

Lower Thames Crossing

7.10 Health and Equalities Impact Assessment Appendix B – National Highways EqIA Screening Template

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Lower Thames Crossing

7.10 Health and Equalities Impact Assessment

Appendix B – National Highways EqlA Screening Template

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1 Introduction

- 1.1.1 This appendix sets out the assessment of equality effects associated with the Project using National Highway's standard Equality Impact Assessment (EqIA) Screening Analysis and Monitoring template. National Highways is committed to improving performance in the area of equality and diversity as a service provider, contractor and employer.
- 1.1.2 An EqIA is a way of systematically taking equal opportunities into consideration when making a decision and enables National Highways to comply with current national legislation set out under the Equality Act 2010 and associated public sector equality duty. The duty requires public authorities to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. It helps to ensure the needs of people are accounted for during the development and implementation of the Project.
- 1.1.3 Under section 149 of the Equality Act 2010, all public authorities must, in the exercise of their functions, 'have due regard to the need to' eliminate conduct that is prohibited by the Equality Act 2010. Such conduct includes discrimination, harassment and victimisation related to protected characteristics, which comprise:
- a. Age
 - b. Disability
 - c. Gender reassignment
 - d. Marriage and civil partnership
 - e. Pregnancy and maternity
 - f. Race
 - g. Religion or belief
 - h. Sex
 - i. Sexual orientation
- 1.1.4 The public sector equality duty also requires public authorities to have due regard to the need to advance equality of opportunity and foster good relations between people who share relevant protected characteristics and persons who do not.
- 1.1.5 The assessment provides information on mitigation and other measures or enhancements for the Project that would help minimise or eliminate potential adverse equality effects. Further actions required to reduce adverse impacts and enhance equality of opportunity for equality groups are also set out.
- 1.1.6 The findings from this assessment have been integrated into the Health and Equalities Impact Assessment (HEqIA) (Application Document 7.10) to ensure that effects are considered holistically.

2 Project description

- 2.1.1 The A122 Lower Thames Crossing (the Project) would provide a connection between the A2 and M2 in Kent and the M25 south of junction 29, crossing under the River Thames through a tunnel. The Project route is presented in Plate 2.1
- 2.1.2 The A122 would be approximately 23km long, 4.25km of which would be in tunnel. On the south side of the River Thames, the Project route would link the tunnel to the A2 and M2. On the north side, it would link to the A13, M25 junction 29 and the M25 south of junction 29. The tunnel portals would be located to the east of the village of Chalk on the south of the River Thames and to the west of East Tilbury on the north side.
- 2.1.3 Junctions are proposed at the following locations:
- a. New junction with the A2 to the south-east of Gravesend
 - b. Modified junction with the A13/A1089 in Thurrock
 - c. New junction with the M25 between junctions 29 and 30
- 2.1.4 The Project route would be three lanes in both directions, except for:
- a. link roads
 - b. stretches of the carriageway through junctions
 - c. the southbound carriageway from the M25 to the junction with the A13/A1089, which would be two lanes
- 2.1.5 In common with most A-roads, the A122 would operate with no hard shoulder but would feature a 1m hard strip on either side of the carriageway. It would also feature technology including stopped vehicle and incident detection, lane control, variable speed limits and electronic signage and signalling. The A122 design outside the tunnel would include emergency areas. The tunnel would include a range of enhanced systems and response measures instead of emergency areas.
- 2.1.6 The A122 would be classified as an ‘all-purpose trunk road’ with green signs. For safety reasons, walkers, cyclists, horse riders and slow-moving vehicles would be prohibited from using it.

Junction modifications

- 2.1.7 Alterations would be required to both the M25 at the northern limits of the route and on the A2 at the southern end. The existing A13/A1089 junction would also require modifications to connect to the Project route.

Vertical alignment

- 2.1.8 The new A122 would be at varying heights along the route, with approximately 80% in a cutting, false cutting or tunnel. The A2 would remain at its current level, with the junction between the A2 and the A122 requiring some link roads at or below ground level, on embankments and structures such as bridges. As it approaches the southern tunnel portal, the A122 would be at ground level before descending into a deep cutting. To the north of the River Thames, the A122 would be lowered as much as practicable to reduce its impact on the landscape. Where the road crosses the Tilbury floodplain, railway lines, and the Mardyke floodplain, it would be elevated.

Side roads

- 2.1.9 The Project would include adjustment to a number of local roads. Most existing local roads affected by the Project route would be reconnected or designed to provide alternative provision. In most locations, the affected local roads would cross over the Project route.

Tunnel

- 2.1.10 It is currently assumed that two tunnel boring machines (TBMs) would be used to construct the tunnel, one for each bore.
- 2.1.11 Emergency access and vehicle turn-around facilities would be provided at the tunnel portals. Cross-passages providing a connection between the two tunnels would be provided for emergency incident response and tunnel user evacuation. Tunnel portal structures would accommodate service buildings for control operations, mechanical and electrical equipment, drainage and maintenance operations.

Highway crossings

- 2.1.12 Approximately 50 new highway crossings would be required, comprising road bridges, underpasses, green bridges and footbridges. In addition, widening and other modification of existing highway crossings would be required.

Highway drainage

- 2.1.13 South of the River Thames, the highway drainage system would discharge into vegetated drainage comprising infiltration basins with lined sediment forebays, ditches and swales. The intention is that these would outfall from the drainage systems to ground.
- 2.1.14 North of the River Thames, the highway drainage system would discharge into vegetated drainage comprising wetland-type retention ponds with sediment forebays, ditches and swales within an infiltration basin at the A13 junction. Existing dry retention ponds located along the M25 would be upgraded to wetland-type retention ponds with sediment forebays. The outfall from these ponds would discharge into watercourses and ditches.

Safety and security

- 2.1.15 The A122 would include the following:
- a. Modern safety measures and design standards with technology to manage traffic and provide better information to drivers
 - b. Variable Message Signs to display variable speed limits, travel information, hazard warnings and both advisory and mandatory signage to drivers
 - c. CCTV cameras and detection equipment to monitor and manage network usage, for alerting and investigating incidents (e.g. stopped vehicles), for maintenance and asset protection, and for detection of crime
 - d. Above-ground traffic detection to control automatic traffic management systems (e.g. variable speed limits) and to collect data on traffic flows
 - e. Free-flow road user charging infrastructure
 - f. Equipment within the tunnel to monitor and control the tunnel environment during normal and emergency operations.

Road user charging

- 2.1.16 In December 2014, the Government stated in the National Policy Statement for National Networks (NPSNN) (Department for Transport, 2014) that the *'Government will consider tolling as a means of funding new road capacity on the SRN. River and estuarial crossings will normally be funded by tolls or road user charges'*.
- 2.1.17 To align with NPSNN policy and to help the Project meet the Scheme Objectives, it is proposed that road user charges would be levied in line with the Dartford Crossing. Vehicles would be charged for using the new tunnel.

Walkers, cyclists and horse riders

- 2.1.18 Where the Project affects existing Public Rights of Way, these would be reinstated with provision of under- or overbridges, or a suitable alternative provision would be made. The Project proposes a number of new, diverted, upgraded and reinstated routes for walkers, cyclists and horse riders.

Environmental design

- 2.1.19 The Project has been developed to avoid or minimise significant effects on the environment, and during the design process further measures have been incorporated to mitigate adverse impacts that would arise and that cannot be avoided. Some of the measures adopted include landscaping, noise mitigation measures, and the provision of green infrastructure along the Project route, including a number of green bridges. The Project would create a number of new areas of ecological habitat, providing mitigation or compensation for the impacts on existing areas. Two new parks would be created including Tilbury Fields to the west of the northern tunnel portal, and Chalk Park, to the south of the River Thames.

Construction compounds and utility logistics hubs

- 2.1.20 While the Project is being built, construction compounds would be located along the Project route. Larger compounds would be required at the northern and southern tunnel portals to allow for tunnelling operations and materials management. Utility logistic hubs would be needed for specific utility works.

Haulage routes and construction traffic management measures

- 2.1.21 Where there is no direct access from the strategic road network, suitable local roads would initially be used to access the construction worksites and compounds. Following this, temporary haul routes would be constructed off the strategic road network early in the programme where possible to access the construction worksites and compounds and further reduce usage of the local road network. In some instances, the temporary haul roads may need to connect to the existing local road network. Traffic management measures would be used to control the impacts of construction on the local and strategic road network.

Services and utility installations and diversions

- 2.1.22 To accommodate the construction and operation of the Project, it would be necessary to install and divert multiple utilities including overhead electricity powerlines, high-pressure gas pipelines and other utility networks and their associated infrastructure including cabinets, substations and maintenance compounds. New utility connections would be installed to the compounds and to the tunnels.

Land required

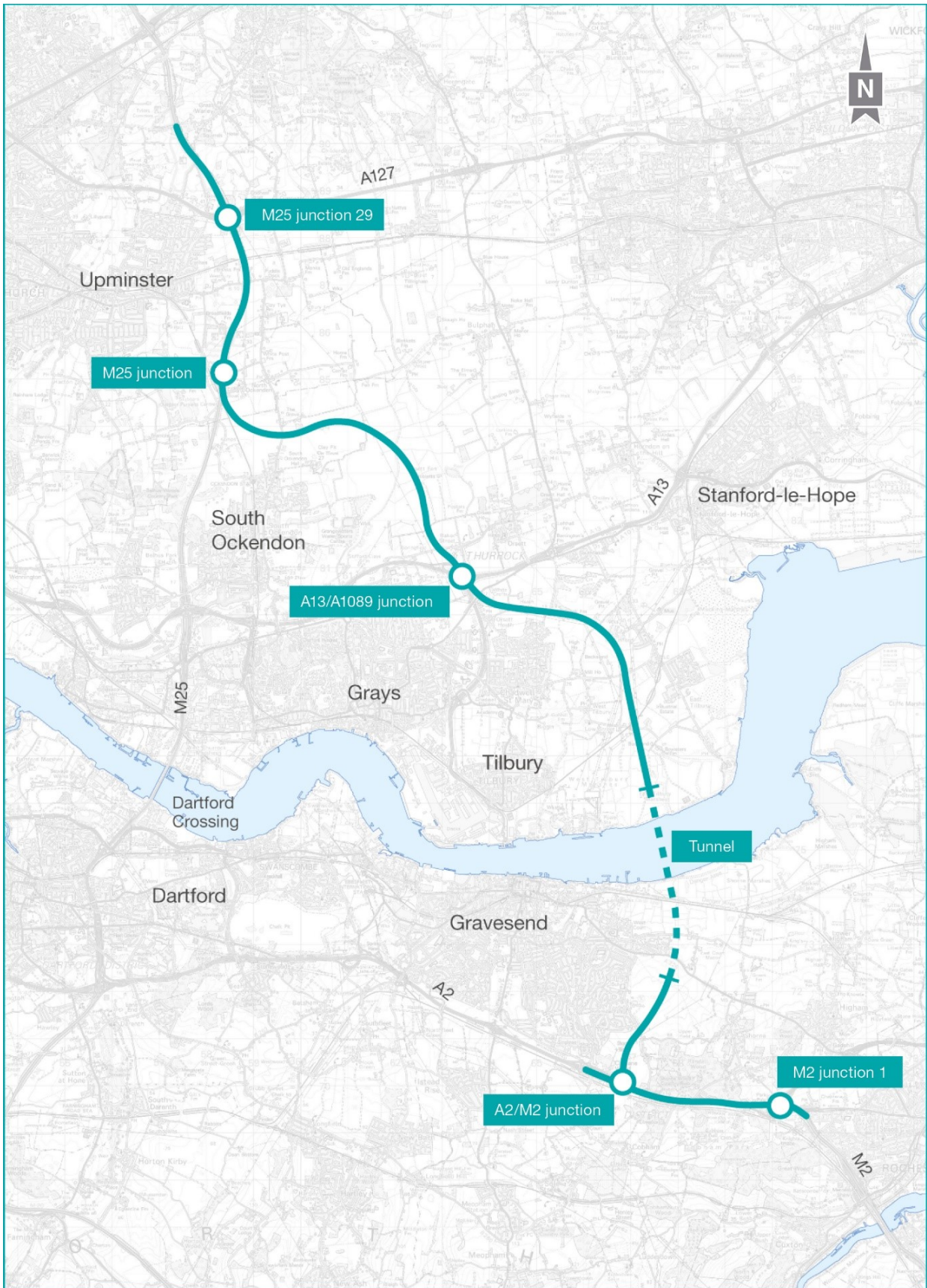
- 2.1.23 The Project would require land on a permanent basis for the road and tunnel, along with other operational infrastructure, and environmental mitigation and compensation.
- 2.1.24 On a temporary basis, land would be required for construction compounds, logistics areas and other construction activities. The utility installations and diversions, some environmental works and flood compensation requirements would require land to be taken on a temporary basis, and for permanent rights to be acquired for the operation and maintenance of any utility infrastructure, and to secure environmental works and flood compensation.
- 2.1.25 The full land requirement for the Project is shown on the Land Plans (Application Document 2.2), and set out in the Statement of Reasons (Application Document 4.1).
- 2.1.26 The Project would also require both permanent acquisition and temporary use of areas of special category land, which includes common land and public open space. Replacement land would be provided for some of this special category land. In other cases, in accordance with the Planning Act 2008, replacement land has not been included, for example, because it is only proposed to install and divert utilities through the land and the land would not be permanently impacted. This means that its previous use can continue once the works are finished.

- 2.1.27 Consultation with relevant landowners, occupiers and agents remains an ongoing focus through the development of the Project. Compensation for affected parties follows the statutory Compensation Code.

Operations and maintenance

- 2.1.28 Following completion, the A122 would be part of the strategic road network.
- 2.1.29 To carry out inspection, certain specified maintenance activities in the tunnel and periodic emergency exercises, a periodic full closure of the relevant tunnel(s) would be required. These would be planned to minimise disruption, and where feasible lane closures would be used instead.

Plate 2.1 Lower Thames Crossing route



3 EqIA Screening and Assessment

Equality Impact Assessment (EqIA)

Screening Analysis and Monitoring Template

Before carrying out an Equality Impact Screening or Assessment familiarise yourself with National Highways’ guidance on the subject. The Equality Impact Screening and Assessment procedure applies in terms of employment and the delivery of services.

The term ‘Policy / Practice’ is used throughout the document. This applies to all policy/practice/projects/schemes/building considerations/initiatives/guidance and functions across all areas of our business.

Equality Impact Assessment (EqIA)			
Name of Practice/Policy	A122 Lower Thames Crossing	Proposed or Current	Proposed
Person Completing the Assessment		Alison Powell – Lower Thames Crossing	
Directorate		Major Projects – Complex Infrastructure Programme Division	
Date: October 2022	EqI Register Ref No: (Obtained from the EDI Advocate)	MP11	

A: In this section, outline the aims, purpose, desired benefits and expected outcomes of the practice/policy, identifying the customers, staff or stakeholders involved or affected.

Aims and Objectives

The Dartford Crossing is the only road crossing of the River Thames east of London. The high level of traffic wanting to use this crossing results in frequent traffic congestion and poor journey time reliability, making the Dartford Crossing one of the least reliable sections of the strategic road network (SRN). Whilst incremental improvements to the Dartford Crossing have helped ease these issues, these have not been sufficient to address the lack of road capacity east of London.

Congestion, delays and poor journey time reliability at the Dartford Crossing and on surrounding roads are major impediments to economic growth in the South East of England. The River Thames acts as a barrier between Kent, Thurrock and Essex and affects the ability to build strong connections between these communities.

As a result of these ongoing issues, slow-moving and queuing traffic on both the local highway network and SRN approaches to the Dartford Crossing also impact the environment and surrounding communities through high levels of noise and air pollution, as described in Environmental Statement Chapter 5: Air Quality, and Chapter 12: Noise and Vibration (Application Document 6.1).

The principal benefits which would be delivered through the Project include reductions in congestion at the Dartford Crossing and on its approach roads, reductions in journey time and improvements in resilience and connectivity alongside benefits to the local, regional and national economy.

The Project objectives are to:

- a. support sustainable local development and regional economic growth in the medium to long term
- b. be affordable to the government and users
- c. achieve value for money
- d. minimise adverse impacts on health and the environment
- e. relieve the congested Dartford Crossing and approach roads and improve their performance by providing free-flowing north-south capacity
- f. improve the resilience of the Thames crossings and the major road network
- g. improve safety.

Benefits and Outcomes

Key benefits of the Project are summarised in Table 3.1 overleaf. Further detail relating to these areas can be found in The Need for the Project (Application Document 7.1).

Table 3.1 Key benefits of the Project

What the Project would achieve	
Economic growth	Faster and more reliable journeys and improved accessibility would boost the productivity of businesses in the Lower Thames area and wider region
	Enhanced connectivity and cross-river economic opportunities would further stimulate competition, boosting employment and increasing inward investment
	Benefits would be greatest for high value businesses, but also significant for the local area's lower value transport and construction sectors
	Quicker, more reliable access to key markets, resources and labour for the region's ports.
Communities and environment	Improved access to community and to businesses.
	Reduced congestion in Dartford area would decrease noise and air pollution.
	Enhanced connectivity and facilities for walkers, cyclists and horse riders.
	The Applicant is committed to achieving no net loss in biodiversity by end of RIS 2 and will work towards net biodiversity gain by 2040.
	Improved access to jobs/skills/training across river for local communities.

Transport	The Project would significantly reduce traffic congestion at the Dartford Crossing.
	Many journeys on both sides of the river, as well as those that cross the river, would be quicker
	Cross-river journey time reliability would be improved, with less frequent delays and uncertainty.
	An additional crossing of the River Thames east of London would lead to a more resilient road network in the Lower Thames area.
	The Project would provide substantial additional capacity and new route options across the River Thames east of London, improving connectivity, both across the river and east/west.
	The Project would be designed to the latest safety standards and would decrease the accident rate.
	Northbound Dangerous Goods Vehicles (DGVs) would be able to travel through the Lower Thames Crossing tunnels without the need for an escort, reducing disruption for other road users

Affected Communities

To the south of the River Thames, the Order Limits for the Project affect the administrative areas of Dartford, Gravesham, Medway and Tonbridge and Malling. The A2/M2 corridor divides a predominantly urban landscape to the north with a rural area to the south. The urban area located between the River Thames and the A2 corridor comprises settlements including Dartford, Greenhithe, Swanscombe, Northfleet and Gravesend; within Medway District, the urban area is clustered to the east of the M2 around the Medway towns of Strood, Rochester and Chatham. Outside of these urban areas, the landscape is characterised by smaller towns and villages within open countryside. The transport network to the south of the River Thames is dominated by east–west routes, including the A2/M2, the A226 (Gravesend Road) and the HS1 rail corridor.

To the north of the River Thames, the Project passes through the administrative areas of Thurrock Council, Brentwood Borough Council and the London Borough of Havering. The A13 runs in a predominantly west–east direction between the M25 and Southend-on-Sea, passing to the north of the towns of Grays and Tilbury. The area is bound by the M25 in the west, the A13 in the north and the A1089 in the east, and is heavily urbanised, incorporating the Lakeside Shopping Centre and surrounding industrial/commercial developments near the Dartford Crossing, in addition to developments associated with Tilbury Docks.

Beyond the A1089, the area includes residential communities of Tilbury, Chadwell St Mary and East Tilbury, set within a low-lying landscape. To the north of the A13, the area is predominantly rural in character; settlements include South and North Ockendon as well as the villages of Orsett and Bulphan. The landscape to the west of the M25 becomes more urbanised near its junction with the A127, with settlements including Upminster and Cranham.

B: SCREENING (Stage 1) Questions considered to establish impacts from the outset for new or changing policies/practices	Sex	Religion or belief	Age	Disability	Race	Sexual orientation	Gender reassignment (include transsexual and	Pregnancy and maternity	Marriage and civil partnership
1: Is there any indication or evidence that different groups have different needs, experiences, issues or priorities in relation to the practice/policy?	N	N	Y	Y	Y	N	N	Y	N
2: Is there evidence or an indication of higher or lower uptake by different groups?	Y	N	Y	Y	Y	N	N	N	N
3: Do people have different levels of access? Are there social or physical barriers to participation (e.g. language, format, physical access)?	Y	N	Y	Y	Y	N	N	Y	N
4: Is there an opportunity to advance equality or foster good relations by altering the policy/practice?	Y	N	Y	Y	Y	N	N	N	N
5: Is there an opportunity to advance equality or foster good relations by working or engaging with other organisations or the wider community?	Y	N	Y	Y	Y	N	N	N	N

B: SCREENING (Stage 1) Questions considered to establish impacts from the outset for new or changing policies/practices	Sex	Religion or belief	Age	Disability	Race	Sexual orientation	Gender reassignment (include transsexual and	Pregnancy and maternity	Marriage and civil partnership
6: Is there stakeholder (staff, trade unions or public) concern about the policy/practice in terms of actual, perceived or potential discrimination against a particular group?	N	N	N	N	N	N	N	N	N
7: Is there potential for, or evidence that any part of this policy/practice may adversely affect equality of opportunity for all or may harm good relations between different groups?	Not known at this stage								
8: Is there any potential for, or evidence that any part of the policy/practice could discriminate indirectly or directly? (Consider those who implement it on a daily basis).	N	N	N	N	N	N	N	N	N

C: The rationale behind the rating (at Section B) and details of the evidence utilised to inform the screening decision.

If all answers are 'No', an EqlA is not required. The reasons and monitoring requirements should be summarised.

If the answers are 'Yes' or 'Unknown', the judgement on the need to gather further evidence to reach an informed decision via an EqlA should be explained.

If there is confidence that the effect of the policy/practice will not be different for different groups then this is summarised below.

The rationale behind the ratings given in Section B and evidence used to inform the screening decision has been taken from:

- Use of EDIT (National Highways' Equality, Diversity and Inclusion Tool)
- Comprehensive baseline data analysis, which has provided a socio-economic profile of residents living near the Project, including people with protected characteristics
- Research findings relating to the potential impacts of major road schemes on equality groups including local residents and users of the strategic highway network
- Evidence from the various statutory and supplementary consultation activities held as the Project has been developed
- Relevant findings from other DCO documents. These include:
 - the Environmental Statement (Application Documents 6.1, 6.2 and 6.3), including ES Chapter 5: Air Quality, ES Chapter 12: Noise and Vibration, and ES Chapter 13: Population and Human Health
 - the Transport Assessment (Application Document 7.9)
 - the Health and Equalities Impact Assessment (Application Document 7.10).

Use of the National Highways' EDIT tool

The Equality, Diversity and Inclusion sifting Tool (EDIT) is designed to help project teams make an informed decision about the extent to which equality, diversity and inclusion (EDI) are relevant to the Project. EDIT uses scheme information and social and demographic data to identify whether schemes have the potential to have an EDI impact.

The EDIT tool was used in advance of the Statutory Consultation for the Project in 2018 to help understand what the EDI impacts of the Project might be and to inform the decision-making as to whether or not an Equality Impact Assessment would be required. The Project was given a score of 74% at this stage, highlighting that EDI issues would likely be a factor in the effective delivery of the Project and that preparation of an EqlA should be considered.

Evidence from baseline data analysis

Baseline data provides a profile of residents living near the Project, drawing on data from a variety of sources (including the 2011 Census and other available datasets from the Office for National Statistics). The purpose of the baseline is to identify the number and distribution of people with protected characteristics that may potentially be affected by the Project.

A comprehensive baseline has been prepared as part of the Health and Equalities Impact Assessment (Application Document 7.10). Baseline data have been gathered at the following spatial areas:

- a. Local authority level – comprising the local authorities of Gravesham Borough Council, Dartford Borough Council, Medway Council and Tonbridge and Malling Borough Council to the south of the River Thames and the local authorities of Thurrock Council, the London Borough of Havering, Brentwood Borough Council, Basildon Council and Southend-on-Sea Borough Council to the north of the River Thames. Data have also been collated at county level (Kent and Essex) both to provide comparative analysis and to present a profile of wider users of the Project (as National Highways' customers).
- b. Ward level – data have been collated at ward level for those wards next to or potentially affected by the Project.

This baseline can be found in Appendix C of the HEqlA (Application Document 7.10) and includes data relating to people with protected characteristics as well as information relating to non-motorised and vulnerable road users (for example accident data, travel behaviour and car ownership).

Evidence from research literature review

The HEqlA provides summaries of findings from research relating to how different groups of people may be affected by major road schemes such as the Lower Thames Crossing. Findings of relevance to equality effects are highlighted here:

Accessibility – car ownership is typically lower for groups including young people, older people and disabled people. Public transport may be more commonly used by populations including children and young people, older people, those without access to a car and women. Changes in public transport provision may present a barrier to jobs, health services, education, shops and other services. Older people and groups impacted by disability are more dependent on health and social care services and are therefore more vulnerable if access to these services becomes restricted.

Severance – road construction, in particular new major urban roads, are associated with community severance, reduced access to local amenities and disruption of social networks caused by a physical barrier through the community (Egan *et al.*, 2003). Busy roads can result in severance for local communities, particularly for children, young people, older people and people with mobility or sensory impairments.

Access to green space and outdoor recreation – access to green space and nature is not equal, with poorer communities likely to suffer from 'green deprivation' (either less or lower quality green space accessible within their neighbourhood) (New Economics Foundation, 2021). Disparities in access to nature can also have a disproportionate impact on minority ethnic groups, with an estimated 40% of people from ethnic minority backgrounds living in the most green-space deprived areas (Groundwork, 2021). Disabled adults can experience barriers to recreation, including use of Public Rights of Way (PRoWs).

Active travel – for older people, factors such as safety, connectivity and the availability of good pedestrian access will influence walking as a preferred mode of travel. For children, factors including concerns about road traffic injury can be a major contributor to physical inactivity (PHE, 2016).

Affordability – household income varies significantly between regions of the UK as well as between ethnic groups and disability status (House of Commons Library, 2021).

Road safety – groups with greater sensitivity include children and older people (Steinbach *et al.*, 2011). Issues associated with becoming trapped in traffic for long periods as a result of unforeseen delays can be far more significant for disabled road users (Transport Focus, 2018). Young men are more commonly involved in road accidents.

Air quality – the most vulnerable groups to air pollution include young children and older people as well as those with pre-existing lung or heart diseases (WHO, 2013).

Noise – the WHO Regional Office for Europe (2011) suggests that some people may be less able to cope with the impacts of noise exposure and be at greater risk for harmful effects. Vulnerable populations considered to be particularly sensitive to noise-related health effects include children, older people, the chronically ill, people with hearing conditions (impairments, those suffering from tinnitus) and people with mental illness (for example dementia or schizophrenia) or conditions such as autism. Evidence also suggests noise pollution may limit children's learning (Xia and Li, 2018). Traveller communities may also be more vulnerable to noise-related disturbance, for example with transference of noise through trailer and caravan walls potentially greater than through the walls of conventional housing (DCLG, 2008).

Work and training – the risk of unemployment remains unequal between different groups in society, with minority ethnic groups, women, lone parents and people with disabilities experiencing lower employment rates (Marmot *et al.*, 2020). Those with lower socio-economic position, younger people, those in lower paid jobs and non-white people are more likely to experience poor quality work (Marmot *et al.*, 2020).

Housing and community-related impacts – older people may be adversely affected by impacts relating to perceptions of personal safety and security, for example through the introduction of construction workers to an area.

Climate change – people with disabilities and older people may be most vulnerable to the consequences of climate change, potentially lacking the resources or ability to be able to respond.

Evidence from consultation

The approach to statutory and non-statutory consultation for the Project has fully taken into account the requirements of the Equality Act 2010 and the public sector equality duty which came into force in April 2011. Target audiences have specifically included groups and individuals with protected characteristics under the Equality Act 2010 who may be impacted by the Project. Details of stakeholders engaged with during the development of the Project can be found in the Consultation Report (Application Document 5.1). The Statement of Engagement (Application Document 5.2) describes how the Applicant has engaged with community groups outside of the statutory and non-statutory consultation processes to ensure their concerns have been considered and responded to.

Since the preferred route for the Project was announced in 2017, five public consultations have been held and the Applicant has continued to engage with stakeholders to refine

and improve the proposals. Traverse, a specialist agency, was appointed to independently analyse the responses to all five consultations. Every response received was assigned a unique reference and transcribed on to a database for analysis. Every issue raised was grouped into themes, then analysed and considered in the decision-making process.

Table 3.2 summarises each of the key consultation events to date for the Project, including a summary of the main purpose of each event.

Table 3.2 Statutory and non-statutory consultation events 2013 to 2022

Date	Consultation event	Purpose
21 May – 16 July 2013	Non-statutory consultation on route options	<ul style="list-style-type: none"> This consultation gathered views on the preferred location for additional road-based river crossing capacity in the Lower Thames area. Responses to this formed the evidence base that the government used to make a decision on where to locate a new crossing.
26 January – 24 March 2016	Non-statutory consultation on route options	<ul style="list-style-type: none"> To give both members of the public and stakeholder organisations, including public representatives, the opportunity to put forward their views and comments about the proposal for a new crossing of the River Thames at Location C, east of Gravesend.
10 October – 20 December 2018	Statutory Consultation on preliminary information for the Project	<ul style="list-style-type: none"> A 10-week consultation which provided stakeholders and the public with an opportunity to have their say on proposals for the Lower Thames Crossing. The Project Team attended more than 100 meetings with stakeholders including local authorities, Statutory Environmental Bodies, business representatives and local elected representatives including Members of Parliament and ward councillors.
29 January – 2 April 2020	Supplementary Consultation	<ul style="list-style-type: none"> A further period of consultation to share design updates emerging in response to feedback from Statutory Consultation. This consultation event provided an opportunity for stakeholders to view and comment on the proposed changes.
14 July – 12 August 2020	Design Refinement Consultation	<ul style="list-style-type: none"> A period of consultation to share further information relating to key changes about the proposed design of the Project.
14 July – 8 September 2021	Community Impacts Consultation	<ul style="list-style-type: none"> The decision to carry out the Community Impacts Consultation was made in light of early feedback from the Planning Inspectorate on the withdrawn application for development consent, as well as feedback provided by local authorities through their Adequacy of Consultation Responses (AoCRs). In particular, the Applicant chose to act on the suggestion that more could have been done to set out and invite comment on the impacts of the Project and its planned mitigations on local communities.
12 May – 20 June 2022	Local Refinement Consultation	<ul style="list-style-type: none"> Presented further refinements to the proposals, informed by consideration of the issues raised through the preceding consultation, as well as stakeholder engagement, on-going design development, assessments and investigations.

People with different protected characteristics may have different needs, priorities and experiences, which can impact on how they may interact with the consultation process. Accessibility in the broadest sense was a key factor throughout the planning of all consultations. Venues used for Public Information Events were fully accessible, with Building Accessibility Checklists completed as part of the assessment of venue suitability. Accessibility was not just limited to the physical attributes of the venues; at each venue the following was available if appropriate:

- a. A portable induction loop
- b. A British Sign Language (BSL) signed event (provided on request)
- c. An easy-to-read version of the consultation guide
- d. Magnifiers for the central maps
- e. An online disability awareness training course was provided for staff

As a result of the restrictions in place due to the Covid-19 pandemic, a 'digital-first' approach to consultation was taken for the Digital Refinement Consultation in summer 2020. During the consultation, there were approximately 50,000 click throughs to the website and around 41,000 visits to the exhibition section of the website. Special provisions were put in place for those who did not have internet access and those who would normally attend a consultation event to speak to a member of the Project Team. Provisions included public webinars and a telephone surgery; four webinars were held, with two covering the Project's proposals south of the River Thames and two covering the Project's proposals north of the River Thames. Each webinar included BSL translation and closed captioning. In total, 79 people registered to attend the webinars and a combined 57 questions were answered during the question-and-answer sections of the webinars. The telephone surgery resulted in a total of 68 calls being received and answered across the consultation period.

The Community Impacts Consultation similarly took place at a time of Covid-19 pandemic restrictions and uncertainty on whether those restrictions would ease or be lifted during the summer of 2021. This being the case, the Applicant undertook a primarily digital approach to consultation, similar to the approach taken to the Design Refinement Consultation, and put measures in place to ensure the consultation was as accessible, interactive and engaging as possible. The Applicant looked to support this approach with a series of public information events and outdoor information centres along the route. Six webinars were held, with two covering the Project proposals south of the River Thames, two covering the Project proposals north of the River Thames up to the A13, and two covering the Project proposals north of the A13. Each webinar included British Sign Language (BSL) translation and closed captioning. In total, 158 people registered to attend the webinars and a combined 85 questions were answered during the question-and-answer sections of the webinars. The telephone surgery resulted in a total of 37 call requests were received. Of the 37 call backs that were made, 22 were followed-up by call-backs from a specialist in the Applicant's team.

The Local Refinement Consultation took place when restrictions put in place in response to the Covid-19 pandemic were being eased. However, the Applicant was aware that while some people would be prepared to participate in a consultation through traditional

face-to-face engagement, others would not, and so the consultation was prepared using many of the 'digital-first' methods that had been successfully used for the Design Refinement Consultation and refined again for the Community Impacts Consultation. These methods included the telephone service (twelve members of the public used this service), a leaflet drop ahead of consultation launch to around 150,000 properties within approximately 2km of the route centre line, an interactive map where people could search by address or postcode to see the Project proposals in their area, and video guides to the proposals north and south of the River Thames.

For each of the Design Refinement, Community Impacts and Local Refinement Consultations, the Guide to Design Refinement Consultation was produced in an Easy Read format, designed to convey information in a style that, by making use of infographics and short statements, is more easily understood by people who have difficulty reading. This was made available upon request and was free of charge. It was also possible to request copies of documents in alternative languages and formats, by calling the Applicant's telephone line advertised on consultation materials or using an equivalent email address. Braille versions of the Guide to Design Refinement Consultation were produced by the Applicant prior to consultation launch as part of the consultation's accessibility strategy.

Consultation response forms from each of the statutory and non-statutory consultations enabled diversity information to be captured from respondents if they wished. This included information relating to gender identity, age, ethnicity and whether respondents considered themselves to have a disability.

The Applicant recognised that, even with an extended series of Public Information Events at a wide range of community venues, some people with an interest in the proposals might not be able to attend. To help address this concern, the Applicant planned and implemented a series of additional events that made use of the National Highways Mobile Information Centre (MIC). This is a Highways England branded vehicle that provides space for display material and for discussions between event staff and visitors. The National Highways MIC is fully Accessible for All and has its own EqIA evidencing this compliance.

The MIC allowed National Highways to hold events in smaller communities that did not have venues large enough for a full Public Information Event. It also allowed National Highways to have a presence in areas of high footfall, for example pedestrianised areas close to shopping centres or high streets. MIC events were held during both the Statutory and Supplementary Consultations (prior to Covid-19 restrictions) as follows:

- a. During Statutory Consultation (2018), the MIC was used at 16 events to the south of the River Thames and a further 16 to the north of the River Thames. Dates and locations of the MIC events can be found in Tables 4.8 and 4.9 of the Consultation Report (Application Document 5.1).
- b. During Supplementary Consultation (2020), a further 11 MIC events were held (seven to the south of the River Thames and three to the north of the River Thames). A further three events were cancelled due to the announcement of the UK Government Covid-19 restrictions. Dates and locations of the MIC events can be found in Tables 6.7 and 6.8 of the Consultation Report (Application Document 5.1).

Finally, additional engagement has been undertaken with groups with protected characteristics across all phases of consultation. This is summarised below:

- a. Gammonfields Way Travellers Site – the Project would directly impact a traveller site at Gammonfields Way, which is a 21-plot site next to the A13 and managed by Thurrock Council. The construction of the Project would require the community who live there to be relocated. At Statutory Consultation, letters were sent to each property at the Gammonfields Way travellers' site to inform residents, confirm that the site would need to be relocated as part of the Project, and invite them to attend an engagement event to be held at the site. Thurrock Council's Traveller Liaison Officer was informed of the letter and the event to ensure that they were aware of the Applicant's plans and able to provide further information to residents of Gammonfields Way travellers' site. The engagement event took place on 27 November 2018, giving the local community an opportunity to ask questions and provide feedback to the Project Team. Further detailed engagement has since taken place with residents of the site. During the Covid-19 pandemic, when face to face meetings were not possible, a private Facebook group was established where the Project could post a series of videos, including diagrams, drawings and voiceovers, in order to obtain feedback and comments from the travellers. The videos were supplemented by phone calls to individuals who were known to not be on Facebook or had no internet access. The Site Manager, working on behalf of Thurrock Council, also liaised directly with the travellers as required. Explanatory videos about amendments to the Project were also incorporated into consultation website material for the Community Impacts Consultation and Local Refinement Consultation. The design of the new site and the pitch layout has been agreed with the travellers and with Thurrock Council, as well as the inclusion of a condition within the Schedule 2 Requirements of the Development Consent Order that provides for Thurrock Council to approve the detailed design of the replacement facility.
- b. Other travellers' sites within the London Borough of Havering and within Gravesham Borough Council are located in close proximity to the Order Limits and may be affected by environmental change during construction and operation. These sites, all of which are privately owned, have received information as part of statutory and non-statutory consultation, including letters and leaflets as appropriate.
- c. Initial designs were presented to the National Mobility Forum in June 2019 to obtain feedback. A Disabled Road Users Forum was set up to engage with disability and mobility groups to understand what concerns these road user groups have when driving through tunnels and how National Highways can communicate safety advice and specific safety features within tunnels. A meeting of the forum was convened on 9 March 2020, to which representatives of Roads for All organisations were invited. The forum provided an opportunity for representatives of disability and mobility groups to give feedback on Project proposals during Supplementary Consultation, including the tunnel designs and systems. Objectives of the meeting included to develop the evacuation strategy with input from disability/mobility drivers and passengers and to build advocacy.

- d. The Project is dedicated to ensuring that any impact on schools is minimised as far as possible and to providing support to local schools and educational facilities in preparation for construction of the Project. Meetings have been held with schools closest to the Project to discuss their needs, concerns, and potential mitigation measures to address adverse impacts. Skills, education and employment opportunities have also been shared such as attendance at careers fairs, organising and attending webinars, and specific school newsletters. A note was shared with the Gateway Learning Community schools (a partnership of schools in Tilbury and Chadwell St Mary in Thurrock) which provided a summary of the construction works and associated forecast impacts on traffic near the schools during the construction of the Project. This provided an opportunity for the Project to clearly set out the proposed measures to mitigate impacts during the construction phase and it invited the schools to engage further with the Project on the implementation of these measures.
- e. Meetings held with individual organisations, groups and businesses that may provide services for people with protected characteristics. These have included:
- Meetings with the Whitecroft Care Home to discuss potential concerns around construction and operational impacts and opportunities to enhance the Project design to mitigate adverse impacts on residents. This has resulted in the relocation of the Stanford Road construction compound further away from the Care Home.
 - Meetings with the Sugarloaf Riding School for the Disabled. Land in the ownership of the Riding School was previously within the Order Limits for the Project due to proposals for changes to a WCH route in the area; however, the proposals have since been amended and the Riding School is now located outside of the Order Limits.
 - Meetings with Wild Thyme Outdoors, an outdoor foraging and education activity provider operating on an informal word of mouth arrangement with the landowner in an area of privately owned woodland called The Wilderness to the east of North Road in Thurrock. Wild Thyme offers forest school type activities (for example outdoor foraging, education and survival skills) primarily for children with social and mental health needs. Anecdotal information provided by Wild Thyme suggests that typically around 30 children/young people use the activities in an average week, although activities have also been offered during school holidays when numbers can increase significantly. Activities during 2022 have been limited due to damage sustained at the site from Storm Eunice. The Wilderness would be impacted by land required for the Project. The provider is considering whether services can be relocated or provided in an alternative way off-site (for example through workshops at schools).
- f. A series of workshops and meetings have been held with representatives of walking, cycling and horse-riding organisations to identify issues and opportunities

- g. Six focus groups were held in 2019 with representatives of specific vulnerable populations (including young jobseekers, people from ethnic minority groups, mothers with young children, older people and people with disabilities). It is noted that the findings from these focus groups are not representative of specific populations, but provided useful context and understanding in terms of specific issues and travel behaviour of relevance to the wider assessment.
- h. The Project has consulted with representatives of each of the Emergency Services, considering all likely tunnel incident scenarios, and are defining appropriate emergency incident response activities and traffic management plans. In forthcoming workshops, inter-services responses will be considered further, and specific response procedures defined and subsequently drafted into a document of incident response plans to which all participating emergency services will ultimately be asked to subscribe.

Relevant findings from other DCO documents

An Environmental Statement has been prepared for the Project (Application Documents 6.1, 6.2 and 6.3), which includes assessments of relevance to equalities, notably in relation to air quality, noise and population and human health (ES Chapters 5, 12 and 13 respectively). The assessments have identified potential adverse and beneficial impacts, together with a range of embedded, good practice and essential mitigation measures. The Transport Assessment (Application Document 7.9) has identified changes relating to journey times for users of private vehicles and users of public transport during both the construction and operational phases of the Project.

Confirmation – State whether a full EqIA is required

(Tick box as appropriate)

Yes	X	<ul style="list-style-type: none"> • Adjustment required to prevent potential discriminatory practice and to remove barriers to equality of opportunity. • Further evidence/consultation required to enable a sound equality decision. <p>Proceed to Sections D – H</p>
No		<ul style="list-style-type: none"> • The policy/practice is robust in terms of equality. • The impact on different groups is considered to be ‘neutral’ with no risk of discrimination and any minor impacts can be justified. <p>Proceed to Section E1 and Sign-off at H</p>

D: ASSESSMENT (Stage 2)

The level of impact on protected characteristics gauged from available information, research, consultation

This section describes the potential impacts of the Project on people with protected characteristics during both construction and operational phases. The assessment has made reference to the following chapters of the Environmental Statement (ES):

- a. ES Chapter 5: Air Quality (Application Document 6.1)
- b. ES Chapter 7: Landscape and Visual (Application Document 6.1)
- c. ES Chapter 12: Noise and Vibration (Application Document 6.1)
- d. ES Chapter 13: Population and Human Health (Application Document 6.1)
- e. ES Chapter 16: Cumulative Effects Assessment (Application Document 6.1)

Other documents which have provided further information relating to potential impacts on people with protected characteristics include:

- a. Need for the Project (Application Document 7.1)
- b. Road User Charging Statement (Application Document 7.6)
- c. Distributional Impact Appraisal, contained within Appendix D: Economic Appraisal Package of the Combined Modelling and Appraisal Report (Application Document 7.7)
- d. Transport Assessment (Application Document 7.9)
- e. Health and Equalities Impact Assessment (Application Document 7.10)

The assessment identifies relevant embedded, good practice and essential mitigation for the Project which has assisted with reducing potential equality effects. Further detail relating to mitigation measures can be found in the relevant topic chapters of the Environmental Statement as well as the following documents:

- a. The Register of Environmental Actions and Commitments (REAC). The REAC forms part of Appendix 2.2, the Code of Construction Practice (CoCP) (Application Document 6.3)
- b. The outline Traffic Management Plan for Construction (oTMPfC) (Application Document 7.14) provides outline concepts and principles that will be applied for the design and management of construction traffic management and transport logistics for the Project
- c. The Framework Construction Travel Plan (FCTP) (Application Document 7.13) has been produced to provide a framework with regard to the implementation of travel planning for the movement of personnel to and from the construction areas and compounds during the construction phase of the Project.

The assessment has considered both disproportionate and differential impacts. To capture specific effects on people with protected characteristics in line with the Equality Act 2010, where relevant the assessment has identified whether the impact is likely to have a disproportionate or differential effect, described as follows:

- a. Disproportionate – where there is a proportionately greater impact on people with a protected characteristic than on other members of the general population in a particular area
- b. Differential – an impact which affects people with a protected characteristic differently from the rest of the general population because of specific needs or a recognised vulnerability.

Potential effects on people with protected characteristics, together with proposed mitigation, are described below in relation to a number of topics for both construction and operation phases.

Construction impacts and mitigation

Accessibility

Impacts may be experienced by groups who are more reliant on public transport (particularly bus services) for example children, women and people with disabilities. Increased journey times for buses using the local road network may have an impact in relation to accessing services and employment for these groups. It is noted that these impacts would be temporary in nature (although long-term) and that no delays greater than five minutes have been predicted in relation to individual affected bus routes.

People with disabilities who are car users may experience impacts relating to increased journey times as a result of traffic management measures and road closures. These may particularly relate to residents and users of facilities in Orsett and Baker Street. However, impacts are considered to be in line with the general population and no differential or disproportionate impact is therefore anticipated for people with protected characteristics.

A range of traffic management measures have been identified which are secured in the oTMPfC (Application Document 7.14) and which would be taken forward by Contractors into a Traffic Management Plan for Construction (TMP). Communication with local communities around changes in traffic management at local area level would take place through the Community Liaison Groups and Traffic Management Forums set out in the CoCP (Application Document 6.3, ES Appendix 2.2) and oTMPfC respectively.

Traffic-related severance

Temporary severance impacts have been identified as a result of changes in the local road network, for example as a result of increased traffic flows. These may differentially affect some people with protected characteristics, including children, older people and people with disabilities / long-term health conditions). A number of the road links identified show there is a higher than average proportion of older people at Thong Lane; for other locations, including Chalk Road, Lower Higham Road, Gravesend Road, Long Lane and St Chad's Road, demographic analysis identifies higher proportions of children at a local level. The oTMPfC (Application Document 7.14) and TMP, together with appropriate communication with local residents and affected communities would help to reduce these impacts.

Access to green space and outdoor recreation

Generally, access would be maintained to areas of public open space and outdoor recreation assets during the construction period. There are limited instances where this may not be the case – for example with the loss of Southern Valley Golf Course. Further detail relating to how areas of open space and private recreation facilities are affected by the Project can be found in Appendix D and Appendix G of the Planning Statement (Application Document 7.2).

Areas of open space are available within reasonable travel distances of populations along the Project route. People who may not have access to private vehicles (which may be more likely to include people with protected characteristics such as age (children and older people) or people with disabilities) may experience an adverse impact, due to fewer alternatives being available to them within a reasonable journey time. To the south of the River Thames, this may relate to people living on the eastern fringe of Gravesend, who may currently access fields next to Claylane Wood, or the wider countryside via footpaths through the SVGC. To the north of the River Thames, this may relate to people living near Thames Chase (on the southern outskirts of Cranham) or users of the Ron Evans Memorial Field.

For the area in the vicinity of the M2/A2/A122 Lower Thames Crossing Junction, where construction activities would necessitate the permanent closure and diversion of a number of WCH routes, the oTMPfC (Application Document 7.14) secures the provision and maintenance of a suitable alternative route connecting Riverview Park and Gravesend with Shorne Woods Country Park within one month of closing the existing route except where short term closures are required for safety reasons. This would benefit residents in communities on the eastern fringe of Gravesend, notably Chalk, Westcourt, Riverview Park and Singlewell.

Where there are effects on well used areas of green space (such as Thames Chase Community Forest), the Applicant would work closely with operators to ensure that sites could remain open and that disruption for users would be reduced.

The duration of potential impact varies according to location along the Project route, from short-term impacts associated with small-scale utilities diversions or footpath upgrades through to medium- and longer-term impacts associated with more significant works. The main construction works are planned to last up to six years; during this time it is anticipated that people would adapt their behaviour according to the location and extent of construction activities.

Active travel

Changes to journey times and travel patterns may arise from temporary closures and diversions of PRoWs as a result of land-take or the need to accommodate construction activities. Even small changes can adversely impact people with protected characteristics such as children, older people or people with disabilities.

The number of routes identified either as being closed for a significant period of time, or permanently, and for which no diversion has been proposed, is small. Where possible, diversion routes have been identified; in many instances these routes are proposed to be constructed or made available for users either prior to the closure of the original route or within a short period of time. It is noted that there are instances where this period of time may be over two years, however, for these routes it is considered that alternative routes are available for the local community to use.

Extensive consultation has taken place to date with walking and cycling groups to the north and south of the River Thames. Ongoing engagement will be necessary with representatives of the local community (through Community Liaison Groups) through the construction period.

Affordability

No impacts on people with protected characteristics relating to affordability have been identified during the construction phase. Concerns highlighted by stakeholders around impacts associated with demand for private rented accommodation by construction workers and related impacts on affordability have been considered as part of the housing topic.

Road safety

A variety of measures are proposed to manage the impacts of construction traffic on the road network and thereby reduce adverse impacts for key receptors (such as schools and care homes) where there may be an effect on people with protected characteristics (for example children or older people). These measures are secured in the FCTP (Application Document 7.13), oTMPfC (Application Document 7.14) and oMHP (Application Document 6.3 Appendix 2.2). They include measures relating to routes where there would be an HGV ban (for example outside schools during drop-off and pick-up times).

In response to concerns raised regarding the lack of funding towards educational road safety programmes for school children, the Project has included a commitment within the Stakeholder Actions and Commitments Register (Application Document 7.21) to provide an educational road safety programme for school aged children.

Air quality

Children, older people and people with some types of disabilities / long term health conditions may be more sensitive to changes in air quality during the construction phase, notably as a result of dust emissions. A range of mitigation measures described in the REAC, which forms part of the CoCP (Application Document 6.3, ES Appendix 2.2), ensure the effective management of construction dust, and measures to appropriately manage emissions from construction plant and construction traffic. ES Chapter 5: Air Quality (Application Document 6.1) has assessed impacts arising from construction activities and concluded that, with mitigation as described, there would be no significant effects on air quality. As a result there would be no discernible impacts for people with protected characteristics.

The proposals for ongoing community engagement during construction works via the establishment of CLGs provides a mechanism by which specific concerns can continue to be raised and addressed by members of local communities.

Noise and vibration

Significant adverse noise effects have been identified as a result of construction activities, including from construction noise, construction traffic and percussive piling activities. Analysis of areas within which adverse effects are predicted include wards where there are greater concentrations of older people than the local authority average (Shorne, Cobham and Luddesdown; Riverview; and Chalk), slightly higher proportions of children under 16 (within Singlewell, East Tilbury and Chadwell St Mary wards) and slightly higher proportions of people with life-limiting conditions or disabilities (the wards of Chalk and Ockendon). These groups may be more susceptible to increases in noise levels.

A range of mitigation measures would be in place during construction to reduce impacts associated with construction noise (these are set out in further detail in ES Chapter 12: Noise and Vibration (Application Document 6.1) and the CoCP (Application Document 6.3 ES Appendix 2.2)). Examples of embedded mitigation include that the earthworks and engineering design would keep the Project road low in the landscape and screen it from view where possible through earthworks features. Earthworks and bunding necessary for the operational design would be established at an early stage of the construction programme to allow later activities to be undertaken behind them, allowing these design elements to provide acoustic screening.

Other mitigation measures relevant to the construction phase include the following:

- a. Pre-construction noise monitoring surveys would be undertaken and agreed with the relevant local authorities to establish a pre-construction baseline for the derivation of construction noise limits.
- b. Following any changes to the design, the Contractors would ensure that an updated noise assessment has been carried out to ensure there would be no additional, or increase in, negative effects on nearby receptors.
- c. Careful consideration of the location and layout of construction compounds to separate noise-generating equipment from sensitive receptors and the use of mains electricity as opposed to generators where possible.
- d. Minimisation of construction vehicle traffic by, where practicable, selection of local suppliers along the Project route, using local workforces and by minimising the amount of material transported to construct the earthworks along the Project route.
- e. Planned community liaison groups would help to disseminate information to local communities regarding the programme for construction activities.

Assessment of potential noise impacts have been undertaken for all travellers' sites potentially affected by construction activities. This includes sites located off Rochester Road in Gravesham; a site located at the end of Lower Crescent, Linford; Gammonfields Way travellers' site; and sites within Havering including Fair Oak Showman's Quarters, Railway Sidings and Tyas Stud Farm. In order to mitigate the potential for significant effects, best practice measures (BPM) and other construction phase mitigation would be implemented through the controls inherent within the REAC (Section 7 of the CoCP (Application Document 6.3, Appendix 2.2)). Additionally, under the controls within the CoCP, when further details of the construction method and design are known, the Contractors would develop a Noise and Vibration Management Plan (REAC NV002) to control noise as far as reasonably possible under BPM. As such it can be concluded that construction noise would be suitably controlled to a level where it would not constitute a significant effect at any of the traveller's sites identified and assessed.

Work and training

The Project would adopt an inclusive procurement process, which would encourage work and training opportunities to be accessible to disadvantaged or under-represented groups in the local community. This would include some people with protected characteristics, for example people with disabilities.

Impacts on housing and community services

A total of 30 residential properties would be subject to demolition as a result of the Project – four of these are located to the south of the River Thames, with the remaining 26 properties in locations to the north of the river. Properties to the south of the River Thames subject to demolition are located along Henhurst Road and Watling Street; properties are relatively few in number in relation to the wider community and do not form a particular cluster of dwellings. To the north of the River Thames, however, there are two clear clusters of impacted communities: ten properties subject to demolition are clustered along Ockendon Road immediately adjacent to the M25, and a further cluster of properties are located in and around the small community of Baker Street

The local area within which both Baker Street and North Ockendon are located is characterised by older age groups (for example, at Lower Super Output Area level, the Baker Street area has a population over 65 years of age of 20.1%, compared to 12.7% for Thurrock as a whole (Census, 2011)). Older people are likely to be impacted more by the changes to the local community and social networks (both for those potentially relocated and for those remaining) than other population groups.

Younger families with school-age children may experience changes as a result of moving schools or changes in journey times to education facilities.

Travellers would be directly impacted by the Project, with the loss of their existing site at Gammonfields Way and relocation to an adjoining area. Ongoing consultation and engagement will continue to ensure appropriate provision of replacement facilities. A further travellers' site at Linford would be temporarily impacted during construction due to works associated with utilities diversions, however this is not considered to be significant in terms of duration or type of activity.

Operational impacts and mitigation

Accessibility

Disabled drivers may have particular needs within the tunnelled section of the Project. In designing the Project, the needs of different road user groups have been considered. Consultation has taken place via the Disabled Road Users Forum, which highlighted the range of travel needs across specific user groups.

Relevant design standards have included DMRB CD 352 Design of Road Tunnels (Highways England, 2020a) and the DfT's Inclusive Mobility document (DfT, 2005). The section of the Project within the tunnel specifies a walkway width of 1.2m, limited to 1.0m only at the locations of rising services and emergency panels, to improve mobility for vulnerable users in the event of an emergency in the tunnel. The tunnel design allows for a 75mm ramped kerb to the walkway for wheelchair access, and provision for pedestrians to pass a wheelchair on the walkway.

The Project has consulted with representatives from each of the emergency services, considering likely tunnel incident scenarios, and are defining appropriate emergency incident response activities and traffic management plans.

The tunnel would be equipped with incident detection systems which can quickly detect a range of abnormal events within the tunnel, including stopped vehicles. Any events detected by the system would be alerted to the tunnel operator for investigation and appropriate response. The tunnel would be equipped with signs and signals to alert other tunnel users to incidents; there would also be traffic barriers near the portals to rapidly close the tunnel if required.

Emergency panels would be located at 50m intervals throughout the tunnel, and each would accommodate an Emergency Roadside Telephone (ERT) and two portable fire extinguishers. ERTs would provide tunnel users with a direct connection from the tunnel to the Tunnel Control Station (staffed 24/7) and be accessible for mobility impaired users. Additional ERTs would be located at the tunnel portals and next to cross-passages.

Mobile phone coverage would be included within the tunnel, so tunnel users can make an emergency call without leaving their vehicle. A public address/voice alarm and radio break-in system would also be installed within the tunnel to communicate with tunnel users in the event of an emergency. The design has considered road users with protected characteristics in terms of how information is provided; for example, in the tunnel there would be a public address system, as well as visual aids, to guide road users in the event of an incident or emergency.

Cross-passages connecting the two tunnel bores would be provided to facilitate tunnel user escape and emergency responder access, during emergency incidents in the tunnel. There would also be illuminated signage within the tunnel that can direct users to the nearest safe escape route in the event of an evacuation in accordance with DMRB CD 352 Design of Road Tunnels (Highways England, 2020).

Under normal operating conditions, traffic monitoring and control would be undertaken from a remote National Highways Tunnel Control Station (TCS) to be located at a Regional Operations Centre. The TCS would perform the day-to-day and emergency monitoring and operation of the tunnel systems, including tunnel traffic control, i.e. lane control signs, speed restrictions and closure barriers.

Local Tunnel Control Stations would be provided at the Tunnel Services Buildings at each of the tunnel portals to enable local operation if and when this was needed, e.g. during tunnel maintenance activities and in response to emergency incidents in the tunnel, or if there was a communication failure between the remote TCS and the tunnel.

Dedicated Traffic Officers would be provided at the tunnel on a 24/7 basis so that they could quickly attend to and manage incidents. Dedicated vehicle recovery services would be provided at the tunnels on a 24/7 basis so that roads can be cleared promptly following vehicle breakdown or collision incidents, in order to minimise disruption.

In response to feedback received during Statutory Consultation, National Highways included additional direct access points for emergency services vehicles in the Project design to enable quicker access from local roads. A new emergency service access road off Heath Road linking to the A1089 southbound was added, with emergency access also provided between Brentwood Road and the Project. These proposals were presented in the Supplementary Consultation, with further design modifications presented as part of the Design Refinement Consultation.

Traffic-related severance

Both adverse and beneficial disproportionate impacts have been identified on the following protected characteristics in relation to severance during operation:

- a. Older people – Forstal Road, Aylesford (Tonbridge and Malling), Elaine Avenue, Strood (Medway) and Brennan Road, Tilbury (Thurrock) are identified as areas where residents may experience a greater disbenefit as a result of increased severance. Areas where a greater proportion of older people may experience a benefit as a result of decreased severance are identified at Stanford Road, Grays (Thurrock) and Singlewell Road, Gravesend (Gravesham).

- b. Children aged under 16 – the increase in severance on Wrotham Road, Gravesham has a larger than expected impact on the proportion of the population under 16 years, for the regional study area and England and Wales. The decrease in severance on Station Road, West Horndon and Lodge Lane, Chafford Hundred affects a larger than expected proportion of the population of children under 16 years, for the regional study area and England and Wales.

The severance identified is not considered to be significant, due to other factors, for example the presence of existing pedestrian refuges and traffic-controlled crossings at appropriate locations (notably to enable access to shops and services). However, for several locations – notably Elaine Avenue (Strood), Brennan Drive (Tilbury) and Valley Drive (Gravesham) – it is considered that further investigation may be required into the potential for improving pedestrian crossing provision; this has been included as part of the Section 106 Agreement Heads of Terms document (Application Document 7.3).

Access to green space and outdoor recreation

Replacement land, or land which could mitigate the impacts identified for areas of temporary and permanent land-take affecting public open space, has been identified. Examples of where improvements to access to green space and outdoor recreation would be improved include the greater size and improved quality of replacement land for the Ron Evans Memorial Field, the provision of a new area of publicly accessible fenland at the Mardyke, and provision of new areas of open space at Thames Chase.

Enhancement opportunities include the creation of two publicly accessible country parks – Chalk Park to the south of the River Thames and Tilbury Fields to the north. The eight nitrogen deposition compensation sites identified equate to 245.7 ha of a woodland-dominated mosaic of habitats including opportunities for increasing public access to the countryside.

A beneficial impact has been identified for people who may not have access to a car as a result of the variety of new connections and routes planned. This may result in beneficial impacts for people with protected characteristics including children, older people and people with disabilities.

Active travel

A wide range of improvements are proposed as part of the Project design, improving connectivity, filling missing links in the PRow network and enhancing the safety of routes through the provision of shared pedestrian-cycle tracks along key routes. The network of new routes may encourage walking and cycling, including amongst communities in close proximity to these routes; this includes populations in more deprived communities such as those to the south and east of Gravesend as well as communities in parts of Thurrock.

A beneficial impact has been identified for people who may not have access to a car as a result of the variety of new connections and routes planned. This may result in beneficial impacts for people with protected characteristics including children, older people and people with disabilities.

Affordability

The road user charging strategy for the Project would be aligned with that for the Dartford Crossing, including current discounts and exemptions. The Road User Charging Statement (Application Document 7.6) states that *'without prejudice to any decision by the Secretary of State on the grant of development consent, the Department*

for Transport has reviewed details of the proposed road user charging regime for the Project and has confirmed that they are in line with government policy’.

Current exemptions include emergency and military vehicles, local bus services, vehicles that are tax exempt because they are registered for the use of a disabled person, and motorcycles. Residents from Thurrock and Gravesham would be eligible for a Local Residents Discount Scheme (LRDS).

Road safety

As a result of the kilometres travelled being higher in the area appraised, it is forecast that there would be a small reduction in the accident rate (accidents per vehicle kilometre travelled) over the 60-year appraisal period (from scheme opening in 2030). The distribution of accidents has not been considered across social population groups by residence, because users would not necessarily be from local areas and therefore the analysis would not be representative. No disproportionate or differential impact has been identified on protected characteristics in relation to road safety during operation. One of the commitments secured in the Stakeholder Actions and Commitments Register (Application Document 7.21) is for the Main Works Contractor to develop and provide an educational road safety programme for school aged children at relevant local schools along the Project route (SACR-002).

Air quality

ES Chapter 5: Air Quality (Application Document 6.1) states that no significant effects have been predicted for air quality during operation of the Project. Across the study area for air quality, there are locations predicted to experience both improvements and deteriorations in air quality. The majority of changes in air quality are forecast to be imperceptible or small at human receptors. While there is a deterioration in air quality at receptors next to the Project route, no exceedances of the annual mean AQS objective are predicted at receptors along the route corridor, largely as a result of the distance between receptors and the Project road and the fact that background concentrations are low in this area, given the rural/suburban nature of the surrounding land use. Air quality improvements are predicted at locations near the existing Dartford Crossing.

Noise and vibration

There are predicted to be changes in noise levels due to the operation of the Project. Adverse effects have been identified at a number of sensitive receptors which may have an impact on people with protected characteristics, notably older people (through adverse effects forecast at a number of care homes), children (through adverse effects forecast at a number of schools/nurseries), and within the wider population. Children may also be affected differentially by changes in noise levels, for example as a result of sleep disturbance impacting on behaviour and schooling, although it is not considered that noise increases would be such that they would be likely to cause these effects during operation. Adverse effects may be experienced by pregnant women/parents with newborn babies (who may already be suffering from sleep disturbance and for whom an increase in noise levels may result in an additional effect).

The findings of ES Chapter 12: Noise and Vibration (Application Document 6.1) concluded that there would be some significant effects as a result of the Project. Post-construction monitoring and evaluation would therefore be undertaken for the Project as set out in DMRB LA 111 (Highways England, 2020c).

The tables below set out the predicted levels and change in road traffic noise in the opening year of the Project (2030) during the daytime and night-time periods at travellers’ sites within proximity of the Project. For the Gammonfields Way travellers’

site, an assessment has been undertaken for each pitch; the operational daytime and night-time impacts for all pitches has been assessed as moderate beneficial.

Table 3.3 Operational day-time impacts

Site	DM 2030	DS 2030	Noise Level Difference	Magnitude of Impact
View Point Place	54.1	54.0	-0.1	Negligible
End of Lower Crescent, Linford	45.0	50.9	+5.9	Major Adverse
Laburnham Stables	58.3	56.6	-1.7	Minor Beneficial
Fairoak Showman's Quarters	65.6	61.8	-3.8	Moderate Beneficial
Railway Sidings	58.8	56.8	-2.0	Minor Beneficial
Tyas Stud Farm	68.8	62.7	-6.1	Major Beneficial
Willow Tree Lodge	66.5	67	+0.5	Negligible

Table 3.4 Operational night-time impacts

Site	DM 2030	DS 2030	Noise Level Difference	Magnitude of Impact
View Point Place	51.3	51.2	-0.1	Negligible
End of Lower Crescent, Linford	43.4	48.5	+5.1	Major Adverse
Laburnham Stables	55.0	53.5	-1.5	Minor Beneficial
Fairoak Showman's Quarters	61.3	58.0	-3.3	Moderate Beneficial
Railway Sidings	55.4	53.7	-1.7	Minor Beneficial
Tyas Stud Farm	64.1	58.8	-5.3	Major Beneficial
Willow Tree Lodge	62.1	62.5	+0.4	Negligible

One site (End of Lower Crescent, Linford) is predicted to experience a major adverse change in road traffic noise level during the daytime and night-time. Adverse impacts at this location would be mitigated as far as reasonably possible through the Project design via low noise surfacing with a road surface influence of -7.5dB(A) and a 4m false cutting adjacent to the Project main alignment. This is shown in Figure 12.6: Operational Road Traffic Noise Mitigation (Application Document 6.2). Resultant road traffic noise levels would be below a SOAEL (Significant Observed Adverse Effect Level) during the daytime and night-time, but as a result of the magnitude of the change would constitute a significant adverse environmental effect. However, in terms of health and quality of life, as defined under the policy considerations of the National Policy Statement for National Networks (Department for Transport, 2014):

- a. Daytime: as the changes occur below a LOAEL (Lowest Observed Adverse Effect Level) these impacts would not be expected to have an adverse effect on health and quality of life as defined under UK Policy on noise
- b. Night-time: as the changes occur above a LOAEL these impacts would be expected to have an adverse effect on health and quality of life as defined under UK Policy on noise. However, as they are below a SOAEL they would not be classified as significant.

Work and training

Analysis shows that there are clearly anticipated to be improvements in accessibility to jobs across the Lower Thames region. The Project intends to create a skills legacy for the region, providing people with the tools to access higher skilled jobs, reducing the skills gap and maximising opportunities for local people to gain more meaningful employment. This may have a beneficial impact for people with protected characteristics.

The Skills, Education and Employment Strategy for the Project (appended to Application Document 7.3) includes the implementation of inclusive and accessible recruitment processes designed to attract, recruit, and retain people from a range of backgrounds; irrespective of gender, race, disability, sexual orientation, religion or belief, age, transgender status, pregnancy and maternity, marriage or civil partnership, or socio-economic status (this list is not exhaustive). Priority groups identified through engagement with stakeholders include care leavers, NEETs, ex-military, people who are homeless/at risk of homelessness, ex-offenders, adult learners and women returners (again, this list is not exhaustive).

The Project is working in partnership with STEM Learning and the Careers and Enterprise Company (CEC) to develop an inclusive education programme aligned to support both school and technical college educational needs. Further information is set out in the SEE Strategy (appended to Application Document 7.3), which also includes targets for number of education hours and number of work placements.

Conclusions

The assessment has identified a number of impacts of the Project where specific cohorts of the population with protected characteristics may be adversely affected relative to the rest of the population:

- a. A number of receptors found close to the Project may be impacted by construction and operational noise. This may disproportionately and/or differentially affect children and older people.
- b. During construction, a number of WCH routes would be closed and, where feasible, diversions would be put in place. These temporary closures would bring about changes in journey times, local travel patterns and certainty of routes for users.
- c. Temporary changes to bus routes during construction may affect people who are more reliant on bus travel, including women, children, older people and people with disabilities.
- d. Older people may be adversely affected by changes in community cohesion as a result of the loss of properties within small settlements.

The assessment has identified how the Project may impact on people with protected characteristics. Intersectional assessment provides the opportunity to review how different identities (for example gender, disability, age or ethnicity) can impact on an individual's experiences and how this can contribute to barriers and/or exclusion. Multiple social identities can mean that individuals experience overlapping systems of potential discrimination or disadvantage. Areas where there may be an intersectional effect include:

- a. Older women may feel more vulnerable to changes that they perceive may affect their personal security or as a result of lower confidence. This may include for example, changes at community level (such as where there is an influx of construction workers) or changes in travel behaviour which may result in greater feelings of social isolation.
- b. Similarly, older people with disabilities may perceive greater barriers to travel as a result of some of the changes described particularly during the construction phase of the Project. The proportions of people reporting greatest impact of their disabilities on travel increase markedly with age (Department for Transport, 2017).

No additional mitigation or intervention is considered necessary in relation to intersectional effects than that already proposed. Ongoing stakeholder engagement will continue to inform detailed Project design. Engagement events held during construction will continue to be inclusive and accessible as will be outlined in the Engagement and Communications Plan to be prepared by Contractors.

Equality group (protected characteristics)	Positive impact	Negative impact	Neutral impact	Summary of reasons and evidence sources (data research and consultation) supporting this analysis
Sex			X	Women are more likely to be users of public transport than men and may be affected by temporary changes in bus travel during the construction period, although it is noted that changes in journey times are small.
Religion or belief			X	N/A
Age	X	X		<ul style="list-style-type: none"> • Older people and children may experience a greater disbenefit as a result of traffic-related severance during construction and operation phases. • During operation, the Project promotes improved north–south connectivity and reduced congestion. Older people would benefit from an improved network and journey reliability, which may give them the confidence to travel further. • Older people and younger people may benefit from a reduction in road accident casualties. • Older people may be disproportionately affected by diversions to footpaths due to potential longer journey lengths but may also experience benefits of improved journey experience (for

Equality group (protected characteristics)	Positive impact	Negative impact	Neutral impact	Summary of reasons and evidence sources (data research and consultation) supporting this analysis
				<p>example improved surfacing, lighting in certain locations).</p> <ul style="list-style-type: none"> Children and older people may be disproportionately impacted by changes in noise levels.
Disability	X	X		<ul style="list-style-type: none"> People with disabilities may benefit from new WCH routes. With improved north–south connectivity and reduced congestion, disabled drivers would benefit from an improved network and journey reliability, which may give them the confidence to travel further. It is noted that disabled drivers may have particular needs within the tunnelled section of the Project route.
Race	X			<ul style="list-style-type: none"> The traveller community are impacted through relocation of the site at Gammonfields Way; a replacement site would be provided next to the current site. Extensive consultation has taken place with residents, as described earlier in this document. The new site would be constructed before the current site is demolished. The new site would include improved facilities, including measures to reduce noise impacts from the Project road.
Pregnancy and maternity		X		<ul style="list-style-type: none"> Noise related issues for parents with newborn babies (who may already be suffering from sleep disturbance and for whom an increase in noise levels may result in an additional effect). Potential issues for pregnant women or women driving with young children could include the frequency and location of safe stopping locations.
Sexual orientation			X	N/A
Gender reassignment (inc. transsexual and transgender)			X	N/A
Marriage and civil partnership			X	N/A

Equality group (protected characteristics)	Positive impact	Negative impact	Neutral impact	Summary of reasons and evidence sources (data research and consultation) supporting this analysis
Potential risks Identified – Including insufficient information to make robust decisions (Yes/No ticked as appropriate)				
No				<p>Identified risks:</p> <ul style="list-style-type: none"> Noise impacts of construction and operational activities on people with protected characteristics. Access to schools and education facilities during the construction phase continues to be an area of concern for stakeholders in particular locations along the Project route (notably within Havering and in relation to facilities in the Baker Street / A1089 area). Mitigation measures include those proposed in the oTMPfC (Application Document 7.14) and set out in the CoCP (Application Document 6.3) in relation to Community Liaison Groups. Engagement will be ongoing with community groups and stakeholders following the submission of the DCO. People with mobility issues such as older people and people with disabilities, potentially impacted from the diversions of footpaths and new crossing facilities as this may bring about longer or changed journeys. Evacuation procedures for disabled customers, including those with hidden disabilities, need to be considered, explored and the outcome evidenced. Signage in the tunnel needs to be clearly accessible to people with protected characteristics where this is relevant. This may include people for whom English is not their first language, people with sensory disabilities, people with colour-blindness. Ongoing community engagement and communication with seldom-heard groups, including those with protected characteristics.
Yes (mitigating action shown in Section F)	X			
E: Options: The rationale behind the decision reached				
<p>E1: Proceed with the policy/practice because:</p> <ul style="list-style-type: none"> The decision can be justified (at screening or in Section D) There is no reasonable alternative The Senior Reporting Officer/Programme Delivery Director is content to defend any potential challenge and is willing to sign off in Section H <p>(There are no unjustified negative impacts and the policy/practice is compliant in terms of the equality duty.)</p>				

Equality group (protected characteristics)	Positive impact	Negative impact	Neutral impact	Summary of reasons and evidence sources (data research and consultation) supporting this analysis
<p>E2: Make adjustments</p> <ul style="list-style-type: none"> To demonstrate how activities will lead to a fair outcome (Ensure further evidence is gathered to ensure any barriers are removed and referenced in Sections F and G) <p>(Opportunities were identified to advance equality, foster good relations and prevent discrimination.)</p>				<p>X</p>
<p>E3: Withdraw it because there is obvious detriment</p> <p>(Sign off in Section H)</p> <p>(A negative impact has been identified that cannot be justified.)</p>				
<p>F: Description of additional evidence, research and consultation undertaken, required, ongoing or captured. This is to ascertain how the policy or practice will advance equality, foster good relations and/or eliminate discrimination. Reference the evidence sources.</p> <p>(Include how internal scoping tools such as EDIT have been utilised and how this work has influenced other assessments such as the social aspects of environmental assessments)</p>				
Activities to address any potential negative impacts or risks to deliver positive impacts				Provide activity completion dates
<ul style="list-style-type: none"> National Highways has a Communications and Engagement Strategy that outlines the objectives and processes for engagement and communications with all stakeholders. The Contractors will produce and implement an Engagement and Communications Plan for the construction phase. The Contractors will take reasonable steps to engage with the local community, particularly focusing on those who may be impacted by construction, including local residents, businesses, landowners and the specific needs of people with protected characteristics (as defined in the Equality Act 2010). The Engagement and Communications Plan will provide a detailed programme of community engagement, setting out how relevant planning authorities, communities, stakeholders and affected parties will be engaged with throughout the construction phase. It will specify stakeholders, communities and affected parties (such as schools, places of worship, businesses and environmental organisations) and for each group identify the proposed methods and likely timing of consultation for each key stage of work. The Engagement and Communications Plan will include details of how the needs of vulnerable groups will be met in terms of use of accessible media and appropriate formats for the visually impaired. The Engagement and Communications Plan will also describe a detailed programme of community involvement through volunteering and educational activity (including Science, Technology, Engineering 				

Equality group (protected characteristics)	Positive impact	Negative impact	Neutral impact	Summary of reasons and evidence sources (data research and consultation) supporting this analysis
				<p>and Maths (STEM) programmes with local schools, colleges, and apprenticeship opportunities).</p> <ul style="list-style-type: none"> • Community Liaison Groups will be established in those communities likely to be most impacted by construction activities. The scope of the groups will be to ensure that local residents are prepared for forthcoming changes and construction activities. The proposed Community Liaison Groups will be open to attendance from the local community. Attendance and membership will be publicised in the local areas. • Construction phase embedded mitigation of particular relevance to people with protected characteristics is described below: <ul style="list-style-type: none"> – The Project has been designed to reduce land-take from private properties and community assets. – Construction compounds have been located away from PRowS, National Trails and cycle routes where feasible. Landscaping has been strategically used to reduce the visual impact of construction compounds for users of PRowS and neighbouring land uses, in addition to reducing noise impacts. – Other relevant embedded mitigation relates to measures to reduce visual and noise impacts during construction. These measures are described in ES Chapter 7: Landscape and Visual and ES Chapter 12: Noise and Vibration (Application Document 6.1). • Operational phase embedded mitigation of relevance to people with protected characteristics is described below. <ul style="list-style-type: none"> – Replacement land has been identified and incorporated into proposals as relevant – this includes a replacement site for the Gammonfields Way travellers’ site. – Other embedded mitigation during operation of relevance relates to measures to mitigate visual and noise impacts. • Essential mitigation measures are secured under the draft Development Consent Order (Application Document 3.1) through the Environmental Masterplan (Application Document 6.2, ES Figure 2.4) and the Design Principles (Application Document 7.5).
<p>G: Summary of the findings, including details of consultation with communities/customers/groups/stakeholders/staff/professional organisations. Explain how this has shaped the development of the practice or policy:</p> <p>The EqIA has identified a number of potentially negative impacts as well as benefits and opportunities that may affect people with protected characteristics. A range of mitigation measures have been identified to address potential negative impacts, including embedded mitigation (relating to Project design), good practice and essential mitigation measures. Ongoing stakeholder engagement will continue to inform detailed Project design. Engagement events held during construction will continue to be inclusive and accessible as will be outlined in the Engagement and Communications Plan to be prepared by the Contractors.</p>				

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