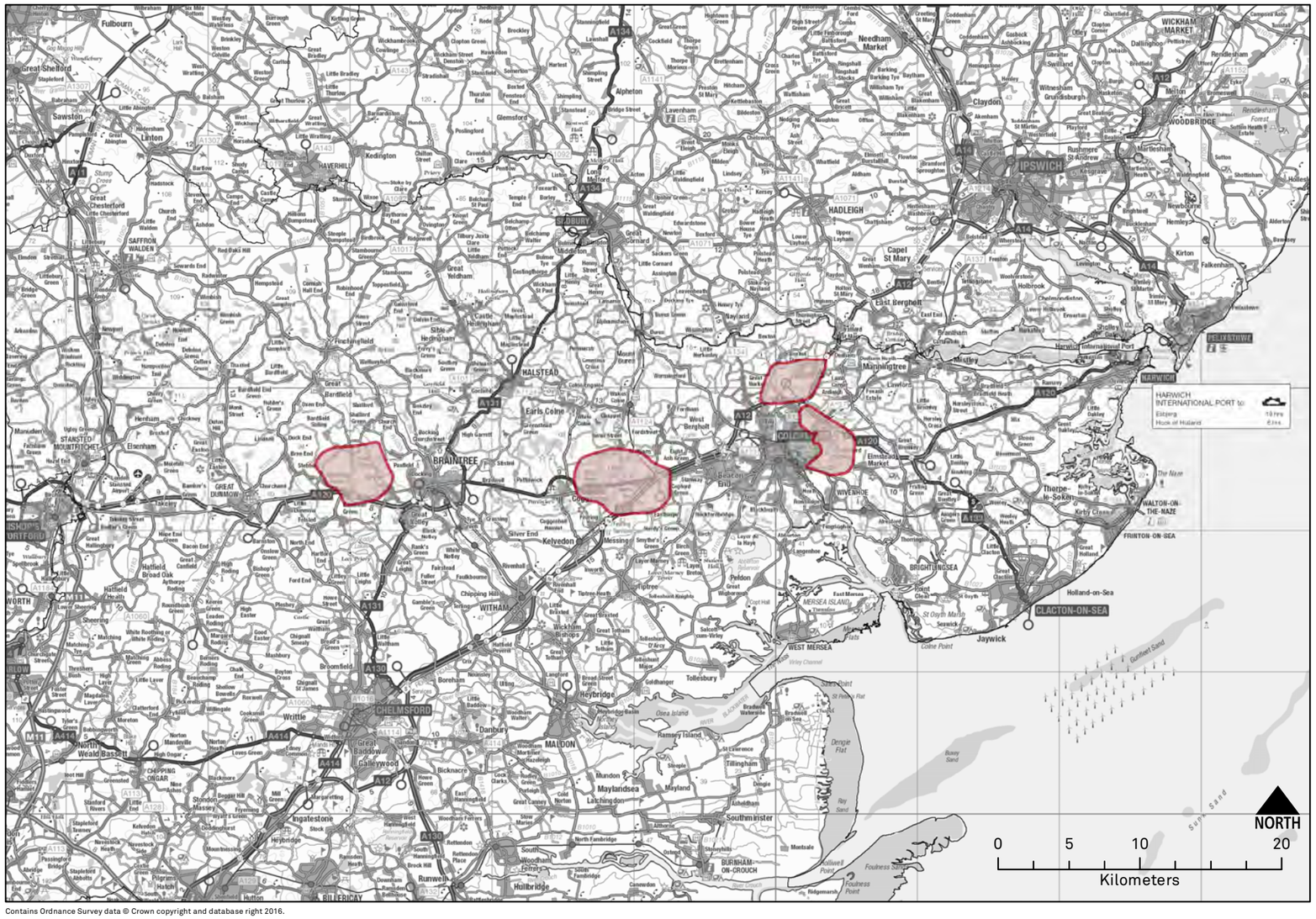

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Figure 1: Study Area Context.

Content of this report

Each are of investigation has been analysed in terms of opportunities and constraints that will affect suitability and capacity for development.

This analysis is presented as follows:

- Area of investigation- considering the constraints and opportunities that will limit the extent of each potential Garden Community.
- Connectivity and Accessibility - considering transport, access and movement issues affecting each potential Garden Community location.
- Landscape and environment- considering how landscape character, heritage, ecological designations, water and mineral extraction will affect the function and structure of each potential Garden Community;
- Market and Economy- The key existing employment centres in proximity to each potential Garden Community and how any future development may seek to respond to current and future market observations; and
- Utilities - documenting any known utility networks and any resulting impacts from each potential Garden Community.

Definitions

Throughout this Opportunities and Constraints report the following key terms and definitions are used when providing assessment of the four potential locations for a Garden Community.

Site Study Area:
Potential Garden Community locations identified by the Councils and informed by the Local Plan call-for-sites process as shown on Figure 2.

5km Buffer Zone:
This study area has been defined as a 5km buffer around the outer boundary of each area of investigation and shown on Figure 2.

Opportunities

O Opportunities are positive features or aspects that may be of benefit to the future development of each site. These have been mapped where appropriate.

Constraints

C Constraints are issues that may have a negative impact on development potential. These have been mapped where appropriate.

Other issues to be taken into account

I Matters that need to be considered that are likely to have a neutral impact on development.

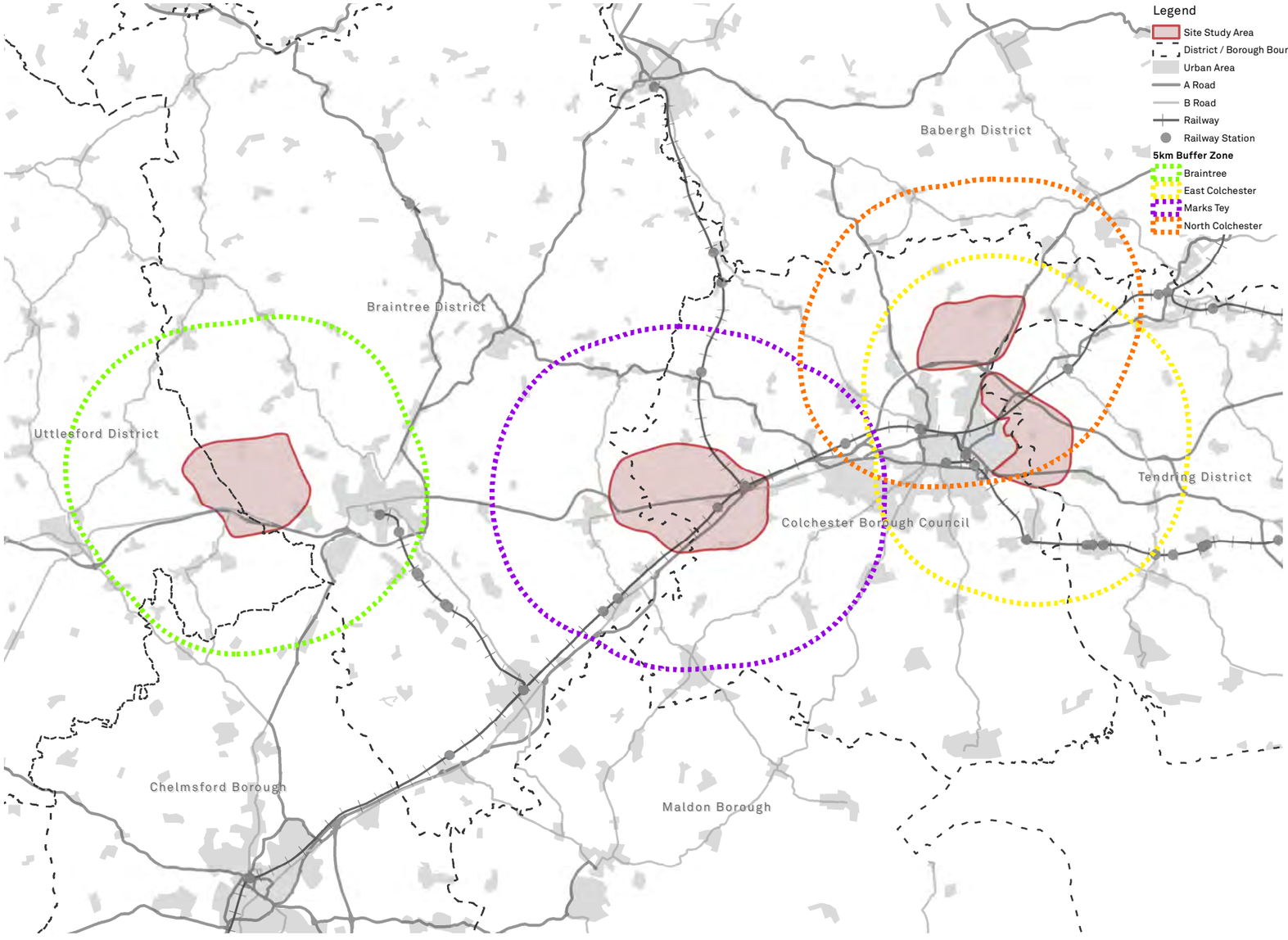


Figure 2: Study Area Definition

This chapter provides opportunities and constraints analysis of the East of Colchester / West of Tendring Study Area.

02 East of Colchester / West of Tendring

2.1 Area of Investigation

The area of investigation comprises approximately 850 ha of land to the east of the Colchester located between the A120 to the north and A133 to the south.

Outer Boundaries

1 Southern Boundary – The A133 forms a well defined and strong physical boundary to the south and will need to provide a primary access to the site, however investment would need to consider options to traverse the A133 and link the Garden Community with the University of Essex Campus, as well as the potential development area to the east of the A133 and east of the University campus. The University of Essex's Colchester campus lies adjacent to the southern boundary of the site and accessed via the A133 Clingoe Hill. Synergies to support employment will need to be considered with opportunities to achieve connectivity into east Colchester and the university campus a clear opportunity.

2 Eastern Boundary - There is no physical feature that would provide a strong defined edge to the settlement in this location. Instead, a combination of features, such as field boundaries and small water courses will more likely set an eastern edge to a new settlement. Importantly, sufficient distance should be maintained between the Garden Community and the village of Elmstead Market to protect against settlement coalescence.

3 Western Boundary- The residential area of Greenstead defines the western boundary of the site, which is further defined by Salary Brook, and its associated valley and topography changes which represent approximately 150m of undevelopable land. However, in the interests if urban integration and cohesive communities, it may be appropriate to create pedestrian connectivity between Greenstead and the Garden Community. The western boundary in the north west part of the investigation area provides the potential to integrate with existing residential development.

4 Northern Boundary - The A120 forms the northern boundary providing a clear defined edge that should be maintained, albeit with appropriate access and links considered with the potential leisure resource of Ardleigh Reservoir.

Internal Boundaries

5 A137 - The A137 Harwich Road bisects the area of investigation in the north and defines the small linear settlement of Fox Street. It effectively creates large development parcels to either side and provides direct road access into Colchester Town Centre. The relationship of the Garden Community with the existing town centre to the west will be an important synergy defining the role and function of any new community.

6 Bromley Road - Bromely Road bisects the area of investigation and links the residential area of Greenstead to the A120. There is potential to use this connection to establish a clear spine to the development that enhances permeability and access.

7 Railway - The Great Eastern Mainline into Colchester North Station, along a similar alignment with the A137, bisects the area of investigation resulting in a severance impact. There are, however, presently three vehicular bridges in place. These would likely to require upgrading to accommodate movement between the north-west and south east of the site.

8 Salary Brook - An environmental asset that has the potential to provide a key green infrastructure corridor across the site. Consideration for its topography will need to be given,

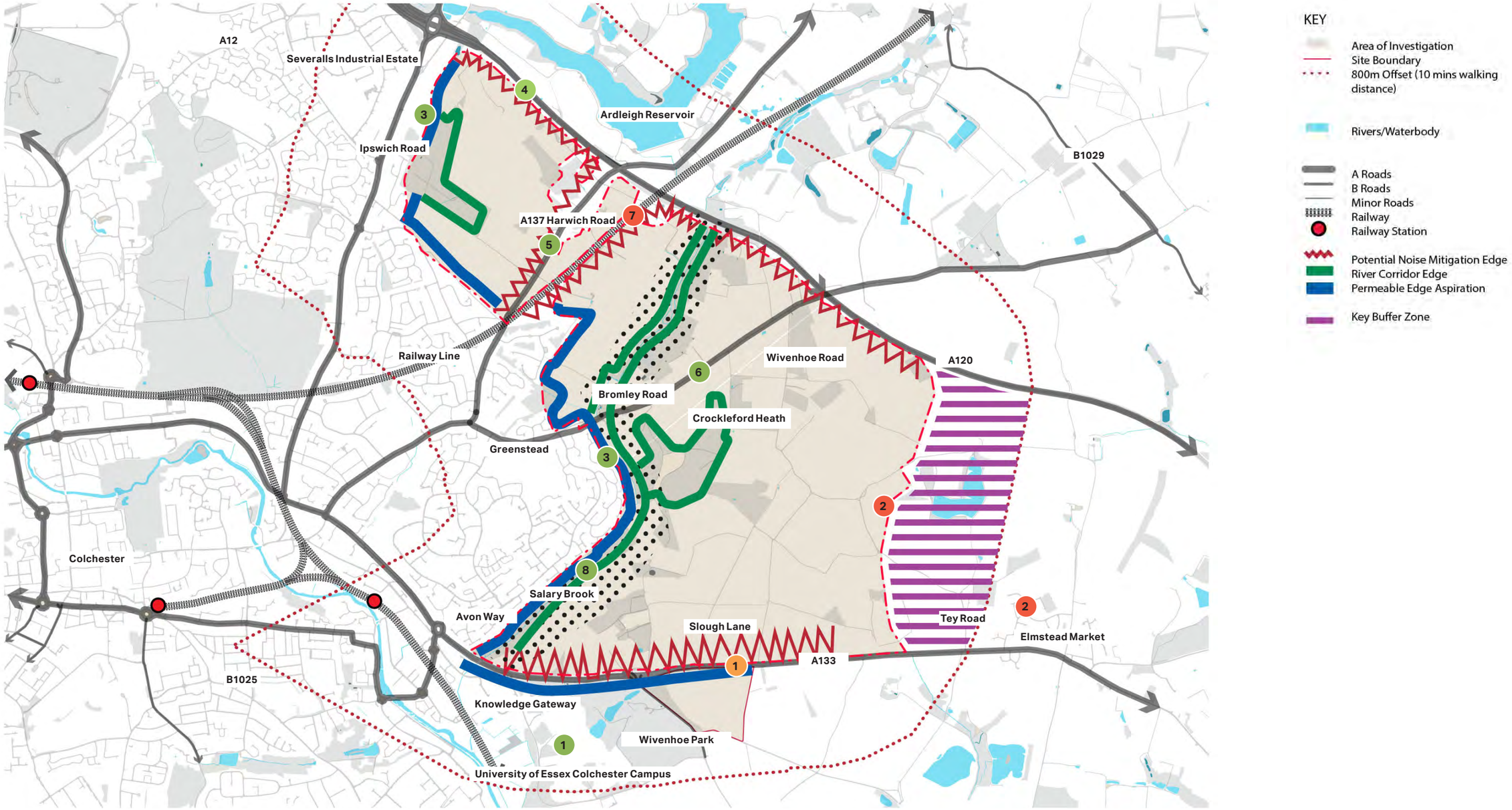


Figure 3: East Colchester / West of Tendring Edges and Boundaries Analysis

2.2 Connectivity and Accessibility

The location of the site provides opportunities for direct connection to surrounding settlement and Colchester town centre. Located in close proximity to the existing University of Essex campus and in close proximity to an established employment and education base, the site offers the potential opportunity for connectivity through active modes of transport via the Salary Brook Trail and existing NCN.

The site is in close proximity to an existing bus network operating through residential settlement to the west, although it is some distance from the town's rail stations (the GEML and Sunshine Coast line). Hythe Rail station is the closest station to the site, the very south-western corner accessible within theoretical walk distances, however direct connections are limited other than a mixture of the Salary Brook Trail and existing roads.

The A120 and A133 provide east-west connectivity, along with junction 29 of the A12, which provides an opportunity for efficient local connection with the strategic trunk road network, albeit via the existing town centre road network which has traffic congestion issues.

Within the Colchester Local Plan provision is made for a dedicated bus corridor to support development in North Colchester. This is anticipated to be delivered on the back of the consented 1,500 new dwellings at Severalls Hospital and linked to the P&R bus route. Since this Jacobs have been instructed by ECC to develop options for a rapid transit system linking the site / existing residential development off Avon Way, the University and the town centre / rail stations. The most recent study entitled 'East Colchester Rapid Transit Option appraisal Garden settlement meeting, 6 January 2016' concludes that a bus Rapid Transit (BRT) would be the most cost effective approach and flexible in delivery, rather than a light rail / tram system. The routes between the town centre via the Hythe link, explored to date include:

- Option 1: via East Hill and Greenstead Road
- Option 2: via Colchester Town rail corridor
- Option 3: via Military Road, Recreation Road and new link to Colne Causeway
- Option 4: via East Hill and Greenstead Road

Active Modes (Walking & Cycling)

1. Due to the rural nature of the site, situated in an edge of town location, there is a lack of existing pedestrian and cycling infrastructure within the site

2. Varying site topography potentially constrains active modes. To enable uptake, the implementation of innovative and well planned routes to establish walking and cycling within the site and connections externally will be required.

3. The Great Eastern Mainline (GEML) bisects the north west of the site creating severance for movements to the North West, although there are presently three vehicular bridges in place, these would require upgrading to accommodate the requisite movements.

4. National Cycle Network (NCN) Route 51 provides a connection with the town centre, albeit located approximately 500m from the southwest corner of the site. Direct access to the cycle route is severed by the A133 alignment.

5. Opportunity exists to link the site with the existing Salary Brook leisure trail on the western periphery of the site

6. The scale of the site and therefore the resultant distances from the town centre illustrate that without the provision of high quality cycle ways and walking route connections both within the site and locally, active mode choice may be difficult to establish.

7. The A133 creates localised severance for pedestrians between the site and the University campus and its current and future public transport provision (including a potential future rail station at the University Campus)

8. Appropriate provision of pedestrian and cycle crossings over the A133 will be required to ensure uptake in active modes and ease of movement between the different parts of the site and the surrounding areas including the university campus and the town centre.

Rail

9. No direct access to the GEML exists

10. A new station stop located on the GEML within the site would theoretically be possible, however given the future capacity constraints identified by Network Rail on the GEML this may not offer a significant wider benefit to the area and would be a highly complex and expensive solution.

11. Hythe and Colchester Town Rail stations are located outside of appropriate walk distances for the majority of the site, but potentially accessible via cycling or public transport. Whilst, improved connections externally from the site could improve connectivity, this would only sufficiently make it attractive to the south-western portion of the site.

12. The stations provide access to the Sunshine Coast rail line which currently offer frequencies of 4tph in both directions between Clacton-on-Sea/ Walton-on-the-Naze and Colchester Mainline

13. Given the quantum of development proposed, a case for improving capacity on the GEML lines and/or re-purposing the Sunshine Coast line to accommodate growth should be made to Network Rail.

14. The aspiration for a new station on the University campus, which is at present a proposal and with no certainty would bring about accessibility improvements to the south of the site – benefits to the wider site would need to be addressed by interconnecting public transport and active mode connectivity. Outcomes of the TWG studies will need to be reviewed.

15. A new public transport hub should be consider within the site to facilitate connectivity and ensure utilisation.

Bus

16. Existing interurban and local bus networks currently set down and pick-up in close proximity to the site.

17. A bus interchange is located at the University Campus, however access to it is a key consideration given the current severances.

18. A proposed BRT route connecting the site, the University Campus and the town centre is currently being developed by ECC. This will be essential in addressing connections between the site, the town centre and public transport nodes as well as addressing connectivity within the site itself.

Road

19. Due to the changing topography of the site and the distance from existing public transport nodes, the development of a non-car-dependant scheme may be a challenge.

20. The key to avoid this situation will be to implement the right level of infrastructure in terms of public transport, pedestrians and cycle links, and fully benefit from the existing proximity to Colchester Town centre and stations.

21. Opportunity for vehicular access via existing and well-defined road network – A133 Clingoe Hill, A120 and A137 Harwich Road.

22. The benefits of close proximity to the major road network in providing connections to the wider region, also creates issues. Barriers to movement are created by the A133 and A120 both of which are dual carriageways with limited opportunities for pedestrian crossings

23. Limited access via A1232 Ipswich Road due to existing constraints, the possibility therefore to provide a new junction with the A120 should be considered.

24. A link road between the A120 and the A133 has been proposed by the developers promoting land under the call for sites exercise. This road provides further opportunity to access the site, likely bringing forward greater quantum of development as well as possibly alleviating localised congestion.

25. An opportunity to plan alongside the new road connection greenways and public transport corridors.

26. Due to the topography of the site, challenges will exist in providing a comprehensive local road network and connecting this to the existing network and communities.

27. Existing congestion on and around the site including key hotspots at the junctions of the A1232/A120, Greenstead Roundabout, A120/A133 and Junction 29 of the A12 are a key consideration.

28. The mix of local development traffic with strategic traffic is an issue, whilst there is likely to be a requirement for extensive infrastructure improvements to enable development on site. Opportunities for Park and Ride need to be considered.

29. Existing proximity of the site to the strategic road network will require noise buffers to alleviate the impact of noise and pollution.

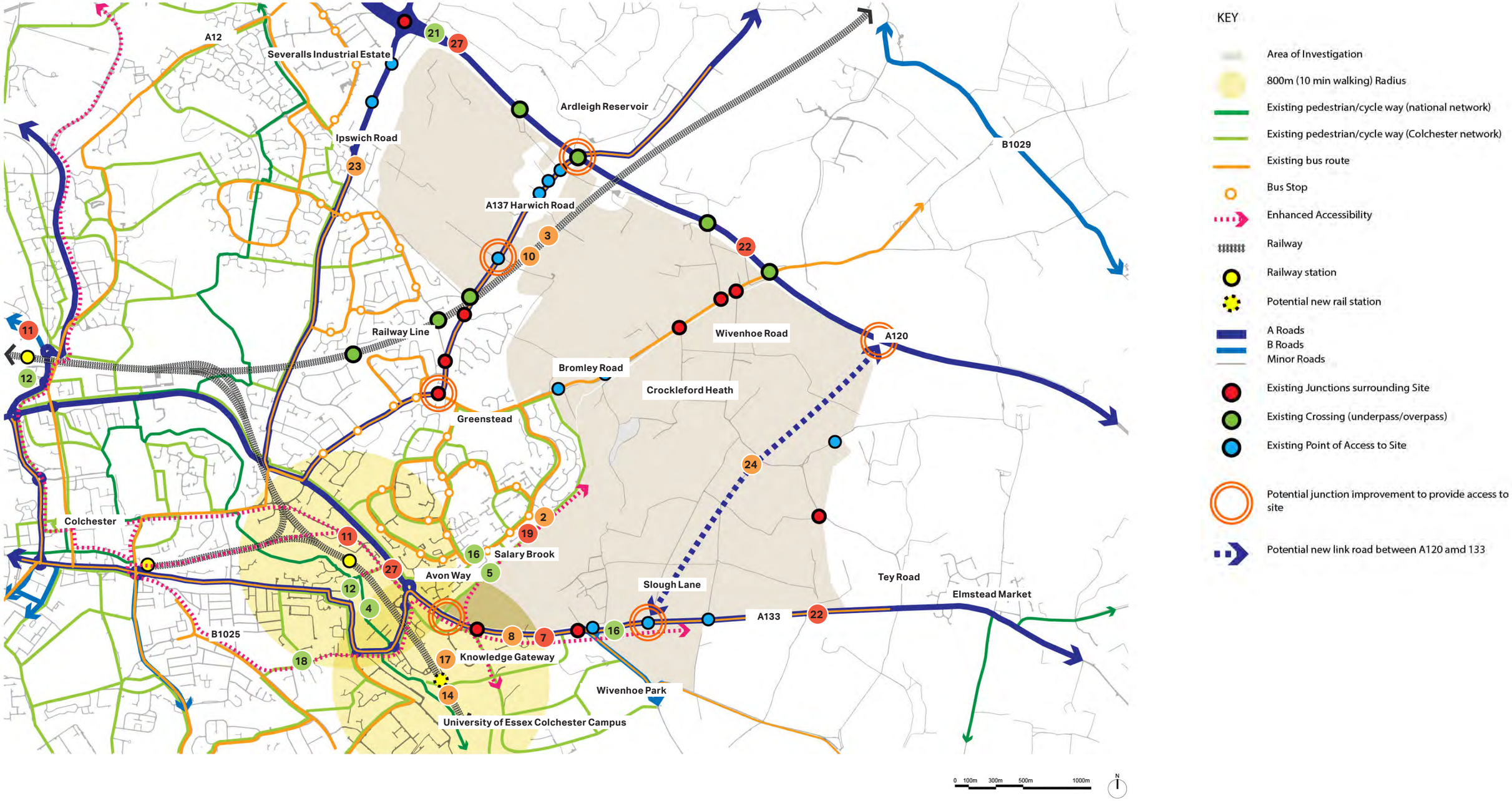


Figure 4: East Colchester / West of Tendring Connectivity and Accessibility Analysis

2.3 Landscape and environment

The river valley and sloping topography as well as ecological features including ancient woodland and a network of intact hedgerows should be used positively when structuring the layout and orientation of any development in this location.

Landscape Character, Sensitivity and Condition

1. The topography of the area constrains views into and across the site which should reduce the visual impact of the development.
2. Being on the edge of Colchester there are likely to be an increased number of sensitive receptors affected.
3. Enhancement of the Salary Brook valley could provide a valuable green corridor that extends into Colchester. This could provide natural flood protection, and be enhanced to improve failing water quality, support biodiversity and provide an attractive central recreation spine for the future community.
4. There are a number of radial roads providing access into Colchester transecting the site such as the A137 Harwich Road and Bromley Road. Improving the vegetation around these routes could provide visual screening and help reduce air and noise pollution.
5. Agricultural Land - Much of the eastern boundary is Grade 1 (Excellent) agricultural land and therefore development will need to be carefully justified with the overriding housing need and other place-making advantages, together with confirming no alternative land is available, including brownfield, which has less agricultural value. The remainder of the site is characterised as Grade 2 (Very Good) and Grade 3 (Good to Moderate).

Ecological Designations

6. Given the relatively close proximity to the internationally important habitats of the Colne Estuary, under 5km, it is likely that significant development on this site would be considered to have a potential impact on the RAMSAR/SPA that would trigger the need of Habitat Regulations Assessment. If deemed to have an adverse impact the delivery of Suitable Alternative Natural Greenspace (SANG) may be required as a mitigation measure.
7. The nationally important Bullock Wood SSSI sits to the north-west of the site. It is considered to be of favourable condition and is likely to be impacted adversely by new development. There are also a number of other areas of habitat, including significant areas of woodland, some ancient including the Welsh Wood Local Nature Reserve and the large Churn Wood.
8. The lower stretch of Salary Brook and surrounding habitat is a Local Nature Reserve and site of importance for nature conservation.

Parks, Recreation and Historic Environment

9. There are a number of Listed buildings and Scheduled Monuments in close proximity to the area of investigation whose setting should be conserved.

Water Cycle

10. The topography of the site coupled with reduction in impervious surfacing associated with development along with impeded drainage potential of clay soils and underlying geology will result in high run-off rates that will need to be managed.
11. The Salary Brook flood plain is predominantly contained tightly to the edges of the water course apart form the lower reaches as the land form and flood plain open out.
12. The underlying geology and soil structure favour attenuation SuDS that could be used to create attractive ponds on site that could be both and ecological resource or used to store water for reuse on site.
13. The green infrastructure network could be used to provide the necessary improvements to run-off water quality before discharge. This would reduce the need for new surface water sewer infrastructure and pressure on the existing waste water networks. Alternative non-potable water supplies are likely to be increasingly important in this water scarce area.
14. Ardleigh Reservoir is protected in the Local Plan. It has a defined catchment area within certain proposals for development will be subject to partner scrutiny with regard to their potential to impact on water quality. A very small part of the site study area falls within this catchment zone adjacent to the A120 and Ipswich Road.

Minerals

15. The site is located in a Minerals Safeguarding Area for sand and gravel and the economic viability of prior extraction of minerals must be assessed. Should the viability of extraction be proven, there is an opportunity for the mineral to be worked in accordance with a scheme / masterplan as part of the phased delivery of the non-mineral development.

Figure 5: East Colchester / West of Tendring Landscape Sensitivity and Green Infrastructure Analysis

2.4 Market and economy

There is opportunity within the site to achieve physical, economic and social connectivity with the University of Essex and the Knowledge Gateway to create an 'Innovation District' for Colchester and Tendring. This may create an economic focus for the Garden Community and could establish a cluster of mutually beneficial entrepreneurial start ups as well as science / technology businesses.

Residential

1 The relationship of the Garden Community with Colchester Town Centre to the west will be an important synergy defining the role and function of any new community. As an urban extension to Colchester there is potential to accommodate higher building densities and maximise opportunities for efficient infrastructure provision and public transport accessibility and sustainability.

2 The proximity to Colchester and established transport links such as Hythe railway station may place residential development in East Colchester at an advantage as proximity to transport links and established markets is an attribute which will likely help drive sales.

3 In addition to the standard residential market the proximity of the University of Essex Colchester Campus to the south is likely to support a demand for student accommodation, as well as family accomodation for University staff and their families.

Retail

4 The proximity to Colchester Town Centre means that primary retail provision will remain in the urban centre with the potential to establish local and district centres to serve the day to day needs of new residents.

5 The provision of retail and cultural opportunities could be developed in synergy with the university campus .

6 Recreational and shopping facilities should service the day to day needs of the new population but not directly compete with those services provided within Colchester Town Centre. Convenience is expected to be provided in localcentresbutthereisassumptionthatcomparisonisprovidedwithintheTown Centre.

Employment

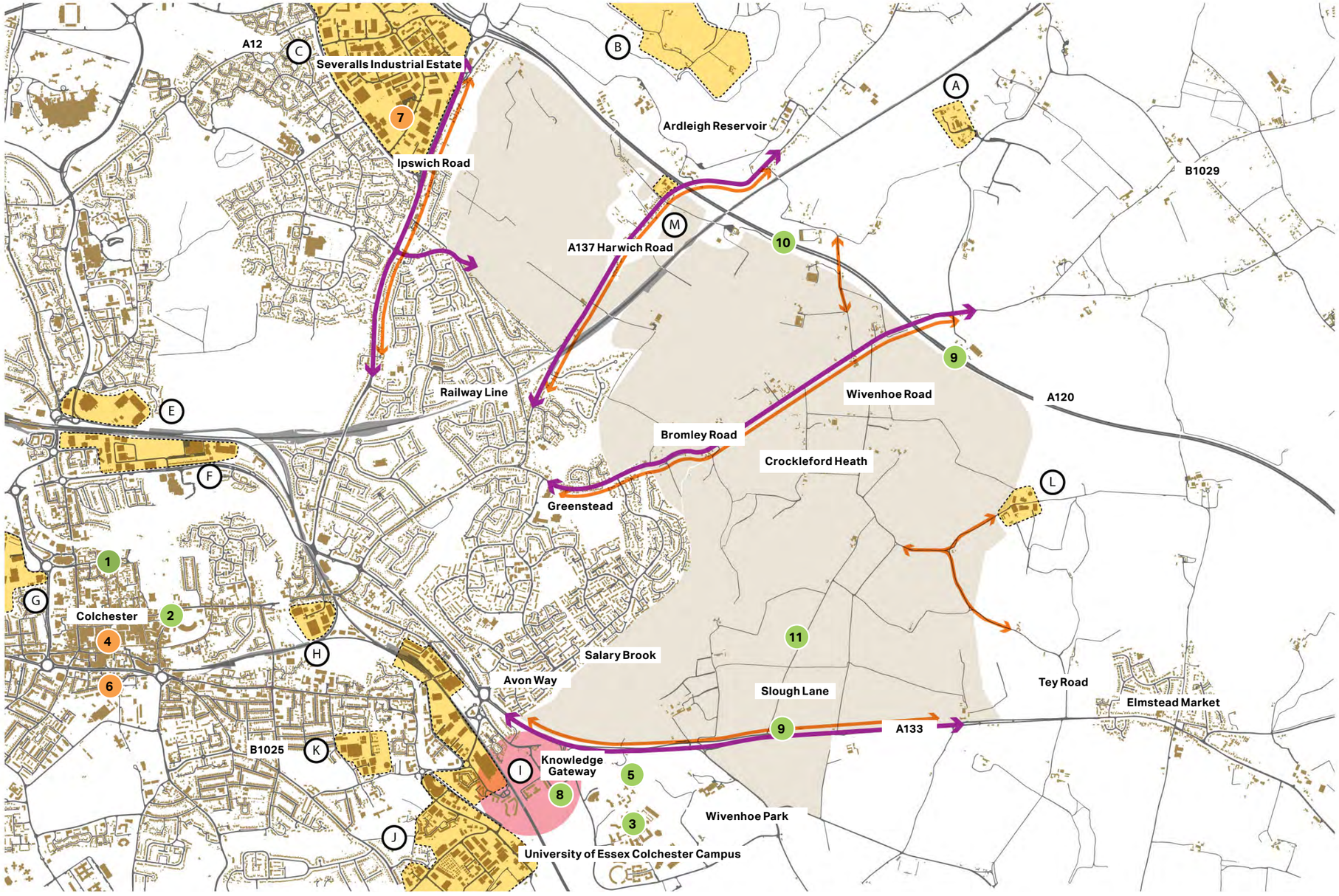
7 Several Industrial Park is located adjacent to the north west of the area of investigation. This site is well contained between the A120, Ipswich Road and Severalls Lane. The Industrial park is well established and includes light industry, storage, warehousing, logistics, manufacturing and office related businesses.

8 There is good potential to build on the opportunities of the knowledge gateway and maximise the potential for supporting employment and start up locations to establish an 'Innovation District' for Colchester and Tendring. The Knowledge Gateway accounts for a third of Colchester's office pipeline but given its targeted demographic of companies heavily connected to the University through research and spin off enterprise, space here will appeal to a wider occupier base from the conventional market.

9 Congestion is a major obstacle to occupier take up in the city centre with car parking and accessibility key requirements for local businesses, coupled with the fact that most stock is dated and poorly specified. By virtue of its position, and proximity to A120 and A133 this area has a potential advantage in attracting new business and they seek to be located close to key strategic routes.

10 Connectivity to the A120 linking the Ports and Stansted provides a distinct opportunity to capitalise on employment potential with business space aligned to serving this function - perhaps aligned to the technology and distribution management sectors.

11 Local Centres - the relationship to Colchester Town Centre means that much of the employment within a new settlement in this location would be provided as part of local centres thus supporting the needs of Tendring as well as those aligned to Colchester which has land adjacent to the University and Knowledge Gateway.



KEY

- Area of Investigation
- Buildings
- Existing Work Centres
- Potential Site Connections to Workcentres
- Potential Site Links to Existing Neighbourhoods
- Knowledge Gateway

(A) **Martells Industrial Park**
Industrial/Storage

(B) **SRC Aggregates**
Aggregates/Industrial

(C) **Various Industrial Parks in North Colchester**
Light Industry, storage, warehousing, logistics, manufacturing, office, foodstuff

(D) **Turner Rise Retail Park**
Retail/Storage

(E) **Cowdray Centre off Clarendon and Cowdray Ave**
Service/retail

(F) **Sheepen Road Retail Park**
Retail/Storage

(G) **Moorside Business Centre**
Light Industry with some services

(H) **Hawkins Road Employment Area**

(I) **Old Heath Industrial Park**
Light Industry, warehousing, automotive repair and waste recycling

(J) **Port Lane Industrial Park**
Warehousing and light industry

(K) **Multiple Car Dealerships and light industry**
Retail

(L) **Design Works and Allen farms**
Light Industry and Agriculture

(M) **Multiple Car Dealerships and light industry**
Retail

Figure 6: East Colchester / West of Tendring Economy and Employment Analysis

2.5 Utilities

Existing information for utilities is contained in the strategy reports submitted to the respective regulators for electricity (OFGEM) and water (OFWAT). The electricity report covers the period 2015 to 2023, while the water report covers the five years to 2020.

This general information is supplemented by meetings which have been held between the local authorities and UKPN (electricity) and Anglian Water (water supply and foul drainage). Some inferences can be made from the general information and these are noted in the sections below. The meetings have sometimes provided more site specific details, but were all held in 2014, and the information may be out of date. As the supply authority meetings took place in late 2014, it would be appropriate now to re-energise the engagement with the utility authorities to get the most up to date information and focus in detailed strategies for the selected study areas.

Electricity

1

A meeting was held with UKPN on Thursday 19 May to discuss issues relating to capacity of power available in the four areas under consideration. These informal meetings are referred to as "surgeries" by UKPN and are designed to offer some headline advice ahead of any formal engagement.

UKPN advised that they expect a capacity demand somewhere between 5MW and 10 MW would trigger the need for a new primary substation.

There is some good information in the evidence base for this area. General information is provided in the UKPN Regional Development Plan (RDP), and this is amplified through a meeting with UKPN in September 2014. Some network reinforcement will be needed in the period to 2013 to ensure that the Regulated reliability criteria are maintained under winter loading conditions. Development east of the Salary Brook could be supported by upgrading Colchester Primary substation, but distribution may be more costly owing to the need to install new circuits under the river but other supply options could be made available to the area, subject to further study. Specifically, the substation at Lawford could be upgraded which would avoid the river crossing.

Gas

2

According to an email from National Grid Gas in September 2014, the high and medium pressure network is expected to be able to deliver the predicted additional demand from new development, but the low pressure network will require reinforcement where connections to new development are required. offset requirements will need to be considered in accordance with development proposals.

Telecommunications

There is no information on telecommunications

Water Supply

There is some general information in the Anglian Water development plan covering the period 2015 to 2020. The region east of Colchester (referred to in the Anglian Water development plan as "South Essex") is predicted to be in water deficit condition by 2030 and water will need to be delivered from other areas within the Anglian Water region, or supplemented by neighbouring water companies, namely Affinity Water to the south and Severn Trent to the west. The Anglian water predictions are based on average growth trends; any accelerated growth will bring the date forward. There is no specific information about the proposed development area. There are no major supply projects planned during the current review period (to 2020) – the focus is firmly on demand reduction by tackling leakage and installing water meters.

Waste Water

The Colchester Waste Water Treatment Plant, now referred to Water Recycling Centre (WRC), is near capacity. There is a high level strategy to expand the plant, but expenditure will only be committed in response to developer demand. Expansion will have a fairly long lead-in time, so there may be some constraint on early development.

There are a number of small WRC's with some capacity in this area. These include WRC's at Fingringhoe and Great Bromley. These could serve early development, but before the end of the plan period (2032), waste water would have to be pumped to Colchester WRC at Hythe, or a new treatment plant would have to be built. Pumping to Hythe would involve a river crossing.

If a new WRC turned out to be the preferred option, there is an opportunity to combine this with the North Colchester area benefitting from economies of scale and providing a more sustainable water cycle – see further information below.

With the Ardleigh Reservoir just to the north of the area, water supply to east Colchester development area is not considered to be a problem. But new and upgraded existing infrastructure would be needed.

Most sewers are running with limited spare capacity, and the infrastructure upgrades will be needed to support new development. This offers the opportunity to explore new approaches,

Surface Water Network

Surface water networks are at capacity and new developments will need to deal with their surface run-off in a way that does not impose any additional load on the system. In practice, this means that surface water cannot be discharged to the existing disposal network.

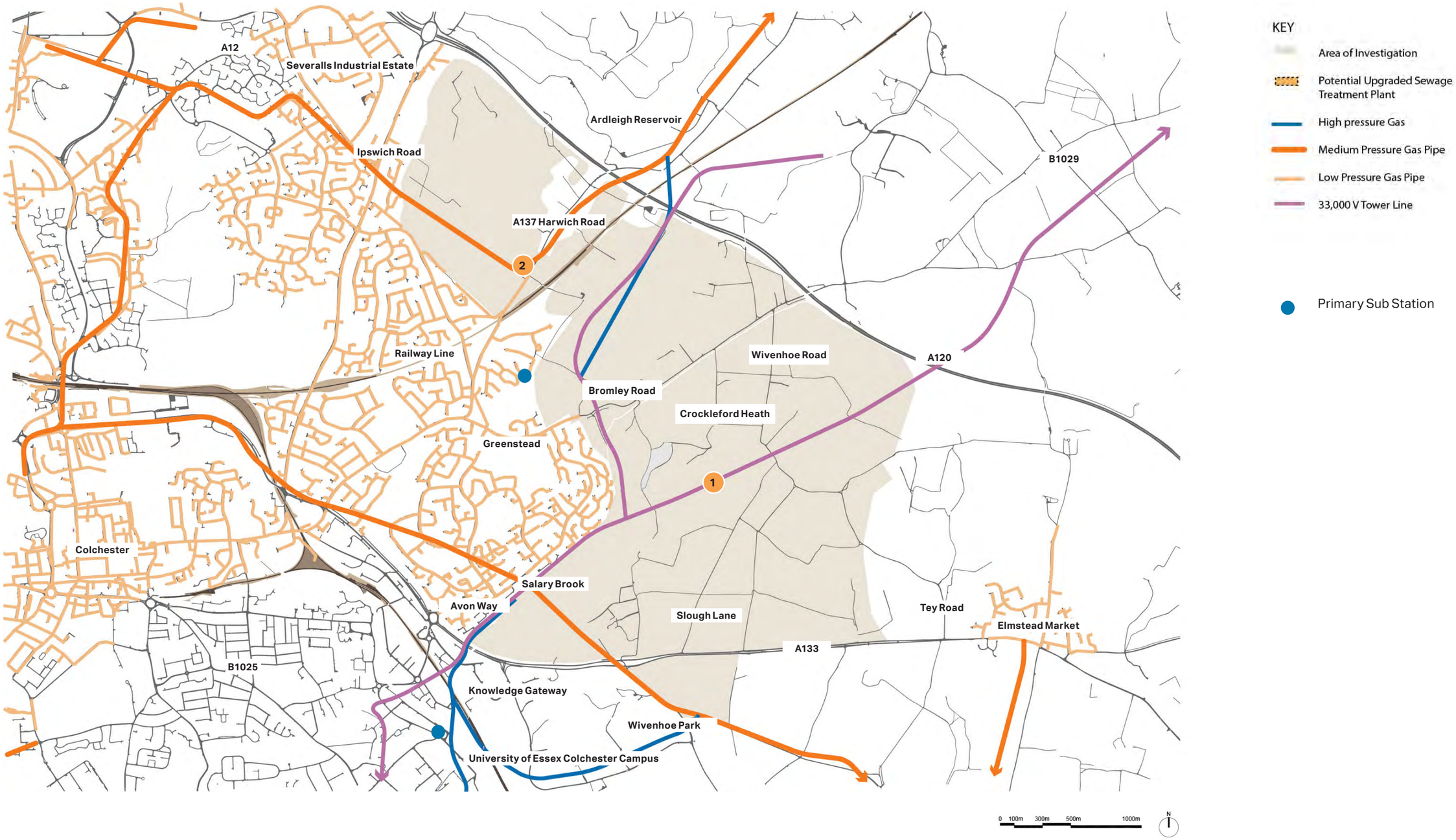


Figure 7: East Colchester / West of Tendring Utilities Analysis

This chapter provides opportunities and constraints analysis of the North of Colchester Study Area.

03 North of Colchester

3.1 Area of Investigation

The North of Colchester area of investigation is situated around the former World War II Boxted Airfield comprising approximately 600 ha currently predominantly used for agriculture. In includes some existing active land uses including a Solar Farm and is defined on its southern and eastern edge by the A12.

Outer Boundaries

1 Southern Boundary – The A12 forms a well defined and strong physical boundary to the south which although bridged for vehicular movements in two locations, reinforces the sense of separation between North Colchester and the development site. This could be further reinforced as a result of the planned widening of the A12 in this location.

2 An appropriate interface between the A12 and local roads will need to be determined to restrict unnecessary traffic flows which would increase congestion along this strategically important route.

3 The functionality of the development will be dependent upon bridging and facilitating sustainable linkages across the A12 connecting with Colchester to the south.

4 Eastern Boundary – The A12 forms a strong physical boundary to the east, although ability to establish connectivity access across this primary network to establish a relationship with Ardleigh Reservoir could provide a high quality leisure resource for new residents. The Conservation Area of Ardleigh (TDC) lies further to the east of the site.

5 Northern Boundary – There is no physical feature that would provide a strong defined edge to the settlement in this location. Instead, field boundaries will more likely set a northern edge to a new settlement. Importantly, sufficient distance should be maintained from the Dedham Vale AONB.

6 Western Boundary – This is set by field ownership boundaries although there is potential to consider western expansion to create a more direct relationship with the defining boundary of the higher capacity route of Straight Road.

Internal Boundaries

7 Boxted Airfield and its heritage may be an influence on the internal layout and form of the Garden Community. i.e. the old runway could define focus and open space.

8 Tertiary Road Network – The area of investigation is divided and accessed via a network of tertiary roads and lanes. If progressed the retention of these routes should be considered for their ability to divide development parcels whilst retaining local character.

9 Field Pattern – At present much of the land has an irregular field pattern with medium to large fields common throughout. Hedgerows and related drainage ditches as a result are fragmented. The opportunity may be taken to retain existing hedgerows and incorporate them into development.

10 Irrigation Reservoirs - currently located at the centre of the site these could be retained and incorporated to support natural habitats and enhance biodiversity within a future settlement.

11 Settlements – A number of single residential units and small villages and hamlets currently exist across the site. Incorporation of these settlements would require careful consideration so as either to sensitively absorb or determine whether clear buffering is required.

12 Solar Farm - The existing Solar Farm, which is understood to have a 20 year temporary planning permission, could present an obstacle which would need to be managed to avoid the delivery of an uncohesive and fragmented development, at least in the short/medium term if retained on site for the full duration of its licence and planning permission. Alternatively, the option might exist to retain the facility to provide clean energy to the new settlement.

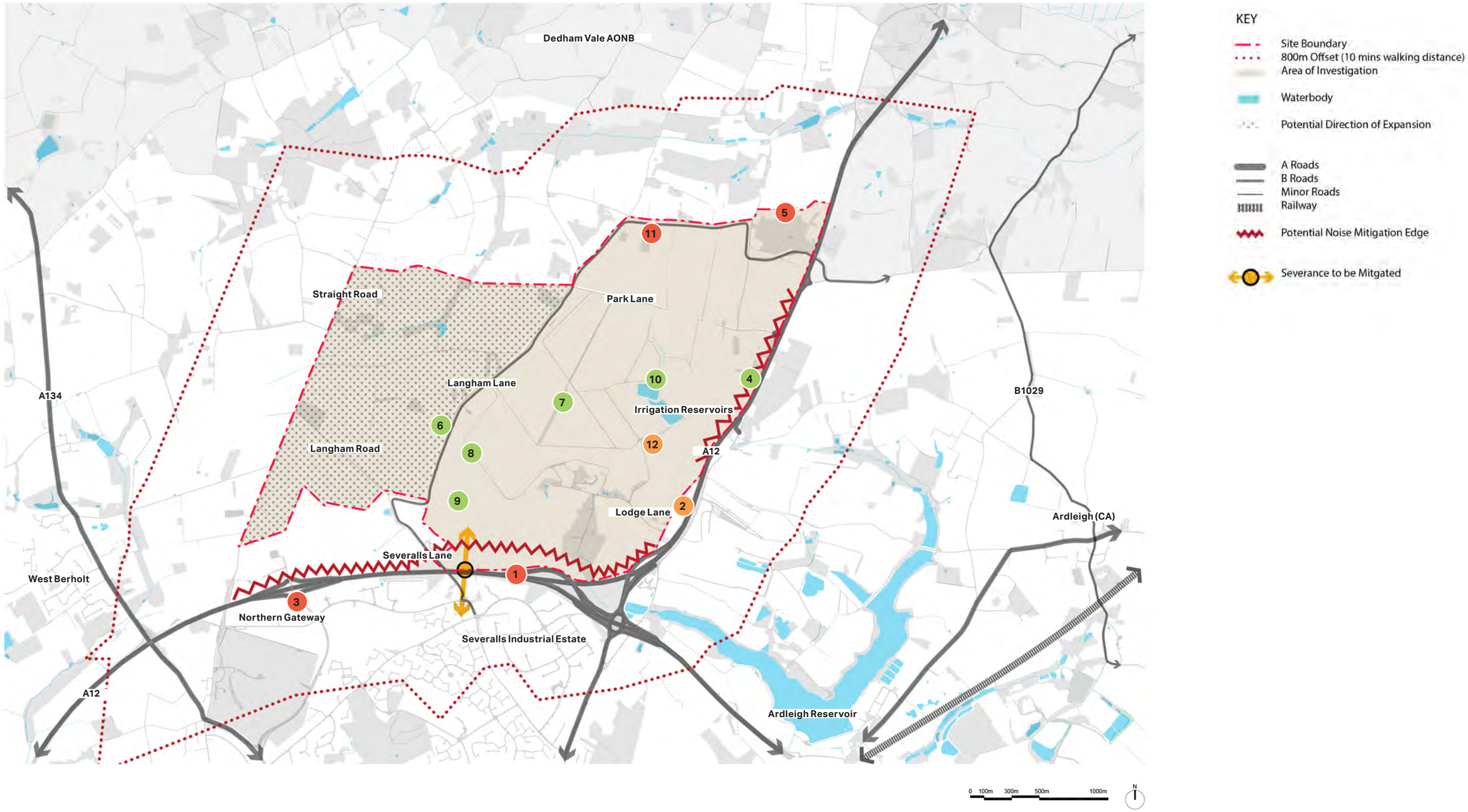


Figure 8: North of Colchester Edges and Boundaries Analysis

3.2 Connectivity and Accessibility

The location offers an opportunity to link the site with the North Colchester Growth Area (Enterprise Zone), south of and connected with Junction 28 of the A12 and the recently constructed Colchester Park & Ride. The stadium and business surrounding it, has the future potential to provide accessible employment and synergy with Garden Community residential development.

The strategic road network (A12, including junction 28 and the A120) along with the established and in places recently upgraded local road network south of the Stadium provide an opportunity for efficient local connections to the urban area as well as the wider Essex region.

Connections with Colchester mainline station, albeit located some distance from the site, bus network as well as the Park & Ride service provide a current option for linking the site with the town centre and viable upgrade to provide site-wide connectivity.

Active Modes (Walking & Cycling)

1 NCN route 1 (a long distance cycle route via the east coast of England) provides a localised connection with Colchester town centre and the western edge of the site, aligned along Langham Road. In addition, the established local cycle network within Colchester town, south of the A12 provides routes to the town centre and rail station.

2 The A12 creates significant severance between the site and the northern fringes of the existing urban settlement.

3 Severalls Lane is a combined pedestrian/cycle and bus route linking the site with the south of the A12. Both this route and Junction 28 of the A12 provide connections over the A12, with adequate pedestrian footway provision in place.

4 Along with high quality pedestrian and cycle routes internal to the site, consideration should be given to enhanced north-south pedestrian/cycle provision in the form of potentially a greenway/land bridge across the A12 for cyclists and pedestrians in order to maximise the take-up of active modes and encourage connection with employment to the south.

5 Pedestrian and cycle routes should be provided within the site linking with the existing infrastructure identified ie. crossing the A12, NCN 1 and established Colchester cycle network.

Rail

6 Colchester rail station (GEML) is located outside of appropriate walk distances but potentially viable by cycling via the existing crossings over the A12 and Colchester cycle network. The station is also importantly accessible via local bus routes and the Park & Ride providing a journey time to the station within 10-15 minutes.

7 The station provides access to the GEML rail line with direct and high frequency services to Ipswich and Norwich and Chelmsford and London Liverpool Street to the south. Albeit the requirement for a 1st leg journey by bus make it potentially less desirable

8 Given the likely future capacity constraints on the rail network towards London, the potential for capacity upgrades may need to be explored with Network Rail to facilitate growth.

Bus

9 The local bus network currently sets down and pick-up in close proximity to the site, albeit these are low frequency routes.

10 The recently built North Colchester P&R is located in close proximity of the site and offers services to the rail station and town centre every 10 to 15 minutes.

11 The potential exists for Bus Rapid Transit to serve the site and connect to Colchester. This could include transit hubs distributed across the site to serve development.

12 Given the quantum of development proposed, a case for extending the current Park & Ride bus service or similar through to the site should be considered as a minimum to promote connectivity in the area via medium capacity sustainable modes of transport.

Road

13 Opportunity exists for vehicular access to the site via existing and local road network:

- Severalls Lane and Langham Lane, Old Ipswich Road via the A12/ A120 Slips and Park Lane via the A12. The site promoter has suggested that significant development could be accessed via this road with minor junction upgrades including up 4,000 dwellings (circa 50,000 sqm NIA of predominately B1 class floorspace), schools, local and community facilities.
- Straight Road provides the opportunity for a connection from the west

14 Junction 28, along with a newly formed link road providing access to the site would provide access from the strategic network although this junction would require significant improvement and upgrade to be fit for purpose.

15 Bordering the south of the site, the A12 currently experiences over a 100% peak hour traffic stress, creating queues along this link up to Junction 29. Given the capacity constraints, the strategic nature of the network and likely proposed access routes from the site to the south, without mitigation measures, public transport connectivity and the anticipated level of development on site, this constitutes an important constraint / issue that would need to be addressed / cognisant of.

16 Widening of the A12 is proposed in this location.

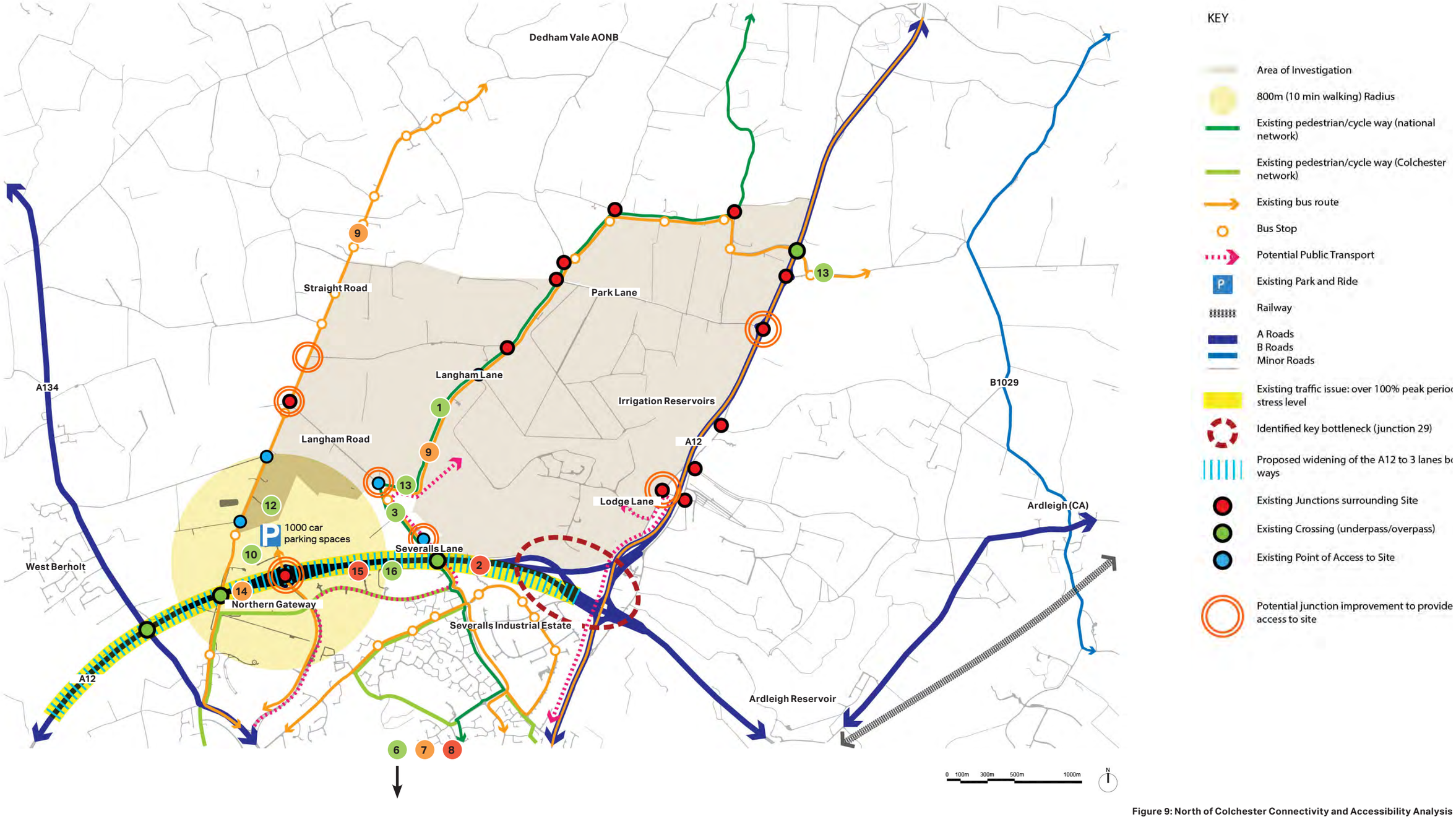


Figure 9: North of Colchester Connectivity and Accessibility Analysis

3.3 Landscape and Environment

The landscape of the site is flat and characterised by medium to large agricultural fields with only limited pockets of ecological value to the south and north-east.

Landscape Character, Sensitivity and Condition

1 Landscape Character - Overall the site is fairly flat and open, the former airfield establishes several linear branches which cut through the site. However, rather than being seen as a constraint, these have the potential to be embraced by the Garden Community for the provision of sustainable connections which transect large areas.

2 The edge of the Dedham AONB lies to the north eastern edge of the site. Although the visual connection with the AONB is considered to be limited, significant development in this location could have an impact on the broader character of this part of the AONB.

3 There are pockets of ecological assets located across the site, such as Kiln Wood. These should be harnessed by the delivery of a Garden Community as amenity assets and green linkages, creating liveable neighbourhoods with attractive landscape features.

4 Development in this location needs to take into consideration the close proximity of Black Brook to the north, Ardleigh Reservoir to the south east and High Woods Country Park to the south. Ardleigh Reservoir has a defined catchement area within which certain proposals for development will be subject to particular scrutiny with regard to their impact on water quality. No part of the site, with the exception of Turnpike Close study area is included within the catchment zone, the boundary of which is the A12.

5 The A12 presents a visual and physical barrier from the rest of Colchester. Opportunities for enhanced green infrastructure could help provide a more attractive environment around the A12 and also help to reduce air and noise pollution.

6 Development will result in the loss of Grade 2 Agricultural Land, which Natural England classify as 'Very Good' and is considered to be the best and most versatile farmland in England. A band of Grade 3 Classed land is located in the southern section of the site, adjacent to the A12. Development of this site will need to demonstrate the overriding housing need and other place-making advantages, together with confirming no alternative land is available, including brownfield, which has less agricultural value.

Parks, Recreation and Historic Environment

7 A significant strategy of green space, including High Woods Country Park and Mill Road playing fields, runs from the town centre out to the site. This green wedge could be enhanced and extend into the new development to provide ecological continuity and improved access out to the countryside. A green bridge or duct could be used to cross the A12.

7 There are concentrations of Grade II listed buildings within the villages of Langham Moore and Langham Wick to the north of the site. Development would need to be sensitive the heritage character, particularly around Langham, and develop measures which mitigates against the development's impact.

8 The Conservation Area of Ardleigh (TDC) lies to the east of the site.

Water Cycle

9 Flood risk is minimal and concentrated around the Salary Brook and a narrow corridor of Flood Zone 3 along the southern boundary of the Site, adjacent to Kiln Wood.

10 The underlying geology and soil structure favour attenuation SuDS that could be used to create attractive ponds on site that could be both and ecological resource or used to store water for reuse on site.

11 The green infrastructure network could be used to provide the necessary improvements to run-off water quality before discharge. This would reduce the need for new surface water sewer infrastructure and pressure on the existing waste water networks. Alternative non-potable water supplies are likely to be increasingly important in this water scares area.

Minerals

12 The site is located in a Minerals Safeguarding Area for sand and gravel and the economic viability of prior extraction of minerals must be assessed. Should the viability of extraction be proven, there is an opportunity for the mineral to be worked in accordance with a scheme / masterplan as part of the phased delivery of the non-mineral development.

Figure 10: North of Colchester Landscape Sensitivity and Green Infrastructure Analysis

3.4 Market and economy

The site benefits from close proximity to Colchester's Northern Gateway providing employment and leisure opportunities for local people. As demand grows this economic focus could inform the type of employment incorporated into a Garden Community in this location. The Leisure Hub at the Northern Gateway also provides potential to build a complimentary offer around leisure, health and assisted living sectors.

Residential

1 As this area is somewhat separated from the existing Colchester settlement, it has the potential to create its' own market and environment.

Retail

2 The site should seek to strengthen linkages with Northern Gateway, located to the south west of the area of investigation. The aspirations of this growth area to develop as a high quality leisure destination would be mutually beneficial and tie in with the objectives of a 21st Century Garden Community.

3 The Garden Community under this option should be capable of providing mixed use opportunities focused on small-scale convenience services and amenity uses which would contribute towards vibrant and social neighbourhoods. On the basis of proximity to both Colchester Northern Gateway and Colchester Town Centre it is assumed that a Garden Community in this location will seek a mutual benefit rather than a competing offer and will thus be reliant on the implementation of sustainable transport connections, including active modes.

Employment

4 The Northern Gateway will contribute to the creation of a leisure destination of high quality which comprises distinctive and memorable buildings, spaces and occupiers/operators. It will offer leisure and retail facilities of a type and a quality not currently available elsewhere in Colchester and provide a scheme design which properly relates to current and proposed development sites and uses including the Weston Homes Community Stadium. The proximity of the site and the existing to the Northern Gateway will provide for a wide range of local jobs within easy commuting distance.

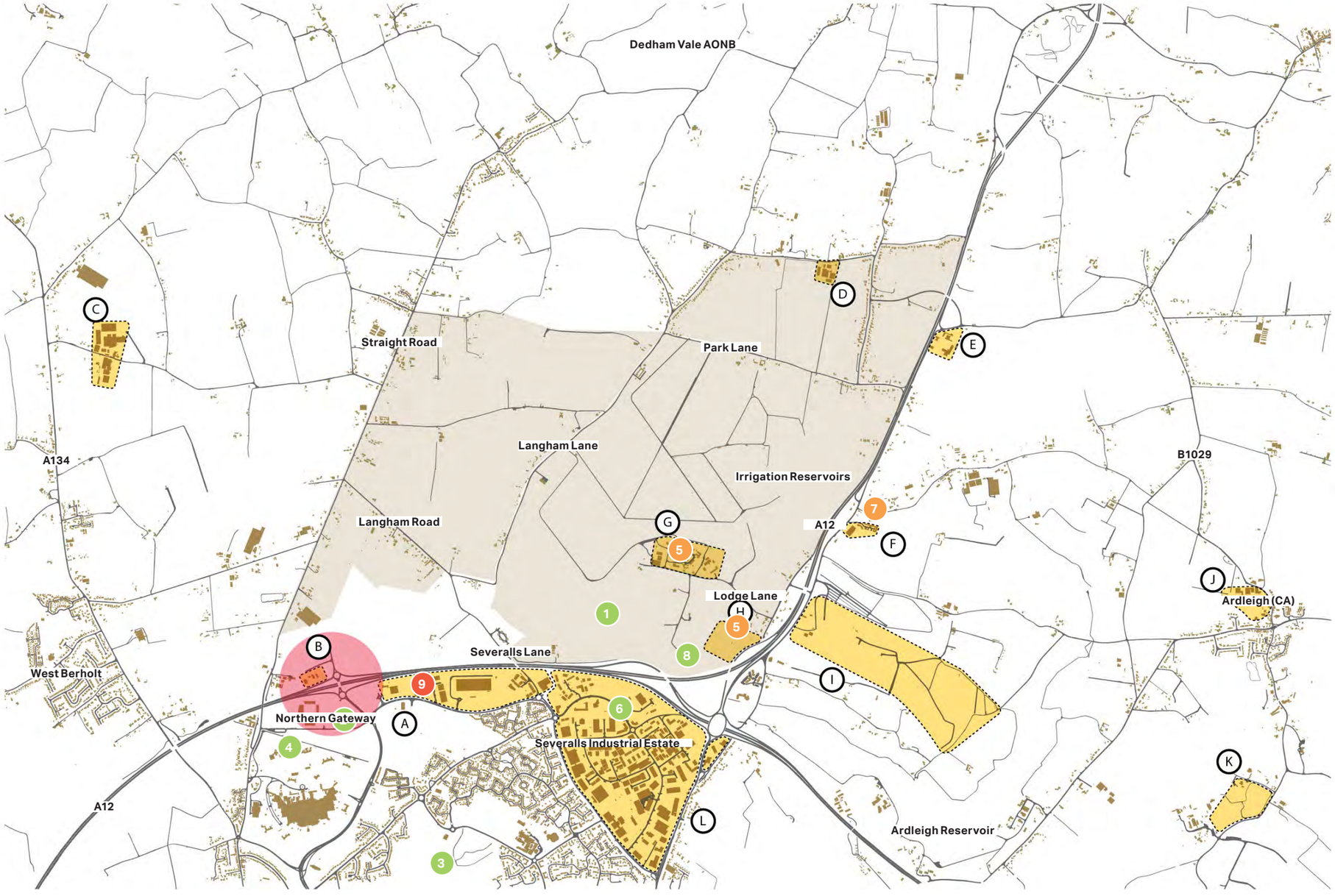
5 Two small areas of employment enterprise already exist on the site (Lodge Lane; and off School Road). These are relatively poor quality light industrial units consisting of small scale retail, warehousing and storage. Located in the middle of the site with no buffer between units and greenfields, consideration should be given to develop a buffer around the site or incorporate as part of the sites employment offer.

6 Several Industrial Parks located to the south of area is well established and includes light industry, storage, warehousing, logistics, manufacturing, office and foodstuff related businesses.

7 Systematic - Large warehousing and storage space, Systematic, who are a logistics and domestic and international freight company. The site is outside the red line boundary and is already buffered with extensive greenery from the main road and North of Colchester. Further consideration may need to be given to enhance the buffer or complete relocation of industrial activity.

8 Most organic/ indigenous economic growth will be driven by microbusinesses and starts ups who require a different kind of flexible workspace which market will need to cater for. There is potential for unconventional office development through the self-build market for small scale plots of land located in prime business parks close to the A12.

9 Both Axial Way (Cuckoo Farm) and Stane Park are viewed as having excellent prospects for employment uses because of their proximity to the A12 and enhanced infrastructure capacity following the recently constructed Junction 28.



KEY

- Area of Investigation
- Buildings
- Existing Work Centres
- Potential Site Connections to Workcentres
- Potential Site Links to Existing Neighbourhoods
- Northern Gateway

- (A) **Axial Way Industrial Park** — Light Industry
- (B) **Highway Pit stop** — Retail and shopping
- (C) **P G Rix Farms** — Agriculture, light industry, manufacturing
- (D) **Industrial Park** — Light Industry
- (E) **Retail and Hotel Park** — Retail, storage, hotel
- (F) **Systematic** — Logistics and shipping
- (G) **Business/Industrial Park** — Small scale manufacturing/retail/etc
- (H) **A12 waste/recycling site** — Waste Recycling
- (I) **SRC Aggregates** — Aggregates/Industrial
- (J) **Ardleigh Industrial Park** — Warehousing/Light Industry
- (K) **Martells Quarry** — Aggregate Mining
- (L) **Various Industrial Parks in North Colchester** — Light Industry, storage, warehousing

Figure 11: North of Colchester Economy and Employment Analysis

3.5 Utilities

Existing information for utilities is contained in the strategy reports submitted to the respective regulators for electricity (OFGEM) and water (OFWAT). The electricity report covers the period 2015 to 2023, while the water report covers the five years to 2020.

This general information is supplemented by meetings which have been held between the local authorities and UKPN (electricity) and Anglian Water (water supply and foul drainage). Some inferences can be made from the general information and these are noted in the sections below. The meetings have sometimes provided more site specific details, but were all held in 2014, and the information may be out of date. As the supply authority meetings took place in late 2014, it would be appropriate now to re-energise the engagement with the utility authorities to get the most up to date information and focus in detailed strategies for the selected study areas.

Electricity

A meeting was held with UKPN on Thursday 19 May to discuss issues relating to capacity of power available in the four areas under consideration. These informal meetings are referred to as "surgeries" by UKPN and are designed to offer some headline advice ahead of any formal engagement.

UKPN advised that they expect a capacity demand somewhere between 5MW and 10 MW would trigger the need for a new primary substation.

1 There is electrical infrastructure in the area to support the solar farm connection into the grid network, but a new primary substation would be needed to supply housing development. If a new primary is not developed, the substation at Lawford could be upgraded to serve this area, but distribution would be more difficult. The solar farm has capability to power a significant proportion of the potential Garden Community with renewable energy, however it may also present considerable constraints associated to severance and restricting future residents' access to amenity if retained in its currently prominent position at the centre of the site.

2 There is an existing Extra High Voltage (EHV) underground cable that runs from north to south across the site. This cable will have an easement of approximately 5m so that it can be accessed and maintained at all times. It may be possible to reroute this cable, but it will depend on network configuration and it is likely to be a very expensive option. Therefore, it is suggested that this be considered a constraint until further discussions have taken place with UKPN.

3 The opportunity might exist to retain the recently installed Boxted Airfield Solar Farm beyond the expiry of its temporary planning permission and use the energy produced to provide clean energy for the homes and businesses of the Garden Community, but this would reduce the amount of available land for housing. It is understood that under current plans the promoter of the site for development would remove the solar farm upon expiry of its consent, with the land then developed for housing. Measures to reduce energy demand through the layout and orientation of development and the possible inclusion of on-plot micro generation should all be possible too.

Gas

4 According to an email from National Grid Gas in September 2014, the medium pressure network is expected to be able to deliver the predicted additional demand from new development, but the low pressure network will require reinforcement in places. The nearest low pressure main connection point is south of the A12 in Severalls Industrial Estate. There may be a constraint in crossing the A12, and this will need further investigation.

Telecommunications

There is an existing BT openreach ductwork and access chambers along Old Ipswich Road on the eastern boundary of the site. It is not known whether these ducts contain copper or fibre optic cable.

Water Supply

6 There is a 250mm diameter Anglian Water Main running along the eastern boundary of the area assumed to be parallel with the A12. It is not known at this time, what spare capacity is available in this main. But it should be assumed that there is insufficient capacity to serve the new development until clarification is obtained from Anglian Water.

There are no major supply projects planned during the current review period (to 2020) – the focus is firmly on demand reduction by tackling leakage and installing water meters.

Waste Water

As for east Colchester, there are a number of small WRC's that could accept limited inflows to support early development. These include plants at Langham and Dedham. But before the end of the plan period (2032), waste water would have to be pumped to Colchester WRC at Hythe, or a new treatment plant would have to be built.

Water supply to north Colchester development area is not considered to be a problem, because of the Ardleigh Reservoir in the south east corner of the area. New and upgraded existing infrastructure would be needed to serve the development areas.

Most sewers are running with limited spare capacity, and the infrastructure upgrades will be needed to support new development

Surface Water Network

All new developments will need to deal with their surface run-off in a responsible way that does not impose any additional load on existing surface water systems.

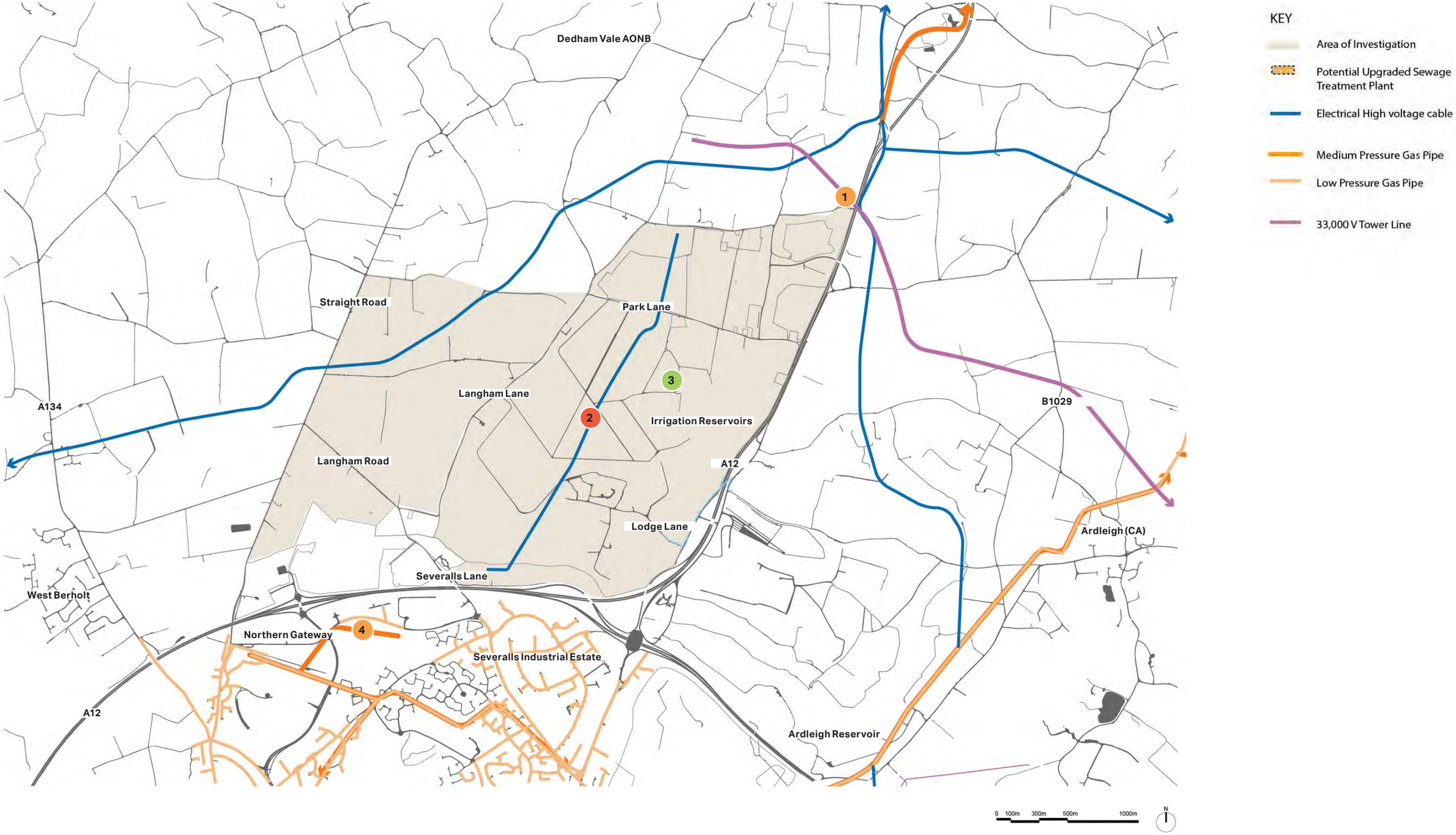


Figure 12: North of Colchester Utilities Analysis

This chapter provides opportunities and constraints analysis of the West of Colchester / Marks Tey Study Area.

04 West of Colchester / Marks Tey

4.1 Area of Investigation

The Colchester/Marks Tey area of investigation contains land in varied ownerships and comprises approximately 1050 ha. The Great Eastern Mainline and primary transit corridors of the A120 and A12 provide defining features that will need to be managed in developing and defining the form and location of a new settlement in this location.

Outer Boundaries

1 Southern Boundary – There is no physical feature that would provide a strong defined edge to the settlement in this location. Instead, a combination of features, such as field boundaries and small water courses will more likely set a southern edge to a new settlement. Further expansion would encroach on existing settlements which are afforded a particular character from their isolated nature. It is therefore not considered expansion further south should be considered.

2 Eastern Boundary - The settlement of Marks Tey lies to the north - east of the area of investigation adjacent to the Gainsborough line and presents a defined edge. Smaller hamlets such as the Conservation Area of Copford Green lie to the east with field boundaries currently setting the south-eastern boundary - although with no distinct edge. Any expansion east would need to be within the consideration of the relationship with the western edge of Colchester and the need to maintain sufficient separation.

3 Western Boundary- The western boundary is set by field ownership lines with the settlement of Coggeshall and Feering (Conservation Areas) approximately 800m to the west. Although not a clear edge further expansion and the rising topography moving west would encroach and impose on existing hamlets, constituting a considerable change in the landscape character, inappropriate given the surrounding context. It is therefore not considered expansion further west should be considered.

4 Northern Boundary - The northern boundary is defined in part by the Roman River as well as field ownership lines. Although expansion north would need to consider the impact on the settlements of Little Tey and Great Tey (Conservation Areas) it is considered this could be appropriate if the A120 was downgraded with a bypass to the A12, given the extent of land that lies within a 800m buffer of the A120.

Internal Boundaries

5 Great Eastern Mainline and A12/ A120 - the alignment of the A12 and adjacent Great Eastern Main Line rail route creates a physical barrier and severance to localised connectivity between land on the east and west of this major transport infrastructure spine.

6 At present this severance is only bridged of note at the grade separated junction of the A12/A120/B1048 (the narrowest crossing point within this corridor which in other respects is approximately 200m wide), from which Marks Tey railway station is also directly accessed.

7 Farm access roads cross the GEML further south, however these links are not of significance to enable bridging the development.

8 Marks Tey - the existing settlement of Marks Tey will be a primary focus for any new settlement and its role as a future upgraded, higher density centre and transport node for the Garden Community could be appropriate.

9 Tertiary Road Network – The study area is currently divided and accessed via a network of tertiary roads and lanes. If progressed the retention of these routes should be considered for their ability to divide development parcels whilst retaining a local character.

10 Field Pattern - At present much of the land has an irregular filed pattern with medium to large arable fields common throughout. Hedgerows and related drainage ditches as a result are fragmented. The opportunity should be taken by the Garden Community to retain as much of the existing hedgerow as possible, using its existence as a key structuring principle of the Garden Community.

11 Settlements - A number of single residential units and small hamlets currently exist across the site. Incorporation of these hamlets would require consideration with respect to the existing occupiers of property - most notably within Marks Tey and Little Tey. The impact on the occupiers of these properties will be the most directly affected. The extent to which individual properties are assimilated into the Garden Community or maintain some form of buffer separation will need to be developed through masterplanning and local community engagement, including with individual occupiers.

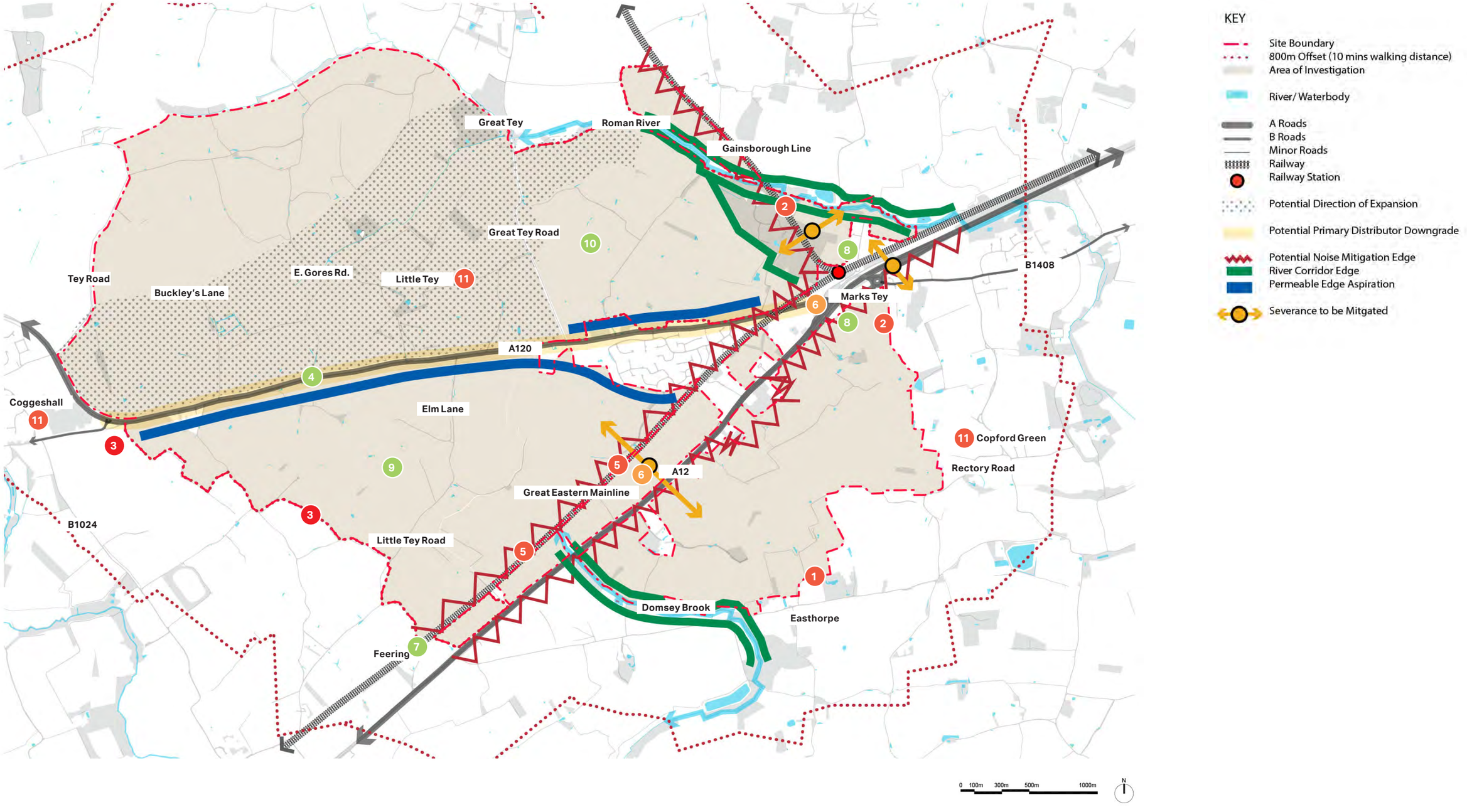


Figure 13: West of Colchester / Marks Tey Edges and Boundaries Analysis

4.2 Connectivity and Accessibility

The area theoretically benefits from good road and rail connections. The site is set around the grade separated junction of the A12 and A120, known as the Marks Tey interchange.

The road network is currently congested - something that is anticipated to worsen without major upgrades. The availability of road infrastructure to the east of the A12 is also limited. The A12 and GEML bisect the site along similar but separate axis.

The GEML is constrained in terms of current and future capacity, whilst the current location of the rail station is poorly positioned a) for the current local population and b) for development over a site which is predominantly on land to the south. Therefore, it can be considered that the major connectivity benefits of the current multi-modal transport infrastructure also act as a major constraints to current localised movements

A number of sub-regional and local bus routes operate on the key routes (A120, A12 and B1014) in close proximity to the site, however these only offer low frequency services.

Active Modes (Walking & Cycling)

1 No significant national or regional level cycle routes are present in close proximity to the site.

2 A traffic free route exists located alongside the northbound carriageway of the A12, between Doggetts Lane south to Junction 24 (Kelvedon), however this is unlikely to offer great synergy.

3 Up to sixty cycle stands are located at Marks Tey station, whilst a pedestrian footbridge links London Road at the northern periphery of the site with the existing bus stop on the westbound lane of the A120.

4 Other than the Marks-Tey grade separated interchange and associated pedestrian footbridge, no further routes cross the A12 exist of note (other than an existing farm access to the south). The severance created by this corridor is therefore significant.

5 The developers promoting land under the call for sites exercise have proposed a new combined pedestrian/cycle footbridge (replacing the existing footbridge), which would facilitate a connection with the northern end of the site and the rail station via Station Road. This solution however is likely to only benefit a small proportion of pedestrian movements originating from the site given the scale of the site, within the context of 1km walk distances.

6 With the provision of appropriate cycle ways and footpaths through the site, safe cycle and pedestrian crossings on the urban road network will facilitate movement and interconnection between land uses and the station as a public transport hub. Cycling facilities such as secure cycle parking should be located at major employment and public transport destinations to promote cycling.

7 The possibility of a new A120 alignment between the existing A120 and the A12 potentially west of the existing Marks Tey settlement, would offer the site an opportunity to plan for cycling infrastructure along it. If the option were to be progressed, it may also provide the opportunity to downgrade the current A120 alignment and orient it towards active and public modes of transportation.

8 The GEML and the A12 run along a similar but separate north-south axis through the site, whilst the A120 is aligned on an east-west alignment. The result is four distinct sections to the site, divided by impermeable infrastructure. To ensure pedestrian and cycle connectivity, connecting these distinct sections through greenways and appropriate crossings will be an important element of any future development to ensure the promotion of active modes as a viable and practical mode of transport.

Rail

9 The site benefits from a rail interchange station (GEML) within its boundaries.

10 Marks Tey rail station is however located within the northern portion of site, its location situated between the A12, the A120 and the Marks Tey interchange, means accessibility is highly constrained for both local pedestrian and cycle movements, but also for car born traffic.

11 The station provides access to the GEML with a frequency of up to 5 tph in either direction between London Liverpool Street and the Sudbury branch rail line (Gainsborough line) which currently offers limited service frequencies (1tph in either direction between Marks Tey and Sudbury) and is only anticipated to rise to 2tph by 2043.

12 In view of future constraints to the rail network, the growth associated with development and the proposed minor upgrades to the capacity, opportunities to utilise the GEML may be limited in future.

13 Opportunities for moving the station to a more central location within the site should be explored

14 Given the quantum of development proposed, a case for improving GEML lines to accommodate growth should be made to Network Rail

Bus

15 A defined bus network exists in proximity to northern end of the site, with routes operating on the A120 and the A12.

16 Whilst, only bus routes 70 and 71 (linking Chelmsford and Braintree) set-down in close proximity of the site offering access to a bus frequency of 2-3 buses per hour, bus routes NEx 205, NEx481, Sx133, 70, 71, 83, 803 also set-down at the rail station.

17 Potential to explore the opportunity for a new bus route to serve the development connected with Stanway and Colchester in collaboration with bus providers.

18 To enable development, more ambitious solutions need to be explored through potentially an integrated BRT route, connecting the site internally as well as the wider local area. This could include re-aligning and re-purposing the Sudbury branch line to a BRT or Tram-Train to extending through the site and connecting a relocated main line station

Road

19 The benefits of the site and its close proximity to the major road network in providing connections to the wider region, also creates issues. Both the mix of strategic and development traffic movements is a complex set of conditions that needs careful consideration with any future development. The planned widening of the A12 between junctions 19 and 25, which includes the section of the A12 through the Study Area, will also need to be taken account of.

20 Opportunity exists for vehicular access via existing and well defined, albeit congested local road network. The developers under the call for sites have developed proposals for new junction upgrades to enable development for up to approximately 900 homes and associated employment and community uses. These include:

- The Prince of Wales Roundabout (A120 / B1048 London Road) upgrades
  - to enable a new connection with the site and improved junction capacity
  - to accommodate increases in traffic
- Capacity improvements to the Marks Tey Roundabout
- New roundabout formed with London Road, the A12 Westbound on slip and the site.

21 The Jacobs Local Plan modelling for Braintree District Council, includes development on part of the Marks Tey Site (3,100 dwellings and 17,000 jobs) as well as development sites surrounding Braintree including West of Braintree. The assessment forecasts that numerous junctions in and around Marks Tey will be overcapacity by 2032 including A120/B1024, Coggeshall Road South/B1024 and B1023/B1024 junctions (based on no improvements to the A120 between Braintree and Marks Tey). This will, almost certainly require, local junction improvements as well as the A120 Braintree to A12 improvement to facilitate the quantum of development proposed at Marks Tey.

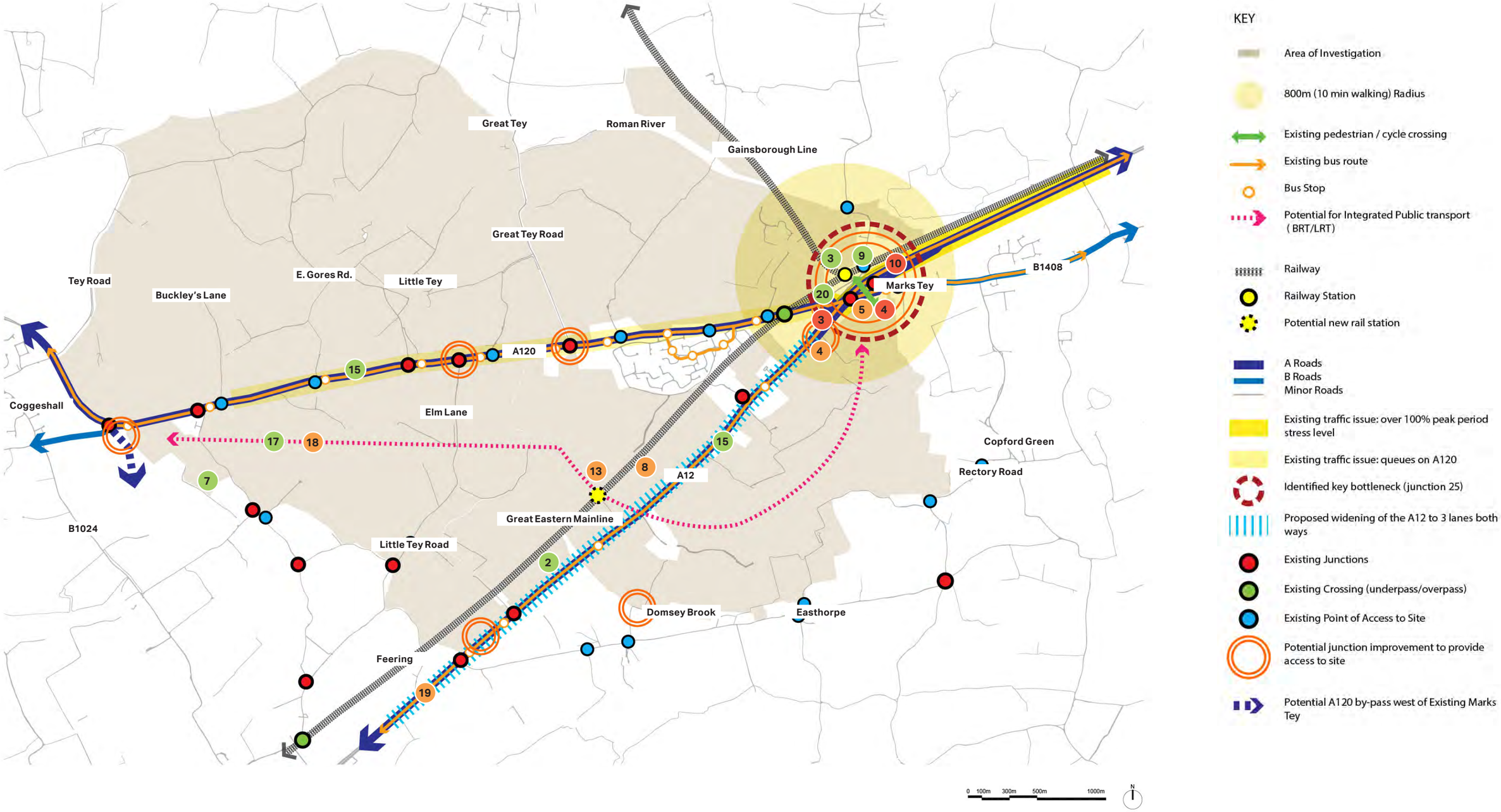


Figure 14: West of Colchester / Marks Tey Connectivity and Accessibility Analysis

4.3 Landscape and environment

There are a number of existing natural landscape and ecological features within the site including Domsey Brook, Roman River, pockets of woodland and a network of intact hedgerows forming mature and densely vegetated field boundaries, often accompanied by land drains and ditches. These may form considerable ecological and landscape assets that must be considered if a Garden Community is brought forward in this location.

Landscape Character, Sensitivity and Condition

1 The existing settlement of Marks Tey is characterised by transport infrastructure, the post 1960s suburb development of Godmans Lane and Ashbury Drive and various individual commercial and industrial uses located throughout. In themselves these features aren't considered particular sensitive to the change that would result from the Garden Community in this location.

2 Away from the A120 spine the land is characterised as raised farmland plateau with medium to large field patterns and mature hedgerows creating a degree of landscape enclosure which limits the occurrence of extensive/ distant views. Therefore, whilst the landscape change will be significant the impact is likely to be acceptable overall, especially if the network of existing hedgerows and associated veteran trees can be retained wherever possible.

3 The Roman River provides a natural boundary to the north east of the site.

4 A green buffer between the development and settlements to the Coggeshall to the west would help to reduce the visual and character impact resulting from development.

5 Development will result in the loss of Grade 2 Agricultural Land, which Natural England classify as 'Very Good' and is considered to be the best and most versatile farmland in England. Land in the far south eastern fringe is slightly poorer quality (Grade 3), but by the majority is Grade 2. Development of this site will need to demonstrate the overriding housing need and other place-making advantages, together with confirming no alternative land is available, including brownfield, which has less agricultural value.

Ecological Designations

6 The site contains or is bordered by a range of existing landscape features including field hedgerows and related drainage ditches; water courses such as Roman River and Domsey Brook. These would provide the initial structuring elements on which to build a green infrastructure framework, with the creation of new areas of multi-functional open space/green corridor(s) providing the opportunity to link landscape features and reduce existing levels of habitat fragmentation within the site as well as improve the water quality and provide an attractive setting for the development.

7 The most significant areas of nature conservation interest are identified as Marks Tey Brick Pit (designated as a SSSI for geological reasons) and Stonefield Strip, both designated as Local Wildlife Sites. It should be possible to incorporate these into an overarching Green Infrastructure Strategy. But caution may need to be exercised in relation to the impact of the SSSI on increasing development in and around Marks Tey railway station

8 With the majority of the land in productive agricultural use; intensively farmed for arable crops and field size typically medium to large, existing biodiversity levels are unlikely to be high, with most ecological value to be found within and adjacent to Roman River, Domsey Brook and the network of field hedgerows and margins.

Parks, Recreation and Historic Environment

9 The character and setting of existing assets should be conserved. Within this area there a number of listed buildings, including the Church of St James, Little Tey and St Andrew's, Marks Tey, both Grade 1. Other buildings are typically Grade 2 with an agricultural history (barn/farmhouse). In each case it is likely to be possible to respect the immediate setting of these buildings or otherwise successfully integrate them into the Garden Community.

Water Cycle

10 The Domsey Brook floodplain opens up into quite a wide area of flood risk to the north of Easthorpe in the south section of the site.

11 The networks of drainage ditches provide the framework for a sustainable drainage network. The underlying geology and soil structure favour attenuation SuDS that could be used to create attractive ponds on site that could be both and ecological resource or used to store water for reuse on site.

12 The green infrastructure network could be used to provide the necessary improvements to run-off water quality before discharge. This would reduce the need for new surface water sewer infrastructure and pressure on the existing waste water networks. Alternative non-potable water supplies are likely to be increasingly important in this water scares area.

Minerals

13 The site is located in a Minerals Safeguarding Area for sand and gravel and brick clay and the economic viability of prior extraction of minerals must be assessed.Should the viability of extraction be proven, there is an opportunity for the mineral to be worked in accordance with a scheme / masterplan as part of the phased delivery of the non-mineral development.

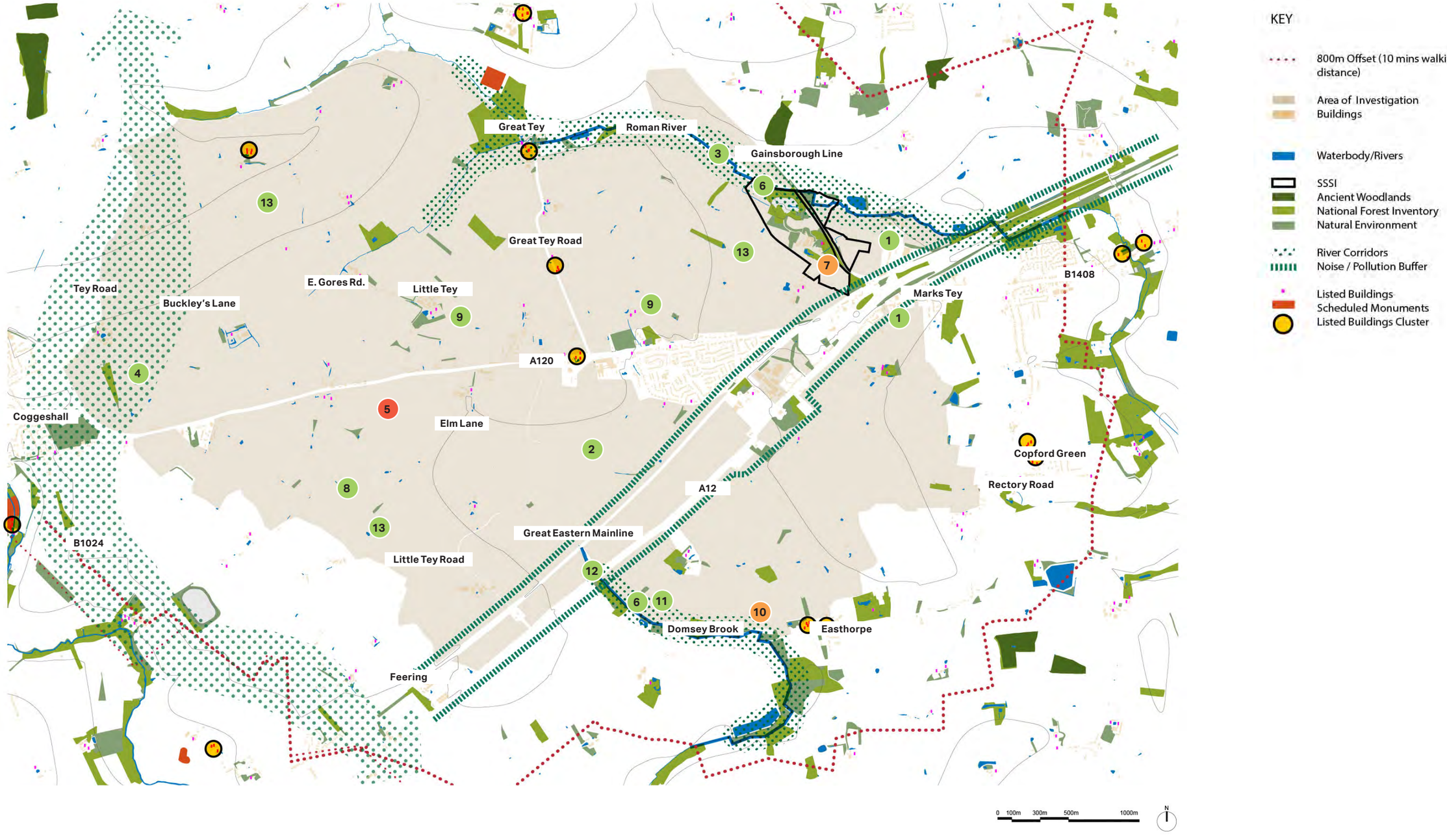


Figure 15: West of Colchester / Marks Tey Landscape Sensitivity and Green Infrastructure Analysis

4.4 Market and economy

As a key transport node the opportunity exists to develop an employment and economic offer around Marks Tey Station. This has the potential to offer more flexible, shared and touch-down spaces that maximise the opportunities afforded through direct connectivity to London, Chelmsford and Colchester. Excellent ICT infrastructure could develop a culture of home working and entrepreneurial enterprise throughout the Garden Community.

Residential

1. This location is relatively removed form existing urban areas and therefore able to create (and control) its own environment in order to maximise viability and long term sustainability.

2. Given the relatively untested market it is considered a new urban centre would be essential in order to support the values required and the overall sustainability of potential development.

Retail

3. There is a high level of comparison expenditure leakage from the study area to centres including Braintree, Clacton, Ipswich and Chelmsford. An improved retail offer could clawback some of this spend.

4. As a result of the existing transport infrastructure, together with the landscape character in an around the existing Marks Tey settlement, it may be possible to introduce higher density development into this option, which would be beneficial to the creation of mixed-use communities.

Employment

5. Two recognised employment clusters exist within Marks Tey. These are small in nature consisting of light industrial, a garden centre and supporting horticultural services. As a key transport node, the opportunity to provide employment space around Marks Tey rail station as part of mixed use urban development with higher density should be considered.

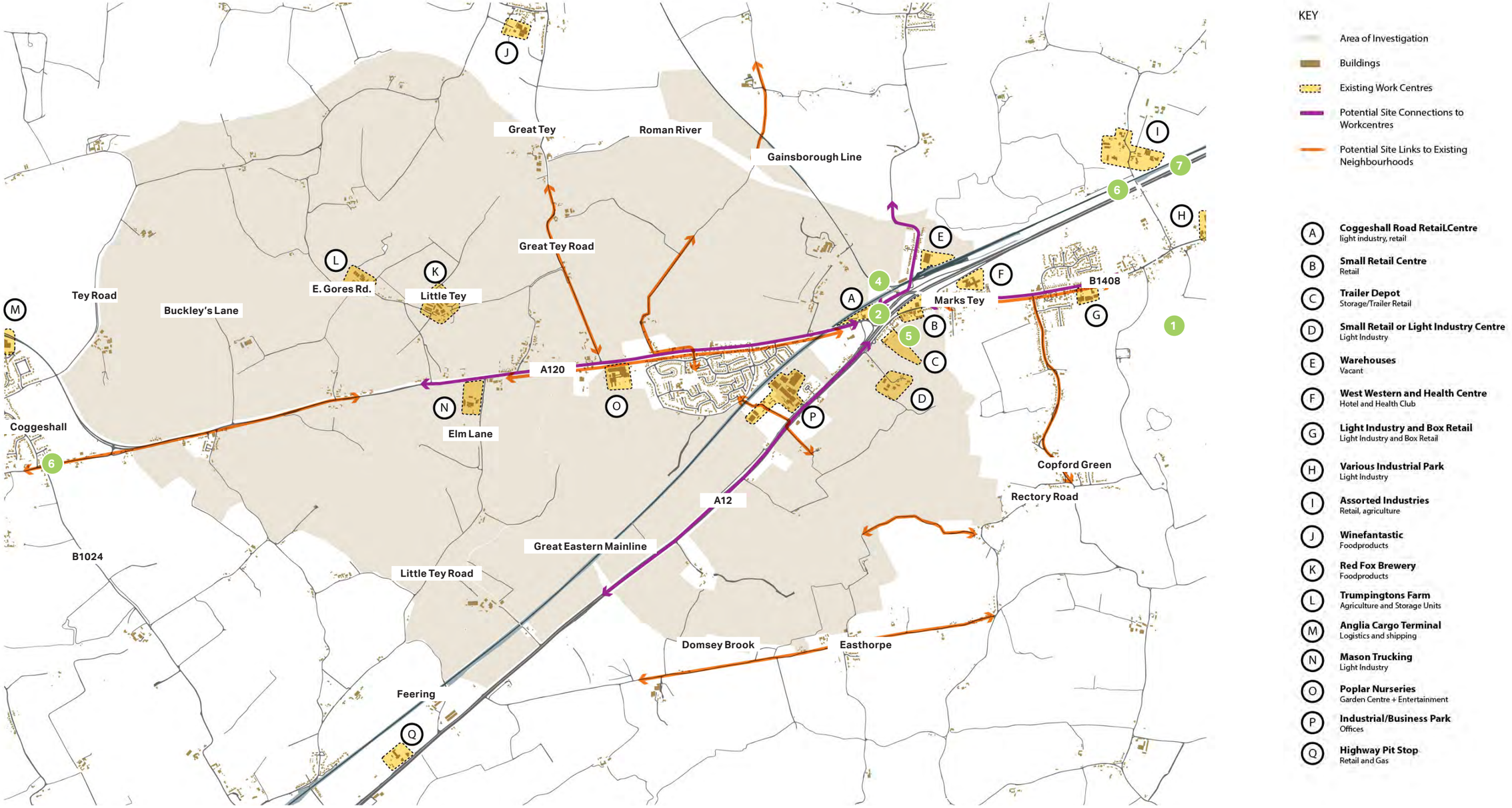
6. The distance of the Marks Tey to Colchester (10km) and Braintree (22km) can be used as an economic advantage to help establish a strong employment offer of its own. The provision of flexible and community work spaces located in the vicinity of Marks Tey station available for meetings or office space hire on a day to day or weekly basis, supported by excellent ICT infrastructure, could facilitate home working and entrepreneurial enterprise to grow locally. It is considered possible that this can be achieved without compromising the identified regeneration and development priority areas of Colchester, including its Northern Gateway and Town Centre, however, because the settlement of Stanway is closer, and has been a recent focus of retail and employment growth, its role in the context planning and bringing forward the Garden Community may need further definition.

7. The significant pipeline of retail led development to the east of Marks Tey (within land allocated for employment uses in planning policy) is considered as an advantage for the viability of this site as an employment location. Proposals at Marks Tey may be able to capitalise on the loss of some of the employment land pipeline in this area by looking to deliver employment use within the garden settlement and provide work space for local businesses with the added advantages of proximity to a key transport node.

8. The settlement of Stanway to the east, which together with Copford, effectively forms a continual linear development between Marks Tey along the B1408 (London Road) provides a more established employment area, and accommodates more than a third (35% or 22.5ha) of Colchester' Borough Council's available employment land.

9. The relationship of the potential Marks Tey Garden Community with Stanway will require careful consideration. The relationship might be informed by how Stanway continues to develop, and the resulting balance of floorspace between employment land , retail and other leisure uses that results, and its related catchment area . Added to this any local desire to maintain some form of separation (physical and/or functional) between Marks Tey, Copford and Stanway.

10. The Garden Community faces competition for a share of the 'Out of Town' occupier market from the more established office destination of the northern gateway cluster of business parks.



KEY

- Area of Investigation
- Buildings
- Existing Work Centres
- Potential Site Connections to Workcentres
- Potential Site Links to Existing Neighbourhoods

- (A) **Coggeshall Road RetaiLCentre** light industry, retail
- (B) **Small Retail Centre** Retail
- (C) **Trailer Depot** Storage/Trailer Retail
- (D) **Small Retail or Light Industry Centre** Light Industry
- (E) **Warehouses** Vacant
- (F) **West Western and Health Centre** Hotel and Health Club
- (G) **Light Industry and Box Retail** Light Industry and Box Retail
- (H) **Various Industrial Park** Light Industry
- (I) **Assorted Industries** Retail, agriculture
- (J) **Winefantastic** Foodproducts
- (K) **Red Fox Brewery** Foodproducts
- (L) **Trumpingtons Farm** Agriculture and Storage Units
- (M) **Anglia Cargo Terminal** Logistics and shipping
- (N) **Mason Trucking** Light Industry
- (O) **Poplar Nurseries** Garden Centre + Entertainment
- (P) **Industrial/Business Park** Offices
- (Q) **Highway Pit Stop** Retail and Gas

Figure 16: West of Colchester / Marks Tey Economy and Employment Analysis

4.5 Utilities

Existing information for utilities is contained in the strategy reports submitted to the respective regulators for electricity (OFGEM) and water (OFWAT). The electricity report covers the period 2015 to 2023, while the water report covers the five years to 2020.

This general information is supplemented by meetings which have been held between the local authorities and UKPN (electricity) and Anglian Water (water supply and foul drainage). Some inferences can be made from the general information and these are noted in the sections below. The meetings have sometimes provided more site specific details, but were all held in 2014, and the information may be out of date. As the supply authority meetings took place in late 2014, it would be appropriate now to re-energise the engagement with the utility authorities to get the most up to date information and focus in detailed strategies for the selected study areas.

Electricity

A meeting was held with UKPN on Thursday 19 May to discuss issues relating to capacity of power available in the four areas under consideration. These informal meetings are referred to as "surgeries" by UKPN and are designed to offer some headline advice ahead of any formal engagement.

UKPN advised that they expect a capacity demand somewhere between 5MW and 10 MW would trigger the need for a new primary substation.

1 There is an existing primary sub-station in the area. It is located south of the railway line, but generally central to the development area. It is assumed that there will be existing routes under the railway to serve areas in the northern development area. Early phases could be served from the substation, but later phases will need a further primary substation in the northern area. The costs would need to be shared by the development parties.

Gas

2 There is a high and medium pressure main that runs along the southern carriageway of the A12, and a low pressure (LP) main that runs along the B1408 London Road. According to an email from National Grid Gas in September 2014, the medium pressure network is expected to be able to deliver the predicted additional demand from new development, but the low pressure network will require reinforcement in places. Offset will need to be considered in accordance with development proposals.

Telecommunications

There is no information on telecommunications

Water Supply

There is no information on water supply.

Waste Water

Anglian Water has previously had discussions with a developer for 3000 houses in the area. Marks Tey falls in Copford Water Recycling Centre (SWT) catchment.

Anglian Water's high level strategy is to minimise capacity at Copford water recycling plant which serves the Marks Tey area (minutes of a meeting with Anglian Water dated 5 September 2014). This is to be managed by increasing capacity of the Colchester plant at Hythe and pumping waste water from Copford to Hythe. There appears to be no concern about capacity at Colchester with these predicted inflows, but there are capacity constraints in the sewer networks to deliver this sewage, and new infrastructure will be needed.

There are a number of small WRC's in the area, including Great Tey, Eight Ash Green, Coggeshall, Tiptree and Birch. These could all accepted limited inflows up to the end of the planning period (2032). As with West of Braintree, a better option may be build a new WRC to collect inflows from all new development, with a discharge to the River Colne. A feasibility study should be done to decide which approach is more economically viable when there is more certainty of the development trajectories. This would also influence the possible funding mechanisms – see section below on AW development plans and funding options.

Surface Water Network

3 The central southern end of the land area is low lying and may be subject to flooding without remodelling of the land to elevate the areas proposed for development. This needs further investigation.

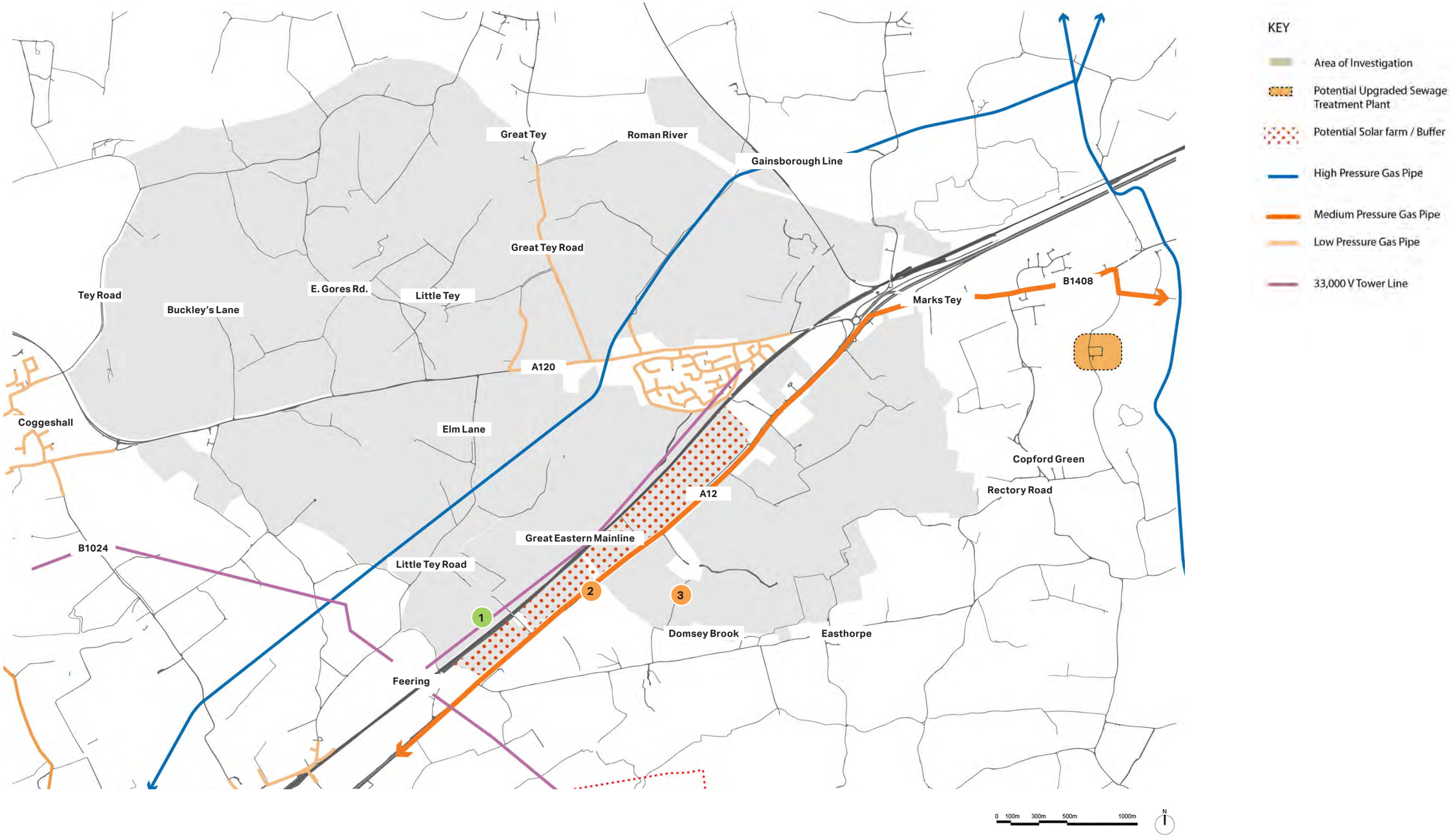


Figure 17: West of Colchester / Marks Tey Utilities Analysis

This chapter provides opportunities and constraints analysis of the West of Braintree Study Area.

05 West of Braintree

5.1 Area of Investigation

The area of investigation is located east of Braintree comprises approximately 1100 ha of agricultural land. The B1256, A120 and River Ter provide a defining southern boundary. Northern and western boundaries are currently set by field ownership and require further investigation.

Outer Boundaries

1 Southern Boundary – defined by the A120, B1256 and River Ter. The Primary route of the A120 represents a defining southern boundary with agricultural land beyond. This boundary should be respected in setting a southern most limit with no further consideration of expansion south.

2 Eastern Boundary - The Village of Rayne lies within an 800m buffer zone to the south east of the area of investigation. The northern extent of the eastern boundary is defined by Pod's Brook which is considered to set a sensible physical limit to growth. The western edge of Braintree and the Springwood Industrial Estate are approximately 2km from the eastern edge of the area of investigation and should impact upon the appropriate definition of land use mix in a new community.

3 Western Boundary- The western boundary is set by field ownership lines. Although not a clear edge further expansion would encroach on existing hamlets of Stebbing Green and Stebbing - both currently afforded a particular character from their relatively isolated nature. It is therefore not considered expansion further west should be considered.

4 Northern Boundary - The northern boundary is set by field ownership lines. Further expansion would encroach on the existing settlement of Great Saling which is afforded a particular character from its isolated nature. It is therefore not considered expansion further north should be considered.

Internal Boundaries

5 Tertiary Road Network – The study area is currently divided and accessed via a network of tertiary roads and lanes. If progressed the retention of these routes should be considered for their ability to divide development parcels whilst retaining a local character.

6 Field Pattern - At present much of the land has an irregular filed pattern with medium to large arable fields common throughout. Hedgerows and related drainage ditches as a result are fragmented. The opportunity should be taken by the Garden Community to retain as much of the existing hedgerow as possible, using its existence as a key structuring principle of the Garden Community.

7 Ancient Woodland - Existing Ancient woodland would require retention and be incorporated appropriately into future development. This should be treated as a positive asset.

8 Mineral Extraction Site - The site to the west of Rayne is permitted for 14 years of mineral extraction. This would require a noise and environmental buffer zone from built development - distance to be determined. Long term there is potential for restored landscape/wetland/parkland.

9 Settlements - Within the site the number of existing residential properties is limited, and those that exist are understood to be in favourable ownership with respect to the sites development. Because of the important access role that the B1256 will need to perform, impact on the amenity of residents in and around Blake End will be more significant, and difficult to mitigate. It is considered that it is most likely that Blake End would be integrated into the new settlement.

10 The village of Great Saling and its residents, though outside of the settlement boundary to the north, would experience impact to their amenity and change to their landscape setting. However, space exists to maintain a substantial green buffer separation between the village and any development, which would help to limit impact on rural character. Similarly it should be possible to achieve sufficient separation between the development and Rayne.

11 Pods Lane - alignment and character afforded protection through the Local Plan which creates a fixed internal boundary.

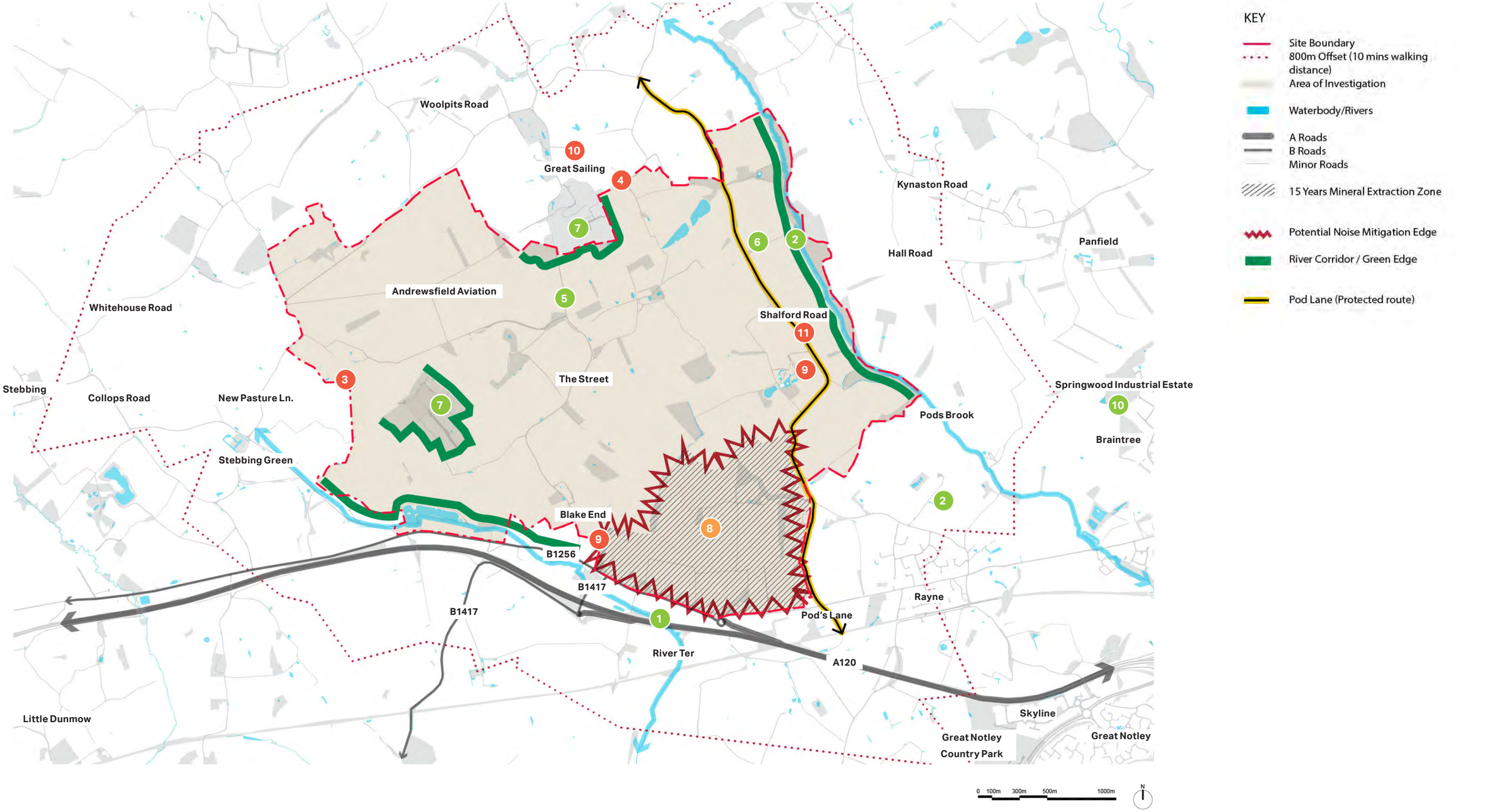


Figure 18: West of Braintree Edges and Boundaries Analysis

5.2 Connectivity and Accessibility

The site is currently connected to the national highway network with direct connection to the A120 trunk road.

The location of the site bounded by the A120 to the south, offers direct east-west connectivity with the M11 and Stansted and the A12. Current congestion issues on the A120 mean connectivity along this route to the east is likely to be constrained now and in the future without the proposed A120 improvement scheme.

The site offers limited synergy with the established settlement and the local employment and commercial centres i.e. Skyline 120. The distances also limit the case for active modes of transport. The rail stations at Braintree and Braintree Freeport provide access to the rail network, the stations however, are located on the branch (Flitch) line connected with the GEML, providing a limited service frequency and therefore wider connectivity.

Development of a non-car-dependant scheme will be a challenge, without major bus and rail infrastructure links. Pedestrian and cycle links are likely to need to be focused on movements within the site and to local employment centre, connections to existing settlement of Braintree are likely to be leisure based rather than commuting.

Active Modes (Walking & Cycling)

1. The distance between the urban settlement of Braintree (approximately 5km) means accessibility by active modes is limited.
2. The A120 is a barrier to north-south connectivity, however measures are already in place to bridge these connectivity issues.
3. Flitch Way bridleway runs in an east-west direction providing a connection between Braintree Rail station and Dunmow. The route crosses the A120 on an elevated footbridge close to the southeast boundary of the site. However, without improvements this route would offer an option for leisure based trips at best.
4. NCN16 connects Flitch Way via an over bridge across the A120. Through future connections between the site, Flitch Way and Skyline 120, both routes could offer pedestrian / cycle routes with existing employment to the south of the site albeit over long distances.
5. A further elevated foot and cycle bridge crosses the A120 connecting Fentons Road with the roundabout with Dunmow Road.
6. The lack of pedestrian and cycling infrastructure (cycle ways and Green ways) through the site itself will need to be addressed along with appropriate connections with existing infrastructure to the south.

Rail

7. Braintree rail station lies to the east of the site located approximately 5km from the centre of the site, providing access to the Braintree branch line between Braintree and Witham (the interchange with the GEML). Given the location of the station in relation to the site, it will be a challenge to access to this interchange without a car.
8. Parking at Braintree rail station is limited (approximately 160 spaces), whilst at Braintree Freeport, shopping parking is limited to a duration of 6 hrs which currently limits its use for commuters.
9. The route currently offers a limited service frequency of 1tph in either direction. Whilst improvements to this line are anticipated, the service frequencies are only anticipated to rise to 2tph by 2043 through the provision of a loop mid-way towards Witham. Improving capacity on the line further is difficult due to the single-track alignment.
10. An extension of this rail line or similar (BRT/Tram-train) between Braintree rail station and the site would potentially address both accessibility within the site, between Braintree town centre and Witham/London. However the re-use of Flitch Way or an alignment alongside it would be difficult from both an Engineering point of view and politically.

Bus

11. A limited existing bus network exists in close proximity to the site, currently setting down south of the site on the B1256 and provides a low service frequency between Chelmsford.
12. A greater volume of buses currently serve Braintree town centre, however due to their current route pattern and the distance between the site and the town, accessibility by bus is poor.
13. Bus routes towards Stansted Airport in the form of potentially a BRT along the A120 should be explored to facilitate westbound movements, potentially integrating the settlements of Dunmow.

Road

14. It will be important to consider the right mix of uses on site to promote sustainable and short journey trips within the site itself and limit a dependency on movements between the existing Braintree urban area, which would lead to increased car trips both in terms of length and volume on the strategic highway network.
15. Opportunity for vehicular access via existing local and strategic road network in the form of the A120, A131 and the B1256 – providing connectivity west toward Braintree, south toward Chelmsford and east toward Stansted.
16. The lack of existing road infrastructure to the north of the site results in dependency on access form the south, putting pressure on A120, its junctions and the town centre route via the B1256.
17. With the exception of Galleys Corner, there are no identified congestion hotspots in close proximity to the site. However, given the level of development anticipated in the area, which based on Jacobs Local Plan modelling includes development on the West of Colchester site, it is forecasted that numerous junctions in and around Braintree will be overcapacity by 2032, impacting the quality and journey time in the area. This modelling is based on no improvements to the A120 between Braintree and Marks Tey.
18. The mix of local development traffic with strategic traffic on the A120 and their very different roles they play is an issue that will need to be addressed.
19. Whilst there is likely to be a requirement for infrastructure improvements to enable development on site, a new road link may also need to be considered from the north and west to reduce reliance on access via the south and the A120, however public transport and active transport should be considered first and this should only be considered as a last resort due to the perceived impact.
20. The impact and constraints at both ends of the A120 (M11 J8) and A120/A12 (junction 25) may need to be assessed and potentially addressed.
21. Pods Lane - alignment and character afforded protection through the Local Plan with potential for use as greenway (cycling / walking focus).

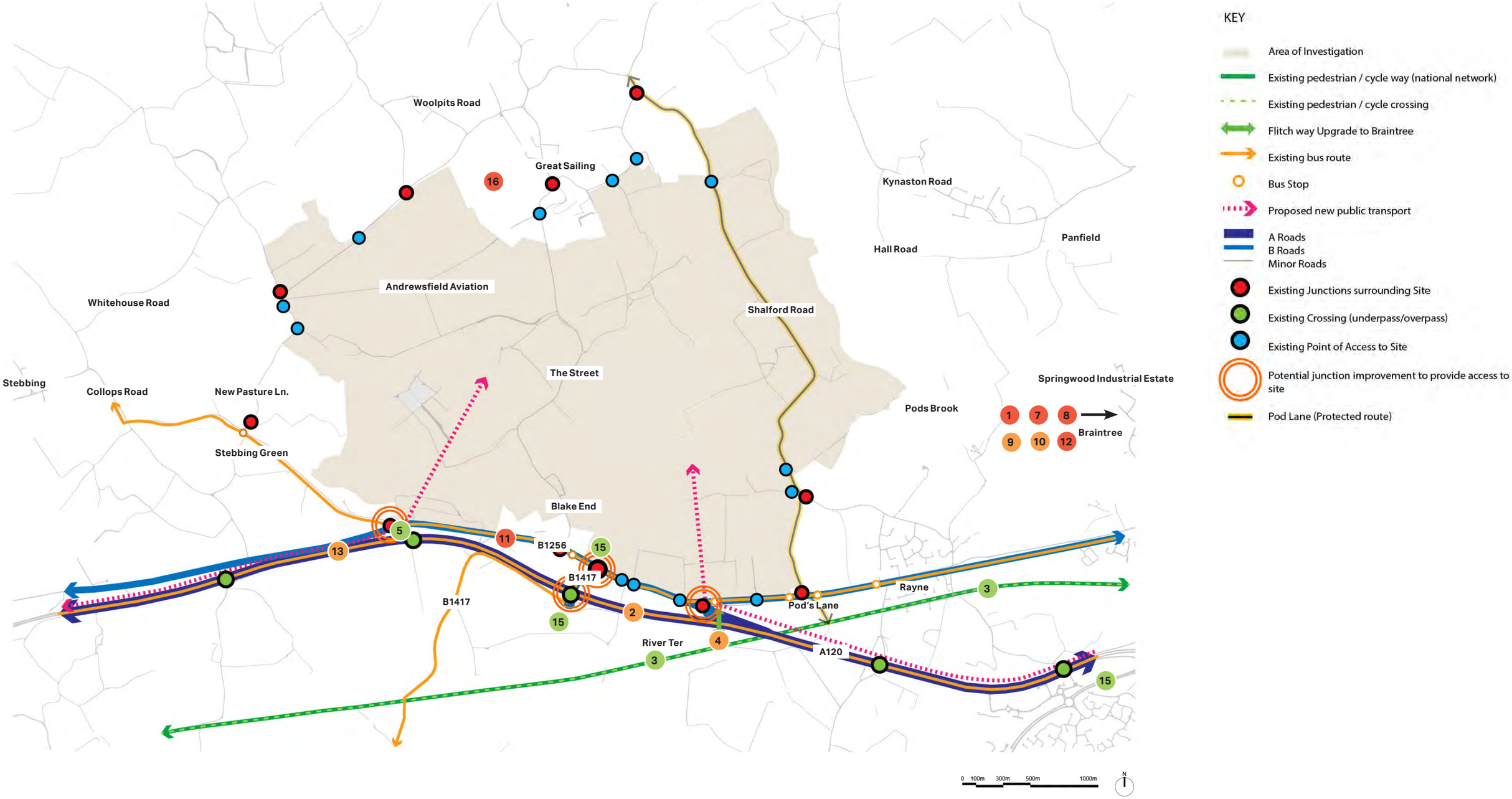


Figure 19: West of Braintree Connectivity and Accessibility Analysis

5.3 Landscape and environment

At present much of the land has an irregular field pattern with medium to large arable fields common throughout. Hedgerows and related drainage ditches as a result are fragmented. The opportunity should be taken to use existing landscape and key assets such as Boxted wood, Golden Grove and Pods Brook to structure the Garden community and establish an integrated green infrastructure network.

Landscape Character, Sensitivity and Condition

1 Development will result in the loss of Grade 2 Agricultural Land, which Natural England classify as 'Very Good' and is considered to be the best and most versatile farmland in England. Land in the area of Andrew's Airfield is slightly poorer quality, but development in this location by itself would be inappropriate for a number of reasons, including transport. Development of this site will need to demonstrate the overriding housing need and other place-making advantages, together with confirming no alternative land is available, including brownfield, which has less agricultural value.

2 The open farmland plateaux with gently sloping topography to the south mean that there are long distance views into the site from the surrounding rural areas. There are a number of sensitive receptors associated with the surrounding settlement and large scale development of the site would impact on the rural character of the small settlements surrounding the site. The area around Great Saling Hall which has been classified as a Conservation Area and includes the historic parks and gardens designations associated with the Hall's grounds and the Church cemetery are particularly sensitive.

3 The Pods Brook valley provides a natural edge to the potential development. Enhancement and active management of the vegetation in and around the Brook and reinstating the natural route of the water course could help establish a green corridor that both the ecological and water quality whilst providing flood protection and recreation opportunities.

Ecological Designations

4 There are a number of important areas of deciduous woodland, which is a priority habitat, scattered across the site. Of particular importance are the significant areas of ancient woodland, including the 19ha Boxted Wood and at Golden Grove and Rumley Wood. These area support potentially sensitive ecology which would be impacted upon by new development.

5 With the majority of the land in productive agricultural use; intensively farmed for arable crops, field size typically medium to large, and the majority of the water courses classified by the Environment Agency as ecologically poor, overall the site is unlikely to have high levels of existing biodiversity.

6 There is an area of good quality semi-improved grassland and priority mixed habitat around Stebbing Green.

7 Active management of existing woodland assets and creation of new areas of planting could create an attractive green network to enhance ecology, manage storm water and provide an attractive environment for the future settlement.

Parks, Recreation and Historic Environment

8 The historic airfield could help to provide structure to the new settlement.

Water Cycle

9 Both the Pods Brook and River Ter are already failing to meet the Water Framework Directive target of good ecological status and is considered to be at risk of further deterioration in water quality. Defuse urban pollution from surface run off associated with future development would exacerbate this risk.

10 The underlying London Clay and clay soils that can impede the rate of infiltration may limit the use of infiltration SuDS. This is coupled with the area siting within Drinking Water Safeguarding Zone and surface and groundwater nitrate vulnerability zones.

11 The networks of drainage ditches provide the framework for a sustainable drainage network. The underlying geology and soil structure favour attenuation SuDS that could be used to create attractive ponds on site that could be both and ecological resource or used to store water for reuse on site.

12 The green infrastructure network could be used to provide the necessary improvements to run-off water quality before discharge. This would reduce the need for new surface water sewer infrastructure and pressure on the existing waste water networks. Alternative non-potable water supplies are likely to be increasingly important in this water scares area.

Minerals

13 The site is located in a Minerals Safeguarding Area for sand and gravel and the economic viability of prior extraction of minerals must be assessed. Should the viability of extraction be proven, there is an opportunity for the mineral to be worked in accordance with a scheme / masterplan as part of the phased delivery of the non-mineral development.

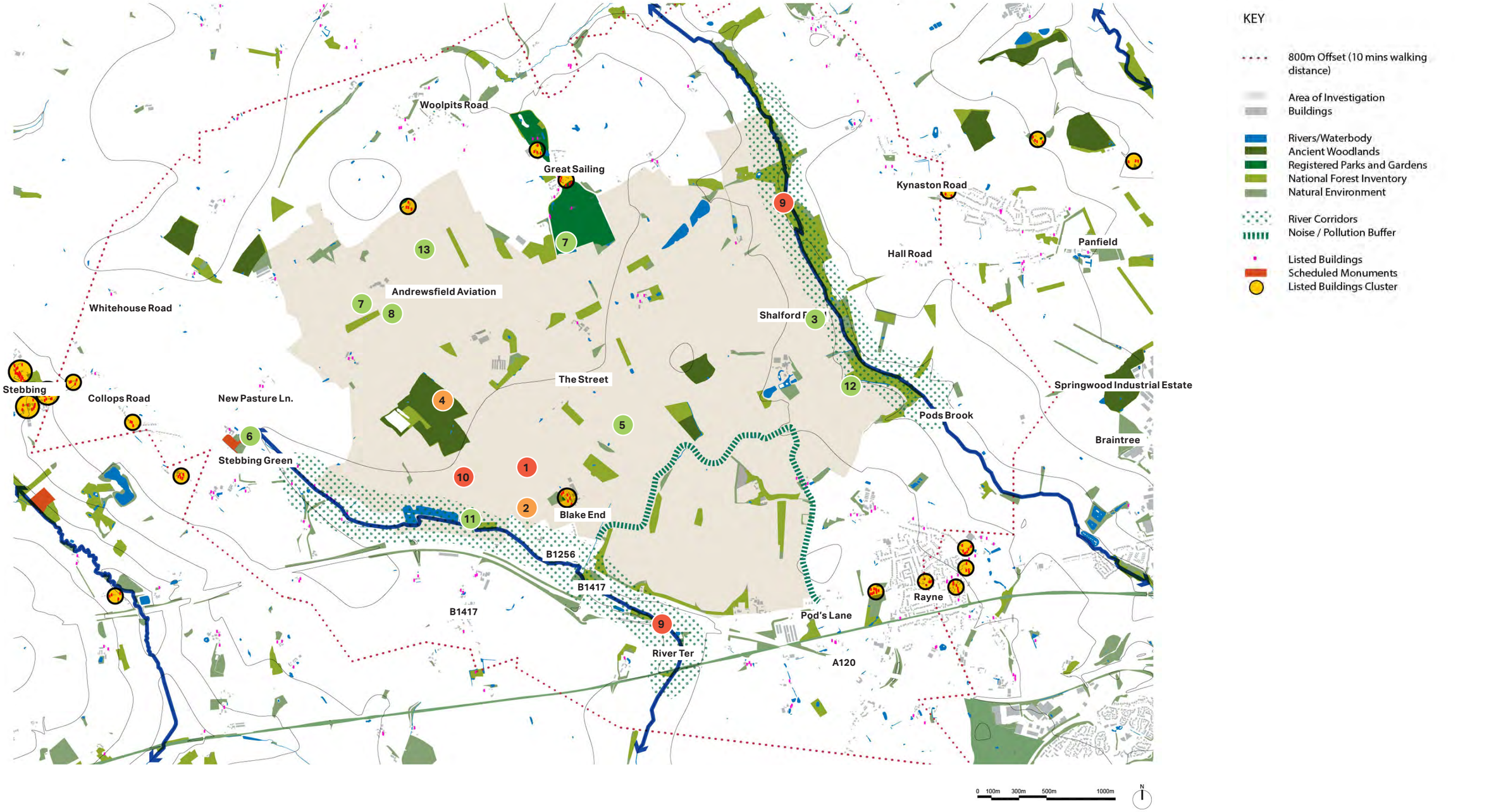


Figure 20: West of Braintree Landscape Sensitivity and Green Infrastructure Analysis

5.4 Economy and Employment

The study area is located in close proximity to existing economic attractors including Braintree (5km) Stansted and the M11 London-Stansted-Cambridge growth corridor.

Residential

1 This site is well placed for residential uses which serve the major economic drivers in the region (towards the M11 Cambridge corridor). There is also relatively strong commercial occupation in the area already which will support residential development.

2 Opportunity to allocate a significant single site to meet much of the areas residential need as opposed to a larger number of smaller sites.

3 The residential market in Braintree is to some extent limited by the poor rail connections and availability of public transport.

Retail

4 The site is located approximately 4km west of Braintree Town Centre and 6km west of Braintree Freeport. A development on the scale of the Garden Community could have the potential, if not appropriately planned and managed, to develop as a competitor location, especially with respect to Braintree Town Centre, further impacting on its resilience. It will be important for the Garden Community to therefore develop an economic strategy that compliments Braintree Town Centre and Braintree Freeport, but which avoids the Garden Community itself becoming a dormitory residential suburb. This will be a challenge; key requirements will likely be: provision of mixed retail, with a particular focus on convenience and associated A2/A3 uses incremental to housing growth, limited comparison retail, sustainable transport connectivity with Braintree Town Centre and Braintree Freeport, no large single town centre, a focus on B1 and SME employment space, and the identification of other niche uses that help create vibrancy and a sense of community.

5 In terms of retail, there is no evidence to suggest an outstanding need for major retail expansion of comparison or convenience around Braintree. Having said that the new provision of a large amount of residential will require a baseline level of retail in the form of small convenience retail in addition to associated A2 and A3.

Employment

6 This location is considered to have good potential access to local jobs, for example Braintree, Braintree Freeport, Witham, Chelmsford and Stansted Airport. These locations would be within easy commuting distance of the new Garden Community, but the challenge will be to ensure that they can be reached using modes of travel other than the car.

7 Although employment within the Garden Community is likely to be focussed towards smaller incubator and start up units that benefit from the proximity to major economic hubs but not necessarily able to base themselves within such centres, the connectivity provided by the A120 duel carriageway should be used to attract businesses, creating new localised employment opportunities. Direct access to the duelled A120 means that logistics and distribution businesses could contribute to the employment opportunity of the Garden Community. These should be sited where their large bulk and form can be used positively in the development to buffer noise from the A120 corridor. And whilst they will create external road based transport movement, as employment destinations they should be sustainably connected with the wider Garden Community

8 Some evidence suggests Chelmsford's office market could be threatened if new office provision is delivered in Braintree although this is difficult to measure.

9 Witham, 8 miles to the South East of Braintree has recently been identified as a suitable location for an enterprise Centre by Essex County Council. Although a smaller settlement, Witham has enhanced train links (4 trains to London / hour) compared to Braintree which has no direct London route. Witham is also on A12 road which links to Chelmsford and onto London giving added advantage. However, given the depth of the market for SMEs and Office space this is not considered a major threat.

11 Linking any new B1 to the existing 120 skyline Centre would build off the growing demand from this business park and accommodate new occupiers as well as diversifying the office stock by possibly delivering more flexible office space. Critically the commercial can 'piggyback' off the established presence of the park in the local sub market as well as benefit from the access to the A120 .

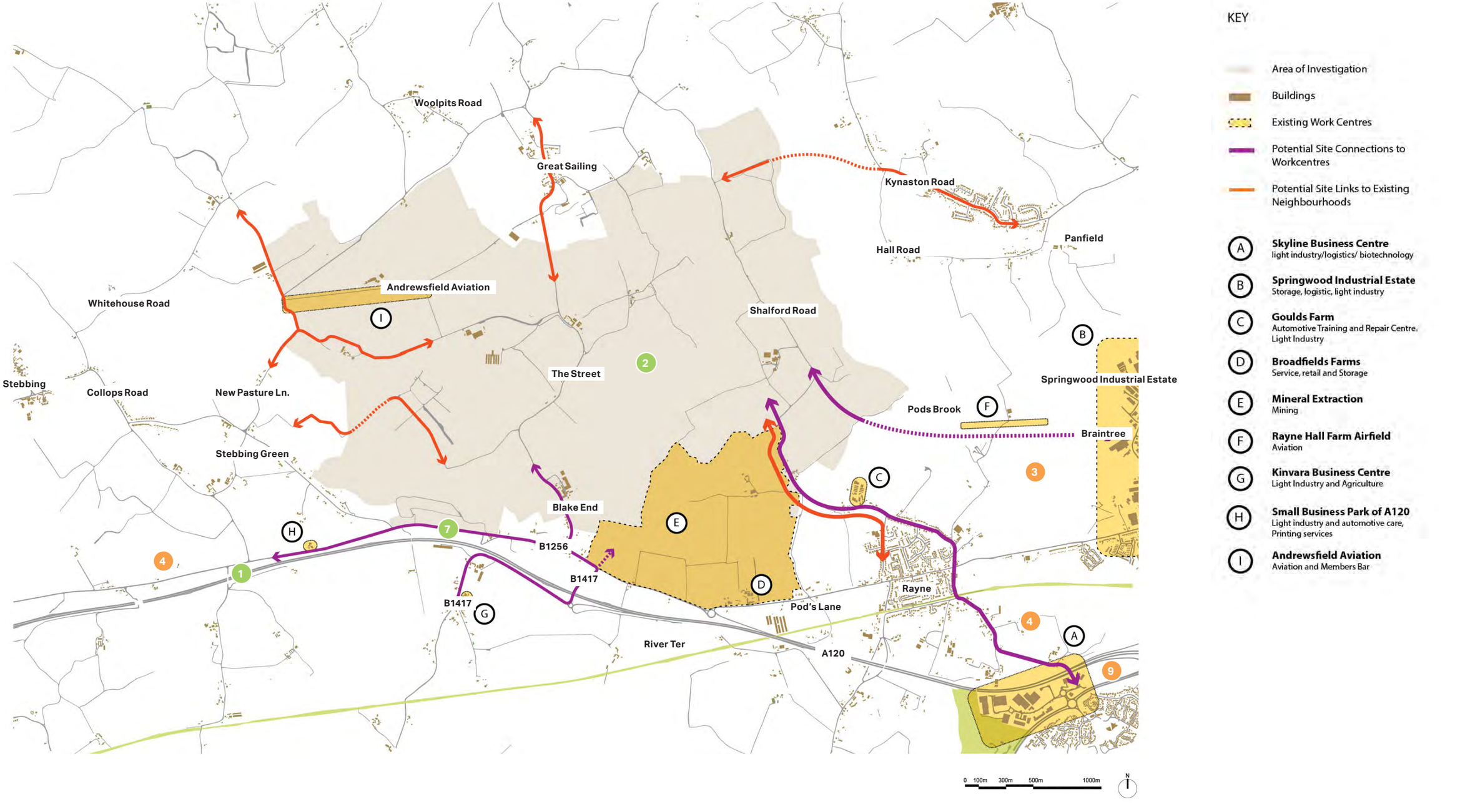


Figure 21: West of Braintree Economy and Employment Analysis

5.5 Utilities

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UKPN advised that they expect a capacity demand somewhere between 5MW and 10 MW would trigger the need for a new primary substation.

All the networks west of Braintree are 11kV rural supplies, mainly overhead lines. These would have limited capacity to supply new development and overhead lines are inherently less reliable than underground cables, as they are more susceptible to storm damage. The nearest primary substation is east on Braintree. Supplying areas west of Braintree will require long underground 11kV cable routes. These routes would have to go through Braintree, causing significant disruption.

Therefore a new primary substation would have to be established early in the development phase. It is expected that there will be high costs for the 33kV infrastructure to supply the new primary substation, as well as the costs of the substation itself. These costs would need to be shared by the development parties.

Gas

1 The general advice from National Grid, as for the other areas, is that there is capacity in the medium pressure network in the region, but local low pressure upgrades will be required.

Telecommunications

There is no information on telecommunications

Water Supply

A water cycle study was done by Hyder in 2006. This looked at the options for development around existing towns and villages, and concluded that there were no particular concerns. AECOM subsequently undertook a meeting with Anglian Water on the 26th May - this confirmed that water supply should be possible to the development subject to upgraded and new infrastructure. It is not clear what level of development was considered at the time, but it is unlikely that it would be comparable as the current proposals. In any event, 2006 is too far out of date to be relied on, and further discussions are required with Anglian Water.

Waste Water

The water recycling centre (WRC) at Bocking would be able to accept waste water for development capacities up to 2032, but thereafter a new recycling plant will be required. The plant is a long way (approximate 6 kms) from the proposed development area and infrastructure and pumping costs would be high. A better alternative would be to establish a new plant near the development. Water courses in and around the development area are too small to accept TSE discharges that would meet the Environment Agency (EA) requirements, so the TSE from the new plant would still have to be pumped to Bocking, but pumping costs would be much lower.

Surface Water Network

There is no information regarding the existing network capacity.

Figure 22: West of Braintree Utilities Analysis

About AECOM
AECOM is at the forefront of urban planning practice and thought leadership within the UK and across the world. AECOM is one of the top employers of chartered town planners in the UK and overseas. Our design, planning + economics team benefit from working in a multi-discipline environment for the world's leading professional and technical services firm.

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Follow us on Twitter: @aecom

Contact
Tom Venables
Director
T 020 3009 2163
E Tom.Venables@aecom.com

Jason Stratton
Associate Director
T 020 3009 2286
E Jason.Stratton@aecom.com

aecom.com