

# Lower Thames Crossing Impact Report

LONDON BOROUGH OF HAVERING

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# 1 Executive Summary

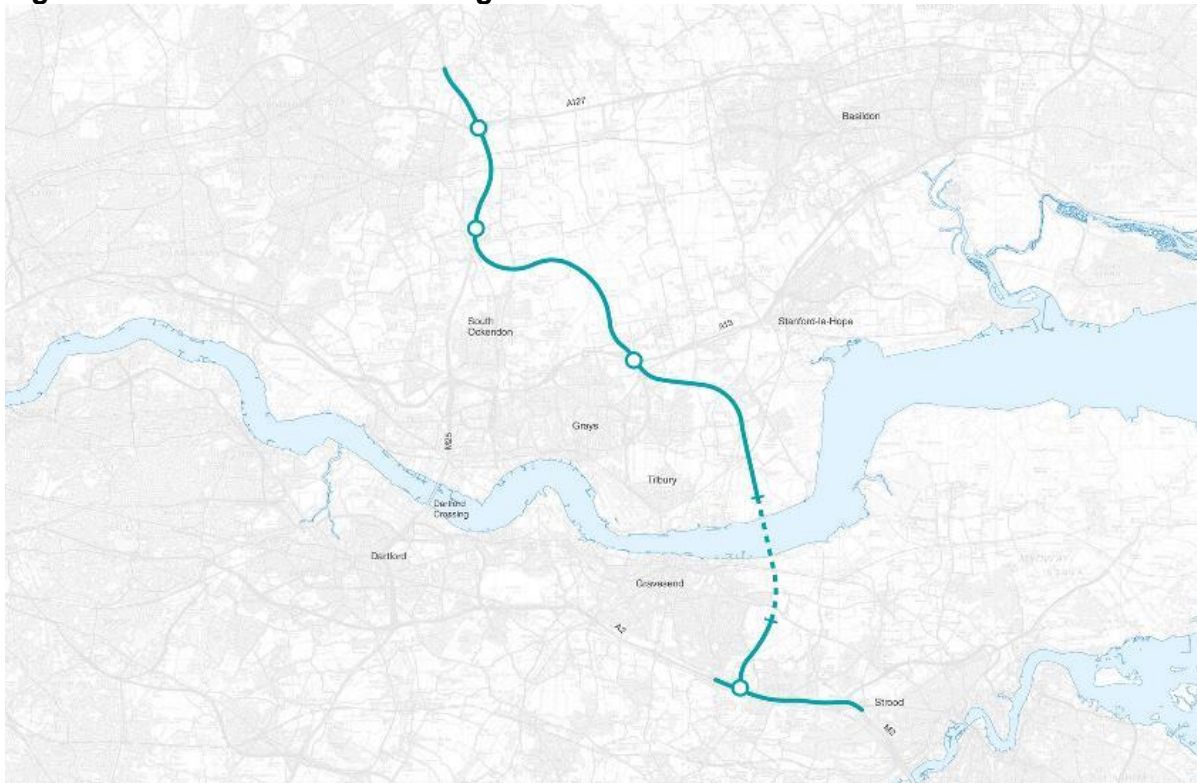
## 1.1 Introduction

- 1.1.1 This document forms the London Borough of Havering's Local Impact Report (LIR) and sets out the perceived positive, neutral and negative impacts of the scheme on the borough. It comments on the local policy compliance of the scheme and identifies issues that the scheme will create in the borough. Comments have also been made on mitigation measures the London Borough of Havering (LB Havering) considers would be appropriate to minimise the impact the scheme will have on the borough. The Council has also put forward a series of planning obligations it feels are necessary in order to mitigate scheme impacts.
- 1.1.2 At the time of writing this report, not all information has been made available by the applicant. LB Havering is dealing with documentation that was submitted to the Planning Inspectorate (PINS) in October 2022. LB Havering has requested for DCO documentation to be updated to reflect discussions that have taken place between LB Havering and the Applicant during the Pre-Examination period. Despite indications by the Applicant that they were prepared to submit updated material, this has not occurred. Once this information does become available, LB Havering intends to inform the ExA of its views in the form of written representations through the Examination timetable.
- 1.1.3 LB Havering has prepared this Local Impact Report (LIR) to the best of its ability with the material that has been made available by the Applicant. Should further material be submitted during the Examination, Havering would wish to provide additional comments to the ExA on matters reflected in this LIR.

## 2 Scheme Background and Council Position

- 2.1.1 National Highways (NH) are proposing a scheme to deliver a new river crossing east of the existing Queen Elizabeth Bridge. The scheme is being promoted by NH and aims to increase capacity over the River Thames.
- 2.1.2 The scheme, known as the Lower Thames Crossing (LTC), will provide a new connection between the A2/M2 in Kent via a twin bored tunnel underneath the Thames to the A13. A new three-lane northbound and two-lane southbound road will then connect through to the M25 between junctions 29 and 30 within Havering.

**Figure 1 – Lower Thames Crossing Route**



**Source: National Highways**

- 2.1.3 The scheme is classified as a Nationally Significant Infrastructure Project (“NSIP”) under Part 5 of the Planning Act 2008, as amended by the Localism Act 2011. NSIPs range from power plants, airport extensions and major road projects which have their own specific planning processes to determine their acceptability.
- 2.1.4 To obtain planning permission, the scheme promoter (or Applicant) is required to progress the scheme through a Development Consent Order (DCO) process. A DCO is a planning ‘tool’ that can provide the several different consents needed to implement a major infrastructure scheme including planning permission, listed building consent, conservation area consent and compulsory purchase orders.
- 2.1.5 NH submitted the application to the Planning Inspectorate (PINS) on 23<sup>rd</sup> October 2022. It was accepted for Examination by PINS on 25th November 2022.

## 2.2 Delivery Timescales

- 2.2.1 The Secretary of State for Transport announced earlier in 2023 that the construction of LTC, should consent for the project be granted, would be re-phased for two years. LB Havering understands that the re-phasing of the construction essentially results in construction of the project being put back by two years. Once construction commences a six year build programme is expected, with the crossing not expected to be operational until the early 2030’s.

## 2.3 London Borough of Havering Scheme Position

- 2.3.1 The Council is supportive of this scheme in principle. The Council acknowledges that additional capacity is needed over and above the existing Dartford Crossing in order to support future forecast traffic demand on this important part of the strategic road network.

- 2.3.2 The principle of an additional crossing is also supported from a resilience perspective as the existing crossing has to be closed in very high wind, which has knock on impacts for Havering’s own road network, in particular roads such as the A1306.
- 2.3.3 Whilst being supportive in principle, the Council continues to have concerns about the scheme, most notably the fact that Havering residents will not benefit from the Local Resident Discount Scheme (LRDS) that is being proposed for residents of Thurrock and Gravesham. Further details on this can be found in the LRDS section of this LIR and in Havering’s Written Representation.
- 2.3.4 The Council remains concerned about the construction impact the scheme will have on Havering and, in particular, residents within Upminster and Cranham wards who will be most impacted by the scheme. The Council continues to lobby for suitable mitigation measures that will offset construction and operational impacts.

### 3 Havering as a Borough – Borough Context

#### 3.1 Borough Context

- 3.1.1 Havering is located on the north-eastern boundary of Greater London and is the third largest London Borough (43 square miles). Most of Havering is within the M25 with part of the east of the borough outside the M25 (Figure 2).
- 3.1.2 Havering is bordered to the north and east by the Essex countryside, to the south by a three-mile River Thames frontage, and to the west by the neighbouring London boroughs of Redbridge and Barking & Dagenham.

**Figure 2- London Borough of Havering and Greater London**

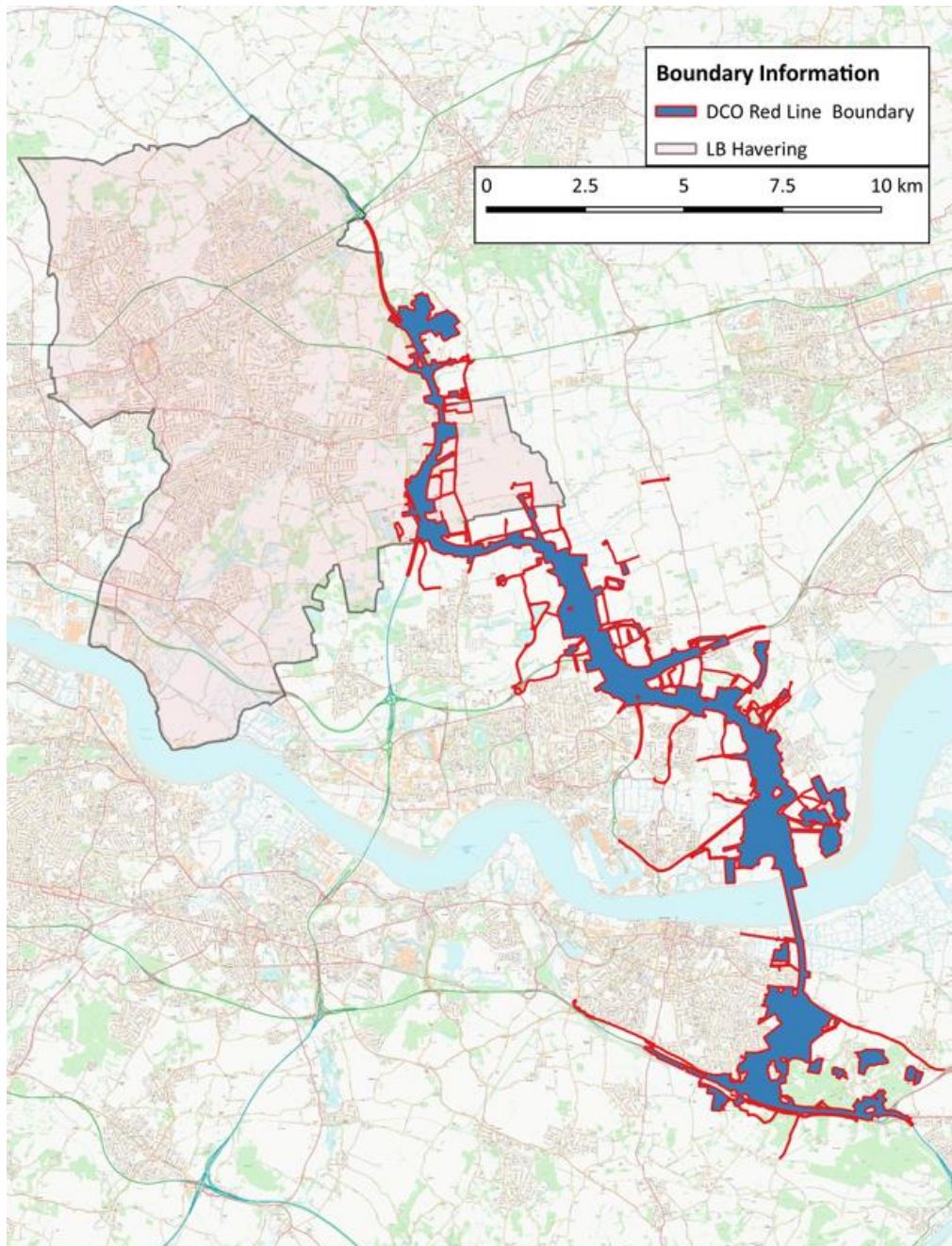


**Source: Approved Local Implementation Plan 2019**

- 3.1.3 Figure 3 below shows the proposed scheme in the context of Havering. As the maps shows, the new junction on the M25 between junctions 29 and 30 will be located in

Havering, in the ward of Upminster. In addition, a main construction compound, a satellite compound and a utility hub will be located in the borough.

**Figure 3 - Local Context Map**



**Source: London Borough of Havering/National Highways**

## 3.2 Havering Administrative Boundaries

3.2.1 Havering has 20 electoral wards (Figure 4). The two wards primarily impacted by the proposed LTC are Cranham and Upminster Wards, however the Topic Specific Issues Chapter of this LIR will explain how the impact of the proposed scheme both during construction and operation will have wider implications, including for other parts of the borough.

**Figure 4 - Ward map**

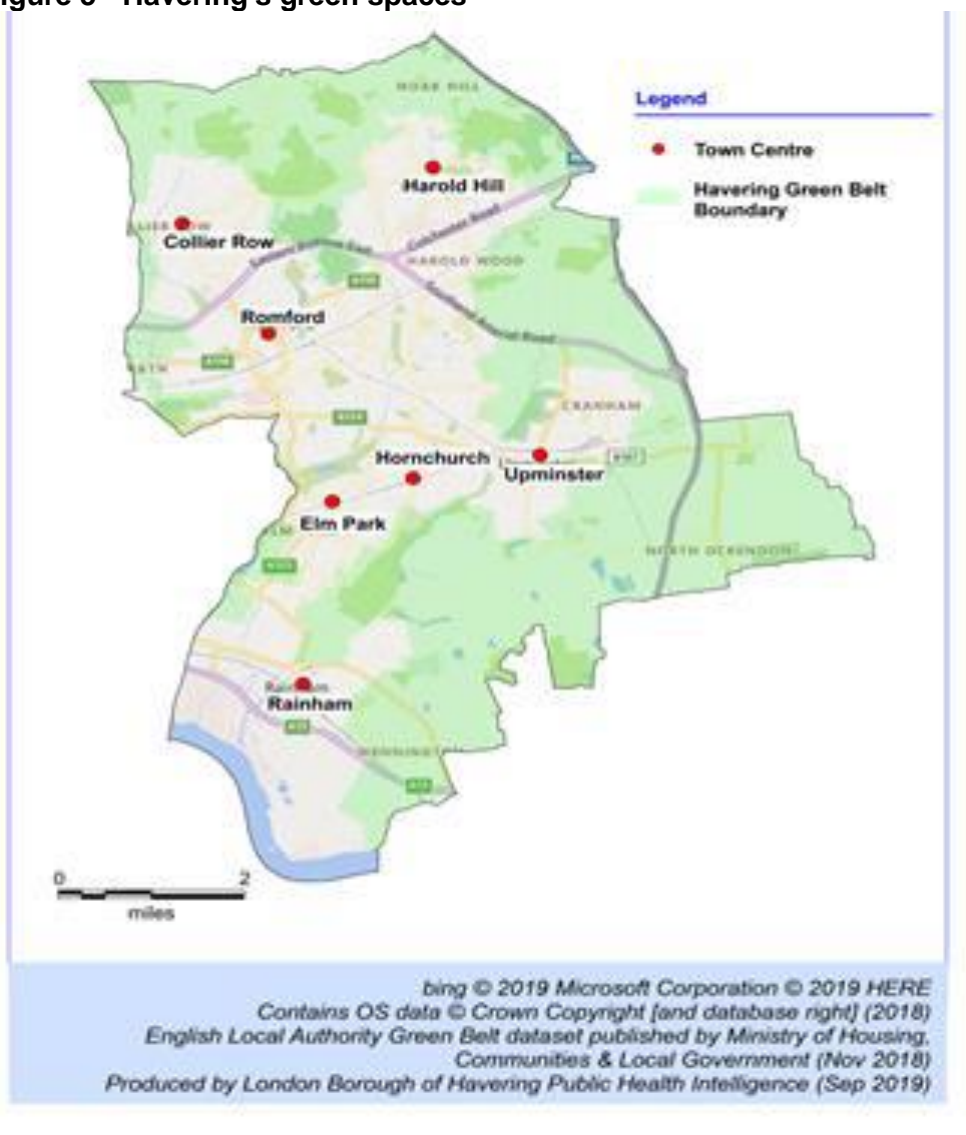


**Source – Joint Strategic Needs Assessment**

## 3.3 Havering Green Belt

3.3.1 Havering is one of London's greenest boroughs with extensive open spaces and more than half of the borough designated as Metropolitan Green Belt, as can be seen in Figure 5. Havering's Local Plan sets out a policy to optimise the use of brownfield land with suitable brownfield sites being developed first meeting the demand for new homes and business growth, and to provide continued protection for Havering's Green Belt and its most valuable open spaces and its ecological assets.

Figure 5 - Havering's green spaces



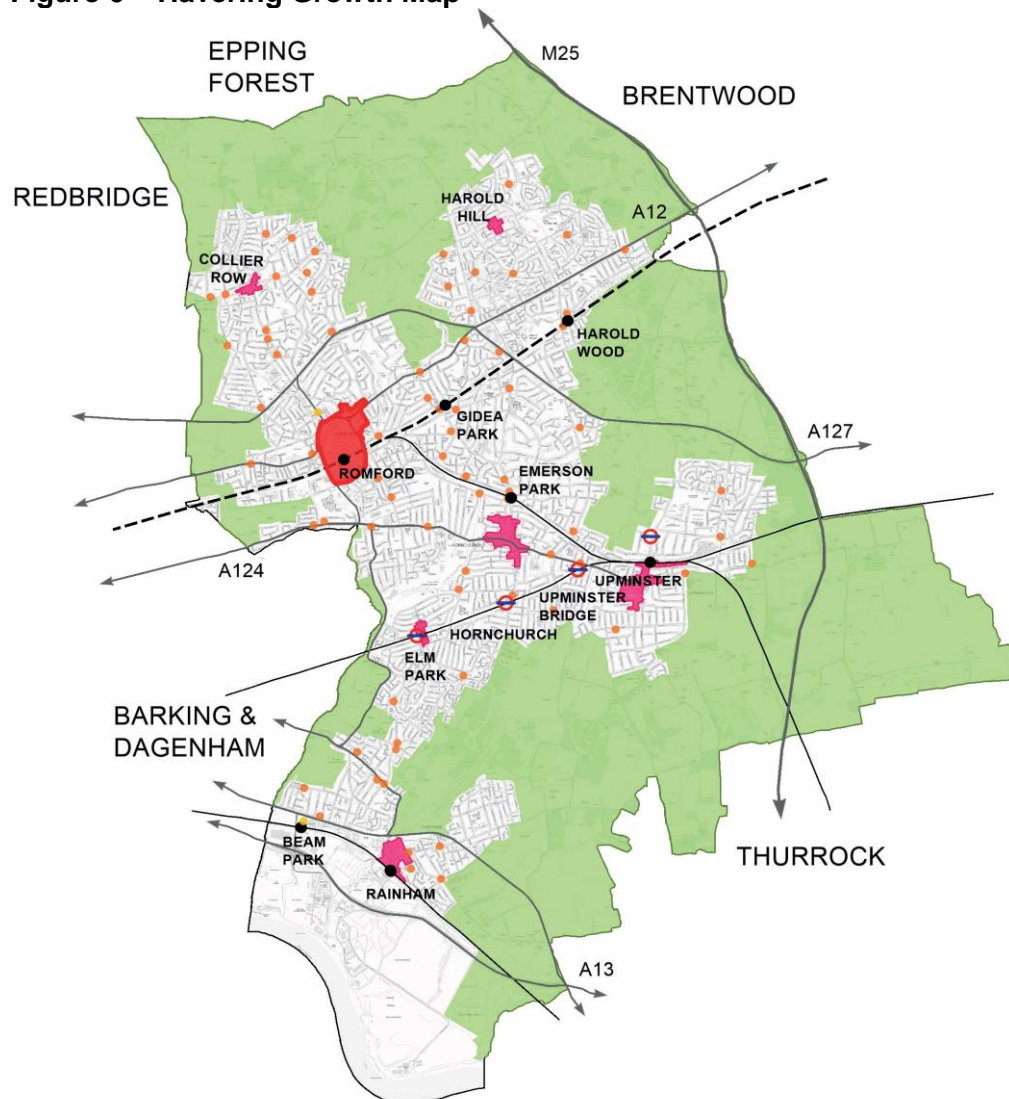
Source: Joint Strategic Needs Assessment

### 3.4 Havering Growth

3.4.1 Romford is Havering's principal town and is identified as a Metropolitan Centre in the London Plan (Figure 6). Romford is identified as an Opportunity Area in the London Plan (2021).



**Figure 6 – Havering Growth Map**



**Source: Joint Needs Strategic Needs Assessment**

- 3.4.2 The Local Plan identifies Romford, Rainham and Beam Park as the key areas for growth over the period of the Plan (2016-2031). The Local Plan recognizes this through the designation of two Strategic Development Areas (SDA).
- 3.4.3 The Romford SDA will accommodate a significant level of housing and economic growth alongside new and enhanced supporting infrastructure. Over the Local Plan period, the Council will support the delivery of 6,000 new high-quality homes in well managed residential and mixed-use schemes that provide attractive places to live and which are well integrated with the existing community.
- 3.4.4 Parts of the south of Havering are included within the London Riverside Opportunity Area (OA) and will be an area of increasing development and population change over the next two decades. OAs are London’s major source of brownfield land which have significant capacity for development – such as housing or commercial use - and existing or potentially improved public transport access.
- 3.4.5 The London Riverside Opportunity Area Planning Framework (OAPF) (2015) identifies that the area has the capacity to provide 26,500 new homes and 16,000 new jobs across Havering and Barking and Dagenham. In Havering the focus will be

on the intensification of industrial land in the Rainham Employment Area and the creation of new residential communities at Rainham and Beam Park. Rainham and Beam Park were granted Housing Zone status by the Mayor of London in 2015 and sites are already being extensively developed.

- 3.4.6 The south of the borough also includes the Rainham, Wennington and Aveley Marshes which are the largest remaining expanse of wetland bordering the upper reaches of the Thames Estuary and a Site of Special Scientific Interest (SSSI) with a rich mix of wildlife habitats and species. Beyond the south of the borough is the River Thames.
- 3.4.7 Much of Havering's built up area is suburban housing and includes neighbourhoods with their own distinctive characteristics. These contribute to Havering being a popular and attractive place to live.
- 3.4.8 The borough contains a wealth of designated heritage assets, including 140 listed buildings, 3 Scheduled Monuments, and 11 Conservation Areas that are afforded statutory protection.
- 3.4.9 Havering's countryside provides many informal recreation and leisure opportunities such as walking, cycling, horse riding and bird watching. Havering has an extensive green infrastructure network comprising of many natural and semi-natural spaces, parks and gardens, woodland, rivers and their corridors.

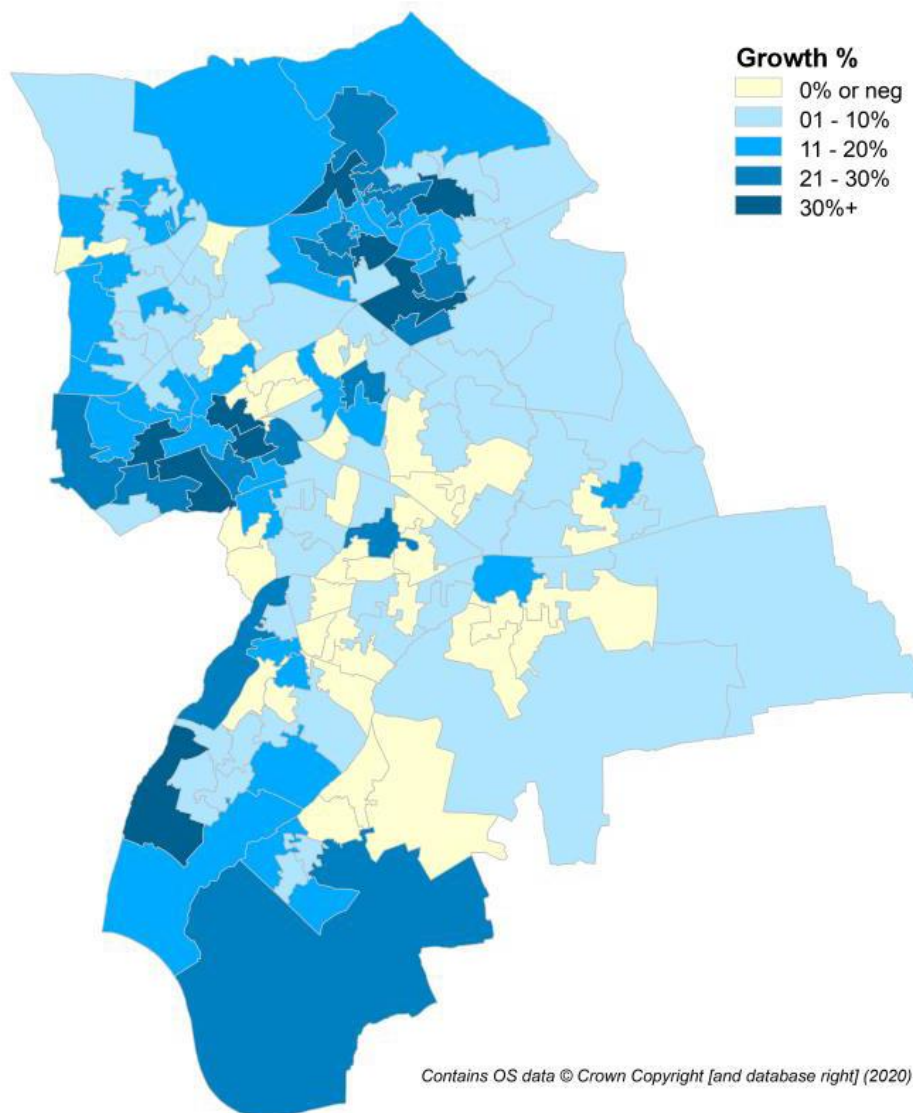
### 3.5 Local Development

- 3.5.1 It is important to recognise that Havering continues to deliver growth and development across the borough working towards its housing and development targets as set out in its Local Plan. Development in Havering will continue post and Consent received for Lower Thames Crossing.
- 3.5.2 The Council is currently exploring the potential for delivery of a 390,000 square metre datacentre to the east of North Ockendon. The centre is proposed to deliver a low carbon data facility, a centre for research and development in low carbon industry, food production and green energy solutions. A Combined Screening and Scoping Request Report has been prepared and further information can be found on the Havering Planning Portal (reference Z002.23).
- 3.5.3 Whilst there is a slight incursion into the red line boundary, NH are aware of the project and currently do not believe it will have any material effect on their proposals.
- 3.5.4 Further residential developments in east Havering are expected to come on line between now and any approved Lower Thames Crossing being built which will put added pressures on the highway network. This gives added importance to ensuring that the impacts of Lower Thames Crossing, both during construction and operation are appropriately monitored and mitigated.

### 3.6 People in Havering

- 3.6.1 The resident population of Havering in 2020 was estimated to be 261,000. The population in Havering is estimated to have increased by 24,000 (10%) in the ten years from 2010. Figure 7 below shows population growth in Havering between 2010 and 2020.

**Figure 7 - Population Growth in Havering by LSOA 2010-2020**



**Source: Joint Strategic Needs Assessment**

- 3.6.2 Further significant population growth is likely with the population of Havering projected to grow by another 15k (5.6%) from 266,000 in 2022 to 281,000 in the ten years to 2031.
- 3.6.3 As has occurred in the recent past, the rate of population growth in the future will vary from area to area. Given housing targets in the London Plan, the greatest growth is likely to be in Rainham and Romford.
- 3.6.4 As well as growing, the age profile of the Havering population is also projected to change with proportionally greater growth amongst older age groups. For example, the number of people aged 85 and above living in Havering is expected to increase by 2,400 (32%) from 7,500 in 2020 to 9,900 by 2030.
- 3.6.5 The populations in the Romford Town, Brooklands and South Hornchurch wards are expected to increase the most over the next 15 years reflecting residential development planned in the Romford and Rainham areas over the borough over that time period.

### 3.7 Homes in Havering

- 3.7.1 The London Plan (2021) set a minimum housing target for Havering of 12,850 new homes to be delivered over a ten-year period which equates to a minimum annual target of 1,285 units. Havering's Local Plan envisages almost 12,000 new homes delivered in the first ten years of the Local Plan in addition to bringing 234 vacant units back into use. A significant proportion of the new housing development will be delivered in the two SDAs for Romford and Rainham and Beam Park.
- 3.7.2 The Council is in the process of building a significant number of new homes in one of the most ambitious local authority home building programmes in the country by means of its twelve estates regeneration programme. The initial programme will deliver over 3,500 new homes across the borough.

### 3.8 Economy in Havering

- 3.8.1 Romford is designated as a Metropolitan Centre in the London Plan and Hornchurch, Upminster, Elm Park, Collier Row, Rainham and Harold Hill are designated as District Centres.
- 3.8.2 Romford is Havering's main commercial entertainment centre with a dynamic night time economy of eating and drinking venues, cinemas and clubs. Hornchurch has the Queens Theatre and Fairtykes Arts Centre and is Havering's cultural centre with a sub-regional importance. Leisure and tourism are also important to Havering's economy. Romford is the main centre for shopping and has had significant competition from centres such as Lakeside, Bluewater and Westfield Stratford in the past ten years.

### 3.9 Transport connections

- 3.9.1 Havering has good access to the rest of London, Essex, Kent, and the rest of the South East via its strategic transport connections and routes.
- 3.9.2 Different organisations are responsible for assessing challenges, generating options, funding and identifying investment priorities in Havering and the wider sub-region including:
- a. The Government (responsible for national transport policy) and its agencies such as National Highways and Network Rail for national and international networks and infrastructure.
  - b. Transport for London (TfL) for London-wide and certain regional networks.
  - c. Havering at the local level and sub – regional level.
- 3.9.3 Further information on transport infrastructure responsibilities within Havering can be found in the Transport Statement Position Statement Evidence Base for the Local Plan.

### 3.10 Highways Responsibilities

- 3.10.1 There are Three Highways Authorities operating within Havering. These are the London Borough of Havering, Transport for London and National Highways.
- 3.10.2 Table 1 below sets out the roles and responsibilities for different organisations and aspects of the transport network within Havering.

**Table 1 - Transport Roles and Responsibilities**

<b>Havering's Transport Network</b>	<b>Responsibility</b>
Great Eastern Mainline (GEML)	Abellio Greater Anglia (trains) Network Rail (track)
London Liverpool Street – Shenfield Rail Services (Metro Services)	MTR (trains) Network Rail (track)
Essex Thameside Line	C2c National Express (trains) Network Rail (track)
Romford to Upminster Push n Pull	London Overground (trains) Network Rail (track)
London Underground District Line	London Underground (trains and track)
London Buses Network	TfL London Buses
A12,A13,A127 (TLRN)	Transport for London (TfL)
M25	National Highways (NH)
Principal Road Network (PRN)	London Borough of Havering
Minor roads in Havering	London Borough of Havering
Traffic signals	Transport for London (TfL)
Dial a Ride	Transport for London (TfL)
Taxicard	Transport for London (TfL)

### 3.11 National and International Links

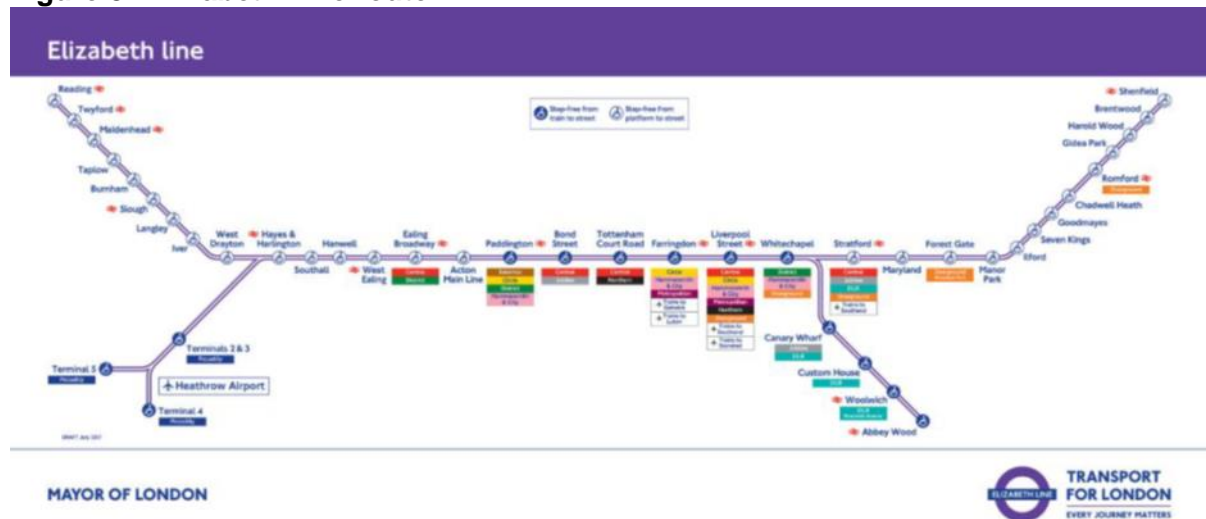
- 3.11.1 Havering has good road links to Kent and the Channel ports via the M25 and the Dartford Crossing and to the major ports of Felixstowe and Harwich which provide further links to Europe and beyond. The A13 provides access to the DP World London Gateway Port as well as Tilbury Docks.
- 3.11.2 There is good access by air to Europe and beyond through the airports at London City, London Southend and London Stansted. In May 2023 Elizabeth line services began operating between Shenfield in Essex and London Heathrow Airport providing residents of Harold Wood, Gidea Park and Romford with direct access to Britain's main hub airport.

### 3.12 Sub-Regional and Regional Links

- 3.12.1 The M25 is part of the national strategic network and provides London-wide and regional links for Havering's residents and businesses. It is managed by NH.
- 3.12.2 Further road access is provided by the A12, A13 and A127 roads which are part of the Transport for London Road Network (TLRN). TLRN routes facilitate access to Havering's business, education and residential areas from other areas of London, Essex, and Kent.
- 3.12.3 Outside London, the A12 is the responsibility of NH. The operation and maintenance of the A127 is the responsibility of Essex County Council (ECC) and Southend Borough Council. Outside London, NH, ECC, and also Southend and Thurrock Borough Councils (as respective unitary authorities) are responsible for specific sections of the A13.
- 3.12.4 Havering has mainline railway services on the Great Eastern Mainline (London Liverpool Street - Norwich) and the Essex Thameside Line (London Fenchurch Street – Shoeburyness).

- 3.12.5 Great Eastern Mainline Services serve Romford station with trains operating from Liverpool Street to Colchester, Clacton-on-Sea and Southend Airport and Southend Victoria Stations in the off-peak. Essex Thameside services operate at Upminster and Rainham stations.
- 3.12.6 Crossrail (Elizabeth line) provide services between Heathrow, Reading and Maidenhead with Essex and South London by means of tunnels beneath Central London. The eastern branch (north of River Thames) operates from Shenfield in Essex through Havering's Harold Wood, Gidea Park, and Romford Stations to London Liverpool Street and beyond.

**Figure 8 - Elizabeth Line route**



**Source: TfL Website**

### 3.13 Local Links

#### 3.13.1 Roads

3.13.2 Havering's public highway network comprises principal roads (37km), classified roads (115km) and unclassified roads (437km). There are approximately 1,110km of footways, 21,000 street lights, over 100 bridges and structures, 25,000 road gullies and 25,000 street trees. All these roads and facilities are managed and maintained by the Council through limited budgets.

#### 3.13.3 Rail

3.13.4 London Overground provides a 'shuttle' service between Romford and Upminster via Emerson Park and is the only stand-alone section of the London Overground network. It enables passengers to travel from Havering via connection onto the London Underground District line or on National Rail on the Essex Thameside line from Upminster Station and via national rail at Romford Station.

3.13.5 Access to local surface level train services is provided by stations at Romford, Harold Wood, Gidea Park, Emerson Park, Upminster and Rainham. There is access to Underground services (District line) at Hornchurch, Upminster Bridge, Elm Park and Upminster providing access into central London. Some of these stations are owned by Network Rail and in the case of Upminster, operated by C2C. As such any interaction with these stations during construction of Lower Thames would require the necessary permissions, and these would need to be reflected within the DCO.

### 3.13.6 Freight

- 3.13.7 The road network provides the primary freight network in Havering although freight traffic also operates on both the Great Eastern Mainline and Essex Thameside line. The latter enables freight movements to/from the DP London Gateway Port. There are no major road freight terminals within Havering although there are container depots in Thurrock and Dagenham located on the A13 trunk road.
- 3.13.8 Havering has two riverside wharves on the River Thames (Phoenix Wharf and Halfway Wharf). In spring 2018, the Mayor published a review on the safeguarding of wharves for public consultation. In September 2020 the Housing Minister on behalf of the Secretary of State confirmed their agreement with the recommendations as set out in the review.
- 3.13.9 Phoenix Wharf was subsequently released for safeguarding because of surplus capacity elsewhere in the wider sub region. Halfway Wharf safeguarding was retained because its cargo handling infrastructure remains in place.

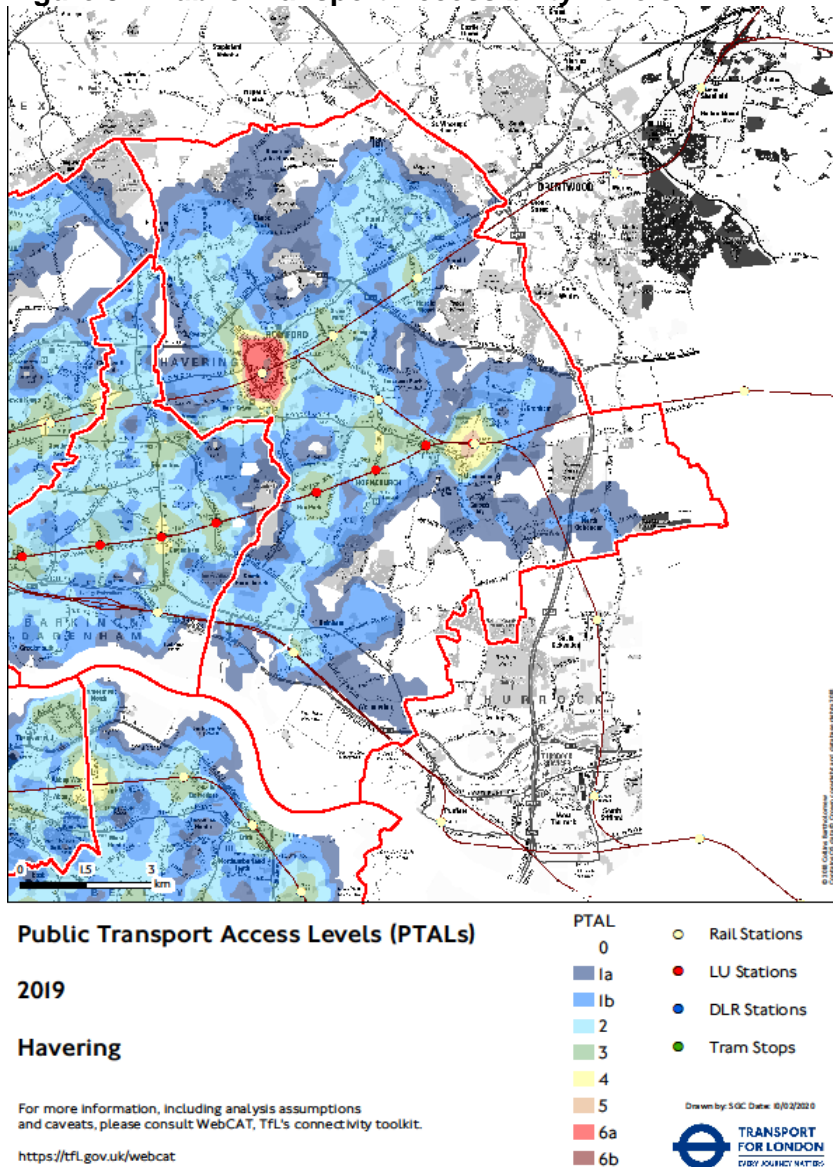
### 3.13.10 Bus

- 3.13.11 Rail services in Havering are complemented by bus services to the various residential, employment, education and leisure activities and key destinations. Havering is served by over 30 bus routes including several dedicated school bus routes and two night services.
- 3.13.12 Romford is the major destination for buses. Most routes provide good links to its railway station to enable direct rail access into London Liverpool Street and central London, with subsequent connections to regional and national destinations beyond.
- 3.13.13 Buses also stop at Newbury Park (in the London Borough of Redbridge) to enable passengers to transfer onto the London Underground Central Line and to Upminster Station where passengers can interchange and travel onto the District line into central London or the Essex Thameside railway line.

## 3.14 Public Transport Accessibility Levels

- 3.14.1 Figure 9 identifies Romford as having the highest Public Transport Accessibility Level (PTAL) rating, with Hornchurch and Upminster also having strong PTAL ratings as a result of being served by the District line and C2C services on the Essex Thameside line. Some of the poorest PTAL levels can be found in the south of the borough where public transport provision is severely limited. Havering would benefit from improved public transport connections in areas that are furthest away from train stations. The lack of public transport infrastructure is reflected in the choices that Havering residents make for commuting within the local area.

**Figure 9 – Public Transport Accessibility Levels**



**Source: Transport for London**

## 4 National and Regional Plan Policies

4.1.1 This section sets out national, regional and local policies and their relevance to the proposed scheme.

### 4.1.2 National Networks National Policy Statement (NNNPS) 2014

4.1.3 The National Networks National Policy Statement (NNNPS) was published in December 2014. The NNNPS sets out Government policy relating to the delivery of nationally significant infrastructure projects in regard to the highway and rail networks.

4.1.4 The NNNPS reflects the importance given to maintaining well connected and high performing networks, which have sufficient capacity to meet long term needs and support economic growth, at both a national and local level. In addition, the NNNPS also recognises the impact of traffic congestion can be economic, constraining economic activity and growth, as well as environmental with consequences such as air and noise pollution.



- 4.1.5 The NNNPS also provides guidance about the need to ensure that new development is appropriately mitigated to avoid environmental and social impacts. However, it also recognises that whilst some local effects and impacts may remain, betterment should be achieved where possible.
- 4.1.6 LB Havering is supportive of the NNNPS but believes that local effects and impacts of the proposed Lower Thames Crossing scheme should be fully mitigated to support local communities.
- 4.1.7 The Government recently launched a public consultation seeking views on the draft revised national networks national policy statement (NNNPS) 2023 and its accompanying documents. Since this emerging document was not a formal government policy at the time the Lower Thames Crossing application was accepted for examination, it will not be assessed from a policy compliance perspective, in line with DfT direction.
- 4.1.8 **Mayor's Transport Strategy (MTS) 2018**
- 4.1.9 The MTS sets out a series of policies designed to manage movement in a growing city. The MTS interprets the Mayor's London Plan transport vision and details how he and his partnerships will deliver transport in London up to 2041. The MTS is a key part of the Mayor's strategic policy framework to support and shape London's social and economic development.
- 4.1.10 The MTS sets out three themes for action by Transport for London (TfL), the London Borough's and other delivery partners. These are Healthy Streets and healthy people; a good public transport experience, and new homes and jobs. Under these three priority areas are a set of nine outcome indicators and targets which sit alongside the overarching aim of the strategy– for 80% of all trips in London to be made by foot, cycle or public transport by 2041.
- 4.1.11 The MTS sets out the Mayor's "Healthy Streets" approach, an evidence based approach designed to improve health and reduce health inequalities designed to help Londoners use the car less, and walk, cycle and use public transport more. The Healthy Streets Indicators are set out in Figure 10 below:

**Figure 10 Healthy Streets Indicators**



**Source: Mayor's Transport Strategy 2018**

- 4.1.12 The MTS sets ambitious goals for a move away from the use of private cars including Policy 1: "The Mayor, through TfL and the boroughs, and working with stakeholders, will reduce Londoners' dependency on cars in favour of active, efficient and sustainable modes of travel...". Whilst it is recognised that National Highways are proposing some improvements for Non-Motorised Users including new footpaths and cycle ways across the scheme, the Lower Thames Crossing project is principally a road based scheme which will result in an increase in vehicle capacity on the strategic road network.
- 4.1.13 LB Havering is generally supportive of the MTS proposition that "In the wider South East and M25 area, in particular, strategic roads must be managed to cater for essential journeys, without increasing car dependency within or outside London". LB Havering has raised concerns with the Mayor that his ambitious modal shift target can only be realistically met by an outer London Borough such as Havering if substantial investment is made in new public transport infrastructure and connectivity to give residents alternative options to travel other than the private car. This has become ever more important with the Mayor of London's recent announcement to expand the Ultra-Low Emission Zone out to the Greater London Authority boundary on 29<sup>th</sup> August 2023.
- 4.1.14 The MTS is a sub-regional policy document developed by the Greater London Authority. LB Havering will not be applying the MTS when assessing policy compliance of the scheme, which is primarily TfL's remit.
- 4.1.15 **LB of Havering Local Implementation Plan (LIP3) 2019.**
- 4.1.16 The Local Implementation Plan (LIP) is the transport strategy for the borough. The LIP sets out how the Mayor's Transport Strategy will be delivered at a local level.

- 4.1.17 The LIP places transport in the context of LB Havering, its population, economy and environment. It provides the local means of delivery for MTS initiatives and sets a locally specific set of transport objectives which contribute to achieving the Mayor's overall transport mode share aim and the nine Mayor's Transport Strategy outcomes.
- 4.1.18 The LIP recognises the M25 as part of the national strategic road network and providing London-wide and regional links for Havering's residents and businesses. The LIP provides a clear indication of LB Havering's commitment to the delivery of the MTS objectives with a specific borough modal shift target of 65% of all trips being made on foot, cycle or public transport by 2041.
- 4.1.19 The LIP includes a series of strategic transport aspirations to encourage alternative modes of travel other than the car, which in particular includes exploring new north south public transport links and improving access to and from the Romford and Rainham Strategic Development Areas (SDA).
- 4.1.20 The LIP sets out a series of Transport Objectives and Targets which will assist with delivering the objectives and outcomes that are set out in the MTS. These are set out below:
- To improve north-south transport connectivity in Havering through provision of alternative travel choices to the private vehicles.
  - To ensure suitable access to Havering's employment areas including the Romford and Rainham and Beam Park Strategic Development Areas.
  - Enable healthier lifestyles through the provision of active and sustainable travel choices to residents and visitors in Havering and to make Havering a better place to walk and cycle around.
  - Work with partners to deliver fully accessible transport links to ensure that residents and visitors with disabilities have the freedom to choose how to travel in the borough.
  - Ensure that the needs of the less mobile are prioritised when delivering public realm improvements and "healthy streets".
  - To deliver Vision Zero in Havering by 2041 through reducing casualties of all road users on borough roads, especially in the vicinity of schools and KSI "hotspots".
  - Improve air quality in Havering by delivering transport and regeneration programmes that contribute to reducing CO<sub>2</sub>, PM<sub>10</sub>, and NO<sub>x</sub> emissions and that support Havering's adopted AQAP.
  - To reduce the fear of crime and antisocial behaviour and improve perception of personal safety and security to encourage residents to travel actively.
  - Through the "healthy streets" agenda, enhance and maintain the quality of public realm in our major, minor and district centres, to create high quality safe neighbourhoods that people want to live and travel within.
  - To strengthen strategic links with neighbouring local authorities in Essex and the wider south east on strategic transport issues to support sub regional growth including the A127 Growth Corridor and remodelling Gallows Corner.
  - To bring and maintain all infrastructure assets to good state of repair in Havering.
- 4.1.21 The LIP includes a number of targets against each of the Mayor's outcomes and outcome indicators that are contained within the MTS. These targets cover a number of topics including modal shift, air quality, casualty reduction and bus punctuality.

4.1.22 The funding that the Council receives each year from TfL is spent on schemes that will contribute towards meeting these targets and therefore the objectives contained within the LIP and MTS.

4.1.23 As Table 2 sets out Havering has a number of targets that involve improved journey times, improving air quality and the quality of life for Havering residents. This will inevitably become more challenging for Havering to meet with the implementation of the Lower Thames Crossing project.

4.1.24 These are set out in Table 2 below.

**Table 2 - Local Implementation Targets**

<b>Metric</b>	<b>Borough target</b>	<b>Target year</b>	<b>MTS target</b>
Active, efficient and sustainable (walking, cycling and public transport) per cent mode share (by borough resident) based on average daily trips. Base period 2012/13 - 2016/17.	46%	2021	46%
Proportion of London residents doing at least 2x10 minutes of active travel a day (or a single block of 20 minutes or more). Base period 2012/14 - 2016/17.	21%	2021	29%
Proportion of Londoners living within 400m of the London-wide strategic cycle network. Base year 2016.	0%	2021	0%
Deaths and serious injuries (KSIs) from road collisions. Base period 2005 - 2009 (for 2022 target)	34 KSIs	2022	34 KSIs
Deaths and serious injuries (KSIs) from road collisions. Base period 2010 - 2014 (for 2030 target)	19 KSIs	2030	19 KSIs
Vehicle kilometres in given year (percent change). Base period 2014 - 2016. Reduce overall traffic levels by 10-15 percent.	0%	2021	N/A
10 per cent reduction in number of freight vehicles crossing into central London in the morning peak period (07:00am - 10:00am) by 2026.	N/A	N/A	N/A
Total cars owned and car ownership per household, borough residents. Quarter of a million fewer cars owned in London. Base period 2014 - 2016.	124,749 cars	2021	N/A
CO <sub>2</sub> emissions (in tonnes) from road transport within the borough. Base year 2013.	328,200 tonnes	2021	
NO <sub>x</sub> emissions (in tonnes) from road transport within the borough. Base year 2013.	500 tonnes	2021	

<b>Metric</b>	<b>Borough target</b>	<b>Target year</b>	<b>MTS target</b>
PM <sub>10</sub> and PM <sub>2.5</sub> emissions (in tonnes) from road transport within borough. Base year 2013.	77 tonnes (PM <sub>10</sub> ) 39 tonnes (PM <sub>2.5</sub> )	2021	
Trips per day (000s) by trip origin. Reported as 3yr moving average. Base period 2011/12 - 2016/17.	120 trips	2021	120 trips
Reduce the difference between total public transport network journey time and total step-free public transport network (minutes). Base year 2015.	88 minutes (full network) 91 minutes (step free network)	2041	88 minutes (full network) 91 minutes (step free network)
Annualised average bus speeds (mph). Base year 2015.	12.2 mph	2021	12.2 mph (low) 12.5 mph (high)
No Outcome indicators	N/A	N/A	N/A

**Source: Havering's Local Implementation Plan**

#### 4.1.25 **Air Quality Action Plan (AQAP)**

4.1.26 In June 2018 LB Havering adopted its AQAP, which outlines the actions the Council will take to improve air quality in the Borough between 2018 and 2023. The AQAP consists of a variety of information explaining air pollution, its effects on human health, the current status of air quality in Havering, sources of pollution, current Council practices, policies, vision, priorities and future actions with regard to improving air quality across the entire Borough. The AQAP is now in the process of being refreshed.

#### 4.1.27 **Climate Change Action Plan (CCAP)**

4.1.28 In November 2021 Havering's Climate Change Action Plan (CCAP) was formally adopted. The CCAP sets out the actions the Council is taking to reduce its carbon emissions with the goal of becoming a carbon neutral authority by 2040 or sooner.

4.1.29 It is noted that National Highways assessed the Transport Strategies for Kent County Council, Essex County Council and Transport for London, however omitted the Havering Local Implementation Plan as part of this assessment. It is also noted that National Highways omitted to review LB Havering's CCAP and AQAP.

#### 4.1.30 **The Havering Local Plan (2016 – 2031)**

4.1.31 The Havering Local Plan was formally adopted in 2021 following an Examination in 2019.

4.1.32 The Havering Local Plan sets out the Council's ambitious vision and strategy for future growth and sustainable development over a 15-year period up to 2031. The

Local Plan and Proposals Map, together with the London Plan, the Joint Waste Development Plan Document (DPD) for the East London Waste Authority Boroughs and Havering's Site Specific Allocations Local Plan, makes up the Development Plan for the borough and is the primary basis against which planning applications are assessed.

## 5 Policy Compliance

- 5.1.1 LB Havering has reviewed its policy documents for compatibility or conflict against the proposed scheme. Rather than reiterating all the policies contained within these documents, for ease of reference LB Havering has set out below the policies that are considered to be conflicted. All other policies are considered to be in agreement or neutral with the scheme.
- 5.1.2 Whilst the Development Plan for Havering also comprises the London Plan, LB Havering has not considered the scheme's compliance against the London Plan. LB Havering would anticipate the Greater London Authority (GLA) would carry out such an assessment as part of any LIR that they produce.
- 5.1.3 **Local Plan Policy 16 Social Infrastructure**
- 5.1.4 This policy commits the Council to working with infrastructure providers to support the provision of essential new services and improvement of existing facilities in Havering. The policy seeks to ensure that new and existing residents have access to a range of social infrastructure facilities.
- 5.1.5 Paragraph 8.5.1 of the Local Plan defines social infrastructure as covering a variety of health, community, cultural, sports and leisure facilities. It encompasses burial spaces, places of worship, health and education facilities, social care facilities, nurseries, theatres, sports pitches, swimming pools, and many other uses that provide a social function.
- 5.1.6 As is set out in the Topic Specific Issues section of the LIR, the Council remains deeply concerned over the impact the full closure of Ockendon Road will have on Upminster Cemetery and South Essex Crematorium.
- 5.1.7 The closure of Ockendon Road will significantly impact on residents' ability to access the Crematorium with the diversion likely to lead to traffic delays. Furthermore, the closure will affect the operation of the Crematorium with the potential for funeral services to be disrupted and/or delayed due to potential traffic congestion in the area.
- 5.1.8 The Council has discussed with the Applicant the potential for compensation for the Crematorium, however this is not something that National Highways consider appropriate.
- 5.1.9 Until satisfactory mitigation measures are agreed with National Highways to negate the impact the road closure will have on the Crematorium and Cemetery, the scheme will continue to be considered non-compliant with Policy 16 of the Local Plan.
- 5.1.10 **Local Plan Policy 18 Open Space, Sports and recreation**
- 5.1.11 The Council seeks to ensure that all residents of Havering will have access to high quality open space, sports and recreation facilities. To achieve this, the Council will continue to protect the borough's designated open spaces from development unless it can be demonstrated that replacement provision of equivalent or better quantity and quality will be made in a suitable location. In addition, the Council will support proposals that improve the quality of and access to existing open space.

- 5.1.12 The scheme will result in a loss of Open Space at Folkes Lane Woodland in Havering, with a narrow section of land being permanently acquired for the project. There is also a loss of open space in Thames Chase Forest. It is noted that Open Space is being replaced in Thames Chase Forest and that the loss of Open Space in Folkes Lane Woodland is, in part, being replaced in the Borough of Brentwood, where a new woodland site is being created at Hole Farm.
- 5.1.13 The Council recognises that there will be an overall net gain of Open Space in the borough as a result of the area of new Open Space that will be delivered to the north and south west of the existing Thames Chase Forest Centre site. However, access arrangements so residents can safely and conveniently get to the new Open Space at Hole Farm in neighbouring Brentwood borough remains unresolved at this stage.
- 5.1.14 LB Havering continues to work with National Highways to secure safe and convenient access to Hole Farm from the Non-Motorised User footbridge over the A127. Should such access arrangements be secured to the Council's satisfaction, the project will be considered compliant with Policy 18.
- 5.1.15 Local Plan Policy 22 Skills and Training**
- 5.1.16 The Council will promote employment and skills development opportunities for local residents by supporting major development proposals that commit to:
- 5.1.17 A minimum local labour target of 20% during construction and end user phase for major commercial or mixed use developments including a proportion of apprenticeships where the length of construction phase allows;
- 5.1.18 A minimum local labour target of 20% during construction for major residential developments;
- 5.1.19 The notification of all vacancies associated with the development and its end use through the Council's employment service; and
- 5.1.20 Offer opportunities to local businesses within their supply chains.
- 5.1.21 Where local labour targets cannot be achieved and it can be demonstrated that all opportunities to meet this target have been explored, a commuted sum payable to the Council will be required.
- 5.1.22 Major development proposals will be expected to submit an Employment and Skills Plan for agreement with the Council to detail how these targets will be met. This must include the proportion of apprenticeships offered and the opportunities given to local businesses within their supply chains. The Employment and Skills Plan needs to comply with the Mayor of London's Economic Development Strategy.
- 5.1.23 The Council would want to see jobs, apprenticeships, work experience and careers talks to local schools and colleges during the construction phase of the scheme, with job opportunities ring-fenced for local residents and local businesses included in the supply chain.
- 5.1.24 The Employment and Skills Strategy does not contain any local targets with regards local workforce employment. Instead, targets are set for employing local workforce across the multiple host boroughs. This gives Havering no surety that any Havering residents will be employed by the project.
- 5.1.25 The fact that no firm commitment has been provided by the scheme promoter with regards to local employment means that the scheme is currently non-compliant with Policy 22.

#### **5.1.26 Local Plan Policy 23 Connections**

- 5.1.27 The Council will support and encourage developments in Havering in locations that are most accessible by a range of transport options. New developments should promote active travel, where possible, and the Council will support new developments that include shared use routes for people walking, and cycling which lead to public open spaces and parks to promote recreational activities.
- 5.1.28 Furthermore, Policy 23 states that the Council will support development which ensures safe and efficient use of the highway and demonstrates that adverse impacts on the transport network are avoided, or where necessary, mitigated. Travel Plans are also expected for major applications.
- 5.1.29 The scheme is principally a road scheme and therefore does not directly support sustainable travel movements.
- 5.1.30 It is recognised that National Highways are proposing new Non-Motorised User (NMU) connectivity enhancements as part of the project, including a footbridge connecting Folkes Lane and Moor Lane across the A127, a footbridge to link footpath 252 over the new LTC road, and a new NMU bridge over the M25 to connect Thames Chase Forest either side of the M25.
- 5.1.31 These new NMU routes are welcome, and the Council has been engaging with National Highways on each of these proposals through the pre-application and pre-examination stages of this project.
- 5.1.32 Whilst these routes are indeed welcome, the Council remains unsatisfied with the approach links to the A127 footbridge. Whilst the Council continues to work with National Highways on agreeing suitable NMU routes, the approaches to the A127 Footbridge fall outside of the red line boundary and are being progressed through designated funds.
- 5.1.33 Until these approach routes have been satisfactorily secured, it is not considered that the scheme is compliant with Policy 23 of the Local Plan.

#### **5.1.34 Local Plan Policy 27 Landscaping**

- 5.1.35 The Council will support development proposals that incorporate a detailed and high quality landscape scheme which, amongst other things:
- 5.1.36 Takes full account of the landscape character of the site and its wider setting.
- 5.1.37 Demonstrates how existing landscape features will be protected during the construction phase of works.
- 5.1.38 Maximises opportunities for greening through the planting of trees and soft landscaping.
- 5.1.39 Provides strong boundary treatment that integrates with and is sympathetic to the local landscape character.
- 5.1.40 Supports natural habitats and opportunities for enhancing biodiversity.
- 5.1.41 All proposals are required to demonstrate that adequate arrangements have been made for future maintenance and management and major development proposals should be supported by a comprehensive Management Plan.
- 5.1.42 LB Havering is generally satisfied with the landscape and visual impact assessment findings and the concluding significance of effect(s).

#### **5.1.43 Local Plan Policy 28 Heritage Assets**



- 5.1.44 This policy seeks all new development affecting sites, buildings, townscapes of special architectural, historical or archaeological importance must preserve or enhance their character or appearance.
- 5.1.45 The proposed M25 Ockendon Compound is located directly to the south west of the North Ockendon Conservation Area. Whilst the compound location does not encroach into the North Ockendon Conservation Area itself, it is located next to it. Whilst it is acknowledged that the layout of the compound has been designed to minimise the impact on the conservation area, the earthworks stockpile area will have a detrimental impact on the setting of the conservation area. Additionally, construction traffic will for a limited time be accessing both the main M25 Compound and the satellite compound off Pea Lane along borough roads within the conservation area. The lack of clarity as to how long these roads will be used for construction traffic purposes is a concern as it gives the Council uncertainty as to the duration of the impact on this conservation area.
- 5.1.46 Until National Highways are able to provide the Council with clarity on this point, it is not possible to ascertain whether the scheme is compliant with Local Plan Policy 28.
- 5.1.47 LB Havering policy commits the Council to taking archaeological significance into account when making planning decisions and to taking appropriate measures to safeguard that interest. Where nationally important remains exist, they will be physically preserved.
- 5.1.48 LB Havering's Heritage SPD (2011) notes that additional, previously unknown archaeological sites will be discovered over time. It also establishes that archaeological advice in the borough is provided on the LPA's behalf by the Greater London Archaeology Advisory Service (GLAAS).
- 5.1.49 As well as establishing a better understanding of the buried potential through site evaluation, it is recommended that National Highways show how cultural heritage and its sympathetic treatment have fed into project planning and the final range of public benefits that would be derived from any consented scheme.
- 5.1.50 Until the Council receives further information from National Highways on the above matters, it is not possible to ascertain whether the scheme is compliant with Local Plan Policy 28.
- 5.1.51 Local Plan Policy 29 Green Infrastructure**
- 5.1.52 This policy seeks to maintain and expand the network of green spaces and natural features in Havering and optimise the benefits of green infrastructure to the environment, economy and community. This policy further states that the Council will support development which includes green infrastructure and which integrates into the wider green infrastructure network.
- 5.1.53 Paragraph 12.1.1 of the Local Plan defines Green Infrastructure as a network of green spaces and features such as street trees and green roofs that is planned, designed and managed to provide a range of benefits, including recreational amenity, healthy living, reducing flooding, improving air quality, cooling the urban environment, encouraging walking and cycling, and enhancing biodiversity and ecological resilience.
- 5.1.54 Developers are expected to work with existing partnerships to support and enhance green infrastructure provision including The All London Green Grid and Thames Chase Forest.
- 5.1.55 The scheme will result in a significant loss of existing Green Infrastructure (GI) at Thames Chase Forest. Whilst it is recognised that this GI will be replaced to the north

and the south of the existing site, and the Council is aware that Thames Chase partners are satisfied with the replacement land, further information is required as to the quality of the mitigation being proposed for the replacement GI in this area.

- 5.1.56 Green Infrastructure also includes public rights of way (PROW) in the form of bridleways and footpaths. Several of Havering's PROW are impacted both during construction and operation of the LRC. Further details can be found in paras 10.1.2 to 10.1.15 of the Non-Motorised User section of this LIR.
- 5.1.57 Whilst the scheme will result in some additional connections for pedestrians and cyclists in the form of NMU bridges being delivered, how some of these structures are maintained post scheme implementation remains an outstanding matter. This is discussed further in the Non-Motorised User section of the LIR.
- 5.1.58 The Council continues to be in discussion with National Highways to seek improved links to Folkes Lane woodland from the new proposed NMU bridge over the A127. Should these improvements be secured, the Council would consider such measures to support Policy 29.
- 5.1.59 **Local Plan Policy 30 Biodiversity and Geodiversity**
- 5.1.60 This policy states that the Council will protect and enhance the borough's natural environment and seek to increase the quantity and quality of biodiversity in Havering through several measures, including supporting proposals where the primary objective is to conserve or enhance biodiversity.
- 5.1.61 It is noted that a Register of Environmental Actions and Commitments (REAC) has been prepared to support this application. This details the environmental mitigation and compensation measures that would be implemented during construction, why they are required, who is responsible for delivering them and any ongoing maintenance arrangements.
- 5.1.62 It is noted in Requirement 4 of the draft DCO that no part of the authorised development can commence until the 2nd iteration of the Environmental Management Plan (EMP2) has been submitted to and approved in writing by the Secretary of State (SoS). Requirement 4 further states that submission to the SoS takes place following consultation by the undertaker with relevant planning authorities. It further states that the EMP2 must reflect the mitigation measures set out in the REAC. It is essential that such mitigation measures are agreed with the Council prior to the commencement of works.
- 5.1.63 **Local Plan Policy 33 Air Quality**
- 5.1.64 This policy states that the Council is committed to improving air quality and seeks air quality neutral developments, where possible, and will support development that delivers measures to support active travel to reduce emissions.
- 5.1.65 Paragraph 12.5.3 of the Local Plan states; where there is a risk of any negative air quality impacts associated with development proposals, an assessment and, if appropriate, mitigation measures will be required, to ensure that air quality has been adequately considered and any negative impacts are minimised.
- 5.1.66 The whole of Havering is identified as an Air Quality Management Area (AQMA). The Council is committed to improving air quality in the borough and has an adopted Air Quality Action Plan (AQAP) and Climate Change Action Plan (CCAP) which set out how air quality in the borough can be improved and health benefits can be maximised.

5.1.67 The Council remains concerned that the methodology for screening of nitrogen deposition impacts is unable to ascertain the impact of air quality on the wider local area owing to the limitations of the transport modelling available.

#### 5.1.68 **Local Plan Policy 34 Managing Pollution**

5.1.69 This policy stipulates that planning permission will not be granted if it will result in exposure to noise or vibrations above acceptable levels affecting a noise sensitive development such as all forms of residential accommodation, schools and hospitals.

5.1.70 Where the proposal would lead to a noise sensitive development being located near to a noise generating activity, a formal assessment will be required to ensure compliance with the noise exposure categories in Planning Policy Guidance Note 24, *Planning and Noise*. Planning conditions may be imposed to this effect.

5.1.71 Further evidence is required to understand the level of noise impacts arising from the scheme at a local level and any appropriate mitigation. Further information is required to reassure the Council that this policy has been complied with.

## 6 Topic Specific Issues

6.1.1 This section of the LIR sets out what the Council considers to be the positive, negative and neutral impacts of the scheme upon the London Borough of Havering. This includes a variety of topic areas which are identified as sub-headings. We would like the ExA to note that Havering has particular concerns regarding these matters.

### 6.2 Materials and Waste

#### 6.2.1 **Policy Context**

6.2.2 The policy context is provided by the development plan and national planning and waste policy.

6.2.3 The development plan comprises:

- The Havering Local Plan 2016-2031 (2021);
- The Joint Waste Development Plan for the East London Waste Authority Boroughs (2012); and
- The London Plan.

#### 6.2.4 **Assessment of Data Sets**

6.2.5 Overall, the data used in the Environmental Statement (ES) and supporting documentation, particularly the Outline Materials Handling Plan (oMHP), the Outline Site Waste Management Plan (oSWMP), the Excavated Materials Assessment (EMA), and the Code of Construction Practice (CoCP) are appropriate and acceptable.

6.2.6 LB Havering previously raised queries about some of the data as well as conclusions in earlier consultations. This related to the quantities of waste predicted to arise from the scheme, primarily excavation waste, that may require management outside of the Order Limits, and the amount (and source) of aggregates used in construction. This included:

- Identification of facilities and their capacity that may be used/relied on for the management of excavation waste outside of the Order Limits.
- Clarification of the amount of excavated material requiring off-site management, whether management would be 'recovery'/beneficial use or disposal/landfill, and targets to be applied for the diversion of waste from landfill.

- Consideration of the effect on permitted reserves and landbanks of primary aggregates.
- Clarification over the potential use of marine-dredged aggregates landed at proximate wharves.

6.2.7 The above queries were addressed satisfactorily by National Highways (NH) in response to the consultation comments, including through meetings with the Applicant and preparation of the Statement of Common Ground (SoCG).

#### 6.2.8 **Assessment Process**

6.2.9 The assessment process has followed the Design Manual for Roads and Bridges (DMRB) guidance and requirements of National Highways Standard Design Manual for Roads and Bridges LA 110 Material assets and waste (NH 2019). As such, the process is considered appropriate.

6.2.10 However, this differs from the EIA process and guidance for other types of development, for example, as set out in the IEMA guidance *Materials and Waste in Environmental Impact Assessment* (2020).

6.2.11 The main difference is that the DMRB approach does not include criteria for consideration of the impact, and its significance, on permitted reserves and land banks of primary aggregates of demand for, and consumption of, aggregates in a development.

6.2.12 This issue was raised by LB Havering with NH. In response, NH voluntarily produced a Local Aggregates Assessment (October 2022) which was provided to LB Havering, but this has not been submitted as part of the DCO Application, so therefore is not the subject of Examination scrutiny. The document helpfully quantifies the demand for aggregates; the permitted reserves in Greater Essex, Kent, Medway, and London (including LB Havering); and the potential worst-case effect (i.e., depletion of reserves) as a result of the demand. It concluded that the project would not be likely to have a 'sizable impact' on landbank, capacity or sales within the area assessed.

#### 6.2.13 **Scheme Design**

6.2.14 The design of the scheme, as it relates to reducing the amount of waste produced and requiring off-site management, and to reducing demand for primary aggregates, is considered appropriate.

6.2.15 The scheme has been designed to reduce the amount of excavation waste generated. The oMHP cites design refinements and landscape mitigation which are estimated to avoid 1,200,000m<sup>3</sup> of excavation waste arisings compared to the earlier (withdrawn) DCO application.

6.2.16 The re-use on site (within the Order Limits) of the vast majority of excavation waste is a key component of the design, which reduces the need for off-site management and also reduces the need to import material.

### 6.2.17 Construction Impacts

6.2.18 The ES and associated documents identify the construction impacts on materials and waste appropriately.

6.2.19 As identified above, while the assessment process does not consider the impact on aggregates reserves and land banks, NH produced a supplementary *Local Aggregates Assessment* to identify the potential impacts, in response to representations by LB Havering and other waste and mineral planning authorities.

6.2.20 The impact on waste management facilities which may be required to manage waste requiring off-site management was not considered as the management of waste will be the responsibility of contractors and subject to contractual arrangements. However, the EMA identifies potential facilities and sites assessed against suitability criteria which would also be applied by contractors.

### 6.2.21 Operational Impacts

6.2.22 The operational impacts from a materials and waste perspective will be minimal and so LB Havering has no comments to make in this regard.

### 6.2.23 Mitigation

6.2.24 The principal embedded mitigation is the design of the scheme to reduce the amount of waste generated (especially excavation waste) and recover or re-use on-site the vast majority of excavation waste within the Order Limits. This reduces the amount of waste requiring off-site management and the need for import of materials (e.g., for construction of embankments and landscape features).

6.2.25 The documents associated with the ES, including the oMHP, the oSWMP, the EMA, and the Register of Environmental Actions and Commitments (REAC), provide detailed measures to mitigate effects of the scheme on materials and waste. This is primarily through reducing waste arisings, maximising recovery and re-use on-site, maximising recycling (including of concrete and use of recycled aggregates) and proximate sourcing of primary aggregates (including of marine dredged aggregates) landed at proximate wharves, notably Tilbury2.

6.2.26 No specific mitigation measures from a Materials and Waste perspective are requested for Havering.

### 6.2.27 DCO Requirements

6.2.28 The DCO requirements, through implementation of the documents associated with the ES as outlined above, are considered appropriate in terms of materials and waste. LB Havering would encourage the ExA to seek the Local Aggregates Assessment (October 2022) for consideration during the Examination.

## 6.3 Archaeology

### 6.3.1 Policy Context

6.3.2 **Havering Local Plan** Policy 28 includes (para vii) support for proposals that do not affect the significance of a heritage asset with archaeological interest, including the effect on its setting. Paragraph 11.3.10 recognises that archaeological heritage assets may merit desk-based assessment and archaeological field evaluation to understand their significance, to provide results to inform a development decision. Paragraph 11.3.11 requires that any consented harm to an asset that is necessary and well justified must be accompanied by proposals to record and advance public understanding of the asset.

- 6.3.3 **NPSNN 5.124** states that non-designated archaeological heritage assets of demonstrably equivalent significance to Scheduled Monuments are to be treated as Scheduled Monuments in decision making. It states that an absence of designation for archaeological heritage assets does not indicate a lower significance.
- 6.3.4 NPSNN 5.132 states that any harmful impact on the significance of a designated heritage asset should be weighed against the public benefit of development, recognising that the greater the harm to the significance of the heritage asset, the greater the justification that will be needed for any loss.
- 6.3.5 NPSNN 5.133 states that where the proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, the Secretary of State (SoS) should refuse consent unless it can be demonstrated that the substantial harm or loss of significance is necessary in order to deliver substantial public benefits that outweigh that loss or harm.
- 6.3.6 NPSNN 5.142 states that where there is a high probability that a development site may include as yet undiscovered heritage assets with archaeological interest, the SoS should consider requirements to ensure that appropriate procedures are in place for the identification and treatment of such assets discovered during construction.
- 6.3.7 Additionally, the 2021 **London Plan** as a regional planning policy framework includes policy HC1D which states that development proposals should identify assets of archaeological significance and use this information to avoid harm or minimise it through design and appropriate mitigation. Where applicable, development should make provision for the protection of significant archaeological assets and landscapes.
- 6.3.8 It further encourages revealing and displaying archaeological remains in new development, accompanied by appropriate visitor infrastructure (para 7.1.3).
- 6.3.9 **Assessment of Data Sets**
- 6.3.10 The Applicant has consulted appropriate sources of information regarding known heritage significances. It is acknowledged by all parties that the nature of archaeology as a buried resource means that not all assets can be identified and that hitherto unknown archaeological sites are likely to be affected by a consented scheme.
- 6.3.11 **Assessment Process**
- 6.3.12 LB Havering is content not to recommend further desk-based archaeological assessment work to accompany a decision. However, the EIA assessments of significance and harm in general are not always convincingly articulated.
- 6.3.13 For example, significance is ascribed to individual artefacts made as spot finds and recorded in museums without considering what wider, as yet unexposed along the route, activity those spot finds are likely to represent in many cases.
- 6.3.14 Significance assessment should be grounded in national, regional and local research framework questions lead on from there to a clear link with the chosen mitigation approach.
- 6.3.15 Archaeological field evaluation has covered a great extent of the scheme impact areas in the borough and provided very useful information on significance to inform a management strategy.
- 6.3.16 There are, however, outstanding questions around significance at a handful of areas that have not yet been subject to archaeological evaluation (e.g., Thames Chase

Forest, Ockendon Compound) and there is a major outstanding question around the **Ockendon Channel**, a large, buried middle palaeolithic feature located at or near the proposed M25 junction site.

6.3.17 This feature has the potential to harbour nationally significant undesignated heritage assets from early prehistory and LB Havering recommends a more detailed field assessment of it to help understand its extent and significance. This needs to be obtained to allow an understanding of the harm created to it by the planned wide and deep motorway cutting proposed at that location and to inform thinking on a mitigation programme.

#### 6.3.18 **Scheme Design**

6.3.19 The design will create unavoidable harm to archaeological remains. LB Havering, however, is content that certain aspects of the harm (such as the line of the road) can be implemented without unacceptable harm, on the understanding that appropriate management measures can be successfully secured. Such management measures have not yet been fully detailed or agreed.

6.3.20 Other aspects of harm, such as compound design and landscaping, have the potential to preserve important remains in situ through detailed design measures.

6.3.21 The scheme design offers some potential to present and interpret heritage through its landscaping and in rest areas. However, the extent that this will be possible in Havering may be limited and the Environment Statement does not identify any public heritage mitigation through design in the borough. There are some useful benefits with a heritage aspect to them through, for example, reinstating a historic route way currently cut by the A127 Southend Arterial Road.

#### 6.3.22 **Construction Impacts**

6.3.23 Construction impacts are broadly understood but further detail is needed to inform the mitigation proposals in the Archaeological Written Scheme of Investigation (AWSI).

6.3.24 More detail would be especially useful on the impact of the planned M25 junction cutting. This is an element of the scheme with potential to affect the significant Ockendon Channel and the formation level and extent needs to be understood to inform an archaeological management strategy.

#### 6.3.25 **Operational Impacts**

6.3.26 LB Havering is satisfied that the operational impacts from an archaeological perspective have been accurately assessed.

#### 6.3.27 **Mitigation**

6.3.28 Mitigation is proposed to be subject to forthcoming documents, including an AWSI, currently in draft. The fact that this document is yet to be drafted and will not be subject to the scrutiny during the Examination is unsatisfactory to LB Havering.

6.3.29 LB Havering is of the view that the Applicant needs to think further about pre-determination archaeological assessment in unexamined areas and also to think more around mitigation arising.

6.3.30 A further concern is the limited detail on the geographic extents and types of proposed archaeological fieldwork to help mitigate or offset consented impact.

- 6.3.31 Provision of maps of the scheme showing where, and what kind of, archaeological mitigation is planned are highly desirable. LB Havering would encourage the ExA to seek this information during the Examination.
- 6.3.32 LB Havering welcomes that the Applicant is considering how best to store, display and interpret the archaeological results from fieldwork related to the scheme. Whilst Havering has been involved in welcome discussions around how this can be achieved, no firm proposals have been put forward by the Applicant. LB Havering would recommend that this is put forward as part of the mitigation plan. This could involve a combined public archive and heritage centre, for example.
- 6.3.33 LB Havering has commented on several occasions around the desirability of enshrining key underlying principles of archaeological mitigation in the CoCP, REAC and other high level scheme documents. Some progress with the Applicant has been made on these points which is very welcome. However, LB Havering continues to press for archaeological management to be acknowledged and considered as part of the wider environmental response.

#### 6.3.34 **DCO Requirements**

- 6.3.35 LB Havering considers the DCO requirements acceptable from the archaeological perspective, subject to agreement of the AWSI, CoCP and other matters above. These include, specifically:
- Securing appropriate management measures in relation to the Ockendon Channel archaeological feature.
  - Ensuring the required pre-determination archaeological assessment in unexamined areas, specifically Thames Chase Forest and the Ockendon Compound, and suitable mitigation arising.
  - Delivering public heritage mitigation, including a combined public archive and heritage centre.

## 6.4 Noise and Vibration

### 6.4.1 **Policy Context.**

6.4.2 The following Havering Local Plan policies are relevant to this topic in the context of the scheme.

### 6.4.3 Policy 34 Managing pollution

- *Do not unduly impact upon amenity, human health and safety and the natural environment by noise, dust, odour and light pollution, vibration and land contamination.*
- *The health and safety of residents and visitors to the borough can be affected by pollution of the air, water and land as well as light and noise pollution. The Council seeks to minimise the exposure to pollutants both during construction and over the lifetime of the development to ensure the creation of safe and healthy places to live, visit and work in the borough. This policy should be read in conjunction with Policy 33.*

### 6.4.4 **Assessment and Mitigation Proposed**

6.4.5 LB Havering is concerned that the submitted Application does not provide sufficient mitigation for noise impacts either during construction or once the scheme is fully operational.



6.4.6 Construction Noise Mitigation Measures

6.4.7 Ockendon Road Diversion Route - RNTM58 Ockendon Road 19 months.

6.4.8 The ES states (Table 12.39 Night-time Impacts and Effects from Road Closures and consequent diversions during *Project construction phase*) that the 19-month closure of Ockendon Road will have a significant adverse impact.

6.4.9 In the ES, CoCP and REAC table there is no stated mitigation measures put forward to reduce the impact along this diversion route.

6.4.10 LB Havering would suggest that there should be a set of mitigation measures offered by the Applicant to deal with noise and vibration impacts such as HGV restrictions, speed reduction measures, road resurfacing prior to construction with low noise surfacing, community engagement, and noise insulation.

6.4.11 Construction noise impacts north of the A13 to the M25.

6.4.12 Within Havering there are eight locations where construction noise has the potential to cause an exceedance of the assigned SOAEL (significant observed adverse effect level) during one of the day, evening or night or all three periods.

6.4.13 The ES sets out the Applicant's responses to the exceedances:

*As a result of the exceedance of a SOAEL mitigation will be required to be implemented through the controls inherent within REAC commitment NV007 (Section 7 of the CoCP (Application Document 6.3, Appendix 2.2)) relating to Best Practise Means (BPM).*

*With regard to evening and night-time impacts, consideration of the construction programme conclude these to be primarily associated with short duration utilities and "tie in" activities would not occur for a duration of 10 or more days in any 15 consecutive day period or for more than 15 days in any six-month period.*

6.4.14 The BPM measures are usual for all construction projects and LB Havering is satisfied with these.

6.4.15 LB Havering would request detail of the enclosure of static plant that has been specified as additional mitigation for CN122, CN124, CN125, CN126 and CN133. These sites can be found in Figure 11.

6.4.16 Although the construction work affecting these receptor locations is time controlled in accordance with BS 5228 (noise) guidance, LB Havering would emphasise that all night-time work is accompanied with S61 agreements including public engagement.

6.4.17 Construction Vibration Assessment

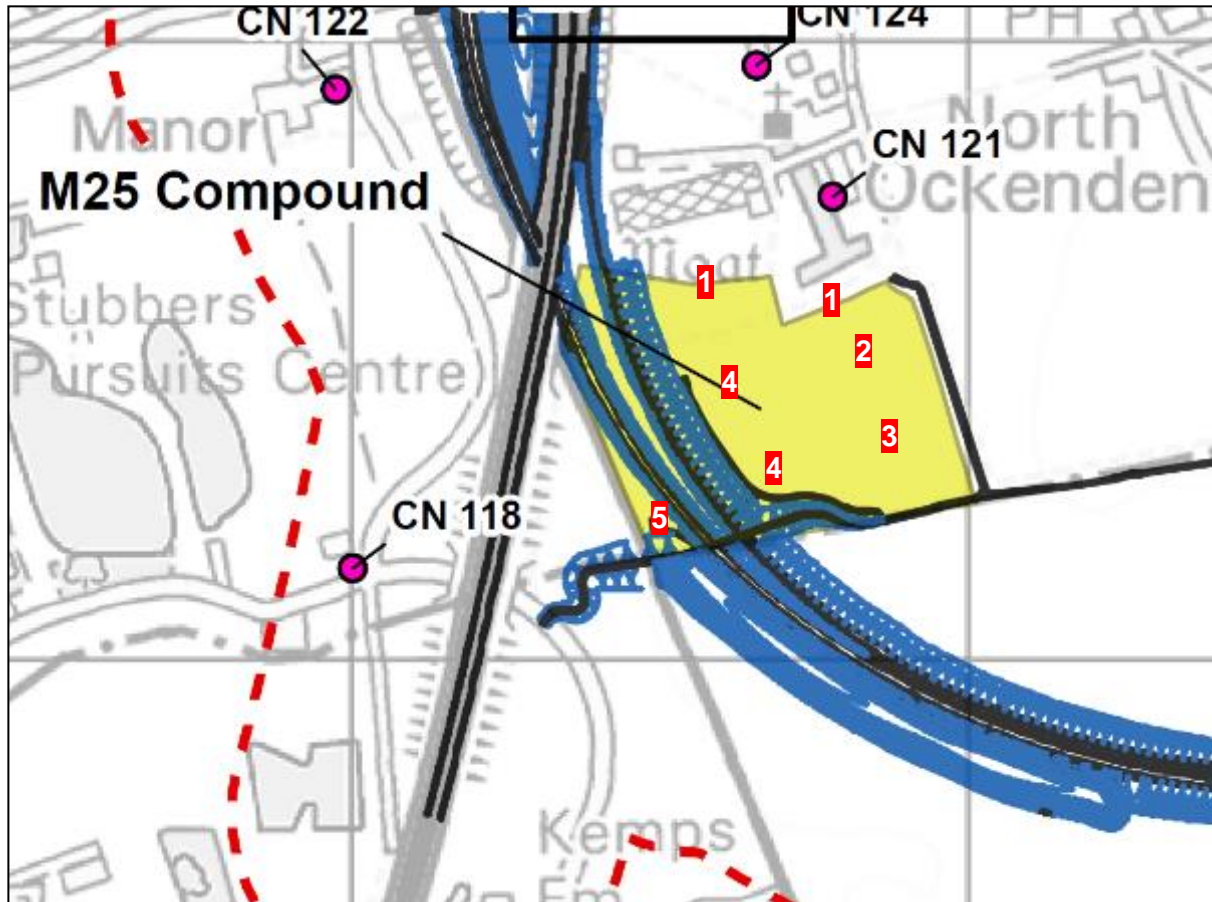
6.4.18 LB Havering notes the contents of Table 12.43 in the Noise Chapter of the ES. The table represents the construction vibration limits for human receptors and identifies where the predicted construction vibration levels exceed those limits within the section of the project to the north of the A13 up to the M25.

6.4.19 LB Havering notes that potentially CV42 and CV44 will be subject to moderate or greater construction vibration impact level (PPV level).

6.4.20 Significant impact is mitigated by time-controlled operations in accordance with DMRB LA111. There are, however, no physical mitigation measures offered, although it is recognised that such measures can be practically challenging.

6.4.21 LB Havering would request manned monitoring at CV42 and CV44 on the first day of work on structures RWN000082 and RWN000085 to determine whether any impact is greater than predicted.

**Figure 11 - M25 Compound**



**Source: National Highways**

6.4.22 Whilst it is recognised that further information has been provided in earlier public consultations with regards to proposed compound layouts, a block plan would be helpful to show designated areas of activity/non-activity. There is currently a lack of clarity around how the compound layout will change as construction works progress. For example, Havering assumes that once the new scheme road to the west of the compound has been built the compound will be reduced, but there is currently a lack of information on this point.

6.4.23 LB Havering makes the following observations about figure 11 (above):

6.4.24 The whole compound will have a solid hoarding a minimum height of 2.4m.

6.4.25 With reference to the numbers 1 to 5 Havering has identified in figure 11 above:

- 1) Compound cabins and offices should be placed along the northern boundary and are anticipated to be at least double height (6m). This would provide a significant barrier/screen to compound activity.
- 2) Site/contractors and visitors parking should be close to the offices, screened by cabins/offices, which would move compound activity noise further from receptors.

- 3) Stores, unloading area. Forklift activity further from receptors.
- 4) Construction vehicle parking, testing, maintenance.
- 5) Concrete batching in the south-west of the compound would be ideal.

#### 6.4.26 **General Compound Considerations**

6.4.27 LB Havering would recommend that the Applicant considers the following points in relation to the M25 Compound:

- Solid (Asphalt) or rolled, flat type 1 compound roads and parking areas. Well maintained and all holes filled on a minimum weekly basis. Site speed limits. Haul roads to and from work sites should be type 1 material, if possible, level and well maintained.
- Ensure a new electrical connection is made to the compound, to power, cabins, drying room, canteens, lights, electric vehicle charging points, etc. This will remove the need for mobile, temporary diesel generators, mobile tower lights and small tool generators. This would also result in fewer diesel fuel deliveries.
- Electrical transformer (if required) should be placed in the south-east corner.
- Air conditioning or ventilation units should all be located to the south of the cabins and offices.
- Smoking areas should not be adjacent to site hoarding, ensure they are screened by cabins/offices.
- Compound noise control for the compounds should be covered in the site induction.
- All general construction noise and vibration mitigation measures for compounds as outlined in Lower Thames Crossing – 6.3 Environmental Statement Appendices Appendix 2.2 – Code of Construction Practice, First Iteration of Environmental Management Plan should be adhered to.
- Resident engagement, e.g., compound life and noise control considerations.

#### 6.4.28 **DCO Requirements**

6.4.29 LB Havering considers the DCO requirements acceptable from a noise and vibration perspective, subject to agreement of the matters above. These include, specifically:

- Securing a set of mitigation measures to deal with noise and vibration impacts on the Ockendon Road Diversion Route.
- Securing manned monitoring at CV42 and CV44 on the first day of work on structures RWN000082 and RWN000085 to inform effective mitigation.
- Securing appropriate noise and vibration mitigation in relation to the M25 Compound to minimise its impacts on the residents of North Ockendon.

## 6.5 Air Quality

### 6.5.1 Policy Context

6.5.2 The NPSNN sets out the Government's policies to deliver NSIPs on the national road and rail networks in England. Paragraphs 5.6 to 5.15 describe when assessment of air quality impacts associated with a project is necessary, the scope of assessment, when consent should be refused and the use of mitigation.

6.5.3 The Havering Local Plan 2016 - 2031 provides current planning policy for the London Borough of Havering. Policy 33: Air Quality and Policy 34: Managing Pollution provides air quality and emissions control requirements for new development within the Borough.

### 6.5.4 Assessments of Data Sets

6.5.5 LB Havering is satisfied with the air quality data sets that have been used in the air quality assessment presented within ES Chapter 5.

6.5.6 It should be noted that the assessment of road vehicle exhaust emission impacts utilised data to describe traffic flows, fleet composition and speed produced from the traffic modelling exercise. However, the dispersion model outputs rely upon these inputs and therefore any discrepancies may also affect the air quality conclusions.

### 6.5.7 Assessment Process

6.5.8 LB Havering considers the air quality assessment process that has been carried out is appropriate in the context of national guidance for the assessment of air quality impacts from highways schemes.

6.5.9 The air quality standards for particulate matter with an aerodynamic diameter of less than 2.5µm (PM<sub>2.5</sub>) have been updated since the assessment was undertaken. It is unclear whether an Addendum will be provided to consider results in the context of the new legislation. However, it is considered unlikely that the conclusions for receptors within the Borough would be materially affected.

### 6.5.10 Scheme Design

6.5.11 LB Havering considers the design of the scheme to be appropriate in relation to potential air quality impacts on receptors within the Borough.

### 6.5.12 Construction Impacts

6.5.13 LB Havering is satisfied that construction related air quality impacts have been identified correctly in general. However, changes in ammonia (NH<sub>3</sub>) concentrations at ecological designations as a result of road vehicle exhaust emissions have not been assessed. These can directly affect vegetation. As such, comprehensive consideration of air quality effects has not been provided.

### 6.5.14 Operational Impacts

6.5.15 Similarly, to construction related air quality impacts, it is considered operational impacts have generally been identified correctly with the exception of consideration of potential NH<sub>3</sub> emission impacts at ecological designations.

### 6.5.16 Mitigation

6.5.17 Proposed mitigation relates to potential construction impacts. This is contained within the (REAC) contained within the Code of Construction Practice (CoCP) as actions AQ001 to AQ008. LB Havering offers the following comments on the mitigation proposals set out:

- 6.5.18 AQ001 to AQ005 are reasonable and generally align with best practice guidance;
- 6.5.19 AQ006 does not provide sufficient detail on how any future requirement for monitoring will be determined. This should provide a methodology for the 'risk-based approach' stated in the measure or reference suitable guidance as a minimum.
- 6.5.20 The baseline monitoring period outlined in AQ007 is considered appropriate;
- 6.5.21 AQ008 is not sufficiently detailed to fully determine how monitoring will be undertaken, for example 'appropriate survey instruments' is extremely vague, and it does not define how the trigger levels will be defined; and,
- 6.5.22 The outlined actions in the event of a trigger level exceedance are vague and no mechanism for providing site specific measures is provided within the measure. Reliance is provided on monitoring for particulate matter with an aerodynamic diameter of less than 10µm (PM<sub>10</sub>) and PM<sub>2.5</sub>, which may not relate to amenity impacts associated with depositional dust. These are more likely to occur and should be considered both as monitoring requirements and during the remedial action stage.
- 6.5.23 DCO Requirements**
- 6.5.24 LB Havering considers the DCO requirements acceptable from the air quality perspective, subject to agreement of the REAC, CoCP and other matters above. These include, specifically:
- Securing appropriate air quality monitoring and mitigation proposals that fully align with best practice guidance.

## 6.6 Flooding and Drainage

### 6.6.1 Policy Context

- 6.6.2 The assessment was undertaken with consideration to the following national policy sources and legislation:
- a. EU Floods Directive and the Flood Risk Regulations (2007/60/EC).
  - b. Flood Risk Regulations 2009 (FRR).
  - c. Flood and Water Management Act 2010 (FWMA).
  - d. National Planning Policy Framework (Department for Levelling Up, Housing and Communities, 2021a) (DLUHC) (NPPF).
  - e. National Policy Statement for National Networks (Department for Transport, 2014) (NN NPS)1.
  - f. National Flood and Coastal Erosion Risk Management Strategy for England (Environment Agency, 2021b) (FCERM).
  - g. The Environment Agency's approach to groundwater protection (Environment Agency, 2018).
- 6.6.3 At a local scale, Havering Local Plan's main flood risk policy (Policy 32) notes that the Council will support development that seeks to avoid flood risk to people and property and manages residual risk by applying the Sequential Test and, if necessary, the Exception Test as set out in the NPPF.
- 6.6.4 The Local Plan policy also states that the Council will seek to reduce the risk from surface water flooding by requiring development proposals to include Sustainable Drainage Systems (SuDS) unless there are practical reasons for not doing so. The Council will ensure that the proposals for SuDS are also in compliance with the London Plan drainage hierarchy, achieve greenfield runoff rates where feasible and include clear maintenance arrangements for the lifetime of the development.

- 6.6.5 In addition, the Thames Catchment Flood Management Plan (CFMP) (Environment Agency, 2009) assesses flood risk within the Thames catchment, which includes the London Borough of Havering. The CFMP promotes de-culverting of watercourses where structures may cause conveyance problems, and encourages alternatives to culverting, where possible.
- 6.6.6 Assessment of Data Sets**
- 6.6.7 LB Havering considers the data sets used for the assessment of flood risk and drainage are appropriate. They are understood to be the latest currently available information in relation to flood risk and drainage for the locality.
- 6.6.8 Assessment Process**
- 6.6.9 In undertaking an assessment of the flood risk implications, the submitted Flood Risk Assessment (FRA) includes all sources of flood risk. LB Havering, as the Local Lead Flood Authority (LLFA), is responsible for considering surface water and groundwater flood risk in this context.
- 6.6.10 The risk of surface water flooding to the proposed scheme is considered within the FRA and is assessed as low. However, it is not considered that sufficient assessment has been undertaken of the potential impacts of the scheme on surface water flood risk. It is therefore not clear whether the mitigation measures are sufficient.
- 6.6.11 Specifically, watercourse DI-1N14ZZZ2: New diversion and culvert (on Sheet 42 of the drainage plans) has been scoped out of the hydro morphology assessment. This is likely to be acceptable considering the characteristics of the ditch. However, the watercourse diversion should be given further consideration to minimise culverting and ensure changes to the gradient do not cause increase flooding or maintenance burdens.
- 6.6.12 Ongoing groundwater monitoring is proposed in key locations, such as proposed earthworks cuttings. LB Havering is of the view that reasonable consideration has been given to ground water flood risk.
- 6.6.13 The risk of increased pollution from both routine runoff and accidental spillage has been considered and mitigation proposals are generally considered appropriate.
- 6.6.14 Scheme Design**
- 6.6.15 One of the primary considerations of the section of the scheme through Havering is the impact of the additional surface water runoff from impermeable areas within the scheme.
- 6.6.16 In terms of the management of surface water runoff from the proposed scheme; for parts of the scheme where impermeable areas will be increased, runoff is proposed to be reduced to 50% of the existing runoff rate, where runoff is already managed. This would be collected from the scheme and attenuated in detention basins prior to discharge. Existing detention basins would be enlarged and improved to accommodate the increase in runoff.
- 6.6.17 A minimum discharge rate of 1l/s is proposed from surface water outfalls. The proposed minimum discharge rate of 1l/s is considered to be too low and could increase the risk of blockages, which would potentially increase flood risk. LB Havering would like to see further consideration given to whether the discharge rate is appropriate or whether mitigation measures are required to manage the blockage risk.

- 6.6.18 In the FRA, it is proposed that the basins are designed for the 100 year + 20% climate change event with a sensitivity check for the 40% climate change event.
- 6.6.19 However, based on the lifetime of the scheme, the basins should be designed for the 100 year + 45% climate change rather than using this as a sensitivity test. The Applicant has confirmed that the basins have been re-designed to manage the 100 year + 45% climate change, in accordance with the latest guidance.
- 6.6.20 In the Environmental Masterplan, detention basins are shown to have a permanently wet element at the base. This is not shown in the FRA and it is not clear that this has been considered as part of the design in combination with the sediment forebay.
- 6.6.21 NH has confirmed that all basins will be designed as hybrid basins incorporating an element of permanent water at the base.
- 6.6.22 Attenuation Basin 11 is located within Flood Zone 3. This basin is an upgrade of an existing basin so its location is unavoidable. However, efforts would need to be made to mitigate this and an enhanced maintenance schedule would be required for this basin based on the risk of flooding. NH has indicated that the Basin 11 would incorporate an embankment to manage the fluvial flood risk.
- 6.6.23 Full details for drainage proposals have not been provided for J29 but proposals to manage this with upgrades to the existing network are considered reasonable.
- 6.6.24 **Construction Impacts**
- 6.6.25 NH has committed to preparing a Flood Risk Assessment and Drainage Strategy for the construction phase, to be prepared by the contractor. In terms of the construction, this approach is considered to be reasonable as the contractor would be best placed to determine the mitigation requirements.
- 6.6.26 LB Havering, in the role as the LLFA, considers they should have an opportunity to review and comment on the Flood Risk Assessment and Drainage Strategy for the construction phase. Havering's comments on the strategy should be submitted to the SoS as part of the approval process for the management document.
- 6.6.27 Both the M25 compound and the Ockendon Road compound are relatively low risk flooding (notwithstanding previous comments that surface water flooding needs to be considered in more detail for the proposals). Havering does not have concerns in relation to these sites and flood risk.
- 6.6.28 **Operational Impacts**
- 6.6.29 Operationally, the key focus should be on ensuring that drainage and flood mitigation features are monitored, maintained and continue to operate as designed.
- 6.6.30 Maintenance of drainage features would be carried out in accordance with the Design Manual for Roads and Bridge (DMRB) and the maintenance schedule is considered to be sufficiently robust. It is also proposed that a specific maintenance plan for the scheme would be prepared as part of the design.

### 6.6.31 **Mitigation**

6.6.32 The Construction Environmental Management Plan (CEMP) should give consideration to the requirements for the management of flood risk and surface water. The CEMP should also provide evidence of how existing watercourses will be managed during the construction process to ensure that flood risk is not increased.

6.6.33 NH would be obliged to carry out maintenance in accordance with DMRB and the maintenance plan. NH should provide annual submissions of maintenance activities completed and correlated against the maintenance plan.

6.6.34 Similarly, to the above, groundwater monitoring is proposed at several critical locations. LB Havering would expect NH to submit ongoing groundwater monitoring records, including an assessment of whether mitigation is effective.

### 6.6.35 **DCO requirements**

6.6.36 LB Havering considers the DCO requirements acceptable from the flooding and drainage perspective, subject to agreement of the CEMP, the FRA and other matters above. These include, specifically:

- Securing the opportunity for LB Havering, as LLFA, to review and comment on the Flood Risk Assessment and Drainage Strategy for the construction phase of the project.

## 6.7 Skills and Employment

### 6.7.1 **Policy Context**

6.7.2 Policy 22 of the Havering Local Plan commits the Council to promote employment and skills development opportunities for local residents by supporting major developments proposals that commit to:

- A minimum local labour target of 20% during construction and end user phase for major commercial or mixed use developments including a proportion of apprenticeships where the length of construction phase allows;
- A minimum local labour target of 20% during construction for major residential developments;
- The notification of all vacancies associated with the development and its end use through the Council's employment service; and
- Offer opportunities to local businesses within their supply chains.

6.7.3 The Skills, Education and Employment Strategy (SEE Strategy) that has been produced for the scheme does not offer any local employment targets, on a local authority by local authority basis. The Strategy commits NH to 45% of the workforce to be recruited from within 20 miles of the project. Specifically, this consists of:

6.7.4 20% from postcodes that sit within the local authorities that the project directly impacts.

6.7.5 25% from post codes that are within a 20 miles' radius of the project

6.7.6 The above commitments are simply a generic target across the whole route rather than borough specific.

6.7.7 NH expects to engage a workforce of around 22,000 people over the course of the project. To put a 20% local labour target in the context of the SEE Strategy, this



would equate to 4,000 jobs out of the 22,000 the scheme is expected to create being from the host local authorities.

6.7.8 In terms of apprenticeships, using CITB benchmarks for development scheme, a scheme with a value of £6.1 - £10M would provide for two apprenticeships. The CITB / NSAfC does not provide formulaic guidance for a project of this scale, however the target of new jobs and new apprenticeships suggested is fewer than the simple extrapolation of the formula would suggest was appropriate.

6.7.9 In terms of the overall targets, if there is no further breakdown of these to identify specific targets for Havering, there is a risk that the opportunities will not reach those most in need of support in the Borough. This is a matter that LB Havering has consistently and repeatedly raised with NH, however thus far no further progress has been made.

#### 6.7.10 **Assessment of Data Sets**

6.7.11 There is no assessment of the local labour market within Havering.

#### 6.7.12 **Assessment Process**

6.7.13 LB Havering recognises there is no statutory process laid out to assess the SEE Strategy. LB Havering has been consulted by NH on the content of the SEE Strategy, however, Havering remains unsatisfied with how these comments have been taken into account in the draft that was submitted as part of the DCO Application.

#### 6.7.14 **Scheme Design**

6.7.15 LB Havering has no comments to make on scheme design in the context of Skills and Employment.

#### 6.7.16 **Construction Impacts**

6.7.17 The workforce required to build the scheme has been stated over the duration of the build with no percentage commitment to employment or training roles for LB Havering. Without a commitment to Borough-specific targets, the monitoring of impacts within Havering cannot be measured.

#### 6.7.18 **Operational Impacts**

6.7.19 While the strategy refers to other major projects in the vicinity, it does not assess the potential impact of these and other projects on the availability of both skilled and unskilled labour. As such, this also increases the risk of the required workforce being imported from elsewhere.

6.7.20 LB Havering has called for training for skilled roles to be front loaded to achieve the upskilling stated in the SEE Strategy. Without this up front training, the roles that will be available will be low skill and are unlikely to leave a skills legacy, which is a stated ambition for the Strategy.

6.7.21 It is unlikely that Havering residents will access jobs in the section of the project that is south of the River Thames in Kent. The cost of travel and accessibility of the main employment sites may also preclude Havering residents from applying.

### 6.7.22 **Mitigation**

6.7.23 The SEE Strategy does not offer local employment or training targets for Havering residents.

6.7.24 The S106 Agreements - Heads of Terms document includes the SEE Strategy but offers no positive resource to the Council that would support bringing forward the SEE Strategy to positively impact LB Havering. The Heads of Terms document sets out proposed Planning Obligations including an “*Officer Support Contributions*” but lacks sufficient details to give LB Havering the assurance it needs that such a resource would be able to drive forward the strategy.

6.7.25 NH proposes to drive the SEE Strategy through the Supply Chain. Havering’s experience is that this is not an effective approach, with supply chains not meeting commitments and using “best endeavours” to cover their shortcomings. Havering would seek to work with NH to drive and monitor performance against local targets to realise any benefit for Havering residents.

### 6.7.26 **DCO Requirements**

6.7.27 LB Havering considers the DCO requirements acceptable from the skills and employment perspective, subject to agreement of the matters above. These include, specifically:

- Requiring the SEE Strategy to offer Borough-specific local employment / training targets for Havering residents.

## 6.8 Carbon

### 6.8.1 **Policy Context**

#### 6.8.2 National Policy

6.8.3 The NPSNN sets out the Government’s policies to deliver NSIPs on the national road and rail networks in England. Paragraphs 5.17 to 5.19 describe how carbon impacts should be considered, the scope of assessment, when consent should be refused and the use of mitigation.

#### 6.8.4 Local Policy

6.8.5 The Havering Local Plan 2016 - 2031 provides current planning policy for the London Borough of Havering. Policy 33: Air Quality and Policy 36: Low Carbon Design and Renewable Energy provide low carbon requirements for new development within the Borough.

### 6.8.6 **Assessment of Data Sets**

6.8.7 LB Havering considers the data sets that have been used in the carbon emissions assessment presented within ES Chapter 15: Climate, to be reasonable.

6.8.8 It should be noted, however, that the assessment of road vehicle exhaust emissions utilised data produced from the traffic modelling that NH have undertaken. Havering has concerns about aspects of the traffic modelling as set out in chapter 7 of this LIR. The emission calculation outputs rely upon these inputs and therefore any discrepancies may also affect the carbon conclusions.

#### 6.8.9 **Assessment Process**

6.8.10 Havering considers that the assessment process has been appropriate in the context of national guidance for the assessment of carbon emission impacts from highways schemes.

#### 6.8.11 **Scheme Design**

6.8.12 It is considered the design of the scheme is appropriate in relation to potential carbon emission impacts on receptors within the Borough.

#### 6.8.13 **Construction Impacts**

6.8.14 It is considered construction-related carbon emission impacts have been identified and assessed correctly. However, it is unclear how the Construction Travel Plan will substantially support carbon reduction given the high percentage of car borne trips to the construction compounds by workers. (M25 Compound trips 75% by car)

6.8.15 Mechanisms to ensure accuracy of results are included in the Carbon and Energy Management Plan.

#### 6.8.16 **Operational Impacts**

6.8.17 It is considered operational-related carbon emission impacts have been identified and assessed correctly.

#### 6.8.18 **Mitigation**

6.8.19 Proposed mitigation relates to potential construction impacts. This is contained within the Carbon and Energy Management Plan Appendix E. The commitments appear reasonable and provide assurance that the project will not exceed the calculated carbon budget, as well as incentives for contractors to improve upon their designated emissions. Specific to the Borough, there are a number of requirements to minimise carbon emissions from compounds.

6.8.20 It is noted that the use of zero emission generators has been included within the calculation of carbon emissions. However, Havering would like to see this included as a commitment and added to Table E1 of the Carbon and Energy Management Plan. Additionally, the main text provides a requirement for at least 20% of the energy demand for site compounds and offices to be from onsite renewables. Havering would again like to see this included as a specific commitment and added to Table E1.

#### 6.8.21 **DCO Requirements**

6.8.22 LB Havering considers the DCO requirements acceptable in relation to carbon emission matters within the Borough, subject to agreement of the Carbon and Energy Management Plan and other matters above. These include, specifically:

- Securing the commitment to use zero emission generators during the construction phase.
- Securing the commitment for a requirement for a least 20% of the energy demand for site compounds and offices to be from onsite renewables.

## 6.9 Ecology

### 6.9.1 Policy Context

6.9.2 The biodiversity resource of Havering is diverse and constantly changing. Its historic parks, river valleys and Thames-side marshland hold a significant proportion of London's entire resource of some Priority habitats. Its private gardens are home to the stag beetle, a Priority species, and it has a high density of ponds (2 per sq.km) that support important key species such as great crested newts. Havering is also the stronghold in London for another Priority species, water voles.

6.9.3 Within Greater London, Havering has 56% of the grazing marsh, 31% of the reedbeds, 31% of the floodplain grassland, 25% of the marshland and 19% of the ponds and lakes, in all cases more than any other London borough. The rivers in the Borough are, in the most part, included either in wildlife corridors, SSSIs, Local Nature Reserves (LNRs) or other sites of nature conservation interest. The estuarine habitats beside the Thames, which include (in Havering, part of) the Inner Thames Marshes SSSI, are internationally important for their biodiversity interest, supporting large numbers of overwintering and breeding wetland birds, rare plant and invertebrate species, and diverse marine wildlife.

6.9.4 Havering is the sixth most wooded borough in London, with a number of ancient woodlands, and blocks of semi-natural woodland which are concentrated in the north of the Borough, forming part of the attractive wooded Havering Ridge (see Appendix 1 Constraints Map). Much of the woodland is concentrated around the historic landscapes of Havering Country Park, Bedfords Park, Pyrgo Park and Dagnam Park, (which is also designated as one of the seven statutory designated LNRs) alongside Ingrebourne Valley LNR. Havering also has a large number of non-statutory Sites of Importance for Nature Conservation (SINCs); these include nine Sites of Metropolitan Importance, 64 Sites of Borough Importance - 21 Grade 1 and 43 Grade II sites – and 16 Sites of Local Importance. The Borough has a concentration of sites of high biodiversity value across the northern ridge and, in the south of the borough, the high-value Ingrebourne and Inner Thames Marshes SSSIs and the corridor of the River Thames.

### 6.9.5 Assessment of Data Sets

6.9.6 LB Havering is satisfied that the ecological assessment follows the methodology set out in the DMRB LA 108 Biodiversity (Highways England 2020a) and relevant guidance, including Chartered Institute of Ecology and Environmental Management (CIEEM) publications. LB Havering also acknowledges that the ES Chapter 9 Terrestrial biodiversity has due regard for the methods of assessing the impact of changes in air quality on designated and non-designated sites as set out in DMRB LA 105 Air Quality (Highways England 2020b).

6.9.7 In relation to paragraph 5.23 of the NPSNN, which states, 'The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests', LB Havering welcomes the Biodiversity Metric calculations which have assessed the Biodiversity Net Gain (BNG) baseline conditions and the post development BNG forecast to be generated by the project. Havering accepts that the current assessment is based on the preliminary project design (as of August 2022) and uses the Biodiversity Metric 3.1 Calculation Tool to determine whether the project could result in a net gain in biodiversity units. Havering notes the Metric results for the project overall are predicted to be 7% for habitat units but -11% for hedgerows and -7% for rivers and streams. It is, however, important to consider how the deficiencies to ensure no net

loss of biodiversity will be overcome for the scheme which is necessary before any claim for BNG can be made for this NSIP.

- 6.9.8 Overall, LB Havering is satisfied that the assessments undertaken have informed likely impacts from both construction and operational phases of the project and that these assessments confirm how target compensatory habitat and condition will be achieved.
- 6.9.9 Havering supports the monitoring, which includes the employment of a suitably qualified Ecological Clerk of Works (ECoW) throughout construction, works to ensure delivery of all the mitigation measures, in line with all protected species licence requirements.
- 6.9.10 Havering is satisfied that no part of the Borough is likely to be impacted by this NSIP, which will result in effects on the marine environment, as set out in Chapter 9 Marine Biology of the ES.
- 6.9.11 **Mitigation**
- 6.9.12 As the Solar Park grassland will be used as a reptile receptor site, LB Havering would like further details of the existing site grass sward and how this fits with proposal for grassland seeding. Havering seeks these in relation to wildflower meadow and/or flowering grass mixes, particularly flowering lawn mixes for pollinators to allow for more frequent cutting than hay meadows.
- 6.9.13 LB Havering welcomes the inclusion of detail relating to long-term ecological monitoring of habitats created after the five-year establishment period, undertaken to assess the success of the grassland in terms of developing into the relevant target Priority habitat.
- 6.9.14 LB Havering also welcomes Table 8.35 in the Terrestrial biodiversity chapter of the ES, which confirms that the compensatory planting for habitat losses of ancient woodland are not considered within the BNG calculations due to the irreplaceable nature of the habitat lost.
- 6.9.15 LB Havering requests that as ancient and veteran trees are also irreplaceable habitat, that the net gain reported in this table is amended to reflect this and remove the 0.13ha from net permanent gain. Havering also requests that where existing habitat is s41 Priority habitat, that this is clearly shown in Table 8.35.
- 6.9.16 LB Havering has reviewed the confidential appendices and associated figures relating to badger, Barn owl and Marsh harrier and are satisfied that the mitigation hierarchy has been applied.
- 6.9.17 Potential impacts on other protected species e.g., bats, great crested newts and water voles, are detailed with mitigation measures, in Chapter 8 of the ES. These include unlit sections of road to provide dark corridors for photosensitive species and warm white luminaires to reduce the impacts on insects and bats. Where licensing will be required, the draft application is also provided to support the DCO and biodiversity losses and compensation features have been embedded into the design of the project and recorded in ES Appendix 2.2 which includes both the CoCP and REAC. This is welcomed by Havering.
- 6.9.18 **North Ockendon Pit Mitigation**
- 6.9.19 The M25 Construction Compound will result in a 7.3% loss of North Ockendon Pit SINC. LB Havering Policy 30 Biodiversity and geodiversity protects SINCS from adverse effects and requires adequate compensation measures for impacts that cannot be avoided.

- 6.9.20 According to GIGL (2020) Appendix 8.1 Designated sites (APP-390) North Ockendon Pit SINC is described as neutral grassland and secondary woodland providing habitat for a variety of birds. This site has been identified as containing Groundwater Dependent Terrestrial Ecosystems (GWDTEs). GWDTEs are wetlands which critically depend on groundwater flows and/or chemistries (European Communities (2011), shown in WFD-UKTAG (2014a). The site description for this SINC in the Havering SINC Review (2017) includes neutral grassland (semi-improved), tall herb, scrub, woodland, scattered trees, standing water and hedges and these habitats support significant populations of reptiles and invertebrate assemblage of national importance, including several rare bees, wasps and ants.
- 6.9.21 ES Appendix 8.21 (APP-417) Biodiversity Metric Calculations Table C.1 Target habitat type and condition (area-based habitats) fails to make it clear which habitats within North Ockendon Pit SINC will be affected by the scheme. There is also no labelling within the calculations to refer to this designated site regarding strategic significance to inform the bespoke compensation requirements.
- 6.9.22 ES Chapter 8 Terrestrial Biodiversity (APP-146) states in Table 8.33 Construction effects on non-statutory designated sites north of the River Thames that for North Ockendon Pit SINC, construction effects are predicted to be an area of temporary reversible habitat loss (1.39ha representing 7.3% of the SINC) within the southern half of the SINC.
- 6.9.23 LB Havering requires further information on the compensatory habitat creation described in Section 8.5, Figure 2.4: Environmental Masterplan (Application Document 6.2) and the Design Principles (Application Document 7.5) Clause no. LSP.22, PRO.04, PLA.05, LSP.02, LSP.04 and LSP.09, to assess if this would deliver adequate compensation for the habitat loss of this designated site. Havering does not agree that the impact of the habitat loss would result in *“a negligible temporary adverse level of impact and result in effects that are slight adverse and not significant.”*
- 6.9.24 Despite embedded mitigation, LB Havering requires bespoke compensation for the permanent loss of SINC and seeks to ensure that sufficient compensation is provided. Havering recommends that the construction compound would be an appropriate single location for the creation of compensatory brownfield habitats with low nutrients which could also act as a buffer for the retained SINC habitats.
- 6.9.25 **DCO Requirements**
- 6.9.26 LB Havering considers the DCO requirements appropriate in relation to ecology matters within the Borough, subject to agreement of the matters above. These include, specifically:
- Securing the requirement for appropriate mitigation measures for the North Ockendon Pit SINC.
  - Securing the requirement for bespoke compensation relating to the permanent loss of SINC in the Borough.

## 6.10 Built Heritage

### 6.10.1 Background

6.10.2 The London Borough of Havering is the furthest east of the London Boroughs and historically formed part of the County of Essex. The current Borough was formed in 1965, combined of the former borough of Romford and the urban district of Hornchurch. The character of its historic environment is therefore unique in that it

reflects its location, with London suburbia sitting alongside rural Essex. Havering has a rich and diverse heritage. There are eleven Conservation Areas all with differing qualities and characteristics which reflect the history of the Borough; from rural villages, to market towns and early twentieth century housing estates. The Borough contains nearly 150 listed buildings, including 21 Grade I and II\* listings which are of the highest significance as well as over 150 locally listed building, recognised for their local architectural or historic interest. There are three Scheduled Monuments, including a Roman site and two medieval sites, and one Registered Park and Garden at Upminster Court.

- 6.10.3 The Borough takes its name from the medieval manor and Liberty of Havering-atte Bower, which covered an area stretching from the Thames marshes in the south to the village of Havering-atte-Bower in the north. The Liberty consisted of the three large parishes of Romford, Havering-atte-Bower and Hornchurch. The eastern side of the Borough was within Chafford Hundred, which comprised of a cluster of small parishes of isolated farms and hamlets including Cranham, North Ockendon, Upminster and Rainham.
- 6.10.4 Havering-atte-Bower was the location of the royal manor house from the eleventh to the seventeenth centuries. The village still retains its ancient green and its character as a rural settlement, containing buildings in the Essex vernacular alongside impressive eighteenth-century country houses including The Bower House (listed at Grade I) and The Round House (listed at Grade II\*). The manor here closely aligned with the boundary of the medieval parish of Hornchurch. The Grade I listed parish Church of St Andrew, of thirteenth century origins, remains a prominent landmark within Hornchurch.
- 6.10.5 The thirteenth century market town of Romford was in the centre of the Liberty. The town, being located on a major route into London, benefitted from travel and trade and grew to a large market town with many coaching inns lining the High Street. The arrival of the Eastern Counties Railway in 1839 resulted in the expansion of the Romford, and the extension of the London Tilbury and Southend line to Hornchurch and Upminster in 1885 instigated the development of nineteenth century suburbs close to station locations. In the early twentieth century, Gidea Park was the first major suburb to be developed at the edge of Romford beyond the nineteenth century residential development of the town. It is now designated as a Conservation Area. At the core of the Gidea Park garden suburb are the exhibition houses which originally consisted of 159 houses by 100 architects showcased by the development company in 1911.
- 6.10.6 More intensive development for housing peaked in the 1930s with the selling of the old estates and the construction of new arterial roads. The architectural character of the suburbs is varied but the creation of the Green Belt curtailed further large-scale development, protecting the unique character of the Borough.
- 6.10.7 **Policy Context**
- 6.10.8 The relevant legislation, national policy, national guidance and local policy for assessing the impacts on built heritage assets is noted below.
- 6.10.9 In assessing the impact on conservation areas and on the settings of listed buildings (and direct impacts on listed buildings although not relevant for the proposals within the LBH boundary), Section 66(1) and Section 72(1) of the *Planning (Listed Buildings and Conservation Areas) Act 1990* are relevant.
- 6.10.10 In regards to the *National Policy Statement for National Networks* (NSPNN), paragraphs 5.120 – 5.142 set out the policies relating to the historic

environment. These policies provide a definition of heritage assets and non-designated heritage assets, explain what ‘significance’ is in relation to heritage assets (5.122), and state that an applicant must describe the significance of any heritage assets affected in order to understand the impacts of a proposal (5.127). Paragraphs 5.182 – 5.138 concern the decision making process and the need to consider the significance of heritage assets in any decision making with great weight given to the conservation of heritage assets. It recognises that any harm to the significance of heritage assets should be weighed against the public benefits of the proposal.

- 6.10.11 To assist in describing the significance of heritage assets (including the contribution made by their setting) and assessing the impact of proposals on this significance there are a number of guidance documents and advice notes produced by Historic England. The most relevant are *The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning: 3 (2nd Edition)*, *Statements of Heritage Significance: Analysing Significance in Heritage Assets: Historic England Advice Note 12* and *Managing Significance in Decision-Taking in the Historic Environment: Historic Environment Good Practice Advice in Planning: 2*. The stepped assessment set out in *The Setting of Heritage Assets* provides a widely-accepted framework for any assessment of the setting of a heritage asset.
- 6.10.12 Policy 28 of the *Havering Local Plan 2016-2031* relates to heritage assets and recognises the importance of preserving or enhancing the significance of heritage assets as per the National Planning Policy Framework (which are largely mirrored within the NPSNN).
- 6.10.13 **Data Sets**
- 6.10.14 The data sets used in the assessment of heritage assets and the production of the Cultural Heritage ES Chapter (and supporting technical documents) are acceptable.
- 6.10.15 **Assessment**
- 6.10.16 The assessment process for built heritage is based on the relevant legislation, policy and guidance and is acceptable.
- 6.10.17 **Design**
- 6.10.18 As detailed in the Cultural Heritage ES Chapter, environmental considerations have influenced the design and certain commitments in regards to cultural heritage have been made through ‘embedded mitigation’, ‘good practice’ and ‘essential mitigation’.
- 6.10.19 In regards to ‘**embedded mitigation**’ for built heritage within the LBH boundary, the scheme has been designed to incorporate a retaining wall to limit the land required adjacent to the listed building of Franks Farmhouse (list UID: 1079879) and soft landscaping is to be provided to soften the visual impact of the structure.
- 6.10.20 The design of the scheme in regards to the construction impacts of the M25 compound at North Ockendon has been partially addressed under the commitment to ‘**good practice**’. The layout of the compound has been designed to minimise impact on the Conservation Area and this includes locating facilities over 6 metres in height as westerly as reasonably practicable (REAC ref. LV022), locating the anticipated concrete batching plant as south-westerly as reasonably practicable (REAC ref. LV023), and using excavated soil to create earth bunds on the north-western



boundary of the compound to provide screening to the Conservation Area (REAC ref. LV024).

6.10.21 The layout of the compound has been designed to minimise impact on the Conservation Area and this includes locating facilities over 6 metres in height as westerly as reasonably practicable (REAC ref. LV022), locating the anticipated concrete batching plant as south-westerly as reasonably practicable (REAC ref. LV023), and using excavated soil to create earth bunds on the north-western boundary of the compound to provide screening to the Conservation Area (REAC ref. LV024).

6.10.22 The Temporary Works Plans Sheet 42 (within Volume C, application document reference 2.17) shows the illustrative layout of the compound with storage, workshops, material storage and car park to the south, further away from the Conservation Area, and an “earthworks stockpile area” covering most of the compound area in closer proximity to the Conservation Area. The earth stockpiling appears much more intensive on the illustrative plan than indicated in the text of the REAC where they are described as “earth bunds on the north-western boundary of the compound”. Stockpiling to this extent will have a detrimental impact on the setting of the Conservation Area and the intention of the REAC to provide visual screening of the compound facilities with bunds will be undermined by the quantity of stockpiling. The potential concrete batching plant is not shown specifically on the plan, but it is assumed that this will be located within the larger proposed storage area to the south west as per the REAC commitment. The details of this are unknown, but it is assumed that parts of this facility will be tall so locating it as far from the Conservation Area as possible is vital to better preserving its setting.

#### 6.10.23 **Construction impacts**

6.10.24 The construction impacts have been correctly identified. However, there remain some queries on the impact of the access routes to the M25 compound at North Ockendon. Main works access routes are shown on the Temporary Works Plans to the north and south of the compound and these will not run through the Conservation Area.

6.10.25 ES Chapter 6 notes (para. 6.6.153) that “a short-term online main construction route would be established through the Conservation Area, along Ockendon Road and the B186. This is not clearly shown on the Temporary Works Plans Sheet 42, however, it is understood that the construction route passes the edge of the Conservation Area (and partially within) and will not be routed through the core of the Conservation Area.

6.10.26 Potential vibration impacts on historic and listed buildings within the Conservation Area during construction have been raised as a concern separately but, on review of the relevant ES Chapters, these impacts have been appropriately identified and assessed.

6.10.27 Chapter 6 (para. 6.3.9) confirms that Chapter 12: Noise and Vibration has concluded that there would be no significant levels of ground-borne vibration during operation and so no further assessment of operational ground-borne vibration impacts was carried out for cultural heritage assets. However, the potential impacts from vibration to buildings within the Conservation Area will result from construction phase (i.e. whilst the M25 compound is present). Two buildings to the north-west of the Conservation Area were assessed for the potential impact of vibration from piling activities (4 Cranham Place, Chapter 12 ref. CV 42, and Old Coach House, Chapter 12 ref. CV 43) and it was found that

the impacts would be 'minor' (in one case 'moderate') and 'not significant' (see Appendix 12.4 of the ES).

6.10.28 The noise assessment in Chapter 12 has considered two buildings within the Conservation Area: Cedar, 1 Hall Farm, Church Lane, North Ockendon (Chapter 12 ref. CN 121); and Glebe Barn, Church Lane, North Ockendon (Chapter 12 ref. CN 124). CN 121 has been assessed to have no likely significant effect through construction noise impacts (Table 12.34, Chapter 12). The effect on CN 124 has been assessed to be at night time only during the construction of utilities work but Chapter 12 (Table 12.35) states that this would not constitute a significant effect.

6.10.29 It appears that the assessment of noise and vibration has not concluded any significant effects to buildings within the North Ockendon Conservation Area during the construction or operational period.

### **6.10.6 Operational impacts**

6.10.6.1 The operational impacts have been correctly identified.

### **6.10.7 Mitigation**

6.10.30 The "retention of screening vegetation, careful siting of compound facilities, and establishment of visual screening earthworks" (ES Chapter 6, para. 6.5.22) are listed as 'essential mitigation' commitments included as part of the design of the scheme to address the impact from construction compounds including the compound at North Ockendon. However, despite the 'good practice' and 'essential mitigation' commitments in the design of the scheme, the temporary, construction phase impact would be "significant" in EIA terms (as per ES Chapter, para. 6.6.156), which would be considered as "less than substantial" harm to the significance of the Conservation Area when applying the terminology of para. 5.134 of the NPSNN.

6.10.31 Relevant to build heritage assets within the LBH boundary, the 'essential mitigation' measures also include commitments within the REAC and Draft Archaeological Mitigation Strategy and Outline Written Scheme of Investigation (AMS-OWSI) to record historic buildings to be lost due to the project. The REAC contains a specific commitment to record the Grade II listed buildings proposed for demolition within Thurrock (REAC ref. CH004), and whilst there is no equivalent commitment for the recording of the locally listed buildings of 1 and 2 Bridge Cottages (DBA ID 4154 and 4155), 3 and 4 Bridge Cottages (DBA ID 4156 and 4157) and Estate House (DBA ID 4153) is it understood that this is due to the policy differentiation between designated and non-designated heritage assets. The loss of the designated heritage assets (listed buildings) will result in 'substantial' harm in policy terms, whereas no equivalent exists for non-designated heritage assets (although there will be a total loss of significance).

6.10.32 Rather than a specific requirement, the recording of the locally listed buildings will be secured under REAC commitment CH001 which requires the implementation of the AMS-OWSI. Item no. 2.3 of the AMS-OWSI notes the aim to create records of any historic building before they are lost and table 9.3 provides a list of the buildings and the proposed level of recording. This is deemed to be an appropriate approach to securing the recording of the locally listed buildings.

6.10.33 The Draft AMS-OWSI suggests a Level 3 recording for the locally listed buildings, however, a hybrid Level 3 – 4 record should be considered in order to adequately record the documentary history of the buildings and their group value given their close proximity.

6.10.34 **DCO Requirements**

6.10.35 Section 20(1) allows for protective works to be carried out to any building on any land which may be affected by the development. Part 9 of Section 20 states that the undertaker of any protective works to a listed building must serve notice on the local planning authority and have due regard to any response received. This will allow for any works to listed buildings to be monitored (although they are not currently envisaged).

## 6.11 Landscape

### 6.11.1 Background

6.11.2 Havering is one of the greenest boroughs in London, with an attractive suburban character and over half the Borough covered by protected countryside, parkland and nature reserves. It is a varied landscape where human intervention has played a significant role in the development and maintenance of many of the different habitats, which combine to create a unique landscape so close to the urban centre of London.

### 6.11.3 Policy Context

6.11.4 At the National level, the London Borough of Havering is identified as lying within the 'Northern Thames Basin (111)' National Character Area (NCA). Profile 111 include several 'Statements of Environmental Opportunity' (SEOs) and 'Landscape opportunities' relevant to the DCO. This includes managing and expanding the significant areas of broadleaf woodland and wood pasture; creating better access to the countryside with an increased number of public footpaths and rights of way and restoring the connectivity of key habitats.

6.11.5 At a local scale, the landscape of Havering has been assessed using the Land of the Fanns Landscape Character Assessment (The 'Land of the Fanns' Landscape Partnership Scheme, 2016).

6.11.6 In regard to national policy, the NPPF (2021) includes for the conservation and enhancement of the natural environment by protecting and enhancing "valued landscapes" and sites of biodiversity or geological value / soils.

6.11.7 In particular, NPPF paragraph 130 states that, "Planning policies and decisions should ensure that developments... are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities)".

6.11.8 Furthermore, paragraph 174 states that, "Planning policies and decisions should contribute to and enhance the natural and local environment by: (b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland".

6.11.9 At a local level, the Havering Local Plan 2016-2031 sets out landscape requirements under Policy 27 Landscaping and Policy 29 Green infrastructure. These are as follows:

6.11.10 Policy 29 Green infrastructure states: "The Council will seek to maintain and expand the network of green spaces and natural features in Havering and optimise the benefits of green infrastructure to the environment, economy and community.

6.11.11 The Council will support development which includes green infrastructure on-site which is multifunctional and integrates into the wider green infrastructure

network. Developers are expected to work with existing partnerships to support and enhance green infrastructure provision including:

- *The All London Green Grid*
- *Thames Chase Community Forest*
- *Rainham Wildspace*
- *Land of the Fanns Landscape Partnership*
- *Roding, Beam & Ingrebourne Catchment Partnership*”.

6.11.12 Policy 27 Landscaping states: The Council will support development proposals that incorporate a detailed and high quality landscape scheme which:

- Takes full account of the landscape character of the site and its wider setting;
- Retains and enhances existing landscape features that contribute positively to the setting and character of the local area;
- Demonstrates how existing landscape features will be protected during the construction phase;
- Maximises opportunities for greening, through the planting of trees and other soft landscaping;
- Provides strong boundary treatment that integrates with and is sympathetic to the local landscape character and street scene; and support natural habitats and opportunities for enhancing biodiversity.

6.11.13 All proposals will be required to demonstrate that adequate arrangements have been made for future maintenance and management and major development proposals should be supported by a comprehensive Management Plan.”

#### 6.11.14 **Assessment of Data Sets**

6.11.15 A detailed review of this assessment and other relevant supporting information has been undertaken to establish whether the methodology, baseline review and assessment findings are deemed appropriate to inform appropriate decision making.

6.11.16 Landscape and Visual matters are provided within Chapter 7 (Application document ref. TR010032/APP/6.1) and associated figures and appendices. The report has been carried out in accordance with published guidance including the DMRB LA 107 Landscape and Visual Effects, Revision 2 (Highways England, 2020b) and the Landscape Institute’s Guidelines for Landscape and Visual Impact Assessment (GLVIA) 3rd edition. The assessment of landscape and visual effects was based on a combination of sensitivity and magnitude of change using the assessment matrix included in IAN 135/10 Landscape and Visual Effects Assessment.

6.11.17 As agreed during stakeholder consultations, a 5km ‘area of search’ was used for the desk-based study and Zone of Theoretical Visibility (ZTV) extent and then a refined study area extending up to 2km from the project route was defined for the assessment of effects on landscape character and visual amenity.

6.11.18 All agreed LCAs associated with the Havering landscape study area have been assessed as part of the Landscape and Visual Impact Assessment (LVIA).

6.11.19 The Thurrock Reclaimed Fen Landscape Character Area (LCA) was split into two sub areas following site appraisal and analysis. This is due to the difference in character between the low-lying, large-scale, flat inland basin associated with the

upper reaches of the Mardyke (sub area Mardyke), and the wooded landscape associated with Thames Chase Forest Centre to the west of the M25 (sub area Thames Chase).

- 6.11.20 On review, LB Havering accepts the landscape value, susceptibility and sensitivity judgements that have been proposed. Of most sensitivity, the Thurrock Reclaimed Fen LCA sub area Mardyke has been judged as having high sensitivity with high levels of tranquillity due to its sparsely settled nature and largely dark night-time character. The Thames Chase sub area and Belhus Lowland Quarry Farmland are deemed to be of moderate sensitivity.
- 6.11.21 The assessment concludes that the proposed scheme is predicted to have significant adverse residual effects on landscape character as a result of the construction and operation of the project.
- 6.11.22 LB Havering generally agrees with the significance of landscape effect judgements. This includes the impacts on the Thames Chase LCA sub area, which are judged to be 'moderate adverse' at Year 1 and 'slight adverse' at Year 15 (Design Year). This is primarily due to the widening of the existing M25 motorway corridor to accommodate the new project slip roads, resulting in a further reduction in relative tranquillity due to the increased prominence of the modified M25 corridor, as well as permanent loss of recreational land within Thames Chase Forest Centre.
- 6.11.23 Impacts on the Belhus Lowland Quarry Farmland LCA are also judged to be 'moderate adverse' at Year 1 and 'slight adverse' at Year 15 (Design Year). This is primarily due to the perception of substantial earthworks, structures and highway infrastructure along the new transport corridor, resulting in a further reduction in relative tranquillity. However, in areas this will be partially in the context of the existing M25, which reduces the significance of effect.
- 6.11.24 Visual effects are a result of the sensitivity of visual receptors (people who will experience changes to existing views) to the proposed development and the magnitude of those changes. The appraisal has identified visual receptors within the Study Area that are likely to have visibility of the proposed development. These include [but are not limited to], PRoW users, cycle routes, residential properties, users of public open space and road users.
- 6.11.25 As acknowledged in the ES, baseline field surveys commenced in 2017 and viewpoint photography for the Representative Viewpoint locations were last reviewed in Winter 2021 and Summer 2022. This ensures both the views and proposed developed are judged based on the worst-case scenario (deciduous trees have no leaf cover) and best-case scenario (leaf cover), which is welcomed.
- 6.11.26 On review, LB Havering accepts the visual receptor value, susceptibility and sensitivity judgements that have been proposed.
- 6.11.27 The assessment concludes that the proposed scheme is predicted to have significant adverse residual effects on visual amenity as a result of the construction and operation of the project. LB Havering agrees with this conclusion.
- 6.11.28 Generally, LB Havering agrees with the effects that have been judged. Pertinent to Havering, Viewpoint N-42 takes into consideration the 'view from the permissive path within Thames Chase Forest Centre'. The significance of effect on this visual receptor has been judged as 'Large adverse; at Opening year (winter) and 'Moderate adverse' at Design Year (year 15 – summer and winter). This reduction in significance is primarily due to the establishment of mitigation planting that will reduce visibility within the Thames Chase Forest Centre open space near the Thames Chase WCH bridge, and along the new embankment of the Lower Thames

Crossing J29 link road. Though this is accepted, it does place a strong reliance on the appropriate establishment and maintenance of mitigation planting. LB Havering notes that Monitoring section (7.8) makes reference to the REAC, which sets out the requirements for overseeing establishment in the first 5 years. Whilst the Landscape and Ecological Management Plan (LEMP) sets out requirements during the aftercare period and beyond. These reports have been addressed in the section below.

6.11.29 In addition, the significance of effect on visual receptors such as N-39 (View from footpath 231 near St Mary Magdalene Church, in North Ockendon Conservation Area) and N-41 (View from adjacent to residential properties, including Cranham Place on B1421, Ockendon Road) have been judged to be 'Moderate adverse' at Opening year (winter) and 'slight adverse' at Design Year (year 15 – summer and winter). As above, LB Havering accepts that the establishment of mitigation planting will soften views and reduce visibility of infrastructure by Year 15. However, the Council questions whether the proposed woodland planting shown in the photomontages (Figure 7.19 Application Document No. Baseline Photography - Viewpoint N-39 Summer Year 15 Sheet 3 of 4) is a realistic representation of the mitigation measures shown on the Environmental Masterplan (Section 13 Sheet 3). When reviewed, a large extent of the eastern edge of the highway, south of Ockendon Road, is only proposed as a native species hedgerow (untrimmed) (LE 4.3) with a reinforced earth bund (LE 7.4), which would look substantially different to the photomontage representation. In turn, this means the significance of effect judgements could differ from that specified in the LVIA.

#### 6.11.30 **Mitigation**

6.11.31 Havering is satisfied with the majority of the mitigation planting proposed to reduce the impact of the scheme and to offset the losses of vegetation and ancient and mature woodland blocks. However, the areas of mitigation planting are solely responsible for mitigating the impacts and therefore the design, implementation and overall management of the planting needs to be robust and future-proof.

6.11.32 Havering notes that Document 7.5: Design Principles Table 5.9 Section - specific principles: Section 13 & 14 – M25 Junctions: Clause S14.051 makes reference to the Thames Chase Community Forest woodland mitigation (Work No. E45) and that new areas of woodland planting south of the Thames Chase Community Forest, including the location of memorial tree planting and replacement of trees planted by the community, shall be developed in collaboration with Thames Chase Trust and Forestry England. Though this is welcomed, Havering notes that the Environmental Masterplan (Section 13 Sheet 4 and 5) shows the majority of the new tree planting to be proposed as 'LE 2.11 Woodland with Non-native Species', whereas Havering would be expecting this to be predominately LE 2.1 Woodland to ensure the form and pattern of native woodlands is retained. The Planting Palettes within Appendix A of the Design Principles document show the differences between the mixes and overall, the Council supports the use of *Quercus robur* as the dominate species within the 'Ultimate Canopy' mix. However, LB Havering would advise that the LPAs have an opportunity to review and comment on species selection.

6.11.33 The reference to veteranising individual trees or management to create veteran features in trees over the lifetime of the LEMP is supported by Havering.

#### 6.11.34 **DCO Requirements**

6.11.35 LB Havering considers the DCO requirements acceptable in relation to landscape matters within the Borough, subject to agreement of the LEMP and other matters above. These include, specifically:

6.11.36 Securing a commitment to effective mitigation planting which is appropriately managed to be robust and future-proof, specifically in relation to Thames Chase Community Forest.

## 6.12 Health

6.12.1.1 Overall, the Health and Equality Impact Assessment (HEqIA) report covered a wide range areas likely to be impacted including:

- Accessibility
- Traffic-related severance
- Noise and vibration
- Traffic-related severance
- Access to green space and outdoor recreation
- Active travel
- Work and training
- Housing and Communities
- Mental health and wellbeing
- Pollution and flood risk
- Light pollution
- Climate change
- Electric and Magnetic Fields (emfs)
- Affordability
- Road Safety

6.12.1.2 It expanded focus on mental health and wellbeing, access to open space and nature, including physical activity as highlighted by the Community Impact Public Health Advisory Group, CIPHAG.

6.12.1.3 The CIPAG Report details the Havering areas impacted with Upminster, Cranham, Harold Wood, Rainham and Wennington & Gooshays as wards most likely to be affected. The impacts are clearly assessed according to construction and operational phase and highlights the variation of impacts by Local Authority and by wards.

6.12.1.4 For Havering, the impact is shown as comparatively low, largely neutral but with key negative impacts and concerns around Upminster and Cranham in terms of:

- Access to green space and outdoor recreation.
- Noise and vibration on specific locations in LBH i.e. North Ockendon Compound, Church Lane.
- Increased traffic during construction-including Church Lane impact of proposed changes on residents on the siting of the local works compound.
- Increase traffic during construction will lead to impacts on local air quality.

6.12.1.5 These impacts are reported on elsewhere in this LIR.

## 7 Traffic and Transport

### 7.1 Scheme Design

7.1.1 In traffic terms the scheme has been designed on the basis of the DMRB. That said, there are locations where the design may not meet the demands placed upon it during operation. A detailed review of the scheme design for the elements in Havering has been conducted by the Council. These issues are set out below.

7.1.2 The following documents have been reviewed:

- Engineering drawings 12, 13 and 14 in Volume A (A122 LTC plans and profiles);
- Engineering drawings 14 and 15 in Volume B (A122 LTC Cross Sections);
- General Arrangement plans sheets 40 -47 in Volume C;
- Engineering sheets 3,4,5,6,7,8,9,10,11,12,13,14 and 15 in Volume G;
- Junction Layout Sheet 1 and 2 submitted recently by NH in Procedural Deadline B; and
- Rights of Way Plans sheets 39 to 47.

7.1.3 The identified issues are set out in Table 3.

7.1.4 It should be noted that while cross section and long section detail is available, the GA drawings are not to a scale that is easily measurable on pdf drawings. As such, any measurements referred to are approximate at this stage.

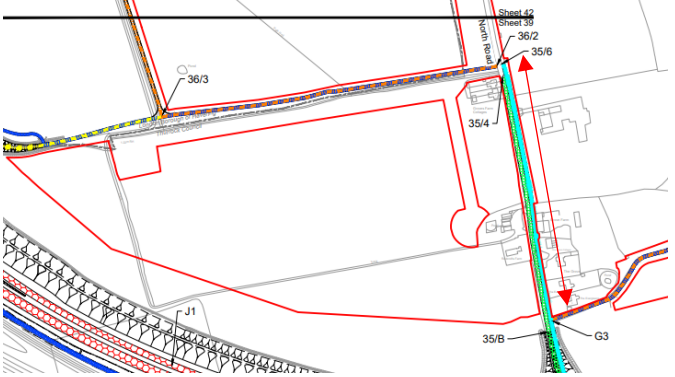
7.1.5 The review highlights potential concerns relating to:



- Design of permanent maintenance access points onto the LB Havering network;
- Specification for, coherency and consistency of Public Rights of Way (PROW) provision following LTC PROW diversions and stopping up of highways required for LTC delivery;
- Safety of PROW users on new sections of footpath and bridleway where they interact with LB Havering network; and
- Specifically, gradients of the proposed bridleway crossing of LTC to join to Dennises Lane.



7.1.6 As a general point, signing strategies for Non-Motorised Users (NMU) need to be produced and agreed at the detailed design stage.

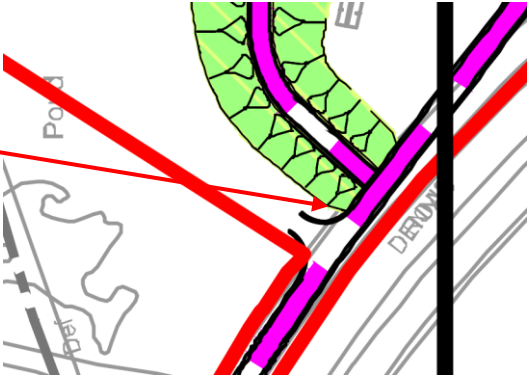



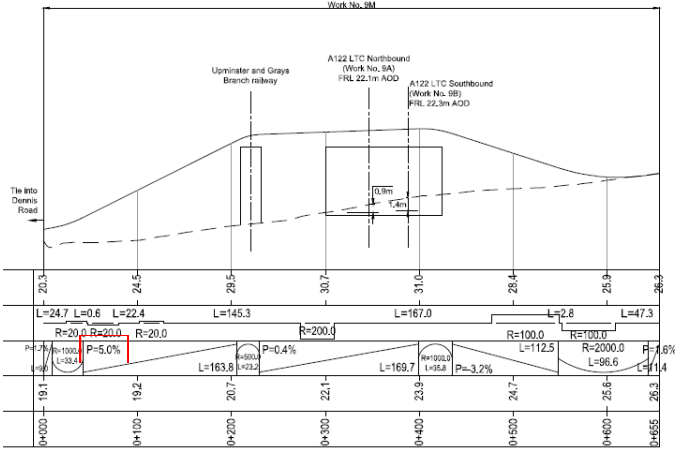
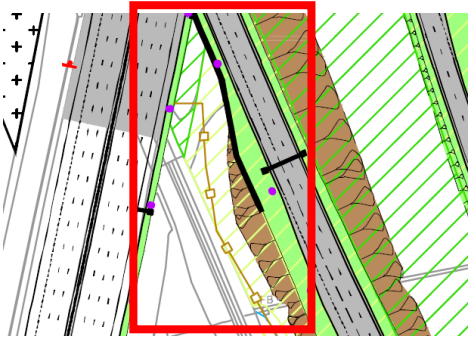
**TABLE 3 – SCHEME DESIGN: IDENTIFIED ISSUES SUMMARY**


DRAWING REF.	ISSUE REF	LOCATION	ISSUE DESCRIPTION	FURTHER NOTES
<p>Vol C GA – sheet 39</p> <p>Rights of Way Plan sheet 39</p>	<p>1</p>	<p>FP 151</p>	<p>FP151 is used for access to the M25 compound during construction, however will be returned to maintenance access and footpath in permanent works.</p> <p>Route of permanent PROW is realigned and this is also upgraded to a bridleway (BW). Has this diversion been applied for?</p> <p>Specification for route i.e. cross sections, materials etc. as a maintenance and FP access?</p>	 <p><b>Source: PROW Plans Sheet 39</b></p>


<p>Vol C GA – sheet 39</p> <p>1.1.1</p>	<p>2</p>	<p>North Road between FP 151 and turning to Medebridge Compound</p>	<p>Proposed new carriageway with form of NUM provision to eastern kerb line, with buffer to main carriageway. Links two existing footpaths that will be converted to bridleway.</p> <p>Is this achievable within highway boundary? Particularly the northern section.</p> <p>Specification for route i.e. cross sections, materials etc. as a maintenance and FP access?</p>	 <p>Source: OS Maps</p>  <p>Source: Google</p>
	<p>3</p>	<p>Crossing of A186 North Road by FP151</p>	<p>How will pedestrians cross the main road to access facilities and bus stops? Dropped kerbs may be required.</p> <p>Does this crossing need to be lit?</p>	<p>Whilst the footpath on North Road is not in LB Havering, FP151 is, and therefore crossing of road to bus stops from FP151 is a duty of care.</p>

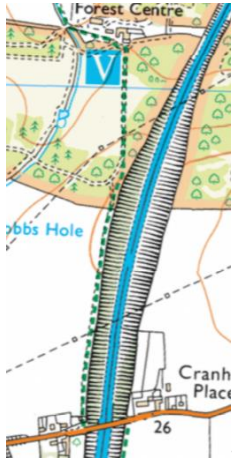
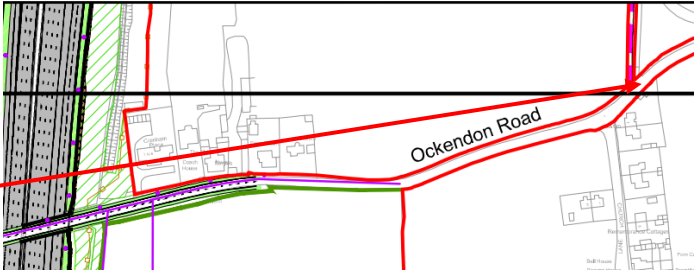
	4	Maintenance access from FP151 onto A186	<p>FP151 is used for access to M25 compound during construction, however will be returned to maintenance access and changed to bridleway in permanent works. Linked to issue 1.</p> <p>Appropriate visibility into FP151 maintenance access from A186 and for cyclists / horse-riders on the bridleway onto the access.</p>	
<p>Vol C GA – sheet 42</p> <p>Vol G GA – Sheet 14</p>	5	New footpath in northern/ eastern kerb line of Dennises Lane	<p>Links to FP259 heading south from Dennises Lane opposite Pea Lane Fishery.</p> <p>New provision west and south from FP252 entry onto Dennises Lane and until Pea Lane. The GA shows that this bridleway will run offline to the south of the access onto Dennises Lane. It is online to the junction with Pea Lane. Is this within highway boundary?</p> <p>Specification for route i.e. cross sections, materials etc.</p> <p>LTN1/20 compliant? Does this need a CLOS audit?</p> <p>Provision of hard surface NMU route needs a dropped crossing and hard standing on opposing radius as a minimum at Pea Lane junction.</p>	 <p><b>Source: Google</b></p>  <p><b>Source: Google</b></p>

<p>Vol C GA – sheet 42</p>	<p>6</p>	<p>New access of FP252 onto Dennises Lane</p>	<p>Appears to be a second access indicated to the west of the proposed footpath. What is the purpose of this?</p> <p>Will require signage onto FP252 from Dennises Lane</p>	 <p>Source: Vol C General Arrangements (GA) Sheet 42</p>
	<p>7</p>	<p>FP251 diversion – existing crossing of railway</p>	<p>Will the crossing be blocked off and closed?</p> <p>How to stop use of the existing FP after permanent works are complete and crossing of railway removed?</p> <p>On OS base the crossing is labelled as a footbridge but it is a raised crossing. FP251 at this point does not appear well used.</p>	 <p>Source: Bing Maps</p>

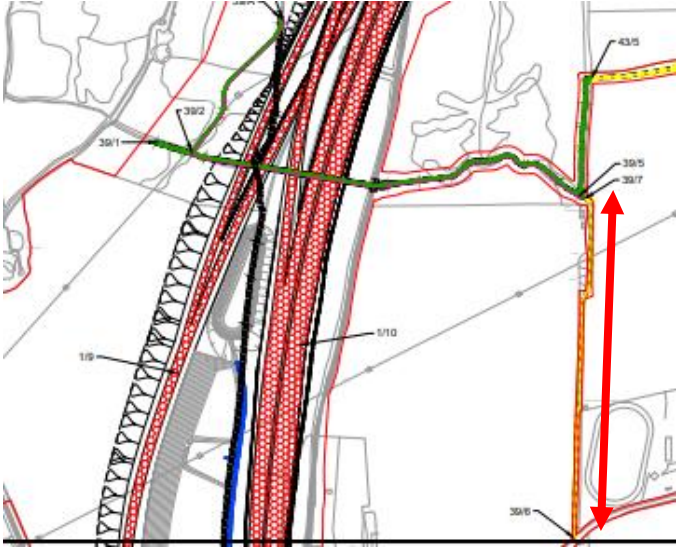
<p>Vol C GA – sheet 42</p> <p>Vol G Eng. - sheet 3</p>	<p>8</p>	<p>FP251 new footbridge</p>	<p>Elevated section crossing railway, NB and SB LTC slips and the false cutting – cross section, route specification, width of structure need to be provided.</p> <p>Gradient on western approach ramp to footbridge looks to be 5% for a distance of around 150m. This will not be compliant with LTN1/20 chapter 5 and will increase speed of cyclists on the downhill section.</p> <p>Given the above, stopping distances achieved onto Dennises Lane to the west of the bridge and to the bridleway junction with maintenance access, to the east of the bridge, need to be ensured for cyclists.</p>	 <p>The diagram shows the vertical profile of Footpath FP252. It includes a topographic profile and a proposed grade profile. Key features include: <ul style="list-style-type: none"> <li>Clearance over 'Uppminster and Grays Branch railway' and 'A122 LTC Northbound (Work No. 5A) FRL 22.1m AOD'.</li> <li>Clearance over 'A122 LTC Southbound (Work No. 5B) FRL 22.3m AOD'.</li> <li>Grades of 5.0%, 0.4%, and 3.2%.</li> <li>Vertical curve lengths (L) and radii (R) such as L=24.7, R=20.0, L=163.8, R=200.0, L=169.7, R=200.0, L=112.5, R=2000.0.</li> <li>Chainage markers from 0+000 to 0+655.</li> </ul> </p> <p>FOOTPATH FP252 PROFILE</p> <p><b>Source: Vol G Eng Sheet 3</b></p>
<p>Vol C GA – sheet 42</p>	<p>9</p>	<p>Close to old railway crossing (issue ref 7)</p>	<p>Permanent works here (and north along railway to Ockendon Road) are close to the railway – Is there adequate easement provided to the railway?</p>	 <p>The plan view shows the layout of the footbridge and its approach. A red rectangle highlights the area where the footbridge crosses the railway tracks. The diagram includes: <ul style="list-style-type: none"> <li>Railway tracks running diagonally.</li> <li>A road (Dennises Lane) crossing the tracks.</li> <li>The proposed footbridge structure crossing the tracks.</li> <li>Approach ramps on either side of the bridge.</li> <li>Green hatched areas indicating easements or specific ground conditions.</li> </ul> </p> <p><b>Source: Vol C GA – Sheet 42</b></p>

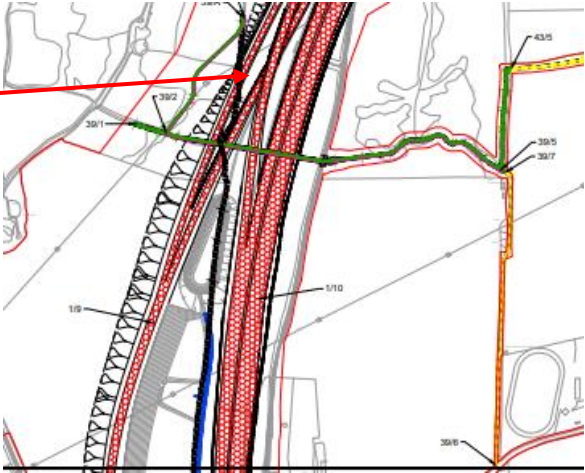

	10	FP231 at Ockendon Road to St Marys Church	<p>New NMU alignment south to meet Church Lane.</p> <p>Improvement of access from Ockendon Road onto the PROW. This PROW also gives access to maintenance access steps down to M25 and overbridge structure</p> <p>Specification for route i.e. cross sections, materials etc.</p> <p>Provision of hard standing link to FP231 from Bus Stop 370 and beyond to the overbridge.</p>	 <p><b>Source: Google</b></p>
Vol C GA – sheet 42	11	FP231 link over M25	<p>Crossing of Ockendon Road should be provided.</p> <p>Footpath indicated on OS maps below to the west of the existing overbridge – is this removed?</p>	<p>As shown in picture above – vegetation removal and provision of hard surface to link to footway over bridge.</p>


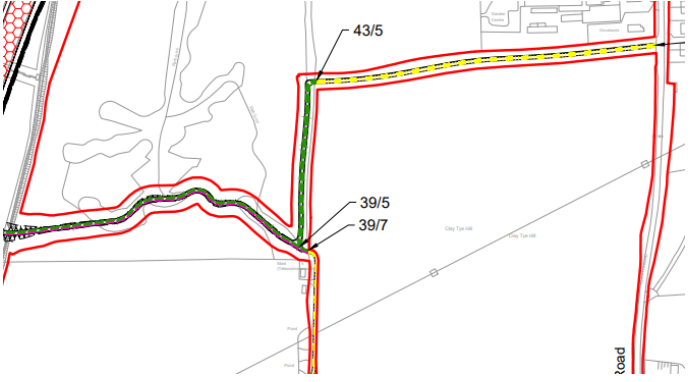
	12	Footpath heading north	<p>Not signed at present and seems to head into third party driveway.</p> <p>It is on OS plans but not on the LTC PROW plans (except as a private maintenance access in the permanent works). One presumes the proposed BW to the east on Ockendon Road (see issue 13) is to replace this.</p> <p>This FP is a maintenance access during works.</p>	 <p>Source: Google</p>
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<p>Vol C GA – sheet 42</p>	<p>13</p>	<p>New BW Greenfield Rd</p>	<p>The existing footpath below (and issue 12) is shown as a footpath and shown to be stopped up highway on the PROW drawings. The remaining track will be a private maintenance track to the drainage pond.</p> <p>Pedestrian access is replaced by the new BW from Ockendon Road on GreenField Lane?</p>  <p>Source: Google</p>	 <p>Source: Vol C GA – sheet 42</p>
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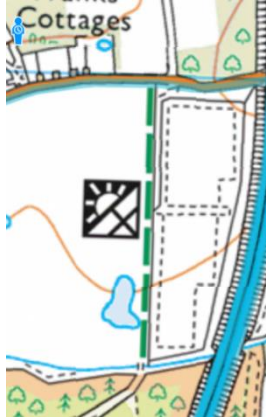






<p>Vol C GA – sheet 43</p>	<p>14</p>	<p>New BW on Greenfield Rd from Ockendon Road</p>	<p>Greenfield Road will become a BW. This new route links up with the PROW on Church Lane to the south and crosses M25 and LTC slips on a footbridge. M25 is in cutting so should not require huge earthworks to cross.</p> <p>Specification for route i.e. cross sections, materials etc. Cycles to LTN1/20?</p> <p>Requires a crossing provision of Ockendon Road to the footway on the southern kerb line from Greenfield Road.</p> <p>Visibility from Greenfield Road onto Ockendon Road is reduced. Speed limit is 40mph. – eastbound forward visibility is certainly reduced.</p> <p>Tactile paving to dropped crossing across Church Lane to link to bus stops.</p>	 <p><b>Source: Vol C GA – sheet 43</b></p>
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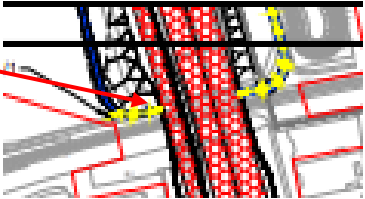

<p>Vol C GA – sheet 43</p>	<p>15</p>	<p>New BW west of M25</p>	<p>Technical specification for the route? Cycles to LTN1/20 standard? Crossing points, structure width and where joins main roads.</p> <p>Thames Chase forest is cyclable even though no actual trails so should the footbridge by a cycle bridge connecting bridleway to east of M25 to forest tracks on the west?</p>	 <p><b>Source: Vol C GA – sheet 43</b></p>
<p>Vol C GA – sheet 43</p>	<p>16</p>	<p>New BW west of M25 where joins Thames Chase Forest Centre tracks.</p>	<p>Onto existing forest tracks – diverted the existing PROW – requires approval of course.</p> <p>Specification for route i.e. cross sections, materials etc. Cycles to LTN1/20?</p>	 <p><b>Source: PROW Sheet 43 and Vol C GA Sheet 43</b></p>


	17	<p>New PROW north of Greenfield Road</p>	<p>Shown on GA's as a new permissive path which links to a new bridleway heading east. The link from end of Greenfields Road and the new BW perpendicular to B86 Clay Tye Road, should be BW too? Is this not BW through to the Chase Forest?</p> <p>Links to issue 15.</p>  <p>Source: BING maps</p>	 <p>Source: Vol C GA – sheet 43</p> <p>Green is improved permissive path, yellow is new bridleway</p>
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	18	New PROW access onto B186 Clay Tye Road	<p>Crossing to eastern kerb line to link pedestrians with FP232 to north via existing pedestrian footpath. Landing area to be provided and cut back hedge to improve access and visibility.</p> <p>Visibility from / to south may be obscured by vertical alignment over brow of hill. Traffic speeds on this section are likely to be higher than the posted speed limit due to road alignment.</p> <p>Is this a maintenance access during and after construction? Will vehicles use it as well as pedestrians and cyclists?</p>	 <p><b>Source: Google</b></p>
Vol C GA – sheet 44	19	BW northern extremity of Chase Forest	<p>Linkages to BW289 headed north (parallel to existing solar farm and golf course). Requires signage for cyclists etc. at southern end?</p>	  <p><b>Source: Vol C GA Sheet 44      Source: Google</b></p>

<p>Vol C GA – sheet 44</p>			<p>BW is not shown on the PROW Plans (see image right) – does this not exist? Would make sense to link bridleways and cycle ways up</p>  <p>Source: Google</p>	
	<p>20</p>	<p>Drainage pond access</p>	<p>New access onto B187 St Mary's Lane to west of widened/new motorway overbridge.</p> <p>Looks to be a 5m wide track and 6 metre radius, which should be appropriate.</p> <p>Direct access onto a 40mph road will require 2.0 x 120m vis splay. This is unlikely to be achieved to the east and may be obstructed by the bridge abutments to the west.</p> <p>Swept path of largest vehicles needs to be tracked.</p> <p>GA also shows a new hedgerow which will need to be set back to ensure visibility from the access.</p>	 <p>Photo – B187 looking west from access point</p>

				 <p>Source: Vol C GA Sheet 44</p>
Vol C GA – sheet 44	21	Existing maintenance access –  B187 East of over bridge.	<p>Existing maintenance access however need to ensure that visibility achieved.</p>  <p>Source: Vol C GA Sheet 44</p>	 <p>Photo – Existing access onto B187 to east of M25 overbridge</p>

Vol C GA – sheet 44	22	FP / BW at Moor Lane Underbridge.	<p>This is a bridleway underneath the overbridge and then changes to a footpath. This is an existing concern of inconsistent PROW provision.</p> <p>The proposed maintenance road to west of M25 will be private as gives maintenance access onto M25 main line.</p>	 <p><b>Source: PROW Plans Sheet 44</b></p>
Vol C GA – sheet 45	23	NMU provision in NW quadrant of A13 / M25 roundabout.	<p>New non-segregated footway / cycle way from footbridge to roundabout and around the nearside circulatory.</p> <p>Cannot determine the width provided along existing footway but need to check it is to LTN1/20 (with CLOS Audit) / GG142 and CD143 of DMRB.</p> <p>Note the proposed path has to cross 8 lanes of traffic, albeit the traffic signals should provide crossing opportunity if crossings are being provided. NH manage this part of the network.</p> <p>There is an existing footway along the offside kerb line at present although narrow, no crossing facilities and poor quality. Presume no width under the underbridge either.</p>	 <p><b>Source: Vol C GA sheet 45</b></p>

Vol C GA – sheet 45	24	NMU Provision, A13 east of M25 RBT	<p>Bridleway stops in the industrial estate. Is this to give a link to the footbridge?</p> <p>What width are these non-segregated NMU routes designed to?</p>	 <p>The map shows a network of routes in red and purple dashed lines. A road labeled 'A 127' runs horizontally across the middle. Below it, a 'Travellers Site' is indicated with several small rectangular buildings. The routes are shown as non-segregated paths, with some crossing roads and others following the edges of the site. A green arrow points to a specific location on one of the routes.</p>
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## 7.2 Construction Impacts

### 7.2.1 Traffic Modelling

7.2.2 The construction traffic impacts presented by NH are based on the construction traffic model set at 2030.

7.2.3 Tables 4 and 5 below provide a summary of the key issues in terms of construction traffic by phase in the AM and PM Peak periods. All traffic changes are recorded in PCUs, with a car equal to 1 PCU and an HGV / PSV equal to 2.5 PCUs. The changes are relative to a without construction scenario in 2030.

**Table 4 - Construction Traffic Headline Issues by Phase - AM Peak**

Phase	Key Traffic Impacts
1	<p>Pea Lane site access – major increase of 127 PCUs northbound and 65 PCU southbound.</p> <p>Increase of 124 PCUs two-way at the B186 site access (immediately north of Helipad Lane).</p> <p>Increases of up to 33 PCUs on the A127.</p> <p>Increases of up to 39 PCUs on St Marys Lane.</p> <p>Increases of up to 112 PCUs on the A13 eastbound.</p> <p>Decreases of up to 97 PCUs on Ockendon Road.</p>
2	<p>Increase of up to 171 PCUs on the A127.</p> <p>Increase of up to 170 PCUs on A13 eastbound.</p> <p>Increase of 292 PCUs two-way on Pike Lane (construction compound access).</p> <p>Increase of 254 PCUs two-way on Pea Lane (compound access).</p> <p>Increase of 109 PCUs two-way at the B186 site access (immediately north of Helipad Lane).</p> <p>Increase of up to 95 PCUs on Wingletye Lane.</p> <p>Decrease of 292 PCUs on Ockendon Road (due to temporary works).</p> <p>Decrease of up to 137 PCUs on St Marys Lane (temporary works).</p>
3	<p>Increase of 332 PCUs on Warley Lane (south of A127 junction).</p> <p>Increase of 185 PCUs on Clay Tye Road / North Road.</p> <p>Increase of up to 149 PCUs on Ockendon Road.</p> <p>Increase of up to 211 PCUs on A13 eastbound.</p> <p>Decrease of up to 132 PCUs west of the B186 junction (St Marys Lane).</p> <p>Decrease of up to 152 PCUs on A127 westbound.</p> <p>Decrease of 146 PCUs on A13 westbound.</p>
4	<p>Increase of up to 330 PCUs on St Marys Lane.</p> <p>Increase of 113 PCUs two-way on Hall Lane.</p> <p>Increase of 165 PCU two-way at the B186 site access (immediately north of Helipad Lane).</p> <p>Increase of up to 237 PCUs on A13 eastbound.</p> <p>Decreases of up to 152 PCUs on A127 westbound and 132 PCUs westbound.</p> <p>Decrease of up to 306 PCUs two-way in Clay Tye Road.</p> <p>Decreases of up to 134 PCUs on A13 westbound.</p>

5	<p>Increase of 290 PCUs (eastbound) and 320 PCUs (westbound) on St Marys Lane (due to Ockendon Road closure).  Increase of 439 PCUs two-way on Pike Lane (construction compound access).  Increase of 216 PCUs two-way on Pea Lane (compound access).  Increase of 307 PCUs two-Way on Dennises Lane (at M25 bridge).  Increase of 105 PCUs on Corbets Tey Road northbound approaching Upminster.  Increase of 172 PCUs on Warley Road eastbound.  Increase of up to 170 PCUs on A13 eastbound.</p> <p>Decrease of 109 PCUs on Ockendon Road (south of Ockendon Road / Clay Tye Lane junction).  Decrease of 743 PCUs in Ockendon Road (closure) (increases to a reduction of 858 PCUs at the Pea Lane and Pike Lane junctions).</p>
6	<p>Increase of 293 PCUs (eastbound) and 287 PCUs (westbound) on St Marys Lane (due to Ockendon Road closure).  Increase of 237 PCUs two-way on Pike Lane (construction compound access).  Increase of 216 PCUs two-way on Pea Lane (compound access).  Increase of 306 PCUs two-way on Dennises Lane (at M25 bridge).  Increase of 174 PCUs on Warley Road eastbound.  Increase of up to 167 PCUs on A13 eastbound.</p> <p>Decrease of 104 PCUs on Ockendon Road (south of Ockendon Road / Clay Tye Lane junction).  Decrease of 739 PCUs on Ockendon Road (closure) (increases to a reduction of 858 PCUs at the Pea Lane and Pike Lane junctions).</p>
7	<p>Increase of 302 PCUs (eastbound) and 288 PCUs (westbound) on St Marys Lane (due to Ockendon Road closure).  Increase of 238 PCUs two-way on Pike Lane (construction compound access).  Decrease of 106 PCUs on Ockendon Road (south of Ockendon Road / Clay Tye Lane junction).  Decrease of 740 PCUs on Ockendon Road (closure) (increases to a reduction of 858 PCUs at the Pea Lane and Pike Lane junctions).  Increase of 215 PCUs two-way on Pea Lane (compound access).  Increase of 306 PCUs two-Way on Dennises Lane (at M25 bridge).  Increase of 166 PCUs on Warley Road eastbound.  Increase of up to 154 PCUs on A13 eastbound.</p>
8	<p>Increase of 257 PCUs two-way on St Marys Lane east of the B186 junction.  Decrease of 159 PCUs on Ockendon Road (south of Ockendon Road / Clay Tye Lane junction).  Increase of up to 130 PCUs on Ockendon Road.  Increase of 120 PCUs on Warley Road eastbound.  Increase of up to 129 PCUs on A13 eastbound.  Decrease A127 of up to 134 PCUs.</p>
9	<p>Only significant changes +/- 50 PCUs on M25 with exception of an increase of 140 PCUs on Ockendon Road (south of Ockendon Road / Clay Tye Lane junction).</p>
10	<p>A12 westbound east of Gallows Corner an increase of 51 PCUs.  A127 westbound increase of up to 63 PCUs.  Increase of 115 PCUs on Ockendon Road (south of Ockendon Road / Clay Tye Lane junction).</p>

	Increase of 75 PCUs on Ockendon Road.
11	No significant changes of +/- 50 PCUs including on M25.

**Table 5 - Construction Traffic Headline Issues by Phase – PM Peak**

<b>Phase</b>	<b>Key Traffic Impacts</b>
1	<p>A13 eastbound up to 103 PCUs increases.            Increase of 361 PCUs two way on Dennises Lane.            Increase of up to 254 PCUs two-way on Pea Lane (compound access).            Increase of 114 PCUs at B186 site access (immediately north of Helipad Lane).            Decrease of 348 PCUs on Ockendon Road (start of temporary works).            Decrease of 216 PCUs on Ockendon Road (south of Ockendon Road / Clay Tye Lane junction).</p>
2	<p>Increase of up to 154 PCUs on A13 westbound.            Increase of up to 150 PCUs on Front Lane northbound.            Increase of 134 PCUs on Pike Lane northbound (compound access).            Increase of 320 PCUs two-way on Pea Lane (compound access).            Increase of 511 PCUs two-way on Dennises Lane.            Increase of 161 PCUs at B186 site access (immediately north of Helipad Lane).</p> <p>Decrease of up to 168 PCUs on St Marys Lane.            Decrease of 472 PCUs on Ockendon Road.            Decrease of 457 PCUs on Ockendon Road (south of Ockendon Road / Clay Tye Lane junction).</p>
3	<p>Increase of up to 114 PCUs on A13 westbound.            increase of up to 141 PCUs westbound on Ockendon Road.            Increase of up to 173 PCUs on Ockendon Road (south of Ockendon Road / Clay Tye Lane junction).            Increase of 196 PCUs at B186 site access (immediately north of Helipad Lane).            Increase of 107 PCUs on Clay Tye Road northbound.</p> <p>Decrease of up to 136 PCUs on St Marys Lane eastbound.            Decrease of up to 202 PCUs on A127 westbound.</p>
4	<p>Increase of up to 138 PCUs on A13 westbound.            Increase of up to 347 PCUs (eastbound) and 290 PCUs (westbound) on St Marys Lane (due to Ockendon Road closure).            Increase of 438 PCUs two-way on Pike Lane (construction compound access).            Increase of 216 PCUs two-way on Pea Lane (compound access).            Increase of 311 PCUs two-way on Dennises Lane.            Increase of 115 PCUs at B186 site access (immediately north of Helipad Lane).            Increase of 150 PCUs on Warley Road (westbound).            Increase of 103 PCUs on Corbets Tey Road.</p> <p>Decrease of 341 PCUs two way on Clay Tye Road.            Decrease of 737 PCUs two way on Ockendon Road (road closure).            Decrease of 105 PCUs on Ockendon Road (south of Ockendon Road / Clay Tye Lane junction).            Decrease of 300 PCUs two-way on A127.</p>

5	<p>Increase of up to 170 PCUs on A13 westbound.  Increase of 172 PCUs on Warley Road (westbound).  Increase of up to 320 PCUs (eastbound) and 290 PCUs (westbound) on St Marys Lane (due to Ockendon Road closure).  Increase of 439 PCUs two-way on Pike Lane (construction compound access).  Increase of 216 PCUs two-way on Pea Lane (compound access).  Increase of 307 PCUs two-way in Dennises Lane.  Increase of 114 PCUs at B186 site access (immediately north of Helipad Lane).  Increase of 105 PCUs on Corbets Tey Road.</p> <p>Decrease of 339 PCUs two way on Clay Tye Road.  Decrease of 743 PCUs two way on Ockendon Road (road closure).  Decrease of 262 PCUs two way on A127.  Decrease of 109 PCUs on Ockendon Road (south of Ockendon Road / Clay Tye Lane junction).</p>
6	<p>Increase of up to 165 PCUs on A13 westbound.  Increase of 174 PCUs on Warley Road (westbound).  Increase of up to 293 PCUs (eastbound) and 287 PCUs (westbound) on St Marys Lane (due to Ockendon Road closure).  Increase of 437 PCUs two-way on Pike Lane (construction compound access).  Increase of 216 PCUs two-way on Pea Lane (compound access).  Increase of 306 PCUs two-way on Dennises Lane.  Increase of 114 PCUs at B186 site access (immediately north of Helipad Lane).</p> <p>Decrease of 334 PCUs two way on Clay Tye Road.  Decrease of 739 PCUs two way on Ockendon Road (road closure).  Decrease of up to 250 PCUs two-way on A127.  Decrease of 104 PCUs on Ockendon Road southbound (south of Ockendon Road / Clay Tye Lane junction).</p>
7	<p>Increase of up to 154 PCUs on A13 westbound.  Increase of 166 PCUs on Warley Road (westbound).  Increase of up to 302 PCUs (eastbound) and 288 PCUs (westbound) on St Marys Lane (due to Ockendon Road closure).  Increase of 437 PCUs two-way on Pike Lane (construction compound access).  Increase of 215 PCUs two-way on Pea Lane (compound access).  Increase of 306 PCUs two-way on Dennises Lane.  Increase of 114 PCUs at B186 site access (immediately north of Helipad Lane).</p> <p>Decrease of 336 PCUs two way on Clay Tye Road.  Decrease of 740 PCUs two way on Ockendon Road (road closure).  Decrease of up to 251 PCUs two-way on A127.  Decrease of 106 PCUs on Ockendon Road southbound (south of Ockendon Road / Clay Tye Lane junction).</p>
8	<p>Increase of up to 129 PCUs on A13 westbound.  Increase of 143 PCUs on Warley Road northbound (south of A127).  increase of 130 PCUs westbound on Ockendon Road (road closure removed).  Increase of 159 PCUs southbound (south of Ockendon Road / Clay Tye Lane junction).  Increase of 120 PCUs on Warley Road (westbound).</p> <p>Decrease of up to 261 PCUs two-way on A127.</p>

9	<p>Increase of 52 PCUs A12 eastbound (east of Gallows Corner).  Increase of up to 59 PCUs on A127 westbound.  Increase of 54 PCUs on Front Lane (north of Upminster centre).  Increase of 100 PCUs westbound on Ockendon Road (road closure removed).  Increase of 140 PCUs southbound (south of Ockendon Road / Clay Tye Lane junction).  Increase of up to 58 PCUs on A13 westbound.  Increase of 85 PCUs at B186 site access (immediately north of Helipad Lane).</p> <p>No significant decreases in traffic flow against the base position recorded.</p>
10	<p>Increase of 52 PCUs A12 westbound (east of Gallows Corner).  Increase of up to 51 PCUs on A127 westbound.  Increase of 54 PCUs on Warley Road northbound (south of A127).  increase of 115 PCUs on Ockendon Road southbound (south of Ockendon Road / Clay Tye Lane junction).  Increase of 75 PCUs westbound on Ockendon Road.</p> <p>No significant decreases in traffic flow against the base position recorded.</p>
11	<p>No significant changes of +/- 50 PCUs including on M25.</p>

7.2.4 The impacts noted are significant for Havering. The length of the construction programme, at around six years, will place notable impacts on local roads in the borough. The length of time major elements of traffic management will be in place is a principal cause of concern for the Council. The key concerns include:

- The B186 will have localised traffic control for 12 months with no details specified.
- St Marys Lane will have traffic control over a 2km length in 300m sections for 9 months.
- Ockendon Road will be closed where it crosses the M25 for 19 months with the potential for an additional 6 months either side of the full road closure for utility works.
- The construction of a set of new M25 temporary slip roads to provide direct access into the main site compounds in Havering has a timeline of 'between 12 and 24 months' and is only completed midway through the construction programme.

7.2.5 Even allowing for the granularity of the traffic modelling, impacts are severe within Havering.

7.2.6 The closure of Ockendon Road has a notable effect on the parallel east-west routes of St Marys Lane and Dennises Lane. The traffic controls and the closure of Ockendon Road place significant, and currently unmitigated, strain on the capacity of the parallel routes. St Marys Lane sees up to 590 PCUs of additional traffic (two-way) in a single peak hour whilst the closure is in place, as well as a 610 PCUs two-way increase earlier in the construction programme when temporary traffic control is placed on Ockendon Road. This equates roughly to 10 additional vehicles a minute in both directions.

7.2.7 The uncertainty over the length of time required to deliver the M25 temporary slip roads (12-24 months being quoted) represents a major disruption for Havering's

communities, due to the positive effect on traffic flows when the slip roads are open, which draw heavy site bound traffic away from the local road network.

7.2.8 On balance, the significant traffic volume changes have been identified correctly but, as stated previously, very localised impacts are beyond the scope of the modelling undertaken. It is noted that NH has committed in the control documents (Outline Traffic Management Plan for Construction or oTMPfC) to conduct further localised traffic modelling, albeit within a decision-making framework that is unclear.

7.2.9 In addition to these key issues, the effects of construction traffic are felt across a wider area than that immediately in proximity to the works.

7.2.10 Locations further afield seeing increases in traffic at various times through the construction programme include:

- A13 west of the M25.
- Warley Road – for traffic diverting around the works at M25 junction 29.
- Corbets Tey Road and Front Lane which are affected by the temporary traffic controls and the closure of Ockendon Road.
- Hall Lane, again as a result of the temporary traffic controls and closure of Ockendon Road.

7.2.11 In contrast, the A127 sees mainly decreases in traffic levels due to the works at M25 junction 29.

#### **7.2.12 Construction Traffic Impacts on Highway Network**

##### **7.2.13 Data Sets**

7.2.14 There appears to be little consideration of access to construction compounds and traffic management on the construction and diversion routes, other than the identification of the routes and the need for diversions, which are set out in the Outline Traffic Management Plan for Construction (oTMPfC) document.

7.2.15 Further details of all temporary traffic management will need to be provided, including layouts of site compound accesses, so that the impact of construction traffic to be properly assessed by LB Havering.

7.2.16 This will need to identify traffic management provision, in addition to a more accurate prediction of expected traffic flows and an adequate investigation of impact of these changes on the operation of the local highway network.

7.2.17 The proposals for construction of the project, and associated diversion routes in the borough, do not appear to have been assessed at this level. This is a significant omission.

7.2.18 LB Havering considers that the data from the strategic model are neither appropriate nor acceptable for use for this purpose. A strategic model, whilst WebTag compliant, may not reflect the base local highway network and traffic flows accurately enough to understand the impact of these construction diversion and routes adequately.

7.2.19 LB Havering has a number of concerns with regards to the modelling carried out for construction:

- The predicted construction traffic flows on Stubbers Lane, Pea Lane and Pike Lane do not appear to reflect the diversion routes that have been proposed. Traffic flows on Stubbers Lane are lower than expected; traffic flows on Pea Lane are conversely higher.

- Traffic appears to be diverted onto Sunnings Lane; however, this route is closed to motor vehicles.
- The proportion of construction and non-construction vehicles on each link is unclear from the modelling output.

7.2.20 Given the above concerns, LB Havering is of the view that the strategic model and the traffic flow forecasts should not be used to predict traffic flow changes in the local network during construction phases.

#### 7.2.21 **Assessment**

7.2.22 The assessment process for determining the impact of construction routes has, thus far, been confined to the use of the strategic model to identify the changes in traffic flows on network links due to diversion requirements e.g., the closure of Ockendon Road.

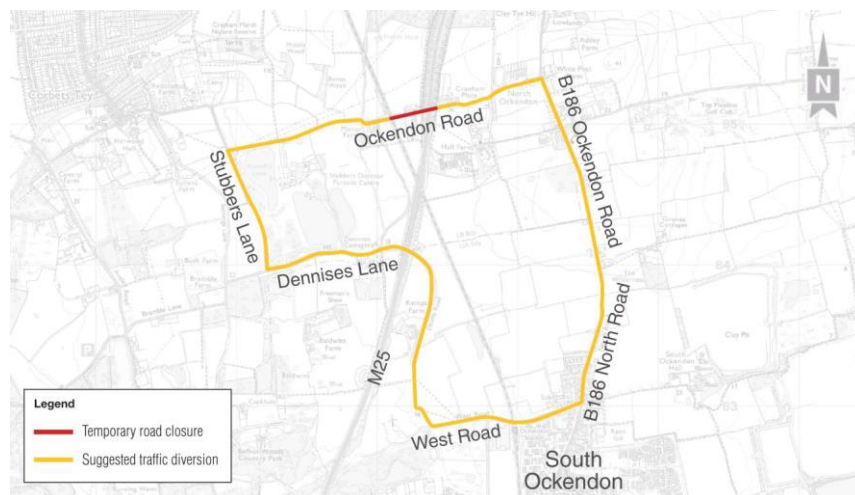
7.2.23 LB Havering considers that more detailed, local prediction of traffic flows, modelling of junction performance and impact assessment of any traffic management proposed is required.

#### 7.2.24 **Local Impacts**

7.2.25 There have been a number of concerns identified with the use of the proposed construction and diversion routes which need to be addressed through further detailed work. This includes:

- Compound access onto Warley Street, B186 North Road and Ockendon Road turning analysis shows that the full main road width of North Road or Ockendon Road will be required for access by larger vehicles, unless large radii and wide access roads are provided. The compound accesses are on private land, and so the access points can be provided within the red line boundary. The oTMPfC does not provide information on the design of the compound accesses and, consequently, feasibility of the exact access provision cannot be assessed.
- Haul road crossings and Ockendon Road compound access may be impeded by the vertical alignment of Ockendon Road and the M25 overbridges.
- B186 Warley Street – compound access visibility concerns and safe provision of public transport access.
- B186 North Road – compound access visibility concerns.
- Diversion route for Ockendon Road and the suitability of the diversion route for general and construction traffic (see Figure 12 below).

**Figure 12 – Proposed Ockendon Diversion Route**



**Source: National Highways**

7.2.26 The issues identified above will require further information and provision of more detailed proposals for construction traffic management. This will need to include:

- More detailed information on vehicle types and frequency of access required.
- More detailed layouts for the access points onto the network to ensure that vehicles can use them without impeding the progress of other vehicles.
- Whether compound accesses and turning areas can be formed within the red line boundary. The oTMPfC does not provide information on the design of the compound accesses and, consequently, feasibility of the exact access provision cannot be assessed.
- Feasibility of junctions on rural roads to facilitate the movement of large, slow-turning vehicles and facilitating these safely.
- Feasibility of using narrow rural roads for diverted vehicles or construction vehicles which depends on the number and type of vehicles.
- Consideration needs to be given to the temporary provision for bus stops and pedestrian access to these.
- The traffic management plan and diversion routes focus more on construction vehicles and non-construction diverted vehicles due to traffic management plans. Planning for, and assessment of, the impact of construction worker traffic has not been considered fully.

7.2.27 Tables 6 and 7 below set out in detail the issues with the proposed construction and diversion routes.



7.2.28 Short term construction route

7.2.29 Route: Warley Street, B187 St Mary's Lane, B186 Clay Tye Road, Ockendon Road and B186 North Road

7.2.30 Road crossings: Ockendon Road to east and west of M25 overbridge.

**Table 6 - Concerns Identified**

TW SHEET	REF.	LOCATION	ISSUE DESCRIPTION
44/45	ST1	B186 Warley Street to north of Shoeburyness railway bridge	The Warley Street compound is not within LB Havering boundary but the utilities works access to the south is within the boundary.
		Warley Street Compound Access	Vertical alignment over railway bridge hampers visibility from the Warley Street compound and also from the utilities access.
	ST2	Utilities Offline Access to south of railway bridge	<p>Speed limit reduces from NSL to 40mph at the LB Havering boundary (at the utilities access) however it is likely speeds will be higher.</p> <p>Accident clusters on the railway bridge itself and also at the junction of B186 Warley Street and the industrial estate.</p> <p><i>Visibility requirement for access points should be for 100kmph design speed in DMRB CD109 ~ 215 metres. Does not look achievable. Reduced visibility at the posted speed limits may cause accidents with slow moving vehicles at the access points. Vegetation clearance required to achieve adequate turning space and visibility splays.</i></p> <p><i>Which vehicles require access for the utilities access? The access seems to accommodate a 3.5t panel van however any larger will swing out into opposing lanes. Culverted access – ensure structural integrity of culvert if frequent use.</i></p> <p><i>Other notes: Bus stops need to be accommodated, hazard of O/H utilities in verges.</i></p>

TW SHEET	REF.	LOCATION	ISSUE DESCRIPTION
44	ST03	B186 Warley Street / B187 St Marys Lane junction	<p>Speed limit is 40mph, however speeds likely to be higher due to amenable alignment. Increase in numbers of larger vehicles, moving slower, as a result of construction.</p> <p>Southbound forward visibility appears to be around 100 metres, with northbound visibility slightly more. This does not meet DMRB CD109 requirements however given location, MfS could be applied.</p> <p>Indications of safety concerns with alignment given the physically protected right turn.</p> <p><i>Temporary speed limit reduction may be appropriate to reduce traffic speeds.</i></p>
44	ST04	B187 St Marys Lane / B186 Clay Tye Road	<p>No existing traffic flow data at present to determine dominant movements. HGV movement restricted to west due to LEZ and weight restriction of 3.5t.</p> <p>Rigid HGVs can make the turn at the mini-roundabout, however articulated vehicles will straddle all lanes.</p> <p>Visibility from Clay Tye Road reduced to the east which will not aid movement of larger vehicles.</p> <p><i>Can we improve this junction at all? Traffic control?</i></p>

44	ST05	B187 M25 overbridge – long term haul road crossings to east and west of overbridge	<p>M25 overbridge may reduce visibility – requires 120m at 40mph to DMRB CD109. Vegetation clearance will be required. There has been one serious incident in the vicinity of the easternmost crossing point, in the location of the existing farm access.</p> <p><i>Road crossing arrangement will calm traffic speeds and needs to be clearly signed.</i></p> <p><i>Other notes: hazard of O/H utilities in verges.</i></p> <p>The overbridge clearance height is 4.1m on the warning signage. <i>Is clearance height to M25 overbridge sufficient for movement of any construction traffic?</i></p>
43	ST06	B186 Clay Tye Road – Utilities access at Clay Tye Farm	<p>Mainline is 5.5m wide and speed limit is 40mph. Actual speeds likely to be higher due to straight alignment and lack of junctions. This gate has clearly been used as an access as it has a lockable gate. Access is not shown on OS base.</p> <p><i>How often will this gate be used as all vehicles will swing out into the opposing lane? What vehicles will be used?</i></p>
43	ST07	B186 Clay Tye Road junction with Ockendon Road	<p>Signed from Ockendon Road as 40mph however there is a 30mph gateway to the north of the junction. Visibility from the junction and forward onto the junction appears to meet DMRB CD109 requirements for 40mph at around 200m. Speeds from the south should be reduced by the presence of the new chicane.</p> <p>Turning movements already undertaken by buses and should be fine for articulated vehicles.</p> <p><i>Minimise construction movements to the south since B186 to the south is reduced in width to between 5.0 and 5.5m, plus the route passes through South Ockendon hence the chicane.</i></p>

43	ST08	<p>Construction crossings of Ockendon Road, to east and west of M25 overbridge</p> <p>Temporary closure of this section to all traffic (Ockendon Road diversion considered in Table 2)</p>	<p>Speed limit 40mph, residential properties but not a sense of place. <i>Requirements of DMRB CD109 at 40mph should be applied to the design of crossing points.</i></p> <p>TW drawings indicate that the eastern crossing point is within the M25 overbridge structure footprint. <i>The access point needs to be confirmed. Visibility splays in all directions will need to consider overbridge parapets.</i></p> <p><i>Bus stops to the east of the overbridge will need to be relocated outside the traffic management for the crossing. Temporary bus stops will be required, a new crossing provided between the two bus stops and potentially new footway to access the bus stops.</i></p> <p><i>More detail required on the PROW diversion to the south and how this will link to the bus stops that are relocated.</i></p> <p><i>Turning vehicles out of the crossing points may cause concern swinging out into traffic since overbridge structure restricts movement. This <u>may</u> only be a hazard outside of the period when the temporary closure is in place since after this, only 'crossing' of Ockendon Road is required.</i></p>
42	ST09	B186 Clay Tye Road, junction with Fen Lane	<p>Fen Lane is narrow and not appropriate for numbers of larger vehicles. Access for utilities to be taken from the Medebridge compound further south (see table 5). Vehicles larger than a rigid HGV will struggle to make the turn into Fen Lane safely.</p> <p><i>Ensure that utilities construction access is not taken down Fen Lane.</i></p>
42	ST10	B186 North Road between Fen Lane and M25 Compound Access	<p>30mph in South Ockendon rising to 40mph at a gateway 235 metres south of Fen Lane. Traffic speeds likely to be higher given straight alignment. Mainline is 6.0m wide which is ok for two larger vehicles to pass but not at high speed. Serious accident at Helipad Road junction (no details).</p> <p><i>Minimise construction traffic movements along this section.</i></p>

42/43	ST11	<p><b>General Note</b></p> <p>B186 Clay Tye Road between B187 and M25 Access Compound</p>	<p>Clay Tye Road varies in width between 5.0m (immediately south of junction with Ockendon Road) to 6.2m (north of junction with Ockendon Road). In general, the width appears to be approximately 5.5m.</p> <p>This would not be considered sufficient to allow easy passing of 2 larger vehicles, however it is recognised that this route is already a bus route and carries commercial (HGV) traffic.</p> <p>It would be preferable to minimise the diverted and construction traffic using Clay Tye Lane south of the Ockendon Lane junction.</p> <p>Forecast traffic flows show that due to the Ockendon Road closure, traffic flows on this section will be reduced during the construction periods and will rise again once removed. This is a benefit to this route, which bisects through villages.</p>
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7.2.31 Ockendon Road diversion online route

7.2.32 Route: Ockendon Road, Stubbers Lane, Dennises Lane, West Road, B186 North Road, avoiding closure of Ockendon Road. Shown on Plate 4.13 of the OTMP.

7.2.33 Closure: Ockendon Road c. 150m in length, phases 4 to 7 of construction phase plan and detailed on page 55 of the OTMP.

7.2.34 Notes: Much of the B186 North Road / Ockendon Road is used by buses anyway and so should be ok for larger vehicles and buses to use.

**Table 7 - Concerns identified**

TW SHEET	REF.	LOCATION	ISSUE DESCRIPTION
43	ORD01	Ockendon Road junction / with Stubbers Lane	<p>Diversion of traffic including all non-construction HGV, buses (service 370) and farm vehicles.</p> <p>40mph speed limit on all approaches, ghost island for right turners into Stubbers Lane.</p> <p>Two serious incidents here in last 5 years.</p> <p>Forward visibility around bend on Ockendon Road is around 50m or less. Forward visibility onto Stubbers Lane from the east is also not to standard. <i>DMRB CD109 visibility requirements apply here.</i></p> <p>Regards turning, larger vehicles cannot use the right turn pocket effectively so will be waiting in the middle of the road.</p> <p><i>Junction arrangement needs to be reviewed for duration of the works. Could priorities be changed? Traffic island will need to be removed to facilitate all movements by larger vehicles.</i></p> <p>Stubbers Lane is approximately 5.0m in width although it narrows immediately north of the junction with Dennises Lane due to a tree within the verge.</p> <p>5.0m would not be considered sufficient to allow passing of 2 larger vehicles on a frequent basis and would lead to deterioration of highway edges and verges.</p> <p>Forecast traffic flows are shown to increase traffic on Pike Lane and Pea Lane rather than Stubbers Lane i.e., not reflective of the diversion in place. The appropriateness of Pike Lane and Pea Lane are discussed in more detail in Table 8 below.</p> <p><i>Stubbers Lane is in general more consistent in width along its length and therefore should this be promoted as a more appropriate link for diverted and construction traffic? Do passing places need to be considered on Stubbers Lane if this is the case?</i></p>

TW SHEET	REF.	LOCATION	ISSUE DESCRIPTION
43	ORD02	Ockendon Road Closure	<p>The closure on TW drawing 43 looks to be 350m rather than the 150m suggested.</p> <p>If a vehicle does not heed the road closure signs and approaches the closure on Ockendon Road, is there a turning area available?</p> <p>From the west on Ockendon Road, the last turning area within the highway is at the junction with Pike Lane. The turning movement will take up the carriageway for both rigid and articulated HGV however at this time vehicular movements on Ockendon Road should be very low.</p> <p><i>There is a need to identify turning locations to either side of the diversion to ensure large vehicles do not use Pike Lane nor Church Lane to avoid the closure.</i></p> <p><i>Are bus services that would operate along Ockendon Road (service 370) intending to use the diversion and also continue to service those properties to the west and east of the length of the closure? How will this be facilitated if so.</i></p>
42	ORD03	Stubbers Lane junction / with Dennises Lane	<p>Both have centreline markings indicating that they are at least 5.0m in width. However, this is not acceptable width for two large vehicles passing.</p> <p>Stubbers Lane at this end, is the start of the LEZ. 40 mph on both roads.</p> <p>Forward visibility onto junction from Dennises Lane in each direction should meet DMRB standard.</p> <p>Visibility from Stubbers Lane is very much reduced by vegetation but not easily measured from OS Base. The southbound approach to the junction is also very narrow. Two large vehicles on Stubbers lane will struggle to pass each other particularly at the pinch point. Large vehicles should be able to pull into Stubbers Lane and wait for a large vehicle to pass the pinch point but need to ensure that the vehicles are visible when stationary for drivers on Dennises Lane.</p>

TW SHEET	REF.	LOCATION	ISSUE DESCRIPTION
			<p>Already evidence of overrun of verges when turning indicating that larger vehicles may struggle to perform the manoeuvre within the highway boundary. A standard bus can achieve this movement without other vehicles in the junction.</p> <p><i>Do passing places need to be considered on Stubbers Lane?</i></p> <p><i>Careful planning of signage of diversion route and potential for larger vehicles to be using Stubbers Lane. Stationary vehicles warning?</i></p>
42	ORD04	Dennises Lane between Stubbers Lane junction and M25 overbridge.	<p>Dennises Lane varies in width between 4.3m and 5.0m along this length to the east of Stubbers Lane. It widens out to more than 5.5m to the east of the junction with Pea Lane.</p> <p>This would not be considered sufficient to allow passing of 2 larger vehicles on, and would lead to deterioration of highway edges and verges.</p> <p>Forecast traffic flows show that during the diversion, an increase of over 300 2-way PCU trips are recorded in the AM peak at the M25 overbridge. This is around 3 vehicles a minute in each direction.</p> <p><i>Do passing places need to be considered on Dennises Lane? If Stubbers Lane is used rather than Pea Lane, then passing places may be needed between Stubbers Lane and Pea Lane junctions.</i></p> <p>Red line boundaries indicated to the north of Dennises Lane and to either side of the M25. Are there any access requirements for these areas?</p> <p><i>Is clearance height to M25 overbridge sufficient for movement of any construction traffic?</i></p>



42/43	ORD05	<b>General Note</b>	<p>The above issues ORD01 to ORD04 indicate concerns with the diversion route.</p> <p>The diversion will be in place for a number of months. It is not clear what the diversion route would be in the occurrence of a closure of Stubbers Lane, Dennises Lane and B186 North Road / Clay Tye Road, since it has been shown that Pea Lane, Pike Lane and Fen Lane are not considered appropriate as diversion routes.</p>
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7.2.35 Ockendon Road compound – construction and utilities access

7.2.36 Proposed construction compound between the M25 and the railway which will require an access onto the Ockendon Road.

7.2.37 Notes: Review findings of Table 6 issue ref ST06 and Table 7 issue ref ORD2 as these concerns link to ORC01 below.

**Table 8 - Concerns Identified**

TW SHEET	REF.	LOCATION	ISSUE DESCRIPTION
43	ORC01	Proposed compound access onto Ockendon Road, west of existing residential properties.	<p>40mph speed limit on Ockendon Road. Visibility from the compound access to the west, and forward visibility for right turns into the compound, will be restricted by vertical alignment over railway bridge. At a 2.4 m set back, visibility from the field access is around 85 metres which does not achieve DMRB standards for 40mph.</p> <p><i>TW drawing shows compound access onto Ockendon Road located on earthworks up to railway bridge. Compound access from edge of field, and the existing field access, would be better, but this is close to residential properties.</i></p> <p><i>Large vehicles will take up most of carriageway when turning left out or right into access – radii to the access will need to be 10m.</i></p> <p><i>Traffic management scheme needs careful consideration of speeds and visibility.</i></p>

TW SHEET	REF.	LOCATION	ISSUE DESCRIPTION
43	ORC02	Pike Lane junction with Ockendon Lane and Utilities Access from Pike Lane	<p>30mph speed limit with a 7.5t weight restriction. Narrows to 3.5m to the north of the junction with Ockendon Road. Two slight accidents in the last 5 years.</p> <p>Visibility to the east from Pike Lane is around 30m which may satisfy Manual for Streets (MfS) at 30mph but not DMRB (requires 70m min). Larger vehicles will not be able to negotiate the junction easily and further Pike Lane being very narrow where utilities access is required further north, turning will be a concern.</p> <p>Pike Lane is not considered sufficient in width to allow passing of any two vehicles on a frequent basis and would require passing places to be introduced, or existing places formalised, to allow safe passage.</p> <p>Forecast traffic flows show that while there is a significant reduction in west to east movements at the Pike Lane junction, the model indicates that during the construction phases when Ockendon Road is closed there could be up to 450 2-way PCUs on Pike Lane. This is over 3 vehicles in each direction per minute and this will have a significant impact and the effective passage of this traffic on a narrow rural road. This could lead to verge degradation, impact on the carriageway extents due to overrun by large vehicles and generally difficulties in passing other vehicles of any size.</p> <p>From the modelling it is suspected that Pike Lane, rather than Ockendon Road / Stubbers Lane, is being used as the diversion route, in addition to construction traffic.</p> <p><i>What vehicles will require access from Pike Lane? Can movements be restricted to right turn into and left turn out of Pike Lane for any construction-related vehicles for safety reasons relating to visibility?</i></p> <p><i>Is this to be a turning location for non-construction-related vehicles that have not followed diversion routes?</i></p> <p><i>Ensure Pike Lane signed as unsuitable for large vehicles and not a diversion route.</i></p>

TW SHEET	REF.	LOCATION	ISSUE DESCRIPTION
42	ORC03	Pea Lane junction with Ockendon Road and also Utilities Access from Pea Lane	<p>30mph speed limit on Pea Lane and Ockendon Road. 3.5m in width. to the north of the junction with Ockendon Road. Two slight accidents in the last 5 years.</p> <p>Visibility to the west from Pea Lane is around 30m which may satisfy MfS at 30mph but not DMRB (requires 70m min).</p> <p>Vehicles larger than a panel van will not be able to negotiate the junction.</p> <p>Pea Lane is narrow along its length and so where utilities access is required further north, turning will be a concern.</p> <p>Pea Lane is not considered sufficient in width to allow passing of any two vehicles on a frequent basis and would require passing places to be introduced, or existing places formalised, to allow safe passage.</p> <p>Forecast traffic flows show that while there is a significant reduction in west to east movements at the Pea Lane junction, the model indicates that during the construction phases when Ockendon Road is closed there could be an additional 250 2-way pcu's on Pea Lane. This level of traffic during the peak hour will have a significant impact and the effective passage of this traffic on a narrow rural road. This could lead to verge degradation, impact on the carriageway extents due to overrun by large vehicles and generally difficulties in passing other vehicles of any size.</p> <p>From the modelling it is suspected that Pea Lane, rather than Stubbers Lane, are being used as the diversion route, in addition to construction traffic.</p> <p><i>What vehicles will require access from Pea Lane? Can movements be restricted to a minimum since this route is not acceptable for most vehicles.</i></p> <p><i>Ensure Pea Lane signed as unsuitable for large vehicles and not a diversion route.</i></p>

7.2.37.1 **M25 (north road) compound – construction and utilities access.**

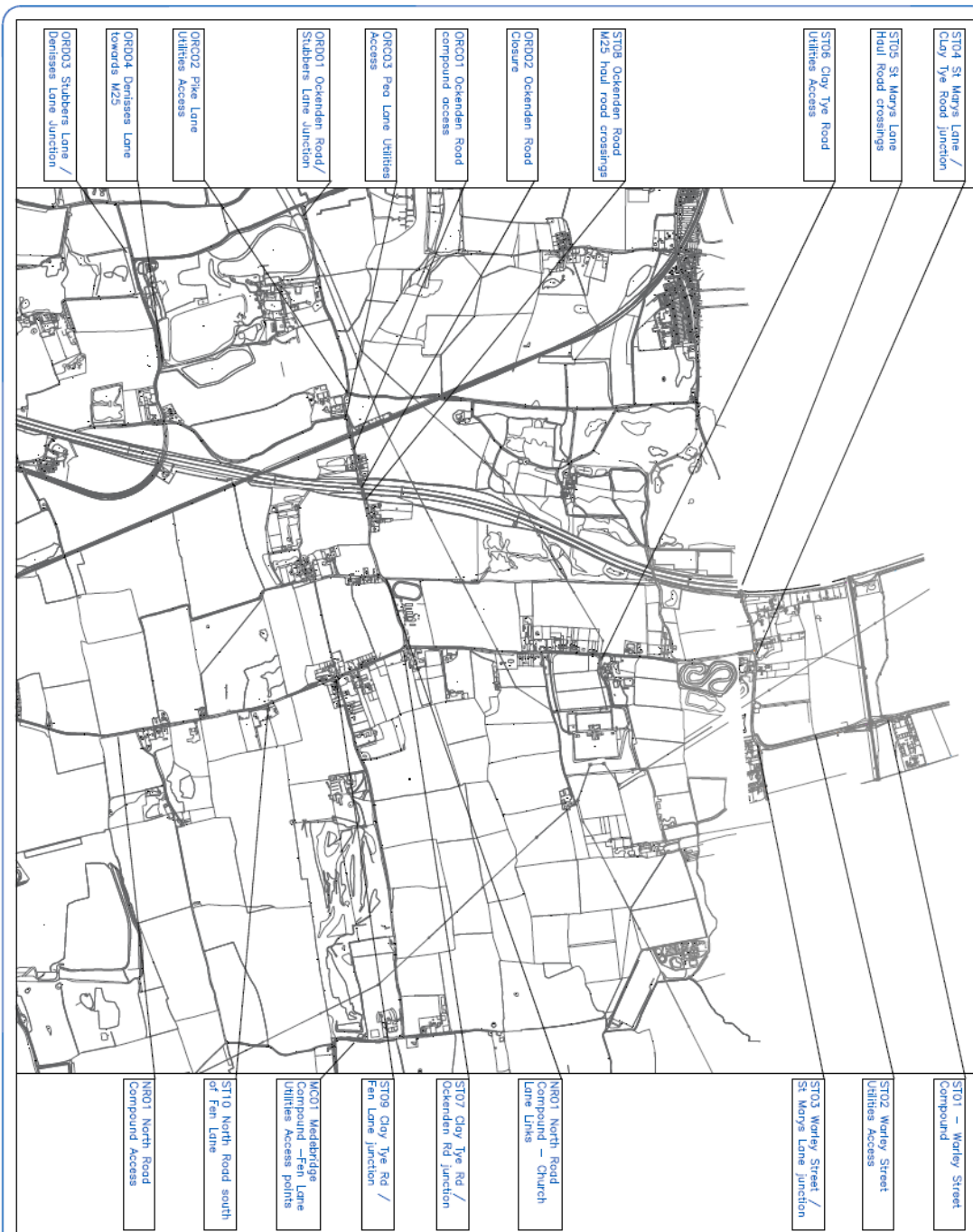
7.2.37.2 Proposed construction compound to south of LB Havering area with access onto B186 North Road. Short term diversion route and Ockendon Road Diversion Route passes the new compound access.

**Table 9 - Concerns Identified**

TW SHEET	REF.	LOCATION	ISSUE DESCRIPTION
43	NR01	Proposed compound access onto B186 North Road, north of Helipad Road.	<p>40mph speed limit on B186; road is 6.5m wide at access and has narrow verges. <i>Verge and vegetation clearance required to ensure 120m minimum visibility splays for DMRB however speed surveys required to assess actual speeds.</i></p> <p>Serious Accident to the south recorded – north of Helipad Road.</p> <p><i>Rigid and articulated HGVs will require crossing into opposing carriageway to head north on B186.</i></p> <p><i>Safe access to bus stops to the south of the compound access to be maintained.</i></p>
43	NR02	Construction access routes north from compound to Ockendon Road	<p>Is construction access to be taken by vehicles to the north of the compound towards Church Lane? Presumably the red line boundary in these locations is for the diversion and reinstatement of PROW through the area.</p> <p>Adopted highway begins at the Church itself therefore private access to negotiate. Private access is not guaranteed; an alternative solution will need to be identified if access is required.</p> <p>Church Lane is very narrow and should not be used as a construction route, despite having some agricultural use.</p>

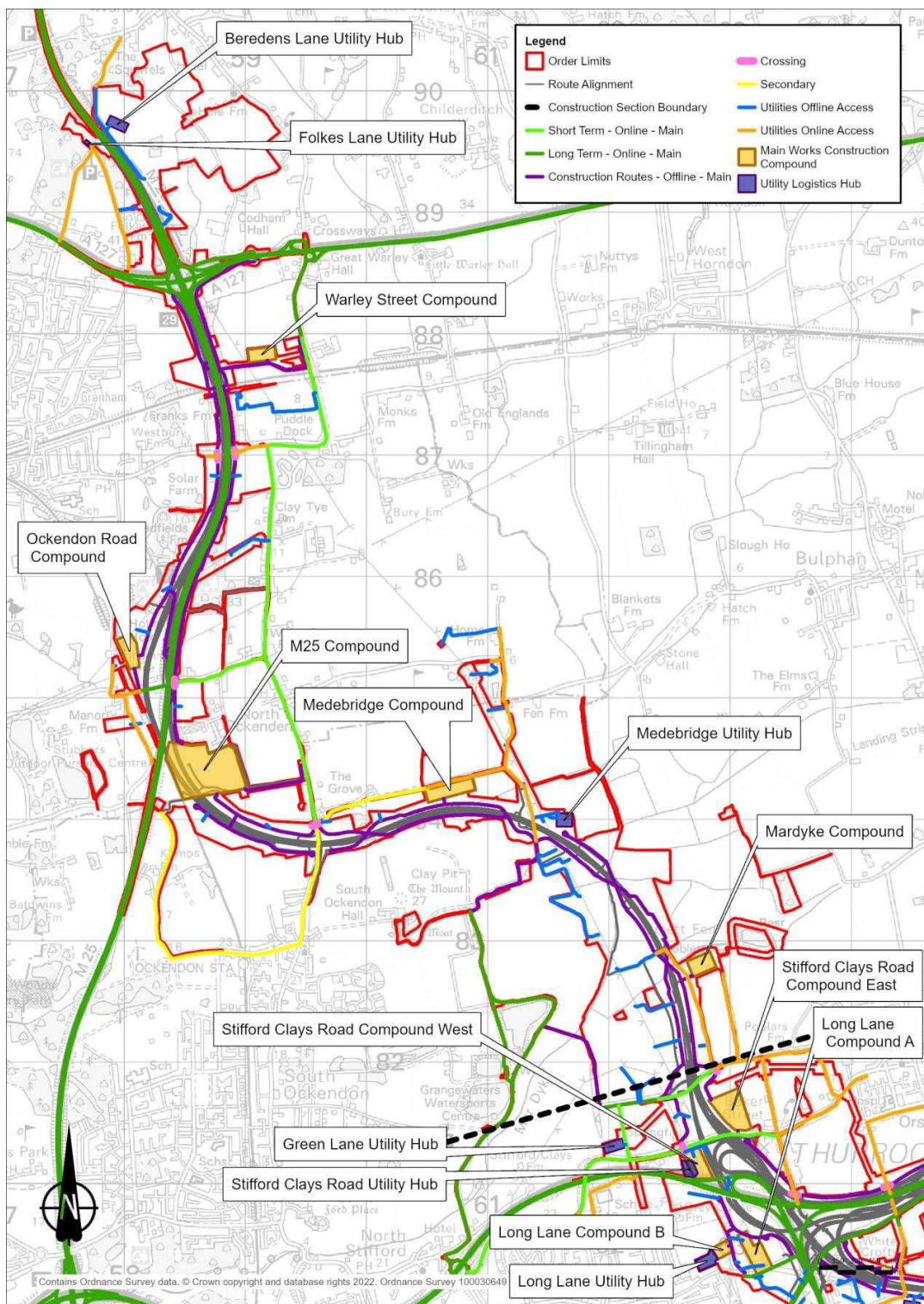
7.2.38 The items identified in the tables above are also set out in Figure 13 on the following page.

**Figure 13 - Identified Issues**



7.2.39 Figure 14 on the following page shows in more detail the construction compound locations, utility compound locations, short-term and long-term access arrangements for these compounds, as well as primary and secondary construction routes. The map shows that the proposed diversion route for general traffic (whilst Ockendon Road is fully closed) will also be used as a secondary route for construction vehicles.

**Figure 14 - Utility and Construction Compound Location Maps**



**Source: National Highways**

#### 7.2.40 Mitigation

7.2.41 LB Havering has concerns around the suitability of some of the roads proposed to accommodate diverted traffic. It should also be pointed out that the proposed division route is also identified as a secondary route for construction traffic. No suitable

mitigation has been put forward, thus far, by the Applicant to ensure these roads are maintained in an appropriate condition in order to accommodate additional traffic during the closure of Ockendon Road and also a potentially significant number of HGVs.

7.2.42 In addition, whilst traffic management measures are set out in generic form in the oTMPfC, further details of all temporary traffic management will need to be provided, including layouts of site compound accesses and for all the highway network.

7.2.43 The mitigation proposals related directly to construction traffic are considered to be very limited in nature. Areas of concern are:

- a Construction traffic impacts (traffic volume, unsuitable roads and junctions etc.) not fully defined and in part reliant on contractors.
- b No mitigation for 19 month Ockendon Road closure.
- c Programming of M25 temporary slip road opening not agreeable to LB Havering as a major piece of mitigation is delivered too late in the overall construction programme.
- d The control documents used to manage construction impacts as drafted are unfit for purpose: they lack ambition and target setting, which will be essential to manage the adverse effect of the volume and type of construction expected and the sheer volume of employees engaged in construction activities for the scheme.
- e No commitment to responding or funding / delivering wider mitigation that may be necessary based on operational experience.
- f There a number of traffic /PRoW that would benefits from Protected Provisions (PPs). There is no PPs to cover highway approvals, transfer of footbridge 252 etc.

7.2.44 The mitigation proposals, and control over them in the construction phase in particular, are insufficient to give certainty to the LB Havering that the impacts are mitigated (NPSNN paragraph 3.3). The use of designated funds to secure scheme mitigation is inappropriate.

#### 7.2.45 **DCO Requirements**

7.2.46 The level of detail presented on the proposed mitigation of construction traffic impact within the borough-area is not sufficient to assess and mitigate impacts on the local highway network.

7.2.47 The draft DCO includes a Requirement for the Final Traffic Management Plan to be approved by the SoS following consultation with the relevant authorities.

### 7.3 Operational Traffic Impacts

#### 7.3.1 **Traffic Modelling**

7.3.2 The transport assessment (TA) of the scheme is strategic in nature, with the modelling covering the entire South East of England east of the Blackwell Tunnel and the M25. However, paragraph 2.20 of the NPSNN indicates that, "...local forecasts will be used for the assessment of any specific road scheme being assessed under the NN NPS". The assessment has used 'traditional' TEMPro / NTEM (Trip End Model Presentation Program / National Trip End Model) based approaches to traffic growth (as also set out in NPSNN Annex B in 2014), rather than more recent analytical techniques based on scenario planning. Alternative growth scenarios are assessed, but only as a mathematical construct from the 'central case' (see NPSNN paragraph 4.6 which indicates the need for sensitivity tests).

7.3.3 Sustainable travel option development is required to meet the policy of NPSNN set out in paragraph 3.17. As the majority of sustainable travel mitigation has been backed off to 'designated funds' the meeting of this test is not made out.

- 7.3.4 Paragraph 3.25 of the NPSNN sets out the policy test for a road user charging scheme. Paragraph 1.4.3 of the road user charging statement suggests that the project aligns with Policy 3.2.5 of the NPS NN as income from tolls would go to the Government in general, not specifically to fund the scheme. LB Havering would consider such a link to be tenuous at best.
- 7.3.5 NPSNN paragraph 4.4 requires assessment of the scheme in the following terms: "...In this context, environmental, safety, social and economic benefits and adverse impacts, should be considered at national, regional and local level...". The traffic information presented is entirely strategic in nature. The recent creation of local traffic models by NH (which LB Havering do not consider to be fit for purpose due to their total reliance on the strategic analysis without using local information) is proof that NH are aware of this deficiency in the operational traffic modelling. LB Havering also notes paragraph 4.6 of the NPSNN, which requires a "local transport model to provide sufficiently accurate detail of the impacts of a project".
- 7.3.6 With regards to the traffic analysis, this has knock-on effects on compliance with NPSNN paragraph 5.6 relating to (air quality) and paragraph 5.191 relating to noise. It can be argued that the lack of reliable local traffic modelling makes analysis of local noise and air quality issues untenable.
- 7.3.7 It is clear that the scheme, as currently proposed, has a degree of compliance with the NPSNN based on its strategic nature. Locally, however, the analysis of traffic is limited and constrained by the assessment tools employed. This leads to questions of compliance at the local level being an area of concern.

#### 7.3.8 **Data Sets**

- 7.3.9 The data used to traffic model the LTC are based on a 2016 traffic model, with its validation improved by the use of mobile phone data in 2019 and 2022. A number of points concerning the data used include:
- a. The most recent uncertainty log has been issued and reviewed by LB Havering. The review suggests that all sites known to Havering have been included, with the exception of sites on the A1306 corridor that are listed as 'reasonably foreseen'. A total of 4,218 dwellings from the current Havering Local Plan have been given the status by NH of "reasonably certain". Notably, this figure includes 661 units on the A1306 corridor. This represents the latest known planning information available and therefore provides an accurate picture of growth in terms of Havering's area.
  - b. As noted above, TEMPro 7.2 has been used to growth traffic to future years. Previous models had capped growth to TEMPro except where the uncertainty log has shown known developments. This approach has been followed again to ensure double counting of growth does not occur.
  - c. The data used is relevant to the analytical task at hand but in some areas is dated and predates the changes in traffic levels and changes in journey purpose seen during and since the Covid-19 pandemic.

On balance, when considered against the strategic analysis the model is designed to achieve, the data used are generally fit for purpose. However, the lack of detail at the local levels makes a statement of confidence in the data inputs at a local level difficult to validate. That said, the model is now reflective of the current Havering Local Plan's proposed growth.



### 7.3.10 **Assessment**

7.3.11 The assessment of traffic flows for construction and operation involves the use of a SATURN software based traffic model. Model coverage for the project is considered by LB Havering to be adequate for a strategic scheme.

7.3.12 As would be expected from a strategic model, there is no assessment of individual junction performance. Following a request from Havering, NH produced a Local Junction modelling report which on review Havering considered unsatisfactory. Further information on the Local Junction modelling can be found in paras 7.5.1 to 7.5.24 of this LIR.

7.3.13 Validation is improved in comparison to the previous models, although this is not fully reported in the Transport Assessment (TA) / Combined Modelling and Appraisal Report. Modelled journey times appear to reflect observed conditions closely.

7.3.14 The creation of high and low growth scenarios accords with the NPSNN (paragraph 4.6), but not with the with the latest DfT guidance on modelling uncertainty through scenario-based assessments.

### 7.3.15 **Combined Modelling and Appraisal Report Comments**

7.3.16 The Combined Modelling and Appraisal Report (ComMA) summarises the transport modelling, forecasting and appraisal work undertaken for the Project. It reports on the key findings of the appraisal work on the social, environmental and economic impacts of the provision of the scheme.

7.3.17 The ComMA fails to explore the very real concern about the application of the Lower Thames Area Model (LTAM) to the necessary local assessments of traffic and environmental factors.

7.3.18 In the document clarity is provided as to what status the new A122 LTC has in the modelling and appraisal. Sections 2.4.6 and 7 provide details of what the road is (i.e., not a Smart Motorway).

7.3.19 Sections 3.7-3.9 provide the view that the scheme and its analysis has been developed on the basis of predicting future traffic levels and providing suitable road capacity to cater for the predicted demand. The approach is a standard assessment based on a central case but with limited analysis of high and low growth scenarios. These wider scenarios are not based on a detailed review of planning and traffic growth evidence, but rather a mathematical construct from the central case.

7.3.20 The latest DfT guidance sets out how a scheme appraisal should deal with future uncertainty, including use of an 'uncertainty toolkit' to assess factors affecting growth. The basis of the guidance is to consider a range of plausible scenarios that would represent alternative trends in growth and therefore in traffic volumes. This concept of scenario planning allows the assessment to move into the realms of 'decide and provide' i.e. the traffic levels are responsive to a particular vision of the future. This decide and provide approach is now regularised as good practice in transport analysis, given the need to move forward within a different policy landscape including climate change and carbon neutrality. Therefore, the NH transport analytical approach is not consistent with latest guidance.

7.3.21 No clarity is provided on how sustainable mode changes instigated by the scheme have been valued. This appears to potentially use the DfT's sustainable modes toolkit, but is at odds with the claims made in the scheme benefits statement which allocates benefits to Non-Motorised User studies rather than actual benefits that users will see.

7.3.22 The section 7.3.48 sets out the distributional benefits of the scheme on an area basis, but no attempt is made to identify where disbenefits of the scheme fall. This lack of a complete distributional analysis is critical for Havering on matters such as environment where the traffic benefits to the areas are suggested to be limited in comparison to the adverse impacts.

7.3.23 TEMPro 7.2 has been used to growth traffic to future years. Previous model iterations had capped growth to TEMPro, except where the uncertainty log has shown known developments. This approach has been followed again to ensure double counting of growth does not occur.

#### 7.3.24 **Construction Model**

7.3.25 The construction model assesses the eleven identified phases of the construction programme. It models both the road closure and formal traffic management arrangements, together with considering the impact of 'diverted' traffic or traffic which re-routes through increased congestion. The construction model is based on 2030, rather than the now predicated 2032 opening year. The TEMPro 7.2 growth factor from 2030 to 2032 is 1.0176, which does not seem overly significant at a macro level, but of course may have some specific local implications.

7.3.26 For the nature of the scheme, the traffic analysis conducted is generally fit for purpose. What the traffic model does *not* do is provide the granularity to confidently assess localised impacts of the scheme, such as at a number of junctions with LB Havering operated roads and the Transport for London Road Network (TLRN), operated by TfL.

## 7.4 Operational Impacts

7.4.1 The operational traffic impacts have also been documented in mapping produced by LB Havering. This shows substantial impacts on the A127 corridor (1,333 PCUs two way in the AM peak on the A127 in the opening year) and adjacent local roads.

7.4.2 Figure 15 and Figure 16, below, show the change in traffic with the scheme in operation during the AM Peak and PM Peak respectively. Increases in traffic are shown in red; decreases in blue and no change in green. The numbers shown indicate the change in PCUs from the base traffic conditions to the situation with the scheme in operation. As previously noted, a PCU is equal to 1 car. In this case, an HGV is equivalent to 2.5 PCUs. Table 10 summarises the key operational traffic impacts.

Figure 15 - 2030 Operational Traffic AM Peak

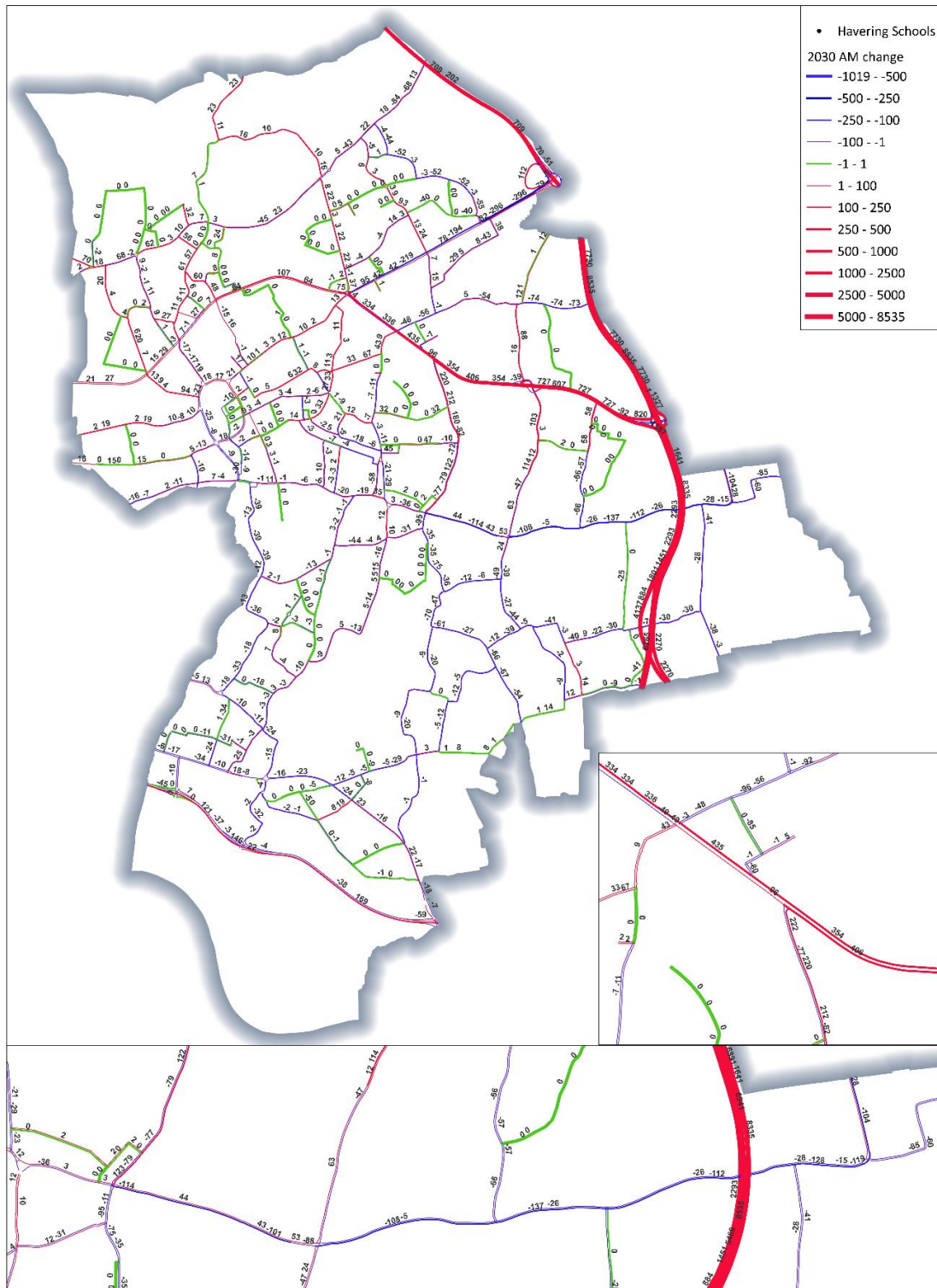
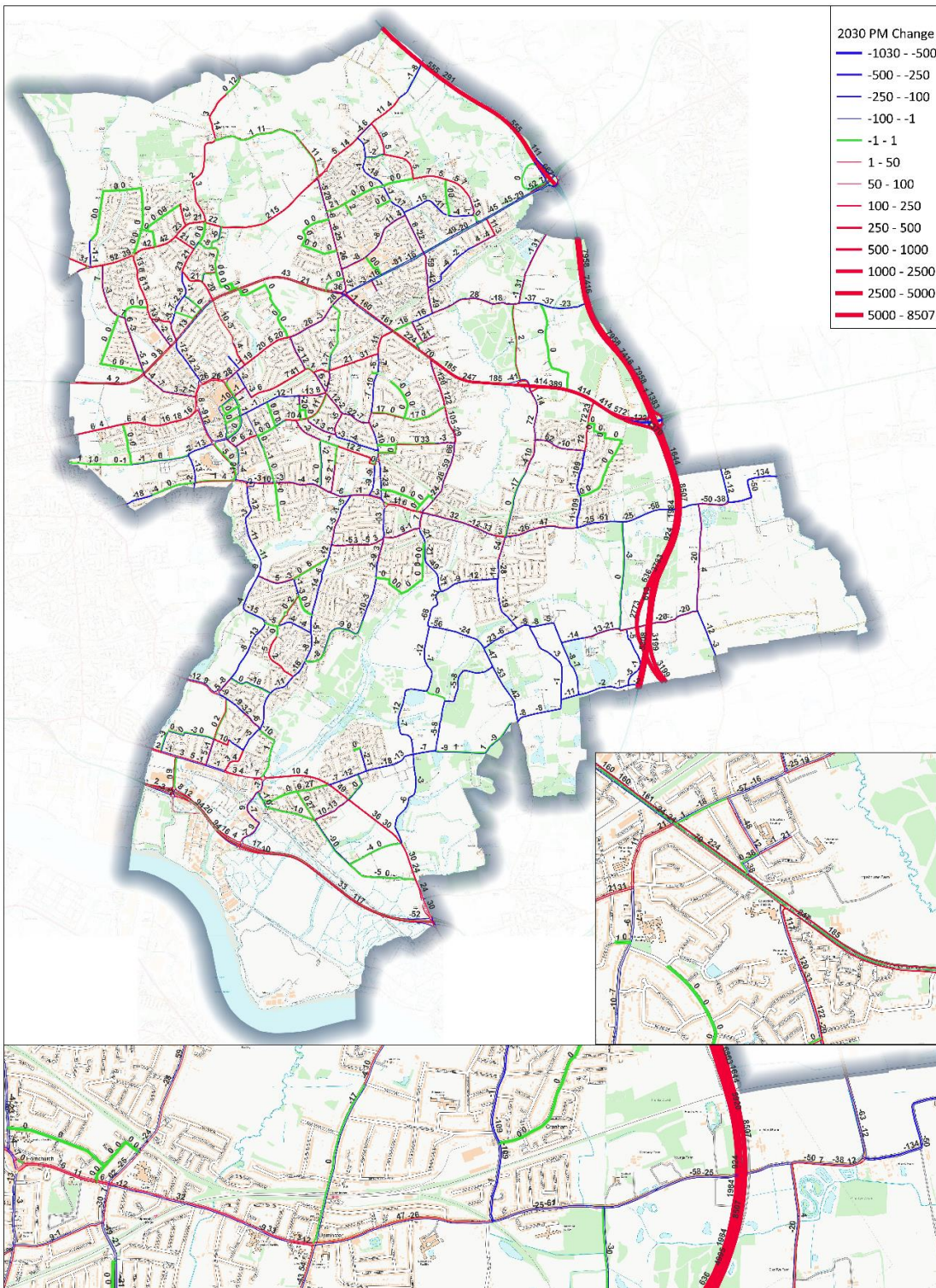


Figure 16 - 2030 Operational Traffic PM Peak



**Table 10 - Operational Traffic Impacts Summary**

Scenario	Key Traffic Impacts
2030 AM Peak	<ul style="list-style-type: none"> <li>• M25 Mainline flows increase by circa 15,000 PCUs two way. Given the release of traffic at the Dartford Crossing this increase in flow is not a surprise.</li> <li>• A127 flows increased by up to 727 PCUs eastbound and 606 PCUs westbound.</li> <li>• Increases of 220 PCUs southbound on Wingletye Lane and 14 PCUs northbound in Hall Lane.</li> <li>• Increases of up to 169 PCUs eastbound on the A13.</li> <li>• Increase of up to 100 PCUs two-way on Ardleigh Green Road.</li> <li>• Decrease of up to 296 PCUs on the A12 eastbound, east of Gallows Corner.</li> <li>• Decreases of up to 137 PCUs two-way on St Marys Lane – due to the changes made by the scheme at M25 junction 29.</li> <li>• Decrease of up to 82 PCUs two-way on Corbets Tey Road south of Upminster.</li> <li>• Decrease of up to 90 PCUs on Squirrels Heath Road.</li> </ul>
2030 PM Peak	<ul style="list-style-type: none"> <li>• Increase of circa 16,250 PCUs two-way. As with the AM peak scenario the changes in capacity at Dartford would appear to be allowing additional traffic throughput.</li> <li>• A127 increases of up to 572 PCUs eastbound and 389 PCUs westbound.</li> <li>• A13 increase of up to 117 PCUs westbound.</li> <li>• Increase of up to 122 PCUs southbound in Wingletye Lane.</li> <li>• Increase of 188 PCUs on Hall Lane northbound (at the A127 junction).</li> <li>• Decrease of up to 97 PCUs two-way on the A12 east of Gallows Corner.</li> <li>• Decrease of 109 PCUs in Front Lane southbound.</li> <li>• Decrease of 134 PCUs on St Marys Lane east of Warley Lane.</li> </ul>
2051 AM Peak	<ul style="list-style-type: none"> <li>• M25 increases of 19,000 PCUs two-way.</li> <li>• A127 increases of 730 PCUs eastbound and 700 PCUs westbound.</li> <li>• Increase of up to 162 PCUs in Wingletye Lane southbound.</li> <li>• St Marys Lane decrease of 106 PCUs.</li> <li>• Front Lane – decrease of 185 PCUs northbound, increase of 120 PCUs southbound.</li> <li>• Hall Lane South northbound increase of 311 PCUs and 121 PCUs south in Hall Lane North.</li> <li>• Increase of 118 PCUs in Chase Cross Road (Collier Row).</li> <li>• Increase of up to 262 PCUs A13 westbound.</li> <li>• Decrease of 262 PCUs A12 eastbound (east of Gallows Corner).</li> <li>• Decrease of 174 PCUs in Warley Lane.</li> </ul>

2051 PM Peak	<ul style="list-style-type: none"> <li>• Increase of 17,000 PCUs two-way on the M25.</li> <li>• A127 increases of 812 PCUs eastbound and 586 PCUs westbound.</li> <li>• Front Lane – decrease of 145 PCUs northbound.</li> <li>• Hall Lane South northbound increase of 395 PCUs.</li> <li>• Increase of up to 212 PCUs in Wingletye Lane southbound.</li> <li>• Increase of up to 126 PCUs in Woodlands Avenue.</li> <li>• Change of 102 PCUs outside Gidea Park Rail Station (appears to be a re-routing rather than a change in traffic levels).</li> <li>• Increase of 212 PCUs A13 westbound.</li> <li>• Decrease of 132 PCUs in Hackton Lane Hornchurch.</li> <li>• Decrease of up to 275 PCUs in Warley Street and 193 PCUs in St Marys Lane.</li> </ul>
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7.4.3 In terms of safety, COBALT (**C**ost and **B**enefit to **A**ccidents – **L**ight **T**ouch), a DfT approved computer programme, has been used previously to consider accident / safety issues. The assessment operates at a whole scheme level rather than considering individual junctions or road links.

#### 7.4.4 DCO Requirements

7.4.5 The Schedule 2 Requirements are deficient in a number of areas in respect of traffic and transport:

- a The proposed Wider Network Monitoring and Management Plan provides no mechanism for funding any necessary mitigation for Havering. There are insufficient monitoring points in Havering. The decision making mechanism for the provision of mitigation is insufficient
- b *Furthermore, Havering would wish to object to Part 3 Article 10 of the draft DCO which places a maintenance burden on the Council for new and improved new streets, structures and any other street which is not intended to be a highway. The Council is not in a financial position to maintain new facilities which occur as a result of the construction of the proposed scheme and would therefore be seeking commuted sums through Protective Provisions. Of particular note is footpath 252 over the Essex Thameside line.*
- c Concern that the CoCP becomes the Phase 2 EMP – in effect this leaves the EMP unexamined and reliant on other documents for control (e.g. CoCP, CEMPs for each construction site and the REAC).
- d Traffic management (R10). The phrase ‘substantially in accordance with’ gives uncertainty.
- e Travel Plan (R11). The phrase ‘substantially in accordance with’ gives uncertainty.

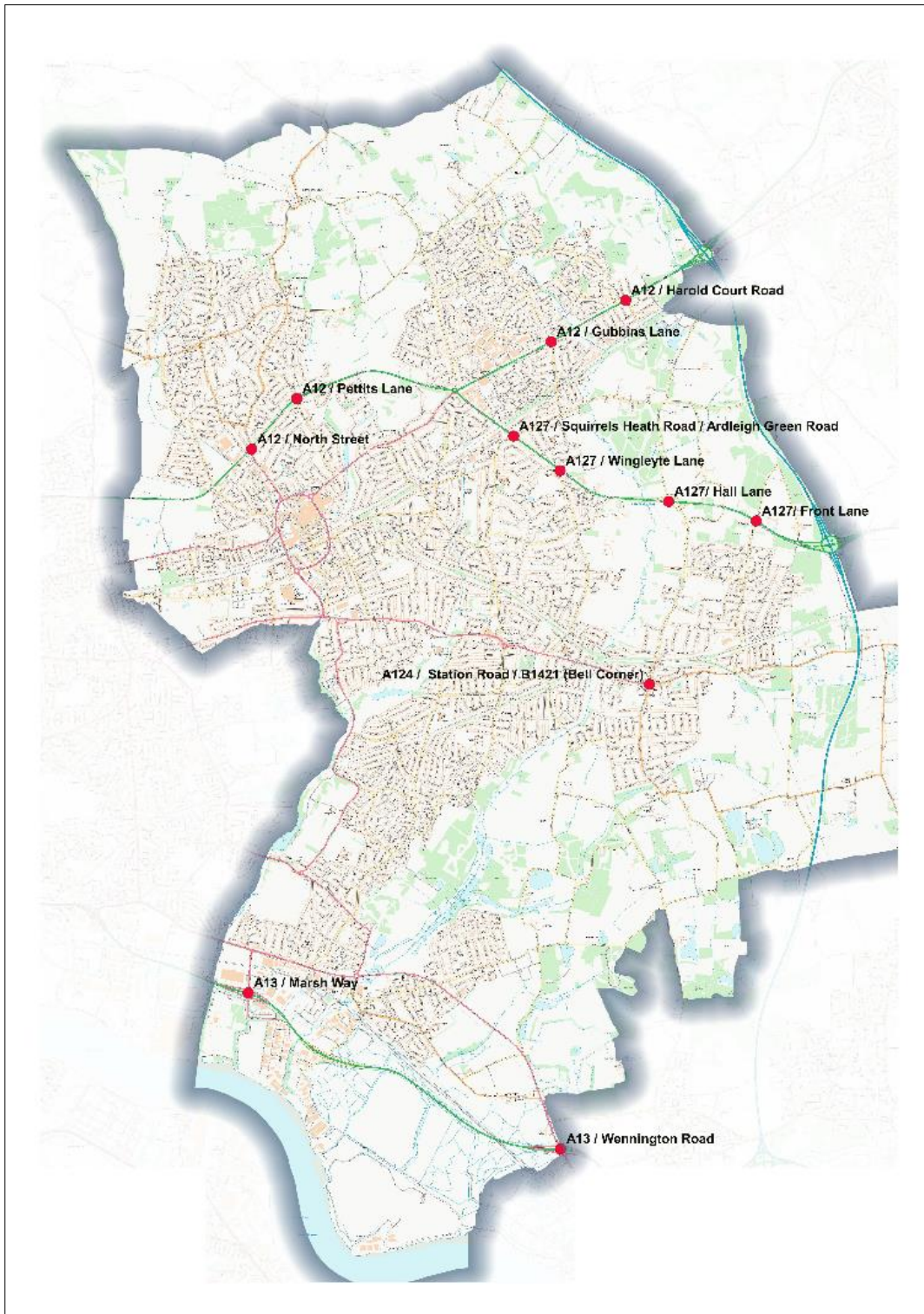
7.4.6 In summary, the Requirements do not give adequate control over traffic impacts. As an aside, the lack of Protective Provisions gives further uncertainty for LB Havering.

## 7.5 Local Junction Modelling

### 7.5.1 Modelling carried out by National Highways

7.5.2 NH undertook an analysis of the potential impacts of the Lower Thames Crossing (LTC) scheme on local junctions in Havering using LTC data extracted from the Lower Thames Area Model (LTAM). An assessment was carried out of 12 junctions using LinSig V3 software for signalised junctions and Junctions 9 (PICADY 9) software for priority junctions. This work took place in February 2023. These 12 junction locations are shown in Figure 17 below.

**Figure 17 - Junction locations**



7.5.3 The flows used were taken from the 2030 LTAM, the LTC Saturn-based strategic model. Whilst overall validation has been considered an improvement to the previous model, a strategic traffic model is not an appropriate tool to analyse local junction impacts. The model does not contain the detailed local data required to undertake such an analysis in an accurate and representative way. Nevertheless, NH shared the findings of the local junction analysis with LB Havering and TfL, which was appreciated. A summary of the modelling findings is set out below.

#### 7.5.4 **Local Junction Modelling Methodology**

- 7.5.5 The strategic model runs used to assess impacts are the AM 07:00 to 08:00 and PM 17:00 to 18:00 time periods. The local junction modelling analysis report has not considered whether the 08:00 to 09:00 AM period is more relevant to localised models.
- 7.5.6 The flows extracted are from the 2030 Do Minimum (DM) and Do Something (DS) LTAM runs. No additional validation or review of the extracted flows has been undertaken by NH. Indeed, there is limited discussion on the approach taken to the transfer of flow information from model to model. This is despite LB Havering making a repeated request for information on this matter in the engagement with NH (prior to the modelling taking place).
- 7.5.7 No additional validation of current junction operation has taken place in the analysis; in essence the strategic model flows and turning information have been used to simulate a localised Origin and Destination (O&D) matrix for each junction. Thus, the turning movements are exclusively based on the simulated O&D matrix without further validation. LB Havering does not consider this an appropriate approach.
- 7.5.8 The modelled “on the ground” geometry has been taken from Google maps. Given the sensitivity of localised models to road geometry, this is a high-risk approach that could significantly affect the modelling outcomes.
- 7.5.9 On basis of the approach discussed above, LB Havering remain unsatisfied with the validity of the modelled outcomes.
- 7.5.10 The assessments do not take into account the cumulative impacts along the corridor, nor do they take into account impacts on non-motorised users or public transport. Safety issues have also not been reported.
- 7.5.11 Given the concerns set out above, LB Havering and TfL commissioned their own local junction modelling work, to test the validity of the modelled outcomes provided by NH. This work was also undertaken to provide answers to some of the information that was missing in the NH Highways technical work cited above. The findings of this modelling work are discussed in further detail below.
- 7.5.12 Local Modelling Impacts commissioned by LB Havering and Transport for London
- 7.5.13 LB Havering and TfL have undertaken an assessment of the local traffic impacts of the scheme using either Linsig V3 or Junctions 10 as appropriate, that assesses the effect of the scheme on 11 local road junctions in the borough.
- 7.5.14 In common with the modelling conducted by National Highways in support of their planning application to build the Lower Thames Crossing, the junctions have been modelled for the time periods of 0700-0800 and 1700-1800. A copy of the local modelling report produced by appointed consultants Cole Easdon can be found in Appendix 2 of this LIR. This report also assesses each junction in relation to relevant Healthy Streets criteria to identify opportunities for interventions with regard to public transport, walking and cycling. Accident data for all eleven junctions have also been analysed.



7.5.15 The assessment considered the following junctions:

- A12/North Street/B175 Havering Road;
- A12 Eastern Avenue/Pettits Lane/Pettits Lane North;
- A12 Colchester Road/Harold Court Road;
- A12 Colchester Road/Gubbins Lane/Gooshays Drive;
- A127 Southend Arterial Road/Ardleigh Green Road/Squirrels Heath Road;
- A127 Southend Arterial Road/Wingletye Lane;
- A127 Southend Arterial Road/Hall Lane;
- A127 Southend Arterial Road/Front Lane;
- A13/Marsh Way;
- A13/A1306 Wennington Road (Wennington Interchange); and
- A124 St Mary's Lane/Station Road/B1421 Corbets Tey Road (Bell Corner).

7.5.16 The *Healthy Streets* assessment identifies that most of the junctions would benefit from improved pedestrian/cycle crossing points, whilst others would also benefit from the banning of U-turn manoeuvres, provision of bus priority measures, and Advanced Stop Lines (ASLs) for cyclists.

7.5.17 The accident data analysis found that the A12/North Street and A12/Pettits Lane had relatively high numbers of accidents in the 5-year period analysed (some 38 and 25 accidents respectively), whilst the A12/Gubbins Lane, A127/Squirrels Heath Road and A127/Hall Lane junctions had all experienced 19 accidents. All five junctions are recommended for further investigation with regards to road safety.

7.5.18 With respect to the junction modelling, this was informed by traffic surveys carried out at each junction in May 2023. The changes in flows caused by the LTC are taken from the National Highways 2030 LTAM. These flows were incorporated into the local models to create a 2030 "with LTC" scenario at each of the 11 modelled junctions.

7.5.19 The summarised findings of the modelling were as follows:

7.5.20 The following junctions operate within capacity and will continue to do so in the year 2030 with or without the LTC scheme:

- A12 Colchester Road/Harold Court Road;
- A127 Southend Arterial Road/Wingletye Lane
- A13/Marsh Way;
- A127/Front Lane;
- A13/A1306 Wennington Road (Wennington Interchange); and
- A124 St Mary's Lane/Station Road/B1421 Corbets Tey Road (Bell Corner).

7.5.21 The following junction will operate over capacity in 2030, with or without the LTC, however, there may be scope to improve this junction:

- A12 Colchester Road/Gubbins Lane/Gooshays Drive.

7.5.22 The LTC causes the following junctions to operate over capacity (i.e. without the LTC, these junctions would operate with reserve capacity in 2030):

- A127 Southend Arterial Road/Hall Lane; and
- A12 Eastern Avenue/Pettits Lane/Pettits Lane North.

7.5.23 The following junctions are severely over-capacity, both now and in the 2030 DS scenario. As such, these junctions will likely require amendments to the strategic network to alleviate the strain on these junctions:

- A12/North Street/B175 Havering Road; and
- A127 Southend Arterial Road/Ardleigh Green Road/Squirrels Heath Road.

7.5.24 A brief summary of the overall findings, together with the report recommendations relevant for each junction, is set out in Table 11.

**Table 11 - Summary of Findings and Recommendations at Each Junction**

Junction	Recommended Healthy Streets Interventions	Accidents & Safety Findings/Interventions	Junction Performance Findings/Interventions
A12/North Street	Installation of controlled pedestrian crossing facilities and imposition of a ban on U-turns. Consider bus priority measures.	38 accidents in 5 years. Recommend that a Road Safety Audit (RSA) is conducted of the junction.	Junction significantly over capacity in 2023 and continues to be in 2030 DS scenario. Strategic approach required to look at options for rerouting traffic away from this junction together with modal shift measures.
A12/Pettits Lane	Installation of controlled pedestrian crossing facilities and imposition of a ban on U-turns. Consider bus priority measures. Consider more compact junction layout that is more pedestrian / cyclist friendly.	25 accidents in 5 years. Recommend that a RSA is conducted of the junction.	Junction within capacity in 2023 base and 2030 DM scenarios. LTC causes junction to operate over capacity in DS scenario. Considered to be scope to improve junction performance through signal timings review and possible U-turn ban.
A12/Harold Court Road	Recommend installation of a controlled crossing on Harold Court Road – existing uncontrolled crossing considered unsatisfactory.	16 accidents in 5 years. No particular safety concerns aside from the crossing on Harold Court Road.	Junction will operate with reserve capacity in all scenarios.
A12/Gubbins Lane/ Gooshays Drive	Installation of controlled pedestrian crossing facilities and imposition of a ban on U-turns. Consider bus priority measures.	19 accidents in 5 years. Recommend that a RSA is conducted of the junction.	Overcapacity in all scenarios modelled, however there is likely to be scope to implement capacity improvements through measures such as signal timing reviews.
A127/Squirrels Heath Road/ Ardleigh Green Road	Installation of controlled pedestrian crossing facilities and imposition of a ban on U-turns. Consider bus priority measures.	19 accidents in 5 years. Recommend that a RSA is conducted of the junction.	Significantly overcapacity in all scenarios modelled. Strategic approach needed with respect to mitigation at this junction.
A127/Wingletye Lane	Consider feasibility of signalling the junction to incorporate pedestrian crossing facilities and to allow right turn movements from Wingletye Lane onto the A127. May help to reduce capacity issues at the Squirrels Heath junction.	8 accidents in 5 years. Recommend that further work is conducted with specific regard to impact of the LTC on Wingletye Lane and the two schools located along this road.	Operates within capacity in all scenarios considered, however queueing back from the Squirrels Heath / Ardleigh Green Road impacts this junction.
A127/Hall Lane (northern and southern junctions)	No Healthy Streets interventions identified.	19 accidents in 5 years. Recommend that a RSA is conducted of the junction.	Junction within capacity in 2023 base and 2030 DM scenarios. LTC causes junction to operate over

Junction	Recommended Healthy Streets Interventions	Accidents & Safety Findings/Interventions	Junction Performance Findings/Interventions
			capacity in DS scenario, leading to dangerous queue lengths almost back to the A127 through lane. Altering the existing priority junction arrangement at the exit slip where it meets Hall Lane to a roundabout junction may minimise or remove the excessive queuing caused. This is recommended for further investigation.
A127/Front Lane	Commission survey and report of usage of the existing staggered crossing on the A127 and options for its removal, retention or alteration.	7 accidents in 5 years. Consider safety of existing staggered crossing.	Junction will operate with reserve capacity in all scenarios.
A13/Marsh Way	Consider provision of additional pedestrian crossing facilities and also consider provision of a foot/cycleway along the western side of Marsh Way between the two roundabouts. Consider addition of Advanced Stop Lines (ASLs) for cyclists.	17 accidents in 5 years. Additional crossing facilities would be beneficial.	Junction will operate with reserve capacity in all scenarios.
A13/Wennington Road	Crossing points require tactile paving. Foot/cycleways require resurfacing and vegetation cutting back.	8 accidents in 5 years. No specific interventions identified.	Junction will operate with reserve capacity in all scenarios.
St Mary's Lane / Station Road (Bell Corner)	Consider provision of ASLs for cyclists and bus priority measures.	9 accidents in 5 years. No specific interventions identified.	Junction will operate with reserve capacity in all scenarios.

### 7.5.25 Next Steps

7.5.26 The Council is concerned that this work has identified the above issues and the clear need for mitigation. The current proposed wider monitoring and mitigation strategy does not identify a mechanism for the delivery of such mitigation for LB Havering. This matter is discussed further in the Council's Written Representation.

7.5.27 The Council is seeking a commitment from NH that it will work with LB Havering and TfL to deliver suitable mitigation measures that will address capacity constraints forecast at key junctions within Havering. LB Havering would like to see such a commitment secured through the DCO.

## 8 Implications for Schools

### 8.1 Construction Impacts

8.1.1 To further assess construction traffic impacts, an analysis by GIS mapping has identified schools within 500m of notable changes in traffic flows caused by scheme

construction. Construction phases 4 and 7 have been analysed given these are periods of maximum effort in the construction programme currently envisaged.

8.1.2 Phase 4 (June 2026 – November 2026 as reported) construction traffic AM Peak – schools near to increased traffic greater than 50 PCU; school less than 500m from the road:

- Branfil Primary School +73.
- Havering Sixth Form + 79 and +58.
- Sacred Heart of Mary Girls' School +74.
- St Joseph's Catholic Primary School +71.
- Upminster Infant & Junior School +72.
- Coopers' Company & Coborn School +72.
- James Oglethorpe Primary School +153.
- Ardleigh Green Infant & Junior School +60.
- Harold Wood Primary School +56.
- Redden Court School +56.

8.1.3 Phase 7 construction traffic AM Peak – schools near to increased traffic greater than 50 PCU; school less than 500m from the road:

- James Oglethorpe Primary School, +159.
- Upminster Infant & Junior School +73.
- Coopers' Company & Coburn School +73.
- Sacred Heart of Mary Girls' School + 73.
- Havering Sixth Form +98.
- Ardleigh Green Infant & Junior School +72.
- Harold Wood Primary School +53.
- Redden Court School +53.
- St Joseph's Catholic Primary School +73.
- Branfil Primary School +59.

8.1.4 Of particular concern is the challenge pupils travelling into these schools from outside of the borough east of the M25 (and therefore more likely to be travelling by vehicles rather than on foot) will have getting to and from school during the construction period. Table 12 below shows the most affected schools during construction and the number of pupils travelling outside the M25 boundary.

**Table 12 – Schools affected during construction phase**

School Name	Phase of Education	Pupil Count (outside of M25)
Ardleigh Green Infant School	Primary	1
Ardleigh Green Junior School	Primary	9
Branfil Primary School	Primary	67
Corbets Tey School	SEN	1
Harold Wood Primary School	Primary	7
Redden Court School	Secondary	14
Sacred Heart Of Mary Girls' School	Secondary	34
St. Joseph's Catholic Primary School	Primary	21
The Coopers' Company & Coborn School	Secondary	216
The James Oglethorpe Primary School	Primary	128
Upminster Infant School	Primary	3
Upminster Junior School	Primary	5

- 8.1.5 The information in the table above is also set out in map form in Appendix 3. Branfil Primary School, The Coopers' Company & Coborn School and The James Oglethorpe Primary School are particularly affected, given the total number of pupils travelling from outside of the borough east of the M25.
- 8.1.6 For a more detailed consideration of impacts in Havering, under operational conditions, the locations of schools in the borough and the changes in traffic levels caused by the scheme have been reviewed. A total of 18 Havering schools are within 500m of a road which has a traffic increase of greater than 50 PCUs in the AM peak.
- 8.1.7 LB Havering requests fixed crossing points to support pedestrians travelling to schools, which will be particularly impacted by increased traffic flows during construction periods. Given the severity of the impacts schools on key parts of the network such as St Mary's Lane will experience, particularly with increased traffic flows, such a measure is considered vital in reassuring parents and minimising risk for pupils travelling to and from school.
- 8.1.8 In addition, the Council requests a financial contribution to the bikeability programme for each year of construction. Ensuring pupils can cycle safely to school will help to manage traffic flows and it a vital life skill for residents. Contributions are also sought for the TfL Sustainable Travel Active Responsible Safe (STARS) accreditation programme, which supports schools in, encourage pupils parent and staff to travel sustainable to and from school.
- 8.1.9 Table 12 shows the number of pupils travelling into schools in Havering from outside of the M25. Should the road closures during construction triggers the statutory distances for free school transport being exceeded, the LB Havering would require NH to provide the necessary funding to allow LB Havering to discharge its statutory duties.

- 8.1.10 The Council is also concerned about the impact Corbets Tey Special school will experience during construction due to its proximity to the works proposed for Ockendon Road. All pupils travelling to the school do so by private vehicle. The vast majority of these pupils live within Havering. There is concern that these journeys will be affected by the wider construction traffic impacts. The potential impacts for Corbets Tey Special school emphasise the importance of the appointed contractor doing all it can to minimise the length of time Ockendon Road is fully closed for.
- 8.1.11 There is concerned that Front Lane will be adversely impacted by construction traffic which is forecast to increase during certain periods of construction. Pupils walking to Engayne Primary school from the east currently have to navigate Front Lane. This is a particularly busy road and will become more challenging for pupils to navigate during construction of Lower Thames. The Council requests a Zebra crossing facility to be installed at the junction with Isis Drive to enable safe passage across this road.

## 8.2 Operational traffic

- 8.2.1 AM traffic change greater than +50 PCU with school under 500m from road in 2030 opening year:

- Engayne Primary School –121 PCUs.
- Upminster Infant & Junior School 63 PCUs.
- St Joseph's Catholic Primary School 63 PCUs.
- Sacred Heart of Mary Girls' School 63 PCUs.
- Havering Sixth Form 122 PCUs.
- Emerson Park Academy 180 PCUs.
- Nelmes Primary School 220 PCUs.
- Champion School 222 PCUs.
- Ardleigh Green Infant & Junior Schools 336 PCUs.
- Havering College of FE 67 PCUs.
- Redden Court School 435 PCUs.
- Harold Wood Primary School 435 PCUs.
- Marshalls Park Academy 64 PCUs.
- Rise Park Academy 60 PCUs.
- Clockhouse Primary School 109 PCUs.
- St Patricks Primary School PS 68 PCUs.
- Harold Court Primary School 78 PCUs.
- Royal Liberty School 67 PCUs.

- 8.2.2 As with the impacts during construction, of particular concern is the challenge pupils travelling into these schools from outside of the borough east of the M25 (and therefore more likely to be travelling by vehicles rather than on foot) will have getting to and from school once the scheme is fully operational. Table 13 on the following page shows the most affected schools during scheme operation and the number of pupils travelling to those schools from outside the M25 boundary.

**Table 13 – Schools affected during the operational phases**

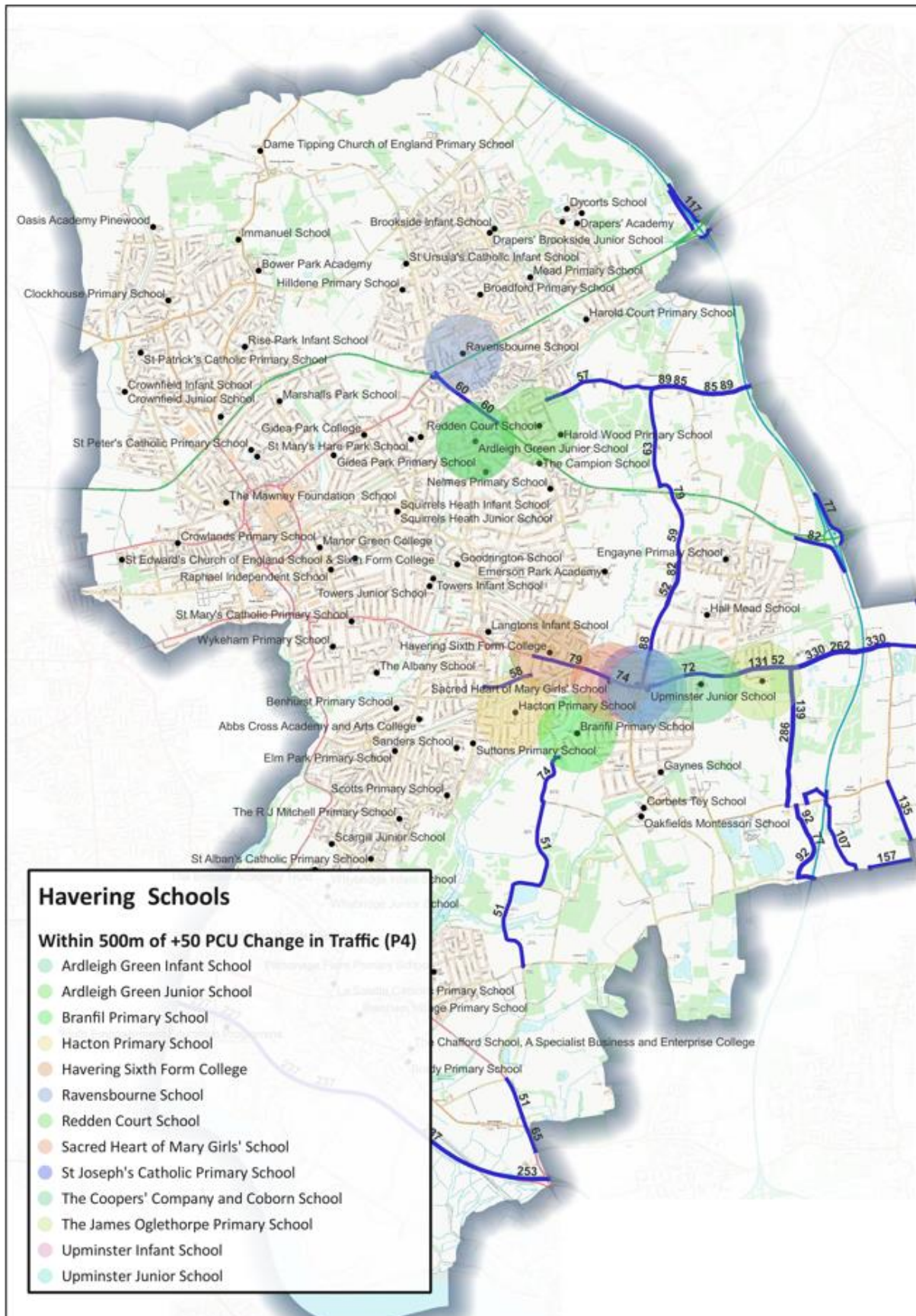
<b>SchoolName</b>	<b>Phase of Education</b>	<b>Pupil count (outside of M25)</b>
Ardleigh Green Infant School	Primary	1
Ardleigh Green Junior School	Primary	9
Clockhouse Primary School	Primary	15
Emerson Park Academy	Secondary	18
Engayne Primary School	Primary	28
Harold Court Primary School	Primary	1
Harold Wood Primary School	Primary	7
Marshalls Park Academy	Secondary	7
Nelmes Primary School	Primary	9
Redden Court School	Secondary	14
Rise Park Infant School	Primary	0
Rise Park Junior School	Primary	0
Sacred Heart Of Mary Girls' School	Secondary	34
St. Joseph's Catholic Primary School	Primary	21
St. Patrick's Catholic Primary School	Primary	1
The Champion School	Secondary	171
The Royal Liberty School	Secondary	6
Upminster Infant School	Primary	3
Upminster Junior School	Primary	5

8.2.3 The Royal Liberty School is particularly affected, given the total number of pupils travelling from outside of the borough east of the M25.

8.2.4 The information in the table above is also set out in map form in Appendix 3.

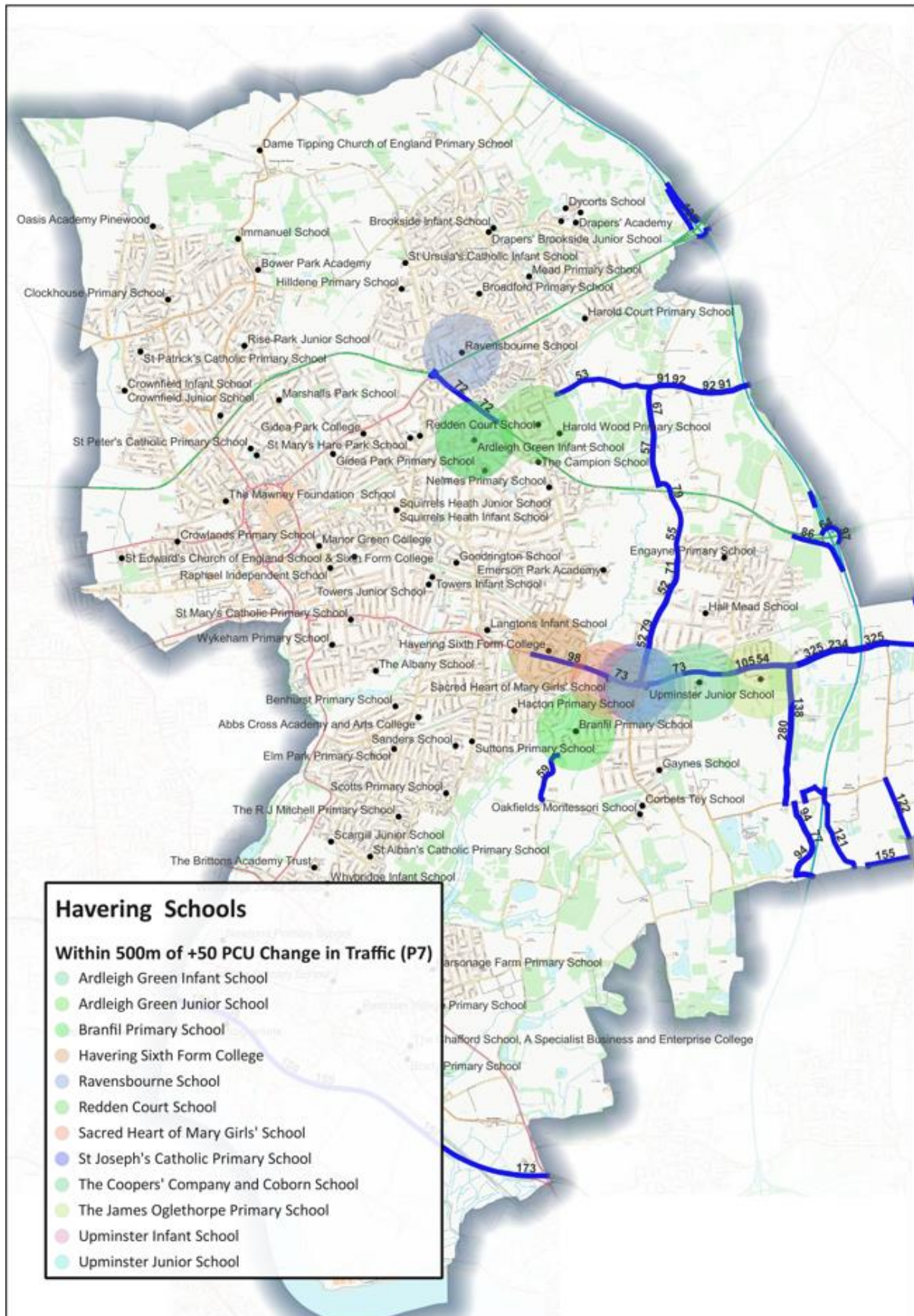
8.2.5 Figure 18 and Figure 19, below, show the change in traffic with the scheme in Construction during the AM Peak and PM Peak respectively. The map also shows the location for schools in relation to the highway network. Increases in traffic are shown in red; decreases in blue and no change in green. The numbers shown indicate the change in PCUs from the base traffic conditions to the situation with the scheme in operation. As previously noted, a PCU is equal to 1 car. In this case, an HGV is equivalent to 2.5 PCUs.

Figure 18 – Affected schools during construction phase four





**Figure 19 – Affected schools during construction phase seven**

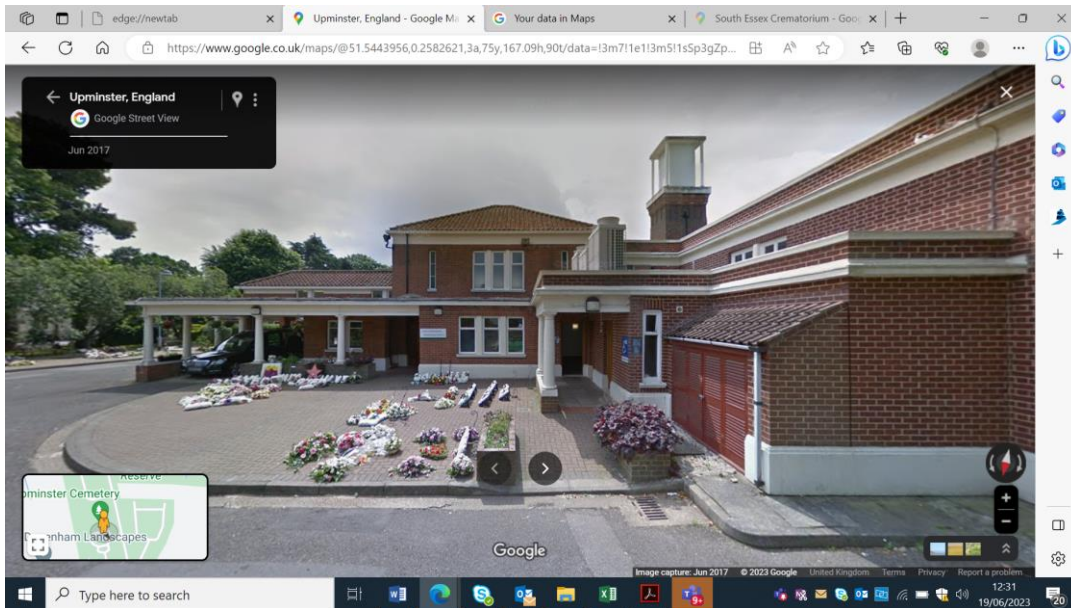


## 9 Upminster Cemetery and South Essex Crematorium

### 9.1 Background

9.1.1 Upminster Cemetery and South Essex Crematorium (SEC) is located on Ockendon Road and is one of four cemeteries in the Borough of Havering. Whilst located in Havering, its catchment area extends far beyond the borough boundary with families visiting the Cemetery to attend funeral or cremation services for individuals that reside in other parts of north-east London or from the east in Thurrock and Essex.

**Figure 20 – South Essex Crematorium**



Source: Google maps

**Figure 21 - Entrance to South Essex Crematorium from Ockendon Road**



Source: Google maps

9.1.2 SEC has been open since 1957 and has completed a total of 221,000 cremations. SEC currently completes 3,000+ cremations annually and is the **eighth busiest crematorium in the country**. Whilst understanding the numbers of people who visit the SEC is challenging, some funerals (particularly ones from the Gypsy and Traveller community) can attract over 500 mourners. For such occasions the SEC

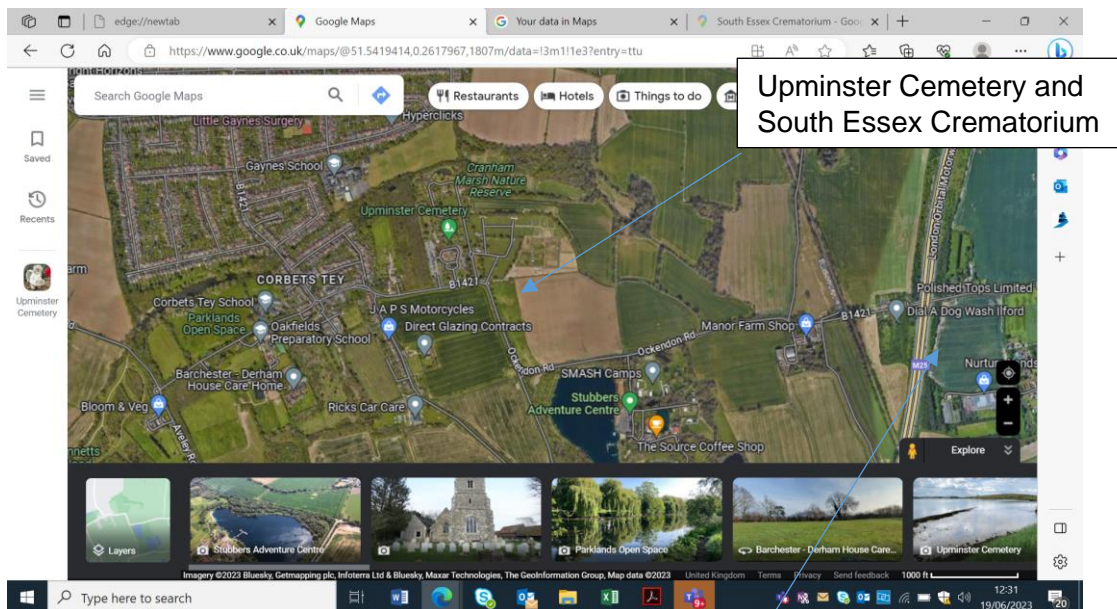
staff manage traffic movement on the SEC site, and often mourners park vehicles along Ockendon Road to access the Crematorium.

- 9.1.3 The 15 acres of memorial grounds located at SEC are extensive and have many established trees, shrubs, flower beds and a lake with a waterfall.
- 9.1.4 Upminster Cemetery (UC) has been open since 1902 and carries out 330+ burials annually. UC is now 28.4 acres in extent after an extension was opened in 2022, which provided an additional 9.5 acres and ensuring burial provision for a further 25 years.
- 9.1.5 SEC and UC are graded annually for quality, customer service and grounds maintenance and both sites have continually been graded gold standard by The Charter for the Bereaved and by London in Bloom. The memorial grounds and cemetery are maintained to a very high standard which contributes significantly to the demand for the use of these facilities and the purchase of memorials; a significant part of the Council's Bereavement Services department's income.

## 9.2 Scheme Impacts

- 9.2.1 The *Outline Traffic Management Plan for Construction (oTMPfC)* suggests that the section of Ockendon Road that goes over the railway would be closed for up to 19 months whilst the bridge over the railway is rebuilt to accommodate the new LTC road as it joins the M25. Whilst National Highways (NH) have indicated that the appointed Contractor for the scheme, Balfour Beatty, has reduced this closure to ten months, this has not yet been confirmed in any documentation within the DCO Application.

**Figure 22 – South Essex Crematorium Aerial View**



**Source: Google maps**

Ockendon Road full road closure – currently up to 19 months as set out in the oTMPfC, but NH have informally indicated to LB Havering that this has now been reduced to 10 months. Such a reduction, however, has not yet been reflected within any DCO documentation submitted to PINS.

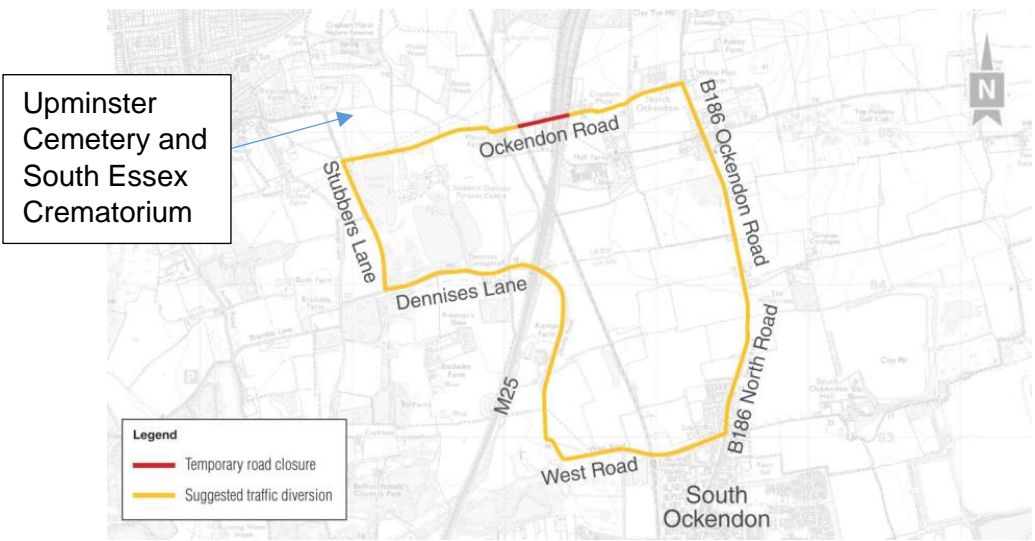
**Figure 23 – Ockendon Road Diversion Routes and South Essex Crematorium**



Ockendon Road diversion route.

**Source: Google Maps**

**Figure 24 - Ockendon Road Closure – Diversion Route**



Upminster Cemetery and South Essex Crematorium

**Source: National Highways**

- 9.2.2 Regardless of whether the length of closure is 19 months (or indeed a reduced 10-month period), this length of closure is unacceptable and will inevitably cause a great deal of disruption to the Cemetery.
- 9.2.3 A key issue for LB Havering is the most likely loss of income the closure of Ockendon Road will have because funeral directors, and ultimately bereaved families, may choose to use alternative facilities in other parts of the region such as in Essex and Thurrock. Funeral directors have told Havering that having to travel alternative routes to the Cemetery (such as the diversion route proposed for the closure in Figure 23) will mean longer journeys and ultimately increased costs. One funeral director wrote to the Council to say:
- 9.2.4 *“Local businesses will have added mileage costs added to their outgoings as they will have to use diversions routes for years and probably experience traffic jams on all local routes again for years. The impact on local company's trying to continue to serve local people while contending with years of building works and heavy machinery moving about on our local roads will I am sure bringing many businesses to their knees”*
- 9.2.5 Whilst NH has indicated in the oTMfC that the diversion route proposed would take vehicles approximately 11 minutes to navigate, the Council is concerned that during certain times of the day the diversion route could take significantly longer than this.

### 9.3 Business Implications

- 9.3.1 During the 2021 calendar year, UC and SEC handled 3,158 cremations and 295 burials. In any given year, the SEC needs to handle around 3,000 cremations and 300 burials to meet its costs.
- 9.3.2 In terms of business impacts, during the 2021 calendar year, 16% of all burials and 17% of all cremations at SEC came from the east or north-east of Havering. These routes will be severely impacted during construction of the scheme and, as such, will deter clients from using the UC and SEC services.
- 9.3.3 There are a number of facilities in Essex and Thurrock that funeral directors could advise bereaved families to use instead. There is concern that the construction impacts, over such an extended period of time, will mean that the SEC is unable to serve a wide catchment area.
- 9.3.4 A loss of business for the UC and SEC would not only impact on the facility itself, but also other businesses that rely on people visiting. For example, construction work has the potential to impact upon the café business sited at SEC (i.e., if people are running late for funerals they are less likely to have the time to use the café facilities). Staff that run the café have raised the following issues with the Council:
- 9.3.5 1) Regarding people attending funerals - the extra time it takes to navigate the journey to the crematorium would result in us losing a considerable amount of business. Usually people arrive earlier and they come in prior to the service they are attending. If it takes them longer to travel through a diversion, it's likely that they will not have the time to stop off for a sandwich/tea/cake.
- 9.3.6 2) Funeral staff - if they have to take a diversion it will mean the time they have between funerals is much tighter, therefore we may see a decrease in overall business from our funeral director customers.
- 9.3.7 3) Visitors to the cemetery/crematorium - Our regular customers would likely be put off if they have to navigate a complicated or long diversion. This would directly impact our weekend trading. LB Havering is concerned that these impacts will lead to

reputational damage, with stakeholders choosing to use cemeteries and crematoria in the wider region instead. This will impact on the local economy within Havering.

9.3.8 Furthermore, Havering is concerned that it will not be able to meet its obligations under the Local Authorities Cemeteries Order 1977, in particular Schedule 1 *Access to Cemeteries*.

#### 9.4 Potential Loss of Income

9.4.1 Table 14 gives an indication of what the potential loss of income could be if burials and cremations coming from the north and east of Havering went to cemeteries and crematoria in the wider sub-region.

9.4.2 As Table 15 shows, based on the percentage of burials and cremations that currently reside east and north-east of Havering, if those families were to take their custom elsewhere then the Council could lose in excess of £700,000 per annum.

**Table 14 - Financials**

Year	Number of burials – calendar year	Number of cremations – calendar year	Cemetery & Crematorium income generated / financial year
2019/20	515 - inc CR's	2,995	£4,823,045.65
2020/21	495 - inc CR's	3,306	£5,322,477.00
2021/22	511 - inc CR's	3,158	£5,011,698.41

**Table 15 - Geographical - Cremations**

Year	Cremation fee	Number of cremations – calendar year	Percentage of cremations from the east / north east of the borough	Potential loss of:
2019/20	£905.00	2,995	16% of 2,995 = 479	<b>£433,495.00</b>
2020/21	£955.00	3,306	17% of 3,306 = 562	<b>£536,710.00</b>
2021/22	£995.00	3,158	17% of 3,158 = 536	<b>£533,320.00</b>
Average of potential loss over one-year period				<b>£501,175.00</b>

**Table 16 - Geographical - Burials**

Year	Fee	Number of burials or cremated remains – calendar year	Percentage of cremations from the east / north east of the borough	Potential loss of:
2019 FBB	£2,132 + 1,360 = £3,492	343	16% of 343 = 55 55 * 3,492	£192,060.00
CR's	£258	172	16% of 172 = 27 27 * 258	£6,966.00
Total for year				<b>£199,026.00</b>
2020 FBB	£2,140 + 1,380 = £3,520	350	16% of 350 = 56 56 * 3,520	£197,120.00
CR's	£260	145	16% of 145 = 23 23 * 260	£5,980.00
Total for year				<b>£203,100.00</b>
2021 FBB	£2,200 + 1,420 = £3,620	295	16% of 295 = 47 47 * 3,620	£170,140.00
CR's	£268	216	16% of 216 = 35 35 * 268	£9,380.00
Total for year				<b>£179,520.00</b>
Average of potential loss over one year period				<b>£193,882.00</b>

9.4.3 Given that, as it currently stands, Ockendon Road alone will be closed for the best part of two years, this could lead to a potential loss of up to £1.4 million. This, of course, does not take into account the wider traffic management measures that will be in place within the Upminster area during other parts of the six year construction period (such as along St Mary’s Lane), so the potential for lost income and disruption is clearly much greater than that. There will inevitably be a longer-term income issue for the Council with whole families (and local funeral directors) using other facilities and not returning to UC and SEC, resulting in a loss of business for the Council for years to come.

## 9.5 Staff Implications

9.5.1 It is also important to recognise that a number of staff work at the SEC who will also be impacted by the road closure. As the table below shows, 16 out of the 31 staff that work at the Crematorium live east or north-east of the borough and are likely to be impacted by construction works for the scheme.

**Table 17 – Number of Staff**

Staff numbers	Within borough / north, east or west	Within borough - south	Barking & Dagenham	Thurrock	Boroughs further afield
31 (Crematorium)	16	3	2	5	6

9.5.2 All staff are present in the workplace, with start times from 8am in the morning. It is imperative staff start on time, and the office team need to be ready for reception to open from 9am when calls from funeral directors start coming in, and to also then be ready for the first funerals of the day to take place. Delays to funerals caused by the closure of Ockendon Road would be totally unacceptable to LB Havering.

9.5.3 The proposals, therefore, will have an impact on staff commuting and affect their ability to get to work on time, which will undoubtedly lead to negative service impact if it results in any potential delays to services opening on time each day.

9.5.4 In addition, it is a legal requirement that a Medical Referee (MR) attends SEC each day in person to scrutinise cremation paperwork. This **must happen** before a cremation takes place.

9.5.5 The MRs are practising GPs in the community and work on a rota basis with one attending each week in turn, in between their surgery appointments. As practising GPs their time is extremely sensitive to disruption, so any traffic delays will have an effect on them also. The worst case scenario would be that an MR gets caught in traffic and cannot get to the SEC in time, meaning a cremation cannot go ahead. Such an incidence occurring would lead to a serious complaint, financial loss/compensation claim and reputational damage.

9.5.6 The proposals will also undoubtedly affect deliveries, contractors, stonemasons and the journeys of the bereaved who come to visit the resting place of loved ones across the grounds of UC and SEC.



## 9.6 Impact on Wider Stakeholders

- 9.6.1 The Council has been engaging with stakeholders to better understand what the potential impact would be not just for the UC and SEC itself, but also for the businesses that serve the Cemetery.
- 9.6.2 There is a strong view that continual road closures, diversions, extended times needed to get staff and vehicles from “a to b” and the additional mileage costs will put a major strain and costs on local business such as funeral services. If funeral services have longer journeys to/from the UC/SEC, this could result in much shorter time between funerals and this, in turn, would mean fewer funerals being able to take place at the Cemetery. Ultimately, this would lead to a reduced level of income for this Council operated facility.
- 9.6.3 Other nearby facilities, such as Public Houses used for wakes, will also be affected. The Huntsman and Hounds is the nearest pub to the Cemetery and can sometimes hold up to three wakes in a day. The loss of this trade would adversely affect its long term future.

## 9.7 Compensation/Financial Mitigation

- 9.7.1 The Council is extremely concerned that works for the scheme could see a significant loss of revenue as a result of a project being delivered within the Borough by another organisation and through no fault of the Council.
- 9.7.2 The Council therefore considers that it is within its right to seek financial recompense from NH for the injurious effects of any loss of revenue for UC and SEC during the extended construction period.

## 9.8 Discussions with National Highways

- 9.8.1 The Council formally wrote to NH in August 2022 raising concerns as set out above. The Council has formally received a response from NH who have stated that compensation would not be applicable in this instance. The relevant extract from the letter is set out below:
- 9.8.2 *“Regarding your concerns about the potential loss of income at the site, whilst we do sympathise with the owners of businesses faced with problems during our construction work, we must ensure the safety of all road users as well as the teams who are working on our project. For certain activities there is no practicable alternative to a road closure. With any road improvements there will be some disruption and inconvenience to those living and working nearby but we will try to minimise this in accordance with the objectives laid out in the oTMPfC.*
- 9.8.3 *National Highways has a statutory duty to improve and maintain the strategic road network, and legally businesses have no rights to any maintained level of access to a road network. We have concluded that there would be no compensation payable with respect to the closure of Ockendon Road and its impact on the South Essex Crematorium/Upminster Cemetery. Temporary or permanent changes to traffic flows are a commercial risk that all businesses are likely to face at some point. Compensation is only payable where there has been an interference with a private right of access to an individual site. Even then, compensation for business losses is not payable. However, if a claimant can prove a reduction in the value of the land in such a case, compensation could be claimed for this loss of value.”*
- 9.8.4 LB Havering believes that the closure of the Ockendon Road will have an injurious effect on the operation of the Crematorium and the ability of the Council to discharge

its statutory functions in respect of providing burial and crematorium services. This injurious effect is not linked to land acquisition through the LTC scheme, rather it arises from the restrictions on access the LTC scheme will generate. The provision of burial and crematorium services by the Council is not a business as suggested by National Highways in para 9.8.3, rather an essential public service that the Council is obligated to make arrangements for.

- 9.8.5 The operation of this service in an effective way requires good stewardship of public funds to allow the Council to demonstrate it has complied with its statutory best value obligations. To that end the decline in use caused by the Ockendon Road is a matter that the Council must seek recompense from National Highways for the injurious effect on the Council and its local taxpayers.
- 9.8.6 The Council requires a planning obligation to deliver recompense for the financial losses incurred due to the LTC scheme construction preventing access to the facility from a significant number of bereaved families and mourners.
- 9.8.7 Whilst LB Havering welcomes the indication from NH that through their appointed contractor they have made progress in reducing the proposed closure length down to ten months, such a closure length would still have a significant impact on the SEC and wider businesses in the area.
- 9.8.8 All staff are present in the workplace, with start times from 8am in the morning. It is imperative staff start on time, and the office team need to be ready for reception to open from 9am when calls from funeral director's start coming in, and to also then be ready for the first funerals of the day to take place. Delays to funerals caused by the closure of Ockendon Road would be totally unacceptable to LB Havering.
- 9.8.9 The proposals, therefore, will have an impact on staff commuting and affect their ability to get to work on time, which will undoubtedly lead to negative service impact if it results in any potential delays to services opening on time each day.
- 9.8.10 In addition, it is a legal requirement that a Medical Referee (MR) attends SEC each day in person to scrutinise cremation paperwork. This **must happen** before a cremation takes place.
- 9.8.11 The MRs are practising GPs in the community and work on a rota basis with one attending each week in turn, in between their surgery appointments. As practising GPs their time is extremely sensitive to disruption, so any traffic delays will have an effect on them also. The worst case scenario would be that an MR gets caught in traffic and cannot get to the SEC in time, meaning a cremation cannot go ahead. Such an incidence occurring would lead to a serious complaint, financial loss/compensation claim and reputational damage.
- 9.8.12 The proposals will also undoubtedly affect deliveries, contractors, stonemasons and the journeys of the bereaved who come to visit the resting place of loved ones across the grounds of UC and SEC.
- 9.8.13 **Impact on Wider Stakeholders**
- 9.8.14 The Council has been engaging with stakeholders to better understand what the potential impact would be not just for the UC and SEC itself, but also for the businesses that serve the Cemetery.
- 9.8.15 There is a strong view that continual road closures, diversions, extended times needed to get staff and vehicles from "a to b" and the additional mileage costs will put a major strain and costs on local business such as funeral services. If funeral services have longer journeys to/from the UC/SEC, this could result in much shorter time between funerals and this, in turn, would mean fewer funerals being able to take

place at the Cemetery. Ultimately, this would lead to a reduced level of income for this Council operated facility.

- 9.8.16 Other nearby facilities, such as Public Houses used for wakes, will also be affected. The Huntsman and Hounds is the nearest pub to the Cemetery and can sometimes hold up to three wakes in a day. The loss of this trade would adversely affect its long term future.

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- 9.10.3 National Highways has a statutory duty to improve and maintain the strategic road network, and legally businesses have no rights to any maintained level of access to a road network. We have concluded that there would be no compensation payable with respect to the closure of Ockendon Road and its impact on the South Essex Crematorium/Upminster Cemetery. Temporary or permanent changes to traffic flows are a commercial risk that all businesses are likely to face at some point. Compensation is only payable where there has been an interference with a private right of access to an individual site. Even then, compensation for business losses is not payable. However, if a claimant can prove a reduction in the value of the land in such a case, compensation could be claimed for this loss of value.
- 9.10.4 Whilst LB Havering welcomes the indication from NH that through their appointed contractor they have made progress in reducing the proposed closure length down to ten months, such a closure length would still have a significant impact on the SEC and wider businesses in the area.

## 10 Non-Motorised Users

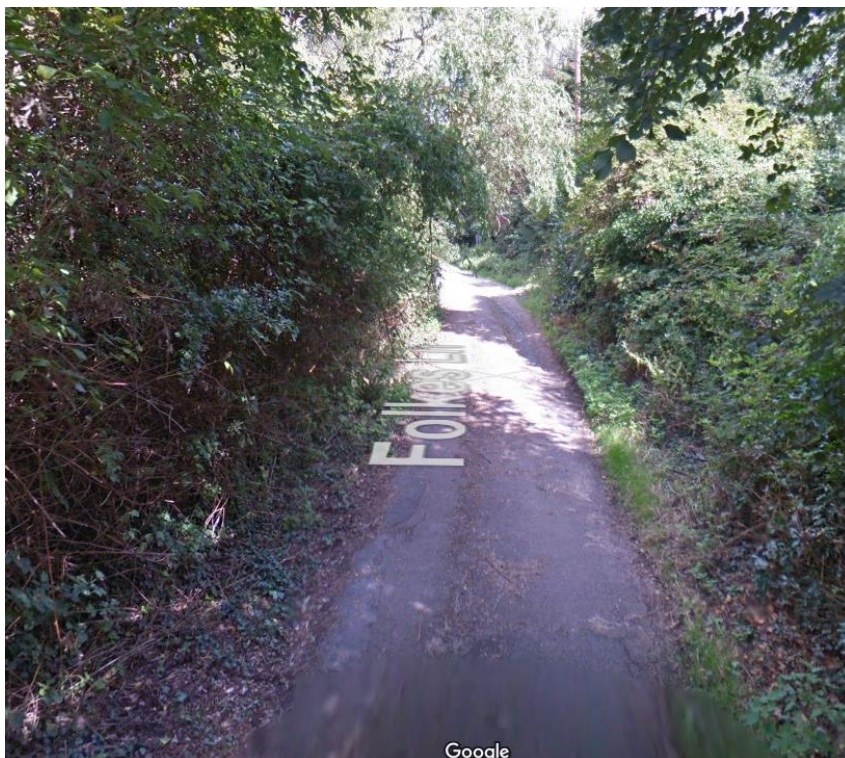
### 10.1.1 Public Rights of Way (PRoW)

- 10.1.2 LB Havering is aware that several of its PRoW are affected during the construction of the proposed scheme. These affected routes are cited in document 7.9 Transport Assessment Appendix A - Public Rights of Way and included in Appendix 4. Document 7.10 Health and Equalities Impact Assessment also recognises the

construction and operational impacts that the proposed scheme will have on walkers, cyclists and horse riders. The later states: “Severance relates to the extent to which the Project separates residents from the facilities and services they use within their community because of either changes in routes used or changes in traffic flows. Severance during the construction phase may arise because of road closures, Public Rights of Way (PRoW) closures or diversions or use of roads as haul routes. During operation, severance may arise from changes in vehicle flows and speeds”. (page 30).

- 10.1.3 Negative impacts are acknowledged for residents in North Ockendon and yet no mitigation is proposed to overcome these impacts. The national significance and need of the proposed scheme is considered to outweigh these impacts and therefore the need for mitigation. Havering does not agree with this approach and that no mitigation should be provided.
- 10.1.4 Another point of concern is the timing of the closures and the proposed opening of diversions which in most cases is some 12 months after closure. Havering would seek to have in place diversions prior to the temporary closures of these facilities to ensure continuity of facilities during construction.
- 10.1.5 LB Havering has expressed its concern regarding the proposed use of Folkes Lane for Walkers, Cyclists and Horse riders (WCH). Folkes Lane is not appropriate for these users due to it narrow lanes, inappropriate speeds and industrial uses that are situated along this lane as can be seen in Figure 25.

**Figure 25 – Folkes Lane**



- 10.1.6 The Council has been in discussions with NH regarding the provision of an alternative route which would lead users up to Folkes Lane car park. NH is investigating potential routes which can be developed through its Designated Funds Programme. Havering believe that the alternative route should be provided as mitigation for the scheme, not be left to the provision of Designated Funds as there is no surety that such funding would be available post 2025. In addition, Havering

also has concerns about the suitability of Moor Lane to be used as an NMU route on the approach to the proposed A127 footbridge from the south. This route needs to be upgraded with surfacing improved given it is likely to be used by a significant larger number of NMUs once the footbridge is in place.

**Figure 26 - Moor Lane**



**Figure 27 – Moor Lane from A127**



10.1.7 Access to Hole Farm from Folkes Lane Woodland

10.1.8 The scheme currently proposed means that residents accessing the new woodland area being delivered at Hole Farm in the borough of Brentwood will be able to access this site from an existing footbridge that goes over the M25 at Folkes Lane Woodland.

10.1.9 The location of this new trip attractor at Hole Farm is anticipated to generate a significant increase in use of the footbridge over the M25 as it will be the main source of accessing Hole Farms for residents of Havering.

10.1.10 The current condition of both the parapets and the surfacing are not acceptable as can be seen in the photographs below.

**Figures 28 and 29 – Folkes Lane Footbridge, M25**



10.1.11 The Council is seeking suitable mitigation for this footbridge to enable safe access of NMUs and this is detailed further in chapter 12 of this LIR.

10.1.12 Footpath 252 and ongoing maintenance

10.1.13 Havering is concerned that this approach to lack of mitigation is proposed for the 60-month closure of FP252. Temporary closures of a shorter nature of less than one month with no mitigation is also proposed for FP 254 and FP 151. Havering urges the applicant to put in place processes to consult non-motorised uses, specifically on these proposals.

10.1.14 NH have indicated to the Council that the section of footpath 252 that goes over the Essex Thameside line would come under Havering's responsibility once in place. It is also stated in Article 10 of the draft DCO.

10.1.15 Whilst it can be considered reasonable for the Local Highway Authority to maintain the footpath surface itself, maintenance of the bridge structure, is considered unreasonable. At a time when local authority maintenance budgets are under severe pressure, the Council does not consider maintenance of the structure acceptable. The structure over the railway would be built for NH's convenience and, as such, the Council believes it should be maintained by NH.

#### 10.1.16 **Public Transport Users**

10.1.17 As has already been stated in the Borough Context section of this Local Impact Report, Havering enjoys extensive bus connectivity. This includes some services that provide connectivity further east to beyond the GLA Boundary. Bus route 370 operates between Romford and Lakeside shopping centre in Essex. The proposed 19 month closure of Ockendon Road will severely impact on the operation of this service and will require a substantial diversion route. It is imperative that National Highways work with TfL Buses and the respective bus operators to agree on a suitable diversion route months in advance to minimise the impact for passengers. Such a diversion route should be publicised a number of weeks prior to the closure taking place so that passengers are adequately informed.

10.1.18 In addition St Mary's Lane is served by a dedicated school bus service (route 646) which operates during the school pick up and drop off times. The Council welcomes the LTC St Mary's Lane Working Group that has been established to discuss how construction works in the vicinity of schools can be mitigated and monitored and this should include school bus services.

## 11 Local Resident Discount

11.1.1 The powers that are being sought in the draft DCO would permit the Secretary of State for Transport (SoS) to introduce road user charges for the tunnel section of the LTC road only. The Road User Charging Statement explains why it is being proposed, where the charge would apply, why the proposed charging regime has been selected and how it would operate and be enforced.

11.1.2 LB Havering offers evidence within its Written Representation with regards to whether it considers the proposed Road User Charging Regime is National Policy Statement (NPS) compliant.

11.1.3 NH has said that it would apply an equal charging strategy for both the Lower Thames and Dartford Crossings, for the following reasons:

- It simplifies decision making for the driver as the choice of crossing will be informed by the easiest route.
- It relieves congestion at the Dartford Crossing while balancing use of the LTC.
- It minimises operation complexity, enabling the combined operation of the Dartford Crossing and LTC charging schemes.

11.1.4 NH propose that the charging regime is consistent with other crossings in the area. This is something that Havering supports, to avoid traffic reassignment towards cheaper tolling regimes elsewhere. It should be pointed out, however, that this is not a matter which is controlled by NH alone, as TfL operate crossings further to the west. As yet, no agreement has been reached between TfL and NH on a consistent charging regime.

11.1.5 The Road User Charging Strategy also make clear NH's commitment to offer a user discount for residents of Thurrock and Gravesham. This discount will mirror that

applied for residents of Thurrock and Dartford for the existing Dartford Crossing. Any user discount would be decided by the SoS.

- 11.1.6 Paragraph 2.2.5 of the Road User Charging Strategy states, “The DCO would allow the Secretary of State to enter into the same discount arrangement, as the same rates as offered to Dartford and Thurrock residents on Dart Charge, with residents who pay their Council Tax to Gravesham Borough Council or Thurrock Council. This aligns with the Dartford Crossing LRDS by limiting eligibility to residents of local authorities in which the tunnel portals would be situated”.
- 11.1.7 LB Havering has consistently argued for residents of Havering to be eligible for the Local Resident Discount Scheme (LRDS) as it will be a host authority for the project. There are no proper grounds for distinguishing between Havering, and Thurrock and Gravesham. Each of these three authorities ‘hosts’ parts of this project. Each of these three authorities is impacted in materially similar ways. Havering residents are in close proximity to the scheme and suffer significant impacts from the schemes construction without significant benefits of mitigation of legacy. A resident’s discount would offer residents a legacy benefit which would offset the significant disruption during construction.
- 11.1.8 Havering is already concerned about the impending extension of the Ultra-Low Emission Zone (ULEZ), which will cover the whole of the borough from 29th August 2023. For some businesses, having to pay a daily charge of £12.50, in addition, to a further Road User Charging cost for using the LTC will prove to be too much.
- 11.1.9 Providing the LRDS to Havering residents will not offset the adverse impacts of the project. However, this will go some way to demonstrate that impacts (both construction and operational) on Havering’s residents have been considered, that Havering is being treated fairly alongside other local authorities, and that the wellbeing of our local communities has been – and will be – taken properly into account.
- 11.1.10 There is no sensible argument as to why Havering’s residents and businesses should not benefit from the LRDS given the small proportion of trips to and from Havering that is forecast to use the crossing. It should be recognised that Havering is a host local authority for this scheme just like Thurrock and Gravesham and the Council considers this a matter of equity.

## 12 Management Plans

### 12.1.1 Background

- 12.1.2 This section reviews each of the key traffic and transport related documents that NH have produced to support their application for a DCO. Although with a technical focus, the reviews highlight the lack of ambition and target setting that will be essential to manage the adverse effect of the volume and type of construction expected and the sheer volume of employees engaged in construction activities for the scheme.
- 12.1.3 The Framework Construction Travel Plan (FCTP) and Outline Traffic Management Plan for Construction (oTMPfC) are control documents that are given force by clauses 11 and 10 respectively of the draft DCO Schedule 2 Requirements. The key effect of both Requirements is to ensure that the respective documents are ‘substantially in accordance with’ the deposited FCTP and oTMPfC. As seen in previous draft DCO’s such as the M25/J28 Capacity Improvement Scheme and Southampton to London Pipeline, as well as the withdrawn LTC submission from 2020, the wording is weak and non-committal.



#### 12.1.4 **General comments**

- 12.1.5 As a general comment, the documents lack consistency between each other and lack firm commitments managing the impact of the scheme. Targets are not explicitly set and much relies on the trickle-down effect of requiring lower tier plans and activities to comply with the higher tier document. Whilst in principle this approach based on conformity is sound, the higher tier documents offer no clarity on the mechanisms that would compel compliance. The overarching Code of Construction Practice (CoCP) has not been reviewed in detail, but it clearly commits to SMART travel plan targets (specific, measurable, assignable, realistic and time-related targets) which fails to follow through down the document hierarchy.
- 12.1.6 The oTMPfC and the FCTP operate in parallel but isolated structures. An overarching Traffic Manager and overarching Travel Plan Coordinator will be appointed with the only formal link between these and their supporting organisations and processes at the Joint Operations Forum of senior managers (the JOF). At a practical level this is not a workable structure; decisions taken on either area will affect the other with potential adverse consequences.
- 12.1.7 The oTMPfC and the FCTP provide no certainty that NH alone will be responsible for submissions to the SoS for the discharge of requirements. Requirements are the formal mechanism by which the detail of the implementation of the DCO is controlled. The draft DCO similarly fails to require the Undertaker alone to make such submissions. This has potential for the lines of accountability for traffic issues to become unclear which may be a significant issue as and if problems emerge.
- 12.1.8 The FCTP offers only objectives not commitments and targets. The only targets seen are generic targets for single occupancy car trips to sites. These are based on the size of the work site or compound and not the locations specific characteristics; nor is this guaranteed as being a feature of the lower-level plans. This is a fundamental flaw which, in turn, will affect the required trickle-down effect to lower tier plans.
- 12.1.9 The oTMPfC lacks control over the Utility related work sites; the wording is such that only control over NH's contractors is proposed, however this does not appear to include other contractors in the chain such as utility contractors. As the scheme is a single entity this approach is flawed.
- 12.1.10 **Outline Traffic Management Plan for Construction Comments**
- 12.1.11 The oTMPfC is designed to provide a framework of principles and mechanisms that inform how the detailed 2<sup>nd</sup> tier traffic management plans will be developed. The oTMPfC requires that each 2<sup>nd</sup> tier plan, whether at a site compound level or otherwise, is developed in accordance with its general principles.
- 12.1.12 Section 2.3.4 is unclear what party will be responsible for submissions to seek approval of the SoS for the oTMPfC. The potential for this to be the contractor is unacceptable.
- 12.1.13 The establishment of a Traffic Management Forum (the TMF) fails to provide any surety as to the outcomes it may secure, as the decision-making powers and remit are not set out. What has been proposed is, in effect, a discussion body that will have limited, if any, decision-making powers.
- 12.1.14 The oTMPfC fails to make clear how the Requirements in terms of traffic and transport will be enforced against the various utility contractors on the project. As these are not directly in the main NH supply chain this issue will need to be addressed in the final DCO.

- 12.1.15 Section 2.4.11 lists a number of proposed monitoring criteria but without reference to the London HGV standard.
- 12.1.16 A series of monitoring sites are recorded in section 2.4.18. The lack of coverage in Havering is stark with only two sites monitoring traffic flows in the borough. The proposals do not consider how the effect of the temporary M25 slip roads will be assessed. Also given its strategic importance to construction traffic, no assessment of the Ockendon Road / A127 junction is a significant oversight. It is also noted that no monitoring locations west of the M25 are proposed in the south of the borough.
- 12.1.17 The OTMPfC makes no reference to the impact that construction of the LTC will have on access to school of pupils who attend schools in Havering. School pupils are entitled to statutory free school transport if they live more than 2 miles (under 8 years old) and 3 miles away if over 8 years old. Should the closures of local roads in Havering for construction trigger this statutory requirement due to increased travel distances for lengthy periods of time LB Havering will seek mitigation through the OTMPfC. As pupil home addresses and numbers will change through the construction programme the clear need is for monitoring on an annual basis through the OTMPfC to confirm if the statutory travel distances are exceeded due to the LTC works and if the mitigation to supply free school travel is required. The burden of providing or funding such transport should fall on the LTC scheme.
- 12.1.18 The suggestion at section 2.4.20 that localised junction modelling for construction traffic will be contemplated is to be welcomed. However, there is no clear view as to how and why junctions would be selected, who would be responsible for these exercises and how the local highway authority would be engaged.
- 12.1.19 Section 2.4.21 introduces for the first time the role of the scheme Traffic Manager. Please see the comments above about the structure of the Traffic Manager role and the alignment of the role with the FCTP and the JOF / TMF.
- 12.1.20 The stakeholders listed in Table 2.3 has no formal reference to frontages. A clear omission is the need to record safety of accesses as a key issue for stakeholders, in particular frontages.
- 12.1.21 Deemed consent for approvals is considered in sections 3.1.4 and 5. As this negates the role of the local highway and planning authorities the basic concept is unacceptable.
- 12.1.22 Section 3.2.2 introduces the concept of Local Operating Agreements (LOA). Whilst this follows the recommended DMRB approach for major projects the agreement will not be examined. Havering expects that the content of the LOA be subject to protective provisions in the draft DCO.
- 12.1.23 The concept of a comms and engagement plan is introduced at section 3.3.4. This only has NH's approvals, whereas in reality the wide range of communications required to reach out to a full spectrum of stakeholders should require the plan to have local authority input and agreement. The Communications Plan also establishes community liaison groups, but these are undefined in terms of structure, resourcing and remit. It appears that NH select who is appointed which is wholly inappropriate (section 3.3.7). Section 3.3.10 promotes the involvement of "community leaders". These are undefined and the lack of clarity suggests that their involvement is simply a token gesture.
- 12.1.24 The Traffic Manager reports directly to the JOF, which is an executive level forum made up of NH and its Contractors (section 3.3.14), without any requirement to formally report or consider the views of the proposed TMF. Given the importance of

the JOF in decision making this is a case of 'marking one's own homework'. It is suggested that the Traffic Manager should be under an obligation to report dissenting views to the JOF and that the JOF records how these are dealt with.

- 12.1.25 The plan in plate 4.4 doesn't highlight the M25 slip roads although these are implicit in the routes detailed. As this is fundamental to the delivery of effective construction traffic routing in Havering, it deserves greater prominence.
- 12.1.26 The committed routes set out are confirmed in 4.2.6 as being "committed" for HGVs only with cars and staff transport being able to take any route. Given the anticipated volumes of non-HGV traffic, there is a strong case for routing control of all construction vehicles using public roads.
- 12.1.27 The building of the M25 temporary slip roads are listed as being a 12-24 month activity (Table 4.1). This uncertainty remains unacceptable given the adverse traffic implications for Havering. The early contractor appointment should allow this time to become more certain and potentially shortened.
- 12.1.28 The B186 will have localised traffic control for 12 months with no details specified. St Marys Lane will have traffic control over a 2km length in 300m sections for 9 months. The OTMPfC offers 'local control of Local Road Network (LRN) junctions'. It is unclear how this will be achieved, how it will be controlled and how the junctions to be controlled will be determined. Given the issues that this uncertainty creates this is unacceptable.
- 12.1.29 Table 4.47 indicates where HGV bans are to be located. This does not include roads in Havering that would require protection.
- 12.1.30 The list of schemes in 5.2.2 that overlap with LTC needs to be updated to reflect the announced 2-year delay to the LTC scheme.
- 12.1.31 It is noted that speed management at roadworks is only 'to be under consideration' (section 5.6.1). This would appear to be a basic pre-requisite for safe operation of roadworks, including on the Local Road Network.
- 12.1.32 The oTMPfC sets out criteria for emergency diversions (section 5.9.3) which fails to ensure the capability of roads would be the key determinant of emergency diversion routes.
- 12.1.33 **Framework Construction Travel Plan Comments**
- 12.1.34 The FCTP is designed to set out a framework with regard to the implementation of travel planning for the movement of personnel to and from the construction worksites and compounds during the construction phase of the LTC.
- 12.1.35 The FCTP needs to accurately record all the transport authorities involved; Section 2.4.1 doesn't consider TfL for example.
- 12.1.36 The logic displayed in Section 3.1.4 is flawed; the idea that on site car parking supply can be extended to cater for any recorded car parking demand is an example of 'predict and provide'. The contractors need to be required to manage their traffic impacts not offer a *carte blanche* of unfettered parking.
- 12.1.37 Section 3.1.4 provides a list of potential interventions to manage construction traffic created by movement of employees. Included in the list is the proposal to have "works shuttle buses" linking to local rail stations. The draft DCO provides no authority for these vehicles to enter these stations, which are third party property rather than a public highway. The FCTP has no review of the physical characteristics of these stations to guarantee that access could be feasible.

- 12.1.38 The line of accountability for the scheme wide Travel Plan Coordinator is unclear (Section 3.1.6). There is a generic diagram that indicates the scheme Travel Plan Coordinator reports to the JOF in a parallel process to the scheme Traffic Manager. In plate 4.1 the Travel Plan Liaison Group (TPLG) is separate from the equivalent Traffic Management group. This will lead, as noted previously, to disjointed thinking on site access, traffic management and use of the most appropriate travel solutions.
- 12.1.39 The Travel Plan proposes 'minimum requirements in Section 3.2.4. Whilst noting that a minimum level of Travel Plan activity is a useful backstop in terms of contractual matters, this is a further sign of the FCTP's limited ambition to manage travel demand. It is not clear if the minimum requirements are to be construed as a target.
- 12.1.40 Section 3.2 has a commitment to ensure lower tier travel plans are produced. Whilst the commitment is noted, the FCTP fails to deal with the question of lines of approval and accountability. With current wording the FCTP provides a canvass of objectives but not detailed commitments to manage staff and site travel. The wording of section 3.2.9 introduces a degree of flexibility that makes the FCTP worthless.
- 12.1.41 Some headline worker statistics for the various compounds in Havering are recorded:
- M25 compound: 300 workers, 70% single occupancy car trips, 210 trips in peak hour – mostly to/from Romford, Ilford and Thurrock.
  - Ockendon Road: 57 workers 80% single occupancy car trips, 46 peak hour trips – mostly to/from Thurrock and Southend
  - Folkes Lane Utility Hub – no numbers provided but from trips manly to/from Brentwood and Romford areas.
- 12.1.42 The FCTP makes little comment on inter-compound movements (section 5.4.24). This is a significant weakness seen in other projects (e.g. HS2), where use of the emerging scheme formation was assumed to cater for inter-site movements, but actual access to the formation was not ring-fenced leading to adverse effects on local roads.
- 12.1.43 The FCTP highlights a number of potential measures to reduce unsustainable travel. Commentary on these includes:
- Car parking to meet demand (ideally reducing over time) is a flawed premise. Seeking to reduce car parking over time will not have the desired effect as travel habits will be ingrained before reductions may occur.
  - Minibus shuttles are committed zero emission but also subject to a no idling policy. This suggests a cut and paste of measures from other Travel Plans.
  - Personalised Travel Planning for construction employees is proposed but with no clarity as to how, where and when this will be delivered.
  - Section 9.1.1 introduces the concept of multiple Travel Plan Coordinators. How these will report to the scheme-wide Travel Plan Coordinator and how accountability will follow is not specified.
  - Table 9.1 gives no clear approval mechanism for the measures proposed.
- 12.1.44 The basis of the FCTP in terms of guidance is set out in Appendix A. A3.6 replicates the current DfT guidance that gives all modes equal consideration i.e. offers no priority to sustainable travel choices.

## 13 Mitigation Measures

13.1.1 LB Havering has reviewed the application material and identified potential adverse impacts, some of which are severe, which are predicted to occur within the Borough as a result of the proposed scheme – during both the construction and operation phases. The Council has held lengthy discussions with the Applicant, over an extended period of time, in relation to the impacts which have not been mitigated as part of the application. Therefore, LB Havering would wish to see a comprehensive package of mitigation provided and secured through the Development Consent Order (DCO). This mitigation is set out in Table 18 below on a topic by topic basis. The mitigation identified is considered to be appropriate, proportionate and relevant to address the impacts of the proposed LTC scheme.

**Table 18 - Summary of Mitigation by Topic**

Topics	Mitigation Requirement	Justification
Archaeology	<p>There is a need to make sure that the key principles around archaeological mitigation and management are secured in Control Documents including the Code of Construction Practice (CoCP) and the Register of Environmental Actions and Commitments (REAC).</p> <p>Specifically, LB Havering requires the following in relation to archaeological matters:</p> <p>Ensuring the required pre-determination archaeological assessment in unexamined areas, specifically Thames Chase Forest and the Ockendon Compound, and suitable mitigation arising.</p> <p>Delivering public heritage mitigation, including a combined public archive and heritage centre.</p> <p>Securing appropriate management measures in relation to the Ockendon Channel archaeological feature.</p> <p>It is also noted that LB Havering would wish to see the NH's <i>Archaeological Written Scheme of Investigation (ASWI)</i> document subject to Examination scrutiny to ensure that appropriate mitigation proposals are in place.</p>	<p>To minimise the archaeological impacts associated with the scheme, with particular reference to the construction phase, in accordance with paragraphs 5.128 – 5.137 and 5.139 – 5.141 of the NNNPS.</p> <p>The mitigation sought is considered necessary, related and proportionate.</p>

Topics	Mitigation Requirement	Justification
Air Quality	<p>LB Havering would wish to see the scheme measures in relation to air quality management, monitoring and mitigation identified in the CoCP and the REAC secured appropriately, which fully align with best practice guidance.</p>	<p>To minimise the air quality impacts associated with the scheme in accordance with paragraphs 5.10 – 5.12 of the NNNPS.</p> <p>The mitigation sought is considered necessary, related and proportionate.</p>
Carbon	<p>LB Havering would wish to see the scheme mitigation measures in relation to carbon emissions identified in the Carbon and Energy Management Plan secured appropriately.</p> <p>Specifically, LB Havering requires the following in relation to carbon emissions:</p> <p>Securing the commitment to use zero emission generators during the construction phase.</p> <p>Securing the commitment for a requirement for a least 20% of the energy demand for site compounds and offices to be from onsite renewables.</p>	<p>To minimise the carbon impacts associated with the scheme in accordance with paragraphs 5.18 – 5.19 of the NNNPS.</p> <p>The mitigation sought is considered necessary, related and proportionate.</p>
Noise and Vibration	<p>LB Havering would wish to see the scheme mitigation measures identified in the CoCP, the REAC and the Environmental Management Plan (EMP) secured appropriately.</p> <p>Specifically, LB Havering requires the securing of a set of mitigation measures to deal with noise and vibration impacts on the Ockendon Road Diversion Route.</p> <p>LB Havering seeks to secure manned monitoring at CV42 and CV44 on the first day of work on structures RWN000082 and RWN000085 to inform effective mitigation.</p> <p>LB Havering also seeks to secure appropriate noise and vibration mitigation (such as S61's) in relation to the M25 Compound to minimise its impacts on the residents of North Ockendon.</p>	<p>To minimise the noise and vibration impacts associated with the scheme (particularly on the residents of North Ockendon), with particular reference to the construction phase, in accordance with paragraphs 5.194 – 5.196 of the NNNPS.</p> <p>The mitigation sought is considered necessary, related and proportionate.</p>

Topics	Mitigation Requirement	Justification
Non-motorised Users (NMUs)	<p>There is a need to make sure that users of the Non-Motorised User bridge to be built over the A127 between Folkes Lane and Moor Lane can safely and securely access Folkes Lane Woodland.</p> <p>It is also important that NMUs can also safely and securely access the new woodland being built by the Applicant at Hole Farm within the borough of Brentwood.</p> <p>LB Havering does not consider Folkes Lane to be suitable for use by pedestrians, cyclists, or equestrians. The Council would like to see a new NMU route from the base of the bridge at Folkes Lane to Folkes Lane Woodland.</p> <p>The approach to the A127 Footbridge from the south needs to be redeveloped to ensure it is suitable for usage by pedestrians, cyclists and horse riders.</p> <p>The current footbridge over the M25 between Folkes Lane Woodland and the proposed Hole Farm site is considered unsuitable for NMUs in its current form. LB Havering seeks an improved surfacing including lighting. In addition, the parapets of the footbridge are unsuitable for horse riders who may use the facility to access Hole Farm.</p>	<p>To minimise the impacts on NMUs associated with the scheme in accordance with paragraphs 5.205, 5.211 and 5.216 of the NNNPS.</p> <p>The mitigation sought is considered necessary, related and proportionate.</p>
Materials and Waste	<p>No specific mitigation is requested by LB Havering.</p> <p>However, it is noted that LB Havering would wish to see the scheme mitigation measures identified in the Outline Materials Handling Plan (oMHP), the Outline Site Waste Management Plan (oSWMP), the Excavated Materials Assessment (EMA), the CoCP and the REAC, secured appropriately.</p> <p>It is also noted that LB Havering would wish to see the NH's <i>Local Aggregates Assessment</i> document subject to Examination scrutiny to ensure that appropriate mitigation proposals are in place.</p>	<p>To minimise materials and waste impacts associated with the scheme (and reduce the need for off-site management), with particular reference to the construction phase, in accordance with paragraphs 5.43 and 5.44 of the NNNPS.</p> <p>The mitigation sought is considered necessary, related and proportionate.</p>

Topics	Mitigation Requirement	Justification
<p>Flooding and Drainage</p>	<p>LB Havering would wish to see the scheme mitigation measures identified in the Flood Risk Assessment (FRA) and Construction Environmental Management Plan (CEMP) secured appropriately.</p> <p>Specifically, LB Havering requires the following in relation to flooding and drainage management and mitigation:</p> <p>The CEMP should provide evidence of how existing watercourses will be managed during the construction process to ensure that flood risk is not increased.</p> <p>NH should provide annual submissions of maintenance activities completed and correlated against the maintenance plan.</p> <p>Groundwater monitoring is proposed at several critical locations. LB Havering would expect NH to submit ongoing groundwater monitoring records, including an assessment of whether mitigation is effective.</p> <p>Secure the opportunity for LB Havering, as Local Lead Flood Authority (LLFA), to review and comment on the Flood Risk Assessment and Drainage Strategy for the construction phase of the project.</p>	<p>To minimise the flooding and drainage impacts associated with the scheme, in accordance with paragraphs 5.98 – 5.104 of the NNNPS.</p> <p>The mitigation sought is considered necessary, related and proportionate.</p>
<p>Ecology</p>	<p>Despite embedded mitigation, LB Havering requires bespoke compensation for the permanent loss of North Ockendon Pit SINC and to ensure that sufficient compensation is provided. The Council recommends that the construction compound would be an appropriate single location for the creation of compensatory brownfield habitats with low nutrients which could also act as a buffer for the retained SINC habitats.</p>	<p>To minimise the ecological impacts associated with the scheme, in accordance with paragraphs 5.25 – 5.26 of the NNNPS.</p> <p>According to GIGL (2020) Appendix 8.1 Designated sites (APP-390) North Ockendon Pit SINC is described as neutral grassland and secondary woodland providing habitat for a variety of birds. This site has been identified as containing Groundwater Dependent Terrestrial Ecosystems (GWDTEs). GWDTEs are wetlands which critically depend on groundwater flows and/or chemistries (European Communities (2011), shown in WFD-UKTAG (2014a).</p>



Topics	Mitigation Requirement	Justification
		<p>The site description for this SINC in the Havering SINC Review (2017) includes neutral grassland (semi-improved), tall herb, scrub, woodland, scattered trees, standing water and hedges and these habitats support significant populations of reptiles and invertebrate assemblage of national importance, including several rare bees, wasps and ants.</p> <p>LB Havering Policy 30 Biodiversity and Geodiversity protects SINCS from adverse effects and requires adequate compensation measures for impacts that cannot be avoided.</p> <p>The mitigation sought is considered necessary, related and proportionate.</p>
Landscape	<p>LB Havering would wish to see the scheme mitigation measures identified in the Landscape and Ecological Masterplan (LEMP) and the REAC secured appropriately.</p> <p>Specifically, LB Havering requires the following in relation to landscape matters:</p> <p>Securing a commitment to effective mitigation planting which is appropriately managed to be robust and future-proof, specifically in relation to Thames Chase Community Forest.</p>	<p>To minimise the impacts associated with the scheme on the landscape, in accordance with paragraphs 5.149, 5.156 and 5.159 – 5.161 of the NNNPS.</p> <p>The mitigation sought is considered necessary, related and proportionate.</p>
Built Heritage	<p>Section 20(1) allows for protective works to be carried out to any building on any land which may be affected by the development.</p> <p>Part 9 of Section 20 states that the undertaker of any protective works to a listed building must serve notice on the local planning authority and have due regard to any response received. This will allow for any works to listed buildings to be monitored.</p>	<p>To minimise the impacts associated with the scheme on the historic environment, in accordance with paragraphs 5.128 – 5.137 of the NNNPS.</p> <p>The mitigation sought is considered necessary, related and proportionate.</p>

Topics	Mitigation Requirement	Justification
Upminster Cemetery (UC) and South Essex Crematorium (SEC)	<p>LB Havering requires the securing of appropriate mitigation to provide resilience on the Ockendon Road diversion route.</p> <p>The closure of the Ockendon Road will have an injurious effect on the operation of the Crematorium and the ability of the Council to discharge its statutory functions in respect of providing burial and crematorium services.</p> <p>The Council seeks to secure a significant reduction in the period of time that Ockendon Road is closed for, which is currently stated in the DCO Application as up to 19 months.</p>	The mitigation sought is considered necessary, related and proportionate.
Wider Network Impacts	<p>LB Havering has been working closely with Transport for London (TfL), and continues to do so, to identify fully the scheme impacts on the local highway network and to identify appropriate mitigation.</p> <p>LB Havering is seeking to secure a robust monitoring and management plan.</p> <p>LB Havering supports the creation of a Lower Thames Crossing Mitigation Management Group (for the operational impacts of the scheme).</p>	<p>To minimise the impacts associated with the scheme on the wider transport network, in accordance with paragraphs 5.206, 5.211, 5.212 and 5.215 of the NNNPS.</p> <p>The mitigation sought is considered necessary, related and proportionate.</p>
Impacts during Construction (Highways)	Secure a commitment to work with LB Havering and Transport for London to further develop mitigation measures as set out in Table 9 and para 7.5.4.1-7.5.4.2 in the Traffic and Transport chapter of the LIR.	<p>To minimise the highways impacts associated with the scheme, with specific reference to the construction phase, in accordance with paragraphs 5.211, 5.215 and 5.216 of the NNNPS.</p> <p>The mitigation sought is considered necessary, related and proportionate.</p>
Impacts during Construction (Schools)	LB Havering is seeking to secure fixed crossing points outside schools impacted by traffic during different construction programme periods including the junction of Front Lane and Isis drive for Engayne Primary.	To minimise the highway safety impacts associated with the scheme, with specific reference to the construction phase, in accordance with paragraph 5.216 of the NNNPS.

Topics	Mitigation Requirement	Justification
		The mitigation sought is considered necessary, related and proportionate.
Skills and Employment	LB Havering requires the Skills, Education and Employment Strategy (SEE Strategy) to offer Borough-specific local employment /apprentices/training targets for Havering residents.	<p>To maximise the socio-economic benefits for Havering's resident and business communities, in accordance with paragraphs 3.3 of the NNNPS.</p> <p>The mitigation sought is considered necessary, related and proportionate.</p>

## 14 Developing the Obligations

### 14.1 S106 asks

14.1.1 LB Havering is seeking a number of contributions through S106, as set out in table 17 below.

14.1.2 LB Havering is of the view that the obligations identified comply with planning conditions and obligations paragraphs 56 and 57 of the NPPF. The planning obligations that LB Havering is seeking meet paragraph 56 of the NPPF for the following reasons: a) LB Havering is seeking the contribution to make sure that the development is acceptable from a planning policy perspective. b) The obligations are reasonably related in scale and kind in terms of cost.

**Table 19 – S106**

<b>TOPIC</b>	<b>S106 Requests and comments</b>
Upminster Cemetery	<p>19<sup>th</sup> month closure of Ockendon Road will result in a loss of business and therefore revenue for Upminster Cemetery and South Essex Crematorium.</p> <p>The closure of the Ockendon Road will have an injurious effect on the operation of the Crematorium and the ability of the Council to discharge its statutory functions in respect of providing burial and crematorium services.</p> <p>Financial contribution is required to offset potential loss of revenue that will be experienced during construction because funeral directors will be advising their clients to use other crematorium outside of the borough which will also have long term impacts of loss of business.</p>
School Safety and Sustainability	<p>Financial contribution to TfL STARS and Road Safety Education programme for Schools along roads to be impacted by the scheme during construction including those along St Mary's Lane. Measures would include a contribution to Bikeability training, Road Safety Theatre productions.</p> <p>Financial contribution to be sought for TfL STARS and Road Safety Education programme for schools along roads that will be impacted once the LTC is operational.</p>
DCO Project Manager	Financial contribution for 1FTE over the lifetime of construction to manage to DCO post Consent. This will include the coordination of management plan approvals coordination of NRSWA matters etc.
Ongoing Technical Resource support	Financial contribution for technical support to approve and sign off Management Plans post Consent received for the scheme. This to include Waste Management Plans, Drainage Strategy, LEMP and CEMP documents .
Skills and Employment	LB Havering would seek to work with NH and their contractors to drive and monitor performance against local targets to realise any benefit to Havering residents.
Community Funds	LB Havering is of the view that the value attributed to the Community Fund is inadequate.