

A12 Chelmsford to A120 widening scheme

TR010060

1.2 Introduction to Application

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A12 Chelmsford to A120 widening scheme

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Introduction to Application

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1 Introduction

1.1 Purpose of this document

- 1.1.1 National Highways (the “Applicant”) has submitted an application under section 37 of the Planning Act 2008 (the “2008 Act”) to the Secretary of State for Transport via the Planning Inspectorate (the Inspectorate) for an order to grant development consent (DCO) for the A12 Chelmsford to A120 widening scheme (the “proposed scheme”).
- 1.1.2 This document provides an accessible guide to the proposed scheme, the Applicant and the Development Consent Order (DCO) application to assist those reviewing the Application Documents.

1.2 Structure of this document

- 1.2.1 This document comprises 12 chapters, as described below:
- Chapter 1 introduces this document
 - Chapter 2 provides a high-level description of the proposed scheme
 - Chapter 3 introduces the Applicant
 - Chapter 4 gives an overview of the Application Documents
 - Chapters 5 to 11 explain the purpose of each document submitted
 - Chapter 12 contains a glossary of the abbreviations and definitions used within the DCO application
- 1.2.2 An Application Document Tracker is provided at Appendix A of this document to help the Examining Authority and interested parties navigate the DCO application as it evolves through examination by identifying the latest version of any Application Document.

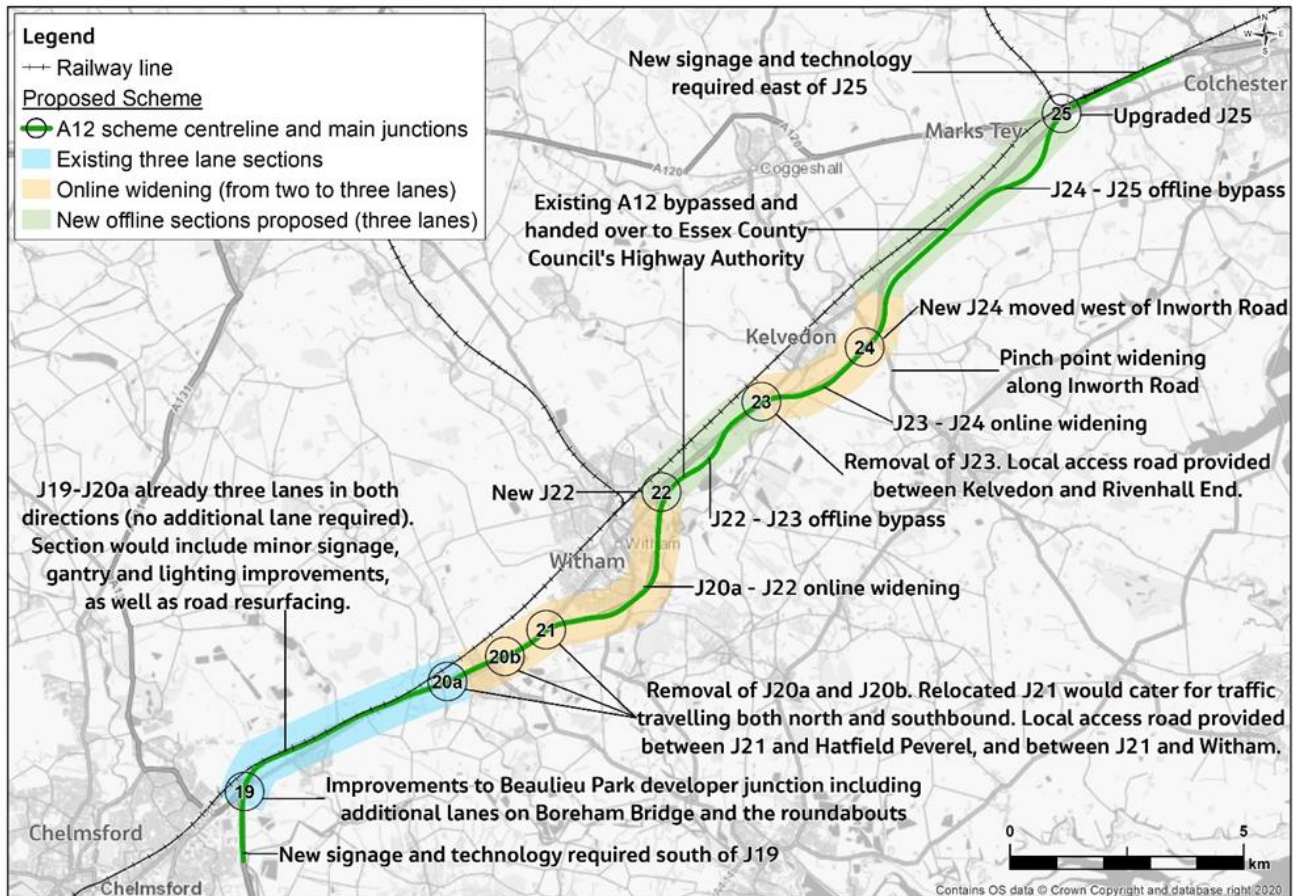
2 The proposed scheme

2.1 Description

- 2.1.1 The existing A12 between junctions 19 (Boreham interchange) and 25 (Marks Tey interchange) is predominantly a dual two-lane carriageway, with a limited length of three-lane carriageway between junctions 19 and 20a (Hatfield Peverel South interchange). There are a number of direct accesses onto the carriageways, particularly between junctions 22 (Colemans interchange) and 23 (Kelvedon South interchange) and between junctions 24 (Kelvedon North interchange) and 25.
- 2.1.2 The proposed scheme involves widening the existing A12 to three lanes throughout in each direction, where it is not already three lanes. This would mainly involve online widening of the carriageway, with offline highway created between junctions 22 and 23 (Rivenhall End Bypass) and between junctions 24

and 25 (Kelvedon to Marks Tey). This would be accompanied by junction improvements (junctions 19 and 25), construction of new junctions catering for traffic movements both north and southbound (junctions 21, 22 and 24), and removal of existing junctions (junctions 20a, 20b and 23).

Plate 2.1 Overview of the proposed scheme design



2.2 Scheme sections

2.2.1 The proposed scheme works are set out in Schedule 1 of the draft DCO [TR010060/APP/3.1]. The General Arrangement Plans [TR010060/APP/2.9] illustrate the preliminary design of the proposed scheme and identify its key components and features. The Highways Engineering Section Drawings [TR010060/APP/2.11] present further proposed scheme design information. Reference to these plans is made in the following sections where applicable. A simplified description of the proposed scheme is provided in Chapter 2: The proposed scheme, of the Environmental Statement [TR010060/APP/6.1].

2.2.2 Part of junction 19 (Boreham interchange) is being improved for the Beaulieu Park development. These changes are currently being made by the developer and are not part of the proposed scheme. The improvements required for Beaulieu Park are due to be completed by December 2022. This section of junction 19 (Boreham interchange) links to the realigned Beaulieu Park radial

distributor road, serving Beaulieu Park's business park and residential development.

2.2.3 Therefore, all Beaulieu Park improvements were taken into account when designing the proposed scheme. The assessment has shown that the additional proposed improvements to Boreham interchange would provide additional benefits to complement the developer's junction and ensure that the junction continues to work for all road users further into the future. The proposed scheme improvements include the following:

- Additional lanes on Boreham Bridge through widening the existing bridge
- Additional traffic lights added to the southern roundabout
- Additional lanes on various roundabouts, and their approaches and exit roads
- A dedicated link from the A131 onto the northbound A12
- A new controlled crossing which would allow both walkers and cyclists to cross the A12 safely and a new bridge for walkers, cyclists and horse riders on the north side of junction 19 (Boreham interchange) (new Paynes Lane Footbridge)

2.2.4 The Order Limits also extend to the south of junction 19 (Boreham interchange) to allow for roadside works in the verges such as new signage and works associated with the junction improvements.

2.2.5 Approximately 3.2km of mainline between junction 19 (Boreham interchange) and junction 20a already consists of three lanes in each direction. Works here would be confined to localised improvements to roadside infrastructure (such as signage) and provision of a new bridleway bridge between Paynes Lane and the proposed Beaulieu Park Station car park.

2.2.6 The approximately 3.3km section between junction 20a and the existing junction 21 would be subject to online widening works to provide a dual three-lane carriageway. This is predominantly symmetrical widening where each existing carriageway would be widened by approximately 3.65m. The A12 would generally be in cutting through this section, as in the existing situation. This section of works is shown on sheets 5 to 7 of the General Arrangement Plans [TR010060/APP/2.9]. Five existing structures would be affected in this section:

- River Ter Bridge (A12 crossing over the River Ter, west of the existing junction 20a) – carriageway would be widened, but the existing bridge structure would not be physically widened
- Bury Lane Bridge (part of existing junction 20a) – existing bridge would be demolished and replaced with a new overbridge
- Station Road Bridge (Hatfield Peverel) – existing bridge would be demolished and replaced with a new overbridge

- Wellington Bridge (part of existing junction 20b) – existing bridge would be demolished and replaced with a new overbridge
- Woodend Bridge (part of the existing junction 21) – existing bridge would be demolished

2.2.7 Junctions 20a and 20b would both be closed and replaced by a new junction 21, situated east of Hatfield Peverel between the existing junctions 20b and 21. The proposed junction 21 layout is shown on sheet 6 of the General Arrangement Plans [TR010060/APP/2.9]. It has been designed as an elevated two-tier junction (raised above the A12 mainline) with a dumbbell layout, connected by a new Hatfield Road Overbridge, with three access roads:

- A road linking the northern roundabout to Hatfield Peverel, intended as the main access between the proposed scheme and areas to the south and west, such as Hatfield Peverel and Maldon
- A road linking the northern roundabout to Witham, intended as the main access between the proposed scheme and the west side of Witham
- A local access road from the southern roundabout linking to Latney's Boarding Kennels, Cattery and Grooming Parlour only

2.2.8 The approximately 3.7km section of A12 between junctions 21 and 22 (Witham bypass) would be widened, upgrading the two-lane dual carriageway to a three-lane carriageway in each direction. This is predominantly symmetrical widening where each existing carriageway would be widened by approximately 3.65m, except near Dengie Farm where asymmetric widening is proposed to the northbound carriageway. The A12 is generally in cutting on the approach to the existing junction 21 and junction 22, and on an embankment in the middle section of the Witham bypass. This section of works is shown on **sheets 7 to 10** of the **General Arrangement Plans [TR010060/APP/2.9]**. Four existing structures would be affected in this section, and one new bridge for walkers would be provided (see Section 2.5: Structures, of this chapter for more information):

- Gershwin Boulevard Footbridge (south of Witham) – new bridge for walkers
- Olivers Bridge (A12 crossing over Maldon Road, south of Witham) – existing bridge would be widened
- Benton Bridge (A12 crossing over the Blackwater Rail Trail east of Olivers Bridge) – existing bridge would be widened
- Brain Bridge (A12 crossing over the River Brain, south-east of Witham) – existing bridge would be widened
- Barrows Creep Underpass (south-east of Witham) – existing underpass south of the existing junction 22 would be decommissioned

2.2.9 The proposed junction 22 layout is shown on sheet 10 of the General Arrangement Plans [TR010060/APP/2.9]. The proposed junction 22 is located

north-east of the existing junction 22 and would have a two-tiered elevated dumbbell layout (raised above the A12 mainline) connected by a new Little Braxted Lane Overbridge. There are two access roads on the northern roundabout, utilising the existing A12 to link to Witham and Rivenhall End, and one access road on the southern roundabout, providing access to the realigned Little Braxted Lane and existing quarry. Colemans Bridge (part of the existing junction 22 arrangement) would be demolished. A new bridge for walkers, cyclists and horse riders (Little Braxted Bridge) would be provided over the A12 from Little Braxted Lane.

- 2.2.10 The existing junction 23 would be removed, with traffic movements associated with this junction being redirected to junction 22 and junction 24 (see Chapter 3: Assessment of alternatives, of the Environmental Statement [TR010060/APP/6.1] for the reasons why junction 23 would be removed). Parts of junction 23 would, however, be retained to provide local access, including Cranes Bridge (which would be widened) and parts of southbound and northbound slip roads.
- 2.2.11 The existing A12, comprising two lanes, between junctions 22 and 23 through Rivenhall End would be de-trunked (trunk road status removed) and returned to the control of Essex County Council as the local highway authority. The de-trunked section of road would benefit from the following improvements: layout alterations to the existing local road junction at Rivenhall End; closure of Oak Road to improve safety and restrict through traffic; speed limit reduction (40mph) through Rivenhall End; controlled walker, cyclist and horse rider crossing points to eliminate the north–south severance, and pedestrian/cycle routes; and provision of a bus stop at Rivenhall End.
- 2.2.12 The existing junction 23 southbound on-slip would also be de-trunked and is proposed to be used for access to Hole Farm and Essex County Fire and Rescue Service Headquarters as a single carriageway with one lane in each direction.
- 2.2.13 B1024 Rivenhall Link Road/Cranes Lane – A new road linking Rivenhall End to Kelvedon would run adjacent to the northern carriageway of the proposed scheme. A roundabout has been proposed to facilitate the transition between the de-trunked section of A12 and this connecting single road section of the existing junction 23 northbound off-slip. The proposed cross-section would be a two-way single carriageway with a shared use footway/cycleway adjacent to the northbound carriageway. Bus stops would be provided within this new section connecting the Essex County Fire and Rescue Service Headquarters to public transport links.
- 2.2.14 The removal of the junction 23 on- and off-slips means the existing B1024 and Cranes Lane crossroad needs to be slightly modified to a staggered type of junction at the eastern side of the proposed single carriageway. The intention of the modification is to improve safety for road users and smooth the flow of traffic.
- 2.2.15 The existing Highfields Lane Overbridge would be replaced by a new bridge adjacent to the existing to accommodate the A12 mainline widening. The bridge would connect to a realigned Maldon Road north of the A12, and to Highfields

- Lane to the south of the A12. The bridge would include a shared use footway/cycleway facility.
- 2.2.16 Between junctions 23 and 24, online widening is proposed which would be broadly symmetrical. To facilitate widening of the existing Cranes and Ashmans bridges around the existing junction 23, widening to the south is proposed. The proposed scheme design allows for the existing concrete road surface to be overlaid with bound surface, resulting in a quieter and smoother road surface.
- 2.2.17 Junction 24 would provide access to the A12 both northbound and southbound, and the proposed junction 24 would take traffic from Inworth Road, which would serve the communities of Kelvedon, Inworth, Tiptree and others. Subject to further surveys, the new junction is expected to be below the existing ground level, with the proposed A12 road passing over the junction at its existing level.
- 2.2.18 The existing Ewell Overbridge would be replaced by a new bridge adjacent to the existing to accommodate the A12 mainline widening. The proposed carriageway would include a single lane with a footway adjacent to the southbound verge.
- 2.2.19 Prested Hall and Threshelfords access road – The Threshelfords accommodation bridge would be demolished, with a new bridge constructed to provide joint access to Threshelfords and Prested Hall, crossing over the proposed scheme near the existing junction 24. The new road is expected to be designated partly as an Essex Highways County Road (local road) and partly as a private road as shown on the Streets, Rights of Way and Access plans [TR010060/APP/2.6]. The proposed Prested Hall access road is a two-way single carriageway with a shared use footway/cycleway adjacent to the southbound carriageway. The proposed Threshelfords access road is a farm track access with a shared use footway/cycleway facility adjacent to the western edge of the track access.
- 2.2.20 Inworth road – To accommodate the predicted traffic flow and improve the safety of road users along Inworth Road, the carriageway would be widened between the proposed junction 24 roundabout and the Garden Centre. The proposed carriageway widening ranges from 0.25m to approximately 1.5m. The main purpose of the widening is to improve the substandard width of the existing carriageway and also remove the pinch points along the curvatures of the road to facilitate the smooth flow of traffic and reduce the risk of heavy goods vehicles colliding.
- 2.2.21 The proposed scheme's second offline bypass is proposed between the existing junction 24 and junction 25. Throughout this section, the road would be three lanes in each direction, separated by a concrete barrier.
- 2.2.22 It is proposed that the existing A12 dual carriageway between Feering and Marks Tey (between junctions 24 and 25) would be returned to the control of Essex County Council's Highway Authority. The total carriageway length is approximately 4.5km. This section of de-trunked road would continue to be used by local traffic to gain access into and out of Marks Tey, Feering, Kelvedon and other surrounding villages and would allow traffic to access the proposed scheme via the new junction 24 and upgraded junction 25.

- 2.2.23 The design proposals are to maintain the dual carriageway as per the existing layout and provide roundabouts in three locations to improve connectivity with local road networks and walking, cycling and horse riding routes: a five-arm roundabout at the existing junction 24; a four-arm roundabout at Easthorpe Road; and a three-arm roundabout at Wishing Well Farm access road.
- 2.2.24 Wishingwell Overbridge would be a new offline road for access to Easthorpe Green Farm and Wishingwell Farm. The proposed new road and overbridge is designed as a minor access local road. The tie-in with the de-trunked A12 would be via a new three-arm roundabout. The proposed access road consists of a two-way single carriageway with a footway adjacent to the southbound carriageway.
- 2.2.25 As the proposed scheme progresses towards junction 25, the proposed offline mainline would tie-in with the existing A12, which has three lanes on the northbound carriageway and two lanes on the existing southbound carriageway. The southbound carriageway would be widened to three lanes until the exit slip road, from which point the carriageway is already three lanes wide.
- 2.2.26 South of the existing junction 25, the bypass would be connected to the existing A12. Alongside this, the existing junction would be modified and improved. Junction 25 would remain an elevated junction and provide access to the A12 both northbound and southbound. It would take traffic from Marks Tey, Copford and the A120, and provide a connection to the existing A12 (which would be kept for use by local traffic). The Marks Tey roundabout would be converted to a signalised crossroads, and traffic signals added to the Prince of Wales Roundabout to improve capacity at the junction. New crossings and a replacement bridge would be provided for walkers and cyclists across the A12.

2.3 Proposed scheme objectives

- 2.3.1 The key objectives of the proposed scheme are as follows:
- Proposed scheme supports the growth identified in Local Plans by reducing congestion related delay, improving journey time reliability and increasing the overall transport capacity of the A12
 - Improved Safety Design: Private accesses to strategic road network closed off and alternative access to local roads provided by proposed scheme
 - Proposed scheme improves road user safety.
 - Proposed scheme improves road worker safety during maintenance operation.
 - Proposed scheme reduces current and forecast congestion related delays and therefore increases journey time reliability.
 - The proposed scheme understands the impacts of other schemes and recognises other RIS schemes.

- Reduce the visual, air and noise quality impacts of the proposed scheme on affected communities on the route
- Reduce the capital carbon and biodiversity impact of the scheme
- Proposed scheme reduces the impact of severance of communities along the route.
- Proposed scheme improves accessibility for walkers, cyclists, horse riders, and public transport users.
- Improve customer satisfaction, and reduce customer impact during construction

The need for the proposed scheme is comprehensively set out in the Case for the Scheme [TR010060/APP/7.1] and Statement of Reasons [TR010060/APP/4.1].

2.4 Proposed scheme history, timeline and future milestones

- 2.4.1 The proposed scheme was included within the Government's first Road Investment Strategy as one of the projects to be delivered in Road Period 1 between 2015 and 2020. Road Investment Strategy 1 (RIS 1) (Department for Transport, 2015) identified a phased approach to major improvement works to the A12 corridor. The proposed scheme was identified as phase 1 of a programme of major upgrades to the A12. It was described as '*widening the A12 to three lanes between junction 19 (north of Chelmsford) and junction 25 (A120 interchange)*' and was allocated funding within RIS 1.
- 2.4.2 In 2017, following the initial consultation on four route options, National Highways was asked by the Department of Communities, Housing and Local Government to consider alternative options that sought to avoid the proposed Colchester Braintree Borders Garden Community (CBBGC) between junctions 24 (Kelvedon North interchange) and 25 (Marks Tey interchange). CBBGC was one of three garden communities being proposed within Essex, included in the North Essex Authorities' draft Local Plan submitted in Autumn 2017 to the Planning Inspectorate. A commitment to 2,500 homes within the CBBGC was set out in the local plan period (as part of an overall total of between 15,000 and 24,000 homes). Alternative alignments for the proposed scheme were considered between junctions 24 and 25 to account for the potential footprint of this development, and a further consultation was held in October 2019. In May 2020 the CBBGC was removed from the adopted Section 1 Local Plan, following feedback from the Planning Inspectorate (see Chapter 3: Assessment of alternatives, of the Environmental Statement [TR010060/APP/6.1], for more details). At this point the extended options stage reverted back to option 2 but the proposed scheme missed the RIS 1 period and was therefore taken forward as a committed scheme in Road Investment Strategy 2: 2020-2025 (Department for Transport, 2020a).
- 2.4.3 Even without the CBBGC, there is substantial housing and employment growth planned in this area over the coming decades. In addition, the investment in the Haven Ports (the five ports on the east coast of England but particularly the

deep water ports of Ipswich, Harwich and Felixstowe) is likely to increase heavy goods vehicles movements along the route. As such, an increase in overall traffic volume during peak periods is expected on the A12.

- 2.4.4 The history of the proposed scheme and future milestones are summarised in Table 2.1.

Table 2.1 Key dates

Year	Activity
2016	Options Assessment Report published.
2017	Non-statutory consultation Report on public consultation published
2019	Additional consultation on junctions 23–25 Preferred Route Announcement – junctions 19–23
2020	Preferred Route Announcement – junctions 23–25
2021	Statutory consultation Supplementary consultation
2022	Targeted consultation Submission of application to Planning Inspectorate
2023/2024	Secretary of State for Transport decision on application expected.
2024 to 2028	Proposed scheme construction
2028	Proposed scheme opening

2.5 Qualification as a Nationally Significant Infrastructure Project

- 2.5.1 The proposed scheme is a Nationally Significant Infrastructure Project (NSIP) within sections 14(1)(h) and 22(1)(b) of the Planning Act 2008. Under section 22, an NSIP must fall within one of the three categories specified, which are expressly stated to be alternatives. This proposed scheme is the ‘alteration’ of a highway within the meaning of section 22(1)(b).
- 2.5.2 The proposed scheme satisfies section 22(3) as follows:
- The highway is wholly in England
 - The Applicant as strategic highways company will be the highway authority for the highway
 - The area of development is greater than the relevant limit set out in subsection (4), which in this case is 12.5 hectares, and speed limits would be in excess of 50mph

- 2.5.3 The diversion of The Witham South to Little Braxted Gas Governor High Pressure Gas Main (AIA2) (this is referred to as ‘the gas main diversion’ throughout the Application Documents) is also an NSIP as it would be constructed by a gas transporter (Cadent holds a licence under the Gas Act 1986) and satisfy the following conditions as set out in section 20 of the Act 2008.
- 2.5.4 The relevant conditions are as follows:
- The pipeline will be wholly in England
 - It is likely to have a significant effect on the environment
 - It will have a design operating pressure of more than 7 bar gauge
 - When constructed, it will convey gas for supply (directly or indirectly) to at least 50,000 customers, or potential customers, of one or more gas suppliers
- 2.5.5 The gas main diversion is considered further in section 4.5 and 4.6 of the Case for the Scheme [TR010060/APP/7.1] which describes how the gas main diversion complies with the Infrastructure Planning Regulations Forms and Procedures 2009.
- 2.5.6 Besides the Little Braxted to Springfield - AIA2, there are four further diversions required for the high-pressure gas mains:
- Little Braxted to Springfield – AIA1: has a diameter of 600mm and maximum operating pressure of 42barg (a unit of gauge pressure), with a proposed diversion length of 200m because the pipe would be exposed due to the widening works.
 - Little Braxted Tye Green – AIA3: has a diameter of 600mm and maximum operating pressure of 42barg, with a proposed diversion length of 970m because the cover to the pipe would be affected by the proposed works and would be affected by new road embankments.
 - Langham-Daisy Green-Little Braxted – AIA4: has a diameter of 200mm and maximum operating pressure of 15barg, with a proposed diversion length of 400m because the cover to the pipe would be affected by the proposed works and would be affected by new road embankments.
 - Little Braxted-Witham – AIA5: has a diameter of 300mm and maximum operating pressure of 7barg, with a proposed diversion length of 180m because the pipe would be exposed due to the widening works.

Chapter 2 of the Environmental Statement [TR010060/APP/6.1] contains a description of the five gas diversions.

3 The Applicant

3.1 National Highways

3.1.1 The Applicant is appointed and licensed by the Secretary of State for Transport as the strategic highways company for England and is responsible for operating, maintaining and improving the strategic road network in England. The network is made up of England's motorways and all-purpose trunk roads (the major A-roads), and the existing A12 is part of the trunk road network for which the Applicant is responsible. Following construction of the proposed scheme, the Applicant will be responsible for operating, maintaining and, under its general statutory powers in respect of the latter, improving the new route of the A12.

3.1.2 The proposed scheme contact details are as follows:

A12 Chelmsford to A120 Widening Project Team

National Highways

Woodlands

Manton Lane

Bedford

MK14 7IQ

Email: A12ChelmsfordA120wide@nationalhighways.co.uk

Telephone: 0300 123 5000

The proposed scheme is managed by the Applicant from its Bedford office by the A12 Chelmsford to A120 widening Project Team, which is responsible for delivering the proposed scheme in accordance with the approved DCO.

4 Application Volumes

4.1.1 A list of documents within the DCO application is set out in the Covering Letter and completed Section 55 checklist [TR010060/APP/1.1]. Further detail of the submission layout within the DCO application is provided in Table 4.1, which describes the DCO application volumes. The documents will be provided free of charge for download on the Inspectorate's website (<https://infrastructure.planninginspectorate.gov.uk/projects/eastern/a12-chelmsford-to-a120-widening-scheme/?ipcsection=docs>).

4.1.2 The reports, drawings and plans that make up the DCO application have been organised into seven volumes. The seven volumes are explained in more detail in Chapters 5 to 11. An overview of the content of the volumes has been provided in **Error! Reference source not found..**

Table 4.1 Description of application volumes

	VOLUME	CONTENT
1	Application Form/Information/Background	The completed application form and an introduction to the proposed scheme.
2	Plans/Drawings/Sections	Plans that illustrate the location of the proposed scheme, the proposed works (engineering drawings), the land that will be acquired or used and local geographical information.
3	Draft Development Consent Order	The legal powers that the Applicant is seeking to enable it to build, operate and maintain the proposed scheme, together with the Explanatory Memorandum, explaining the provisions of the Order, and the Consents and Licences Position Statement which sets out the strategy for obtaining the consents and associated agreements needed to implement the proposed scheme.
4	Compulsory Acquisition Information	Documents setting out in tabular form the land to be acquired or used and affected persons with interests in that land, as well as evidence justifying the Applicant seeking compulsory acquisition powers over this land. Information is included on how the proposed scheme would be funded.
5	Consultation Report	Details of the pre-application consultation that the Applicant has undertaken on the proposed scheme and how consultation feedback has been taken into account.
6	Environmental Impact Assessment (EIA) Information	An assessment of the likely significant effects (both positive and negative) of the proposed scheme on the environment and a description of mitigation measures proposed to reduce any negative impacts. Includes the Statutory and Non-Statutory Nature Conservation Sites Plan.
7	Other Documents	Additional documents that support the DCO application; these are not legally required but provide useful information on the case for the proposed scheme.

5 Volume 1: Application Form/Information/Background

- 5.1.1 The Covering Letter and completed Section 55 checklist [TR010060/APP/1.1] provide an overview of the DCO application. The Compliance Checklist in the Consultation Report (Annex O of the Consultation Report [TR010060/APP/5.2]) has been completed by the Applicant to evidence how the DCO application fulfils the conditions for acceptance by the Examining Authority under section

55 of the Planning Act 2008. This checklist will also be completed by the Examining Authority on receipt of the DCO application.

- 5.1.2 The Application Form [TR010060/APP/1.3] is a standard form and provides a high-level summary of the proposed scheme and the documents that have been submitted. It is a form that originates from Schedule 2 of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.
- 5.1.3 The Introduction to the Application [TR010060/APP/1.2] is this document. Appendix A of this document provides an Application Document Tracker to help the Examining Authority and interested parties understand the DCO application as it evolves through examination by identifying the latest version of any Application Document. Appendix A also provides details of the Application Documents to be certified as set out in Schedule 12 of the draft DCO [TR010060/APP/3.1].

6 Volume 2: Plans, Drawings and Sections

- 6.1.1 There are 15 sets of plans as described below. Where a plan comprises three or more separate sheets, a key plan is provided, showing the relationship between the different sheets. Each plan (and each sheet within a set of plans) includes a key, which explains the use of symbols, lines and shading to denote features and information in the plans. The exception to this is the Location Plan [TR010060/APP/2.1] and the Highways Engineering Section Drawings [TR010060/APP/2.11] which do not require a key plan. The General Arrangement Plans [TR010060/APP/2.9] do not have a key on each sheet, but the key is on the key plan.
- 6.1.2 The Location Plan [TR010060/APP/2.1] identifies the location of the proposed scheme in its wider context.
- 6.1.3 The Works Plans [TR010060/APP/2.2] show the centre line of the proposed highway and the limits of deviation within which the development and works may be carried out. Most importantly, the plans show the extent of the individual works.
- 6.1.4 The Traffic Regulation Measures Plans [TR010060/APP/2.3] are provided to show clearways and restrictions on vehicle weights and classes of user which are proposed to be applied to the proposed scheme.
- 6.1.5 The Classification of Roads Plans [TR010060/APP/2.4] show highways classifications which are proposed to be applied to the proposed scheme where new classifications are required, and existing classifications are changed.
- 6.1.6 The Special Category Land Plans [TR010060/APP/2.5] show the extent of land required for the proposed scheme that falls within a special category for example open space, its location and the replacement land.
- 6.1.7 The Streets, Rights of Way and Access Plans [TR010060/APP/2.6] show any new or altered means of access, stopping up of streets or roads, and any diversions, extinguishment or creation of rights of way.
- 6.1.8 The Land Plans [TR010060/APP/2.7] correspond to the Book of Reference [TR010060/APP/4.3] and, in summary, set out the following:

- The land to be acquired or used permanently for construction, operation and maintenance works for the proposed scheme
- Any land over which temporary possession may be taken
- Any land to be used temporarily and for rights in the land to be acquired permanently

- 6.1.9 The Crown Land Plans [TR010060/APP/2.8] show the land required for the proposed scheme over which the Crown Estates, the Crown Estates Commissioner and the Government Department own.
- 6.1.10 The General Arrangement Plans [TR010060/APP/2.9] provide a technical illustration of the proposed scheme against an Ordnance Survey base map.
- 6.1.11 The De-trunking and Stopping-Up Plans [TR010060/APP/2.10] show the sections of the proposed scheme that include the downgrading of the existing A12 from trunk road status to county road status as well as roads that are to be closed or truncated.
- 6.1.12 The Highways Engineering Section Drawings [TR010060/APP/2.11] and Structures Engineering Drawings and Sections [TR010060/APP/2.12] show the levels of the proposed works, including the ground levels, the height of certain structures and the depths of any cuttings required for the proposed scheme and any drainage outfall details.
- 6.1.13 The Drainage and Surface Water Plans [TR010060/APP/2.13] show the drainage and surface water management features, including the locations of water attenuation for the proposed scheme.
- 6.1.14 The Retained and Removed Vegetation Plans [TR010060/APP/2.14] show the areas where existing vegetation would be removed to enable the construction of the proposed scheme as well as vegetation that would be retained.
- 6.1.15 The Construction Phase Plans [TR010060/APP/2.15] show the phases of construction that would be followed for the proposed scheme.
- 6.1.16 The Statutory and Non-Statutory Nature Conservation Sites Plans [TR010060/APP/6.6] show the statutory and non-statutory sites and features important to nature conservation. These plans should be read in conjunction with Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1].
- 6.1.17 The Statutory and Non-Statutory Historic Sites Plans [TR010060/APP/6.7] show statutory and non-statutory sites and features of the historic environment, including scheduled monuments, listed buildings and other historic structures, archaeological sites and registered parks and gardens. These plans should be read in conjunction with Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].

7 Volume 3: Draft Development Consent Order

- 7.1.1 The draft DCO [TR010060/APP/3.1] sets out the powers that the Applicant is seeking to enable it to construct, operate and maintain the proposed

scheme. It sets out the parameters for what development would be permitted. It consists of 7 Parts:

- Part 1: Preliminary
- Part 2: Principal Powers
- Part 3: Streets
- Part 4: Supplemental Powers
- Part 5: Powers of Acquisition
- Part 6: Operations
- Part 7: Miscellaneous and General

7.1.2 The draft DCO [TR010060/APP/3.1] is accompanied by 12 Schedules as outlined below:

- Schedule 1: Authorised Development – lists the works that would be authorised by the grant of development consent, which are shown on the Works Plans and to which the schedule relates. The Schedule is split in to three parts – permanent works, temporary works and utilities works.
- Schedule 2: Requirements – sets out the conditions that the Applicant would be required to accord with when implementing the development authorised by the DCO.
- Schedule 3: Classifications of Roads, Etc. – lists the classifications of new, altered, de-trunked and improved highways and details relevant speed limits and other traffic regulation measures. It also sets out changes to public rights of way provided for in the Order.
- Schedule 4: Permanent Stopping Up of Highways and Private Means of Access & Provision of New Highways and Private Means of Access – sets out the streets, public rights of way and private means of access that would be permanently stopped up as a result of the proposed scheme along with any relevant substitutes or replacements provided.
- Schedule 5: Land in Which New Rights Etc. May Be Acquired – limits the Applicant's powers of compulsory acquisition, in relation to specified plots, to temporary use and permanent new rights only.
- Schedule 6: Modification of Compensation and Compulsory Purchase Enactments for Creation of New Rights – amends relevant compulsory acquisition legislation to ensure that it can apply to the DCO.
- Schedule 7: Land of Which Temporary Possession May Be Taken – sets out the land which the Applicant is seeking to possess temporarily only for the purpose of constructing the proposed scheme.

- Schedule 8: Special Category Land: This lists the plots of special category land to be acquired (or over which new rights will be acquired) and for which replacement land has been identified.
- Schedule 9: Trees and Hedgerows – sets out the details of hedgerows which fall within the proposed scheme and trees that are subject to Tree Preservation Orders.
- Schedule 10: Disapplication and Modification of Bylaws – lists the local bylaws that would be disapplied or subject to modification by the DCO.
- Schedule 11: Protective Provisions – includes provisions to protect the interests of various bodies in the context of the proposed scheme (for example, statutory undertakers).
- Schedule 12: Documents to be Certified – sets out those documents to be certified by the Secretary of State for the purposes of the DCO.

The Explanatory Memorandum [TR010060/APP/3.2] to the Draft DCO explains the purpose and effect of each provision in the draft DCO including why it is considered necessary.

The Consents and Licenses Position Statement [TR010060/APP/3.3] sets out the intended strategy for obtaining the consents and other agreements that may be necessary to construct, operate and maintain the proposed scheme and how these consents would be obtained.

8 Volume 4: Compulsory Acquisition Information

- 8.1.1 In order to implement the proposed scheme, the Applicant would need to use statutory powers to acquire land and rights in land, and to possess and use land temporarily. The Applicant is required to provide evidence that the use of these powers would be justified, proportionate and in the public interest, and this evidence is set out in the Statement of Reasons [TR010060/APP/4.1], Funding Statement [TR010060/APP/4.2] and Book of Reference [TR010060/APP/4.3] as explained below.
- 8.1.2 The Statement of Reasons [TR010060/APP/4.1] explains that there is a compelling case in the public interest which would justify the Applicant's exercise of powers of compulsory acquisition to acquire land and rights permanently and to use land temporarily to enable it to construct, operate and maintain the proposed scheme.
- 8.1.3 The Funding Statement [TR010060/APP/4.2] explains how the proposed scheme, including any compensation claims for compulsory acquisition, would be funded.
- 8.1.4 The Book of Reference [TR010060/APP/4.3] identifies all parties who own or occupy land and/or have an interest in or right over the land affected by the proposed scheme, and/or who may be entitled to make a 'relevant claim' as defined in section 57 of the Planning Act 2008. It is structured in five parts in accordance with relevant regulatory requirements. The five parts are as follows:

- Part 1: Names and addresses for service of each person/organisation within Categories 1 and 2 as defined in section 57 of the Planning Act 2008 in respect of any land which it is proposed shall be subject to:
 - powers of compulsory acquisition
 - rights to use land, , or
 - rights to carry out protective works to buildings

Category 1 interests are owners, lessees, tenants or occupiers of land. Category 2 interests are those who have an interest in the land or who have the power to sell and convey the land or release the land.

- Part 2: Names and addresses for service of each person/organisation within Category 3. These are interests who might be entitled to make a relevant claim if the DCO were consented and implemented, e.g. potential claimants under Part 1 of the Land Compensation Act 1973, section 10 of the Compulsory Purchase Act 1965 and section 152(3) of the Planning Act 2008.
- Part 3: Names of all those entitled to enjoy easements or other private rights over land (including private rights of navigation over water) which it is proposed shall be extinguished, suspended or interfered with in the proposed DCO.
- Part 4: Owner of any Crown interest in the land which is proposed to be used for the purposes of the order for which the application is being made.
- Part 5: Land the acquisition of which could be subject to special parliamentary procedure, is special category land, or is replacement land.

9 Volume 5: Consultation Report

9.1.1 The Consultation Report [TR010060/APP/5.1] provides an account of the pre-application consultation undertaken for the proposed scheme. The report includes details of the statutory consultation which the Applicant is required to undertake in accordance with the Planning Act 2008, the informal engagement that has taken place, and how the comments received have been taken into account when developing the proposed scheme. It is a requirement of section 37(3)(c) of the Planning Act 2008 that an application for a DCO is accompanied by a consultation report.

9.1.2 A range of annexes that support the report are described in Table 9.1.

Table 9.1 Consultation Report annexes

Annex number	Annex name
Annex A	Options consultation brochure and associated materials

Annex number	Annex name
Annex B	The Infrastructure Planning (EIA) Regulations 2017: Regulation 8(1) letter to PINS & acknowledgement
Annex C	Copy of the draft SoCC provided to local authorities
Annex D	Letter to local authorities for draft SoCC consultation
Annex E	Response from local authorities on the draft SoCC
Annex F	Published SoCC with location and date
Annex G	List of prescribed consultees identified and consulted
Annex H	S42 letters and enclosures with date
Annex I	S46 letter and the enclosures sent to PINS (with date)
Annex J	S47 consultation material
Annex K	S48 newspaper notice with locations and dates including a copy of the press release and media invite
Annex L	Table of Protective Provisions for Statutory Undertakers
Annex M	List of any additional consultation recipients (noting their interest)
Annex N	Tables evidencing regard had to consultation responses (in accordance with s49 of the Planning Act 2008)
Annex O	Compliance checklist
Annex P	Meetings with Stakeholders
Annex Q	Independent Reports on Statutory and Supplementary Consultations
Annex R	Community Gardens Correspondence
Annex S	Essex County Council Requirements Letter and Response

10 Volume 6: Environmental Impact Assessment (EIA) Information

- 10.1.1 The Environmental Statement [TR010060/APP/6.1] has been produced by the Applicant as part of the process of Environmental Impact Assessment (EIA). As the proposed scheme is a project for which the EIA process is required, the Environmental Statement has been prepared by competent experts to provide specified information to enable the Examining Authority, the Secretary of State and all stakeholders to understand the likely significant environmental effects of the proposed scheme in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.
- 10.1.2 The Environmental Statement chapters, figures and appendices have been split into three separate parts, each with its own document reference number. This is

to ensure that file sizes do not exceed the 50MB limit to support virtual examination. The names of the individual component documents are listed in Appendix A of this document.

10.1.3 The Environmental Statement also provides general information on the proposed scheme, including context, description of the proposed scheme and its construction, main alternatives considered, the consultation process that was part of the EIA and technical information on a range of aspects. The following paragraphs provide an overview of the structure of the Environmental Statement to assist with navigation.

10.1.4 The Environmental Statement includes the following chapters:

- Chapter 1: Introduction
- Chapter 2: The proposed scheme
- Chapter 3: Assessment of alternatives
- Chapter 4: Consultation
- Chapter 5: Environmental assessment methodology
- Chapter 6: Air quality
- Chapter 7: Cultural heritage
- Chapter 8: Landscape and visual
- Chapter 9: Biodiversity
- Chapter 10: Geology and soils
- Chapter 11: Material assets and waste
- Chapter 12: Noise and vibration
- Chapter 13: Population and human health
- Chapter 14: Road drainage and the water environment
- Chapter 15: Climate
- Chapter 16: Cumulative effects assessment
- Chapter 17: Summary
- Chapter 18: Glossary and acronyms

10.1.5 The Environmental Statement is accompanied by a number of Figures [TR010060/APP/6.2] which provide further information and details to support the EIA.

- 10.1.6 The Environmental Statement is accompanied by a series of appendices [TR010060/APP/6.3] which provide further information and detail to support the EIA. These appendices are listed in Table 10.1.

Table 10.1 Environmental Statement appendices

Appendix	Appendix Name
Appendix 1.1	Legislation and Policy
Appendix 3.1	Colchester Braintree Border Garden Community North Essex Authorities Decision Letter
Appendix 3.2	Maldon Road Options Appraisal
Appendix 3.3	Junction 24, Inworth Road and Community Bypass Technical Report
Appendix 5.1	Scoping Opinion Response Table
Appendix 5.2	Gas Main Diversion Screening Assessment
Appendix 5.3	Major Accidents and Disasters Screening
Appendix 5.4	Transboundary Effects
Appendix 6.1	Air Quality Monitoring Results
Appendix 6.2	Traffic Data for the Affected Route Network
Appendix 6.3	Dispersion Modelling Process
Appendix 6.4	Verification of Dispersion Model Results
Appendix 6.5	Air Quality Modelling Results
Appendix 6.6	Project Air Quality Action Plan
Appendix 7.1	Cultural Heritage Gazetteer
Appendix 7.2	Cultural Heritage Desk-Based Assessment
Appendix 7.3	Palaeolithic Desk-Based Assessment
Appendix 7.4	Aerial Investigation and Mapping Report
Appendix 7.5	Geophysical Survey Phase 1 Report
Appendix 7.6	Geophysical Survey Phase 2 Report
Appendix 7.7	Trail Trenching Report
Appendix 7.8	Palaeolithic and Palaeo Environmental Evaluation Report
Appendix 7.9	Cultural Heritage Impact Assessment Summary Tables
Appendix 7.10	Archaeological Mitigation Strategy
Appendix 8.1	Published Sources of Landscape Character
Appendix 8.2	Landscape Effects Schedule

Appendix	Appendix Name
Appendix 8.3	Visual Effects Schedule
Appendix 8.4	Arboricultural Impact Assessment
Appendix 8.5	Technical Photomontage Methodology
Appendix 8.6	Technical Zone of Theoretical Visibility Methodology
Appendix 9.1	Aquatic Ecology Survey Report
Appendix 9.2	Badger Survey Report [CONFIDENTIAL]
Appendix 9.3	Barn Owl Survey Report [CONFIDENTIAL]
Appendix 9.4	Bat Survey Report
Appendix 9.5	Breeding Bird Survey Report
Appendix 9.6	Dormouse Survey Report
Appendix 9.7	Hedgerow Survey Report
Appendix 9.8	Phase 1 Habitat Survey Report
Appendix 9.9	Reptile Survey Report
Appendix 9.10	Riparian Mammal Survey Report
Appendix 9.11	Terrestrial Invertebrate Survey Report
Appendix 9.12	Wintering Bird Survey Report
Appendix 9.13	Great Crested Newt Survey Report
Appendix 9.14	Biodiversity Net Gain Report
Appendix 9.15	Assessment of Air Quality Impacts on Ecology Receptors Report
Appendix 9.16	Draft Bat Licence
Appendix 9.17	Draft Badger Licence [CONFIDENTIAL]
Appendix 10.1	Land Quality Risk Assessment
Appendix 10.2	Agricultural Land Classification Survey Report
Appendix 11.1	Mineral Resource Assessment
Appendix 11.2	Mineral Infrastructure Assessment
Appendix 11.3	Waste Infrastructure Assessment
Appendix 12.1	Introduction to Noise
Appendix 12.2	Noise Assessment Methodology
Appendix 12.3	Noise Baseline Survey Results

Appendix	Appendix Name
Appendix 12.4	Construction Noise Calculations
Appendix 12.5	Noise Impact Tables
Appendix 12.6	Full Noise Calculation Results
Appendix 13.1	Human Health Literature Review and Evidence
Appendix 13.2	Stakeholder Engagement and Scoping for Human Health
Appendix 13.3	Land Use and Accessibility Assessment Tables
Appendix 13.4	Mental Wellbeing Impact Assessment
Appendix 13.5	Legislative and Policy Framework for Population and Human Health
Appendix 14.1	Water Quality Assessment Report
Appendix 14.2	Detailed Water Environment Regulations (WFD) Compliance Assessment
Appendix 14.3	Hydromorphology Assessment
Appendix 14.4	Groundwater Assessment
Appendix 14.5	Flood Risk Assessment
Appendix 14.6	Surface Water Drainage Strategy
Appendix 15.1	Greenhouse Gas Emissions Methodology
Appendix 15.2	Vulnerability Assessment
Appendix 16.1	Long List and Short List of Other Developments

- 10.1.7 A Non-Technical Summary [TR010060/APP/6.4] to the Environmental Statement has been provided. This provides a summary of the Environmental Statement using non-technical language. The Non-Technical Summary summarises the proposed scheme description, alternatives considered, the likely significant effects, the proposed mitigation and monitoring requirements and opportunities for enhancement.
- 10.1.8 In addition, the Environmental Scoping Report and Scoping Opinion received from PINS (available on PINS Website for the proposed scheme: <https://infrastructure.planninginspectorate.gov.uk/projects/eastern/a12-chelmsford-to-a120-widening-scheme/>) have informed the scope and content of the EIA.
- 10.1.9 A first iteration Environmental Management Plan (EMP) [TR010060/APP/6.5] has been prepared for the proposed scheme. This sets out the practices and standards to be applied in the construction of the proposed scheme. The key aims of the EMP are to ensure that all environmental mitigation, DCO requirements, consents and licences are met, and to minimise and manage the risk of adverse environmental effects. It also includes a Register of Environmental Actions and Commitments which sets out mitigation measures proposed in the Environmental Statement and indicates which DCO

requirements address the mitigation, or how it has been embedded in the proposed scheme's design.

- 10.1.10 To demonstrate the proposed scheme's compliance with the Conservation of Habitats and Species Regulations 2017 (as amended) and document the Habitats Regulations Assessment process that has been undertaken, a Habitats Regulations Assessment: No Significant Effects Report [TR010060/APP/6.8] has been included in the DCO application.
- 10.1.11 A Statement of Statutory Nuisances [TR010060/APP/6.9] identifies the matters set out in section 79 of the Environmental Protection Act 1990 in respect of statutory nuisances and considers whether the proposed development would engage one or more of those matters. Where any matters may be potentially engaged, this statement sets out the proposals for mitigating or limiting them.

11 Volume 7: Other Documents

- 11.1.1 A range of additional documents have been submitted as part of the DCO application. These documents are not legally required but are intended to provide useful information on the proposed scheme and aid detailed understanding of the DCO application and its justification.
- 11.1.2 The Case for the Scheme [TR010060/APP/7.1] Accordance Tables are presented in the appendices to the Case for the Scheme which explain how the proposed scheme aligns with government policy in the NNNPS, EN-1 and EN-4 in both adopted and draft versions. The Case for the Scheme [TR010060/APP/7.1] sets out the need for the proposed scheme, the objectives that it seeks to address, options and alternatives considered of the proposed scheme over time. It sets out how the proposed scheme meets its objectives and how it aligns with government policy in the NNNPS, EN-1 and EN-4.
- 11.1.3 The Transport Assessment [TR010060/APP/7.2] assesses the impact of the proposed scheme on elements of the strategic and local highway network, road safety, and local sustainable modes of transport.
- 11.1.4 The Combined Modelling and Appraisal Report [TR010060/APP/7.3] assesses the impact of the proposed scheme on elements of the wider highway network.
- 11.1.5 The Design and Access Statement [TR010060/APP/7.4] presents a simple introduction to the proposed scheme's context and details the design and how it has been developed. It also contains a review of local and national planning policy.
- 11.1.6 The Equalities Impact Assessment [TR010060/APP/7.5] sets out the equality impact screening and assessment of the proposed scheme.
- 11.1.7 The Interrelationship Document [TR010060/APP/7.6] sets out how the proposed scheme relates to relevant major development proposals and Nationally Significant Infrastructure Projects.
- 11.1.8 The Outline Construction Traffic Management Plan [TR010060/APP/7.7] sets out measures to manage traffic on construction sites activities, including

diversions for walkers, cyclists and horse riders. The key aims of the Outline Construction Traffic Management Plan is to ensure all mitigation, DCO requirements, consents and licences are met and to minimise and manage the risk of adverse traffic impacts.

- 11.1.9 The Borrow Pits Report [TR010060/APP/7.8] presents the rationale for inclusion of borrow pits to support the construction of the proposed scheme and explains why the proposed locations have been selected.
- 11.1.10 The Replacement Land Statement [TR010060/APP/7.9] sets out the legal requirements, the options considered and proposed replacement land to compensate for the loss of public open space for members of the public.
- 11.1.11 The Design Principles [TR010060/APP/7.10] presents the proposed schemes design principles which have been applied to the proposed scheme's design and detailed design principles.

12 Glossary and abbreviations

Abbreviations and definitions used in the DCO application for the proposed scheme.

Term	Acronym or Abbreviation	Meaning/Definition
A12 Members' Forum		Quarterly forum with elected Councillors in Essex. Including County, District and Borough Councillors.
Abnormal Indivisible Load	AIL	A load that cannot be divided for the purpose of being carried on a road without undue expense or risk of damage.
Above ordnance datum	AOD	Vertical datum used by the Ordnance Survey as the basis for deriving altitudes on maps.
Accessibility		The ability of users to access land, property, infrastructure, businesses and community facilities.
Acute impact		Occurs as a result of a severe, usually transient, event. For road runoff, acute pollution is usually the result from a spillage of pollutants but can result from routine runoff.
Advanced works		Advanced works would be undertaken prior to consent for the DCO application being granted, which would be secured through separate planning consents and landowner agreements outside of the powers contained in the DCO.

Additional mitigation		Requires further activity (after consideration of embedded and standard mitigation) in order to achieve the anticipated outcome. It is described in the aspect chapters of the Environmental Statement and secured through the Register of Environmental Actions and Commitments and the Development Consent Order (DCO).
Additive		Where similar types of impact from a scheme or different developments affect a receptor at the same time and in a similar way, e.g. loss of two pieces of woodland of 1ha, resulting in 2ha cumulative woodland loss overall.
Adjusted Benefit Cost Ratio	Adjusted BCR	The ratio of the sum of Level 1 and 2 PVBs to PVC
Advanced Directional Sign	ADS	Sign giving road users route information regarding a junction ahead.
Advanced Motorway Indicator	AMI	Advanced Motorway Indicator, with optical feedback for enforcement.
Advanced works		Advanced works would be undertaken prior to consent for the DCO application being granted, which would be secured through separate planning consents and landowner agreements outside of the powers contained in the DCO.
Advice note		The Planning Inspectorate has published a series of advice notes that are intended to inform applicants, consultees, the public and others about a range of process matters in relation to the Planning Act 2008.
Affected Unaltered Traffic Links		In noise assessment, existing roads predicted to demonstrate in a 1dB or greater change in road traffic noise as a result of the Proposed Scheme. However, these roads would not be physically altered by the Proposed Scheme.
Affected Road	ARN	All roads that trigger the traffic screening criteria and adjoining roads within 200m.
Agglomeration		In traffic and economics assessment, benefits which come when firms and/or

		people locate near one another in geographical clusters
Aggregate		An umbrella term for bulk raw particulate materials used in infrastructure construction
Aggregate Apportionment		The National and Regional Guidelines for Aggregates Provision in England 2005-2020 (Department for Communities and Local Government, 2009) set out how much aggregate should be provided for in each of the English sub-national areas. The apportionment targets set out in the Essex Minerals Local Plan (ECC, 2014) ensure that district, borough, and city planning authorities with mineral resources, plan for and protect identified mineral resources.
Agricultural landholdings		Land and associated infrastructure for the purpose of agricultural production, e.g. arable farming, dairy farming etc.
Agricultural Land Classification	ALC	The Agricultural Land Classification system forms part of the planning system in England and Wales. It classifies agricultural land into five categories according to versatility and suitability for growing crops.
Air Quality Management Area	AQMA	An area declared by a local authority which has been determined will exceed the relevant air quality strategy objective.
Air Quality Objective	AQO	The threshold below which harmful effects from pollutant exposure are not expected, set out within the Air Quality Standards Regulations 2010
Air Quality Threshold		Generic term to represent the relevant pollutant averaging period and concentration value described by the air quality strategy objectives or EU limit values.
Alignment		The horizontal (lateral) or vertical (height) position of a road. It can be defined by a series of horizontal tangents and curves or vertical crest and sag curves, and the gradients connecting them.
Alluvium		Deposits of clay, silt or sand left by running water.

Amino Acid Racemisation		A scientific dating technique which relates changes in amino acid molecules in organic matter to the time elapsed since they were formed.
Analysis of Monetised Costs and Benefits	AMCB	In transport and economic assessment, the conversion of changes due to a Proposed Scheme into an estimated monetary value.
Ancient Woodland Inventory Site		The Ancient Woodland Inventory identifies over 52,000 ancient woodland sites in the UK. Ancient woodland in England is defined as woodland that has existed since 1600 or before.
Annual Average Daily Traffic	AADT	An estimate of the average daily traffic along a defined segment of roadway. This value is calculated from short-term counts taken along the same section, which are then factored to produce the estimate of AADT. Because of this process, the most recent AADT for any given roadway will always be for the previous year.
Annual Average Weekday Traffic	AAWT	The daily number of vehicles passing a point in the road network, averaged over a full year excluding weekends.
Annual Exceedance Probability	AEP	Refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which may be calculated to have a 1% chance to occur in any one year, is described as a 1% AEP event.
Application Document		A document submitted to the Planning Inspectorate as part of the application for development consent.
Appropriate assessment		The assessment of the impact on the integrity of a European site of a project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives.
Aquifer		A subsurface layer or layers of rock or other geological strata of sufficient porosity and permeability to allow either a significant flow of groundwater or the abstraction of significant quantities of groundwater.

Aquitard		An aquitard is a zone within the earth that restricts the flow of groundwater from one aquifer to another. A completely impermeable aquitard is called an aquiclude or aquifuge.
Arboricultural impact assessment		An assessment of the effect of the proposed scheme on existing trees.
Arboriculturist		Person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction (BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations).
Archeological Geophysical Survey		Non-intrusive and non-destructive techniques used to determine the presence or absence of anomalies likely to be caused by archaeological features, structures or deposits, as far as reasonably possible, within a specified area or site on land, in the inter-tidal zone or underwater. Geophysical survey determines the presence of anomalies of archaeological potential through measurement of one or more physical properties of the subsurface.
Archeological Watching Brief		A formal programme of archaeological observation and investigation conducted during any operation carried out for non-archaeological reasons.
Areas Susceptible to Groundwater Flooding		Areas susceptible to groundwater flooding is a strategic scale map showing groundwater flood areas on a 1km square grid. It was developed specifically by the Environment Agency for use by Lead Local Flood Authorities for use in Preliminary Flood Risk Assessment as required under the Flood Risk Regulations.
Asbestos-containing material	ACM	Material that contains asbestos fibres.
Aspect		This refers to an environmental topic (e.g. air quality, biodiversity, noise).
Asset delivery		Asset delivery is where National Highways England is directly responsible for managing all aspects of the operation of the network.

		This includes determining and managing what routine maintenance activities are undertaken and capital renewal and improvement schemes.
At grade		On the same level. For example, an at grade junction is two or more roads meeting or crossing on the same level.
Atmospheric dispersion modelling		The mathematical computation of the dispersal of emissions as they travel through the ambient atmosphere.
Attenuation storage		Attenuation storage is a means of temporarily storing surface water runoff. This is achieved by means of flow restriction at the drainage system outlet with the surface water backing up into storage upstream. The surface water is then released downstream at a controlled rate to a watercourse or sewer system.
Attenuation pond		An attenuation pond is a landscaped and vegetated depression in the ground that can contain a shallow pool of water below the outlet pipe invert level. An attenuation pond provides both the attenuation and treatment of surface water runoff. The attenuation storage is provided above the shallow pool of water.
A-weighting		This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
Automatic Traffic Count	ATC	Equipment placed on a road that counts traffic.
Automatic Urban and Rural Network	AURN	The UK's largest automatic monitoring network and the main network used for compliance reporting against the Ambient Air Quality Directives.
Automated Number Plate Recognition	ANPR	Automated Number Plate Recognition is a technology that reads vehicle registration plates to create vehicle location data.
Backfilling		Backfilling means a recovery operation where waste is used in excavated areas (such as underground mines, gravel pits) for

		the purpose of slope reclamation or safety or for engineering purposes in landscaping and where the waste is substituting other non-waste materials which would have had to be used for the purpose.
Background concentration		The ambient pollutant concentration from multiple sources.
Barn Owl Nest		A site used by barn owls for nesting and raising of young, legally protected when in use for nesting.
Barn Owl Roost		A site used by a barn owl to roost/rest but not nest.
Baseflow Index		The proportion of the flow in a watercourse made up of groundwater and discharges. Base flow sustains the watercourse in dry weather.
Baseline		In EIA, 'baseline conditions' are the environmental conditions in existence before the occurrence of an impact from a development, i.e. they are the existing conditions that would be affected.
Baseline (in context of landscape and visual)		Work to provide an outline understanding of landscape and visual conditions before or without implementation of the project, requiring a mix of desk study consultation and field work. (DMRB LA 107)
Base Year (Traffic Model)		The outputs of the traffic model coinciding with the year the traffic data was collected.
Basic Noise Level	BNL	The BNL is a measure of source noise at 10m before any corrections, for example for distance, are applied.
Bat Roost		A bat's home
Batter slope	BS	In construction, a batter slope is a receding slope of a wall, structure or earthwork. The term is used with buildings and non-building structures to identify when a wall is intentionally built with an inward slope.
Bedrock geology		Solid bedrock formations underlying superficial deposits (if present).
Bed Substrate		The material that rests at the bottom of a stream and along the channel margins.

Below ground level	bgl	A term typically accompanied by a depth in metres to denote a point that occurs beneath the surface of the ground.
Benefit Cost Ratio	BCR	The ratio of benefits to costs
Best and Most Versatile	BMV	This is the land which is most flexible, productive and efficient in response to inputs and which can best deliver future crops for food and non-food uses such as biomass, fibres and pharmaceuticals.
Best Overall Environmental Outcome		A departure from the waste hierarchy which delivers better overall environmental outcomes.
Best Practicable Means	BPM	Measured to reduce noise and vibration from construction activities that are reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to the financial implications.
Bill of Quantities	BoQ	A document containing details on the volumes of excavated arisings from, and materials required for, a development.
Blue Land		Temporary possession of land and permanent acquisition of rights.
Borehole	BH	A hole bored into the ground, usually as part of investigations, typically to test the depth and quality of soil, rock and groundwater. A borehole can also be used to dewater the ground.
Borrow pit		A pit resulting from the excavation of material for use in construction
Bridge	BR	Bridge (when used as part of a Proposed Scheme's shortlist route reference).
Bridleway	BR	A route along which the general public has rights to travel on foot or horseback. Cyclists may use a bridleway but are obliged to give way to other users on foot or horseback.
British Standard	BS	British Standards are the standards produced by the British Standards Institution, which is incorporated under royal charter and formally designated as the national standards body for the UK.

British Standards Institution	BSI	The national standards body of the United Kingdom which produces technical standards for various industries.
Brownfield		A previously developed parcel of land which is or was occupied by permanent structures.
Businesses		Land and buildings for the purpose of commercial/ industrial enterprise.
Bund		An embankment structure
Bypass oil separator		Bypass oil separators are structures designed to separate gross amounts of oil and large-size suspended solids from surface water. They do this by allowing the light non-aqueous phase liquids (LNAPL) to float and large sediment particles to sink. The separated oils and sediment particles are then removed manually as required.
Carbon Budgets		A carbon budget, defined in accordance with the Climate Change Act 2008, places a restriction on the total amount of greenhouse gases the UK can emit over a defined five-year period.
Carbon Dioxide Equivalent	CO ₂ e	Carbon dioxide equivalent (abbreviated as CO ₂ e) is a metric used to compare the emissions of various greenhouse gases, based on their global-warming potential (GWP), by converting amounts of other gases to the equivalent amount of CO ₂ with the same GWP. For example, the GWP for methane (CH ₄) is 25, and for nitrous oxide (N ₂ O) it is 298. This means that an emission of 1 tonne of CH ₄ is equivalent to an emission of 25 tonnes of CO ₂ and an emission of 1 tonne of N ₂ O is equivalent to 298 tonnes of CO ₂ .
Carbon Emissions		Shorthand for emissions of any of the seven GHGs that contribute to climate change.
Carriageway		The width of a highway that can be used by motorised vehicles and non-motorised users, formed by a number of lanes. Dual two-lane means two lanes in each direction, and dual three-lane means three lanes in each direction (dual two-lane and three-lane carriageways have a central reserve to

		separate the traffic travelling in each direction).
Carrier drain		A carrier drain is a closed conduit / pipe that conveys collected surface water runoff. Typical materials used include clay, high-density polyethylene, concrete and ductile iron.
Catchment area		A catchment area is a contributing area from which surface runoff flows off the ground topography and into to a drainage system located at the catchment low point. The drainage system can be a river, drainage ditch or a formal engineered drainage system (with pipework, flow control structures, etc.).
Catchpit chamber		Catchpits are a precast concrete drainage product that are recommended for use as a filter and collector in land drainage systems that do not make use of any sort of geo-membrane. A catchpit is essentially an empty chamber with an inlet pipe and an outlet pipe set at a level above the floor of the pit. Any sediment carried by the system settles out while in the catchpit, from where it can be periodically pumped out or removed.
Category 1, 2, and 3 changes		<p>For the supplementary consultation, design changes were split into three categories:</p> <p>Category 1 changes: the main changes proposed as a result of the updated design which were likely to result in a change to the environmental information presented at statutory consultation.</p> <p>Category 2 changes: further changes as a result of the updated design. These were changes that also involved an environmental change but those that were considered less significant in environmental terms and which were potentially more localised.</p> <p>Category 3 changes: minor changes as a result of the updated design. The majority of these involved a change to the environmental information presented at</p>

		statutory consultation and which were generally more localised in nature.
Category 4 Screening Levels		The Category 4 Screening Levels represent the concentration of a contaminant in the soil below which a site is definitely not classed as 'Contaminated Land' as defined by Part 2A of the Environmental Protection Act.
Chart Datum		The level of water from which charted depths displayed on a nautical chart are measured.
Characteristics (in context of landscape and visual)		Elements or combination of elements, which make a particular contribution to distinctive character. (DMRB LA 107)
Chartered Environmentalist	Cenv	Chartered Environmentalists come from a broad range of professions across industry, government, education and the public sector. The CEnv qualification denotes sound knowledge, proven experience and a profound commitment to sustainable best practice within their particular profession and field of expertise.
Chronic Impact		The result of ongoing low levels of pollution which can result in the transport and accumulation of sediment-bound pollutants over a longer period of time (months/years).
Cill		An underwater ledge
Circular economy		A circular economy is an alternative to a traditional linear economy (make, use, dispose) in which resources are kept in use for as long as possible, extracting the maximum value from them whilst in use, then recovering and regenerating products and materials at the end of each service life.
Closed-circuit television	CCTV	Highways England CCTV cameras are used to monitor traffic flows on the English motorway and trunk road network primarily for the purposes of traffic management.
Class 1 material		General granular fill material defined and tested in accordance with BS 1377: Part 2
Class 2 material		General cohesive fill material defined and tested in accordance with BS 1377: Part 2

Class 4 material		Landscape fill material defined and tested in accordance with BS 1377: Part 2
Class 5 material		Topsoil defined and tested in accordance with BS 1377: Part 2
Class 6 material		Selected granular fill material defined and tested in accordance with BS 1377: Part 2
Class 6 engineering fill		A well graded granular material, used for a road subbase for example.
Climate Change		Long-term variations in global temperature and weather patterns caused by natural and human actions.
Climate Scenario		UKCP18 uses emissions scenarios, called Representative Concentration Pathways (RCPs). RCPs specify the concentrations of greenhouse gases that would result in target amounts of radiative forcing at the top of the atmosphere by 2100, relative to pre-industrial levels. Four forcing levels have been set: 2.6, 4.5, 6.0 and 8.5W/m ² . These create four RCPs that are used in UKCP18: RCP2.6, RCP4.5, RCP6.0 and RCP8.5.
Clinical Health		Having to do with the examination and treatment of patients. Health status of individual patients.
Code of Construction Practice	CoCP	Contains control measures and standards to be implemented by the Proposed Scheme, including those to avoid or reduce environmental effects.
Cohesive fill materials		Fine grained and often with high water content such as clays and silts
Colchester Braintree Borders Garden Community	CBBGC	Cross boundary garden community that was proposed near Marks Tey. Proposals for this garden community were dropped from the North Essex Authorities' Shared Strategic Section 1 Plan.
Cold Spell Duration Index		Count of days with at least six consecutive days when daily minimum temperature is below the 10th percentile.
Combined drainage and kerb system	CKD	Kerb combining a closed profile hydraulic conduit with slots

Combined filter drain		A combined filter drain system drains the highway surface, any adjacent grassed catchments (e.g. cutting slopes and external natural catchments) and highway subsurface drainage.
Combined sewer overflow	CSO	A relief structure in combined sewer systems to divert flows in excess of the peak design flow of the sewage treatment plant.
Compulsory acquisition		The compulsory acquisition of land or buildings for public interest purposes.
Community		A group of people living in the same place or having a particular characteristic in common.
Community Land and Assets		Land, buildings and infrastructure providing a service/resource to a community, e.g. open spaces, village greens, village halls, healthcare and education facilities.
Compensation Code		The national compensation code (the compensation code or the land compensation code) is the collective term for the principles derived from statute and case law, relating to compensation for compulsory acquisition, which ensures that when land is needed for an infrastructure project, the owners receive compensation to help them relocate. The code also ensures that those who experience real, physical events, for example vibration or noise, from a scheme once it is in operation, are entitled to compensation.
Conservation Area		An area designated under Section 69 of the Planning (Listed Buildings and Conservation Areas) Act 1990 as being an area of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance.
Considerate Constructor Scheme	CCS	A not-for-profit, independent organisation founded in 1997 to raise standards in the construction industry.
Construction		Activity on and/or offsite required to implement the Proposed Scheme. The construction phase is considered to commence with the first activity on site (e.g.

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		creation of site access), and ends with demobilisation.
Construction compound		A compound used during construction for the storage of material, assembly of components or for other construction related activities.
Construction Demolition Waste	CDW	Waste arisings from activities such as the construction or demolition of buildings and civil infrastructure, road surfacing and maintenance. Includes materials such as concrete, bricks, wood, glass, metals, plastic and excavated soil.
Construction Environmental Management Plan	CEMP	The primary environmental management document that defines the procedures for achieving the objectives set out in the environmental policy. It incorporates environmental performance targets set for the Proposed Scheme.
Construction Industry Research Information Association	CIRIA	A not-for-profit, independent organisation that facilitates a range of collaborative activities to help improve the construction industry.
Construction Logistics and Community Safety	CLoCS	A national Standard that requires all stakeholders in construction to take responsibility for health & safety beyond the hoardings. It demands collaborative action to prevent fatal or serious collisions between vehicles servicing construction projects and vulnerable road users: pedestrians, cyclists, and motorcyclists.
Construction materials		Primary, recycled or secondary, and renewable sources of materials required for constructing a project.
Construction Traffic Management Plan	CTMP	A plan setting out the strategy and measures to be adopted with respect to highway and transportation issues for the Proposed Scheme . The CTMP supports the DCO application and would be embedded within the eventual construction contractor documentation and will form an overarching and comprehensive management procedure for the contractor to adhere to.
Consultation Report		Applicants have a duty to take into account all responses to their statutory consultation

		at the pre-application stage. The Consultation Report summarises all responses and is submitted with the DCO application. The Consultation Report explains how the Applicant has had regard to consultation responses.
Contraflow		A temporary arrangement where traffic on a road is transferred from its usual side to share the other half of the carriageway with traffic moving in the opposite direction.
Correlation coefficient		The linear relationship between predicted and observed data. A value of zero means no relationship and a value of 1 means absolute relationship.
Core traffic growth		The central traffic growth forecast
Cost Estimation Summary Sheet	CESS	Highways England's Commercial Services Division sheet, for estimating Proposed Schemes' costs.
Costs and Benefits Appraisal – Light Touch	COBALT	Department for Transport's accidents appraisal software
Cost-Benefit Analysis	CBA	A systematic approach to estimating the strengths and weaknesses of alternatives, used to determine options that provide the best approach to achieve benefits while preserving savings.
Costs	-22:22	Expenditure to build a road (CAPEX) and to operate, maintain and renew a road (OMR)
Couch		With regard to otters, a couch is a daytime resting location. They are usually above ground and often consist of a roughly circular area of flattened vegetation.
Cropmark		An effect expressed in the differential growth or ripening of crops caused by sub-surface archaeological features. Differential drying of exposed earth can reveal similar features and these effects are sometimes referred to as soilmarks. Such marks can reveal buried archaeological sites that are not visible from the ground.
Culvert		A tunnel (pipe or box-shaped) carrying a stream, open drain or utility equipment under a feature such as a road or railway.

Cumulative effects		Effects upon the environment that result from the incremental impact of an action when added to other past, present or reasonably foreseeable actions. Each impact by itself may not be significant but can become a significant effect when combined with other impacts.
Curtilage		<p>Legally defined as the enclosed space of ground and buildings immediately surrounding a dwelling-house, or the open space situated within a common enclosure belonging to a dwelling-house.</p> <p>Used in relation to listed buildings. As defined in Section 1(5) of the Planning (Listed Buildings and Conservation Areas) Act 1990, curtilage of a listed building is 'any object or structure within the curtilage of the building which, although not fixed to the building, forms part of the land and has done so since before 1st July 1948 shall be treated as part of the building.'</p>
Cut and fill balance		Assessment outcome of the volume of materials generated through excavation (cut) and reused (fill, typically in embankments) to achieve a design
Cutting		In road construction, where the route is cut into the ground such that its vertical alignment is lower than the surrounding ground level. Often used on hilly terrain and to achieve safe gradients for roads.
Cutting (earthwork)		Excavation of earth material to lower the ground level on which a road would be positioned, in order to help reduce noise and/or visual impacts.
Cycle track		A way constituting or comprised in a highway, being a way over which the public have the following rights of way - a right of way on pedal cycles (other than pedal cycles which are motor vehicles within the meaning of the Road Traffic Act 1988) with or without a right of way on foot. For the purpose of the proposed scheme, all the cycle tracks created under the scheme include a right of way on foot.

Dead hedging		Retained cut shrubby vegetation (often used to temporarily infill gaps in hedgerows whilst new planting matures).
Decibel		The scale on which sound pressure level is expressed. In air it is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure ($2 \times 10^{-5} \text{Pa}$).
Defra's Emission Factor Toolkit		Toolkit used to estimate vehicle emissions based on traffic flows and speeds.
De-mountability		Means structures and assets are designed to allow destruction-free disassembly and reassembly responding to changing structural demands, refurbishment or removal (e.g. through modular, flexible, adaptable and upgradable components with detachable connections).
Department for Business, Energy and Industrial Strategy	BEIS	A department of the UK government, with responsibility for business, industrial strategy, and science and innovation with energy and climate change policy.
Department for Communities and Local Government	DCLG	The former name of the Ministry of Housing, Communities and Local Government (MHCLG).
Department for Transport	DfT	The government department responsible (alongside agencies and partners) for the English transport network and a limited number of transport matters in Scotland, Wales and Northern Ireland that have not been devolved.
Department of Energy and Climate Change	DECC	The UK Government department formerly responsible for (among other things) energy and climate change issues, including the security of the UK's energy supplies. These functions have now been transferred to BEIS.
Deposit model		Mapping of the underlying geology of an area, identifying the differing character of deposits.
Deposit model		A method of identifying the character and degree of survival of buried archaeological remains over a specified area using the results of previous excavations and other

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		intrusive archaeological investigations to estimate the nature of the archaeology over a wider area.
Design for resource efficiency		Making the best use of materials, water and energy over the lifecycle of built assets to minimise embodied and operational carbon.
Design Manual for Roads and Bridges	DMRB	Provides standards relating to the design, assessment and operation of trunk roads, including motorways, in the United Kingdom.
Design year		Term used to describe the situation 15 years after scheme opening.
Design, Build, Finance and Operate	DBFO	A way of creating Public Private Partnerships (PPPs) by funding public infrastructure Proposed Schemes with private capital.
Design, Build, Finance, Maintain	DBFM	Method of procurement where a party is responsible for the design, construction, financing and maintenance of an asset. Often used in Public Private Partnership arrangements for infrastructure Proposed Schemes.
Desire line		an unplanned route or path (such as one worn into a grassy surface by repeated foot traffic) that is used by pedestrians in preference to or in the absence of a designated alternative (such as a paved pathway)
Desk-based assessment	DBA	A document produced to assess the overall heritage resources of a defined area. This is primarily performed without the aid of archaeological field investigations, through the use of Historic Environment Records and archive materials.
Detailed Quantitative Risk Assessment (in relation to geology and soils)		A Detailed Quantitative Risk Assessment involves detailed or supplementary investigation to confirm contaminant linkages and to identify or develop site-specific assessment criteria.
De-trunk		The transfer of trunk roads from National Highways' responsibility to the local highway authority.

Development		Any proposal that results in a change to the landuse, landscape and/or visual environment.
Development Consent Order	DCO	Introduced by the Planning Act in 2008, a DCO is the means of obtaining permission for developments categorised as Nationally Significant Infrastructure Proposed Schemes (NSIP).
Development Consent Order application	DCO application	The Proposed Scheme Application Documents, collectively known as the 'DCO application'.
Development land		Land identified in national or local plans, policies or strategies for development (including intensification of existing uses) and land subject to planning permission.
Dewatering		Dewatering refers to the removal of groundwater and/or surface water from a location to facilitate construction.
DfT Road Traffic Forecasts		Government's traffic forecast of future traffic growth, used to forecast LGV and HGV growth in the A12 traffic model.
DIADDEM		Dynamic Integrated Assignment & Demand Modelling, software tool to set-up variable demand models in accordance with TAG
Diffusion tube		A passive pollution monitoring device.
Directional closures		Prohibition of one direction of traffic while the opposing direction of traffic is maintained.
Disbenefit		A negative benefit
Discharge		The volume of flow passing a point in a given time period.
Discount rate		The annual percentage rate at which the present value of future monetary values is estimated to decrease over time
Discounting		A technique used to compare costs and benefits occurring at different points of time
Distributional Impact	DI	The variance of transport intervention impacts across different social groups. The appraisal of DIs is mandatory in the

		appraisal process and is a constituent of the Appraisal Summary Table (AST)
Distributional Impact Appraisal	DIA	Distributional Impact Appraisal
Disposal		Any operation which is not recovery, even where the operation reclaims substances or energy as a secondary consequence.
Diversion route	-	A set of approved routes to follow in case of closure of motorway / major A-roads.
Do-minimum	DM	The scenario that represents the situation that would occur without the project in operation, which includes permitted developments.
Do-something	DS	The scenario that represents the situation that would occur with the project in operation, which includes permitted developments.
Drainage CCTV survey		A drainage CCTV survey is a camera drain survey that enables the viewing of the structural integrity of drainage pipework, the identification of potential blockages and the investigation of drainage system routes.
Driver stress		The adverse mental and physiological effects experienced by a driver traversing a road network. Factors influencing the level of stress include road layout and geometry, surface riding characteristics, junction frequency, and speed and flow.
Dual 2 lane all-purpose road	D2AP	A road that has 4 lanes in total, with 2 lanes in each direction. An all-purpose road is available for all types of traffic
Dual 3 lane all purpose road	D3AP	A road that has 6 lanes in total, with 3 lanes in each direction. An all-purpose road is available for all types of traffic.
Duty of care		The duty of care is a legal requirement for those dealing with certain kinds of waste to take all reasonable steps to keep it safe and is set out in the Environmental Protection Act 1990 (as amended). It applies to anyone who is a holder of household, industrial and commercial waste, known as controlled waste.

Dynamic clustering		Benefits come when firms and/or people locate near one another in geographical clusters by changing their spatial location
Dynamic Integrated Assignment & Demand Modelling	DIADDEM	Software tool to set-up variable demand models in accordance with TAG
Dynamic Integrated Assignment and DEMand Model	DIADDEM	DfT software for finding equilibrium between demand and supply in a transport model
Earthworks		Engineering works created through the processing of parts of the earth's surface involving quantities of soil or unformed rock.
East London Highway Assignment Model	ELHAM	TfL's East London Highway Assignment Model
Eastbound	EB	Direction of travel
East of England Forecasting Model	EEFM	A model developed by Oxford Economics which can Proposed Scheme economic, demographic and housing trends into the future, and allow users to produce theoretical scenarios under which the impacts can be monitored. It provides economic, demographic and housing forecasts for the East of England and its constituent local authorities.
Effect		Term used to express the consequence of an impact. The significance of effect is determined by correlating the magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
Ellenberg N value		An indication of soil fertility based on nitrogen preference, on a scale of 1 to 9, where a value of 1 indicates extremely infertile soil and a value of 9 indicates extremely rich soil.
Embankment		Artificially raised ground, commonly made of earth material, on which the carriageway is laid.
Embedded mitigation		Design principles and features integrated into the proposed scheme design to reduce adverse environmental effects

Emergency Roadside Telephones	ERT	Telephones used to connect motorists who require assistance in an emergency.
Emission factors		The emission rate of a pollutant attributable to a specific activity.
Employment and support allowance	ESA	Money for people who have limited capability for work because of their sickness or disability but do not get Statutory Sick Pay.
Enclosure		An area of land enclosed by a boundary ditch, bank, wall, palisade or other similar barrier.
End of first life		The point at which an asset is no longer useful in the capacity for which it was originally intended.
Enhancement		A beneficial measure that is over and above what is required to mitigate the adverse effects of a scheme. Enhancements do not factor into the assessment of effects.
Environment Agency		The Environment Agency is a public body with responsibilities relating to the protection and enhancement of the environment in England and Wales.
Environmental Impact Assessment	EIA	A process by which information about environmental effects of a proposed development is collected, assessed and used to inform decision making. For certain projects, EIA is a statutory requirement.
Environmental Management Plan	EMP	A site-specific plan (or set of plans) developed to ensure that appropriate environmental management practices are followed during the construction and operational phases of a scheme. A first iteration EMP has been included in the DCO application. This will then be updated before construction starts (second iteration), and again after completion of works before the proposed scheme becomes operational (third iteration).
Environmental Masterplan		Plan which illustrates the mitigation measures integrated into the design of the proposed scheme.

Environmental quality standard	EQS	The maximum permissible concentration of a potentially hazardous chemical. The EQS is used to assess the risk to the health of aquatic flora and fauna.
Environmental Statement		A statutory document produced in accordance with the EIA Regulations, to report the EIA process.
Equality Act 2010		The Equality Act 2010 legally protects people from discrimination in the workplace and in wider society. Protected characteristics under the Equality Act 2010 are age, disability, gender reassignment, race, religion or belief, sex, sexual orientation, marriage and civil partnership, and pregnancy and maternity.
Equilibre Multimodal, Multimodal Equilibrium	EMME	A complete travel demand modelling system for urban, regional and national transportation forecasting.
Equivalent continuous sound pressure level	Leq	The equivalent continuous sound pressure level is the notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the A-weighted fluctuating sound measured over that period.
Essential mitigation		Mitigation critical for the delivery of a scheme which can be acquired through statutory powers. For the purpose of the proposed scheme, both standard and additional mitigation are considered essential mitigation.
EU Limit Value		Legally binding threshold for individual pollutants, as prescribed in the European Commission Ambient Air Quality Directive (2008/50/EC).
European Commission	EC	The executive body of the European Union responsible for proposing legislation, enforcing European law, setting objectives and priorities for action, negotiating trade agreements and managing and implementing European Union policies and the budget.

European protected species mitigation licence	EPSM licence	The licence issued that permits an activity affecting a European protected species, that would otherwise constitute an offence under the relevant legislation.
European sites		<p>Habitats Directive or Birds Directive sites including:</p> <p>Special Protection Areas (SPAs), and potential SPAs (pSPAs)</p> <p>Special Areas of Conservation (SACs), and candidate or possible SACs (cSACs or pSACs)</p> <p>Ramsar sites</p> <p>See also 'National Site Network'.</p>
European Union	EU	A political-economic union of member states that are located primarily in Europe.
Evaluation (in relation to cultural heritage)		A limited programme of non-intrusive and/or intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land, inter-tidal zone or underwater. If such archaeological remains are present, field evaluation defines their character, extent, quality and preservation, and enables an assessment of their significance in a local, regional, national or international context as appropriate.
Examination		Statutory process in where the Secretary of State will appoint an Inspector to carry out an independent examination
Examining Authority		The Examining Authority is appointed by the Secretary of State to examine an application for a Development Consent Order and make a recommendation.
Excluded route		Local road networks and accesses that construction traffic is not permitted to use, excluding vehicles associated with traffic management.

False cutting		A means of screening a linear feature such as a road or railway by forming embankments on both sides of the feature.
Fatalities and Weighted Injuries		A statistical measurement of all fatal and non-fatal injuries, with non-fatal injuries added up using a weighting factor to produce a total number of 'fatality equivalents'.
Features (in context of landscape and visual)		Particularly prominent, 'eye-catching' elements or characteristic components (i.e. tree clumps, church towers, or wooded skylines). (DMRB LA 107)
Filter drain		Filter drains are shallow trenches filled with stone/gravel that create temporary subsurface storage for attenuation, conveyance and filtration of surface water runoff. A perforated pipe is provided at the base of the filter drain to collect and convey the water to downstream drainage components.
Findspot		The approximate location at which stray finds of artefacts were found.
First study area (in relation to material assets and waste)		Project footprint (including temporary land-take) for which consent is being sought. The area within which construction materials would be consumed (used or deployed), and waste generated (including temporary compounds and storage areas).
Fleet Operators Recognition Scheme	FORS	A voluntary accreditation scheme which aims to raise the level of quality within fleet operations, and to demonstrate which operators are achieving exemplary levels of best practice in safety, efficiency, and environmental protection.
Flood defence		Infrastructure used to protect an area against floods, such as floodwalls and embankments; they are designed to a specific standard of protection (design standard).
Flood risk		The exposure, vulnerability and hazard associated with flooding.
Flood Risk Assessment		A flood risk assessment is an assessment of the risk of flooding to and from a proposed

		scheme from all flooding mechanisms. It also includes the identification of flood mitigation measures where required.
Floodplain		A floodplain is flat or nearly flat land adjacent to a stream or river, stretching from the banks of its channel to the base of the enclosing valley walls and (under natural conditions) experiences periods of flooding.
Flow dynamics		The manner in which flow behaves, i.e., turbulent flows, non-energetic and laminar flows.
Fluvial flooding		Flooding resulting from water levels exceeding the bank level of a Main River
Footpath		A highway over which the public have a right of way on foot only, not being a footway. A footpath is essentially a freestanding right of way (i.e. not alongside a carriageway).
Footway		A way comprised in a highway which also comprises a carriageway, being a way over which the public have a right of way on foot only. A footway is essentially a pavement alongside a carriageway – it is the part of a carriageway highway set aside for pedestrians.
Full closures of the carriageway		Complete closure of the carriageway to avoid any forms of movement of an unauthorised vehicle and people.
Full-time equivalent	FTE	Full-time equivalent employment is calculated by converting all employees' hours into full-time employees' equivalent – i.e. an employee who works half the hours of a full-time employee is equivalent to 0.5 FTE.
Geoarchaeology		The application of earth science principles and techniques to the understanding of the archaeological record.
GEH		The GEH Statistic; formula used in traffic engineering, traffic forecasting, and traffic modelling to compare two sets of traffic volumes.
Geographic Information System		Geographic Information System, software that stores, retrieve, manage, display, and

		analyse all types of geographic and spatial data.
Global Positioning System	GPS	A global navigation satellite system that provides geolocation and time information to a GPS receiver anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites.
Grade separation		Grade separation is a method of aligning a junction of two or more surface transport axes at different heights (ie grades) so that they will not disrupt the traffic flow on other transit routes when they cross each other.
Granular fill materials		Clean mixture of crushed stone or crushed or uncrushed gravel.
Gravity retaining wall		Gravity retaining walls are the walls which use their own weight to resist the lateral earth pressures.
Greater Essex		Greater Essex comprises Essex County Council, Southend-on-Sea Borough Council and Thurrock Council areas.
Green Belt		Designated parcels of land around cities and large built-up areas, which aim to keep this land permanently open or largely undeveloped. Green Belts are defined in Local Planning Authority's Development Plans (as per Town and County Planning Act 1947).
Green Book		HM Treasury's guidance on how publicly funded Proposed Schemes, programmes and policies should be appraised and evaluated
Green infrastructure		Networks of green spaces and watercourses and water bodies that connect rural areas, villages, towns and cities. (GLVIA3)
Green Land		Temporary possession of land.
Greenfield (land)		Undeveloped parcel of land.
Greenhouse gases	GHGs	A gaseous compound that absorbs infrared radiation and traps heat in the atmosphere. Greenhouse gases are usually expressed in terms of carbon dioxide equivalent (CO ₂ e).

Green infrastructure		Networks of green spaces and watercourses and water bodies that connect rural areas, villages, towns and cities. (GLVIA3)
Gross Domestic Product	GDP	Total value of all goods and services produced within an economy in one year
Gross Value Added	GVA	The measure of the value of goods and services produced in an area, industry or sector of an economy.
Ground gas		Gases such as carbon dioxide and methane, which are generated within the ground and/or within landfills, commonly from the breakdown of vegetative matter.
Ground investigation	GI	Several levels of investigation from desk-based research to onsite sampling to evaluate challenges related to soil/ground.
Ground Investigation Report		A Ground Investigation Report gives the designer's interpretation or judgement of the ground conditions as they pertain to the planned works and an assessment of the ground risks.
Groundwater		Water below ground level
Groundwater body		A distinct volume of groundwater within an aquifer.
Groundwater dependent terrestrial ecosystem	GWDTE	GWDTEs are wetlands which critically depend on groundwater flows and chemistries.
Guide planting		Placement of seeds, bulbs and/or plants in such an arrangement that it encourages movement of animals in a certain direction, e.g. by creating planted corridors that encourage movement along them or planted barriers that may deter species in a certain direction.
Gully		A gully (in the context of a highway drainage system) is a discrete surface water edge collection unit with an open grated top, a gully chamber and an outlet pipe to one or more sides.
H++		Defined as plausible 'high-end' climate change scenarios, which are typically extreme climate change scenarios on the

		margins or outside of the 10th to 90th percentile range presented in the 2009 UK climate change projections (also known as 'UKCP09').
Habitats Regulations Assessment	HRA	A HRA refers to the several distinct stages of assessment which must be undertaken in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended) if a plan or project may affect the protected features of a habitats site, before a decision can be made on whether to authorise it.
Hardstrip		A hardstrip provides a surfaced strip that abuts the carriageway (between the carriageway and verge). Reasons for providing a hardstrip include, but are not limited to, providing drainage surface area, preventing vegetation from encroaching on the carriageway, and allowing for vehicle overrun (e.g. due to driver error or evasive maneuverers).
Haul road/route		Temporary routes which will be used during construction by construction vehicles.
Haven Ports		The ports located at Felixstowe, Ipswich, Mistley and Harwich.
Hazardous waste		Defined in line with Article 3(2) of the Waste Framework Directive (Council Directive 2008/98/EC) as waste which displays one or more of the hazardous properties listed in Annex III of the Directive ¹ .
Health and Safety Executive	HSE	Non-departmental public body responsible for workplace health, safety and welfare regulation in Great Britain.
Health inequalities		The unfair and avoidable differences in exposure to health risk factors and to health status, health across the population, and between different groups within society. Note that where these are unfair and avoidable differences, these are also known as health inequities.
Heavy Duty Vehicle	HDV	Freight vehicles of more than 3.5 tonnes (e.g. lorries) or passenger transport vehicles of more than 8 seats (e.g. buses).

Heavy Goods vehicle	HGV	A commercial carrier vehicle with a gross vehicle weight of more than 3.5 tonnes.
Heritage assets		The historic environment assets such as archaeological remains, historic buildings and historic landscapes which have archaeological, architectural, artistic or historic value.
Her Majesty's Treasury	HMT	The UK government's economic and finance ministry, which maintains control over public spending, setting the direction of the UK's economic policy.
High Speed 1	HS1	A 109km high-speed railway between London and the UK end of the Channel Tunnel. The line carries international passenger traffic between the UK and continental Europe; it also carries domestic passenger traffic to and from stations in Kent and east London, as well as Berne gauge freight traffic.
High Speed 2	HS2	High Speed 2 rail line (planned high-speed railway between London Euston and the North West).
Highway Assignment Model	HAM	TfL's Highway Assignment Model
Highways Agency	HA	Precursor to Highways England. No longer exists but still mentioned in reference to previous Proposed Schemes or in older documents.
Highways Agency Traffic Information System	HATRIS	Highways England's traffic count and journey time database
Highways England	HE	A UK government-owned company with responsibility for managing the motorways and major roads in England.
Highways England Integrated Demand Interface	HEIDI	HEIDI is a bespoke DIADEM interface developed for by Highways England.
Historic England		A public body responsible for ensuring that England's historic environment is protected and improved.
Historic Environment Record	HER	Information services that seek to provide access to comprehensive and dynamic

		resources relating to the historic environment of a defined geographic area for public benefit and use.
Historic landfill		Sites where records of waste being received to be buried are now closed, meaning there is no Pollution Prevention and Control (PPC) permit or waste management licence in force. This also applies to landfills which had no permit to operate in the first instance, such as those which operated before the Control of Pollution Act 1974.
Historic landscape characterisation		A formal process of the study of the historic landscape, using an array of sources including historic maps, archaeological data and aerial photographs. Historic Landscape Characterisation identifies and describes the essential characteristics of the land being studied. The studied areas are recorded chiefly in GIS format as polygons.
HM Revenue & Customs	HMRC	The UK's tax, payments and customs authority.
Holocene		The name given to the current geological epoch which began approximately 11,650 years ago.
Holt		With regard to otters, a holt is a hole in the ground used as a sleeping and resting place. The most common type is a hole leading to a cavity beneath the roots of a bankside tree, although can take a variety of other forms.
Homes and Communities Agency	HCA	An executive non-departmental public body sponsored by the Department for Communities and Local Government. It helped create successful communities by making more homes and business premises available to the residents and businesses who need them. They also regulated social housing providers in England. HCA was replaced by Homes England in January 2018.
Host Authorities		Local authorities in which the proposed scheme passes through.
Hulk		With regard to trees, a 'hulk' refers to the large, ruined remains of a standing dead

		tree, sometimes retained for its historical importance or for the benefit of wildlife.
Hydromorphology		The scientific study of the form and function of rivers and the interaction between streams and the landscape around them.
Illustrative viewpoint		Chosen specifically to demonstrate a particular effect or specific issues, which might, for example, be the restricted visibility at certain locations. (GLVIA3)
Impermeable liner		An impermeable liner is a membrane that does not allow water or waterborne contaminants to pass through the structure which it is wrapped around. They are used to retain water and/or prevent the ingress of water into a structure.
In-combination effects (in relation to climate)		When a projected future climate impact (e.g. increase in temperatures) interacts with an effect identified by another aspect and exacerbates its impact.
Indirect tax revenues		Revenues from indirect taxes paid by road users
Inert waste		<p>Waste which meets one or more of the following criteria:</p> <p>It does not undergo any significant physical, chemical or biological transformations</p> <p>It does not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm to human health</p> <p>Its total leachability and pollutant content and the ecotoxicity of its leachate are insignificant and, in particular, do not endanger the quality of any surface water or groundwater</p> <p>See Directive 1999/31/EC and Council Decision 2003/33/EC.</p>

Infiltration		Infiltration is the process by which surface water either flowing or ponding on the ground surface drains into the soil naturally
Inflation		A measure of the increase in prices within the economy
Infrastructure and Proposed Schemes Authority	IPA	HMG's Infrastructure and Proposed Schemes Authority
Institute of Environmental Management and Assessment	IEMA	A professional body for environmental managers and EIA professionals.
Institution of Civil Engineers	ICE	A representative organisational body for professional civil engineers.
Interactive		Where different types of impact affect a receptor and interact to increase their combined significance, e.g. two discharges combine to have an effect on a species not affected by discharges in isolation.
Interchange		A term used to describe a grade separated junction that provides free flow from one mainline to another.
Interested Party		A person or persons with an interest in land affected by the application, or who has registered a relevant representation by the deadline set by the Planning Inspectorate after the application has been accepted.
International Organization for Standardisation	ISO	An international standard setting organisation composed of a network of national standards bodies.
Internet Protocol	IP	A set of rules governing the format of data sent over the Internet or other network.
Inter-project cumulative effects		The combined action of a number of different projects, in combination with the project being assessed, on a single resource/receptor.
Intra-project effects (interrelationship of effects)		The combined action of a number of different environmental aspect-specific effects upon a single resource/receptor. Also referred to as interrelationship of effects.

Invasive non-native species	INNS	Species that have been released either deliberately or accidentally outside their natural range, where they have become established and cause adverse ecological, environmental, or economic impacts.
Jowel		The end of a timber post made wider than the rest of its length on one face to accommodate tie-beams, wall-plates, etc.
Junction		A place where two or more roads meet.
Junctions 9		Traffic modelling software for roundabouts and priority junctions
Key construction material		Construction materials which, by weight, constitute the majority of material required to deliver the proposed scheme.
Key Performance Indicator	KPI	Measurable value that demonstrates how effectively a company is achieving key business objectives.
Kilometre	km	An SI unit of length, equivalent to a thousand metres.
Kilometres per hour	km/h	An SI unit of speed
L10 or LA10		Acoustic nomenclature indicating that the value is exceeded for 10% of the period of interest. This index, evaluated over the period 06:00 to 24:00, is commonly used to describe road traffic noise.
L90 or LA90		Acoustic nomenclature indicating that the value is exceeded for 90% of the period of interest. This index is taken to be a good indicator of the background noise level remaining at a location in the absence of any easily identifiable sources.
LA10,18h		The noise level, in dB, that is exceeded 10% of the time between 06:00 and 24:00.
Land use		The purpose that land is used for, based on broad categories of functional land cover, such as urban and industrial use and the different types of agriculture and forestry.
Landbank		A stock of land with planning permissions but where minerals development has yet to take place.

Landfill capacity		The known, forecast or estimated remaining landfill void space, either regionally or nationally. Landfill capacity is generally measured in cubic metres.
Landscape		An area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors. (GLVIA3)
Landscape and visual impact assessment	LVIA	A tool used to identify and assess the likely significance of the effects of change resulting from development both on the landscape as an environmental resource in its own right and on people's views and visual amenity.' (GLVIA3)
Landscape architect		Competent expert to mean: 1) Chartered Member of the Landscape Institute; or 2) member of a recognised equivalent landscape professional body. (DMRB LA 107)
Landscape character		A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse. (GLVIA3)
Landscape Character Area	LCA	These are single unique areas which are the discrete geographical areas of a particular landscape type. (GLVIA3)
Landscape character assessment		The process of identifying and describing variation in character of the landscape, and using this information to assist in managing change in the landscape. It seeks to identify and explain the unique combination of elements and features that make landscapes distinctive. (GLVIA3)
Landscape character type		These are distinct types of landscape that are relatively homogeneous in character. They are generic in nature in that they may occur in different areas in different parts of the country, but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation and historical land use and

		settlement pattern, and perceptual and aesthetic attributes. (GLVIA3)
Landscape component		Interplay of physical, natural and cultural factors of our surroundings. (DMRB LA 107)
Landscape effects		Effects on the landscape as a resource in its own right. (GLVIA3)
Landscape elements		Individual parts which make up the landscape, such as, for example, trees, hedges and buildings. (GLVIA3)
Landscape quality (or condition)		A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements. (GLVIA3)
Landscape receptors		Defined aspects of the landscape resource that have the potential to be affected by a proposal. (GLVIA3)
Landscape resource		Natural and physical attribute (i.e. soils, vegetation). (DMRB LA 107)
Landscape value		The relative value that is attached to different landscapes by society. A landscape may be valued by different stakeholders for a whole variety of reasons. (GLVIA3)
Land-take		The temporary acquisition or permanent loss of land as a result of the construction and/or operation of the Proposed Scheme.
Lane 1,2,3		A lane reference, starting with lane 1 from the nearside to lane 3 on the offside.
Lane closures		An act of closing a lane on a motorway.
Latrine		A term used to describe the small pits or holes in the ground in which badgers deposit their faeces. Generally a latrine will consist of several of these pits, although one or two is not uncommon. Latrines are frequently used as territorial markers of boundaries between social groups and are often located at prominent landscape features such as fences, hedges or trees.
Laydown area		An area used for the temporary storage of construction equipment and supplies.

Lden		The Lden is a noise index that is mainly used by the World Health Organisation and health professionals. It provides a single weight noise level taking into account the commonly used three periods of day (07:00 to 19:00), evening (19:00 to 23:00) and night (23:00 to 07:00). Before the noise levels from these three periods are added together, the evening period has a +5dB(A) correction applied and the night period a +10dB(A) correction applied.
Leaching		When soil loses water-soluble nutrients due to excessive rain or irrigation.
Level of Service	LOS	Used to assess the operation of traffic in junction modelling
Lead Local Flood Authority	LLFA	Local Authority responsible for taking the lead on local flood risk management. The duties of LLFAs are set out in the Flood and Water Management Act 2010.
L _{eq} or L _{Aeq}		Acoustic nomenclature indicating that a value is expressed in terms of the equivalent continuous sound pressure level.
LiDAR		Light Detection and Ranging is a remote sensing method that can be used to examine the surface of the Earth. In this instance it can enable the mapping of the ground topography for the determination of drainage catchments.
Life cycle stage		PAS 2080:2016 proposes a modular approach for the quantification of infrastructure related GHG emissions over a number of stages over the 'life cycle' of a project, namely 'before use (A)', 'use (B)' and 'end of life (C)'. These stages are further disaggregated into modules (e.g. product stage (A1–A3) and construction process stage (A4–A5)).
Light Duty Vehicle	LDV	A vehicle designed for light duty work, such as a small van.
Light Goods Vehicle	LGV	A motor vehicle used to carry goods with a total mass of up to 3.5 tonnes.

Light-emitting diode	LED	A semiconductor device that emits visible light when an electric current passes through it.
Limits of deviation	LoD	The tolerances, both laterally and vertically, that any parts of the Proposed Scheme can be constructed from the lines and situations shown on the Works Plans (Application Document 2.6) and the levels shown on the Engineering Section Drawings (Application Document 2.9).
Linear slot drainage		Linear slot drainage systems drain water along their entire length, rather than at one discrete point like a gully does. They comprise an enclosed channel with some form of grating placed over the top.
LinSig		Software tool which allows traffic engineers/planners to model traffic signals and their effect on traffic capacities and queuing.
Listed building		A building or structure designated under Section 1 of the Planning (Listed Building and Conservation Areas) Act 1990 as being of special architectural or historic interest.
Lnight		The free-field noise level in the LAeq index from 23:00 to 07:00.
Local Biodiversity Action Plan	LBAP	Local Biodiversity Action Plans set the focus for conservation of locally valued species and habitats.
Local nature reserves	LNRs	Sites that are designated by the local authority under Section 21 of the National Parks and Access to the Countryside Act 1949 for nature conservation which have wildlife or geological features that are of special interest locally.
Local Plan		The plan for the future development of the local area, drawn up by the local planning authority in consultation with the community. They define the priorities for an area, strategic policies, the framework for neighbourhood plans, land allocations, infrastructure requirements, housing needs, requirements for safeguarding the

		environment, measures for adapting to climate change, among others.
Local planning authority	LPA	The LPA is the planning department of a council body (district, borough, county, National Park or Greater London Authority), who carry out planning functions for a particular area'.
Local Transport Plan	LTP	Planning document produced by a local highway authority that sets out the transport planning policy framework within its area.
Local Wildlife Site	LWS	LWS are wildlife-rich sites selected for their local nature conservation value. They are identified and selected at a local level, often through a combination of local authorities, nature conservation charities and a variety of other experts. In many parts of the UK, they are the principal wildlife resource but their designation is non-statutory and their protection comes via the planning system.
London Area Transport Surveys	LATS	Annual travel demand survey of households in London by Transport for London.
Long term trend (LTT) adjustment factor	LTT	Adjustment factor applied to raw modelled nitrogen oxides (NOx) concentrations to account for over-optimism by Defra tools regarding the future uptake of low-polluting vehicles.
Longest dry spell		Highest number of consecutive days with <1mm rainfall.
Lower critical load		A quantitative estimate of exposure to a pollutant, below which significant harmful effects on specified sensitive elements of the environment are not expected to occur.
Lower Layer Super Output Area	LSOA	A geographic hierarchy used to report statistics for small areas with an average population of 1,500 people in England and Wales.
Lowest observed adverse effect level	LOAEL	The level above which adverse effects on health and quality of life can be detected.
Lux		A standardised unit of measurement of light level intensity.

M25 Motorway	M25	Orbital motorway that encircles most of Greater London.
Macrophyte		An aquatic plant large enough to be seen with the naked eye.
Magnitude		The scale, size or degree of change (impact) to the environment from an action upon it.
Magnitude of effect		A term that combines judgements about size and scale of the effect, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short or long term in duration. (GLVIA3)
Main construction compounds		Construction compounds that contain features, apparatus and provisions including office and welfare facilities, batching plants, waste management facilities, materials testing laboratory facilities, and CCTV traffic control facilities.
Main River		A watercourse shown as such on the Main River Map, and for which the Environment Agency has responsibilities and powers. N.B. Main River designation is not an indication of size, although it is often the case that they are larger than Ordinary Watercourses.
Mainline		The carriageway carrying the main flow of traffic, generally traffic passing straight through a junction or interchange
Manual of Contract Documents for Highway Works	MCDHW	The Model Contract documents for Highway Works which includes the instructions for tendering and typical contract documentation for the preparation of contracts for the construction, improvement and maintenance of the strategic road network in England, Scotland, Wales and Northern Ireland.
Material impact		An event/outcome that is a key decision-making consideration.
Matter		This relates to sub-topics of an environmental aspect (e.g. designated sites, protected species).
Maximum five-day precipitation		Highest value of rainfall accumulated over five days.

Meandering channel		A single channel that follows a winding course, with a sinuosity ratio typically over 1.5.
Medium Goods Vehicle	MGV	Goods vehicles weighing between 3.5 and 7.5 tonnes.
Mental health		A state of wellbeing in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.
Metapopulation		A metapopulation is a term used to refer to a regional/local group of connected populations of a single species. A common example in UK ecology is that of great crested newts which breed in, and live around, a cluster of ponds. Even though most adults consistently return to the same pond to breed, there will be some interchange of individuals between ponds.
Metre	m	SI unit of length.
MicroDrainage		MicroDrainage is a hydraulic drainage design software package from the software company, Innovyze, that models / optimises the performance and effectiveness of drainage systems, including SuDS.
Middle Layer Super Output Area	MSOA	A geographical dataset of census information, collated by the Office of National Statistics (ONS). Designed to contain 5,000 to 15,000 residents and 2,000 to 6,000 households.
Mineral area of search		A broad area within which mineral sites are sought for development.
Mineral consultation area	MCA	Geographical area, based on a mineral safeguarding area, where the district or borough council should consult the mineral planning authority for any proposals for non-minerals development.
Mineral planning authority	MPA	The mineral planning authority is the county council in two-tier parts of the country, the unitary authority or the national park authority responsible for minerals development planning and control.

Mineral preferred area		Areas of known resources where planning permission might reasonably be anticipated providing the proposals are environmentally acceptable, or appropriate conditions can be applied to mitigate adverse impacts.
Mineral resource		Natural concentrations of minerals in or on Earth's crust that are or may become of economic interest because they are present in such form, quality and quantity that there is the potential for eventual economic extraction. Generally, a mineral resource is known to exist within the boundaries outlined by British Geological Survey geological mapping.
Mineral safeguarding area	MSA	An area designated by a mineral planning authority which covers known deposits of minerals which are desired to be safeguarded from unnecessary sterilisation by non-mineral development. MSAs are different from mineral safeguarding sites, defined below, as Government guidance is clear that there is no presumption that resources defined in MSA would be worked.
Mineral safeguarding sites		Operational extraction sites or mineral sites specifically identified and allocated in strategic planning documents as those that would be mined or extracted.
Mineral specific sites		Areas with viable mineral resources where the landowners are willing to allow mineral development, and where granting of planning permission may be more likely than in a preferred area.
Ministry of Agriculture, Fisheries and Food	MAFF	A former department of the government responsible for agriculture, fisheries and food. In 2002, its responsibilities were merged with those of Defra.
Ministry of Housing, Communities and Local Government	MHCLG	Ministerial department supported by 12 agencies and public bodies, responsible for driving housing supply, increasing home ownership, boosting local growth and supporting communities with public services
Mitigation		The action of reducing the severity and magnitude of change (impact) to the environment. Measures to avoid, reduce,

		remedy or compensate for significant adverse effects.
Modular block retaining wall		Pre-cast blocks that are fit together to create a retaining structure.
Monte-Carlo simulation		A computational algorithm based on repeated random sampling to obtain cost estimates.
Motorised user		A collective term to describe people who make vehicle journeys.
Motorway Incident Detection and Automatic Signalling	MIDAS	A distributed network of traffic sensors designed to alert the local regional control centre to traffic flow and average speeds, and set variable message signs and speed limits.
Motorway Reliability Incidents And Delays	MyRIAD	Motorway Reliability Incidents And Delays appraisal software
MS4		The latest generation of Variable Message Signs, designed to display both pictograms and text; uses internationally recognised warning symbols and provides a dual colour display matrix for amber and red coloured characters or symbols.
Municipal waste		Municipal waste covers household waste and waste similar in nature and composition to household waste.
MyRIAD		Motorway Reliability Incidents and Delays, software tool used to assess the journey time reliability impacts of interventions or schemes affecting inter-urban motorways.
Narrow lane working		Width of the standard carriageway reduced to allow safe construction works on the adjacent lane.
National Cycle Network	NCN	A series of traffic-free paths and quiet, on-road cycling and walking routes that connect to every major town and city. These routes are promoted for both recreational and active travel purposes.
National Cycle Route	NCR	A cycle route part of the National Cycle Network created by Sustrans to encourage cycling throughout Britain.

National Grid Electricity Transmission	NGET	A UK company that builds and maintains the electricity transmission network in England and Wales.
National Grid Reference	NGR	A system of geographic grid references used in Great Britain to enable positional reference on the Ordnance Survey National Grid.
National Highways		National Highways is the public body that operates, maintains and improves England's motorways and major A-roads.
National Infrastructure Delivery Plan	NIDP	Document published by the UK Government, setting out its strategy for meeting the infrastructure needs of the UK economy.
National nature reserve	NNR	NNRs in England are sites designated by Natural England to protect some of the most important habitats, species and geology. A NNR is declared under the National Parks and Access to the Countryside Act 1949 or the Wildlife and Countryside Act 1981 (as amended).
National Planning Policy Framework	NPPF	The NNNPS sets out 'the need for, and the Government's policies to deliver, development of nationally significant infrastructure projects on the national road and rail networks'.
National Planning Policy Framework	NPPF	The National Planning Policy Framework was published in March 2012 by the UK's Department of Communities and Local Government, consolidating over two dozen previously issued documents called Planning Policy Statements (PPS) and Planning Policy Guidance Notes (PPG) for use in England. The NPPF was updated in February 2019 by the Ministry of Housing, Communities and Local Government.
National Planning Practice Guidance	NPPG	Supporting guidance to the NPPF, published by the Government in March 2014 as an online resource, available at: http://planningguidance.planningportal.gov.uk/ . It replaces previously published Government guidance, including that regarding flood risk.

National Policy Statement	NPS	NPS are produced by Government. They give reasons for the policy set out in the statement and must include an explanation of how the policy takes account of Government policy relating to the mitigation of, and adaptation to, climate change.
National Policy Statement for Electricity Networks Infrastructure (EN-5)	NPS EN-5	Sets out the needs for the Government's policy for delivery of major energy infrastructure and provides the primary basis for decisions taken by the Infrastructure Planning Commission (IPC) on applications it receives for electricity networks infrastructure.
National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)	NPS EN-4	Sets out the need for the Government's policy for delivery of major energy infrastructure and provides the primary basis for decisions by the Infrastructure Planning Commission (IPC) on applications it receives for gas supply infrastructure and gas and oil pipelines.
National Policy Statement for National Networks	NPSNN	The NPSNN sets out the need for, and Government's policies to deliver, development of Nationally Significant Infrastructure Proposed Schemes on the national road and rail networks in England. It provides planning guidance for promoters of Nationally Significant Infrastructure Proposed Schemes on the road and rail networks, and the basis for the examination by the Examining Authority and decisions by the Secretary of State.
National Roads Telecommunications Services	NRTS	The fibre-optic network of communication and control that Highways England uses to monitor England's roads.
National Sites Network		Special protection areas (SPA), special areas of conservation (SAC), and Ramsar sites which were formerly collectively known as Natura 2000 sites but are now known as the National Sites Network since the UK's exit from the European Union.
Nationally Significant Infrastructure Project	NSIP	Major infrastructure developments in England and Wales, such as proposals for power plants, large renewable energy projects, new airports and airport extensions, and major road projects, as set

		out in the Planning Act 2008. See entry for Development Consent Order.
National Traffic Control Centre	NTCC	Based in the West Midlands, the NTCC is an ambitious telematics Proposed Scheme aimed at providing free, real-time information on England's network of motorways and trunk roads to road users, allowing them to plan routes and avoid congested areas.
National Traffic Information Service	NTIS	The National Traffic Information Service is provided by Highways England and provides a range of services to help road users avoid delays and plan their journeys. It also makes data available for other service providers to incorporate into their own applications.
National Transport Model	NTM	Government's traffic model of the whole country, used to generate traffic growth factors used in the A12 scheme's traffic model
National Travel Survey	NTS	A UK government household survey designed to monitor long-term trends in personal travel and to inform the development of policy.
National Trip End Model	NTEM	Government's demand model of the whole country, used to generate demand growth factors used in the A12 scheme's traffic mode
National Vocational Qualification	NVQ	National Vocational Qualifications are work-based awards in England, Wales and Northern Ireland that are achieved through assessment and training.
National Vocational Qualification Level 4	NVQ4	NVQ level that is equivalent to a degree level education
Natural England		A public body responsible for ensuring that England's natural environment is protected and improved.
Natural Environment and Rural Communities Act 2006	NERC Act 2006	An Act of Parliament (2006) which created Natural England and the Commission for Rural Communities. It also extended the biodiversity duty set out in the Countryside and Rights of Way (CROW) Act to public bodies and statutory undertakers to ensure due regard to the conservation of biodiversity.

Natural resources		Any physical, tangible and valued element of the natural environment (such as soil, land, water and biodiversity).
Net Present Value	NPV	A measure of the total impact of a scheme upon society, in monetary terms, expressed in 2010 prices.
Net zero		Net zero means any emissions would be balanced by schemes to offset an equivalent amount of greenhouse gases from the atmosphere, such as planting trees or using technology like carbon capture and storage.
Nitrogen (N) deposition		The transfer of reactive nitrogen from the atmosphere to the biosphere.
No observed effect level	NOEL	The noise level below which no effect can be detected.
Noise important area	NIA	Areas identified with respect to noise from major roads and from roads within agglomerations where the 1% of the population that are affected by the highest noise levels from major roads are located according to the results of the strategic noise mapping.
Noise sensitive receptor		Receptors which are potentially sensitive to noise, for example dwellings, hospitals, healthcare facilities, education facilities.
Nomenclature of Territorial Units for Statistics	NUTS	A standard for referencing the subdivisions of countries for statistical purposes. The standard is developed and regulated by the European Union, and thus only covers the member states of the EU in detail.
Nomenclature of Territorial Units for Statistics 3	NUTS3	Refers to an administrative level comprising countries or groups of unitary authorities with a population size ranging from 150,000 to 800,000.
Non-designated heritage asset		Known archaeological sites, built heritage assets or historic landscape types which are not protected or designated under heritage legislation.
Non-hazardous waste		Waste that is classified as neither inert nor hazardous.

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Non-motorised user(s)	NMU	Users of non-motorised vehicles (e.g. cyclists, horse riders) and pedestrians
Non-permissive route		Footpaths, local road networks and accesses that construction traffic is not permitted to use, excluding vehicles associated with traffic management.
Non-statutory consultation		A period to seek comments from the local community and statutory consultees on the proposed scheme prior to a decision being made on the preferred option.
Northbound	NB	Direction of travel towards Colchester and beyond.
North Essex Authorities		The North Essex Authorities consist of the Braintree, Colchester and Tendring local authorities.
Not applicable	N/A	Abbreviation of Not Applicable
Office for National Statistics	ONS	The executive office of the UK Statistics Authority, a non-ministerial department which reports directly to the UK Parliament.
Office of Rail and Road	ORR	A non-ministerial government department responsible for the economic and safety regulation of Britain's railways, and the economic monitoring of Highways England.
Official Journal of the European Union	OJEU	Official Journal of the European Union (Tender and Public Procurement process) which is published every working day in all official languages of the European Union. It consists of two related series (L for legislation and C for information and notices) and a supplement (S for public procurement). This supplement is where OJEU notices and award notices are published.
Offline		Highway development on land under non-highway use, for example a new dual carriageway constructed on agricultural land.
Off-peak traffic hours		Off-peak traffic hours would be between the hours of 21:00–06:00 during the week (Monday–Friday) and weekend hours (Saturday 00:00–Monday 06:00).

Off-slip	-	A slip road by which traffic leaves a major road such as a motorway
Online		Highway development proposed along, or on the line of, an existing road, for example road widening.
On-slip		A slip road by which traffic joins a major road such as a motorway
Opening year		The first year of operation.
Operating expenditure	OPEX	An operating expense or operating expenditure: an ongoing cost for running a product, business or system.
Operating, maintenance and renewal expenditure	OMR	Operating, maintenance and renewal expenditure
Operation		Describes the operational phase of a completed development and is considered to commence at the end of the construction phase, after demobilisation.
Order Limits		The Order Limits are the outermost extent of the Proposed Scheme indicated on the Plans by a red line. This is the Limit of Land to be Acquired or Used (LLAU) by the Proposed Scheme. This is the area in which the DCO would apply.
Ordinary Watercourse		All watercourses that are not designated Main River, and which are the responsibility of Local Authorities or, where they exist, Internal Drainage Boards. Note that Ordinary Watercourse does not imply a 'small' river, although it is often the case that Ordinary Watercourses are smaller than Main Rivers.
Orifice plate		An orifice plate is typically a circular or rectangular opening of a prescribed shape and size that allows a controlled rate of outflow from the drainage system outlet when the orifice is submerged.
Origin-destination	OD	Origin-destination data (also known as flow data) includes the travel-to-work and migration patterns of individuals, cross-tabulated by variables of interest (for example occupation).

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Other Goods Vehicle		Greater than 3.5 tonnes, two-axle rigid, three-axle rigid, four or more axles (rigid), three-axle articulated, four or more axles (articulated) and other goods vehicles with trailers.
Other sensitive receptors (in relation to noise assessment)		A receptor other than a dwelling that is potentially sensitive to noise.
Outfall		Point of discharge into a water body.
Outline Construction Traffic Management Plan	Outline CTMP	A plan which identifies clear controls on routes, vehicle types, vehicle frequency, vehicle quality and hours of site operation.
Overarching National Policy Statement for Energy (EN-1)	NPS EN-1	Sets out the need for the Government's policy for delivery of major energy infrastructure. This Overarching National Policy Statement for Energy (EN-1) is part of a suite NPSs issued initially issued by the Secretary of State for Energy and Climate Change (now the Department for Business, Energy and Industrial Strategy). There are further five technology-specific NPS for the energy sector.
Overbridge		A bridge crossing over a transport corridor (for example a highway).
Palaeochannel		The course or channel of a river or stream preserved as a geological feature.
PAS 2080		PAS 2080:2016 Carbon Management in Infrastructure specifies requirements for the management of whole-life carbon in infrastructure.
Passenger Car Unit(s)	PCU	A metric to allow different vehicle types within a traffic model to be assessed in a consistent manner
Peak particle velocity	PPV	PPV is defined as the maximum instantaneous positive or negative peak of the vibration signal. It is specified in millimetres per second (mm/sec). It should be noted that the PPV refers to the movement within the ground of molecular particles and not surface movement.
Peak traffic hours		Peak traffic hours would be between the hours of 06:00–21:00.

Peat resource		Existing or potential peat extraction sites.
Permissive route		Footpaths, local road networks and accesses that construction traffic are allowed to use at any time.
Permitted reserves		Sites where planning permission has been granted for development but where extraction has still to take place or is not yet completed. It may cover the whole or part of a site.
Permitted route		Local road networks and accesses that construction traffic are allowed to use at any time.
Permitted with restrictions route		Local road networks and accesses that construction traffic are permitted to use for specific activities only.
Personal Injury(ies) Accident(s)	PIA	An accident that involves personal injury occurring on the public highway (including footways) in which at least one road vehicle or a vehicle in collision with a pedestrian is involved and which becomes known to the police within 30 days of its occurrence.
Photomontage		A visualisation which superimposes an image of a proposed development upon a photograph or series of photographs. (GLVIA3)
Pick-up points		Locations where stakeholders could collect consultation documentation including brochures.
Pink Land		Permanent acquisition of land.
PLANET rail model		National model of rail demand
Planform		The birds-eye view of the channel and the form of the channel from that perspective.
Planning Act 2008	PA2008	The primary legislation that establishes the legal framework for applying for, examining and determining Development Consent Order applications for Nationally Significant Infrastructure Proposed Schemes.
Planning Inspectorate		The Planning Inspectorate for England and Wales is an executive agency of the Department for Levelling Up, Housing and

		Communities with responsibility to make decisions and provide recommendations and advice on a range of land use planning-related issues, including operating the planning process for Nationally Significant Infrastructure Projects.
Plant		The machinery or infrastructure used to construct or support the operation of a given development or facility.
Pollution climate mapping (PCM) model	PCM	Government's national air quality modelling used to assess and report on compliance with the Ambient Air Quality Directive to the European Commission.
Pools and riffles		Periodic undulations in bed elevation where relatively shallow, coarse grained riffles are separated by deeper pools.
Population health		The health outcomes of a group of individuals, including the distribution of those outcomes within the group.
Pore water pressure		The pressure exerted on its surroundings by water held in pore spaces in rock or soil, an increase in which can result in a decrease in the shear strength of a slope material, reducing slope stability.
Practical Reserve Capacity	PRC	A measurement of capacity at a junction. A positive value indicates that there is spare capacity, whereas a negative value indicates over-capacity.
Pre-commencement works		Pre-commencement works are preparations to make a building site ready for construction. It covers activities from site preparation, creation of access routes, and the installation of facilities like security fencing, ramps, and placing of signs.
Preferred Route Announcement	PRA	Preferred Route Announcement by government of the preferred route for a new road or crossing.
Preliminary Environmental Information Report	PEIR	Report produced for statutory consultation for schemes consented through the Planning Act 2008. The purpose of the PEIR is to provide environmental information to enable consultees to understand the likely significant environmental effects of the

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		proposed scheme, and measures proposed to mitigate such effects, to help inform their consultation responses.
Preliminary Sources Study Report	PSSR	A combination of desk study and site reconnaissance, the purpose of which is to develop an initial conceptual site model.
Preparing for reuse		Checking, cleaning or repairing operations, by which products or components of products that have become waste are prepared so that they can be reused without any other pre-processing.
Prescribed consultee		The bodies/organisations required to be consulted as listed in Schedule 1 of the Infrastructure Planning (Applications: Prescribed Forms & Procedure) Regulations 2009.
Prevention (in relation to material assets and waste)		<p>Measures taken before a substance, material or product has become waste, that reduce:</p> <p>the quantity of waste, including through the reuse of products or the extension of the life span of products</p> <p>the adverse impacts of the generated waste on the environment and human health</p> <p>the content of harmful substances in materials and products</p>
Primary materials		Physical substances from non-renewables sources, that is those that cannot or will not be replaced in short (non-geological) periods of time. Also referred to as 'virgin' materials.
Principal aquifer		Deposits that have high intergranular and/or fracture permeability, meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.
Principal Contractor	PC	Contractor appointed to coordinate the construction phase of a project where it involves more than one contractor.

Principles of net self-sufficiency and proximity		<p>The principles of self-sufficiency and proximity (commonly referred to as the 'proximity principle') are set out in the Waste Framework Directive. Local planning authorities are required, under Regulation 18 of the Waste (England and Wales) Regulations 2011 which transposed the Directive, to have regard to these requirements when exercising their planning functions relating to waste management.</p> <p>The self-sufficiency principle requires local planning authorities to move towards developing their own waste disposal facilities wherever practical to become self-sufficient in waste management capacity.</p> <p>The proximity principle requires wastes to be disposed of as close to the source of waste as possible. Materials that can be reclaimed or recycled are not included under this principle.</p> <p>Though this should be the aim, there is no expectation that each local planning authority should deal solely with its own waste to meet the requirements of the proximity and self-sufficiency principles. Nor does the proximity principle require using the absolute closest facility to the exclusion of all other considerations.</p>
Prior extraction		<p>There are varying degrees of prior extraction, including the following:</p> <p>Large-scale extraction: Where the full mineral resource, or a significant proportion of it, is extracted. Large-scale extraction would typically occur as a separate activity to the non-minerals development and would include restoration of the land to make it suitable for future non-minerals development. However, in line with national policy there would be no presumption that the mineral would be worked in full.</p> <p>Medium to smaller-scale extraction: Where there is no opportunity for a more comprehensive extraction of the mineral</p>

		<p>resources present, prior extraction would be undertaken as an integral part of the non-minerals development (such as during site preparation). The material would then either be processed and used onsite or exported to a suitable minerals operator for processing so that it can be used to supply other development projects.</p> <p>Incidental extraction: Where any minerals that are incidentally extracted during site preparation would be processed and used onsite (such as from excavating the road box, foundations, drainage works). This is typically the minimum level of prior extraction that the MPA would seek as part of any non-minerals development in an MSA.</p>
Priority habitats		Priority habitats are the habitats of conservation priority which are listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.
Priority species		Priority species are species of conservation priority which are listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.
Private property and housing		Land, buildings and infrastructure for the purpose of residential use.
Procedural Decision		A decision made by the Examining Authority regarding the conduct of the Examination, including the submission of a written representation or the holding of a hearing under the provisions of the Infrastructure Planning (Examination Procedure) Rules 2010.
Production Attraction	PA	In traffic analysis, "producing" or "attracting" trips, where by assumption trips are "produced" by households and "attracted" to non-households.
Proposed Scheme Control Framework	PCF	Highways England Proposed Scheme Control Framework process. Setting out how Highways England, together with DfT, manage and deliver major improvement Proposed Schemes.

Proposed Scheme Manager	PM	The person with lead responsibility for a Proposed Scheme or a workstream within a Proposed Scheme.
Protected and notable species		Species of plant and animal protected by legislation, and species of conservation importance such as priority species or species of principal importance.
Public Information Event	PIE	An event where members of the public are informed and, where appropriate, consulted regarding a development scheme. Highways England held a total of 24 PIEs in 20 locations during the six-week public consultation period between January and March 2016; almost 13,000 people attended.
Public right of way	PRoW	A right to cross land owned by another person is known as a 'right of way'. If this is a right exercisable by the public at large, it is a 'public right of way'.
Python Wider Impacts Transport Appraisal	PyWITA	Software used to calculate Level 2 Wider Economic Impacts following DfT TAG guidance
Q95		The flow rate of the watercourse that is exceeded for 95% of the time.
QMED		QMED is the median annual maximum flood. QMED has an annual exceedance probability of 0.5% and a return period of two years.
QUeues And Delays at Roadworks	QUADRO	QUeues And Delays at Roadworks software; estimates the effects of roadworks in terms of travel time, vehicle operating and accident costs on the users of the section of road affected.
Qualifying feature (in relation to air quality)		In the PCM compliance risk assessment, qualifying features include public access (e.g. footpaths) and sensitive receptors (e.g. residential properties, schools etc) within 15m of the running lane / kerbside, but which are not within 25m of a junction.
Quality Outcomes Framework	QOF	An NHS system designed to remunerate general practices for providing good quality care to their patients, and to help fund work

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		to further improve the quality of health care delivered.
Quaternary		The geological period spanning between approximately 2.5 million years ago to the present.
Quiet areas		An area which is identified as a quiet area in an agglomeration in accordance with the regulation 13 of the Environmental Noise Directive.
Rainfall from extremely wet days		Total rainfall falling on days with daily rainfall total in excess of the 99th percentile of daily rainfall.
Ramsar site		A wetland of international importance designated under the Ramsar Convention.
Range Estimation Tool	RET	Highways England Excel workbook that contains the range of CAPEX costs for a road Proposed Scheme
Ratio of Flow to Capacity	RFC	Provides an indication of how close the flow is to the capacity of a road. An RFC of 1 indicates that the arm is at capacity and above 1 the road is over capacity.
RCP8.5		RCP8.5 refers to the concentration of carbon that delivers global warming at an average of 8.5W/m ² across the planet. The RCP8.5 pathway delivers a temperature increase of about 4.3°C by 2100, relative to pre-industrial temperatures.
Reach		A length of river along which the channel controls are sufficiently uniform to allow a fairly consistent morphological structure to be maintained.
Realignment (in relation to rivers)		The artificial relocation, or straightening, of a river channel to accommodate structures, flood control, or navigation.
Reasonably Foreseeable Future Proposed Schemes	RFFP	Proposed Schemes that can reasonably be expected to progress, and whose effects would overlap spatially and/or temporally with those of the lead Proposed Scheme. Proposed Schemes meeting these criteria have the potential to act together with the lead Proposed Scheme to cause one or more cumulative effects.

Receptor		A defined individual environmental feature usually associated with people, fauna and flora that could be impacted by a development.
Recovery		Any operation, the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the study areas or wider economy.
Re-cutting		Evidence of the periodic cleaning or re-excavation of archaeological features preserved in the layers of material filling them.
Recycled aggregates		Aggregates that are typically derived from reprocessing materials previously used in construction, such as road planings, railway ballast, crushed concrete or masonry from construction and demolition activities.
Recycling		Any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. Recycling includes the reprocessing of organic material but does not include energy recovery and reprocessing into materials that are to be used as fuels or for backfilling operations.
Region (in relation to material assets and waste)		The defined geographical areas or physical extents of the second study area. For the purposes of the material assets and waste aspect, the physical extent is the former East of England Planning Region.
Regional Control Centre	RCC	Highways England offices overseeing the strategic road network.
Regionally important geological sites	RIGS	Regionally important geological or geomorphological sites that are of regional and local importance for their geology that have not been designated as sites of special scientific interest.
Register of Environmental Actions and Commitments	REAC	Itemised schedule of environmental mitigation. Sets out the intended purpose of the mitigation, as well as how it will be delivered, who is responsible for

		implementing it, when it will be implemented, and success criteria (including monitoring requirements). The REAC forms part of the Environmental Management Plan.
Registered parks and gardens		Gardens, grounds and other planned open spaces which have been assessed by Historic England to be of special historic interest and included on the register established under the Historic Buildings and Ancient Monuments Act 1953 (as amended). Registration is a 'material consideration' in the planning process.
Reinstatement		The act of restoring something to a condition agreed with the relevant authorities.
Representative Viewpoints		Representative selection of viewpoints where large numbers of viewpoints cannot all be included individually. Representative viewpoints were selected based on a range of factors including their high sensitivity, their location at recognised and important viewpoints or on scenic routes and their proximity to the Proposed Scheme and the likely change in existing view.
Representative worst-case receptor (in relation to air quality)		A sensitive receptor location that is considered to show the largest increase in pollutant concentration as a result of the proposed scheme, compared to other sensitive locations in the vicinity.
Residual effect		The predicted consequential change on the environment from the impacts of a development after mitigation.
Residual risk (in relation to flood risk)		A measure of the outstanding flood risks and uncertainties that have not been explicitly quantified and/or accounted for as part of the design process.
Restricted route		Footpaths, local road networks and accesses that construction traffic are permitted to use for specific activities only.
Return period		An estimate of the interval between storm events of a certain intensity or size, in this instance between rainfall events. It is a statistical measurement denoting the

		average recurrence interval of a storm event over an extended period of time.
Reuse (in relation to material assets and waste)		Any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.
Ring-ditch		Circular or near-circular ditches, usually seen as cropmarks. Ring ditches may be the remains of ploughed-out round barrows, round houses, or even of modern features such as searchlight emplacements.
Ring management		Varying the numbers of lane on a circulatory section of a roundabout.
Riparian zone		The corridor of land which runs along the banks of a river channel. If vegetated, it is known as the vegetated riparian zone.
RIS 2 Period	RIS2	Road Investment Strategy, financial years 2020/21 to 2024/25
RIS 3 Period	RIS3	Road Investment Strategy, financial years 2025/26 to 2029/30
Risk factor (in relation to population and health)		Social, economic or biological status, behaviours or environments which are associated with, or cause, increased susceptibility to a specific disease, ill health or injury.
Road surface influence	RSI	A parameter used for quantifying road surfacing noise performance.
Road Vehicles (Authorisation of Special Types) (General) Order 2003	STGO	An order which allows the carriage of Abnormal Indivisible Loads which exceed the weight and/or dimensions contained in the Road Vehicles Regulations 1986.
Rochdale Envelope		An approach established by UK planning case law which involves broadly defining the Proposed Scheme (or elements of it) but limiting it by a number of clearly defined fixed parameters. Rochdale Envelopes are typically defined by a series of maximum extents of a Proposed Scheme (or 'worst case scenarios') by which effects can be assessed.

Root mean square error	RMSE	RMSE is used to define the average error or uncertainty of the model. The units of RMSE are the same as the quantities compared.
Root protection area	RPA	The minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
Routine runoff		The normal runoff from roads including any contaminants washed off the surface in rainfall events which can result in either acute or chronic impacts. Routine runoff excludes the effect of spillages and major leaks which usually result in acute impacts.
Runoff		The movement of water above and below the surface.
Runoff specific threshold		Time-dependent (24-hour or six-hour) soluble pollutant concentration above which adverse effects may be observed in aquatic fauna.
Satellite construction compound		Construction compounds that would generally be strategically located near to specific works, for example bridge structures or junction works.
Scarborough Tourism Economic Activity Model	STEAM	A model which produces data estimating the number of visitors, visitor days, employment supported by tourism and the revenue generated within a geographic area.
Scheduled monument		An archaeological site, built heritage asset or combination of the two which has been assessed to be of national importance under the Ancient Monuments and Archaeological Areas Act 1979.
Science, Technology, Engineering and Mathematics	STEM	A term used to group together these academic disciplines.
Scoping		The process of identifying the issues to be addressed in the EIA process. It is a method of ensuring that an assessment focuses on the important issues and avoids those that are considered unlikely to be significant.

Scoping Opinion		The relevant authority's formal view on the issues an Environmental Statement should address. For the Proposed Scheme, the Scoping Opinion was given by the Planning Inspectorate on behalf of the Secretary of State.
Scoping Report		A report produced before the Environmental Statement to outline the key issues associated with a Proposed Scheme and assist the relevant regulator in providing a Scoping Opinion.
Screening		The formal process undertaken to determine whether the process of Environmental Impact Assessment (EIA) is required and so whether the applicant is required to provide an Environmental Statement in accordance with the EIA Regulations.
Second study area (in relation to material assets and waste)		<p>Feasible sources and availability of construction materials required to construct the main elements of the proposed scheme.</p> <p>Suitable recovery and waste management infrastructure that could accept arisings and waste generated by the proposed scheme.</p>
Secondary A aquifer		Deposits that comprise permeable layers that can support local water supplies and may form an important source of base flow to rivers or wetland ecosystems.
Secondary B aquifer		Deposits with mainly lower permeability layers that may store and yield limited amounts of groundwater.
Secondary materials and aggregates		Secondary aggregates are typically by-products of industrial and other processes. These can be subdivided into manufactured and natural aggregates, depending on their source, and can include materials such as pulverised fuel ash, ground granulated blast-furnace slag, furnace bottom ash, incinerator bottom ash and recycled glass. Both secondary and recycled aggregates offer appropriate engineering specifications to allow them to replace primary aggregates.
Secondary undifferentiated aquifer		Deposits where it is not possible to apply either a secondary A or B definition because

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		of the variable characteristics of the rock type.
Secretary of State	SoS	The Secretary of State has overall responsibility for the policies of the Department for Transport.
Sector-removal (background concentrations)		The removal of major road contributions to the Defra background mapping data concentrations.
Sense of place		The essential character and spirit of an area (genius loci – spirit of the place). (DMRB LA 107)
Sensitivity		Receptor or resource environmental value.
Sensitivity (in relation to landscape and visual)		Term applied to specific receptors, combining judgements of the susceptibility of the receptor to specific type of change proposed and the value related to that receptor. (GLVIA3)
Sequestration		Carbon sequestration is the process of capturing and storing atmospheric carbon dioxide (e.g. by trees and vegetation).
Sett		A sett is a system of burrows in which a badger lives. Typically, a badger social group will have a single main sett towards the centre of their territory and several smaller subsidiary or outlier setts. They are typically located on well-drained slopes or verges, often found along woodland edges and field margins.
Setting (in relation to cultural heritage)		The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.
Setting (in relation to landscape and visual)		Contribution of the surroundings to the appearance of an area or feature and the interrelationship of the area or feature to the wider context and sense of place. (DMRB LA 107)

Severance		Severance is used to refer to a change in ease of access for walkers, cyclists and horse riders due to, for example, a change in travel distance or travel time or a change in traffic levels on a route that makes it harder for walkers, cyclists and horse riders to cross. A reference to severance does not necessarily imply a route is closed to access.
Sewer flooding		Flooding caused by a blockage or overflowing in a sewer or urban drainage system.
Sheet pile retaining walls		Sheet piling is used to provide temporary and permanent walls. Sheet piles are designed to interlock with each other. They are installed in sequence along the planned excavation perimeter. When arranged together, they form a wall for permanent or temporary earth support, along with anchors to provide extra lateral support.
Side road		A side road is a road that crosses or enters a trunk road scheme.
Significance		A measure of the importance, or gravity, of the environmental effect, defined by significance criteria specific to the environmental aspect.
Significance (in relation to cultural heritage)		The value of a heritage asset to this and future generations because of its heritage interest. The interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting. For the purposes of the cultural heritage assessment, 'value' has been used as if synonymous with 'significance' to avoid confusion with 'significance of effect' as commonly used in Environmental Impact Assessment.
Significance of effect		The level or importance of effects, generally determined by considering together the sensitivity of the receptor with the magnitude of impact.

Significant observed adverse effect level	SOAEL	The level of noise exposure above which significant adverse effects on health and quality of life occur
Simulation and Assignment of Traffic to Urban Road Networks	SATURN	Software used to build transport models (Simulation and Assignment of Traffic to Urban Road Networks)
Sinuosity		The degree to which a channel meanders. A sinuous channel generally has a sinuosity ratio between 0 and 1.5.
Site arisings		Construction, demolition, excavation and other arisings generated from within a project boundary, during both construction, and operational and maintenance phases.
Site of special scientific interest	SSSI	A SSSI is one that has been designated for its particular value to science, often due to the presence of rare species, rare habitats or important geological or physiological features within its boundary. Such sites are designated and protected under the Wildlife and Countryside Act 1981 (as amended).
Skills Level 4		Equates to a Certificate of Higher Education, Key Skills Level 4, NVQ Level 4, BTEC Professional award, certificate and diploma Level 4, and HNC.
Slip road		A connector road between a mainline carriageway and another road.
Small and Medium Sized Enterprise	SME	The UK definition of SME is generally a small or medium-sized enterprise with fewer than 250 employees. The EU also defines an SME as a business with fewer than 250 employees, a turnover of less than €50 million, or a balance sheet total of less than €43 million
Smart motorway		Term for a range of types of actively controlled motorway, using technology to optimise use of the carriageway including the hard shoulder.
Snuffle hole		A snuffle hole is a small pit created by a badger digging for earthworms and other small invertebrates. Often several will be present in the same area where badgers have been foraging for food.

Soakaway		A soakaway is essentially a pit in the ground which contains drainage units (e.g. geocellular crates, perforated concrete rings, etc.) that contain perforations which enable the collected surface water runoff to infiltrate into the ground.
Soil Resource Plan		A Soil Resource Plan shows the areas and type of topsoil and subsoil to be stripped, haul routes, the methods to be used, and the location, type and management of each soil stockpile.
Soilscapes		Soilscapes is a web application which conveys a summary of the broad regional differences in the soil landscapes of England and Wales.
Source protection zone	SPZ	Zones around groundwater sources used for potable supply or food processing, including wells, boreholes and springs, which show the level of risk to the source from contamination.
Source-pathway-receptor		The 'source-pathway-receptor' model defines those receptors considered to be at risk. The term 'source' describes the origin of potential effects (e.g. construction activities) and the term 'pathway' describes the means (e.g. through air, water or ground) by which the effect reaches the receiving sensitive 'receptor' (e.g. terrestrial habitats/ species, human receptors). If the source, pathway or receptor is absent, no link exists and thus there will be no potential for an impact to occur.
Southbound	SB	Direction of travel
South East Local Enterprise Partnership	SELEP	The business-led, public/private body established to drive economic growth across East Sussex, Essex, Kent, Medway, Southend and Thurrock.
Special area of conservation	SAC	A SAC is the land designated under Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora for the protection of habitats and/or species considered to be of European interest. In England, special areas of conservation are protected under the

		Conservation of Habitats and Species Regulations 2017 (as amended).
Special Landscape Area	SLA	A non-statutory designation applied by the local planning authority to define areas of high landscape importance within their administrative boundary.
Special protection area	SPA	A SPA is a designation under the European Union Directive on the Conservation of Wild Birds to ensure the protection of habitats used by migratory birds and certain particularly threatened species.
Special road		A road on which certain types of traffic are prohibited, under the Highways Act 1980. All motorways are special roads, together with some high-grade dual carriageways.
Species of principal importance		Species of principal importance are species protected under section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.
Speed band		A range of categories into which outputs from the traffic model are grouped to describe their emissions.
Spraint		A term used to describe the dung of otters. Typically it is deposited in prominent locations along watercourses (e.g. on top of a rock protruding from the middle of a river) and will have visual evidence of scales and other prey remains such as invertebrate exoskeletons. Fresh spraint has a distinctive smell that has a variety of descriptions from fresh fish to jasmine tea.
Stable non-reactive hazardous waste	SNRHW	<p>Hazardous waste, the leaching behaviour of which will not change adversely in the long term, under landfill design conditions or foreseeable accidents:</p> <p>in the waste alone (for example, by biodegradation)</p> <p>under the impact of long-term ambient conditions (for example, water, air, temperature or mechanical constraints)</p>

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		by the impact of other wastes (including waste products such as leachate and gas)
Standard		Actions typically implemented across all proposed scheme sites to avoid or reduce potential environmental effects
Standard mitigation		Mitigation required regardless of the EIA because it is generally imposed through legislative requirements or standard sector practices (e.g. implementing considerate contractor practices to reduce nuisance from site work). These measures have been captured in an Environmental Management Plan.
Standard working hours		<p>These are the standard hours that will apply to the majority of worksites and construction activities. These hours are those that are defined by most local authorities.</p> <p>Mobilisation period: mobilisation activities may include loading, unloading, arrival and departure of workforce and staff at site and movement to and from place of work, general refueling, site inspections and safety checks prior to commencing work, site meetings, site clean-up, site maintenance, and maintenance and checking of plant and machinery.</p> <p>Maintenance period: The activities allowed in this period are limited, with no significant noise and vibration allowed. Maintenance activities include general mechanical maintenance to construction machinery, such as excavators, and maintenance to plant such as compressors, grouting equipment and dewatering equipment such as pumps. Repairs or maintenance of construction equipment that needs to be carried out outside of standard working hours will normally be carried out on Saturday afternoons (13:00 to 18:00) or on Sundays and bank holidays between 08:00 and 17:00.</p>
Standardised admissions ratio	SAR	The SAR is a health measure that allows a comparison of hospital admissions data between areas, while accounting for

		<p>differences in population structures (i.e. age profile) between those areas. It is calculated by using admissions data from a standard population to estimate the number of admissions expected in the study population. The estimate is then compared with the actual (observed) number of admissions and multiplied by 100 to yield the SAR. If the observed admissions are the same as the expected admissions the SAR will be 100. An SAR greater than 100 indicates that admissions are higher than would be expected for the age structure in the study population. An SAR less than 100 indicates it is lower than expected.</p>
Standardised incidence ratio	SIR	<p>The SIR is a health measure that allows a comparison of incidence of diseases between areas, while accounting for differences in population structures (i.e. age profile) between those areas. It is calculated from mortality data using the same approach as for the SAR.</p>
Standardised mortality ratio	SMR	<p>The SMR is a health measure that allows a comparison of mortality data between areas, while accounting for differences in population structures (i.e. age profile) between those areas. It is calculated from mortality data using the same approach as for the SAR.</p>
Statement of Community Consultation	SoCC	<p>Sets out how local communities in the vicinity of the Proposed Scheme will be consulted. Directly affected and neighbouring local authorities will be consulted on the content of the SoCC before it is finalised.</p>
Statement of Common Ground	SoCG	<p>A Statement of Common Ground is a written statement containing factual information about the proposal which is the subject of the appeal that the appellant reasonably considers will not be disputed by the local planning authority.</p>
Static clustering		<p>Benefits that come when firms and/or people locate near one another in geographical clusters but do not change their spatial location.</p>

Statutory consultation		A formal period of consultation required by Section 42 and Section 47 of the Planning Act 2008. During this period, prescribed consultees such as planning authorities, regulators, land holders, and the wider public are consulted on the development proposals. Materials such as preliminary design drawings, a PEIR, preliminary land use plans, and preliminary traffic modelling data are made available to inform stakeholders' responses.
Statutory consultee		Organisations, bodies and persons, defined by statute, which must be consulted regarding the application for development consent.
Statutory designated site		A site which receives protection by means of legislation in recognition of its biodiversity and/or geological value.
Statutory Environmental Body	SEB	Any principal council as defined in subsection (1) of section 270 of the Local Government Act 1982 for the area where the land is situated. Where the land is situated in England, SEBs include Natural England, Historic England, and the Environment Agency. Where, in the opinion of the Secretary of State, the land is sufficiently near to Wales to be of interest to them, Natural Resources Wales and the National Assembly for Wales would also be SEBs. SEBs also include any other public authority which has environmental responsibilities and which the Secretary of State considers likely to have an interest in the Proposed Scheme.
Statutory Environmental Body(ies)	SEBs	Any principal council as defined in subsection (1) of section 270 of the Local Government Act 1982 for the area where the land is situated. Where the land is situated in England; Natural England, Historic England, the Environment Agency, Natural Resources Wales and the National Assembly for Wales where, in the opinion of the Secretary of State, the land is sufficiently near to Wales to be of interest to them and any other public authority which has environmental responsibilities and which the Secretary of

		State considers likely to have an interest in the scheme.
Statutory Undertaker	SU	Bodies carrying out functions of a public character under a statutory power. They may either be in public or private ownership, for example the Post Office, Civil Aviation Authority, the Environment Agency, or any water undertaker, public gas transporter or supplier of electricity.
Sterilise (in relation to material assets and waste)		Substantially constrain or prevent existing and potential future use and extraction of mineral resources, typically by constructing infrastructure over or adjacent to a deposit. In the absence of any further guidance, this has been interpreted to mean that the proposed scheme would need to sterilise an entire minerals site, placing its future use at risk or rendering it inaccessible for current or future use. This approach is considered consistent with Materials and Waste in Environmental Impact Assessment - Guidance for a Proportionate Approach (Institute of Environmental Management and Assessment, 2020) that also focuses on impacts to allocated minerals sites in their entirety.
Strategic Flood Risk Assessment	SFRA	Considers local flood risk and informs the planning process information on the future risk over a wide spatial area.
Strategic road network	SRN	The network of motorways and trunk roads in England.
Stratigraphy		The arrangement and succession of layers of material, as well as their origin, composition and distribution in the context of archaeological excavation.
Strip, map and sample excavation		Stripping the full depth of topsoil in a specifically defined area of archaeological potential, to maximise visibility of potential archaeological remains. Following topsoil removal, any archaeological features identified are recorded in plan, and this is then used to agree a programme of sample excavation and recording in consultation with the relevant archaeological regulator.

Sub-region (in relation to material assets and waste)		The defined geographical areas or physical extents of the county of Essex and the unitary authorities of Southend-on-Sea and Thurrock.
Suitable 4 Use Levels		Soil assessment criteria using similar methodology to Category 4 Screening Levels but covering a larger range of contaminants.
Superficial deposits		Superficial deposits (previously called 'drift') are the youngest geological deposits formed during the most recent period of geological time. Most of these superficial deposits are unconsolidated sediments, such as gravel, sand, silt and clay
Supplementary consultation		A period to seek comments from the local community and statutory consultees on design changes that have occurred after the statutory consultation.
Surface water flooding		Flooding as a result of surface water runoff after high intensity rainfall when water is ponding or flowing over the ground surface before it enters the underground drainage network or watercourse, or cannot enter it because the network is full to capacity, thus causing what is known as surface water or pluvial flooding.
Surface water runoff		Rainwater (including snow and other precipitation) which is on the surface of the ground (whether or not it is moving), and has not entered a watercourse, drainage system or public sewer.
Susceptibility (in context of landscape and visual)		The ability of a defined landscape or visual receptor to accommodate the specific proposed development without undue negative consequences. (GLVIA3)
Sustainable drainage system	SuDS	Methods of management practices and control structures that are designed to drain surface water in a more sustainable manner than some conventional techniques.
Swale		Swales are shallow, flat bottomed, vegetated open channels designed to convey, treat and often attenuate surface water runoff. When incorporated into a site design, they

		can enhance the natural landscape and provide aesthetic and biodiversity benefits.
Temporary Traffic Regulation Orders	TTRO	A legal instrument that enables a traffic authority to regulate or prohibit the movement of traffic on the highway. This Order is made in accordance with the Road Traffic Regulations Act 1984.
Town and Country Planning Act 1990		The Act that forms part of the land use planning regime in the UK and (among other things) establishes the legal framework in respect of applications for, and determination of, planning permissions.
Trackout		The transport of dust and dirt from the construction/demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network.
Traffic Flow Data System	TRADS	System holding information on traffic flows at sites on the network.
Traffic Information System	TRIS	National Highways' traffic data source, highway traffic information (WebTRIS), which contains traffic flow and journey time data
Traffic management	TM	Control of traffic by means of lane closures to include temporary signals.
Traffic model peak hours		<p>The proposed scheme traffic model represents peak hours, the times of which were derived from analysis of traffic count data. The three modelled hours are:</p> <p>AM peak hour (07:30-08:30)</p> <p>Average weekday inter-peak hour (10:00-16:00)</p> <p>PM peak hour (17:00-18:00)</p>
Traffic Regulation Order	TRO	A legal instrument that enables a traffic authority to regulate or prohibit the movement of traffic on the highway. This Order is made in accordance with the Road Traffic Regulations Act 1984
Traffic reliability area		Defined in DMRB LA 105 Air Quality as the 'area covered by the traffic model, that the

		competent expert for traffic has identified as reliable for inclusion in an environmental assessment’.
Tranquility		A state of calm and quietude associated with peace, considered to be a significant asset of landscape. (GLVIA3)
Transboundary effects		Environmental effects on other European Economic Area states are referred to as transboundary effects, as defined by Regulation 32 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.
Transport Analysis Guidance	TAG	National guidance document produced by the Department for Transport.
Transport for London	TfL	The integrated body responsible for London's transport system
Transport Analysis Guidance	TAG	National guidance document produced by the Department for Transport.
Transport Research Laboratory	TRL	Independent private company offering a transport consultancy and research service to the public and private sector. Originally established in 1933 by the UK Government as the Road Research Laboratory. It changed its name to TRL in 1992 and was privatised in 1996.
Transport Users Benefit Appraisal	TUBA	Transport Users Benefit Appraisal (DfT economic appraisal software tool)
Treatment train		Where multiple sustainable drainage system measures treat runoff to a single outfall.
Tree Preservation Order	TPO	A TPO is an order made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity.
Trial hole		A trial hole or pit (or test pit) is an open cut excavation of ground in order to study or sample the composition and structure of the subsurface, usually dug during a site investigation, a soil survey or a geological survey. It is also used to identify and locate existing underground services.
Trial trenching		A method of archaeological evaluation used to determine the presence or absence of

		archaeological features, deposits or structures and assess their character and significance.
Trip End Model Presentational Program	TEMPro	DfT software for viewing data from the DfT's National Trip End Model
TRIS		Highways England Traffic Count Database
Trunk road		A trunk road is a road owned and operated by the Secretary of State for Transport. Trunks roads form part of the strategic road network. Trunk roads include all-purpose trunk roads (APTRs) and motorways.
UK Power Network	UKPN	An energy network operator. Owns and maintains the electricity cables in South East England, the East of England and London.
UKCP18		<p>The UK Climate Projections 2018 (UKCP18) are a set of UK climate projection tools designed to help decision-makers assess their risk exposure to climate change. The UKCP18 project uses cutting-edge climate science to provide climate change projections out to 2100.</p> <p>UKCP18 provides probabilistic projections over land and a set of high-resolution, spatially coherent future climate projections for the UK at 12km scale. The 12km climate model has been further downscaled to 2.2km scale – a level previously only used for short-term weather forecasts, allowing realistic simulation of high impact events such as localised heavy rainfall in summer.</p>
Ultra-low emission vehicles	ULEV	The Office for Low Emission Vehicles (OLEV) is a team working across government to support the early market for ultra-low emission vehicles (ULEV). OLEV is part of the Department for Transport and the Department for Business, Energy & Industrial Strategy.
Underbridge		A bridge crossing under a transport corridor (for example a highway).
Underground geocellular attenuation storage system		Underground geocellular attenuation storage systems are used to create a below-ground void for the temporary storage of surface water runoff before its infiltration or

		controlled discharge. The individual geocellular units are typically modular/honeycomb in nature and can be combined to create geocellular attenuation storage in various shapes.
Unproductive strata		Deposits which are largely unable to provide usable water supplies and are unlikely to have surface water and wetland ecosystems dependent on them.
Urban All Purpose		A road in an urban area designed for all types of traffic in accordance to the relevant DMRB Standards.
Utilities		Refers to the set of services provided by organisations and consumed by the public: electricity, natural gas, water, sewage, and telephone. Broadband internet services (both fixed line and mobile) are included within the definition.
Value Added Tax	VAT	A consumption tax levied in the UK which was introduced in 1973. It is administered and collected by HM Revenue and Customs. VAT is levied on most goods and services provided by registered businesses in the UK and some goods and services imported from outside the European Union. The default VAT rate is the standard rate, 20% since 4 January 2011. Some goods and services are subject to VAT at a reduced rate of 5% (such as domestic fuel) or 0% (such as most food and children's clothing).
Value engineering		Value engineering is used to solve problems and identify and eliminate unwanted and unnecessary costs, while improving function and quality. The aim is to increase the value of products, satisfying the product's performance requirements at the lowest possible cost.
Variable Demand		Demand which takes into account a change in transport conditions (such as cost) and quantifies that change.
Variable Mandatory Speed Limits	VMSL	Speed limits are displayed and come into operation when traffic volumes increase and sensors activate lower speeds. Reducing speed during peak demand decreases stop-

		start conditions and allows traffic to move smoothly
Variable Message Sign	VMS	A road sign able to display different messages
Vegetated ditch		A vegetated ditch is a grassed channel excavated into the ground to enable the collection and conveyance of surface water runoff from an adjacent development or natural catchment, and is typically of trapezoidal or triangular cross-section.
Vehicle Hours Delay		Vehicle Hours Delay is an estimate of the total travel time experienced by all road users over and above the expected theoretical free-flow travel time.
Verification (including adjustment factor)		A comparison of the modelled results versus monitoring results at relevant locations to enable the adjustment of model outputs (by applying an adjustment factor), minimising the inherent uncertainties associated with dispersion modelling.
Veteran tree		A tree that by recognised criteria shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.
Vissim		"Verkehr In Städten - SIMulationsmodell" (Traffic in Cities Simulation Model); a microscopic multi-modal traffic flow simulation software
VISUM		Strategic car and rail modelling software.
Visual receptors		Individuals and/or defined groups of people who have the potential to be affected by a proposal. (GLVIA3)
Volatile Organic Compound	VOC	Organic compound that is volatile under normal environmental/atmospheric conditions, although it can be found in the ground in the solid, liquid and dissolved phase form as well as in gaseous phase.
Volume by volume		A measure of the concentration of a substance in a solution. It is expressed as the ratio of the volume of the solute to the

		total volume of the solution multiplied by 100.
Vortex flow control device		A vortex flow control device relies on the upstream hydraulic head to generate an air-filled vortex within the centre of the flow control device casing, thereby enabling the restriction of surface water flows.
Vulnerability (in relation to climate)		The degree to which a system/asset is exposed and resilient to adverse effects of climate change.
Walkers, cyclists and horse riders	WCH	<p>Users that include:</p> <p>pedestrians – including mobility impaired and vulnerable pedestrians</p> <p>cyclists – including mobility impaired and vulnerable cyclists</p> <p>equestrians – including mobility impaired and vulnerable equestrians</p> <p>Other users considered as part of this group include (but are not limited to):</p> <p>scooter riders (non-motorised)</p> <p>cyclists with electrically assisted pedal cycles (where these conform to Department for Transport or other relevant regional regulations and where they can legally be used)</p> <p>users of powered wheelchairs (where these conform to Department for Transport regulations and where they can legally be used)</p>
Warm spell duration index		Count of days with at least six consecutive days when daily maximum temperature is above the 90th percentile.
Waste		Defined in line with Article 3(1) of the Waste Framework Directive (Council Directive 2008/98/EC) as ‘any substance or object which the holder discards or intends or is required to discard’. Waste is commonly split into the following classifications: inert, hazardous and non-hazardous (the latter

		being waste classified as neither inert nor hazardous).
Waste classification		As part of waste Duty of Care, waste holders must classify their waste: before it is collected, disposed of or recovered; to identify the controls that apply to the movement of the waste; to complete waste documents and records; to identify suitably authorised waste management options; and to prevent harm to people and the environment. Technical Guidance WM3 'Waste Classification - Guidance on the classification and assessment of waste' provides guidance on waste classification in the UK. It is a comprehensive reference manual for anyone involved in producing, managing and regulating waste. Appendix A of WM3 includes the waste classification codes, also referred to as LoW (List of Waste) or EWC (European Waste Catalogue) codes.
Waste consultation area	WCA	Geographical area, based on existing waste infrastructure sites, where the district or borough council should consult the mineral planning authority for any proposals for non-minerals development.
Waste hierarchy		The waste hierarchy ranks waste management options according to what is best for the environment. It gives top priority to preventing waste in the first place. When waste is created, it gives priority to preparing it for re-use, then recycling, then recovery, and last of all disposal (e.g. landfill).
Waste holder		<p>The duty of care applies to anyone who imports, produces, carries, keeps, treats, disposes of, or is a dealer or broker that has control of, controlled waste (commonly referred to as a 'waste holder'). Waste holders include the following:</p> <p>Waste producer – any person whose activities produce waste. It also includes permitted operations or exempt facilities that produce waste as part of their activities. If you carry out a waste operation that changes the nature or composition of the</p>

		<p>waste, you are regarded as a producer of the waste. Waste producers play a key role under the duty of care requirements as they are in the best position to identify the nature and characteristics of the waste.</p> <p>Waste carrier – any person who normally and regularly collects, carries or transports waste in the course of any business or with a view to profit, including those that produce and transport their own waste.</p> <p>Waste dealer – any person, business or organisation that buys waste with the aim of subsequently selling it, including in circumstances where the dealer does not take physical possession of the waste.</p> <p>Waste broker – any person, business or organisation that arranges waste transportation and management of waste on behalf of another party, such as organisations contracting out waste collection services.</p> <p>Waste manager – any person involved in the collection, transport, recovery or disposal of controlled waste, including the supervision of these operations, the aftercare of disposal sites and actions taken as a dealer or broker.</p>
Waste infrastructure		Facilities that handle, treat or prepare for reuse, recycle and dispose (landfill) of waste.
Waste planning authority		The waste planning authority is the county council in two-tier parts of the country, the unitary authority or the national park authority responsible for waste development planning and control.
Waste transfer note		A waste transfer note is a legally required document which must be completed for all transfers of non-hazardous waste to another party. The format of the waste transfer note must conform to the requirements laid out in Part 9 of The Waste (England and Wales) Regulations 2011 (as amended).

Water Framework Directive	WFD	The Water Framework Directive (Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy) is an EU directive which commits EU member states to achieve good qualitative and quantitative status of all water bodies (including marine waters up to one nautical mile from shore). The Directive has been transposed into UK legislation via the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, which is now the retained legislation following Brexit.
Web-based Transport Appraisal Guidance	WebTAG	Former name given for the Department for Transport's web-based multi-modal guidance on appraising transport Proposed Schemes and proposals, now known as Transport Analysis Guidance (TAG).
Westbound	WB	Direction of travel
Wider determinants of health		Personal, social, economic and environmental factors which determine the health status of individuals and communities.
Wider Impacts in Transport Appraisal	WITA	Wider Impacts in Transport Appraisal software; undertakes the appraisal of wider impacts appraisals in accordance with the DfT's TAG Unit A.2 Wider Economic Impacts
With Scheme		Appraisal scenario that includes a proposed intervention such as a Proposed Scheme, programme or policy
Without Scheme		Appraisal scenario that excludes a proposed intervention such as a Proposed Scheme, programme or policy
Worst case		Reasonable prediction of the scenario that would result in the highest level of effect(s).
Zone of influence	ZOI	This is established for each environmental aspect considered within the Environmental Statement in order to establish the relevant 'other existing development and/or approved development' to be considered within the cumulative effects assessment.

Zone of theoretical visibility	ZTV	A map, usually digitally produced, showing areas of land within which a development is theoretically visible. (GLVIA3)
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13 References

Department for Transport (2015). Road Investment Strategy: for the 2015/16–2019/20 Road Period. Available at: <https://www.gov.uk/government/publications/road-investment-strategy-for-the-2015-to-2020-road-period>. Accessed March 2022.

Department for Transport (2020). Road Investment Strategy 2: 2020–2025. Available at: <https://www.gov.uk/government/publications/road-investment-strategy-2-ris2-2020-to-2025>. Accessed March 2022.

National Infrastructure Planning: A12 Chelmsford to A120 widening Project, Scoping Opinion and Scoping Report, website accessed in June 2022: <https://infrastructure.planninginspectorate.gov.uk/projects/eastern/a12-chelmsford-to-a120-widening-scheme/>

Appendix A Application Document Tracker

Submitted at Application/Deadline August 2022.

Application Document reference	Examination Document Library reference	Name of document	Version number	Examination deadline/submission date
1.1		Covering Letter and Completed Section 55 Checklist	0	12 th August 2022
1.2		Introduction to the Application	0	12 th August 2022
1.3		Application Form	0	12 th August 2022
1.4		Electronic Application Index	0	12 th August 2022
2.1		Location plan	0	12 th August 2022
2.2		Work plans	0	12 th August 2022
2.2.1		Permanent works plans	0	12 th August 2022
2.2.2		Works plans utility diversions	0	12 th August 2022
2.2.3		Temporary works plans	0	12 th August 2022
2.3		Traffic regulation measures plans	0	12 th August 2022
2.3.1		Traffic regulation measures speed limits plans	0	12 th August 2022
2.3.2		Traffic regulation measures movement restrictions Plans	0	12 th August 2022
2.3.3		Revocation of existing traffic orders plans	0	12 th August 2022

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2.4		Classification of roads plans (Part 1)	0	12 th August 2022
2.4		Classification of roads plans (Part 2)	0	12 th August 2022
2.5		Special category land plans	0	12 th August 2022
2.6		Streets, rights of way and access plans (part 1)	0	12 th August 2022
2.6		Streets, rights of way and access plans (part 2)	0	12 th August 2022
2.7		Land plans	0	12 th August 2022
2.8		Crown land plans	0	12 th August 2022
2.9		General arrangement plans (part 1)	0	12 th August 2022
2.9		General arrangement plans (part 2)	0	12 th August 2022
2.9		General arrangement plans (part 3)	0	12 th August 2022
2.9		General arrangement plans (part 4)	0	12 th August 2022
2.9		General arrangement plans (part 5)	0	12 th August 2022
2.10		De-trunking and stopping up plans (Part 1)	0	12 th August 2022
2.10		De-trunking and stopping up plans (Part 2)	0	12 th August 2022
2.11		Highway engineering section drawings (part 1)	0	12 th August 2022
2.11		Highway engineering section drawings (part 2)	0	12 th August 2022
2.11		Highway engineering section drawings (part 3)	0	12 th August 2022
2.11		Highway engineering section drawings (part 4)	0	12 th August 2022

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2.12		Structures engineering drawings and sections (part 1)	0	12 th August 2022
2.12		Structures engineering drawings and sections (part 1)	0	12 th August 2022
2.13		Drainage and surface water plans (part 1)	0	12 th August 2022
2.13		Drainage and surface water plans (part 2)	0	12 th August 2022
2.14		Retained and removed vegetation plans (part 1)	0	12 th August 2022
2.14		Retained and removed vegetation plans (part 2)	0	12 th August 2022
2.15		Construction phase plans (part 1)	0	12 th August 2022
2.15		Construction phase plans (part 2)	0	12 th August 2022
3.1		Draft DCO	0	12 th August 2022
3.2		Explanatory Memorandum	0	12 th August 2022
3.3		Consents and Licenses Position Statement	0	12 th August 2022
4.1		Statement of Reasons	0	12 th August 2022
4.2		Funding Statement	0	12 th August 2022
4.3		Book of Reference	0	12 th August 2022
5.1		Consultation Report	0	12 th August 2022
5.2		Annex A: Options consultation brochure and associated materials (Part 1)	0	12 th August 2022
5.2		Annex A: Options consultation brochure and associated materials (Part 2)	0	12 th August 2022

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5.2		Annex B: The Infrastructure Planning (EIA Regulations) 2017: Regulation 8(1) letter to PINS & acknowledgement	0	12 th August 2022
5.2		Annex C: Copy of the draft SoCC provided to local authorities	0	12 th August 2022
5.2		Annex D: Letter to local authorities for draft SoCC consultation	0	12 th August 2022
5.2		Annex E: Response from local authorities on the draft SoCC	0	12 th August 2022
5.2		Annex F: Published SoCC with location and date	0	12 th August 2022
5.2		Annex G: List of prescribed consultees identified and consulted	0	12 th August 2022
5.2		Annex H: S42 letters and enclosures with date	0	12 th August 2022
5.2		Annex I: S46 letter and the enclosures sent to PINS (with date)	0	12 th August 2022
5.2		Annex J: S47 consultation material (Part 2)	0	12 th August 2022
5.2		Annex J: S47 consultation material (Part 1)	0	12 th August 2022
5.2		Annex K: S48 newspaper notices with locations and dates including a copy of the press release and media invite	0	12 th August 2022
5.2		Annex L: Table of Protective Provisions for Statutory Undertakers	0	12 th August 2022
5.2		Annex M: List of any additional consultation recipients (noting their interest)	0	12 th August 2022
5.2		Annex N: Tables evidencing regard had to consultation responses (in accordance with s49 of the Planning Act 2008)	0	12 th August 2022
5.2		Annex O: Compliance checklist	0	12 th August 2022
5.2		Annex P: Meetings with stakeholders	0	12 th August 2022

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5.2		Annex Q: Independent report on consultation	0	12 th August 2022
5.2		Annex R: Community Gardens Correspondence	0	12 th August 2022
6.1		Environmental Statement Chapter 1 Introduction	0	12 th August 2022
6.1		Environmental Statement Chapter 2 The Proposed Scheme	0	12 th August 2022
6.1		Environmental Statement Chapter 3 Assessment of Alternatives	0	12 th August 2022
6.1		Environmental Statement Chapter 4 Consultation	0	12 th August 2022
6.1		Environmental Statement Chapter 5 Environmental Assessment Methodology	0	12 th August 2022
6.1		Environmental Statement Chapter 6 Air Quality	0	12 th August 2022
6.1		Environmental Statement Chapter 7 Cultural Heritage	0	12 th August 2022
6.1		Environmental Statement Chapter 8 Landscape & Visual	0	12 th August 2022
6.1		Environmental Statement Chapter 9 Biodiversity	0	12 th August 2022
6.1		Environmental Statement Chapter 10 Geology & Soils	0	12 th August 2022
6.1		Environmental Statement Chapter 11 Material Assets & Waste	0	12 th August 2022
6.1		Environmental Statement Chapter 12 Noise & Vibration	0	12 th August 2022
6.1		Environmental Statement Chapter 13 Population and Human Health	0	12 th August 2022
6.1		Environmental Statement Chapter 14 Road Drainage and the Water Environment	0	12 th August 2022
6.1		Environmental Statement Chapter 15 Climate	0	12 th August 2022

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6.1		Environmental Statement Chapter 16 Cumulative Effects Assessment	0	12 th August 2022
6.1		Environmental Statement Chapter 17 Summary	0	12 th August 2022
6.1		Environmental Statement Chapter 18 Glossary and Acronyms	0	12 th August 2022
6.2		Figure 1 - Scheme Location Plan	0	12 th August 2022
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6.2		Figure 6.5 - Modelled NO2 Concentrations in the Peak Construction Year (2025) Do Something Scenario for Human Health Receptors	0	12 th August 2022
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6.2		Figure 6.9 - Modelled NO2 Concentrations in the Opening Year (2027) Do Something Scenario for Human Health Receptors	0	12 th August 2022
6.2		Figure 6.10 - Modelled Change in NO2 Between the Opening Year (2027) Do Minimum and Do Something scenarios for Human Health Receptors	0	12 th August 2022
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