

# Lower Thames Crossing

## 7.10 Health and Equalities Impact Assessment Appendix C – Baseline

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## 7.10 Health and Equalities Impact Assessment

### Appendix C – Baseline

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# 1 Introduction

- 1.1.1 The baseline provides a profile of residents living in communities potentially affected by virtue of their proximity to the proposed A122 Lower Thames Crossing (the Project) or affected by environmental change (for example, changes in traffic levels, air quality or noise levels) in addition to groups who may be particularly vulnerable to environmental and social change.
- 1.1.2 The baseline covers the following areas:
- a. Demographic profile – population characteristics within the local and wider study areas, covering urban and rural communities.
  - b. Economic baseline – a summary of employment and local socio-economic characteristics, including deprivation and income.
  - c. Health profile – identifying health issues at a local level, including childhood and adult obesity, cardiovascular and respiratory diseases, and mental health.
  - d. Travel – identifying data relating to mode of travel and journey purpose and describing how people currently travel within the local and wider study areas.
  - e. Environmental baseline – a brief summary of relevant baseline information from the Environmental Statement (ES) (Application Document 6.1), including noise, air quality, landscape and population and human health topics.
  - f. Future baseline – encompassing areas such as population and employment projections, as well as future trends and changes as they may affect the future health of the existing population.

## 2 Overview of community networks

- 2.1.1 The areas to the north and south of the River Thames have distinct characteristics, communities and networks.
- 2.1.2 To the south of the River Thames, the study area encompasses the three local authorities of Dartford, Gravesham and Medway. The A2/M2 corridor divides a predominantly urban landscape to the north from 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), the High Speed 1 (HS1) rail corridor and the North Kent Railway line.
- 2.1.3 Wards to the south of the River Thames which may either be directly or indirectly affected by the Project comprise the following:
- Gravesham – the wards of Riverside; Riverview; Higham; Chalk; Westcourt; Singlewell; Woodlands; Northfleet South; Central; Coldharbour; Istead Rise; Painters Ash; and Shorne, Cobham and Luddesdown
  - Medway – the wards of Strood Rural, Strood North, Strood South, and Cuxton and Halling
  - Dartford – the wards of Newton, Stone Castle, Stone House, Bridge, Temple Hill and Longfield, New Barn and Southfleet
  - Tonbridge and Malling – the ward of Snodland East.
- 2.1.4 The area to the north of the River Thames encompasses the three local authorities of Thurrock, Brentwood and 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 bounded by the M25 in the west, the A13 in the north and the A1089 in the east, is heavily urbanised, incorporating 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.
- 2.1.5 Wards to the north of the River Thames which may be either directly or indirectly affected by the Project comprise the following:



- a. Thurrock – the wards of Ockendon, Belhus, Orsett, Stifford Clays, Little Thurrock Rectory, Little Thurrock Blackshots, Chadwell St Mary, Tilbury St Chads, Tilbury Riverside and Thurrock Park, Chafford and North Stifford, East Tilbury, Aveley and Uplands, West Thurrock and South Stifford, Stanford-le-Hope West, Stanford East and Corringham Town, The Homesteads, and Corringham and Fobbing
- b. Havering – the wards of Upminster, Cranham, Harold Wood, Gooshays and Rainham and Wennington
- c. Brentwood – the wards of Warley, South Weald and Herongate, Ingrave and West Horndon.

2.1.6 Further areas of consideration are the wards immediately to the south and north of the existing Dartford Crossing. To the south of the river, these include Stone Castle, Stone House, Newtown, Bridge and Temple Hill, all within Dartford; to the north of the river, they include Aveley and Uplands, and West Thurrock and South Stifford (both within Thurrock). Characteristics of these wards to both the south and north of the River Thames include high levels of deprivation and poor health outcomes (for example, lower life expectancy, significantly worse mortality rates from various conditions, and high levels of obesity).

## 3 Limitations

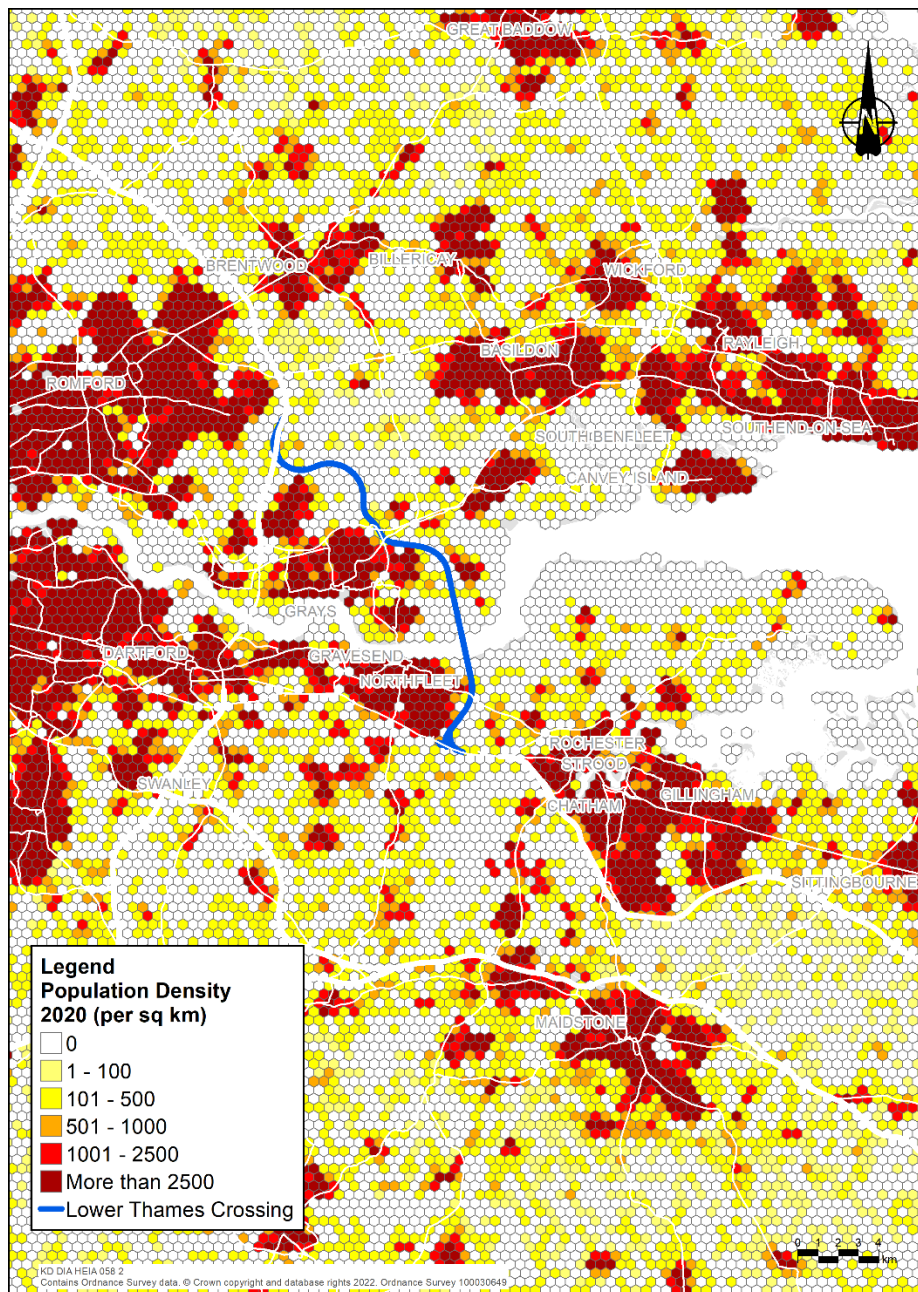
- 3.1.1 Baseline conditions have been established using the most recent data currently available. For a number of indicators used in the baseline (for example data relating to ethnicity and certain health metrics), the 2011 Census is the most recent data source; given that this information is 10 years old, there may be limitations to the accuracy of conclusions which can be drawn from it. Data at ward level from the 2021 Census is not yet available for use.

## 4 Demographic profile

### 4.1 General population

4.1.1 Population density is illustrated in Plate 4.1, showing clearly the centres of population across the area, with the most densely populated areas typically located to the south and west (Office for National Statistics, 2021).

**Plate 4.1 Population density**



### South of the River Thames

4.1.2 Population density across the three local authority areas to the south of the River Thames ranges from 10.3 persons per hectare in Gravesham to 13.4 and 13.7 persons per hectare in Dartford and Medway respectively. These densities

are much higher than for the south-east of England (excluding London) and for England as a whole, which are 4.5 and 4.1 persons per hectare respectively. Population densities within some of the urban centres to the south of the River Thames are much higher still, as would be expected. For example, in the two wards of Strood North and Strood South population density is 46.9 and 38.8 persons per hectare respectively, which is close to the figure of 51 persons per hectare for London as a whole.

4.1.3 Table 4.1 shows population figures across local authorities to the south of the River Thames, including population change between the 2011 (Office for National Statistics, 2011) and 2021 Census (Office for National Statistics, 2021). Each local authority has been subject to population growth, with Dartford exhibiting the highest increase of nearly 20%. For the local study area as a whole, the growth rate appears to have peaked in 2014 and has been dropping for the past four years (this is based on five-year rolling average growth rates).

**Table 4.1 Population change 2011–2021**

Local authority	2011 (resident population)	2021 (resident population)	Population growth (%)
England	53,012,456	56,489,800	6.6%
Kent	1,463,740	1,576,100	7.7%
Medway	263,925	279,800	6.0%
Gravesham	101,720	106,900	5.1%
Dartford	97,365	116,800	19.9%
Tonbridge and Malling	120,805	132,200	9.4%

Source: 2011 Census data (Office for National Statistics, 2011)

Mid-Year population estimates, 2020 (Office for National Statistics, 2021)

4.1.4 Communities identified to the south of the River Thames, together with the approximate size of their populations, are shown in Table 4.2.

**Table 4.2 Communities to the south of the River Thames**

Community	2020 (resident population)
Riverside	10,124
Riverview	4,268
Higham	3,850
Chalk	2,181
Westcourt	7,033
Singlewell	8,203
Woodlands	6,956
Shorne, Cobham and Luddesdown	4,239
Northfleet South	8,945
Istead Rise	3,363

<b>Community</b>	<b>2020 (resident population)</b>
Painters Ash	5,454
Central	7,139
Coldharbour	4,979
Cuxton and Halling	6,683
Strood Rural	15,200
Strood South	16,495
Strood North	14,393
Newtown	6,413
Stone Castle	7,833
Stone House	6,689
Bridge	2,940
Temple Hill	12,137
Longfield, New Barn and Southfleet	6,542
Snodland East	5,308

Source: *Mid-Year Population Estimates, 2020 (Office for National Statistics, 2021)*

## North of the River Thames

- 4.1.5 The three local authority areas to the north of the River Thames have a combined population of just over half a million people. Population density across each of the three areas ranges from 4.8 persons per hectare in Brentwood to 9.7 and 21.1 persons per hectare in Thurrock and Havering respectively. These densities are higher than for the south-east of England (excluding London) and for England as a whole. Population densities within some of the urban centres to the north of the River Thames are much higher still, as would be expected. For example, population density in the Stanford East ward (Thurrock) is 54.9 persons per hectare, and for the Corringham Town ward (Thurrock) and Romford Town ward (London Borough of Havering), population density is as high as 55.5 persons per hectare. Both these figures are higher than 51 persons per hectare, the figure for London as a whole.
- 4.1.6 Table 4.3 shows population figures across local authorities within the local study area to the north of the River Thames, including population change between the 2011 (Office for National Statistics, 2011) and 2021 Census (Office for National Statistics, 2021). Each local authority has been subject to population growth, with Thurrock exhibiting the highest increase of 11.6%. As with the area to the south of the River Thames, the growth rate appears to have peaked in 2014 and has been dropping for the past four years (this is based on five-year rolling average growth rates).

**Table 4.3 Population change 2011–2020**

Area	2011 (resident population)	2021 (resident population)	Population growth (%)
England	53,012,456	56,489,800	6.6%
Essex	1,393,587	1,503,300	7.8%
Thurrock	157,705	176,000	11.6%
Havering	237,232	262,000	10.4%
Brentwood	73,601	77,000	4.6%

*Source: 2011 Census data (Office for National Statistics, 2011)*

*Mid-Year Population Estimates 2020 (Office for National Statistics, 2021)*

4.1.7 Communities identified to the north of the River Thames, together with the approximate size of their populations, are shown in Table 4.4.

**Table 4.4 Communities to the north of the River Thames**

Community	2020 (resident population)
Ockendon	11,790
Belhus	10,679
Orsett	5,944
Stifford Clays	6,760
Little Thurrock Rectory	6,186
Little Thurrock Blackshots	6,695
Chadwell St Mary	10,489
Tilbury St Chads	6,813
Tilbury Riverside and Thurrock Park	8,181
East Tilbury	7,309
Aveley and Uplands	10,639
West Thurrock and South Stifford	14,223
Chafford and North Stifford	8,324
Stanford-le-Hope West	8,288
Stanford East and Corringham Town	8,282
The Homesteads	8,282
Corringham and Fobbing	5,425
Upminster	13,260
Cranham	12,973
Harold Wood	15,117
Rainham and Wennington	13,384
Gooshays	17,443

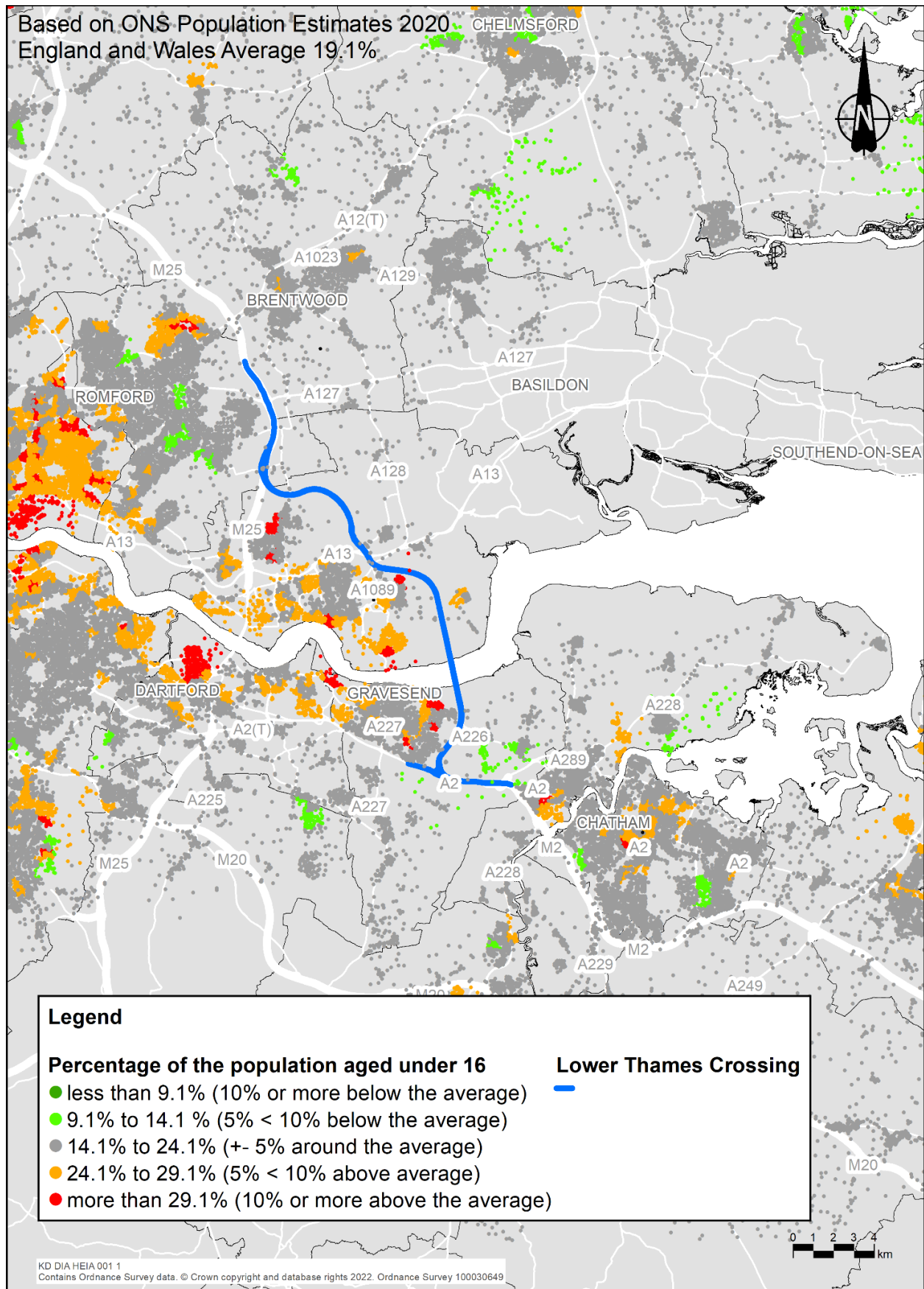
Community	2020 (resident population)
Warley	6,432
South Weald	1,911
Herongate, Ingrave and West Horndon	3,699

*Source: Mid-Year Population Estimates, 2020 (Office for National Statistics, 2021)*

## 4.2 Age

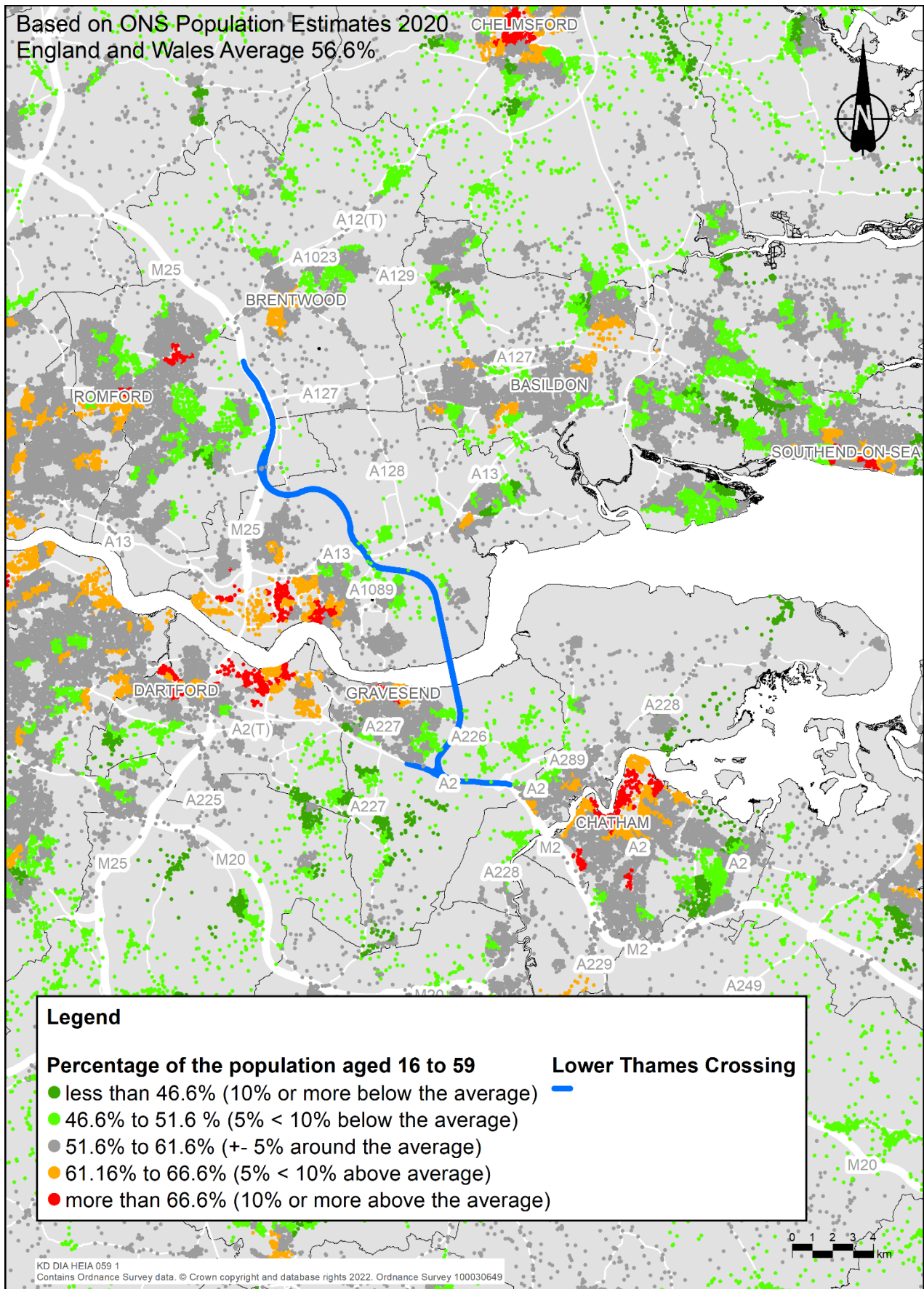
4.2.1 This section analyses age profiles for each of the areas to the south and north of the River Thames. Particular age groups of interest (by virtue of their inclusion within the Equality Act 2010 (Equality Act 2010, 2010) as a protected characteristic, or by virtue of their travel behaviours) are children under 16, working aged people and older age groups (people aged over 60). Plate 4.2 to Plate 4.4 show distributions of age groups.

**Plate 4.2 Age (under 16s)**

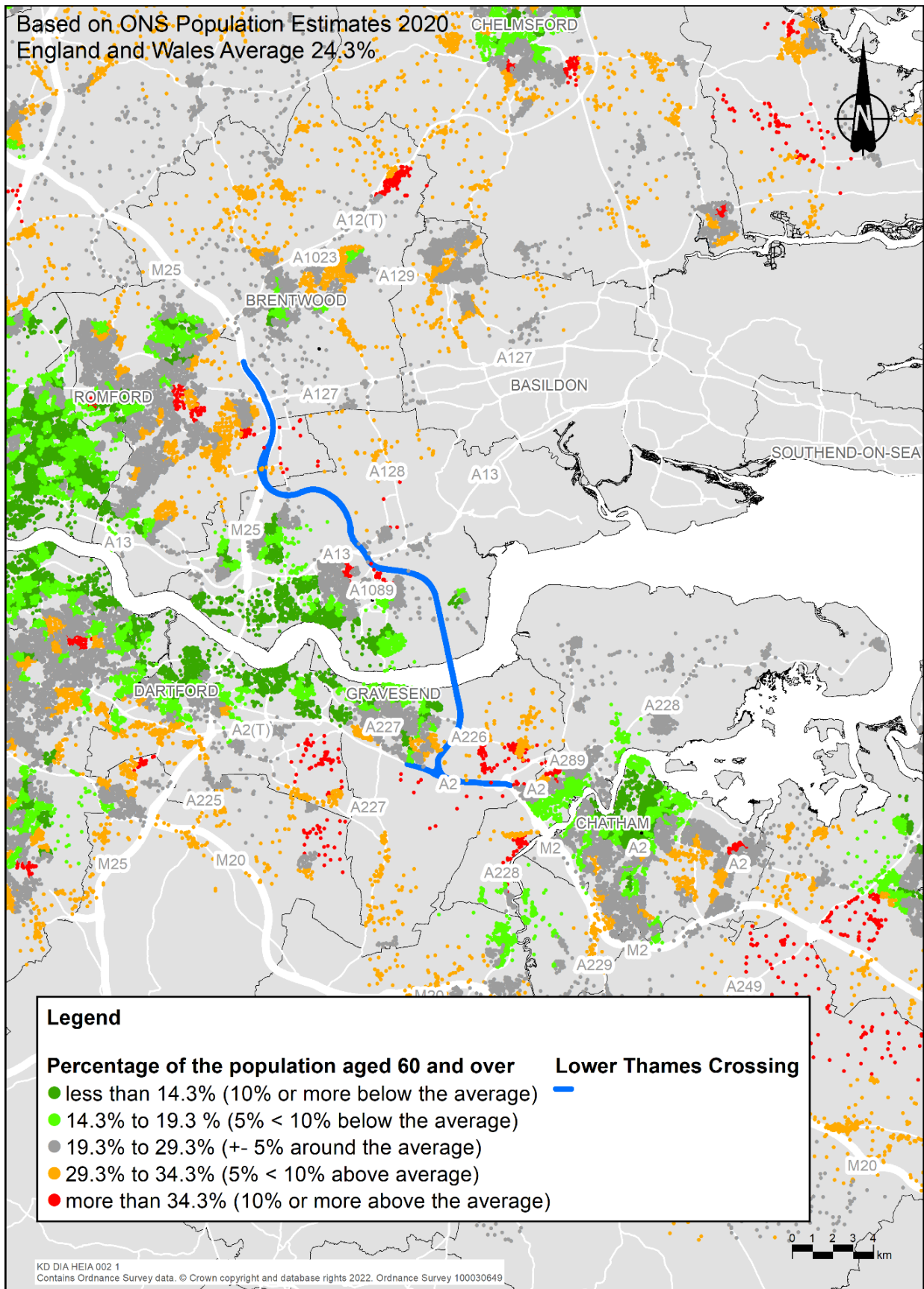




**Plate 4.3 Age (working population)**



**Plate 4.4 Age (over 60s)**



## South of the River Thames

4.2.2 Table 4.5 sets out the age profile of residents living in each of the three local authority areas to the south of the River Thames. The data shows that, at local authority level, there are broad similarities in terms of the proportions of children aged under 16; Medway has a slightly higher proportion of young people aged 17-25. Dartford has a lower proportion of older age groups (people aged over 60).

**Table 4.5 Age profile – local authorities south of the River Thames**

Age	Gravesham (%)	Medway (%)	Dartford (%)	Tonbridge & Malling (%)	Kent (%)	England (%)
<16	22.6	22.2	23.6	21.7	20.6	20.3
17–25	9.5	10.5	9.0	8.9	10.0	10.8
26–59	45.2	45.9	48.7	44.7	43.5	45.0
60+	22.7	21.4	18.7	24.7	26.0	23.9

Source: Mid-Year Population Estimates, 2020 (Office for National Statistics, 2021)

4.2.3 Table 4.6 looks more closely at the age profile of residents living in wards found closest to the Project route.

**Table 4.6 Age profile – wards south of the River Thames**

Ward	Age group (%)			
	<16	17–25	26–59	60+
<b>Gravesham</b>				
Riverside	26.7	11.4	50.0	11.9
Riverview	19.4	8.5	41.9	30.2
Higham	17.1	9.1	40.7	33.1
Chalk	17.1	7.4	40.5	35.1
Westcourt	27.4	10.0	42.7	19.9
Singlewell	25.8	9.8	45.6	18.7
Woodlands	21.8	9.3	45.7	23.1
Shorne, Cobham and Luddesdown	18.4	9.6	37.4	34.6
Northfleet South	26.9	9.3	48.7	15.0
Istead Rise	15.9	7.6	37.6	38.9
Painters Ash	18.7	8.2	39.8	33.4
Central	18.2	10.2	51.0	20.6
Coldharbour	24.8	8.9	43.8	22.5
<b>Medway</b>				
Cuxton and Halling	20.1	8.4	46.5	25.0
Strood South	25.3	9.7	46.6	18.4

Ward	Age group (%)			
	<16	17–25	26–59	60+
Strood North	21.4	9.5	47.7	21.5
Strood Rural	21.8	8.7	45.6	24.0
<b>Tonbridge and Malling</b>				
Snodland East	22.9	10.0	48.9	18.2
<b>Dartford</b>				
Newtown	23.2	10.2	52.8	13.8
Stone Castle	23.3	9.3	56.3	11.1
Stone House	25.6	8.9	49.6	15.9
Bridge	37.2	4.8	55.1	3.0
Temple Hill	28.3	9.3	49.3	13.1
Longfield, New Barn and Southfleet	18.6	6.2	39.4	35.8

Source: *Mid-Year Population Estimates, 2020 (Office for National Statistics, 2021)*

- 4.2.4 At local level, the data shows that there is a higher proportion of children aged under 16 concentrated within urban areas to the south of the River Thames, for example in central Chatham, communities on the eastern edge of Gravesend (such as Denton and Riverview), communities in and around Northfleet, and northern parts of Dartford (notably the Temple Hill and Dartford Bridge areas). Conversely, there are much lower proportions of children under 16 living in the more rural community of Chalk. Looking in more detail at Medway, there are higher proportions of children under 16 living in urban areas such as Strood South. Communities such as the Bridge ward found to the east of Dartford have some of the higher proportions of children under 16 (37.2%), while the ward of Newtown found to the south-east of Dartford town centre has one of the lowest (23.2%).
- 4.2.5 Older population groups (people aged over 60) are typically concentrated outside of the urban centres, in rural villages to the south of Dartford and Gravesham, for example Hawley, Bean and Cobham; and villages located in open countryside separating Gravesend and the Medway towns, for example Higham and Shorne. The village of Chalk, immediately to the east of Gravesend, has a higher proportion of residents aged over 60, as do the Perry Street and Singlewell suburbs to the south of Gravesend. Finally, there are higher than average concentrations of older people in Chatham and Gillingham to the south of Medway District.
- 4.2.6 Table 4.7 shows the proportion of people aged 65 and over living alone, within the local authorities and wards located closest to the development boundary to the south of the River Thames.

**Table 4.7 Percentage of older people living alone – south of the River Thames**

<b>Geographic area</b>	<b>People aged 65+ living alone (%)</b>
<b>England</b>	<b>31.5</b>
<b>Kent</b>	<b>30.2</b>
<b>Medway</b>	<b>32.1</b>
Cuxton and Halling	29.7
Strood South	33.5
Strood North	28.8
Strood Rural	28.4
<b>Tonbridge and Malling</b>	<b>27.6</b>
Snodland East	32.5
<b>Gravesham</b>	<b>30.2</b>
Riverside	42.2
Riverview	21.4
Higham	28.0
Chalk	29.0
Westcourt	31.4
Singlewell	35.4
Woodlands	31.5
Shorne, Cobham and Luddesdown	22.6
Northfleet South	35.7
Istead Rise	20.1
Painters Ash	27.1
Central	33.1
Coldharbour	39.9
<b>Dartford</b>	<b>29.5</b>
Newtown	38.9
Stone Castle	32.9
Stone House	30.3
Bridge	10.0
Temple Hill	41.9
Longfield, New Barn and Southfleet	20.3

*Source: 2011 Census (Office for National Statistics, 2011)*

4.2.7 Particular wards where there are higher proportions of older people living alone include the Riverside ward in Gravesham (42.2% of people aged over 65).

## North of the River Thames

4.2.8 Table 4.8 sets out the age profile of residents living in each of the three local authority areas to the north of the River Thames. The table shows that Thurrock has a higher proportion of children under 16 than other authorities to the north of the River Thames and, conversely, a much lower proportion of older people.

**Table 4.8 Age profile – local authorities north of the River Thames**

Age	Thurrock (%)	Havering (%)	Brentwood (%)	Basildon (%)	Southend-on-Sea (%)	Essex (%)	England (%)
<16	24.5	21.4	19.9	22.2	20.6	20.0	20.3
17–25	9.6	10.0	9.1	9.7	9.2	9.6	10.8
26–59	47.5	45.3	45.1	45.6	45.3	43.9	45.0
60+	18.4	23.3	26.0	22.5	24.8	26.5	23.9

Source: Mid-Year Population Estimates, 2020 (Office for National Statistics, 2021)

4.2.9 Table 4.9 looks more closely at the age profile of residents living in wards found closest to the Project route.

**Table 4.9 Age profile – wards north of the River Thames**

Ward	Age group (%)			
	<16	17–25	26–59	60+
<b>Thurrock</b>				
Ockendon	25.0	9.2	48.3	17.5
Belhus	25.3	10.4	48.4	15.9
Orsett	18.4	8.5	44.7	28.5
Stifford Clays	21.7	10.0	42.0	26.3
Little Thurrock Rectory	20.6	8.5	47.3	23.6
Little Thurrock Blackshots	22.9	8.1	42.5	26.5
Chadwell St Mary	25.3	9.6	42.0	23.1
Tilbury St Chads	28.8	11.2	45.3	14.7
Tilbury Riverside and Thurrock Park	31.5	10.3	44.2	14.0
East Tilbury	25.2	9.3	46.5	19.0
Aveley and Uplands	25.4	9.1	48.4	17.1
West Thurrock and South Stifford	27.8	9.8	53.9	8.5
Chafford and North Stifford	26.7	10.3	51.5	11.0
Stanford-le-Hope West	23.5	10.2	46.9	19.4
Stanford East and Corringham Town	20.4	9.8	41.5	28.4
The Homesteads	19.2	9.3	42.4	29.1
Corringham and Fobbing	17.8	8.4	40.5	33.3

Ward	Age group (%)			
	<16	17–25	26–59	60+
<b>Havering</b>				
Upminster	18.1	9.4	41.4	31.1
Cranham	19.7	9.2	42.1	29.1
Harold Wood	20.1	9.3	48.5	22.1
Rainham and Wennington	22.4	10.0	44.5	23.1
Gooshays	28.8	9.5	46.0	15.7
<b>Brentwood</b>				
Warley	19.7	8.0	48.4	23.9
South Weald	19.7	9.3	44.1	26.9
Herongate, Ingrave and West Horndon	16.7	10.3	44.0	29.1

Source: Mid-Year Population Estimates, 2020 (Office for National Statistics, 2021)

- 4.2.10 The data shows that there is a higher proportion of children aged under 16 within urban areas to the north of the River Thames, for example in West Thurrock and South Stifford, Chafford and North Stifford, and Tilbury Riverside and Thurrock Park, which are all found to the south of Grays. In Havering, communities such as Rainham and Wennington have a higher proportion of children under 16 when compared to Cranham and Upminster (22.4% compared to 19.7% and 18.1% respectively).
- 4.2.11 In both Thurrock and Brentwood, older population groups (people aged 60 and over) are typically concentrated outside of urban centres, in rural villages such as Fobbing and the eastern fringes of Corringham in Thurrock, and Ingatestone and Blackmore in Brentwood. In Havering, older population groups are concentrated towards the east of the borough in Cranham, Corbets Tay and North Ockendon.
- 4.2.12 Looking at older age groups such as the over-70s, data for Thurrock shows that 15% of residents living in the semi-rural area of Stifford Clays are aged over 70 compared to 6.3% found living in the urban community of East Tilbury. Similarly, within Havering, just over 18% of residents in the Cranham area are aged over 70, compared to the more rural ward of Rainham and Wennington (12.6%). Within Brentwood, there is a higher proportion of residents aged over 70 living in the more rural ward of Herongate, Ingrave and West Horndon.
- 4.2.13 Table 4.10 shows the proportion of people aged 65 and over living alone, within the local authorities and wards located closest to the development boundary to the north of the River Thames.

**Table 4.10 Percentage of older people living alone north of the River Thames**

<b>Geographic area</b>	<b>People aged 65+ living alone (%)</b>
<b>England</b>	<b>31.5</b>
<b>Essex</b>	<b>29.9</b>
<b>Thurrock</b>	<b>31.9</b>
Ockendon	38.0
Belhus	34.9
Orsett	19.5
Stifford Clays	35.9
Little Thurrock Rectory	36.7
Little Thurrock Blackshots	29.4
Chadwell St Mary	32.1
Tilbury St Chads	32.1
Tilbury Riverside and Thurrock Park	39.1
East Tilbury	22.2
Aveley and Uplands	38.8
West Thurrock and South Stifford	36.1
Stanford-le-Hope West	34.3
Stanford East and Corringham Town	32.3
The Homesteads	19.8
Corringham and Fobbing	23.0
<b>Havering</b>	<b>31.9</b>
Upminster	26.3
Cranham	32.1
Rainham and Wennington	30.3
Gooshays	40.4
<b>Brentwood</b>	<b>29.7</b>
Warley	29.4
South Weald	30.4
Herongate, Ingrave and West Horndon	27.5
<b>Basildon</b>	<b>32.2</b>
<b>Southend-on-Sea</b>	<b>33.3</b>

*Source: (Office for National Statistics, 2011)*

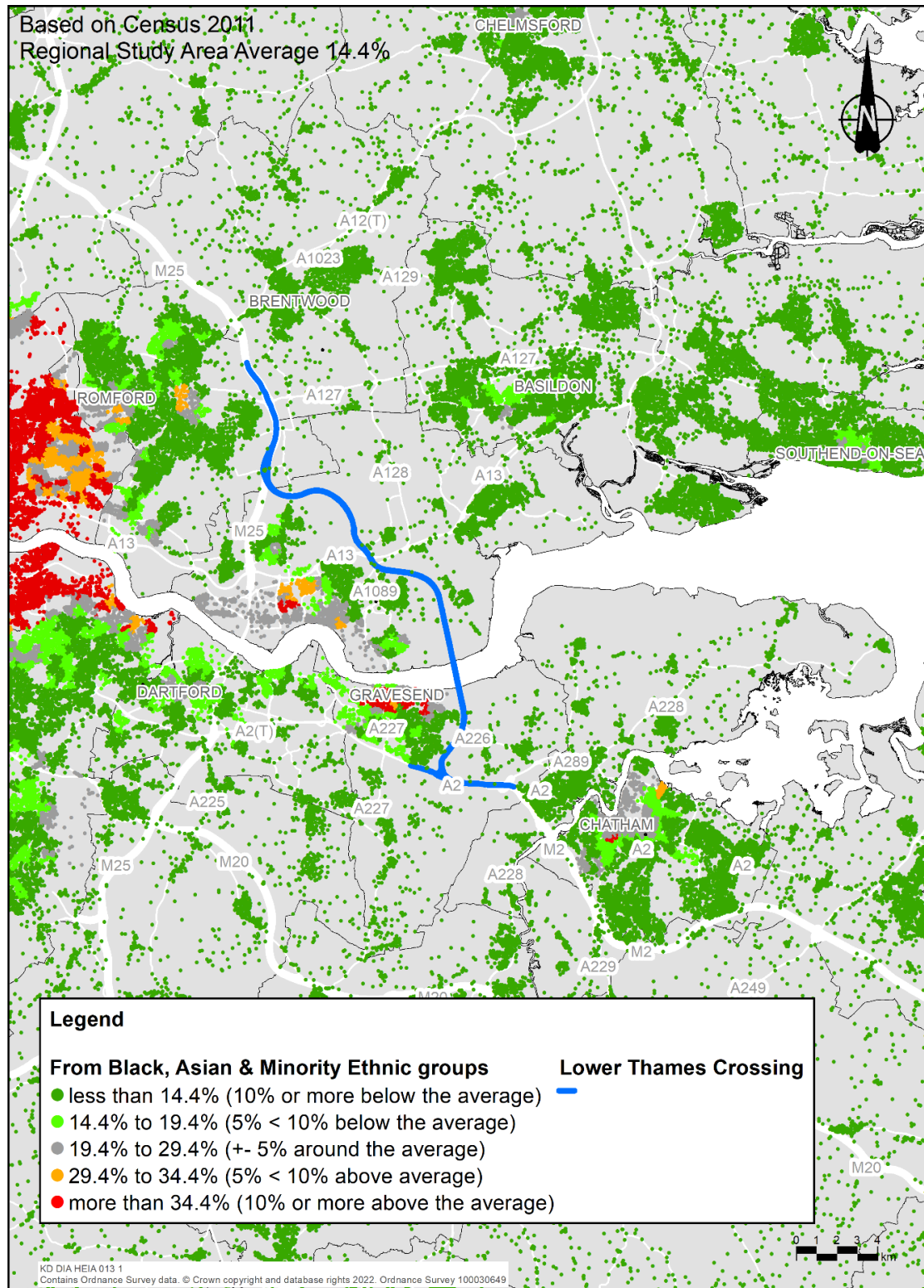
- 4.2.14 Particular wards where there are higher proportions of older people living alone include Gooshays (40.4%), Tilbury Riverside and Thurrock Park (39.1%), Aveley and Uplands (38.8%), Ockendon (38.0%) and Little Thurrock Rectory (36.7%).



## 4.3 Ethnicity

4.3.1 The following section provides information on the ethnicity of residents living in each of the areas found to the south and north of the River Thames. Plate 4.5 shows the distribution of people from ethnic minority groups across the study areas to the north and south of the River Thames.

**Plate 4.5 Ethnicity**



## South of the River Thames

4.3.2 Table 4.11 shows the proportions of people from different ethnic backgrounds across the study area. The data shows that both Gravesham Borough Council and Dartford Borough Council areas have particularly high proportions of residents from Asian ethnic groups when compared to the average for Kent as a whole. Medway and Tonbridge and Malling have a higher proportion of residents who are white when compared to the England average.

**Table 4.11 Ethnicity – local authorities south of the River Thames**

Geographic area	Ethnicity (%)				
	White	Mixed	Asian	Black	Other
England	85.4	2.3	7.8	3.5	1.0
Kent	93.7	1.5	3.3	1.1	0.5
Medway	89.6	2.0	5.2	2.5	0.7
Gravesham	82.8	2.0	10.4	2.8	1.9
Dartford	87.4	2.2	6.0	3.7	0.8
Tonbridge and Malling	95.9	1.4	2.0	0.3	0.3

Source: 2011 Census (Office for National Statistics, 2011)

4.3.3 Table 4.12 looks more closely at ethnicity across wards closest to the development boundary.

**Table 4.12 Ethnicity – wards south of the River Thames**

Ward by local authority	Ethnicity (%)				
	White	Mixed	Asian	Black	Other
<b>Medway</b>					
Cuxton and Halling	96.5	1.1	1.3	0.5	0.6
Strood South	91.9	2.0	2.4	3.2	0.5
Strood North	88.9	1.8	6.9	2.0	0.4
Strood Rural	94.0	1.2	3.2	1.3	0.3
<b>Tonbridge and Malling</b>					
Snodland East	97.7	0.9	1.0	0.3	0.1
<b>Gravesham</b>					
Riverside	70.5	2.7	17.3	6.1	3.5
Riverview	89.5	1.3	6.7	1.9	0.6
Higham	93.1	1.4	4.1	0.5	1.0
Chalk	92.6	1.5	4.2	1.4	0.3
Westcourt	87.2	2.1	5.4	4.4	0.9
Singlewell	89.8	2.6	3.5	3.4	0.7
Woodlands	82.4	2.0	12.1	2.1	1.5

Ward by local authority	Ethnicity (%)				
	White	Mixed	Asian	Black	Other
Shorne, Cobham and Luddesdown	92.9	0.8	5.0	0.8	0.5
Northfleet South	77.2	2.1	15.3	3.4	1.9
Istead Rise	96.3	1.2	2.2	0.1	0.3
Painters Ash	84.8	1.4	10.4	2.0	1.4
Central	74.8	2.1	15.7	2.8	4.5
Coldharbour	86.9	2.1	8.2	2.0	0.8
<b>Dartford*</b>					
Littlebrook	83.2	3.1	6.7	6.5	0.5
Newtown	83.3	2.5	8.1	4.1	2.0
Stone	88.2	2.4	4.5	4.4	0.6
Joyce Green	83.6	3.2	4.3	8.2	0.7
Longfield, New Barn and Southfleet	95.0	0.9	3.5	0.5	0.1

*\*Note: this data is from the 2011 Census. New electoral wards were agreed upon in 2018, for which data on ethnicity is not currently available.*

*Source: 2011 Census (Office for National Statistics, 2011)*

- 4.3.4 Table 4.12 highlights the higher proportion of ethnic minority groups concentrated in areas to the north of Gravesend, for example around the town centre and Milton to the east. Rural villages to the south of the main centres show a predominantly white population. Table 4.12 shows that there is significant variation within and across wards, for example Riverside has a much higher proportion of ethnic minority groups (29.6% compared to 17.1% for Gravesham and 14.6% for England). Certain wards within Dartford (for example Joyce Green) have higher proportions of ethnic minority groups than is the case nationally. Within Medway, the ward of Cuxton and Halling has a significantly higher proportion of white residents when compared to the England average (96.5% compared to 85.4%).
- 4.3.5 Table 4.13 shows proficiency in the English language by local authority. The table shows that Gravesham has a higher proportion of residents whose main language is not English than is the case for England as a whole (9.2% compared to 8.0%) and that, for these residents, one third (30.3%), cannot speak English well or at all. These figures are even higher for the Riverside ward in Gravesham, where 20.3% of residents have stated that English is not their main language, and of these, 48.1% cannot speak English either well or at all.

**Table 4.13 Proficiency in English language by local authority area**

Geographic area	% of population			
	Main language is English	Main language is not English	Main language is not English: can speak English very well or well	Main language is not English: cannot speak English or cannot speak English well
<b>England</b>	<b>92.0</b>	<b>8.0</b>	<b>79.3</b>	<b>20.7</b>
Kent	95.5	4.5	81.0	19.0
Medway	94.8	5.2	78.3	21.7
Gravesham	90.8	9.2	69.7	30.3
Dartford	94.3	5.7	81.2	18.8
Tonbridge and Malling	97.5	2.5	87.7	12.3

Source: 2011 Census (Office for National Statistics, 2011)

4.3.6 Finally, traveller communities are located near the Project. In the local authority area of Gravesham, 0.2% of residents identified themselves as Gypsy or Irish Traveller (according to data provided in the 2011 Census). Information relating to traveller sites is collated by relevant local authorities and submitted to the Department for Levelling Up, Housing and Communities on a biannual basis. There are no publicly managed traveller sites within the study area to the south of the River Thames. However, two privately owned sites have been identified to the east of Chalk, at the point where Rochester Road becomes Gravesend Road. The two sites are next to each other, one being accessed via View Point Place (up to four static caravans) with the other accessed via an adjacent track (between two and four static caravans). Both sites are outside of, but adjacent to, the Order Limits.

### North of the River Thames

4.3.7 Table 4.14 shows the proportions of people from different ethnic backgrounds across the study area. The data shows that Thurrock has a higher proportion of people from Black ethnic backgrounds than other local authorities to the north of the River Thames and also higher than is the case nationally. Both Thurrock and Havering have higher ethnic minority groups than other local authority areas (14.2% and 12.4% respectively compared to 6.4% for Brentwood).

**Table 4.14 Ethnicity – local authorities north of the River Thames**

Geographic area	Ethnicity (%)				
	White	Mixed	Asian	Black	Other
<b>England</b>	<b>85.4</b>	<b>2.3</b>	<b>7.8</b>	<b>3.5</b>	<b>1.0</b>
Essex	94.3	1.5	2.5	1.3	0.4
Thurrock	85.9	2.0	3.8	7.8	0.6
Havering	87.7	2.1	4.9	4.8	0.6
Brentwood	93.6	1.6	3.2	1.2	0.4

Geographic area	Ethnicity (%)				
	White	Mixed	Asian	Black	Other
Basildon	92.7	1.7	2.7	2.7	0.3
Southend-on-Sea	91.6	2.1	3.7	2.1	0.5

Source: 2011 Census (Office for National Statistics, 2011)

4.3.8 Table 4.15 looks more closely at ethnicity across wards closest to the development boundary.

**Table 4.15 Ethnicity – wards to the north of the River Thames**

Wards by local authority	Ethnicity (%)				
	White	Mixed	Asian	Black	Other
<b>Thurrock</b>					
Ockendon	88.6	1.7	2.4	6.9	0.3
Belhus	85.4	2.1	2.4	9.6	0.5
Orsett	94.6	1.7	1.8	1.4	0.5
Stifford Clays	91.3	1.2	4.0	3.2	0.3
Little Thurrock Rectory	87.4	2.3	5.0	4.7	0.5
Little Thurrock Blackshots	92.3	1.0	3.8	2.4	0.5
Chadwell St Mary	89.7	1.9	1.3	6.9	0.2
Tilbury St Chads	84.3	1.3	1.9	12.1	0.3
Tilbury Riverside and Thurrock Park	82.3	1.5	1.8	13.9	0.5
East Tilbury	94.6	1.2	0.7	3.3	0.2
Aveley and Uplands	89.3	2.1	1.3	6.8	0.5
West Thurrock and South Stifford	75.0	2.8	4.9	16.6	0.7
Chafford and North Stifford	74.0	3.4	7.5	13.7	1.4
Stanford-le-Hope West	94.2	1.3	2.5	1.7	0.3
Stanford East and Corringham Town	95.7	1.3	0.7	1.9	0.3
The Homesteads	95.5	1.1	1.5	1.8	0.2
Corringham and Fobbing	97.5	0.9	0.7	0.7	0.2
<b>Havering</b>					
Upminster	95.2	1.3	2.3	1.0	0.3
Cranham	94.4	1.5	2.8	1.0	0.4
Harold Wood	89.9	1.7	4.0	3.8	0.5
Rainham and Wennington	84.3	2.6	4.9	7.6	0.6
Gooshays	87.2	2.3	2.7	7.4	0.4
<b>Brentwood</b>					
Warley	90.7	2.1	4.9	1.8	0.5

Wards by local authority	Ethnicity (%)				
	White	Mixed	Asian	Black	Other
South Weald	91.6	1.9	4.4	2.0	0.2
Herongate, Ingrave and West Horndon	96.4	1.6	1.3	0.2	0.4

Source: 2011 Census (Office for National Statistics, 2011)

- 4.3.9 Table 4.15 highlights that there are higher concentrations of ethnic minority groups in and around Grays, notably within the Chafford Hundred area; within Havering, again, there is increased ethnic diversity in and around the Romford town centre area.
- 4.3.10 Looking at wards found closest to the Project route, Table 4.15 shows significant variations. For example, within Thurrock, the wards of Orsett, Little Thurrock Blackshots and East Tilbury have significantly higher proportions of white residents when compared to the England average. The Tilbury Riverside and Thurrock Park ward has one of the highest proportions of ethnic minority groups (17.7%). Within Havering, the wards of Upminster and Cranham have particularly high proportions of white residents when compared to the England average. The ward of Rainham and Wennington has a higher proportion of people from black ethnic backgrounds. Similarly, wards within Brentwood have lower proportions of ethnic minority groups when compared to the England average.
- 4.3.11 Table 4.16 shows proficiency in the English language by local authority area. The table highlights that the proportion of residents whose main language is not English is lower than is the case nationally and across the study area. Both Thurrock and Southend-on-Sea have higher proportions of people who cannot speak English well or at all, than the English average. Wards exhibiting particularly high concentrations of residents for whom English is not their main language and who cannot speak English either well or at all, include Tilbury St Chads (31.8% of residents for whom English is not their main language) and East Tilbury (29.2%).

**Table 4.16 Proficiency in English language by local authority area – north of the River Thames**

Geographic area	% of population			
	Main language is English	Main language is not English	Main language is not English: can speak English very well or well	Main language is not English: cannot speak English or cannot speak English well
<b>England</b>	<b>92.0</b>	<b>8.0</b>	<b>79.3</b>	<b>20.7</b>
Essex	97.0	3.0	85.2	14.8
Thurrock	94.0	6.0	80.9	19.1
Havering	95.4	4.6	84.4	15.6
Brentwood	97.2	2.8	90.4	9.6
Basildon	97.2	2.8	87.4	12.6
Southend-on-Sea	94.9	5.1	81.1	18.9

Source: 2011 Census (Office for National Statistics, 2011)

- 4.3.12 Traveller communities are also located in Havering, Brentwood and Thurrock local authority areas. The proportion of populations of each identifying themselves as Gypsy or Irish Traveller (according to data provided in the 2011 Census) are 0.07%, 0.16% and 0.20% respectively.
- 4.3.13 Information relating to traveller sites submitted to the Department of Levelling Up, Housing and Communities identifies the following sites within and near to the Order Limits:
- a. The Gammonfields Way Travellers' Site is located on Long Lane, within the Order Limits, and is owned and managed by Thurrock Council. The existing site has 21 pitches and covers an area of approximately 1.5ha. There is a site office and a small car park on site. Although detached from the urban edge, the site has good road access and is close to existing community facilities and services throughout.
  - b. The Ship Lane (21 pitches) and Pilgrims Lane (22 pitches) travellers' sites are located to the north-west and north of Grays respectively; the sites are 5km and 3km from the Order Limits respectively.
  - c. Buckles Lane Traveller Camp is located south of South Ockendon, 0.5km to the west of the Order Limits and is owned and managed by Thurrock Council. Buckles Lane is made up of nine distinct sub-yards containing a total of 109 distinct plots. These include over 700 accommodation units, of which nearly 250 are occupied by Travelling Showpeople (Thurrock Council, 2018). This site is not included within the DLUHC data reported by Thurrock Council.
- 4.3.14 There are a number of privately owned traveller sites within 500m of the Order Limits. Sites located within Thurrock are as follows:
- a. A small site located at the western end of Lower Crescent, Linford, with approximately five caravan pitches.
- 4.3.15 Currently, there are no publicly owned or operated gypsy and traveller sites within the London Borough of Havering. A Gypsy and Traveller Position Statement published by the London Borough of Havering in 2018 (London Borough of Havering, 2018) confirmed that the borough is dependent on privately owned sites to accommodate identified need. Privately owned traveller sites within 500m of the Order Limits in the London Borough of Havering are as follows:
- a. A linear site situated to the west of the M25 and Ockendon branch railway line, known as 'Railway Sidings', with approximately eight static caravans. The site is accessed from Ockendon Road to the south. Railway Sidings is outside of, but surrounded by, the Order Limits.
  - b. Fair oak Showman's Quarters, which accommodates approximately seven caravans, is located to the north of the B187 St Marys Lane. The site is listed in the revised London Borough of Havering's Gypsy and Traveller

Accommodation Assessment (London Borough of Havering, 2019) as an authorised travelling showpeople yard. Whilst the site itself is outside of the Order Limits, the entrance to the site (which is accessed from the B187 St Marys Lane) is within the Order Limits.

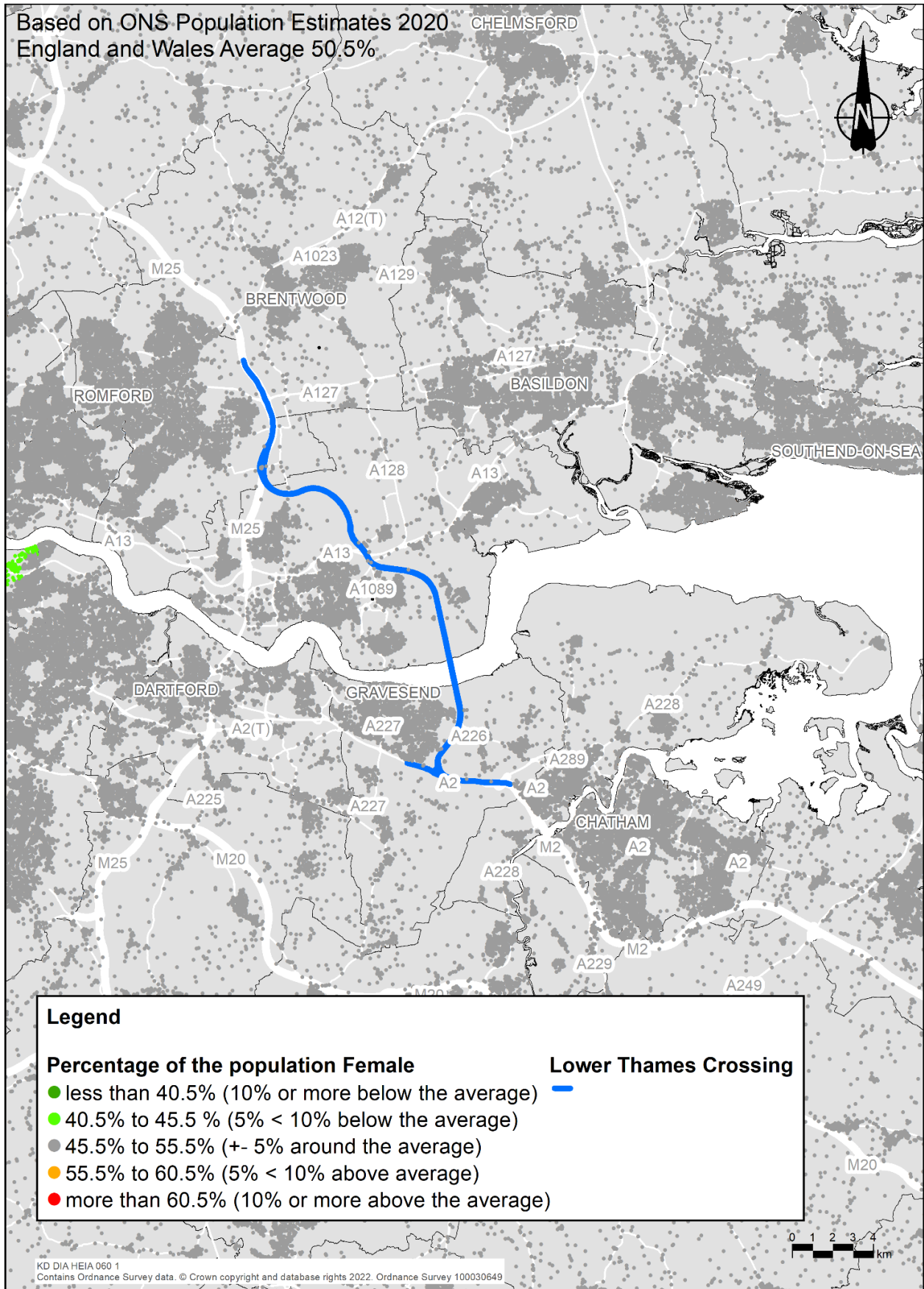
- c. Tyas Stud Farm is a linear site of approximately 1.6ha in size which is located to the rear of Latchford Farm, to the east of the M25 and south of the London to Shoeburyness railway line. The site is accessed from the B187 St Marys Lane. The site is divided into six discrete areas or plots, each of which accommodate multiple units including modular buildings and caravans. The most northern plot is located within the Order Limits.
- d. The Laburnham Stables site is located to the east of Cranham. There are several pitches apparent on the site, which is accessed from Laburnham Gardens. The site is located approximately 130m from the Order Limits.
- e. A further site, Willow Tree Lodge, is located to the south of the A127, towards the north of Cranham. The site is accessed from Brookman's Park Drive in Cranham and has approximately 12 pitches. The site is approximately 140m from the Order Limits.

## 4.4 Gender

- 4.4.1 Plate 4.6 shows locations within the study areas to the north and south of the River Thames where the concentration of residents by gender may be higher or lower than the England and Wales average.



**Plate 4.6 Gender (Female)**



## South of the River Thames

4.4.2 Table 4.17 shows gender distributions within local authorities and wards to the south of the River Thames. The table shows that there is a broadly similar distribution within each local authority as for England as a whole.

**Table 4.17 Gender – distribution within local authorities and wards to the south of the River Thames**

Geographic area	Male (%)	Female (%)
<b>England</b>	<b>49.4</b>	<b>50.6</b>
<b>Kent</b>	<b>49.1</b>	<b>50.9</b>
<b>Medway</b>	<b>49.6</b>	<b>50.4</b>
Cuxton and Halling	49.3	50.7
Strood South	48.5	51.5
Strood North	49.1	50.9
Strood Rural	49.7	50.3
<b>Tonbridge and Malling</b>	<b>49.0</b>	<b>48.0</b>
Snodland East	51.0	52.0
<b>Gravesham</b>	<b>49.2</b>	<b>50.8</b>
Riverside	50.2	49.8
Riverview	49.8	50.2
Higham	48.1	51.9
Chalk	49.8	50.2
Westcourt	48.4	51.6
Singlewell	47.9	52.1
Woodlands	48.9	51.1
Shorne, Cobham and Luddesdown	47.3	52.7
Northfleet South	49.6	50.4
Istead Rise	49.0	51.0
Painters Ash	47.9	52.1
Central	51.7	48.3
Coldharbour	47.6	52.4
<b>Dartford</b>	<b>49.3</b>	<b>50.7</b>
Newtown	51.1	48.9
Stone Castle	50.1	49.9
Stone House	49.5	50.5
Bridge	48.4	51.6
Temple Hill	48.8	51.2
Longfield, New Barn and Southfleet	47.2	52.8

Source: Mid-Year Population Estimates, 2020 (Office for National Statistics, 2021)

4.4.3 The data presented in Table 4.17 reveals localities where the results are slightly different – for example, the Shorne, Cobham and Luddesdown ward in Gravesham shows a higher proportion of females (47.3%/52.7% male/female split), whereas the Riverside ward (again in Gravesham) shows the reverse to be the case (50.2%/49.8% male/female). Within Medway, Strood South has a slightly higher proportion of females compared to the England average. Within Dartford, Newtown has a slightly higher proportion of males compared to the England average.

### North of the River Thames

4.4.4 Table 4.18 shows gender distributions within local authorities and wards to the north of the River Thames. As with the areas to the south of the River Thames, the table shows that there is a broadly similar distribution within each local authority as for England as a whole.

**Table 4.18 Gender – distribution within local authorities and wards to the north of the River Thames**

Geographic area	Male (%)	Female (%)
<b>England</b>	<b>49.4</b>	<b>50.6</b>
<b>Essex</b>	<b>48.9</b>	<b>51.1</b>
<b>Thurrock</b>	<b>49.4</b>	<b>50.6</b>
Ockendon	49.8	50.2
Belhus	50.4	49.6
Orsett	47.8	52.2
Stifford Clays	48.5	51.5
Little Thurrock Rectory	48.9	51.1
Little Thurrock Blackshots	49.5	50.5
Chadwell St Mary	47.7	52.3
Tilbury St Chads	48.0	52.0
Tilbury Riverside and Thurrock Park	47.7	52.3
East Tilbury	48.0	52.0
Aveley and Uplands	49.0	51.0
West Thurrock and South Stifford	51.4	48.6
Chafford and North Stifford	50.1	49.9
Stanford-le-Hope West	49.7	50.3
Stanford East and Corringham Town	47.2	52.8
The Homesteads	48.3	51.7
Corringham and Fobbing	48.3	51.7
<b>Havering</b>	<b>48.1</b>	<b>51.9</b>
Upminster	48.1	51.9

Geographic area	Male (%)	Female (%)
Cranham	47.7	52.3
Rainham and Wennington	48.5	51.5
Harold Wood	49.2	50.8
Gooshays	48.0	52.0
<b>Brentwood</b>	<b>48.6</b>	<b>51.4</b>
Warley	48.7	51.3
South Weald	48.5	51.5
Herongate, Ingrave and West Horndon	51.2	48.8
<b>Basildon</b>	<b>48.5</b>	<b>51.5</b>
<b>Southend-on-Sea</b>	<b>49.1</b>	<b>50.9</b>

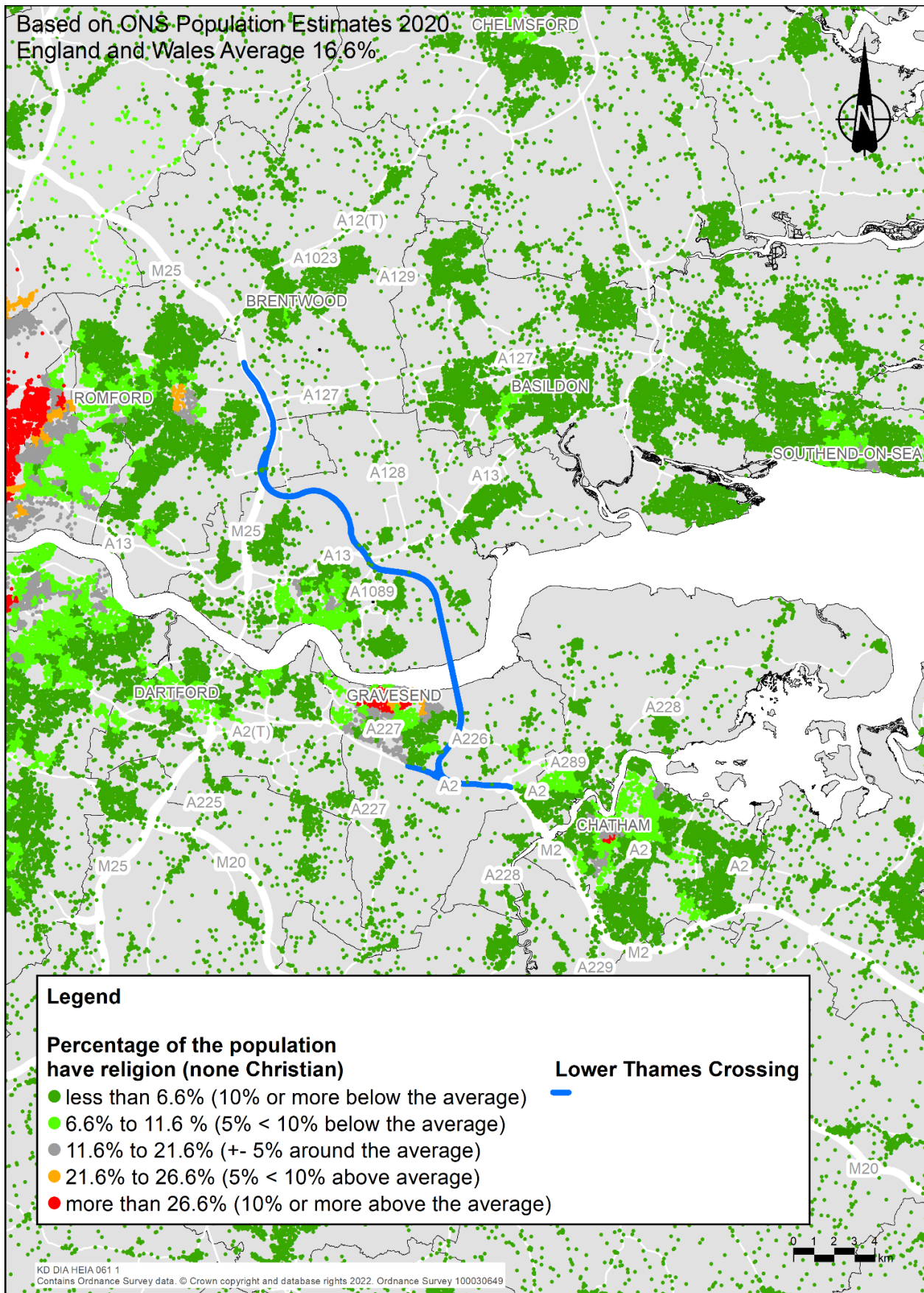
Source: Mid-Year Population Estimates, 2020 (Office for National Statistics, 2021)

- 4.4.5 The data presented in Plate 4.6 and Table 4.18 shows that both Thurrock and Southend-on-Sea have very similar proportions of males to females when compared to England as a whole. The local authority areas of Havering, Brentwood and Basildon each have slightly higher proportions of females to males than is the case nationally.
- 4.4.6 Locations where the gender distribution may differ slightly from the national average include within north Brentwood and the Havering Park and Heaton areas of Havering (higher proportions of females than the average); and the community of Grays Riverside in Thurrock (higher proportion of males).

## 4.5 Faith

- 4.5.1 According to 2011 Census data (Office for National Statistics, 2011), the largest declared religion across local authorities to the north and south of the River Thames is Christianity. Plate 4.7 shows the distribution of non-Christian religions across the study areas.

**Plate 4.7 Faith – distribution of non-Christian religions**



## South of the River Thames

- 4.5.2 Plate 4.7 and Table 4.19 highlight that Gravesham is home to a particularly high proportion of Sikh residents, with Medway having a high proportion of residents from the Muslim faith. Higher proportions of non-Christians are shown to be centred around urban areas such as central Dartford, the Greenhithe area, central Gravesend and the Chatham/Gillingham areas of Medway.
- 4.5.3 Variations among wards located close to the Project route include the following:
- a. Riverside ward in Gravesham has one of the lowest proportions of residents who declare Christianity as their religion (54.4%). Riverside also has the highest proportion of residents who declare themselves as Muslim or Sikh (comprising 15.6% of the total population).
  - b. Chalk has the highest proportion of residents who declare Christianity as their main religion (73.2%), which is higher than the England average of 59.4%. Cuxton and Halling ward also has a high proportion of Christian residents (64.9%).
  - c. Strood North has a significantly higher proportion of residents who declare their main religion as Sikh.

**Table 4.19 Faith – local authorities and wards to the south of the River Thames**

Geographic area	Faith group (%)								
	Christian	Buddhist	Hindu	Jewish	Muslim	Sikh	Other	No religion	Not stated
<b>England</b>	<b>59.4</b>	<b>0.5</b>	<b>1.5</b>	<b>0.5</b>	<b>5.0</b>	<b>0.8</b>	<b>0.4</b>	<b>24.7</b>	<b>7.2</b>
<b>Kent</b>	<b>62.5</b>	<b>0.5</b>	<b>0.7</b>	<b>0.1</b>	<b>1.0</b>	<b>0.7</b>	<b>0.4</b>	<b>26.8</b>	<b>7.3</b>
<b>Medway</b>	<b>57.8</b>	<b>0.4</b>	<b>1.0</b>	<b>0.1</b>	<b>2.0</b>	<b>1.5</b>	<b>0.5</b>	<b>29.9</b>	<b>6.8</b>
Cuxton and Halling	64.9	0.2	0.4	0.0	0.7	0.0	0.4	26.8	6.6
Strood South	57.5	0.3	0.5	0.0	0.9	0.9	0.7	32.5	6.8
Strood North	56.4	0.5	1.1	0.0	1.1	3.1	1.5	29.3	7.0
Strood Rural	64.2	0.3	0.4	0.0	0.3	1.5	0.6	25.9	6.7
<b>Tonbridge and Malling</b>	<b>63.7</b>	<b>0.6</b>	<b>0.4</b>	<b>0.2</b>	<b>0.6</b>	<b>0.2</b>	<b>0.3</b>	<b>42.9</b>	<b>7.0</b>
Snofland East and Ham Hill	58.3	0.3	0.0	0.1	0.2	0.0	0.5	33.3	7.2
<b>Gravesham</b>	<b>60.8</b>	<b>0.3</b>	<b>0.9</b>	<b>0.1</b>	<b>1.9</b>	<b>7.6</b>	<b>0.6</b>	<b>21.5</b>	<b>6.3</b>
Riverside	54.4	0.5	1.5	0.1	4.2	11.4	0.9	20.9	6.1
Riverview	70.5	0.1	0.9	0.1	0.6	3.9	1.0	16.6	6.3
Higham	70.0	0.4	0.7	0.1	1.1	2.5	0.2	18.9	6.2
Chalk	73.2	0.2	0.2	0.0	1.0	1.1	1.0	17.1	6.1
Westcourt	63.8	0.4	0.5	0.0	1.5	2.8	0.5	24.0	6.3
Singlewell	62.4	0.2	0.4	0.1	1.3	1.7	0.4	27.4	6.1
Woodlands	61.8	0.3	0.9	0.0	1.3	10.0	0.5	19.6	5.5
Shorne, Cobham and Luddesdown	69.2	0.4	0.4	0.1	0.7	2.8	0.4	18.3	7.7
Northfleet South	54.0	0.3	1.5	0.0	2.3	10.5	0.9	23.9	6.5

Geographic area	Faith group (%)								
	Christian	Buddhist	Hindu	Jewish	Muslim	Sikh	Other	No religion	Not stated
Istead Rise	71.9	0.1	0.2	0.1	0.2	1.8	0.3	19.9	5.6
Painters Ash	66.1	0.4	0.6	0.0	0.5	8.8	0.1	17.0	6.4
Central	56.0	0.4	1.0	0.1	2.8	12.4	1.1	20.1	6.2
Coldharbour	60.9	0.0	1.1	0.0	1.9	5.0	0.5	24.4	6.2
<b>Dartford</b>	<b>60.6</b>	<b>0.4</b>	<b>1.6</b>	<b>0.1</b>	<b>1.6</b>	<b>1.6</b>	<b>0.3</b>	<b>27.2</b>	<b>6.6</b>
Stone	61.6	0.3	0.9	0.1	1.0	0.9	0.2	28.6	6.4
Littlebrook	59.8	0.8	1.5	0.0	1.8	0.7	0.7	29.2	5.5
Joyce Green	55.7	0.5	1.5	0.0	1.9	0.5	0.3	33.1	6.5
Newtown	53.8	0.7	1.8	0.1	2.2	3.2	0.4	31.1	6.8
Longfield, New Barn and Southfleet	72.0	0.3	0.6	0.1	0.3	1.5	0.2	18.1	6.8

Source: 2011 Census (Office for National Statistics, 2011)



## North of the River Thames

- 4.5.4 Plate 4.7 and Table 4.20 highlight concentrations of Hindu populations within Havering. The table shows again that locations with a higher concentration of Hindu and Muslim populations are primarily urban areas, including Emerson Park in Havering, South Chafford (to the south of Grays in Thurrock) and Brentwood West, located next to Brentwood town centre.
- 4.5.5 Looking in more detail at wards found close to the Project route, the following can be seen:
- a. Wards with a high proportion of residents from a Christian faith include Orsett (70.9%) and Upminster (75%).
  - b. Wards with a high proportion of residents from a Muslim faith include West Thurrock and South Stifford (3.3%), Chafford and North Stifford (2.9%) and Little Thurrock Blackshots (2.1%).
  - c. Rainham and Wennington has a high proportion of residents who declare their religion as Sikh (2.5%).

**Table 4.20 Faith – local authorities and wards to the north of the River Thames**

Geographic area	Faith group (%)								
	Christian	Buddhist	Hindu	Jewish	Muslim	Sikh	Other	No religion	Not stated
<b>England</b>	<b>59.4</b>	<b>0.5</b>	<b>1.5</b>	<b>0.5</b>	<b>5.0</b>	<b>0.8</b>	<b>0.4</b>	<b>24.7</b>	<b>7.2</b>
<b>Essex</b>	<b>61.8</b>	<b>0.3</b>	<b>0.6</b>	<b>0.5</b>	<b>1.0</b>	<b>0.2</b>	<b>0.4</b>	<b>28.1</b>	<b>7.2</b>
<b>Thurrock</b>	<b>63.3</b>	<b>0.4</b>	<b>0.7</b>	<b>0.1</b>	<b>2.0</b>	<b>0.8</b>	<b>0.3</b>	<b>26.0</b>	<b>6.3</b>
Ockendon	62.1	0.5	0.2	0.2	1.7	0.2	0.4	28.6	6.2
Belhus	61.2	0.7	0.3	0.0	1.7	0.1	0.2	28.4	7.4
Orsett	70.9	0.2	0.4	0.1	0.7	0.7	0.3	20.6	6.2
Stifford Clays	64.8	0.2	0.7	0.1	1.5	1.5	0.1	25.0	6.1
Little Thurrock Rectory	64.3	0.5	1.0	0.1	1.4	1.8	0.4	23.4	7.0
Little Thurrock Blackshots	65.4	0.2	0.6	0.0	2.1	1.4	0.3	23.6	6.5
Chadwell St Mary	64.0	0.2	0.1	0.2	1.0	0.3	0.4	27.8	6.1
Tilbury St Chads	64.6	0.3	0.3	0.0	1.1	0.1	0.5	27.3	5.6
Tilbury Riverside and Thurrock Park	62.9	0.2	0.3	0.0	1.7	0.1	0.3	28.2	6.2
East Tilbury	64.2	0.1	0.0	0.1	0.6	0.1	0.2	29.4	5.3
Aveley and Uplands	63.8	0.3	0.2	0.1	1.3	0.1	0.3	27.6	6.3
West Thurrock and South Stifford	58.0	0.4	1.2	0.2	3.3	1.2	0.3	29.7	5.6
Chafford and North Stifford	64.1	0.8	1.7	0.5	2.9	2.0	0.1	21.8	6.2
Stanford-le-Hope West	63.8	0.2	0.3	0.0	1.8	0.0	0.3	27.3	6.3
Stanford East and Corringham Town	64.7	0.2	0.1	0.1	0.3	0.0	0.3	27.8	6.4

Geographic area	Faith group (%)								
	Christian	Buddhist	Hindu	Jewish	Muslim	Sikh	Other	No religion	Not stated
The Homesteads	67.6	0.4	0.6	0.1	0.6	0.0	0.2	24.6	5.9
Corringham and Fobbing	69.8	0.1	0.1	0.2	0.1	0.3	0.3	22.2	6.9
<b>Havering</b>	<b>65.6</b>	<b>0.3</b>	<b>1.2</b>	<b>0.5</b>	<b>2.0</b>	<b>0.8</b>	<b>0.3</b>	<b>22.6</b>	<b>6.7</b>
Upminster	75.0	0.2	0.7	0.2	0.7	0.2	0.2	16.5	6.2
Cranham	72.2	0.2	0.6	0.3	1.0	0.5	0.3	18.4	6.5
Rainham and Wennington	66.1	0.3	0.8	0.3	1.5	2.5	0.2	21.6	6.6
Harold Wood	63.5	0.2	1.4	0.5	1.3	0.3	0.4	25.4	6.9
Gooshays	58.1	0.2	0.5	0.4	1.7	0.2	0.4	30.9	7.6
<b>Brentwood</b>	<b>68.6</b>	<b>0.4</b>	<b>1.1</b>	<b>0.4</b>	<b>0.9</b>	<b>0.2</b>	<b>0.3</b>	<b>21.1</b>	<b>7.1</b>
Warley	65.4	0.5	2.0	0.3	1.5	0.1	0.2	22.3	7.6
Herongate, Ingrave and West Horndon	72.2	0.3	0.3	0.2	0.3	0.2	0.1	18.9	7.4
South Weald	72.1	0.3	1.4	0.3	1.1	0.1	0.6	16.2	0.8
<b>Basildon</b>	<b>60.3</b>	<b>0.3</b>	<b>0.7</b>	<b>0.2</b>	<b>0.9</b>	<b>0.1</b>	<b>0.3</b>	<b>30.3</b>	<b>6.8</b>
<b>Southend-on-Sea</b>	<b>55.7</b>	<b>0.5</b>	<b>0.7</b>	<b>1.2</b>	<b>1.9</b>	<b>0.1</b>	<b>0.5</b>	<b>31.6</b>	<b>7.8</b>

Source: 2011 Census (Office for National Statistics, 2011)

## 4.6 Sexual orientation

- 4.6.1 Data relating to sexual orientation in the UK in 2019 by region, sex, age, marital status, ethnicity and socio-economic classification has been gathered by the ONS. These are classified by ONS as ‘experimental statistics’, which are statistics that are in the testing phase and not fully developed. The main points from ONS data relating to sexual orientation include the following:
- a. The proportion of the UK population aged 16 years and over identifying as heterosexual or straight decreased slightly from 94.6% in 2018 to 93.7% in 2019.
  - b. An estimated 2.7% of the UK population aged 16 years and over identified as lesbian, gay or bisexual (LGB) in 2019, an increase from 2.2% in 2018.
  - c. Between 2018 and 2019, the proportion of men identifying as LGB increased from 2.5% to 2.9%, and the proportion of women identifying as LGB increased from 2.0% to 2.5%.
  - d. Younger people (aged 16 to 24 years) were most likely to identify as LGB – in 2019 the proportion was 6.6% of all 16- to 24-year olds, an increase from 4.4% in 2018. The proportion of older people (aged 65 years and over) identifying as LGB also increased, from 0.7% to 1.0%.
  - e. Between 2018 and 2019, the proportion of people who identified as LGB increased for England (2.7%, up from 2.3%); among English regions, people in London were most likely to identify as LGB (3.8%, an increase from 2.8%).

## 4.7 Marriage and Civil Partnership

- 4.7.1 Data relating to marriage and civil partnerships for the areas to the south and north of the River Thames is presented in the sections below.

### South of the River Thames

- 4.7.2 Data has been used from the 2011 Census (Office for National Statistics, 2011) to describe marital status of the population by local authority area. This is the most-up-to-date data available at this geographical scale. Table 4.21 shows that Tonbridge and Malling has the highest proportion of residents who are married (53.4%); the proportion of residents in a same-sex civil partnership is roughly similar across all local authorities.

**Table 4.21 Marital status – south of the River Thames**

Geographic area	Single (%)	Married (%)	In a registered same-sex civil partnership (%)*	Separated	Divorced	Widowed / surviving partner from a civil partnership
Gravesham	32.4	48.8	0.1	2.9	8.7	7.2
Medway	34.6	46.1	0.2	3.1	9.6	6.4
Dartford	34.6	47.1	0.2	2.9	8.8	6.5
Tonbridge and Malling	28.1	53.4	0.2	2.5	9.3	6.6
<b>Kent</b>	<b>31.3</b>	<b>48.8</b>	<b>0.2</b>	<b>2.8</b>	<b>9.6</b>	<b>7.3</b>
<b>England</b>	<b>34.6</b>	<b>46.6</b>	<b>0.2</b>	<b>2.7</b>	<b>9.0</b>	<b>6.9</b>

Source: 2011 Census (Office for National Statistics, 2011)

\*Data does not include any opposite-sex civil partnerships. Data was permitted by amendments to the Civil Partnership Act 2004, made in 2019. According to the ONS (Office for National Statistics, 2020a) data there were 7,208 opposite-sex civil partnerships formed in England in 2020.

4.7.3 Looking in more detail at wards found closest to the Project route, figures range between 0.0% and 0.4% of the local population declaring that they are in a same-sex civil partnership, with Newtown ward (Dartford) having the highest proportion (0.4%).

### North of the River Thames

4.7.4 Table 4.22 sets out similar information for the study area to the north of the River Thames. The data shows that Brentwood has a high proportion of married individuals (52.1%), with Southend-on-Sea having a higher proportion of people who are divorced than is the case nationally (10.8%). The proportion of residents in a same-sex civil partnership is roughly similar across all local authorities.

4.7.5 At ward level, East Tilbury has the highest proportion of residents in a registered same-sex civil partnership (0.3%).

**Table 4.22 Marital status – north of the River Thames**

Geographic area	Single (%)	Married (%)	In a registered same-sex civil partnership (%)	Separated	Divorced	Widowed / surviving partner from a civil partnership
<b>England</b>	<b>34.6</b>	<b>46.6</b>	<b>0.2</b>	<b>2.7</b>	<b>9.0</b>	<b>6.9</b>
<b>Essex</b>	<b>30.0</b>	<b>50.6</b>	<b>0.2</b>	<b>2.4</b>	<b>9.4</b>	<b>7.4</b>
Thurrock	33.9	47.6	0.1	3.3	8.9	6.1
Havering	33.0	48.5	0.1	2.4	8.0	7.9
Brentwood	29.6	52.1	0.1	2.2	8.4	7.5

<b>Geographic area</b>	<b>Single (%)</b>	<b>Married (%)</b>	<b>In a registered same-sex civil partnership (%)</b>	<b>Separated</b>	<b>Divorced</b>	<b>Widowed / surviving partner from a civil partnership</b>
Basildon	32.1	47.9	0.1	2.9	9.7	7.3
Southend-on-Sea	34.4	43.8	0.2	3.1	10.8	7.7

*Source: 2011 Census (Office for National Statistics, 2011)*

## 5 Economic overview

### 5.1 Introduction

5.1.1 This section provides a summary of key features associated with the local and wider economy to the south of the River Thames, including information relating to employment, unemployment, education attainment and deprivation.

### 5.2 Employment Structure

5.2.1 A review of employment by sector over the period 2010 to 2020 for the local authority areas to the north and south of the River Thames shows that:

- a. Manufacturing employment has declined in both areas and by a substantially greater degree to the north of the River Thames. This points to a greater degree of structural change in the area to the north than in the area to the south of the River Thames.
- b. Construction employment has grown strongly in both areas but by a much greater degree in the area to the north of the River Thames, which could indicate a stronger attraction to this area as the location for the clustering of construction activity.
- c. Growth in employment in private sector services was similar in both areas; however, this sector is much larger in the area to the north of the River Thames than the area to the south.

5.2.2 Within the areas to the north and south of the River Thame, there are marked differences between individual local authority areas, for example:

- a. Havering and Medway have the largest numbers of jobs, Brentwood and Gravesham have the smallest.
- b. Thurrock and Medway have a relatively large share of employment engaged in primary industries and utilities: this might reflect proximity to water or having sites suited to certain industry types.
- c. Only Medway has a relatively large share of employment in manufacturing.
- d. Brentwood and Dartford have relatively large shares of employment engaged in construction.
- e. Thurrock has the largest proportion of employment in private sector services. Dartford also has a relatively large share of employment engaged in private sector services, while Medway has a very low share.
- f. There are large variations in employment in public sector services which accounts for a relatively large share of employment in Havering and Medway, but a low share in Brentwood and Thurrock.

- g. Manufacturing employment fell more in all six areas compared to England and more in Brentwood and Thurrock than elsewhere.
- h. Growth in construction employment was stronger than in England in all areas, being greatest in Brentwood and Thurrock and smallest in Havering and Medway.
- i. Compared with England, Thurrock, Dartford and Gravesham (from a low base) experienced the strongest growth in private sector services.
- j. Thurrock and Havering experienced large growth in public sector services employment. This growth was from a low base in Thurrock, but in Havering employment in this sector was already large in 2010.

## 5.3 Economic activity and unemployment

5.3.1 The Annual Population Survey (ONS) (Office for National Statistics, 2020b) provides economic activity and unemployment rates for the working age population (residents aged between 16 and 64).

### South of the River Thames

5.3.2 Table 5.1 shows Dartford to have a lower economic activity rate than is the case for other local authorities in the area (73.8%). Conversely, Medway has the highest rate (81.2%), which is higher than for Kent as a whole (77.3%). Dartford also has the highest rate of residents who are economically active but unemployed (4.2%). Gravesham has the highest claimant count (those individuals who are unemployed and claiming job seekers allowance or other unemployment related benefits) at 4.1%. The claimant count for Tonbridge and Malling and Dartford are considerably lower than either for Kent or for Great Britain as a whole.

**Table 5.1 Economic activity and unemployment – local authorities to the south of the River Thames**

Geographic area	Economic activity (%) (April 2021 to March 2022)	Unemployment rate (%) (April 2021 to March 2022)	Claimant count (%) (August 2022)
Gravesham	78.4	3.5	4.1
Medway	81.2	3.7	3.8
Dartford	73.8	4.2	2.9
Tonbridge and Malling	79.8	2.5	2.0
<b>Kent</b>	<b>77.3</b>	<b>3.9</b>	<b>3.2</b>
<b>Great Britain</b>	<b>78.5</b>	<b>4.1</b>	<b>3.7</b>

Source: ONS Annual Population Survey (Office for National Statistics, 2020b) ONS Claimant Count data, 2022 (Office for National Statistics, 2022)

5.3.3 Economic activity and claimant count data at ward level are set out in Table 5.2. For wards located close to the Project route, key features include the following:

- a. Riverside and Westcourt wards (Gravesham) have high claimant counts relative to other local areas.



- b. Economic activity rates are lower in areas such as Westcourt and Shorne, Cobham and Luddesdown.

**Table 5.2 Economic activity and claimant count by ward – south of the River Thames**

Ward by local authority	Economic activity (%) (2011)	Claimant count (%) (August 2022)
<b>Medway</b>		
Cuxton and Halling	72.0	1.6
Strood South	71.0	3.9
Strood North	72.8	3.5
Strood Rural	73.1	2.5
<b>Tonbridge and Malling</b>		
Snodland East	78.7	3.2
<b>Gravesham</b>		
Riverside	73.6	6.2
Riverview	73.8	1.6
Higham	67.9	1.9
Chalk	69.9	2.6
Westcourt	65.3	5.6
Singlewell	69.2	4.2
Woodlands	74.8	2.7
Shorne, Cobham and Luddesdown	65.7	1.3
Northfleet South	73.5	3.9
Istead Rise	66.6	1.3
Painters Ash	69.6	2.4
Central	71.8	5.6
Coldharbour	76.6	5.0
<b>Dartford</b>		
Bridge	*	1.6
Newtown	*	4.2
Stone Castle	*	2.6
Stone House	*	3.1
Temple Hill	*	3.9
Longfield, New Barn and Southfleet	*	1.7

Source: 2011 Census (Office for National Statistics, 2011)

\*Data based on new ward boundaries for Dartford post-2011 Census

## North of the River Thames

5.3.4 Table 5.3 outlines economic activity rates between January 2020 and December 2020. Havering has the highest proportion of residents who are economically active (87.1%), with Brentwood the lowest (79.3%). Havering has the highest unemployment rate (4.5%), with Southend-on-Sea having the highest claimant count (4.4%).

**Table 5.3 Economic activity and unemployment – local authorities to the north of the River Thames**

Geographic area	Economic activity (%) (April 2021 to March 2022)	Unemployment rate (%) (April 2021 to March 2022)	Claimant count (%) (August 2022)
<b>Great Britain</b>	<b>78.5</b>	<b>4.1</b>	<b>3.7</b>
<b>Essex</b>	<b>82.0</b>	<b>3.4</b>	<b>2.8</b>
Thurrock	83.4	3.9	3.8
Havering	87.1	4.5	3.6
Brentwood	79.3	3.2	2.5
Basildon	84.6	3.6	3.6
Southend-on-Sea	80.5	4.2	4.4

Source: Annual Population Survey 2020 (Office for National Statistics, 2020b) /ONS Claimant Count, 2022 (Office for National Statistics, 2022)

- 5.3.5 Economic activity and claimant count data at ward level is set out in Table 5.4. For wards located close to the Project route, key features include the following:
- Economic activity rates are higher within Chafford and North Stifford (82.1%) and lowest in Stanford East and Corringham Town (66.0%).
  - Claimant counts in Tilbury Riverside and Thurrock Park (6.8%), Tilbury St Chads (6.1%) and Gooshays (6.0%) wards are higher than other local areas.
  - Claimant counts are lowest within Herongate, Ingrave and West Horndon (1.1%) and Upminster wards (1.3%).

**Table 5.4 Economic activity and claimant count by ward – north of the River Thames**

Wards by local authority	Economic activity (%) (2011)	Claimant count (%) (August 2022)
<b>Thurrock</b>		
Ockendon	71.9	4.1
Belhus	71.9	5.2
Orsett	74.9	2.0
Stifford Clays	71.1	2.8
Little Thurrock Rectory	76.3	2.4
Little Thurrock Blackshots	69.5	2.8
Chadwell St Mary	67.5	4.8
Tilbury St Chads	68.5	6.1
Tilbury Riverside and Thurrock Park	70.4	6.8
East Tilbury	76.2	3.9
Aveley and Uplands	73.9	3.6
West Thurrock and South Stifford	79.9	4.6
Chafford and North Stifford	82.1	2.1
Stanford-le-Hope West	74.8	2.9
Stanford East and Corringham Town	66.0	3.3
The Homesteads	73.3	2.0
Corringham and Fobbing	69.8	2.3
<b>Havering</b>		
Upminster	70.8	1.3
Cranham	70.0	1.5
Rainham and Wennington	70.6	4.4
Harold Wood	71.0	3.2
Gooshays	72.5	6.0
<b>Brentwood</b>		
Warley	72.9	2.5
Herongate, Ingrave and West Horndon	72.8	1.1
South Weald	73.8	2.5

Source: 2011 Census (Office for National Statistics, 2022)

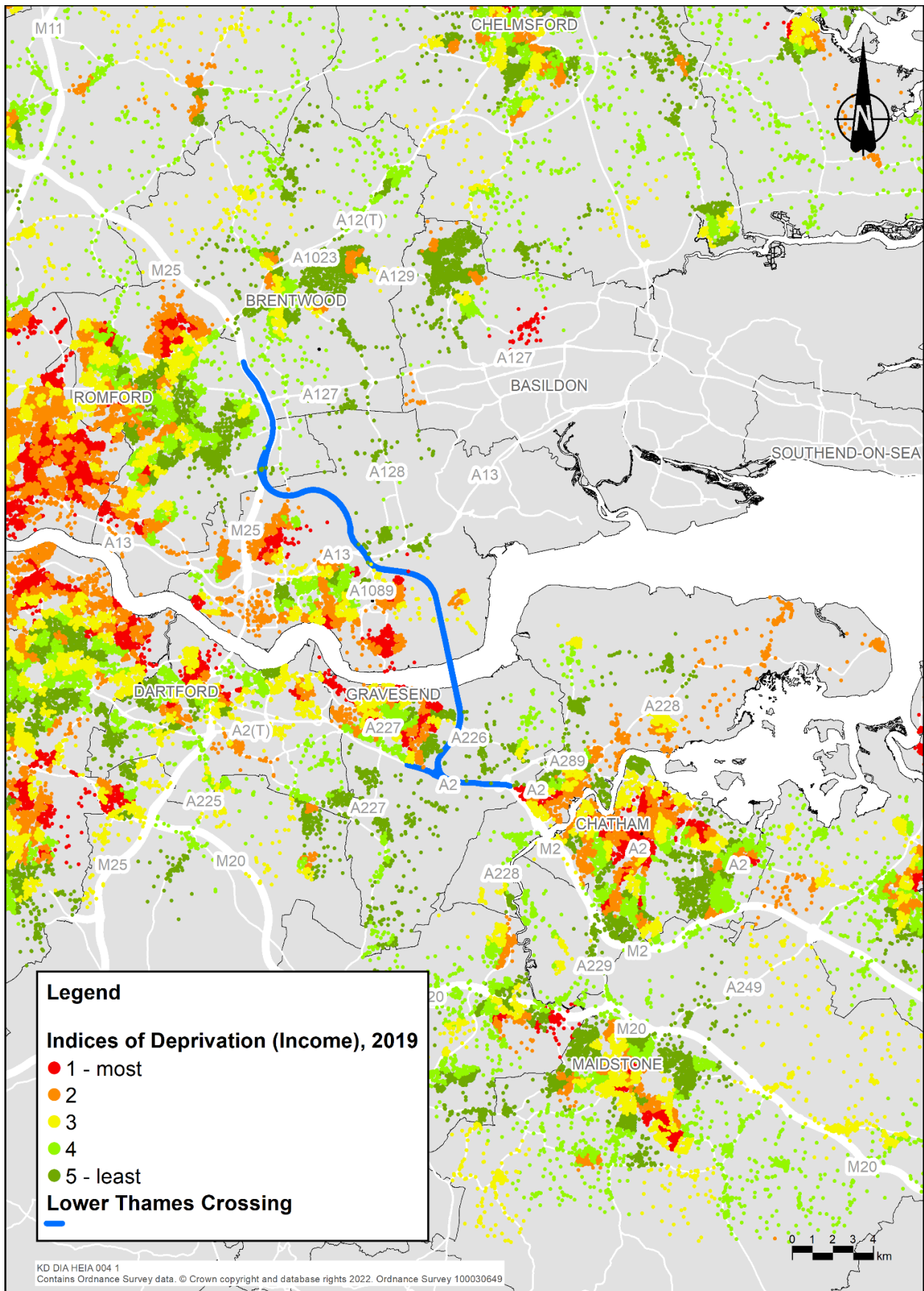
## 5.4 Deprivation

5.4.1 The Indices of Deprivation measure relative levels of deprivation across Lower Layer Super Output Areas in England. The Indices of Deprivation are based on 39 separate indicators organised against seven distinct domains of deprivation (income, employment, health deprivation and disability, crime, barriers to

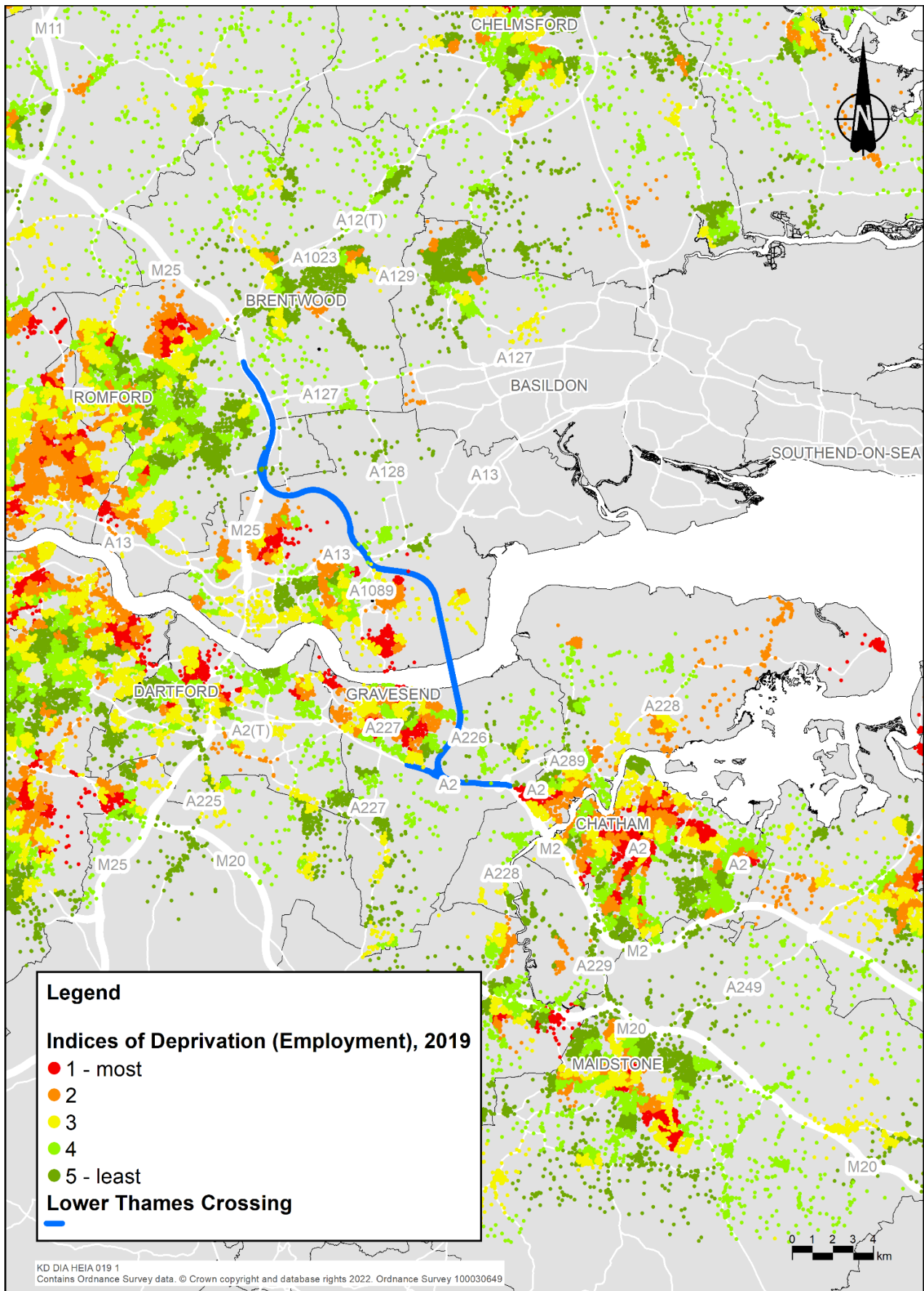
housing and services, living environment, and education and skills training). The seven domains are combined and weighted to calculate an Index of Multiple Deprivation (IMD) which shows levels of deprivation at local level. The most recent Indices of Deprivation statistics were released in 2019 (Ministry of Housing, Communities and Local Government, 2019), and statistics can be compared to the previous release in 2015 (Ministry of Housing, Communities and Local Government, 2015).

5.4.2 Plate 5.1 to Plate 5.7 show deprivation by domain for the areas to the south and north of the River Thames, with Plate 5.8 showing the results of the IMD.

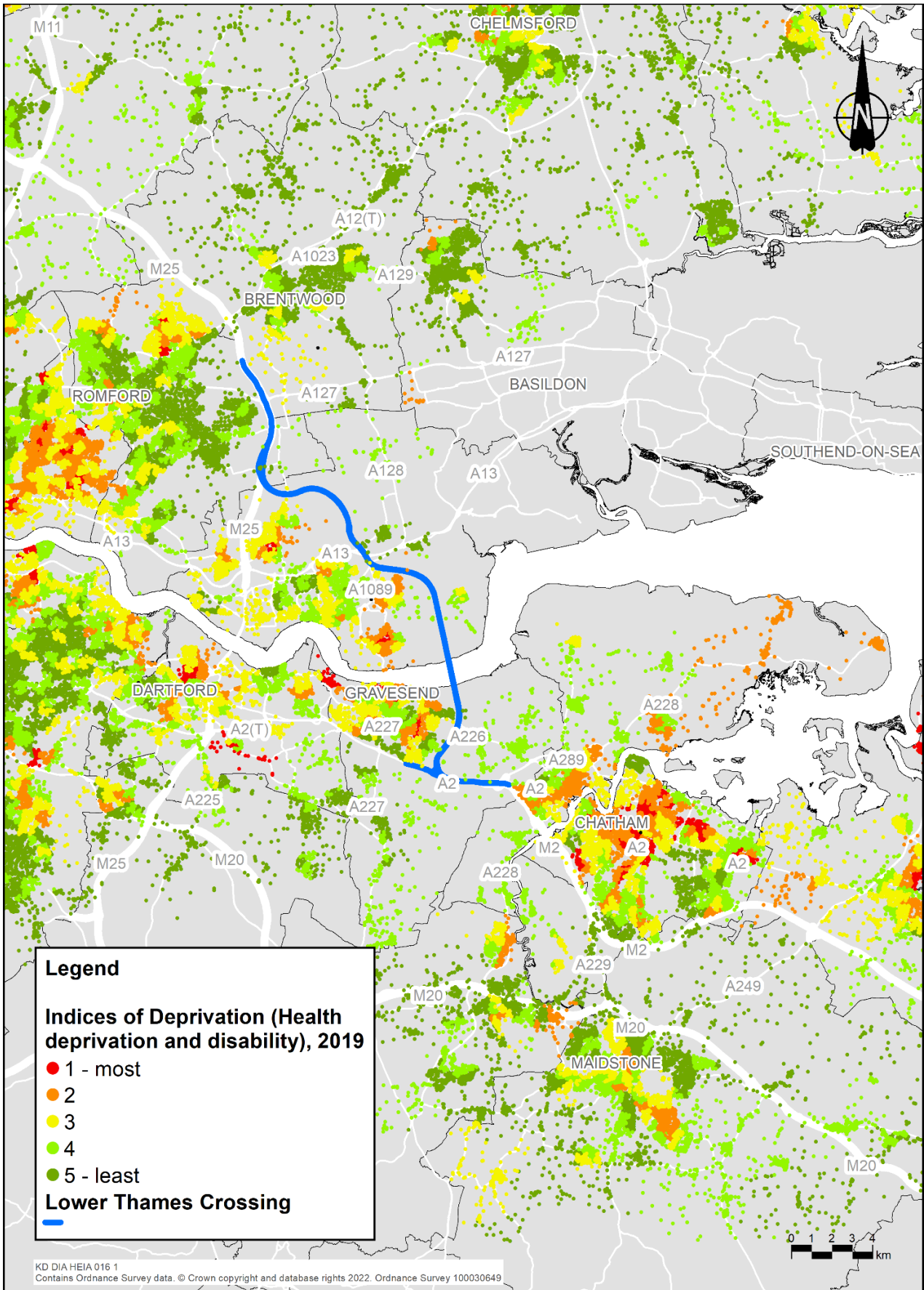
**Plate 5.1 Indices of Deprivation – income domain**



**Plate 5.2 Indices of Deprivation – employment domain**



**Plate 5.3 Indices of Deprivation – health deprivation and disability domain**



**Plate 5.4 Indices of Deprivation – education and skills training domain**

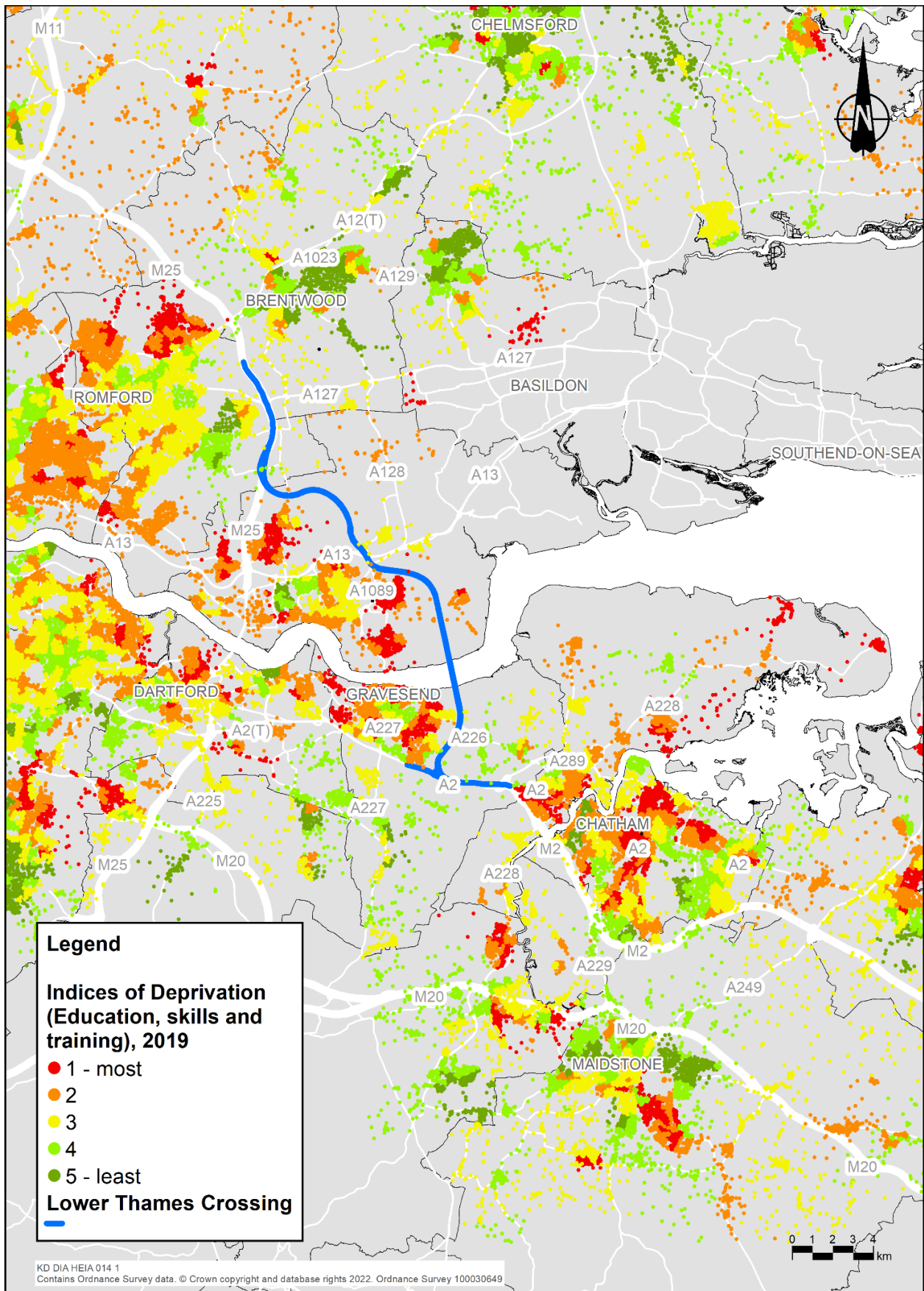
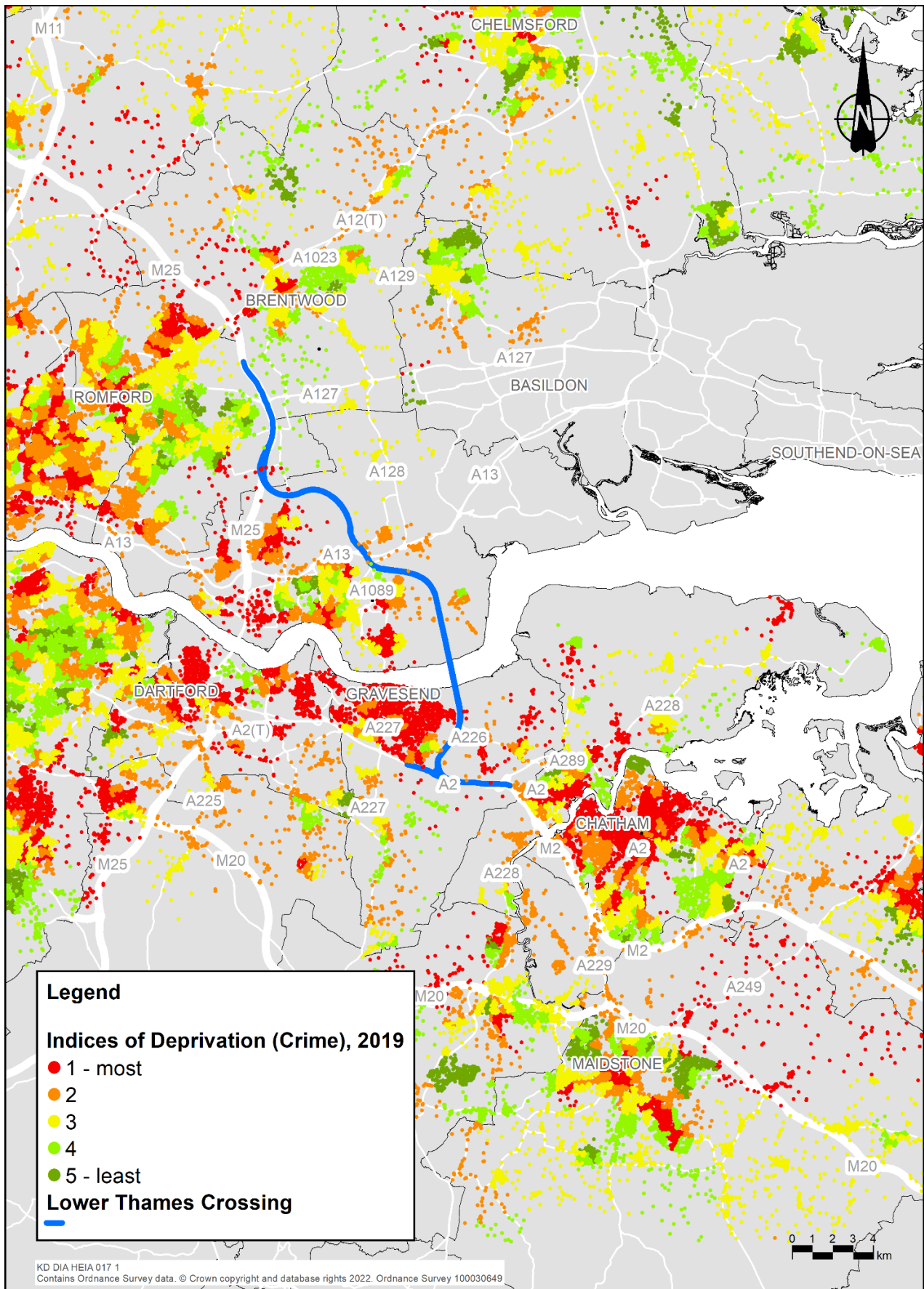
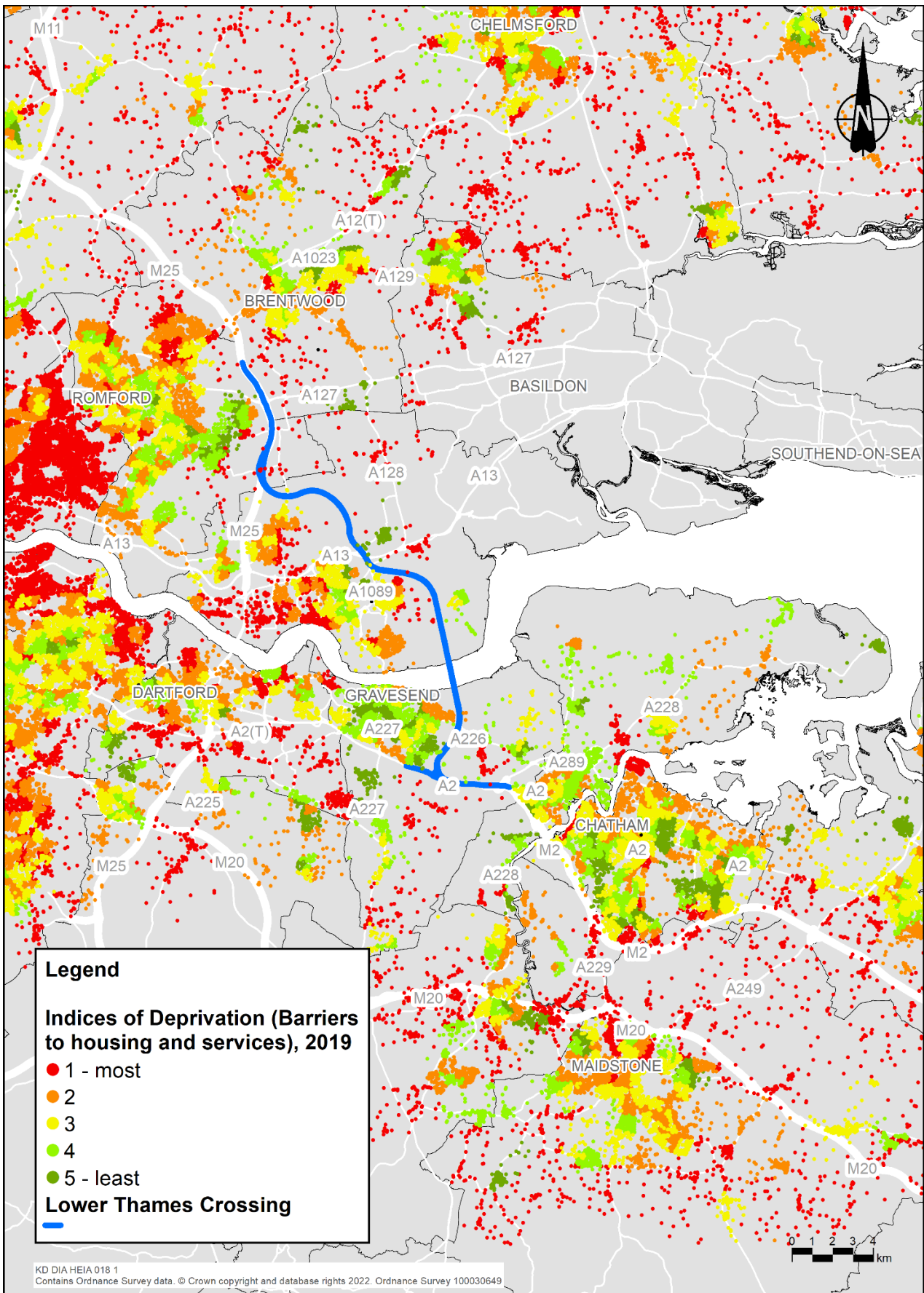




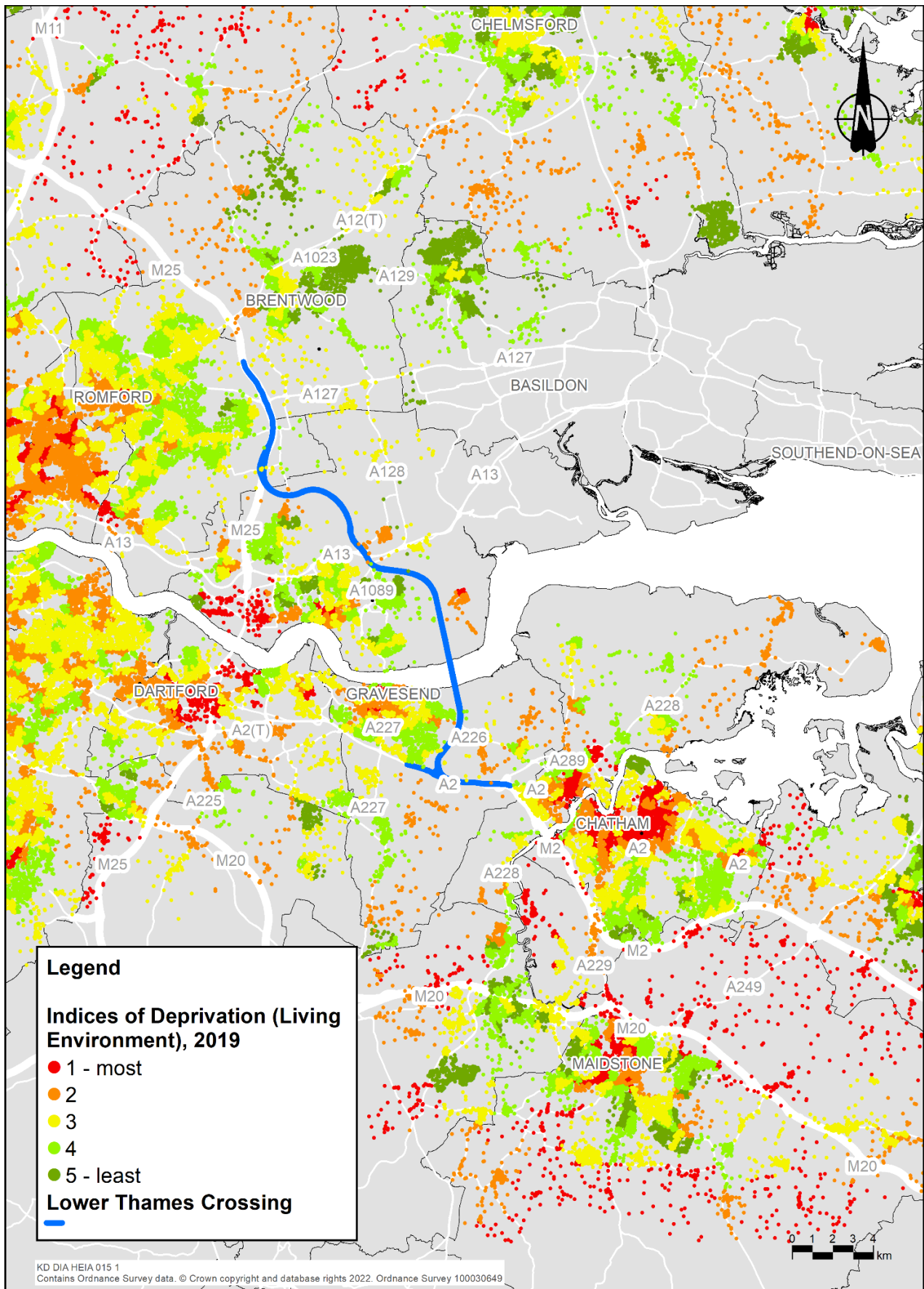
Plate 5.5 Indices of Deprivation – crime domain



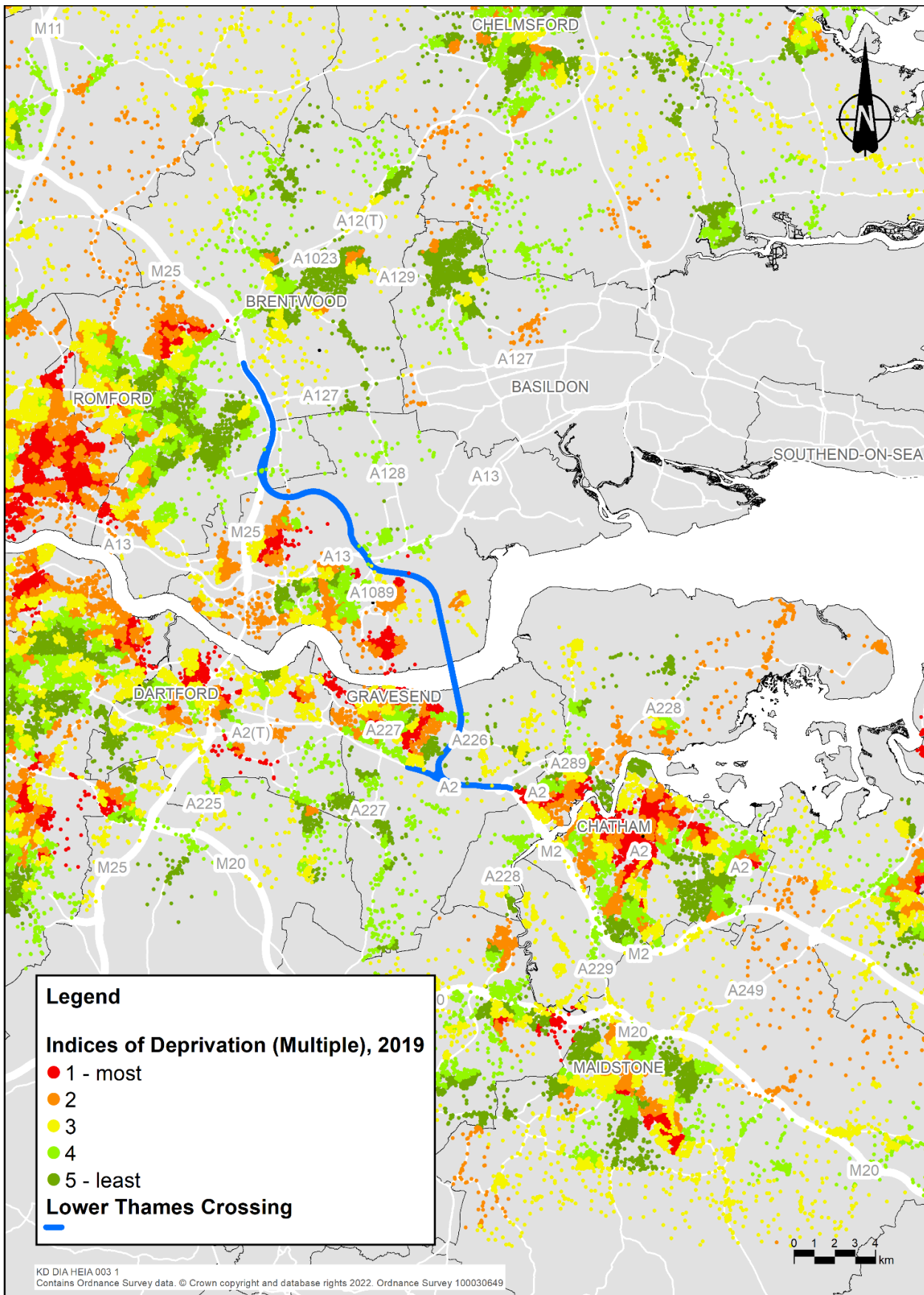
**Plate 5.6 Indices of Deprivation – barriers to housing and services domain**



**Plate 5.7 Indices of Deprivation – living environment domain**



**Plate 5.8 Index of Multiple Deprivation**



## South of the River Thames

- 5.4.3 Relative to other areas of the UK, the area to the south of the River Thames has become comparably less deprived, which supports other evidence that shows how employment rates, income and house prices have all improved in the local area. Local improvements are particularly notable in the riverside towns of Gravesend and Dartford. However, not all areas have seen improvement. Areas to the south and south-east have generally declined further, with Rochester and Chatham fairing particularly badly.
- 5.4.4 Closer examination of the specific indices in Gravesham reveals improvements have been driven by strong increases in employment, income, housing and services. These indices have all increased from low levels in 2015 and still remain mixed within the area. Crime, education and health deprivation domains have all worsened in Gravesham, and crime continues to register in the most deprived quintile across the town and the surrounding area. Rochester has seen a general decline in the IMD; all individual deprivation domains have seen a decline with the exception of income and education domains, which have remained broadly flat with pockets improving and others declining.
- 5.4.5 Dartford has seen one of the largest improvements in the IMD, yet, remains in the lowest quintile in 2019. The increase is the result of strong improvements in income, education and housing, but these are still poor in comparison to other areas of the UK and crime is a particular issue. There has also been a deterioration in the living environment domain.
- 5.4.6 Other specific domains such as income reveal people in the highest quintile living close to people in the lowest quintile in places such as Gravesend and Rochester.
- 5.4.7 In addition to the seven domain-level indices above, there are two supplementary indices. These are created as subsets from the income deprivation domain and have been used to provide further detail. The Income Deprivation Affecting Children Index (IDACI) (Ministry of Housing, Communities & Local Government, 2019) is the proportion of all children aged 0 to 15 living in income deprived households. The Income Deprivation Affecting Older People Index (IDAOP) measures the proportion of all those aged 60 or over who experience income deprivation.
- 5.4.8 Analysis of the IDACI shows the following:
- a. Northfleet North in Gravesham is ranked in the 10% most deprived nationally, with a further 10 areas ranked in the 10–20% most deprived (these include areas within Northfleet South, Riverside, Singlewell and Westcourt wards).
  - b. There are 17 areas in Medway ranked in the 10% most deprived nationally (these include areas within Rainham North and Rochester West) with a further 25 areas ranked in the 10–20% most deprived.
  - c. There are two areas in Dartford ranked in the 10% most deprived nationally (Town and Swanscombe), with a further three areas ranked in the 10–20% most deprived (including areas within Princes, Bridge and Stone Castle wards).

- 5.4.9 Analysis of the IDAOPI shows the following:
- a. There are two areas in Gravesham ranked in the top 10% most deprived nationally (one in Central ward and one in Riverside ward), with a further six areas ranked in the 10–20% most deprived (including areas within Riverside, Westcourt, and Northfleet South wards)
  - b. There are five areas in Medway ranked in the top 10% most deprived nationally (including around the Chatham area), with a further 14 areas ranked in the 10–20% most deprived.
  - c. There are no areas in Dartford ranked in the top 10% most deprived nationally. There are two areas ranked in the 10–20% most deprived, which are located in the Town and Princes wards.

### North of the River Thames

- 5.4.10 The local study area to the north of the River Thames includes areas that fall into the most and least deprived quintiles – for example, Upminster is largely in the least deprived quintiles, as is west Romford and much of Brentwood. The areas closer to the River Thames, such as Grays, show a higher proportion falling into the most deprived quintile.
- 5.4.11 Little has changed in Tilbury between IMD releases in 2015 and 2019, with the IMD information showing communities generally in the lowest quintile. However, the living environment domain has increased, indicating the quality of the local environment has improved. Grays has seen an improvement over time, driven by improvements in education, the living environment and a significant reduction in crime. Employment, health and housing have all deteriorated slightly.
- 5.4.12 Other specific domains such as income reveal people in the highest quintile living close to people in the lowest quintile – for example, the situation is different in Romford and Brentwood where income is largely high and in Basildon where income is largely low.
- 5.4.13 Analysis of the IDACI shows the following:
- a. There are six areas in Thurrock which are in the top 10% most deprived nationally, including areas within Tilbury St Chads, Tilbury Riverside and Chadwell St Mary wards, with a further 13 areas ranked in the 10–20% most deprived.
  - b. There are five areas in Havering which are in the top 10% most deprived nationally, with a further 14 areas ranked in the top 10–20% most deprived.
  - c. There are no areas in Brentwood which are in the top 20% most deprived nationally.
  - d. There are 11 areas in Basildon which are in the top 10% most deprived nationally, with a further 15 areas ranked in the top 10–20% most deprived.

- e. There are 14 areas in Southend-on-Sea which are in the top 10% most deprived nationally, with a further 10 areas ranked in the top 10–20% most deprived.

5.4.14 Analysis of the IDAOPI shows the following:

- a. There are five areas in Thurrock which are in the top 10% most deprived nationally, including areas within Tilbury St Chads, Belhus and Grays Riverside wards, with a further 10 areas ranked in the 10–20% most deprived.
- b. There are three areas in Medway which are in the top 10% most deprived nationally, with a further nine areas ranked in the top 10–20% most deprived.
- c. There are no areas in Brentwood which are in the top 10% most deprived nationally. One area in Brentwood South is ranked in the 10–20% most deprived.
- d. There are three areas in Basildon which are in the top 10% most deprived nationally, with a further 12 areas ranked in the top 10–20% most deprived.
- e. There are six areas in Southend-on-Sea which are in the top 10% most deprived nationally.

## 5.5 Socio-economic classification – social grade

5.5.1 This section provides information on approximated social grade of local populations. Although not a precise science, the Market Research Society has developed a method which uses Census information (Market Research Society, 2011) to provide an approximation of social grade using the following categories:

- a. AB – higher and intermediate managerial/administrative/professional occupations
- b. C1 – supervisory, clerical and junior managerial/administrative/professional occupations
- c. C2 – skilled manual occupations
- d. DE – semi-skilled and unskilled manual occupations, unemployed and lowest grade occupations

### South of the River Thames

5.5.2 Table 5.5 provides information relating to approximated social grade of residents aged 16–64 living in local authorities found to the south of the River Thames. At local authority level, the table shows that each area has a lower proportion of residents in social grade category AB, when compared to England as a whole. Tonbridge and Malling has the highest proportion of residents who are in social grade AB, with Medway the lowest. For social grade DE, both Gravesham and Medway have a higher proportion of residents than England as a whole.

**Table 5.5 Approximated social grade by local authority and ward – south of the River Thames**

Geographic area	Social grade (%)			
	AB	C1	C2	DE
<b>England</b>	<b>22.9</b>	<b>30.3</b>	<b>21.9</b>	<b>24.8</b>
<b>Kent</b>	<b>22.4</b>	<b>31.9</b>	<b>22.5</b>	<b>23.2</b>
<b>Medway</b>	<b>16.7</b>	<b>31.3</b>	<b>26.9</b>	<b>25.2</b>
Cuxton and Halling	22.3	33.2	27.8	16.7
Strood South	11.6	26.0	32.5	29.9
Strood North	16.8	29.2	28.4	25.4
Strood Rural	19.6	31.6	30.1	18.6
<b>Tonbridge and Malling</b>	<b>27.8</b>	<b>32.6</b>	<b>21.3</b>	<b>18.3</b>
Snodland East	11.4	28.0	27.3	33.3
<b>Gravesham</b>	<b>17.4</b>	<b>28.4</b>	<b>26.5</b>	<b>27.7</b>
Riverside	12.5	25.9	23.4	38.2
Riverview	16.6	32.0	33.4	18.1
Higham	25.3	34.5	24.3	15.9
Chalk	20.1	29.8	30.4	19.7
Westcourt	10.2	23.6	31.9	34.2
Singlewell	10.0	24.5	32.1	33.4
Woodlands	23.4	31.6	24.4	20.7
Shorne, Cobham and Luddesdown	31.9	32.3	22.8	13.0
Northfleet South	12.1	25.6	29.7	32.6
Istead Rise	23.8	35.5	27.8	12.9
Painters Ash	15.9	29.5	30.4	24.2
Central	21.6	29.8	19.7	29.0
Coldharbour	11.2	24.6	27.9	36.3
<b>Dartford</b>	<b>19.4</b>	<b>33.1</b>	<b>25.8</b>	<b>21.7</b>
Stone	12.2	33.9	28.0	25.9
Littlebrook	11.5	26.3	29.5	32.6
Joyce Green	12.4	30.9	25.8	30.9
Newtown	15.3	34.6	26.9	23.2
Longfield, New Barn and Southfleet	29.8	36.3	20.1	13.8

Source: 2011 Census (Office for National Statistics, 2011)

5.5.3 For wards located close to the Project route, key features are as follows:

- a. Riverside, Coldharbour and Westcourt have high proportions of residents in social grade category DE (semi-and unskilled). Westcourt, Singlewell and



Coldharbour have a particularly low proportion of residents of social grade AB. Shorne, Cobham and Luddesdown has a higher proportion of residents in social grade AB than is the case nationally.

- b. Strood South has a high proportion of residents in social grades C2 and DE combined (62.4%) compared to the combined figure for England as a whole (46.7%).

### North of the River Thames

5.5.4 Table 5.6 provides comparable information for the study area to the north of the River Thames. The table shows that Thurrock has a particularly low proportion of residents within the social grade AB (15% compared to 32.7% for Brentwood for example). Thurrock also has a slightly higher proportion of residents in social grade DE than is the case for England as whole (27% compared to 24.8%). Basildon and Southend-on-Sea have comparatively similar resident profiles to the national average.

5.5.5 At ward level, the data shows the following:

- a. Within Thurrock, Orsett has a higher proportion of residents of social grade AB (24.5%) than is the case for Thurrock as a whole (15%). Conversely, Tilbury St Chads, and Tilbury Riverside and Thurrock Park wards have very high proportions of residents within social grade DE (40.8% and 38.1% respectively).
- b. Warley ward in Brentwood and Upminster ward in Havering have high proportions of residents in social grade AB (35.1% and 32.7%) compared to the average for England of 22.9%. Gooshays has a high proportion of residents in social grade DE (34%).

**Table 5.6 Approximated social grade by local authority and ward – north of the River Thames**

Geographic area	Social grade (%)			
	AB	C1	C2	DE
<b>England</b>	<b>22.9</b>	<b>30.3</b>	<b>21.9</b>	<b>24.8</b>
<b>Essex</b>	<b>22.5</b>	<b>33.5</b>	<b>22.5</b>	<b>21.4</b>
<b>Thurrock</b>	<b>15.0</b>	<b>30.7</b>	<b>27.4</b>	<b>27.0</b>
Ockendon	13.5	31.2	27.3	27.9
Belhus	10.2	27.6	29.1	33.0
Orsett	24.5	36.4	23.2	15.9
Stifford Clays	16.1	31.1	29.2	23.5
Little Thurrock Rectory	16.6	35.2	27.6	20.7
Little Thurrock Blackshots	16.0	31.6	28.6	23.8
Chadwell St Mary	9.6	25.7	30.6	34.1
Tilbury St Chads	8.0	24.9	26.2	40.8
Tilbury Riverside and Thurrock Park	8.7	25.0	28.2	38.1
East Tilbury	12.4	31.1	29.5	27.1
Aveley and Uplands	11.3	30.9	28.9	28.9
West Thurrock and South Stifford	13.2	31.5	25.2	30.1
Chafford and North Stifford	26.4	37.5	20.5	15.5
Stanford-le-Hope West	14.4	31.2	31.3	23.1
Stanford East and Corringham Town	10.3	29.5	32.3	27.9
The Homesteads	16.3	32.3	29.5	21.8
Corringham and Fobbing	17.9	32.4	29.9	19.8
<b>Havering</b>	<b>19.1</b>	<b>34.6</b>	<b>25.5</b>	<b>20.7</b>
Upminster	32.7	36.3	18.8	12.2
Cranham	28.4	36.9	20.8	13.9
Rainham and Wennington	14.9	32.9	28.2	24.0
Harold Wood	18.9	35.6	25.0	20.4
Gooshays	10.1	28.5	27.4	34.0
<b>Brentwood</b>	<b>32.7</b>	<b>35.1</b>	<b>18.1</b>	<b>14.1</b>
Warley	35.1	37.4	15.4	12.1
Herongate, Ingrave and West Horndon	30.4	35.7	20.4	13.5
South Weald	18.9	35.6	25.0	20.4
<b>Basildon</b>	<b>19.1</b>	<b>31.8</b>	<b>24.5</b>	<b>24.6</b>
<b>Southend-on-Sea</b>	<b>20.4</b>	<b>34.4</b>	<b>22.6</b>	<b>22.6</b>

Source: 2011 Census (Office for National Statistics, 2011)

## 5.6 Household tenure

5.6.1 The following section provides information relating to household tenure for each of the areas to the south and north of the River Thames.

### South of the River Thames

5.6.2 Table 5.7 identifies the characteristics of household tenure in each of the respective local authorities to the south of the River Thames. The data shows that each local authority has a higher proportion of households which own their home outright, when compared to England as a whole, with Tonbridge and Malling, and Medway the highest at 71.1% and 67.7% respectively. Local authorities have a lower proportion of rented properties than is the case for England, but there are significant differences between areas, with Gravesham having a higher proportion of households which are social rented. Medway has a higher proportion of households in the private rented sector than is the case for England.

**Table 5.7 Household tenure – local authorities to the south of the River Thames**

Geographic area	Owned	Shared ownership (part-owned and part-rented)	Social rented	Private rented	Living rent free
England	63.3	0.8	17.7	16.8	1.3
Kent	67.3	1.0	13.9	16.5	1.3
Medway	67.7	1.0	13.2	17.1	1.0
Gravesham	64.6	0.8	17.3	16.1	1.2
Dartford	66.9	1.3	14.8	15.9	1.0
Tonbridge and Malling	71.1	1.5	16.1	10.1	1.1

Source: 2011 Census (Office for National Statistics, 2011)

5.6.3 Table 5.8 provides household tenure information for those wards located closest to the Project route. The table shows that there is significant variation with, for example, 92.8% of households in Istead Rise (Gravesham) owning their property, compared to 44.7% of households in Riverside. Westcourt has the highest proportion of households in the social rented sector (36.8%), with Riverside having one of the highest proportions of households in the private rented sector (28.8%).

5.6.4 The wards of Longfield, New Barn ad Southfleet, Higham, Chalk, and Cuxton and Halling each have high proportions of households who own their own property (85.4%, 80.9%, 82.7% and 81.9% respectively). Joyce Green ward in Dartford has one of the higher proportions of households in the social rented sector (43.4%), with the ward of Stone having a relatively high proportion of households within the social and private rented sectors combined (44.1%).

**Table 5.8 Household tenure – wards to the south of the River Thames**

Wards by local authority	Owned	Shared ownership (part-owned and part rented)	Social rented	Private rented	Living rent free
<b>Medway</b>					
Cuxton and Halling	81.9	1.5	6.9	9.0	0.7
Strood South	65.5	2.0	20.1	11.4	1.1
Strood North	72.4	1.1	7.6	17.9	1.0
Strood Rural	76.5	1.6	11.4	9.5	0.9
<b>Tonbridge and Malling</b>					
Snodland East	51.6	1.9	33.9	12.1	0.6
<b>Gravesham</b>					
Riverside	44.7	1.6	23.3	28.8	1.6
Riverview	92.1	0.1	0.7	6.7	0.4
Higham	80.9	0.3	10.3	7.7	0.7
Chalk	82.7	0.3	1.9	13.8	1.3
Westcourt	54.3	0.6	36.8	6.1	2.2
Singlewell	54.6	0.2	34.6	9.0	1.6
Woodlands	76.0	0.6	10.3	12.5	0.7
Shorne, Cobham and Luddesdown	81.4	0.1	9.7	7.3	1.5
Northfleet South	61.2	1.6	16.2	20.1	0.9
Istead Rise	92.8	0.1	0.9	5.3	0.8
Painters Ash	77.2	0.2	16.1	5.4	1.2
Central	58.7	1.1	12.7	26.2	1.4
Coldharbour	50.0	0.4	35.8	12.1	1.7
<b>Dartford</b>					
Stone	53.4	1.2	22.1	22.0	1.3
Littlebrook	50.9	1.0	31.0	15.7	1.4
Joyce Green	39.4	4.0	43.4	11.6	1.5
Newtown	69.1	0.4	4.1	25.6	0.7
Longfield, New Barn and Southfleet	85.4	0.3	4.8	8.3	1.3

Source: 2011 Census (Office for National Statistics, 2011)

## North of the River Thames

- 5.6.5 Table 5.9 identifies the characteristics of household tenure in each of the respective local authorities to the north of the River Thames. The data shows that each local authority has a higher proportion of households which own their home outright, when compared to England as a whole. Brentwood has the highest proportion (75.1%), with Southend-on-Sea the lowest (65.2%). Basildon has a relatively high proportion of households within the private rented sector (22% compared to 17.7% for England). Southend-on-Sea has the highest proportion of households in the social rented sector (22% compared to 16.8% for the English average).

**Table 5.9 Household tenure – local authorities to the north of the River Thames**

Geographic area	Household tenure (%)				
	Owned	Shared ownership	Private rented	Social rented	Living rent free
<b>England</b>	<b>63.3</b>	<b>0.8</b>	<b>17.7</b>	<b>16.8</b>	<b>1.3</b>
<b>Essex</b>	<b>71.3</b>	<b>0.6</b>	<b>14.3</b>	<b>12.7</b>	<b>1.1</b>
Thurrock	66.2	0.5	18.4	14.1	0.8
Havering	73.8	0.6	14.2	10.6	0.8
Brentwood	75.1	0.6	11.7	11.3	1.3
Basildon	65.9	1.0	22.0	10.2	10.2
Southend-on-Sea	65.2	0.4	11.5	22.0	0.9

*Source: 2011 Census (Office for National Statistics, 2011)*

- 5.6.6 Table 5.10 shows variations in household tenure across each of the wards which are found closest to the Project route. For example, within Thurrock, 83.9% of households in Orsett are owned outright, compared to 44.9% in Tilbury Riverside and Thurrock Park. In looking at the proportion of households which are socially rented, Tilbury Riverside and Thurrock Park has the highest proportion of households, with Orsett the lowest (37.6% and 5.5% respectively). For households which are privately rented, East Tilbury has the highest proportion with Stifford Clays the lowest (15.9% and 4.4% respectively).
- 5.6.7 Other wards with high proportions of home ownership are Upminster (89.3%) and Herongate, Ingrave and West Horndon (86.8%). Within Havering, Rainham and Wennington ward has a high proportion of households which are privately rented (13.2% compared to 10.6% for the local authority as a whole). Wards with highest proportions of social rented accommodation include Gooshays (41.9%) and Tilbury St Chads (36.8%).

**Table 5.10 Household tenure – wards to the north of the River Thames**

Wards by local authority	Household tenure (%)				
	Owned	Shared ownership (part-owned and part-rented)	Social rented	Private rented	Living rent free
<b>Thurrock</b>					
Ockendon	61.1	0.4	29.2	8.4	0.9
Belhus	56.7	0.2	34.2	8.2	0.7
Orsett	83.9	0.3	5.5	9.2	1.1
Stifford Clays	71.3	0.1	23.3	4.4	0.8
Little Thurrock Rectory	81.8	0.5	5.6	11.5	0.6
Little Thurrock Blackshots	81.7	0.2	11.6	5.4	1.2
Chadwell St Mary	57.4	0.1	37.1	4.9	0.6
Tilbury St Chads	49.6	0.5	36.8	12.5	0.6
Tilbury Riverside and Thurrock Park	44.9	0.6	37.6	15.8	1.2
East Tilbury	75.8	0.5	6.9	15.9	0.8
Aveley and Uplands	66.0	0.4	21.7	10.7	1.2
West Thurrock and South Stifford	51.0	2.1	17.7	28.5	0.7
Chafford and North Stifford	80.7	0.6	2.5	15.6	0.7
Stanford-le-Hope West	71.2	0.0	12.2	15.8	0.9
Stanford East and Corringham Town	68.6	0.1	21.6	8.6	1.0
The Homesteads	89.4	0.1	2.9	7.0	0.6
Corringham and Fobbing	88.6	0.2	3.7	6.7	0.9
<b>Havering</b>					
Upminster	89.3	0.2	1.9	7.9	0.6
Cranham	88.0	0.2	4.8	6.3	0.8
Rainham and Wennington	76.8	0.5	8.9	13.2	0.6
Harold Wood	71.7	0.2	16.0	11.3	0.8
Gooshays	48.6	0.7	41.9	7.6	1.2
<b>Brentwood</b>					
Warley	73.2	0.3	10.4	15.0	1.2
Herongate, Ingrave and West Horndon	86.8	0.2	2.3	9.5	1.1
South Weald	83.6	0.3	2.7	12.1	1.3

Source: 2011 Census (Office for National Statistics, 2011)

## 6 Health baseline

### 6.1 Introduction

- 6.1.1 This section sets out information relating to the health characteristics of people living in areas which may be potentially affected by the Project. There are significant variations in health across populations, with differences in health outcomes according to factors such as gender, age, ethnicity and socio-economic status. Differences in health outcomes across population groups can be described as health inequalities.
- 6.1.2 The health baseline provides information from a variety of sources including Census data and data available at local area level from the Office for Health Improvement and Disparities website.

### 6.2 Self-reported health

- 6.2.1 Data on self-reported health is available from the 2011 Census and provides an overarching indication of the general health status of a population.

#### South of the River Thames

- 6.2.2 Table 6.1 shows self-reported health data for local authorities and wards closest to the Project route to the south of the River Thames. The table shows that each of the local authorities have proportions of residents in each self-reported health status group that are comparable to those for England as a whole. At ward level, the proportion of residents in Westcourt ward reporting bad or very bad health is 6.4% (compared to 5.1% for Gravesham); similarly, Newtown ward in Dartford has a higher proportion of residents reporting bad or very bad health than is the case for the local authority as a whole (6.1% compared to 4.4% for Dartford).

**Table 6.1 Health status by local authority and ward – south of the River Thames**

Geographic area	Very good health (%)	Good health (%)	Fair health (%)	Bad health (%)	Very bad health (%)
<b>England</b>	<b>47.2</b>	<b>34.2</b>	<b>13.1</b>	<b>4.2</b>	<b>1.2</b>
<b>Kent</b>	<b>46.9</b>	<b>34.9</b>	<b>13.3</b>	<b>4.0</b>	<b>1.1</b>
<b>Medway</b>	<b>45.7</b>	<b>36.3</b>	<b>13.0</b>	<b>3.9</b>	<b>1.1</b>
Cuxton and Halling	44.1	37.1	13.2	4.3	1.2
Strood South	45.7	37.5	12.2	3.6	1.0
Strood North	45.3	34.9	14.2	4.5	1.1
Strood Rural	48.2	35.4	12.2	3.3	1.0
<b>Tonbridge and Malling</b>	<b>49.2</b>	<b>34.3</b>	<b>11.8</b>	<b>3.1</b>	<b>0.9</b>
Snodland East	44.5	36.1	14.1	4.0	1.3
<b>Gravesham</b>	<b>46.5</b>	<b>35.0</b>	<b>13.4</b>	<b>4.0</b>	<b>1.1</b>

Geographic area	Very good health (%)	Good health (%)	Fair health (%)	Bad health (%)	Very bad health (%)
Riverside	48.1	35.2	11.7	3.8	1.2
Riverview	48.4	36.4	11.6	2.9	0.8
Higham	46.2	34.8	14.4	4.0	0.6
Chalk	41.0	39.5	14.8	4.2	0.5
Westcourt	44.5	34.2	15.0	4.9	1.5
Singlewell	44.9	34.8	14.3	4.7	1.3
Woodlands	49.4	34.6	12.2	3.0	0.8
Shorne, Cobham and Luddesdown	49.2	34.2	12.2	3.5	0.9
Northfleet South	47.0	35.8	12.6	3.6	1.0
Istead Rise	46.1	36.0	14.3	2.6	1.0
Painters Ash	42.6	33.6	17.3	5.2	1.2
Central	48.6	32.9	13.5	3.9	1.1
Coldharbour	41.5	35.1	16.1	5.8	1.5
<b>Dartford</b>	48.6	34.9	12.2	3.4	1.0
Stone	48.1	35.2	11.7	3.8	1.2
Littlebrook	46.4	35.6	12.8	4.1	1.1
Joyce Green	48.4	36.4	11.6	2.9	0.8
Newtown	47.6	33.3	13.0	5.1	1.0
Longfield, New Barn and Southfleet	46.9	34.9	13.0	3.5	1.7

Source: 2011 Census (Office for National Statistics, 2011)

## North of the River Thames

6.2.3 Table 6.2 shows that, overall, Brentwood has the highest proportion of residents who report that they have very good health, higher than the England average. The proportion of residents reporting bad or very bad health is lower than or equivalent to the average for England in Thurrock, Brentwood and Havering. Wards within Thurrock that have a high proportion of residents reporting bad or very bad levels of health include Chadwell St Mary (7.4%), Tilbury St Chads (6.7%), Belhus and Ockendon (both 6.5%), compared to a figure of 4.7% for Thurrock overall.

**Table 6.2 Health status by local authority and ward – north of the River Thames**

Geographic area	Very good health (%)	Good health (%)	Fair health (%)	Bad health (%)	Very bad health (%)
<b>England</b>	<b>47.2</b>	<b>34.2</b>	<b>13.1</b>	<b>4.2</b>	<b>1.2</b>



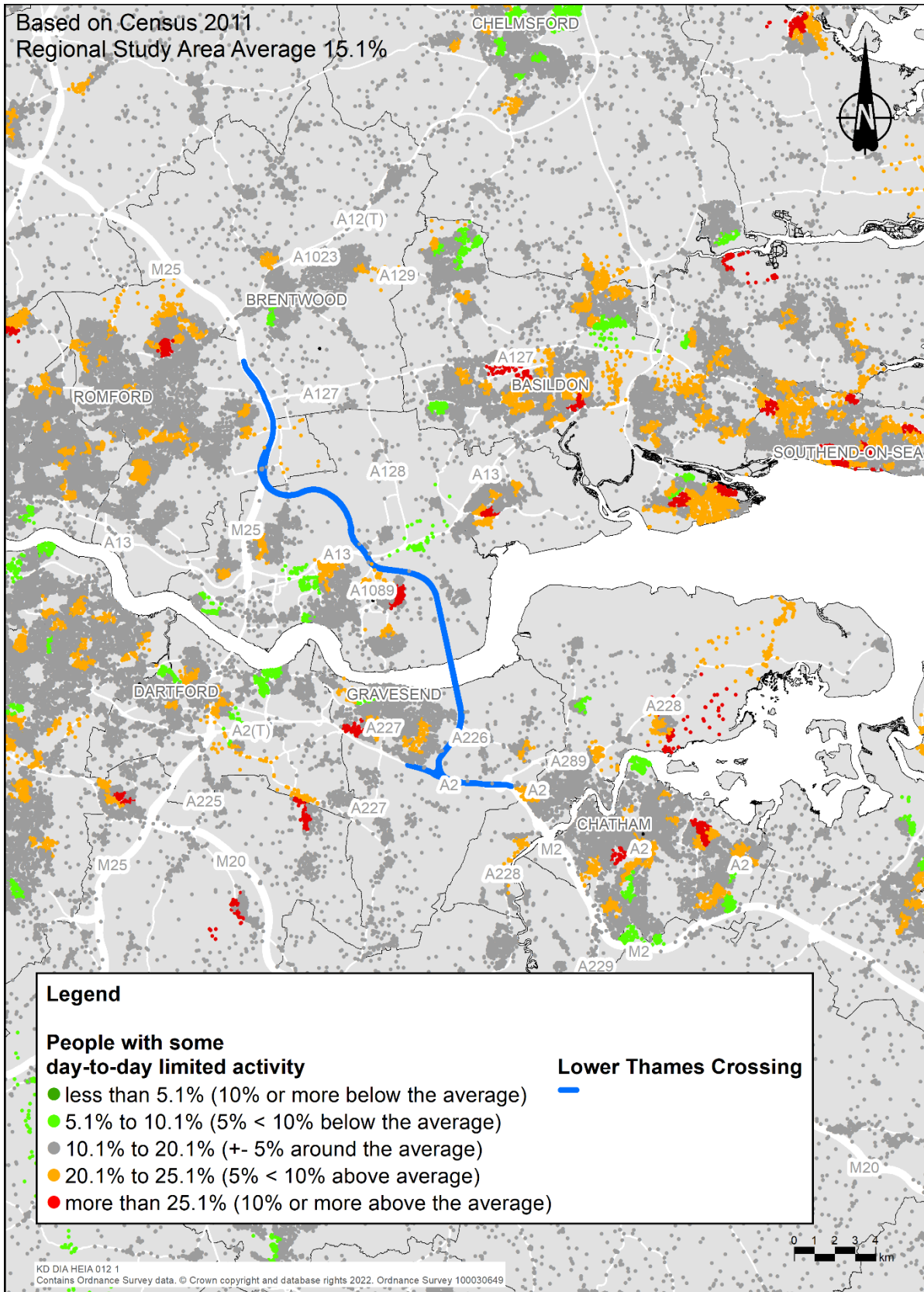
Geographic area	Very good health (%)	Good health (%)	Fair health (%)	Bad health (%)	Very bad health (%)
<b>Thurrock</b>	<b>48.2</b>	<b>34.7</b>	<b>12.3</b>	<b>3.7</b>	<b>1.0</b>
Ockendon	45.5	34.3	13.6	4.9	1.6
Belhus	45.9	33.8	13.8	4.8	1.7
Orsett	51.2	33.3	11.5	3.0	1.0
Stifford Clays	43.9	35.3	14.8	4.6	1.4
Little Thurrock Rectory	49.8	34.2	12.1	3.1	0.9
Little Thurrock Blackshots	45.2	36.8	13.4	3.5	1.1
Chadwell St Mary	42.0	34.6	16.0	5.8	1.6
Tilbury St Chads	44.9	34.7	13.6	5.3	1.4
Tilbury Riverside and Thurrock Park	47.4	34.3	12.8	4.5	1.0
East Tilbury	45.9	38.0	11.9	3.3	0.9
Aveley and Uplands	45.6	34.5	14.3	4.6	1.0
West Thurrock and South Stifford	50.5	35.5	10.5	2.9	0.6
Chafford and North Stifford	60.1	31.7	6.3	1.4	0.5
Stanford-le-Hope West	47.0	35.8	12.8	3.5	1.0
Stanford East and Corringham Town	41.7	35.7	16.3	4.9	1.3
The Homesteads	48.9	37.3	10.6	2.6	0.6
Corringham and Fobbing	45.7	36.5	13.5	3.3	1.0
<b>Havering</b>	<b>46.0</b>	<b>35.6</b>	<b>13.3</b>	<b>4.0</b>	<b>1.2</b>
Upminster	49.0	34.2	12.7	3.0	1.1
Cranham	47.5	34.6	13.0	3.8	1.0
Rainham and Wennington	44.9	36.4	13.5	4.0	1.2
Harold Wood	45.5	35.6	13.3	4.4	1.2
Gooshays	42.3	35.4	15.2	5.5	1.6
<b>Brentwood</b>	<b>51.0</b>	<b>33.3</b>	<b>11.6</b>	<b>3.1</b>	<b>0.9</b>
Warley	51.4	32.2	11.5	3.5	1.3
Herongate, Ingrave and West Horndon	48.9	34.1	13.3	2.9	0.9
South Weald	53.2	33.2	10.9	2.2	0.5
<b>Basildon</b>	<b>46.2</b>	<b>35.0</b>	<b>13.3</b>	<b>4.2</b>	<b>1.3</b>
<b>Southend-on-Sea</b>	<b>45.1</b>	<b>35.1</b>	<b>14.1</b>	<b>4.5</b>	<b>1.3</b>

Source: 2011 Census (Office for National Statistics, 2011)

## 6.3 Disability

- 6.3.1 Plate 6.1 shows the distribution of people with some day-to-day limited activity against the average for England and Wales, using 2011 Census data (Office for National Statistics, 2011).

**Plate 6.1 People with some limits to day-to-day activity**



## South of the River Thames

6.3.2 Table 6.3 shows that, for the three local authorities south of the River Thames, the proportion of local residents who fall into the category ‘day to day activities limited a lot’ is lower than for England as a whole. However, at a ward level, there are areas where the population is much higher in this group (for example Coldharbour ward in Gravesham has 11% of residents in this category).

**Table 6.3 Long-term health problem or disability – local authorities and wards to the south of the River Thames**

Geographic area	Day-to-day activities limited a lot (%)	Day-to-day activities limited a little (%)	Day-to-day activities not limited (%)
<b>England</b>	<b>8.3</b>	<b>9.3</b>	<b>82.4</b>
<b>Kent</b>	<b>8.0</b>	<b>9.6</b>	<b>82.4</b>
<b>Medway</b>	<b>7.5</b>	<b>8.9</b>	<b>83.6</b>
Cuxton and Halling	8.0	9.0	83.0
Strood South	6.8	8.8	84.4
Strood North	7.5	10.2	82.3
Strood Rural	7.0	8.4	84.6
<b>Tonbridge and Malling</b>	<b>6.3</b>	<b>8.6</b>	<b>85.1</b>
Snodland East	7.9	8.8	83.2
<b>Gravesham</b>	<b>7.7</b>	<b>9.4</b>	<b>83.0</b>
Riverside	6.7	8.1	85.2
Riverview	5.5	8.6	85.9
Higham	7.7	10.7	81.6
Chalk	7.4	11.0	81.6
Westcourt	9.3	10.2	80.5
Singlewell	8.6	10.2	81.2
Woodlands	6.3	8.6	85.1
Shorne, Cobham and Luddesdown	6.6	9.3	84.1
Northfleet South	6.6	8.4	84.9
Istead Rise	7.3	11.1	81.6
Painters Ash	10.7	11.0	78.3
Central	8.1	9.2	82.7
Coldharbour	11.0	10.2	78.8
<b>Dartford</b>	<b>6.8</b>	<b>8.3</b>	<b>84.9</b>
Stone	6.7	8.1	85.2
Littlebrook	7.5	8.7	83.8

Geographic area	Day-to-day activities limited a lot (%)	Day-to-day activities limited a little (%)	Day-to-day activities not limited (%)
Joyce Green	5.5	8.6	85.9
Newtown	8.7	8.9	82.5
Longfield, New Barn and Southfleet	7.6	10.7	81.7

Source: 2011 Census (Office for National Statistics, 2011)

- 6.3.3 The number of Blue Badge holders (permits designed to help disabled people who have severe mobility problems to access goods, services and other facilities) within Kent was 28,236 in 2019/20 (Department for Transport, 2021). The equivalent figure for Medway was 5,081.

### North of the River Thames

- 6.3.4 Similar data for the local authorities and wards to the north of the River Thames is shown in Table 6.4. Across the local authorities, Southend-on-Sea has a higher proportion of residents who report that their day-to-day activities are limited a lot, than England as a whole (8.8% compared to 8.3%). Several wards within Thurrock have high proportions of residents falling into the ‘limited a lot’ and ‘limited a little’ categories – for example, the wards of Chadwell St Mary, Stifford Clays and Little Thurrock Blackshots have 21.9%, 20.4% and 18.5% of residents in these two categories combined, compared to 15.5% for Thurrock as a whole. Similarly, the Herongate, Ingrave and West Horndon ward in Brentwood has a combined proportion of 18.1% of residents in these two categories, compared to 15.5% for the local authority.

**Table 6.4 Long-term health problem or disability – local authorities and wards to the north of the River Thames**

Geographic area	Day-to-day activities limited a lot (%)	Day-to-day activities limited a little (%)	Day-to-day activities not limited (%)
<b>England</b>	<b>8.3</b>	<b>9.3</b>	<b>82.4</b>
<b>Essex</b>	<b>7.4</b>	<b>9.4</b>	<b>82.9</b>
<b>Thurrock</b>	<b>7.2</b>	<b>8.3</b>	<b>84.4</b>
Ockendon	9.1	9.0	81.9
Belhus	9.3	9.6	81.1
Orsett	6.8	7.5	85.8
Stifford Clays	9.9	10.5	79.6
Little Thurrock Rectory	6.4	8.4	85.2
Little Thurrock Blackshots	8.1	10.4	81.6
Chadwell St Mary	10.9	11.0	78.1
Tilbury St Chads	8.8	9.6	81.6
Tilbury Riverside and Thurrock Park	7.6	8.1	84.3

Geographic area	Day-to-day activities limited a lot (%)	Day-to-day activities limited a little (%)	Day-to-day activities not limited (%)
East Tilbury	6.2	7.7	86.2
Aveley and Uplands	8.5	9.4	82.1
West Thurrock and South Stifford	4.9	6.2	88.8
Chafford and North Stifford	2.9	4.2	92.8
Stanford-le-Hope West	7.4	9.0	83.5
Stanford East and Corringham Town	10.4	11.0	78.6
The Homesteads	5.2	7.9	87.0
Corringham and Fobbing	7.4	9.9	82.6
<b>Havering</b>	<b>8.2</b>	<b>9.1</b>	<b>82.7</b>
Upminster	7.2	9.1	83.7
Cranham	7.6	9.7	82.7
Rainham and Wennington	7.9	8.6	83.5
Harold Wood	8.4	9.5	82.0
Gooshays	10.4	9.5	80.1
<b>Brentwood</b>	<b>6.8</b>	<b>8.7</b>	<b>84.4</b>
Warley	6.9	9.5	83.6
Herongate, Ingrave and West Horndon	9.1	9.0	81.9
South Weald	4.8	8.0	87.1
<b>Basildon</b>	<b>8.2</b>	<b>9.2</b>	<b>82.6</b>
<b>Southend-on-Sea</b>	<b>8.8</b>	<b>9.7</b>	<b>81.5</b>

Source: 2011 Census (Office for National Statistics, 2011)

- 6.3.5 The number of Blue Badge holders within Essex was 22,442 in 2019/20 (Department for Transport, 2021). The equivalent figure for Thurrock was 3,092 and for Havering was 3,779.

## 6.4 Unpaid care

- 6.4.1 The following section provides information about carers, who can be classified as a vulnerable population. The provision of unpaid care in England and Wales has grown since 2001, and projections suggest the demand for such care will more than double over the next 30 years (Dahlberg *et al.*, 2007).

### South of the Thames

- 6.4.2 The proportion of residents by local authority and ward who are providing unpaid care is shown in Table 6.5. The table shows that both Gravesham and Medway are broadly in line with the averages for England, with Dartford

exhibiting a slightly lower proportion of residents in the role of unpaid carers. Areas to highlight at ward level include Westcourt ward (Gravesham) where 5.2% of residents provide more than 20 hours of unpaid care per week, compared to 3.9% for Gravesham as a whole; and Littlebrook ward (Dartford) where 4.7% of residents provide more than 20 hours of unpaid care per week, compared to 3.4% for Dartford as a whole.

**Table 6.5 Provision of unpaid care – south of the River Thames**

Geographic area	Provides no unpaid care (%)	Provides 1–19 hours unpaid care a week (%)	Provides 20–49 hours unpaid care a week (%)	Provides 50+ hours unpaid care a week (%)
<b>England</b>	<b>89.8</b>	<b>6.5</b>	<b>1.4</b>	<b>2.4</b>
<b>Kent</b>	<b>89.6</b>	<b>6.7</b>	<b>1.3</b>	<b>2.5</b>
<b>Medway</b>	<b>90.5</b>	<b>5.7</b>	<b>1.3</b>	<b>2.5</b>
Cuxton and Halling	88.7	7.6	1.2	2.5
Strood South	90.8	5.0	1.3	2.9
Strood North	90.5	5.8	1.3	2.4
Strood Rural	89.6	6.7	1.3	2.4
<b>Tonbridge and Malling</b>	<b>90.0</b>	<b>6.8</b>	<b>1.1</b>	<b>2.1</b>
Snodland East	91.7	5.4	0.9	2.0
<b>Gravesham</b>	<b>89.9</b>	<b>6.3</b>	<b>1.4</b>	<b>2.5</b>
Riverside	92.4	4.0	1.3	2.3
Riverview	89.5	6.7	1.2	2.6
Higham	87.9	8.5	1.3	2.3
Chalk	89.2	7.5	1.3	2.0
Westcourt	89.4	5.4	1.7	3.5
Singlewell	89.9	5.6	1.4	3.0
Woodlands	89.0	7.5	1.3	2.2
Shorne, Cobham and Luddesdown	87.0	9.1	1.0	2.9
Northfleet South	90.2	5.5	1.4	2.8
Istead Rise	86.6	8.9	1.7	2.8
Painters Ash	88.5	7.6	1.5	2.5
Central	90.6	6.0	1.3	2.1
Coldharbour	90.3	5.1	1.5	3.1
<b>Dartford</b>	<b>90.5</b>	<b>6.1</b>	<b>1.2</b>	<b>2.2</b>
Stone	90.9	5.7	1.1	2.3
Littlebrook	90.8	4.4	1.6	3.1

Geographic area	Provides no unpaid care (%)	Provides 1–19 hours unpaid care a week (%)	Provides 20–49 hours unpaid care a week (%)	Provides 50+ hours unpaid care a week (%)
Joyce Green	92.2	3.5	1.2	3.1
Newtown	91.9	5.2	1.0	1.8
Longfield, New Barn and Southfleet	87.5	8.6	1.2	2.6

Source: 2011 Census (Office for National Statistics, 2011)

6.4.3 The proportion of male and female residents who are providing unpaid care together with the amount of unpaid care provided on a weekly basis is shown in Table 6.6. The table shows that across all geographical areas, females are more likely to provide unpaid care when compared to males. Looking at the difference in the number of hours of unpaid care per week, females generally provide more hours of unpaid care per week when compared to men across all areas.

**Table 6.6 Male and female provision of unpaid care – south of the River Thames**

Geographic area	Provides 1–19 hours unpaid care a week (%)		Provides 20–49 hours unpaid care a week (%)		Provides 50+ hours unpaid care a week (%)	
	Male	Female	Male	Female	Male	Female
<b>England</b>	<b>5.8</b>	<b>7.4</b>	<b>1.2</b>	<b>1.6</b>	<b>2.0</b>	<b>2.8</b>
<b>Kent</b>	<b>5.9</b>	<b>7.6</b>	<b>1.1</b>	<b>1.5</b>	<b>2.0</b>	<b>3.0</b>
<b>Medway</b>	<b>5.1</b>	<b>6.4</b>	<b>1.1</b>	<b>1.5</b>	<b>2.0</b>	<b>3.1</b>
Cuxton and Halling	6.5	8.5	1.1	1.4	2.0	3.0
Strood South	4.5	5.5	1.2	1.4	2.3	3.4
Strood North	5.2	6.6	1.2	1.3	1.8	3.0
Strood Rural	5.9	7.4	1.1	1.4	2.0	2.9
<b>Tonbridge and Malling</b>	<b>5.9</b>	<b>7.9</b>	<b>0.9</b>	<b>1.3</b>	<b>1.7</b>	<b>2.5</b>
Snodland East	4.7	6.1	0.6	1.2	1.4	2.7
<b>Gravesham</b>	<b>5.6</b>	<b>7.0</b>	<b>1.2</b>	<b>1.5</b>	<b>2.0</b>	<b>3.1</b>
Riverside	3.4	4.7	1.1	1.5	1.7	2.9
Riverview	5.6	7.7	1.1	1.2	2.2	3.1
Higham	7.7	9.3	1.0	1.6	1.8	2.8
Chalk	6.6	8.3	1.1	1.6	1.2	2.8
Westcourt	4.6	6.1	1.8	1.6	2.8	4.2
Singlewell	4.9	7.7	1.2	1.2	2.4	3.1
Woodlands	6.8	8.0	1.2	1.4	1.6	2.8



Geographic area	Provides 1–19 hours unpaid care a week (%)		Provides 20–49 hours unpaid care a week (%)		Provides 50+ hours unpaid care a week (%)	
	Male	Female	Male	Female	Male	Female
Shorne, Cobham and Luddesdown	8.2	10.2	0.9	1.1	2.3	3.6
Northfleet South	5.3	5.7	1.2	1.7	2.2	3.4
Istead Rise	7.4	10.3	1.4	2.0	2.6	3.0
Painters Ash	7.1	8.1	1.5	1.4	2.0	2.9
Central	4.8	7.2	1.2	1.4	1.7	2.5
Coldharbour	4.3	5.9	1.0	2.0	2.8	3.5
<b>Dartford</b>	<b>5.4</b>	<b>6.9</b>	<b>0.9</b>	<b>1.4</b>	<b>1.7</b>	<b>2.8</b>
Stone	4.7	6.7	1.0	1.2	1.7	3.0
Littlebrook	4.2	4.7	1.4	1.9	2.2	4.0
Joyce Green	3.1	3.9	1.2	1.1	2.5	3.6
Newtown	4.7	5.9	0.7	1.4	1.2	2.5
Longfield, New Barn and Southfleet	7.8	9.9	1.1	1.4	1.9	3.4

Source: 2011 Census (Office for National Statistics, 2011)

## North of the River Thames

- 6.4.4 For local authorities and wards to the north of the River Thames, Table 6.7 sets out data for residents providing unpaid care. The table shows that there are marginally higher levels of residents providing high levels of unpaid care in Thurrock than is the case nationally. Broadly, the proportions for Thurrock, Havering, Brentwood and Basildon are in line with national averages. Wards such as Chadwell St Mary, Tilbury St Chads and Stifford Clays exhibit higher proportions of residents providing more than 20 hours of unpaid care per week (5.4%, 5.2% and 5.1% respectively) compared to 3.8% for Thurrock as a whole.

**Table 6.7 Provision of unpaid care – north of the River Thames**

Geographic area	Provides no unpaid care (%)	Provides 1–19 hours unpaid care a week (%)	Provides 20–49 hours unpaid care a week (%)	Provides 50+ hours unpaid care a week (%)
<b>England</b>	<b>89.8</b>	<b>6.5</b>	<b>1.4</b>	<b>2.4</b>
<b>Essex</b>	<b>89.5</b>	<b>6.9</b>	<b>1.3</b>	<b>2.3</b>
<b>Thurrock</b>	<b>90.7</b>	<b>5.5</b>	<b>1.4</b>	<b>2.4</b>
Ockendon	90.4	5.5	1.6	2.6
Belhus	90.4	4.8	1.7	3.1
Orsett	89.1	7.1	1.3	2.5

Geographic area	Provides no unpaid care (%)	Provides 1–19 hours unpaid care a week (%)	Provides 20–49 hours unpaid care a week (%)	Provides 50+ hours unpaid care a week (%)
Stifford Clays	88.8	6.1	2.0	3.1
Little Thurrock Rectory	89.6	6.9	1.5	2.0
Little Thurrock Blackshots	87.8	7.7	1.6	2.8
Chadwell St Mary	88.6	6.1	1.6	3.8
Tilbury St Chads	90.3	4.5	1.8	3.4
Tilbury Riverside and Thurrock Park	92.7	3.9	1.5	1.8
East Tilbury	90.6	6.1	1.0	2.3
Aveley and Uplands	89.9	6.0	1.5	2.6
West Thurrock and South Stifford	93.3	3.8	1.1	1.8
Chafford and North Stifford	93.9	4.0	0.9	1.1
Stanford-le-Hope West	89.8	6.2	1.4	2.6
Stanford East and Corringham Town	88.8	6.3	1.4	3.5
The Homesteads	89.5	6.9	1.4	2.2
Corringham and Fobbing	88.7	7.4	1.3	2.6
<b>Havering</b>	<b>89.4</b>	<b>6.8</b>	<b>1.4</b>	<b>2.5</b>
Upminster	87.9	9.1	1.1	2.0
Cranham	88.5	7.7	1.2	2.5
Rainham and Wennington	89.4	6.7	1.6	2.4
Harold Wood	88.4	8.7	1.4	1.5
Gooshays	90.1	5.5	1.6	2.9
<b>Brentwood</b>	<b>89.4</b>	<b>7.5</b>	<b>1.1</b>	<b>2.0</b>
Warley	89.7	7.4	1.0	1.8
Herongate, Ingrave and West Horndon	87.4	8.7	1.3	2.5
South Weald	88.4	8.7	1.4	2.8
<b>Basildon</b>	<b>89.9</b>	<b>6.2</b>	<b>1.4</b>	<b>2.6</b>
<b>Southend-on-Sea</b>	<b>89.8</b>	<b>6.6</b>	<b>1.2</b>	<b>2.4</b>

Source: 2011 Census (Office for National Statistics, 2011)

6.4.5 The proportion of male and female residents who are providing unpaid care and how much unpaid care a week is shown in Table 6.8. The table shows that across all geographical areas, females are more likely to provide unpaid care when compared to males; for example, across Thurrock 10.6% of females provide unpaid care compared to 8% of males.

**Table 6.8 Male and female provision of unpaid care – north of the River Thames**

Geographic area	Provides 1–19 hours unpaid care a week (%)		Provides 20–49 hours unpaid care a week (%)		Provides 50+ hours unpaid care a week (%)	
	Male	Female	Male	Female	Male	Female
<b>England</b>	<b>5.8</b>	<b>7.4</b>	<b>1.2</b>	<b>1.6</b>	<b>2.0</b>	<b>2.8</b>
<b>Essex</b>	<b>6.2</b>	<b>7.8</b>	<b>1.1</b>	<b>1.5</b>	<b>1.9</b>	<b>2.7</b>
<b>Thurrock</b>	<b>4.8</b>	<b>6.1</b>	<b>1.2</b>	<b>1.6</b>	<b>2.0</b>	<b>2.9</b>
Ockendon	5.0	5.9	1.2	1.9	2.3	2.9
Belhus	4.0	5.7	1.4	1.9	2.5	3.7
Orsett	5.9	8.4	1.2	1.4	2.0	3.0
Stifford Clays	5.3	6.8	1.8	2.2	3.0	3.2
Little Thurrock Rectory	6.0	7.7	1.1	1.8	1.7	2.4
Little Thurrock Blackshots	6.8	8.6	1.5	1.8	2.8	2.9
Chadwell St Mary	5.4	6.9	1.4	1.7	3.3	4.3
Tilbury St Chads	4.0	5.0	1.5	2.1	2.6	4.1
Tilbury Riverside and Thurrock Park	3.3	4.5	1.2	1.8	1.7	2.0
East Tilbury	5.4	6.8	0.9	1.2	1.9	2.7
Aveley and Uplands	5.3	6.8	1.2	1.7	2.3	2.9
West Thurrock and South Stifford	3.6	4.0	1.1	1.1	1.3	2.4
Chafford and North Stifford	3.4	4.7	0.6	1.3	0.8	1.4
Stanford-le-Hope West	5.2	7.2	1.0	1.7	1.9	3.2
Stanford East and Corringham Town	5.9	6.7	1.3	1.4	2.9	4.0
The Homesteads	6.0	7.7	1.1	1.8	1.8	2.6
Corringham and Fobbing	7.0	7.7	1.0	1.5	2.5	2.8
<b>Havering</b>	<b>6.0</b>	<b>7.6</b>	<b>1.2</b>	<b>1.6</b>	<b>2.1</b>	<b>2.9</b>
Upminster	8.1	10.0	0.5	1.5	1.6	2.4
Cranham	6.9	8.5	1.2	1.3	2.1	2.8
Rainham and Wennington	5.3	8.1	1.2	1.9	2.1	2.6
Harold Wood	6.3	8.5	1.1	1.8	2.1	3.4
Gooshays	5.1	5.9	1.2	1.9	2.5	3.3
<b>Brentwood</b>	<b>6.7</b>	<b>8.4</b>	<b>0.9</b>	<b>1.3</b>	<b>1.7</b>	<b>2.3</b>
Warley	7.0	8.4	0.9	1.1	1.7	2.1
Herongate, Ingrave and West Horndon	7.7	9.9	1.1	1.6	2.4	2.6

Geographic area	Provides 1–19 hours unpaid care a week (%)		Provides 20–49 hours unpaid care a week (%)		Provides 50+ hours unpaid care a week (%)	
	Male	Female	Male	Female	Male	Female
South Weald	7.6	9.7	1.1	1.8	1.0	2.1
<b>Basildon</b>	<b>5.5</b>	<b>6.9</b>	<b>1.1</b>	<b>1.6</b>	<b>2.1</b>	<b>3.0</b>
<b>Southend-on-Sea</b>	<b>5.8</b>	<b>7.5</b>	<b>1.1</b>	<b>1.4</b>	<b>2.0</b>	<b>2.8</b>

Source: 2011 Census (Office for National Statistics, 2011)

## 6.5 Life expectancy and mortality rates

6.5.1 The following section looks at details relating to life expectancy and mortality rates. Life expectancy has risen nationally in recent decades due to improvements in public health, but there are still variations in life expectancy by area and population group.

### South of the River Thames

6.5.2 Life expectancy for males in local authorities to the south of the River Thames was recorded as 79.4 years (Gravesham), 79.3 years (Dartford), 78.6 years (Medway) and 80.4 years (Tonbridge and Malling), compared to a life expectancy of 79.5 years for England as a whole. Female average life expectancy is higher, as is the case nationally, and was recorded as 83.4 years (Gravesham), 82.4 years (Dartford), 82.5 years (Medway) and 84.6 years (Tonbridge and Malling), compared to 83.2 years for England (Office for Health Improvement and Disparities, 2016-2020 data).

6.5.3 Life expectancy within each of the local authorities reveals inequalities in health. For example, although overall the life expectancy for males and females in Gravesham appears similar to the England average, data from the Office for Health Improvement and Disparities (2016-2020) shows that life expectancy is 9.1 years lower for men and 4.6 years lower for women in the most deprived areas of Gravesham than in the least deprived areas. A similar indication of health inequality is revealed in Dartford, Medway and Tonbridge and Malling – for Medway, life expectancy is 9.4 years lower for men and 6.6 years lower for women in the most deprived areas than in the least deprived areas, for Dartford, the figures are 7.0 years lower and 5.4 years lower for males and females respectively; and for Tonbridge and Malling, life expectancy is 5.1 years lower for males and 5.6 years lower for females.

6.5.4 Table 6.9 shows mortality rates by local authority for various categories, including all-cause mortality, deaths from respiratory diseases, coronary heart disease and cancer. The table shows that mortality rates for Gravesham are not significantly different to those for England. For both Dartford and Medway, deaths from all causes and all cancers are significantly worse than the England average; for Medway, deaths from respiratory disease is also significantly worse than the England average.

**Table 6.9 Mortality rates by local authority for various categories (2016-2020) – south of the River Thames**

Mortality Rate	Gravesham	Medway	Dartford	Tonbridge and Malling	Kent	England
Deaths from all causes (Standardised Mortality Ratio (SMR))	101.3	108.7	108.5	91.1	98.9	100.0
Deaths from all cancer (SMR)	105.0	110.9	106.4	96.3	101.4	100.0
Deaths from circulatory disease (SMR)	96.5	98.1	96.9	88.0	94.2	100.0
Deaths from coronary heart disease (SMR)	96.6	94.9	88.7	82.9	86.0	100.0
Deaths from respiratory disease (SMR)	101.8	122.3	102.3	88.0	102.3	100.0
Deaths involving COVID-19 (all ages) 2020 (directly standardised rate per 100,000)	171.0	184.3	189.6	97.4	142.2	140.1

Source: Office for Health Improvement and Disparities, 2016-2020

- 6.5.5 Table 6.10 looks in more detail at wards located closest to the Project route. The table highlights the following variations in health outcomes at ward level:
- a. Variations in life expectancy between genders – for example, Riverview in Gravesham has the highest life expectancy at birth for males (84.5) compared to Riverside male life expectancy of 75.0.
  - b. Locations where the SMR is significantly better or worse than the England baseline of 100 – for example, deaths from all cancer (all ages) is worse in Bridge ward (Dartford) (192.8), Strood South (139.9), Riverside (130.2), Painters Ash (129.9) and Singlewell (126.8). The SMR for deaths from respiratory disease is higher for wards including Stone House in Dartford (178.0) and Painters Ash in Gravesham (167.3).

**Table 6.10 Life expectancy and mortality rates (2016–2020) – south of the River Thames**

Wards by local authority	Male life expectancy at birth (years)	Female life expectancy at birth (years)	Deaths from all causes, all ages (SMR)	Deaths from respiratory diseases, all ages, all persons (SMR)	Deaths from coronary heart disease, all ages (SMR)	Deaths from all cancer, all ages (SMR)
<b>Medway</b>						
Cuxton and Halling	83.9	83.8	80.4	89.5	76.2	113.4
Strood South	77.4	81.4	115.9	143.5	93.0	139.9
Strood North	79.2	82.7	110.4	101.8	97.5	107.4
Strood Rural	80.5	83.7	102.5	128.9	85.0	112.4
<b>Tonbridge and Malling</b>						
Snodland East	78.6	79.1	135.3	154.9	108.8	134.2
<b>Gravesham</b>						
Riverside	75.0	82.4	125.2	152.1	134.0	130.2
Riverview	84.5	85.5	76.0	77.1	77.8	100.4
Higham	80.6	85.3	94.7	104.2	94.0	87.8
Chalk	82.7	86.1	79.5	72.7	102.0	91.2
Westcourt	77.8	80.9	116.3	94.5	160.3	124.0
Singlewell	76.1	83.9	103.0	106.9	133.6	126.8
Woodlands	81.6	82.8	98.4	75.8	69.6	105.0
Shorne, Cobham and Luddesdown	83.3	88.7	66.3	44.7	62.8	90.4
Northfleet South	80.7	82.7	95.0	97.1	98.7	95.1
Istead Rise	83.2	86.5	70.1	86.3	73.1	85.5

Wards by local authority	Male life expectancy at birth (years)	Female life expectancy at birth (years)	Deaths from all causes, all ages (SMR)	Deaths from respiratory diseases, all ages, all persons (SMR)	Deaths from coronary heart disease, all ages (SMR)	Deaths from all cancer, all ages (SMR)
Painters Ash	76.8	80.2	159.4	167.3	98.8	129.9
Central	77.8	82.9	109.1	90.6	104.2	120.5
Coldharbour	77.0	81.3	134.5	142.4	81.5	108.7
<b>Dartford</b>						
Newtown	82.5	84.8	82.1	111.2	85.8	81.3
Stone Castle	76.4	83.7	115.5	79.6	115.0	118.0
Stone House	74.7	77.2	198.5	178.0	121.3	115.6
Bridge	75.2	*	90.8	141.2	*	192.8
Temple Hill	78.3	82.0	103.2	105.9	91.7	108.4
Longfield, New Barn and Southfleet	82.0	84.0	110.6	92.8	74.0	96.4

Source: Office for Health Improvement and Disparities, 2016-2020

## North of the River Thames

- 6.5.6 Life expectancy within local authorities to the north of the River Thames is broadly similar to that for England as a whole. For males, life expectancy is 81.0 years (Brentwood), 79.5 years (Havering) and 78.6 years (Thurrock), compared to 79.5 years for England as a whole. For females, average life expectancy is 84.6 years (Brentwood), 83.7 years (Havering) and 82.4 years (Thurrock) compared to 83.2 years for England (Office for Health Improvement and Disparities, 2016-2020 data).
- 6.5.7 As with the area to the south of the River Thames, life expectancy reveals inequalities in health. For example, although overall life expectancy for males is higher in Thurrock than the England average, Office for Health Improvement and Disparities data (2016-2020) shows that the life expectancy is 9.5 years lower for men and 6.3 years lower for women in the most deprived areas of Thurrock than the least deprived areas. A similar indication of health inequality is revealed in both Havering and Brentwood – for Havering, life expectancy is 7.5 years lower for men and 6.4 years lower for women in the most deprived areas than in the least deprived areas, and for Brentwood, the figures are 8.0 years lower and 8.5 years lower for males and females respectively.
- 6.5.8 Table 6.11 shows mortality rates by geographic area for all-cause mortality, deaths from respiratory diseases, coronary heart disease, circulatory disease and cancer. The table shows that, for all indicators, Thurrock performs significantly worse than England as a whole. Southend-on-Sea also performs significantly worse in terms of deaths from all causes and deaths from respiratory disease. For each of the other local authority areas, the results are not significantly different to, or are better than, England for each indicator.

**Table 6.11 Causes of death (all ages) by geographic area – north of the River Thames**

Causes of death	Geographic area						
	Thurrock	Havering	Brentwood	Basildon	Southend-on-Sea	Essex	England
Deaths from all causes (SMR)	111.0	99.3	91.2	102.3	107.6	<b>98.0</b>	<b>100.0</b>
Deaths from all cancer (SMR)	111.2	103.4	92.4	110.9	102.8	<b>99.5</b>	<b>100.0</b>
Deaths from circulatory disease (SMR)	109.0	92.0	88.2	100.1	100.1	<b>93.5</b>	<b>100.0</b>
Deaths from coronary heart disease (SMR)	115.2	89.0	89.2	102.1	96.5	<b>90.9</b>	<b>100.0</b>



Causes of death	Geographic area						
	Thurrock	Havering	Brentwood	Basildon	Southend-on-Sea	Essex	England
Deaths from respiratory disease (SMR)	119.0	104.6	85.4	110.2	113.6	<b>98.3</b>	<b>100.0</b>
Deaths involving COVID-19 (all ages) 2020 (directly standardised rate per 100,000)	213.5	202.0	162.2	188.5	151.7	<b>119.5</b>	<b>140.1</b>

*Source: Office for Health Improvement and Disparities, 2016-2020*

6.5.9 Table 6.12 looks in more detail at wards closest to the Project route. The table highlights variations in health outcomes at ward level. Particular areas of note are that a number of wards within Thurrock show a significantly worse situation across several mortality indicators than is the case for England (notably Chadwell St Mary, Tilbury St Chads, Tilbury Riverside and Thurrock Park, Aveley and Uplands, West Thurrock and South Stifford, and Belhus wards). Cranham ward in Havering has a lower SMR for a number of mortality indicators. Brentwood wards experience no significantly different conditions to England as whole.

**Table 6.12 Life expectancy and mortality rates (2015–2019) – north of the River Thames**

Wards by local authority	Male life expectancy at birth	Female life expectancy at birth	Deaths from all causes, all ages (SMR)	Deaths from respiratory diseases, all ages, all persons (SMR)	Deaths from coronary heart disease, all ages (SMR)	Deaths from all cancer, all ages (SMR)
<b>Thurrock</b>						
Ockendon	77.8	81.8	112.7	139.2	133.2	122.6
Belhus	75.6	80.7	139.2	154.5	132.9	127.1
Orsett	80.5	82.6	103.4	92.6	118.7	90.1
Stifford Clays	79.7	83.2	101.2	132.9	80.0	106.3
Little Thurrock Rectory	80.7	84.6	91.5	118.0	111.6	106.7
Little Thurrock Blackshots	80.4	85.4	85.6	107.6	92.7	105.3
Chadwell St Mary	77.3	82.0	122.7	120.2	117.3	108.9
Tilbury St Chads	76.1	80.8	125.0	187.6	148.2	133.2
Tilbury Riverside and Thurrock Park	74.1	80.8	150.5	111.0	159.8	151.0
East Tilbury	79.3	82.0	112.3	110.5	128.2	116.3
Aveley and Uplands	78.0	82.0	117.6	160.4	156.3	109.0
West Thurrock and South Stifford	75.5	81.3	125.6	150.2	162.1	113.7
Chafford and North Stifford	*	82.5	87.7	88.9	75.8	75.0
Stanford-le-Hope West	79.1	82.6	114.4	125.1	109.2	128.3
Stanford East and Corringham Town	77.4	81.8	112.2	112.3	125.2	125.9
The Homesteads	83.4	86.4	74.4	58.8	71.1	86.9
Corringham and Fobbing	82.4	86.0	79.7	80.3	98.5	86.9

Wards by local authority	Male life expectancy at birth	Female life expectancy at birth	Deaths from all causes, all ages (SMR)	Deaths from respiratory diseases, all ages, all persons (SMR)	Deaths from coronary heart disease, all ages (SMR)	Deaths from all cancer, all ages (SMR)
<b>Havering</b>						
Upminster	83.0	85.2	107.3	83.1	81.6	97.4
Cranham	80.3	87.2	72.1	83.9	71.3	90.2
Harold Wood	79.7	84.7	89.9	110.8	91.1	99.4
Rainham and Wennington	76.9	83.1	97.7	114.8	93.1	121.1
Gooshays	80.2	80.5	123.5	82.8	103.7	116.6
<b>Brentwood</b>						
Warley	78.9	83.8	107.4	85.8	101.3	110.8
Herongate, Ingrave and West Horndon	82.9	81.7	102.9	63.1	92.2	99.2
South Weald	*	*	69.5	93.6	72.4	86.0

*\*Value cannot be calculated as number of cases too small*

*Source: Office for Health Improvement and Disparities, 2016-2020*

## 6.6 Health conditions

6.6.1 This section provides a summary of baseline information regarding relevant health conditions, including respiratory conditions such as asthma and COPD. For certain health conditions, data is only available at area level based on former Clinical Commissioning Groups (CCGs).

### South of the River Thames

6.6.2 Table 6.13 summarises data for the former Kent and Medway CCG area to the south of the River Thames. The table includes Quality and Outcomes Framework (QOF) prevalence data for asthma.

**Table 6.13 Lung conditions (2020/21) by former CCG**

Lung conditions	NHS Kent and Medway CCG	England
Emergency hospital admissions for asthma in adults (aged 19 and over) (directly standardised rate per 100,000)	38.1	44.4
Hospital admissions for asthma (under 19 years) (crude rate per 100,000)	60.3	73.1
Asthma QOF prevalence (6+ years) (%)	6.0%	6.4%
Emergency hospital admissions for COPD (all ages)	115.5	133.5

*Source: Inhale – Interactive Health Atlas of Lung Conditions in England (Office for Health Improvement and Disparities, 2022)*

6.6.3 Data at ward level in relation to emergency hospital admissions for COPD (all ages) is shown in Table 6.14.

**Table 6.14 Emergency hospital admissions for COPD (standardised admissions ratio 2016-2020)**

Wards by local authority	Emergency hospital admissions for COPD (standardised admissions ratio)
<b>Medway</b>	
Cuxton and Halling	66.1
Strood South	144.3
Strood North	80.5
Strood Rural	107.5
<b>Tonbridge and Malling</b>	
Snodland East	157.3
<b>Gravesham</b>	
Riverside	165.6
Riverview	32.5
Higham	43.4

Wards by local authority	Emergency hospital admissions for COPD (standardised admissions ratio)
Chalk	43.6
Westcourt	159.5
Singlewell	119.7
Woodlands	56.0
Shorne, Cobham and Luddesdown	54.6
Northfleet South	86.5
Istead Rise	63.5
Painters Ash	96.1
Central	93.6
Coldharbour	136.9
<b>Dartford</b>	
Newtown	104.8
Stone Castle	141.2
Stone House	174.7
Bridge	*
Temple Hill	211.1
Longfield, New Barn and Southfleet	47.3

Source: Office for Health Improvement and Disparities, 2016-2020

### North of the River Thames

6.6.4 Table 6.15 summarises data for the NHS CCGs to the north of the River Thames. The table includes Quality and Outcomes Framework (QOF) prevalence data for asthma.

**Table 6.15 Lung conditions (2020/21) – CCGs to the north of the River Thames**

Lung conditions	NHS Thurrock CCG	NHS North East London CCG	NHS Basildon and Brentwood CCG	NHS Southend CCG	England
Emergency hospital admissions for asthma in adults (aged 19 and over) (directly standardised rate per 100,000)	28.4	43.4	31.3	40.3	44.4
Hospital admissions for asthma (under 19 years) (crude rate per 100,000)	85.7	89.2	84.6	48.7	73.1

Lung conditions	NHS Thurrock CCG	NHS North East London CCG	NHS Basildon and Brentwood CCG	NHS Southend CCG	England
Asthma QOF prevalence (6+ years) (%)	5.6%	4.8%	6.2%	6.3%	6.4%
Emergency hospital admissions for COPD (all ages)	149.8	120.7	112.2	154.3	133.5

Source: *Inhale – Interactive Health Atlas of Lung Conditions in England* (Office for Health Improvement and Disparities, 2020)

\*Aggregated from all known lower geography values

6.6.5 Data at ward level in relation to emergency hospital admissions for COPD (all ages) is shown in Table 6.16.

**Table 6.16 Emergency hospital admissions for COPD (standardised admissions ratio 2016-2020)**

Wards by local authority	Emergency hospital admissions for COPD (standardised admissions ratio)
<b>Thurrock</b>	
Ockendon	127.4
Belhus	187.4
Orsett	67.9
Little Thurrock Rectory	94.0
Little Thurrock Blackshots	82.0
Chadwell St Mary	180.5
Tilbury St Chads	220.4
Tilbury Riverside and Thurrock Park	203.6
East Tilbury	90.2
Aveley and Uplands	151.2
West Thurrock and South Stifford	116.1
Chafford and North Stifford	29.4
Stanford-le-Hope West	147.8
Stanford East and Corringham Town	158.3
The Homesteads	57.9
Corringham and Fobbing	88.3
<b>Havering</b>	
Upminster	38.0

Wards by local authority	Emergency hospital admissions for COPD (standardised admissions ratio)
Cranham	69.9
Harold Wood	127.2
Rainham and Wennington	88.8
Gooshays	225.3
<b>Brentwood</b>	
Warley	49.2
South Weald	60.3
Herongate, Ingrave and West Horndon	93.1

**Source: Office for Health Improvement and Disparities, 2016-2020**

6.6.6 Thurrock Council has provided data relating to persons considered to be clinically extremely vulnerable (and therefore advised to shield during the COVID-19 pandemic). These include people with severe respiratory conditions, people on immune-suppression therapies and people with specific cancers. A total of 9,950 people within Thurrock fall into this category (known as Category A persons) which translates into a rate of 58 per 1,000 persons, slightly higher than the average for England of 40 per 1,000 persons. Over half of Category A persons are older people aged over 65; 62% of Category A persons live within deprived areas. The wards of Aveley and Uplands, and Chadwell St Mary have high concentrations of Category A persons (rates of 102 and 100 per 1,000 persons respectively), while the wards of Orsett and South Chafford have among the lowest (rates of 35 and 25 per 1,000 persons respectively).

## 6.7 Mental wellbeing

6.7.1 The Government published Health Matters: Reducing Health Inequalities in Mental Illness in 2018 (Public Health England, 2018), which highlighted that people with severe and enduring mental illness are at greater risk of poor physical health and reduced life expectancy compared to the general population. The report notes that mental health problems can affect anyone and have significant effects on wider society. There are a wide range of mental health conditions and disorders, with common mental health conditions such as depression and anxiety affecting one in five of the population. Issues of mental wellbeing, mental illness and mental distress are all interlinked, and there is a clear link between loneliness and poor mental and physical health.

6.7.2 The following sections outline the prevalence and incidence of mental disorders and wellbeing across the local authorities and wards closest to the Project route to the south and north of the River Thames.

### South of the River Thames

6.7.3 Table 6.17 outlines the prevalence and incidence of mental disorders and wellbeing across local authorities to the south of the Thames. The table shows that the proportion of the population with a common mental disorder is broadly in line with the average for England as a whole. There is a slightly higher Employment and Support Allowance claimant rate for mental and behavioural disorders within Medway than is the case across Kent as a whole, although the figure is still below the England average.

**Table 6.17 Mental disorders and illnesses – local authorities to the south of the River Thames**

Mental disorders and illnesses	Gravesham	Medway	Tonbridge and Malling	Dartford	Kent	England
<b>Common mental disorders</b>						
Estimated prevalence of common mental disorders: % of population aged 16+ (2017)	16.8	17.4	13.4	16.0	<b>15.8</b>	<b>16.9</b>
Estimated prevalence of common mental disorders: % of population aged 65+ (2017)	10.0	10.4	8.4	9.5	<b>9.9</b>	<b>10.2</b>
<b>Mental health</b>						
Employment and Support Allowance claimants for mental and behavioural disorders: rate per 1,000 working age population	22.7	26.7	3.6	20.5	<b>23.4</b>	<b>27.3</b>
<b>Suicide</b>						
Suicide rates (directly standardised rate – per 100,000) (2019 to 2021)	10.7	10.6	12.3	7.3	<b>11.7</b>	<b>10.4</b>

Source: Office for Health Improvement and Disparities 2022b

6.7.4 Table 6.8 sets out data relating to self-reported wellbeing. Data is only available at county and unitary authority level.

**Table 6.18 Self-reported wellbeing – areas to the south of the River Thames**

Self-reported wellbeing	Medway	Kent	England
People with a high anxiety score (%)	27.8	23.0	24.2
People with a low satisfaction score (%)	5.9	6.4	6.1
People with a low happiness score (%)	12.1	9.7	9.2

Source: Office for Health Improvement and Disparities, 2022b

### North of the River Thames

6.7.5 Similar information is presented for local authorities to the north of the River Thames in Table 6.19. Again, there are broadly similar characteristics across local authorities when compared with England as a whole – exceptions include lower levels of common mental disorders within Brentwood and a higher proportion of Employment and Support Allowance claimants with mental and behavioural disorders in Southend-on-Sea.



**Table 6.19 Mental disorders and illnesses – local authorities to the north of the River Thames**

<b>Mental disorders and illnesses</b>	<b>Thurrock</b>	<b>Havering</b>	<b>Brentwood</b>	<b>Basildon</b>	<b>Southend-on-Sea</b>	<b>Essex</b>	<b>England</b>
<b>Common mental disorders</b>							
Estimated prevalence of common mental disorders (% of population aged 16+) (2017)	17.3	15.9	13.1	17.2	17.5	<b>14.9</b>	<b>16.9</b>
Estimated prevalence of common mental disorders (% of population aged 65+) (2017)	10.4	9.9	8.3	10.6	10.6	<b>9.5</b>	<b>10.2</b>
<b>Mental health</b>							
Employment and Support Allowance claimants for mental and behavioural disorders: rate per 1,000 working age population	17.5	18.8	13.5	24.1	28.9	<b>21.2</b>	<b>27.3</b>
<b>Suicide</b>							
Suicide rates (directly standardised rate per 100,000 population) (2019 to 2021)	5.4	8.4	15.0	9.5	12.1	<b>10.7</b>	<b>10.4</b>

*Source: Office for Health Improvement and Disparities, 2022b*

6.7.6 Table 6.20 sets out data relating to self-reported wellbeing. As noted previously, this is a new dataset and data is only available at county and unitary authority level.

**Table 6.20 Self-reported wellbeing – areas to the north of the River Thames**

Self-reported wellbeing	Thurrock	Havering	Southend-on-Sea	Essex	England
People with a high anxiety score (%)	22.9	22.8	23.5	<b>25.4</b>	<b>24.2</b>
People with a low satisfaction score (%)	*	No data	8.6	<b>4.9</b>	<b>6.1</b>
People with a low happiness score (%)	6.6	*	10.5	<b>10.1</b>	<b>9.2</b>

Source: Office for Health Improvement and Disparities, 2022b

\* Value missing due to small sample size

## 6.8 Obesity

6.8.1 Population health in England has improved in recent decades, but with people living longer, the number of years spent in poorer health has increased. Morbidity is the state of having poor health as a result of a disease or other condition. The Health Profile for England (Office for Health Improvement & Disparities, 2022c) noted that the leading causes of morbidity in England over recent years have included musculo-skeletal conditions, mental and substance-use disorders and various non-communicable diseases. Morbidity due to diabetes has increased over time, driven mainly by high levels of obesity in the population (Golay and Ybarra, 2005).

6.8.2 Obesity is widely acknowledged as a problem among adults and children and is associated with an increased risk of a number of common diseases and causes of premature death, including diabetes and cardiovascular disease.

### South of the River Thames

6.8.3 Table 6.21 provides figures for adults classified as overweight or obese within local authorities to the south of the River Thames, showing that levels are significantly higher than is the case for England as a whole.

**Table 6.21 Adults classified as overweight or obese by local authority – south of the River Thames**

	Gravesham	Dartford	Medway	Tonbridge & Malling	Kent	England
Adults (aged 18+) classified as overweight or obese (%)	65.2	70.4	69.4	<b>57.4</b>	<b>64.2</b>	<b>63.5</b>

Source: Office for Health Improvement and Disparities, 2021

6.8.4 Table 6.22 looks at obesity in children, using indicators of excess weight/obesity in Reception Year and Year 6. Again, figures at local authority level are much higher than is the case for England as a whole (with the exception of Medway, where proportions are only marginally higher). Wards with particularly high proportions of children with excess weight/obesity levels are Riverside, Westcourt, Singlewell, Coldharbour and Woodlands in Gravesham, and Strood South and Strood North in Medway.

**Table 6.22 Overweight and obese children – local authorities and wards to the south of the River Thames (2017/18 - 2019/20)**

<b>Geographic area</b>	<b>Reception: Prevalence of obesity (including severe obesity), 3-years data combined</b>	<b>Reception: Prevalence of overweight (including obesity), 3-years data combined</b>	<b>Year 6: Prevalence of obesity (including severe obesity), 3-years data combined</b>	<b>Year 6: Prevalence of overweight (including obesity), 3-years data combined</b>
<b>England</b>	<b>9.7</b>	<b>22.6</b>	<b>20.4</b>	<b>34.6</b>
<b>Kent</b>	<b>9.7</b>	<b>23.5</b>	<b>19.1</b>	<b>33.3</b>
<b>Medway</b>	<b>10.4</b>	<b>24.2</b>	<b>21.5</b>	<b>42.7</b>
Cuxton and Halling	8.7	21.7	17.5	30.0
Strood South	12.2	26.8	23.1	37.7
Strood North	12.1	26.4	24.0	38.0
Strood Rural	9.4	25.0	19.8	32.7
<b>Tonbridge and Malling</b>				
Snodland East	9.5	26.2	20.5	33.3
<b>Gravesham</b>	<b>11.8</b>	<b>25.7</b>	<b>22.6</b>	<b>38.5</b>
Riverside	13.6	27.3	24.4	40.2
Riverview	8.7	17.4	16.7	30.0
Higham	11.1	22.2	15.8	36.8
Chalk	*	*	*	*
Westcourt	12.7	31.7	20.3	35.1
Singlewell	13.2	26.3	29.6	45.1
Woodlands	12.0	28.0	16.3	34.7
Shorne, Cobham and Luddesdown	*	14.3	9.1	27.3
Northfleet South	10.3	24.4	23.9	38.8
Istead Rise	*	25.0	15.8	42.1
Painters Ash	10.0	23.3	19.5	39.0
Central	14.3	21.4	21.1	36.8
Coldharbour	11.9	26.2	28.9	42.1
<b>Dartford</b>	<b>11.1</b>	<b>25.0</b>	<b>22.6</b>	<b>37.4</b>
Newtown	12.0	24.0	24.4	41.5
Stone Castle	9.8	24.6	23.5	41.2
Stone House	14.5	23.6	26.8	41.1
Bridge	9.5	21.4	23.8	42.9
Temple Hill	13.5	30.2	27.6	41.8

\* Value suppressed for disclosure controlled reasons

Source: Office for Health Improvement and Disparities, 2021

## North of the River Thames

6.8.5 Figures for adult obesity in local authorities to the north of the River Thames are provided in Table 6.23. The proportion of overweight or obese adults is higher than for England as a whole (62.0%) in all local authorities with the exception of Brentwood.

**Table 6.23 Obesity rates by local authority – north of the River Thames**

	Thurrock	Havering	Brentwood	Basildon	Southend-on-Sea	Essex	England
Adults (aged 18+) classified as overweight or obese (%)	76.3	68.8	61.3	69.7	68.8	<b>65.9</b>	<b>63.5</b>

Source: Office for Health Improvement and Disparities, 2021

6.8.6 Figures for excess weight and obesity in children are shown by local authority and by ward in Table 6.24. The table shows that Thurrock and Havering both have a considerably higher proportion of obese and overweight children than is the case nationally, while Brentwood, Basildon and Southend-on-Sea have lower proportions. Wards where childhood obesity levels are particularly high include Belhus, Little Thurrock Rectory, Tilbury St Chads, and Tilbury Riverside and Thurrock Park in Thurrock; and Rainham and Wennington in Havering.

**Table 6.24 Overweight and obese children – local authorities and wards to the north of the River Thames**

Geographic area	Reception: Prevalence of obesity (including severe obesity), 3-years data combined	Reception: Prevalence of overweight (including obesity), 3-years data combined	Year 6: Prevalence of obesity (including severe obesity), 3-years data combined	Year 6: Prevalence of overweight (including obesity), 3-years data combined
<b>England</b>	<b>9.7</b>	<b>22.6</b>	<b>20.4</b>	<b>34.6</b>
<b>Essex</b>	<b>9.1</b>	<b>21.9</b>	<b>18.4</b>	<b>32.1</b>
<b>Thurrock</b>	<b>10.8</b>	<b>23.2</b>	<b>24.4</b>	<b>38.9</b>
Ockendon	13.5	25.8	25.0	43.2
Belhus	17.6	29.4	26.7	40.0
Orsett	11.4	25.7	22.9	34.3
Stifford Clays	9.3	20.9	25.0	37.5
Little Thurrock Rectory	13.6	22.7	24.4	37.8
Little Thurrock Blackshots	8.9	21.4	19.2	30.8
Chadwell St Mary	11.8	24.7	26.1	40.9

<b>Geographic area</b>	<b>Reception: Prevalence of obesity (including severe obesity), 3-years data combined</b>	<b>Reception: Prevalence of overweight (including obesity), 3-years data combined</b>	<b>Year 6: Prevalence of obesity (including severe obesity), 3-years data combined</b>	<b>Year 6: Prevalence of overweight (including obesity), 3-years data combined</b>
Tilbury St Chads	15.3	25.4	30.2	41.3
Tilbury Riverside and Thurrock Park	8.2	23.3	31.8	45.5
East Tilbury	10.4*	22.9*	22.4	36.2
Aveley and Uplands	13.7	27.4	26.2	42.9
West Thurrock and South Stifford	10.4*	21.7*	27.1	43.2
Chafford and North Stifford	7.8	18.8	21.3	38.7
Stanford-le-Hope West	8.8	22.8	21.2	36.5
Stanford East and Corringham Town	12.3	29.8	20.3	34.4
The Homesteads	7.4	18.5	17.5	31.6
Corringham and Fobbing	6.9	17.2	17.6	32.4
<b>Havering</b>	<b>10.5</b>	<b>23.6</b>	<b>22.6</b>	<b>37.2</b>
Upminster	6.3*	17.5*	15.5	27.8
Cranham	10.0	24.3	17.4	32.6
Rainham and Wennington	15.5	30.1	24.2	40.4
Harold Wood	9.8	23.5	23.9	39.8
Gooshays	11.2	23.7	24.3	40.8
<b>Brentwood</b>	<b>7.5*</b>	<b>18.5*</b>	<b>14.4*</b>	<b>26.1*</b>
Warley	6.7*	20.0*	10.0*	23.3*
Herongate, Ingrave and West Horndon	**	20.0*	14.3*	28.6*
South Weald	*	*	*	18.2**
<b>Basildon</b>	<b>9.6</b>	<b>22.0</b>	<b>20.5</b>	<b>34.3</b>
<b>Southend-on-Sea</b>	<b>9.1*</b>	<b>22.5*</b>	<b>19.2</b>	<b>33.0</b>

\* Data for 2019/20 is underrepresented due to paused measurements in March 2020

\*\* Value suppressed for disclose control reasons

Source: Office for Health Improvement and Disparities, 2021.

## 7 Travel behaviour and accessibility

### 7.1 Introduction

7.1.1 The following section looks at travel behaviour and accessibility, considering access to private transport, walking and cycling accessibility, how people travel to work, and road safety.

### 7.2 Road safety

7.2.1 Table 7.1 and Table 7.2 categorise reported accidents and their severity for each local authority to the south and north of the River Thames, respectively.

**Table 7.1 Reported accidents and accident severity by local authority/ parliamentary constituency to the south of the River Thames**

2017	Gravesham	Medway	Dartford
Reported road casualties – fatal	3	2	5
Reported road casualties – serious	33	88	62
Reported road casualties – slight	232	534	345
<b>All</b>	<b>268</b>	<b>624</b>	<b>412</b>

Source: Department for Transport (2018a)

**Table 7.2 Reported accidents and accident severity by local authority/ parliamentary constituency to the north of the River Thames**

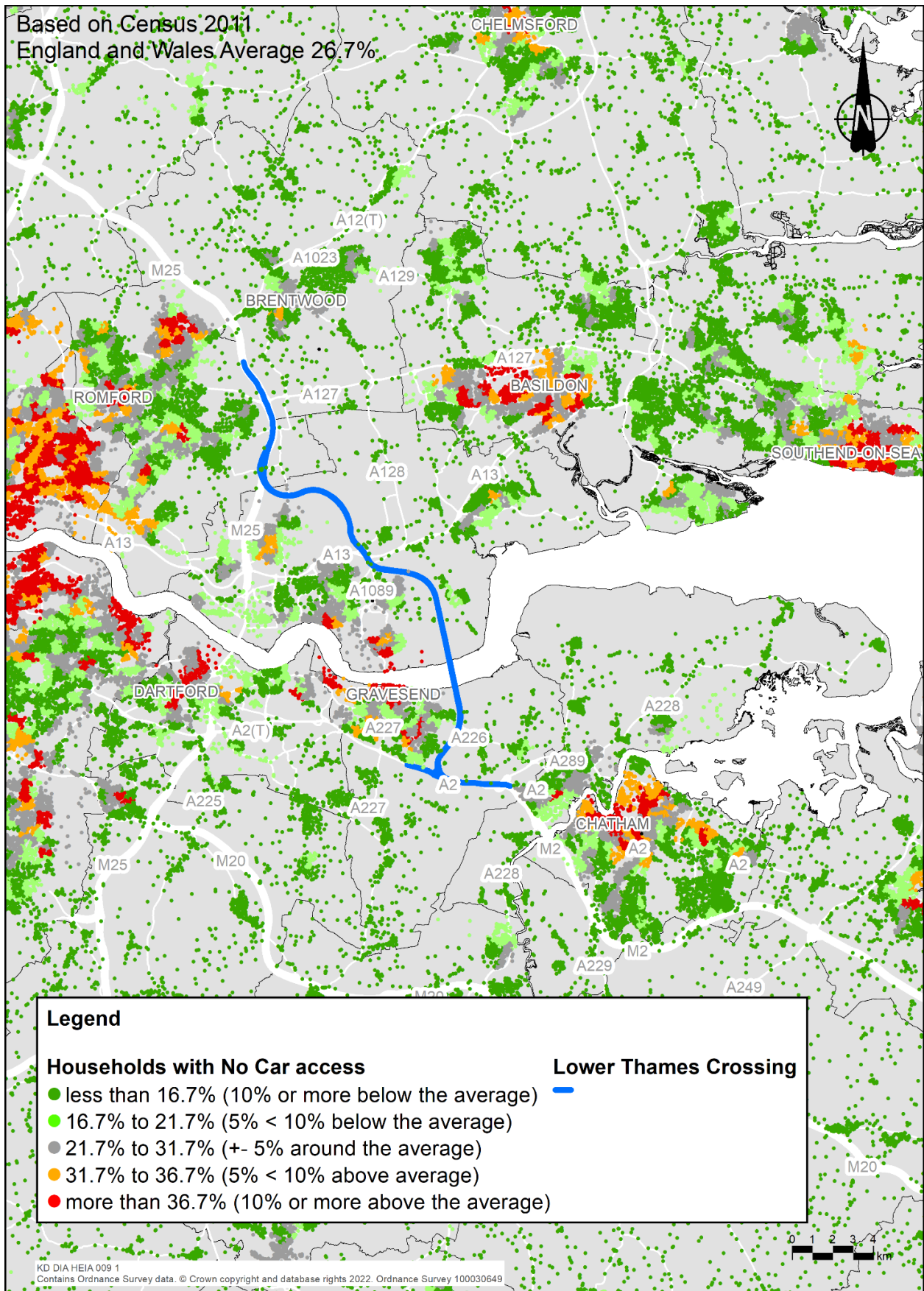
2017	Thurrock	Havering	Brentwood and Ongar
Reported road casualties – fatal	1	2	4
Reported road casualties – serious	47	66	55
Reported road casualties – slight	189	507	190
<b>All</b>	<b>237</b>	<b>577</b>	<b>249</b>

Source: Department for Transport (2018a)

### 7.3 Availability of private transport

7.3.1 Plate 7.1 sets out the distribution of households with no access to cars or vans for the study areas to the north and south of the River Thames, showing deviation from the average across the area.

**Plate 7.1 Households with no car access**



## South of the River Thames

7.3.2 Car or van availability for local authority areas located to the south of the River Thames is summarised in Table 7.3. The table shows that zero car ownership is relatively low for each local authority as a whole, when compared to England.

**Table 7.3 Car or van availability – local authorities to the south of the River Thames**

Local authority	Households (%)				
	No cars or vans	One car or van	Two cars or vans	Three cars or vans	Four or more cars or vans
<b>England</b>	<b>25.8</b>	<b>42.2</b>	<b>24.7</b>	<b>5.5</b>	<b>1.9</b>
<b>Kent</b>	<b>20.0</b>	<b>42.7</b>	<b>28.0</b>	<b>6.7</b>	<b>2.6</b>
Medway	21.9	42.5	27.1	6.2	2.3
Tonbridge and Malling	13.8	41.0	33.7	8.2	3.4
Gravesham	22.9	41.7	26.1	6.8	2.5
Dartford	19.2	45.5	27.1	6.0	2.3

Source: 2011 Census (Office for National Statistics, 2011)

7.3.3 At ward level, there is more variation as shown in Table 7.4. For example, Riverside and Coldharbour wards in Gravesham have a higher proportion of households with no access to a car or van than is the case nationally (33.6% and 32.7% compared to 25.8% for England as a whole). Similarly, the Littlebrook and Joyce Green wards within Dartford have higher proportions of poor access to private transport (33.5% and 35.2% respectively). More rural and affluent areas such as Chalk and Higham have higher numbers of cars per household than is the case nationally; for example, 12% of households within Higham ward have access to three cars or vans, compared to 5.5% nationally.

**Table 7.4 Car or van availability – wards to the south of the River Thames**

Wards by local authority	Households (%)				
	No cars or vans	One car or van	Two cars or vans	Three cars or vans	Four or more cars or vans
<b>Medway</b>					
Cuxton and Halling	11.2	37.5	38.4	9.0	3.8
Strood South	22.2	43.5	26.6	5.7	2.0
Strood North	20.1	42.6	28.1	6.8	2.5
Strood Rural	11.0	37.6	37.8	9.2	4.3
<b>Tonbridge and Malling</b>					
Snodland East	22.2	46.7	24.7	4.8	1.5
<b>Gravesham</b>					
Riverside	33.6	45.8	16.8	3.1	0.6



Wards by local authority	Households (%)				
	No cars or vans	One car or van	Two cars or vans	Three cars or vans	Four or more cars or vans
Riverview	9.9	40.3	36.4	10.3	3.1
Higham	11.4	37.4	34.6	12.0	4.6
Chalk	14.1	45.0	29.7	8.0	3.2
Westcourt	28.7	41.2	23.9	4.4	1.8
Singlewell	26.6	44.5	23.2	4.3	1.3
Woodlands	15.3	42.0	31.8	8.6	2.3
Shorne, Cobham and Luddesdown	8.8	34.7	37.1	13.2	6.1
Northfleet South	23.5	46.7	23.3	5.2	1.4
Istead Rise	8.7	36.6	38.1	11.7	4.9
Painters Ash	19.4	41.2	29.2	7.5	2.7
Central	29.0	40.9	22.5	5.2	2.4
Coldharbour	32.7	42.0	18.5	5.0	1.8
<b>Dartford</b>					
Stone	24.7	47.2	23.4	3.7	1.0
Littlebrook	33.5	45.3	17.1	3.1	1.0
Joyce Green	35.2	46.0	15.2	2.6	1.0
Newtown	22.2	52.5	20.6	3.4	1.2
Longfield, New Barn and Southfleet	7.5	35.5	38.2	13.0	5.8

Source: 2011 Census (Office for National Statistics, 2011)

## North of the River Thames

7.3.4 Car or van availability for local authorities found to the north of the River Thames is shown in Table 7.5. Southend-on-Sea has a higher proportion of households without access to a car or van than is the case nationally (27.3% compared to 25.8%). Brentwood has the lowest proportion (14.9%), which is significantly below the national average.

**Table 7.5 Car or van availability – local authorities to the north of the River Thames**

Local authority	Households (%)				
	No cars or vans	One car or van	Two cars or vans	Three cars or vans	Four or more cars or vans
<b>England</b>	<b>25.8</b>	<b>42.2</b>	<b>24.7</b>	<b>5.5</b>	<b>1.9</b>
<b>Essex</b>	<b>18.0</b>	<b>42.1</b>	<b>29.6</b>	<b>7.4</b>	<b>3.0</b>
Thurrock	20.1	43.9	27.3	6.4	2.3

Local authority	Households (%)				
	No cars or vans	One car or van	Two cars or vans	Three cars or vans	Four or more cars or vans
Havering	23.0	44.2	24.5	6.1	2.2
Brentwood	14.9	43.2	31.1	7.8	3.1
Basildon	21.9	43.5	26.4	6.0	2.2
Southend-on-Sea	27.3	44.5	22.2	4.6	1.4

Source: 2011 Census (Office for National Statistics, 2011)

7.3.5 Table 7.6 looks in detail at wards closest to the Project route. Wards where there are a high proportion of households without access to a car or van include Gooshays (34.7%), Tilbury Riverside and Thurrock Park (34.2%) and Tilbury St Chads (28.6%).

**Table 7.6 Car or van availability – wards to the north of the River Thames**

Wards by local authority	Households (%)				
	No cars or vans	One car or van	Two cars or vans	Three cars or vans	Four or more cars or vans
<b>Thurrock</b>					
Ockendon	24.1	44.1	25.0	5.1	1.6
Belhus	25.8	44.3	23.5	4.5	1.9
Orsett	6.7	32.0	41.6	14.3	5.5
Stifford Clays	21.9	38.2	28.6	8.4	2.9
Little Thurrock Rectory	16.5	44.8	29.7	6.6	2.4
Little Thurrock Blackshots	16.9	38.7	32.6	8.2	3.6
Chadwell St Mary	23.3	43.4	25.3	5.8	2.2
Tilbury St Chads	28.6	43.9	21.6	4.8	1.1
Tilbury Riverside and Thurrock Park	34.2	42.6	18.6	3.5	1.1
East Tilbury	12.7	42.7	32.2	9.2	3.2
Aveley and Uplands	19.8	44.3	27.4	6.4	2.2
West Thurrock and South Stifford	21.8	51.7	21.6	3.6	1.4
Chafford and North Stifford	7.5	44.2	37.8	7.8	2.7
Stanford-le-Hope West	18.9	43.5	27.2	7.6	2.9
Stanford East and Corringham Town	22.0	43.1	26.0	6.6	2.3
The Homesteads	8.5	39.6	37.8	10.1	4.0
Corringham and Fobbing	12.5	38.4	34.3	10.0	4.7

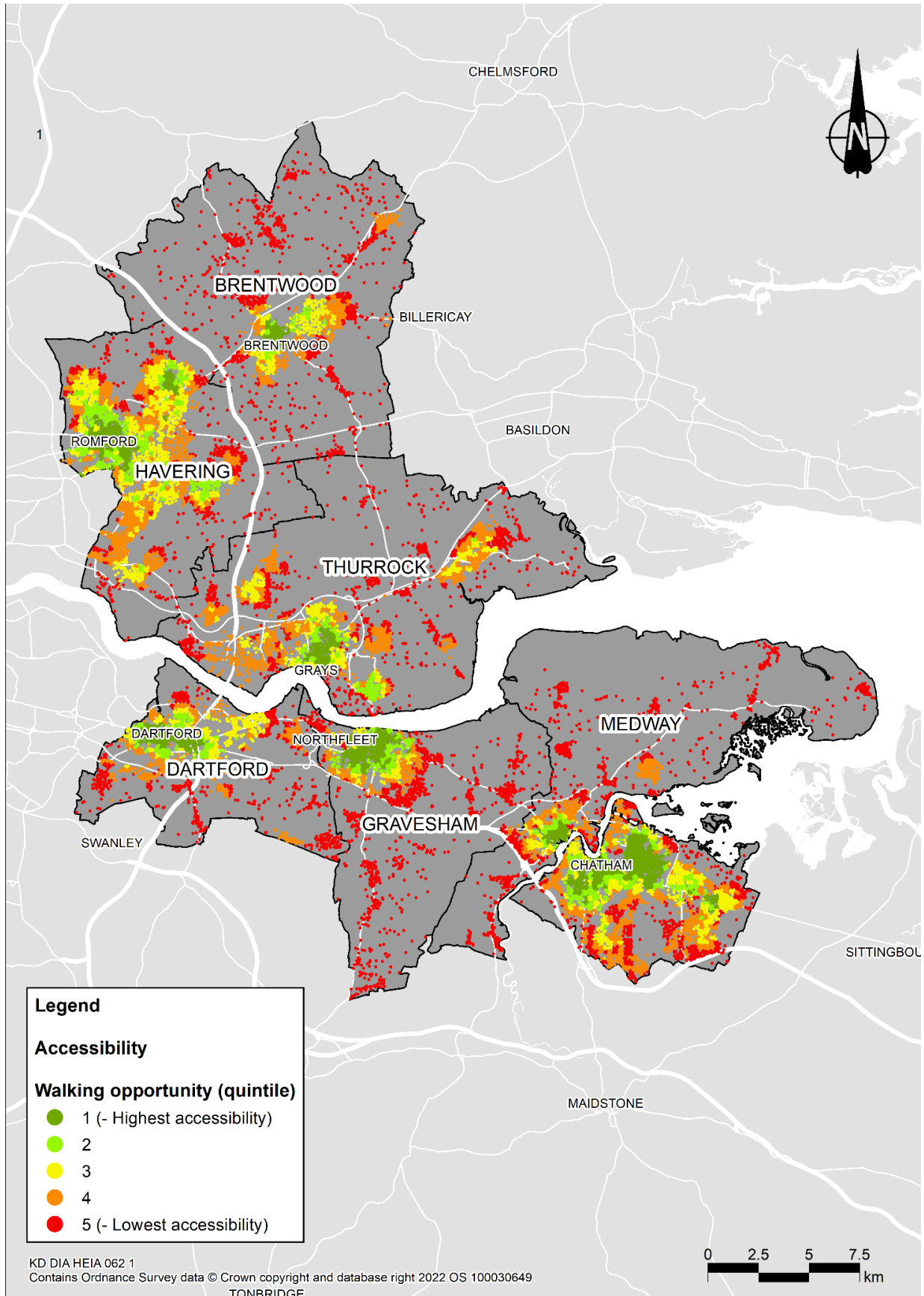
Wards by local authority	Households (%)				
	No cars or vans	One car or van	Two cars or vans	Three cars or vans	Four or more cars or vans
<b>Havering</b>					
Upminster	13.5	45.9	30.6	7.4	2.6
Cranham	16.7	45.6	28.1	6.8	2.7
Rainham and Wennington	21.8	43.2	25.0	7.1	2.8
Harold Wood	22.9	46.3	24.1	5.1	1.6
Gooshays	34.7	41.6	18.7	3.8	1.2
<b>Brentwood</b>					
Warley	14.7	50.1	27.0	5.5	2.7
Herongate, Ingrave and West Horndon	9.4	36.3	37.7	12.2	4.4
South Weald	11.6	36.8	37.4	11.1	3.1

Source: 2011 Census (Office for National Statistics, 2011)

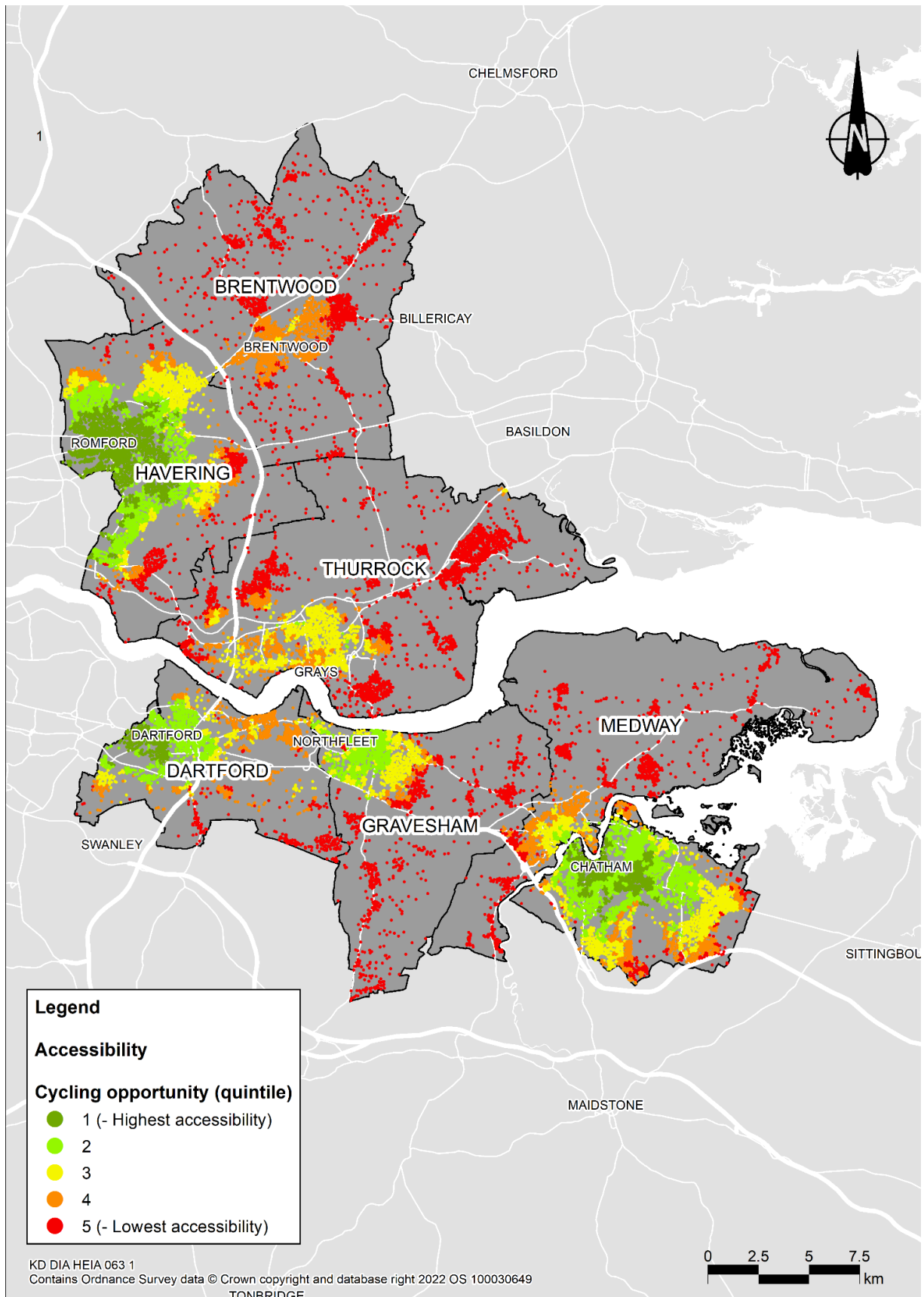
## 7.4 Walking and cycling accessibility

7.4.1 Plate 7.2 and Plate 7.3 show levels of walking and cycling accessibility, respectively, within the areas to the south and north of the River Thames. The purpose of the plates is to show the variation of opportunity available to communities for walking and cycling, with green areas showing the greatest level of opportunity to walk or cycle to a variety of destinations compared to the red areas.

**Plate 7.2 Walking accessibility**



**Plate 7.3 Cycling accessibility**



- 7.4.2 The figures show that, to the south of the River Thames, communities experiencing low accessibility for walking and cycling are predominantly rural communities such as those located on the Hoo Peninsula in Medway and villages to the south of the urban settlements of Dartford and Gravesend. Central areas of Gravesend and Dartford experience high levels of accessibility for both walking and cycling.
- 7.4.3 To the north of the River Thames, communities experiencing low accessibility for walking and cycling are again predominantly rural communities such as villages to the north and east of Grays. Central areas of Grays and Tilbury experience high levels of accessibility for both walking and cycling.

## 7.5 Journey purpose and travel behaviour

- 7.5.1 Journey purposes can broadly be categorised into work, leisure/cultural reasons, or for personal services (for example education, healthcare, community services and facilities). The latter are more likely to be local in nature.

### South of the River Thames

- 7.5.2 Travel to work areas (TTWA) are contiguous, non-overlapping areas covering the whole of the UK and are approximations of a local labour market, i.e. the majority of the resident population also work within the area. As would be expected, the area to the south of the River Thames is dominated by the London TTWA; this extends east to include Dartford and much of Gravesham. Further east, the Medway TTWA covers the Hoo Peninsula (to the east of Gravesend) in addition to the settlements of Strood, Rochester and Chatham.
- 7.5.3 Origin-destination data shows that Medway has a higher level of self-containment than the two areas of Dartford and Gravesham. Self-containment refers to the proportion of people in employment who both live and work in the same area. For Medway, this proportion is approximately 30%, but drops to 20% and 19% for Dartford and Gravesham respectively. This is possibly a reflection on both the smaller extent of these two areas together with the closer proximity to larger urban centres.
- 7.5.4 A second journey purpose relates to trips taken for leisure and cultural reasons. Many of these trips will focus on visits to urban centres such as Dartford, Gravesend, Strood and Rochester, for example. In addition, there are facilities and destinations outside of these centres that will act as trip generators, attracting people from across a wider area. These include the Bluewater Shopping Centre near Dartford, which has 13,000 free car parking spaces, attracting millions of visitors every year (Bluewater Shopping Centre, 2018).
- 7.5.5 Rural attractions/visitor destinations include country parks and wildlife/nature reserves. Examples include Darenth Country Park (near Dartford), Shorne Woods Country Park and Jeskyns Community Woodland (both in Gravesham). The Kent Downs Area of Outstanding Natural Beauty skirts the southern extent of the study area; the Kent Downs Area of Outstanding Natural Beauty is bordered by urban centres and receives visitor traffic both from London and coastal Kent areas.

- 7.5.6 A final journey purpose relates to personal service trips. Settlements closest to the Project route, together with the variety of community facilities located within and around them, are described in ES Chapter 13: Population and Human Health (Application Document 6.1) and identified on ES Figure 13.1 (Application Document 6.2).
- 7.5.7 National Public Transport Access Nodes data (NaPTAN) (Department for Transport, 2018b) shows the public transport network within the area to the south of the River Thames. The data highlights the locations of railway stations and lines, coach and bus stops, bus routes and frequencies, and clearly shows that urban areas contain the main concentration of public transport routes and high frequency routes. Rural areas (to the south of Gravesend, to the south and east of Dartford, and along the Hoo Peninsula) appear less well served by public transport. The area appears well served by rail with good frequency rail links to London (journey times of approximately 30 minutes).
- 7.5.8 Travel behaviour for residents of local authorities to the south of the River Thames is shown in Table 7.7 in relation to method of travel to work. The dominant mode of travel to work across each of the local authorities is by private transport (car or van), higher than the proportion for England as a whole. Dartford has the highest proportion of residents who travel to work by train at 12.1%, with each local authority having a higher proportion of residents using the train compared to the average for England as a whole. Each area has a lower proportion of residents who travel to work using a bicycle and on foot, when compared to England as a whole.

**Table 7.7 Travel to work – local authorities to the south of the River Thames**

Mode of travel to work	Gravesham (%)	Medway (%)	Tonbridge & Malling (%)	Dartford (%)	Kent (%)	England (%)
Work mainly at or from home	2.5	2.4	4.4	2.5	<b>3.8</b>	<b>3.5</b>
Underground, metro, light rail, tram	0.3	0.1	0.2	0.5	<b>0.1</b>	<b>2.6</b>
Train	7.1	5.8	8.4	12.1	<b>5.9</b>	<b>3.5</b>
Bus, minibus or coach	4.3	3.0	1.5	3.6	<b>2.4</b>	<b>4.9</b>
Taxi	0.3	0.2	0.2	0.5	<b>0.2</b>	<b>0.3</b>
Motorcycle, scooter or moped	0.7	0.7	0.6	1.0	<b>0.5</b>	<b>0.5</b>
Driving a car or van	39.5	41.4	43.8	40.8	<b>39.7</b>	<b>36.9</b>
Passenger in a car or van	4.1	4.0	3.0	3.1	<b>3.3</b>	<b>3.3</b>
Bicycle	0.6	0.7	1.0	0.8	<b>1.1</b>	<b>1.9</b>
On foot	5.3	6.4	6.0	5.1	<b>7.3</b>	<b>6.9</b>
Other method of travel to work	0.4	0.4	0.3	0.3	<b>0.3</b>	<b>0.4</b>
Not in employment	34.9	34.7	30.6	29.6	<b>34.7</b>	<b>35.3</b>

Source: 2011 Census (Office for National Statistics, 2011)

- 7.5.9 Average distances travelled by residents to get to work are summarised in Table 7.8. The table shows, for example, that 14.4% of residents in Gravesham travel between 2km and 5km to get to work, compared to 20.8% in Medway. A significantly higher proportion of Gravesham residents travel further afield for work purposes (30–40km) than is the case for residents of Medway or Dartford.
- 7.5.10 At ward level, specific behaviours to note include the following:
- a. In Gravesham, residents of the Riverside and Woodlands wards take a higher proportion of more local trips for work purposes (less than 2km) compared to the local authority average (18.4% and 16.9% compared to 14.9%).
  - b. Within Medway, there is a higher proportion of trips in the 5–10km category in the Cuxton and Halling ward (26.1% compared to 14.7% for Medway as a whole).
  - c. In Dartford, again there is a greater proportion of more local trips (less than 2km) for work purposes in wards such as Littlebrook (22.6%) and Stone (23.7%) than is the case for the authority as a whole (14.7%).
  - d. In Tonbridge and Malling, more trips are taken in the 5km to 10km category; this is also the case for the Snodland East ward, where 21.8% of trips fall into this category compared to 16% of trips for Tonbridge and Malling as a whole and 13.6% for Kent.



**Table 7.8 Distance travelled to work – local authorities and wards to the south of the River Thames**

Geographic area	Less than 2km	2km to less than 5km	5km to less than 10km	10km to less than 20km	20km to less than 30km	30km to less than 40km	40km to less than 60km	60km and over	Works mainly at or from home
<b>England</b>	<b>18.1</b>	<b>20.1</b>	<b>18.9</b>	<b>16.7</b>	<b>6.3</b>	<b>2.8</b>	<b>2.5</b>	<b>3.4</b>	<b>11.2</b>
<b>Kent</b>	<b>18.3</b>	<b>15.9</b>	<b>13.6</b>	<b>14.9</b>	<b>9.4</b>	<b>5.1</b>	<b>5.4</b>	<b>5.1</b>	<b>12.3</b>
<b>Medway</b>	<b>16.3</b>	<b>20.8</b>	<b>14.7</b>	<b>14.5</b>	<b>6.2</b>	<b>4.6</b>	<b>11.6</b>	<b>2.8</b>	<b>8.7</b>
Cuxton and Halling	4.8	11.5	26.1	20.5	9.0	5.3	9.8	2.6	10.5
Strood South	14.7	19.8	15.4	18.3	7.3	5.9	8.9	2.8	6.8
Strood North	17.9	17.7	11.1	19.2	6.7	5.7	10.3	2.9	8.5
Strood Rural	7.7	17.5	16.8	20.1	8.0	5.8	10.4	2.7	11.1
<b>Tonbridge and Malling</b>	<b>12.8</b>	<b>11.6</b>	<b>16.0</b>	<b>14.2</b>	<b>6.7</b>	<b>5.4</b>	<b>11.0</b>	<b>1.9</b>	<b>11.4</b>
Snodland East	18.1	11.1	21.8	13.3	8.7	4.1	4.9	1.9	6.1
<b>Gravesham</b>	<b>14.9</b>	<b>14.4</b>	<b>16.0</b>	<b>18.7</b>	<b>8.9</b>	<b>12.6</b>	<b>2.9</b>	<b>2.5</b>	<b>9.2</b>
Riverside	18.4	11.6	15.0	18.3	10.1	13.2	3.1	3.4	7.0
Riverview	9.4	22.4	13.8	18.4	8.0	13.2	2.9	2.7	9.3
Higham	3.9	9.1	25.2	22.8	8.4	7.9	8.4	1.8	12.5
Chalk	6.4	24.3	17.7	19.6	7.9	10.8	3.6	1.4	8.3
Westcourt	12.8	21.5	14.4	20.7	8.0	10.0	2.7	3.1	6.9
Singlewell	8.6	26.2	16.0	20.4	8.0	10.2	2.1	1.8	6.7
Woodlands	16.9	14.7	13.0	16.7	9.2	14.3	2.2	2.6	10.4
Shorne, Cobham and Luddesdown	3.6	11.5	21.2	18.6	8.1	14.1	4.6	2.7	15.5
Northfleet South	22.3	12.7	15.7	15.8	8.8	12.8	2.4	2.5	7.0

Geographic area	Less than 2km	2km to less than 5km	5km to less than 10km	10km to less than 20km	20km to less than 30km	30km to less than 40km	40km to less than 60km	60km and over	Works mainly at or from home
Istead Rise	5.1	22.3	15.2	18.6	10.3	13.6	1.9	1.4	11.4
Painters Ash	13.7	22.8	17.3	15.7	9.2	10.8	2.1	1.7	6.9
Central	21.4	7.1	15.0	16.3	9.0	15.2	2.5	2.8	10.8
Coldharbour	25.1	10.5	15.3	13.3	7.0	7.9	1.6	2.1	6.1
<b>Dartford</b>	<b>14.7</b>	<b>18.0</b>	<b>16.1</b>	<b>15.3</b>	<b>20.3</b>	<b>4.0</b>	<b>1.4</b>	<b>1.7</b>	<b>8.5</b>
Stone	23.7	15.8	16.4	13.3	18.5	2.6	1.4	1.9	6.5
Littlebrook	22.6	19.2	14.6	14.4	18.0	2.4	1.3	2.1	5.5
Joyce Green	16.2	21.9	14.2	16.5	19.8	2.3	1.0	1.9	6.2
Newtown	21.3	15.0	14.7	14.5	21.9	2.8	1.0	1.7	7.1
Longfield, New Barn and Southfleet	5.5	10.1	19.5	17.2	10.4	11.6	1.9	1.5	13.2

Source: 2011 Census (Office for National Statistics, 2011)

7.5.11 The Office for Health Improvement and Disparities has used data from the Active Lives Adult Survey (published by Sport England on a twice-yearly basis) to identify the percentage of physically active adults, children and young people in an area. Data for 2020/21 is shown in Table 7.9.

**Table 7.9 Percentage of physically active adults, children and young people 2020/21**

	Gravesham	Medway	Tonbridge & Malling	Dartford	Kent	England
Percentage of physically active adults	68.7	60.8	74.2	63.5	<b>68.3</b>	<b>65.9</b>
Percentage of physically active children and young people	42.7	39.3	37.2	39.3	<b>42.1</b>	<b>44.6</b>

*Source: Office for Health Improvement and Disparities (Office for Health Improvement and Disparities, 2021b)*

### North of the River Thames

- 7.5.12 There are two TTWAs located immediately to the north of the River Thames. The London TTWA extends eastwards beyond the M25 to the outskirts of Basildon. The town of Tilbury, and areas to the east and north, fall within the Southend TTWA.
- 7.5.13 Origin-destination data shows that Thurrock has a higher level of self-containment than either the London Borough of Havering or Brentwood. Self-containment refers to the proportion of people in employment who both live and work in the same area; for Thurrock this proportion is approximately 39%, but, drops to 29% and 25% for Havering and Brentwood respectively. The proximity of Havering and Brentwood to London may explain why self-containment figures are lower for these two local authority areas.
- 7.5.14 Journeys undertaken for leisure and cultural reasons to the north of the River Thames will include visits to urban centres, but there are facilities and destinations outside of these centres that will act as trip generators, for example the Lakeside Shopping Centre near Grays, which is the 10<sup>th</sup> largest in the UK by area and has an annual footfall of around 11 million people (Statista, 2019). Other leisure facilities located to the north of the River Thames include the Orsett Golf Club, Top Meadow Golf Club, and the Thurrock Rugby Club and Athletics Stadium.
- 7.5.15 Rural attractions/visitor destinations to the north of the River Thames include the Thames Chase Community Forest located to the south-east of Upminster, the Mardyke Country Park located near South Ockendon, and the Tilbury and Coalhouse Forts.
- 7.5.16 Settlements closest to the Project route, together with the variety of community facilities located within and around them, are described in ES Chapter 13: Population and Human Health (Application Document 6.1) and identified on ES Figure 13.1 (Application Document 6.2).
- 7.5.17 Travel behaviour for residents of local authorities to the north of the River Thames is shown in Table 7.10 in relation to method of travel to work. While using private means of transport is clearly the dominant method of travel to work, a high proportion of residents in Brentwood use the train (15.8%).

**Table 7.10 Travel to work – local authorities to the north of the River Thames**

Mode of travel to work	Thurrock (%)	Havering (%)	Brentwood (%)	Basildon (%)	Southend-on-Sea (%)	Essex (%)	England (%)
Work mainly at or from home	2.0	2.4	4.2	2.4	3.0	<b>3.5</b>	<b>3.5</b>
Underground, metro, light rail, tram	1.2	6.3	1.3	0.5	0.3	<b>1.5</b>	<b>2.6</b>
Train	10.5	11.9	15.8	10.9	10.2	<b>7.0</b>	<b>3.5</b>
Bus, minibus or coach	2.5	5.1	1.2	2.2	3.5	<b>2.1</b>	<b>4.9</b>
Taxi	0.4	0.7	0.4	0.6	0.3	<b>0.3</b>	<b>0.3</b>
Motorcycle, scooter or moped	0.7	0.6	0.4	0.5	0.5	<b>0.4</b>	<b>0.5</b>
Driving a car or van	41.4	31.8	36.3	38.0	32.9	<b>40.4</b>	<b>36.9</b>
Passenger in a car or van	3.7	2.1	2.3	3.7	3.1	<b>3.1</b>	<b>3.3</b>
Bicycle	1.0	0.6	0.6	1.1	1.9	<b>1.4</b>	<b>1.9</b>
On foot	4.0	4.1	5.3	5.8	9.1	<b>6.1</b>	<b>6.9</b>
Other method of travel to work	0.4	0.4	0.4	0.3	0.4	<b>0.3</b>	<b>0.4</b>
Not in employment	32.2	34.1	34.5	34.0	34.9	<b>33.2</b>	<b>35.3</b>

Source: 2011 Census (Office for National Statistics, 2011)

- 7.5.18 Average distances travelled by residents to get to work are summarised in Table 7.11. The table shows, for example, that 12.9% of residents in Thurrock travel less than 2km to get to work, compared to 24.4% of residents in Southend-on-Sea. At ward level, specific behaviours to note include the following:
- Around 20.5% of residents of Tilbury St Chads travel between 5km and 10km for work purposes, compared to 15.3% for Thurrock as a whole.
  - Residents of Orsett are more likely either to travel longer distances or to work from home than is the case for Thurrock as a whole (likely to be partly a function of a more rural location).
  - Similarly, a higher proportion of residents in Upminster work from home (12.6% compared to 8.7% for Havering as a whole)

**Table 7.11 Distance travelled to work – local authorities and wards to the north of the River Thames**

<b>Geographic area</b>	<b>Less than 2km</b>	<b>2km to less than 5km</b>	<b>5km to less than 10km</b>	<b>10km to less than 20km</b>	<b>20km to less than 30km</b>	<b>30km to less than 40km</b>	<b>40km to less than 60km</b>	<b>60km and over</b>	<b>Works mainly at or from home</b>
<b>England</b>	<b>18.1</b>	<b>20.1</b>	<b>18.9</b>	<b>16.7</b>	<b>6.3</b>	<b>2.8</b>	<b>2.5</b>	<b>3.4</b>	<b>11.2</b>
<b>Essex</b>	<b>16.9</b>	<b>15.3</b>	<b>13.2</b>	<b>16.5</b>	<b>9.0</b>	<b>5.8</b>	<b>7.5</b>	<b>4.3</b>	<b>11.6</b>
<b>Thurrock</b>	<b>12.9</b>	<b>17.6</b>	<b>15.3</b>	<b>19.0</b>	<b>14.9</b>	<b>8.7</b>	<b>1.9</b>	<b>2.2</b>	<b>7.5</b>
Ockendon	8.6	18.5	19.2	19.5	19.4	4.1	1.3	2.1	7.3
Belhus	12.1	23.6	12.8	19.8	17.3	3.6	1.1	2.3	7.2
Orsett	4.3	9.4	28.0	17.7	11.1	13.8	1.8	1.6	12.4
Stifford Clays	11.5	30.6	10.0	17.9	12.7	5.4	1.8	2.2	8.0
Little Thurrock Rectory	20.8	20.8	9.3	16.3	12.0	9.7	1.3	2.8	7.1
Little Thurrock Blackshots	13.4	26.9	11.8	15.4	12.4	9.0	1.5	1.7	8.0
Chadwell St Mary	7.9	23.9	23.1	16.5	8.9	10.3	1.9	1.7	5.8
Tilbury St Chads	17.3	16.0	20.5	17.0	8.4	10.8	1.8	3.2	5.0
Tilbury Riverside and Thurrock Park	18.3	16.3	19.1	15.5	9.4	11.6	1.8	2.7	5.3
East Tilbury	6.5	10.7	29.5	21.2	8.0	12.9	2.3	2.4	6.5
Aveley and Uplands	9.0	20.6	18.0	22.9	15.2	3.0	1.4	2.6	7.3
West Thurrock and South Stifford	17.2	15.7	9.3	20.7	21.3	4.2	1.4	3.4	6.8
Chafford and North Stifford	12.4	15.0	4.6	19.2	27.2	8.2	2.0	2.0	9.3
Stanford-le-Hope West	10.6	8.0	26.8	21.0	6.5	14.8	2.6	1.4	8.3
Stanford East and Corringham Town	15.2	10.0	24.3	21.5	7.4	10.4	2.4	1.7	7.1

Geographic area	Less than 2km	2km to less than 5km	5km to less than 10km	10km to less than 20km	20km to less than 30km	30km to less than 40km	40km to less than 60km	60km and over	Works mainly at or from home
The Homesteads	12.2	9.6	22.1	25.2	6.2	13.8	2.4	1.7	6.7
Corringham and Fobbing	11.2	14.7	15.1	26.9	5.7	9.9	4.8	1.8	9.9
<b>Havering</b>	<b>12.7</b>	<b>17.2</b>	<b>16.2</b>	<b>19.5</b>	<b>21.2</b>	<b>2.1</b>	<b>1.0</b>	<b>1.5</b>	<b>8.7</b>
Upminster	9.4	8.7	18.7	14.7	31.4	2.2	0.9	1.5	12.6
Cranham	8.9	11.6	18.2	15.2	31.6	2.8	0.9	1.4	9.5
Rainham and Wennington	9.7	11.4	27.6	20.9	17.8	2.0	0.8	1.9	7.9
Harold Wood	11.5	17.3	13.8	17.5	26.8	2.5	1.0	1.5	8.1
Gooshays	12.7	13.8	16.7	16.5	16.3	2.3	0.9	1.8	6.2
<b>Brentwood</b>	<b>13.1</b>	<b>10.1</b>	<b>11.2</b>	<b>18.2</b>	<b>15.6</b>	<b>15.7</b>	<b>1.9</b>	<b>1.6</b>	<b>12.5</b>
Warley	18.0	9.3	9.5	15.1	22.3	10.6	1.5	1.6	12.1
Herongate, Ingrave and West Horndon	5.2	11.6	16.0	18.4	9.9	18.6	2.2	2.3	15.9
South Weald	8.7	15.2	13.2	18.1	19.9	4.2	1.6	2.0	17.0
<b>Basildon</b>	<b>17.2</b>	<b>18.0</b>	<b>13.9</b>	<b>14.4</b>	<b>6.4</b>	<b>12.1</b>	<b>7.6</b>	<b>1.8</b>	<b>8.7</b>
<b>Southend-on-Sea</b>	<b>24.4</b>	<b>22.2</b>	<b>11.9</b>	<b>6.9</b>	<b>4.3</b>	<b>2.5</b>	<b>14.2</b>	<b>3.5</b>	<b>10.1</b>

Source: 2011 Census (Office for National Statistics, 2011)

7.5.19 Data from the Active Lives Adult Survey (Office for Health Improvement and Disparities, 2021b) identifying the percentage of physically active adults, children and young people for local authorities to the north of the River Thames is shown in Table 7.12.

**Table 7.12 Percentage of physically active adults, children and young people 2020/21**

	<b>Thurrock (%)</b>	<b>Brentwood 9%</b>	<b>Havering (%)</b>	<b>Basildon (%)</b>	<b>Southend-on-Sea (%)</b>	<b>Essex (%)</b>	<b>England (%)</b>
Percentage of physically active adults	60.3	68.4	61.3	63.1	65.4	<b>65.2</b>	<b>65.9</b>
Percentage of physically active children and young people	31.1	*	*	*	44.8	<b>42.4</b>	<b>44.6</b>

*Source: Office for Health Improvement and Disparities (Office for Health Improvement and Disparities, 2021b)*

*\*value missing due to small sample size*

## 8 Crime and fear of crime

### 8.1 Introduction

8.1.1 Community safety relates to how people feel about living in an area. Factors which can affect this are crime levels and perception of crime. This section summarises available data relating to crime using publicly available sources.

### 8.2 South of the River Thames

8.2.1 Table 8.1 sets out recorded crime figures for community safety partnerships to the south of the River Thames, which generally equate to local authority areas. The table provides information on the numbers and types of crimes committed per 1,000 population where relevant for the year ending March 2021.

8.2.2 The data indicates that Dartford, Gravesham and Medway experience very similar proportions of crime, with violence against the person, theft offences, criminal damage and arson, and public order offences making up the majority of crimes committed. Higher rates of theft offences (per 1,000 population) are experienced in Gravesham and Dartford than is the case for Medway.

**Table 8.1 Types of crime by community safety partnership – south of the River Thames**

Type of crime	Dartford and Gravesham (combined local authorities)	Medway
Violence against the person	45	52
Sexual offences	3	4
Robbery	1	1
Theft offences	26	22
Criminal damage and arson	13	12
Drug offences	3	3
Possession of weapons offences	1	1
Public order offences	8	9
Miscellaneous crime against society	3	4
<b>Residential burglary (per 1,000 population)</b>	<b>3</b>	<b>3</b>
<b>Residential burglary (per 1,000 household)</b>	<b>8</b>	<b>7</b>

*Source: data.police.uk (2021)*

8.2.3 A review of crime data for September 2021 at very local level for those wards located closest to the Project route revealed the following:

- a. The most common type of crime recorded in wards across Gravesham near the Project related to violence and sexual offences, making up 41.9% of all



recorded crimes during this period. The next most frequent crimes related to anti-social behaviour, followed by criminal damage and arson, and vehicle crime (13.9%, 9.6% and 6.9% respectively). Of the wards close to the Project route, Central has the highest number of recorded crimes.

- b. The percentages within Medway wards were similar, with violence and sexual offences again the most recorded type of crime (27.6%), followed by anti-social behaviour, vehicle crime, and criminal damage and arson (24.5%, 9.9% and 6.8% respectively). Across the wards, Chatham Central and Rochester Riverside had the highest number of recorded crimes.

8.2.4 Finally, in the Dartford wards closest to the Project route, violence and sexual offences make up 34.9% of all recorded offences, followed by shoplifting, anti-social behaviour, and criminal damage and arson (13.5%, 12.0% and 8.7% respectively). Crime levels were particularly high within Stone, which saw 41.8% of all offences across the wards considered.

## 8.3 North of the River Thames

8.3.1 Table 8.2 provides recorded crime figures for community safety partnerships for areas to the north of the River Thames. The table shows that there are similarities across local authorities in terms of recorded crime, with principal offences for each community safety partnership area relating to violence against the person, theft, criminal damage and arson, and public order offences.

**Table 8.2 Types of crime by community safety partnership – north of the River Thames**

Type of crime	Thurrock	Havering	Brentwood	Basildon	Southend-on-Sea
Violence against the person	36	19	24	42	45
Sexual offences	2	2	1	3	3
Robbery	1	1	0	1	1
Theft offences	24	24	27	23	22
Criminal damage and arson	8	4	6	9	9
Drug offences	3	5	3	6	4
Possession of weapons offences	1	0	0	1	1
Public order offences	8	4	7	10	11
Miscellaneous crime against society	2	1	1	2	2
<b>Residential burglary (per 1,000 population)</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>4</b>

Type of crime	Thurrock	Havering	Brentwood	Basildon	Southend-on-Sea
Residential burglary (per 1,000 household)	7	8	7	7	9

Source: data.police.uk (2021)

8.3.2 Looking in more detail at crime levels in September 2021 in wards close to the Project route, the following observations can be made:

- a. For Thurrock wards, violence and sexual assault was the most common crime recorded (a total of 42.1% of total crimes recorded across all wards considered), followed by anti-social behaviour, public order, and criminal damage and arson (15.8%, 9.9% and 7.0% respectively). West Thurrock and South Stifford had the highest number of recorded crimes.
- b. The most frequently recorded crimes across Havering wards were violence and sexual assault (27.6%) followed by anti-social behaviour and vehicle crime (24.5% and 9.9% respectively). Central Romford had the highest number of recorded crimes.
- c. Brentwood wards follow a similar pattern, with violence and sexual assault being the highest recorded crime, followed by anti-social behaviour and other theft (34.0%, 15.2% and 8.4% respectively).
- d. Crime levels in Warley were higher when compared to Herongate, Ingrave and West Horndon ward (total recorded crime rates of 62.7% and 37.3% respectively).

8.3.3 A review of the prevalence of violence and age, for the year ending March 2020 for England and Wales, is outlined in Table 8.3, which shows the following:

- a. A significantly higher proportion of 16–24-year-olds are victim of violent crimes compared to all other age groups.
- b. Adults who are aged 75+ are significantly less likely to be subject to violent crimes compared to all other age groups.
- c. The data also shows that males are more likely to be involved in violent crime compared to females across all age brackets.

**Table 8.3 Prevalence of violence, by type of violence and age – percentage of adults, victims once or more**

Age	All violence			Violence with injury	Violence without injury
		Male	Female		
16–24	3.6	4.4	2.8	1.6	2.0
25–34	2.4	2.9	1.9	1.2	1.3
35–44	1.6	2.0	1.2	0.9	0.8

Age	All violence		Violence with injury	Violence without injury	
		Male			Female
45–54	1.4	1.5	1.4	0.7	0.8
55–64	1.2	1.5	0.8	0.6	0.6
65–74	0.7	1.0	0.3	0.3	0.3
75+	0.2	0.1	0.2	0.1	0.1

Source: ONS – Crime Survey for England and Wales (Office for National Statistics, 2020d)

8.3.4 A review of the prevalence of violence and disability, for the year ending March 2020 for England and Wales, is outlined in Table 8.4. The data shows that people with disabilities are more likely to be subject to violent crime compared to non-disabled people.

**Table 8.4 Prevalence of violence, by type of violence and disability – percentage of adults, victims once or more**

Classification of victim	All violence	Violence with injury	Violence without injury
Disabled	2.4	1.4	1.2
Not disabled	1.5	0.7	0.8

Source: ONS – Crime Survey for England and Wales (Office for National Statistics, 2020d)

8.3.5 A review of the prevalence of violence and sexual orientation, for the year ending March 2020 for England and Wales, is outlined in Table 8.5. The data shows that people who identify as LGB are significantly more likely to be the victim of a violent crime, compared to people who are heterosexual/straight.

**Table 8.5 Prevalence of violence, by type of violence and sexual orientation – percentage of adults, victims once or more**

Classification of victim	All violence	Violence with injury	Violence without injury
Heterosexual/ straight	1.7	0.9	0.9
Gay/lesbian	3.9	0.9	3.0
Bisexual	3.4	0.7	2.6
Other	2.2	0.0	2.2

Source: ONS – Crime Survey for England and Wales (Office for National Statistics, 2020d)

## 9 Environmental baseline

### 9.1 Introduction

- 9.1.1 This section contains an overview of relevant baseline information from the ES (Application Document 6.1) for specific topics where there is a direct link to the assessment of health effects.

### 9.2 Air quality

#### South of the River Thames

- 9.2.1 A total of nine Air Quality Management Areas (AQMAs) are located across the Dartford, Gravesham and Medway authority areas within 200m of the Affected Road Network. The study area for the air quality assessment to the south of the River Thames extends beyond these three local authorities, and also encompasses the local authority areas of Tonbridge and Malling Borough Council (three AQMAs), Sevenoaks District Council (five AQMAs), Southend Borough Council, Rochford District Council and Maidstone Borough Council (one AQMA in each respectively).

#### North of the River Thames

- 9.2.2 Within the three local authority areas of the London Borough of Havering, Thurrock and Brentwood, there are 14 AQMAs within 200m of the Affected Road Network. The Havering AQMA encompasses the entire borough. AQMAs within Brentwood comprise parts of Brook Street and the A12 (AQMA No.2) and parts of Warescot Road, Hurstwood Avenue, Ongar Road and the A12 (AQMA No. 4). The Thurrock AQMA consists of 15 separate areas; in addition, AQMA 26 is located along Purfleet Bypass.
- 9.2.3 The study area for the air quality assessment to the north of the River Thames extends beyond these three local authorities, and also encompasses the local authority areas of Southend Borough Council, St Albans District Council and Epping Forest District Council (one AQMA within each), the London Borough of Enfield (the AQMA for which is borough-wide), Hertsmere Borough Council (three AQMAs) and Broxbourne Borough Council (four AQMAs).

### 9.3 Noise

- 9.3.1 Within the study area for the noise assessment, sensitive receptors are classified as dwellings and Other Sensitive Receptors (OSRs); the latter are defined in the Design Manual for Roads and Bridges LA 111 Noise and Vibration (Highways England, 2020a) as including hospitals, schools and community facilities. Information relating to the location of these receptors within the noise study areas for construction and operation are found within the ES (Application Document 6.1).

#### South of the River Thames

- 9.3.2 ES Chapter 12: Noise and Vibration (Application Document 6.1) describes the characteristics of the noise environment for the area south of the River Thames as follows:

- a. South of the River Thames and A2 junction – there are a number of dwellings and OSRs within the noise study area between the south shore of the River Thames and the A2. These are primarily at the eastern extent of Gravesend, within the areas of Chalk, Singlewell, Riverview Park and Thong, in addition to several outlying dwellings. There are no identified Noise Important Areas (NIAs) as defined under the Environmental Noise (England) Regulations 2006 (as amended) in this section. The dominant source of noise here is attributable to road traffic noise from the A226 and the A2, with rail noise also being a contributing factor towards the north near Chalk.
- b. Along the A282 between Dartford Crossing and the M25 junction 2 – existing noise-sensitive dwellings and OSRs are located primarily within Dartford, Stone, Southfleet, Darenth and Greenhithe. There is one NIA within this section, located along the A206. Survey locations within this section were noted to be dominated by a climate of road traffic noise, primarily from the major sources of the A282 and M25, coupled with local roads including the A206.
- c. Along the A2 between the M25 junction 2 and the M2 – existing noise-sensitive dwellings and OSRs are primarily within the settlements of Gravesend, Higham, Cobham, Rochester, Shorne, Northfleet, Ebbsfleet Valley, Swanscombe, Bean, Dartford, Greenhithe, Southfleet and Longfield. In addition to these main residential areas, there are also numerous outlying, more-isolated dwellings. There are 12 NIAs, nine of which are located along the A2, with the remainder located along the A225, the A282 and the B262. Survey locations within this area were noted to be dominated by a climate of road traffic noise, primarily from the A2 and the A282/M25. At certain locations, noise was also present from the HS1 railway line.

## North of the River Thames

### 9.3.3

ES Chapter 12: Noise and Vibration (Application Document 6.1) describes the characteristics of the noise environment for the area north of the River Thames as follows:

- a. Between the north shore of the River Thames and the A13 – sensitive receptors including dwellings and OSRs are located in Tilbury, Linford, Chadwell St Mary and Grays. In addition to these main residential areas there are also numerous outlying, more-isolated dwellings. There are eight NIAs within this section (along the A1089, along the B188 and six locations along the A1013). The noise climate in this area is predominantly characterised by road traffic noise, with contributions from railway noise, general human activity and natural/agricultural noise sources depending on season.

- b. Between the A13 and the M25 at junction 30 – existing noise-sensitive dwellings and OSRs within the study area are predominantly located in Orsett, South Ockendon and North Ockendon. In addition to these main residential areas there are also numerous outlying, more-isolated dwellings. There are no designated NIAs identified within this section. Survey locations within this area were noted to be dominated by a climate of road traffic noise, primarily from the major sources of the A13 and M25, coupled with local roads. However, certain measurement locations around the Mardyke area were notable for the perceived lack of dominant background noise sources.
- c. Along the A13 between the Project and M25 junction 30 – existing noise-sensitive dwellings and OSRs within the study area are predominantly located in Chafford Hundred, North Stifford and Stifford Clays. There are four NIAs along the A13 in this section. Survey locations within this area were noted to be dominated by a climate of road traffic noise, primarily from the A13 and M25, coupled with the A1012, A1306 and A126.
- d. Along the M25 between junction 28 and the Dartford Crossing – existing noise-sensitive dwellings and OSRs located within the study area are within the towns of Upminster, Great Warley, Hornchurch, Little Warley, Aveley, South Ockendon, West Thurrock, Purfleet, Thurrock and Grays. There are three NIAs within this section (two located along the M25 and a third along the B1421). Survey locations within this area were noted to be dominated by a climate of road traffic noise, primarily from the M25 but coupled with noise from the busy A127.

## 9.4 Population and human health

- 9.4.1 ES Chapter 13: Population and Human Health (Application Document 6.1) covers baseline information relating to private property and housing; community land and assets; development land and businesses; agricultural land holdings; and walkers, cyclists and horse riders (WCH). The chapter also provides a summary of the human health baseline.
- 9.4.2 Community land describes land used both formally and informally for sports and recreation purposes, including country parks, areas of community woodland, open green space, open access land and common land. The definition of community land provided in Design Manual for Roads and Bridges LA 112 Population and Human Health (Highways England, 2020b) is wider than the definition of land caught by sections 131 and 132 of the Planning Act 2008 and includes, for example, private sports facilities. Special Category Land identified by sections 131 and 132 of the Planning Act 2008 is identified in the Statement of Reasons (Application Document 4.1), with policy compliance considered within the Planning Statement (Application Document 7.2).
- 9.4.3 Community assets refer to a wide range of facilities used for community purposes, including education and healthcare facilities, community centres, places of worship, libraries, residential care homes and post offices. Community

land and assets within a study area extending 500m from the Order Limits are identified.

9.4.4 The location and types of community, recreational, education and healthcare facilities and areas of green/open space within 500m of the Order Limits are identified on ES Figure 13.1 (Application Document 6.2).

9.4.5 Baseline data is provided in relation to WCH including the type, location and extent of WCH provision, for example Public Rights of Way, cycle routes and bridleways, together with routes regularly used by people to access services and facilities. Information is provided in relation to minor roads and Public Rights of Way crossed or potentially affected by activities associated with the construction or operation of the Project, together with the services and facilities potentially accessed.

## 9.5 Landscape

9.5.1 Visual amenity receptors identified as being of high sensitivity to the south of the River Thames include Shorne Woods Country Park, Ashenbank Wood open access land, Cobham Park, Jeskyns Community Woodland, the Higham and Shorne marshes, Southern Valley Golf Course and the associated local footpath network for each of these areas.

9.5.2 Communities south of the River Thames highlighted as being of high sensitivity from a visual perspective include the Shorne and Higham areas, Thong village and Gravesend urban edge (notably the Singlewell, Riverview Park and Chalk areas). Specific footpath and cycle routes highlighted include the Timeball and Telegraph Trail Long Distance Path, the Saxon Shore Way and National Cycle Routes 1 and 117.

9.5.3 Visual amenity receptors identified as being of high sensitivity to the north of the River Thames include Coalhouse Fort and Open Space, Tilbury Fort, South Ockendon Hall, Orsett Fen, Thames Chase Community Forest Centre, Top Meadow Golf Club and Orsett Golf Club.

9.5.4 Communities north of the River Thames highlighted as being of high sensitivity from a visual perspective include Tilbury urban edge, Chadwell St Mary urban edge, East Tilbury urban edge, Linford settlement edge, and West Tilbury. Specific footpath and cycle routes highlighted include National Cycle Route 13 and various Public Rights of Way found close to the route.

## 9.6 Light pollution

9.6.1 Local Landscape Character Areas (LLCAs) have been identified to inform the landscape and visual assessment undertaken as part of the ES (ES Chapter 7: Landscape and Visual (Application Document 6.1)). Environmental Lighting Zones have been identified within each LLCA, using professional judgement and based on site surveys undertaken as part of the baseline analysis. Environmental Lighting Zones specify whether an area is urban, suburban, rural, natural or protected and accord a lighting environment category to each. For example, a rural Environmental Lighting Zone may equate to 'low district brightness' (such as a village or relatively dark outer suburban location), whereas an urban Environmental Lighting Zone may equate to 'high district brightness' (such as a town or city centre with high levels of night-time activity).

9.6.2 Environmental Lighting Zones defined by reference to LLCAs (together with an estimated percentage split for the area of each LLCA within each zone) are set out in Annex B of Appendix 7.5 of the ES (Application Document 6.3). A summary is provided in Table 9.1.

**Table 9.1 Summary of environmental lighting zones by LLCA**

<b>LLCA</b>	<b>Environmental lighting zone baseline summary</b>
West Kent Downs (sub area Cobham)	Predominantly Zone E1 (intrinsically dark).
West Kent Downs (sub area Shore)	Predominantly Zone E1 (intrinsically dark).
Higham Arable Farmlands (sub area Gadshill)	Predominantly Zone E2 (intrinsically dark).
Shorne Wooded Slopes	Predominantly Zones E1 (intrinsically dark) and E2 (low district brightness).
Higham Arable Farmland (Thong)	Predominantly Zone E2 (low district brightness).
Istead Arable Farmlands	Predominantly Zone E2 (low district brightness).
Gravesend Southern Fringe	Predominantly Zone E2 (low district brightness).
Higham Arable Farmlands (sub area Chalk)	Predominantly Zone E2 (low district brightness).
Shorne and Higham Marshes	Classified as Zone E2 (low district brightness).
Mucking Marshes	Predominantly Zone E2 (low district brightness).
Tilbury Marshes	Predominantly Zone E2 (low district brightness).
Chadwell Escarpment Urban Fringe	Predominantly Zone E2 (low district brightness).
Dartford and Gravesend Fringe	Environmental light zones E2 and E3 (low and medium district brightness respectively).
West Tilbury Urban Fringe	Predominantly Zone E2 (low district brightness).
Linford/Buckingham Hill Urban Fringe	Predominantly Zone E2 (low district brightness).
White Croft/Orsett Heath Urban Fringe	Predominantly Zone E2 (low district brightness).
Orsett Lowland Farmland	Predominantly Zone E2 (low district brightness).
Thurrock Reclaimed Fen (sub area Mardyke)	Predominantly Zone E2 (low district brightness), with areas of intrinsic darkness in the core low-lying area.
Thurrock Reclaimed Fen (sub area Thames Chase)	Predominantly Zone E2 (low district brightness).
Belhus Lowland Quarry Farmland	Typically Zone E2 (low district brightness), with areas of Zone E3 (medium district brightness) at the residential urban areas.
Brentwood Wooded Hills	Predominantly Zone E2 (low district brightness).



## 9.7 Pollution and floodrisk

- 9.7.1 ES Chapter 10: Geology and Soils (Application Document 6.1) provides baseline information relating to contamination sources of various risk categories to the south and north of the River Thames.
- 9.7.2 Phase 2 ground investigation works targeted the main route alignment and areas where proposed intrusive works are planned as part of the construction phase. Soil samples, soil leachates and groundwater samples were analysed for a suite of contaminants. The results showed that widespread contamination is not present across the Project. Where exceedances are present, they are localised and generally reflect Made Ground. The results of the Generic Quantitative Risk Assessment (GQRA) have been assessed in terms of identified credible sources of contamination to refine the Conceptual Site Model (CSM) for the Project. This resulted in the identification of six high risk and 33 medium risk sites, with the remaining credible sources being rated as low risk.
- 9.7.3 Ten medium-risk credible contamination sources were identified to the south of the River Thames, with the remaining 23 medium-risk and six high-risk credible contamination sources identified to the north of the River Thames. Five of the six high-risk sources that were identified are landfill sites, including Goshems Farm, East Tilbury (two sources), Low Street and Low Street Brickworks. High and medium risk sites are presented on ES Figure 10.5: Refined Conceptual Site Model: Credible Contamination Sources (Application Document 6.2).
- 9.7.1 ES Chapter 10: Geology and Soils (Application Document 6.1) notes that the majority of the route is classified as the lowest risk for radon (*'less than 1% of homes are estimated to be at or above the Action Level'*). Some of the route is classified as an intermediate probability area (*'1 to 3% of homes are estimated to be at or above the Action Level'*). The risk from radon gas is considered to be low.
- 9.7.2 Five potentially significant sources of Unexploded Ordnance (UXO) hazard have been identified along the Project route and these areas have been assigned a moderate UXO hazard level. Further information is presented in Appendix 10.10: Unexploded Ordnance (UXO) Desk Study and Risk Assessment (Application Document 6.3).
- 9.7.3 ES Chapter 14: Road Drainage and the Water Environment (Application Document 6.1) sets out baseline data in relation to areas including existing surface water, groundwater quality and flood-risk. Fluvial and tidal flood risk zones and flood defence assets are illustrated in ES Appendix 14.6: Flood Risk Assessment (Application Document 6.3).
- 9.7.4 Future baseline is also of particular relevance in relation to flood-risk. The UK Government forecasts that it is likely that Flood Zones 2 and 3 would increase in area coverage in the future baseline scenario, therefore introducing flood risk to areas previously unaffected. However, this may be counteracted by implementation of some of the flood risk management policies set out in the Thames Estuary 2100 Plan (Environment Agency, 2012), including, for example, a new Thames barrage.

## 10 Future baseline

- 10.1.1 The future baseline has been identified for population, housing and employment using sources including regional and borough level population forecasts, and housing and employment growth projections.
- 10.1.2 ONS data (ONS, 2019b) sets out projected population increases between 2018 and 2043, as shown in Table 10.1.

**Table 10.1 Population projections**

Geographic area	2018	2043	% growth (-/+)
<b>England</b>	<b>55,977,178</b>	<b>61,744,098</b>	<b>+10.30%</b>
<b>Greater London</b>	<b>8,908,081</b>	<b>9,814,027</b>	<b>+10.17%</b>
<b>Kent</b>	<b>1,568,623</b>	<b>1,812,170</b>	<b>+15.53%</b>
Medway	277,855	292,918	+5.42%
Gravesham	106,385	111,743	+5.05%
Dartford	109,709	141,502	+28.98%
Tonbridge and Malling	130,508	154,347	+18.27%
<b>Essex</b>	<b>1,477,764</b>	<b>1,667,768</b>	<b>+12.86%</b>
Thurrock	172,525	205,470	+19.10%
Havering	257,810	295,195	+14.50%
Brentwood	76,550	78,573	+2.64%

Source: ONS Population Projections (2020c)

- 10.1.3 Analysis shows that the number of people aged 65 and over would be expected to increase. In 2018, the proportion of residents aged 65 and over across the combined local authority areas of Gravesham, Medway, Dartford, Tonbridge and Malling, Thurrock, Havering and Brentwood made up 16.7% of the total population; this is forecast to rise to 20.3% by 2043. This change is reflective of wider society and ageing populations – for England as a whole, the change is predicted to be from 18.2% to 23.9% between 2018 and 2043.
- 10.1.4 ONS data outlined in Table 10.2 shows household projections for England, by region and local authority, between mid-2018 to mid-2043.

**Table 10.2 Household projections by area**

Local authority	2018	2043	% change (-/+)
<b>England</b>	<b>23,204,246</b>	<b>26,953,266</b>	<b>+16.16%</b>
<b>Kent</b>	<b>651,716</b>	<b>800,723</b>	<b>+22.86%</b>
Medway	111,737	122,493	+9.63%
Gravesham	42,255	46,301	+9.58%
Dartford	44,470	59,494	+33.78%
Tonbridge and Malling	52,178	65,306	+25.16%

Local authority	2018	2043	% change (-/+)
<b>Essex</b>	<b>614,034</b>	<b>722,344</b>	<b>+17.64%</b>
Thurrock	66,148	82,484	+24.70%
Havering	103,482	123,456	+19.30%
Brentwood	31,509	33,340	+5.81%

Source: ONS Population Projections (2020c)

- 10.1.5 The South Essex 2050 Ambition (which covers an area comprising the local authority areas of Brentwood, Basildon, Castle Point, Rochford, Southend and Thurrock) sets out how growth and development will be distributed across the sub-region. The Association of South Essex Local Authorities was formed in January 2018, with the South Essex 2050 Ambition being taken forward through a Joint Strategic Plan called the South Essex Plan. The current estimated need for housing across South Essex is 90,000 dwellings over the next 20 years, although this could be increased if the right conditions to support growth are achieved.
- 10.1.6 The Issues and Options Consultation prepared by Thurrock Council in 2018 as part of the emerging Local Plan (Thurrock Council, 2018) refers to potential calculations of housing need in the order of 22,287 new homes between 2018 and 2037 (using Government proposed changes to standard calculations).
- 10.1.7 Other changes to the future baseline will arise from the growth in population described in the table. These will include likely growth in the number of vehicle trips, public transport network users and the number of trips being made by other modes of transport, such as walking and cycling. With increasing demand for travel, it is likely that levels of congestion on the road network will increase (further reducing journey time reliability). There will also be a need for more social infrastructure to accommodate the larger populations, for example education, healthcare and leisure facilities.
- 10.1.8 Economic forecasts are available using information from the East of England Forecasting Model (Cambridge Econometrics, 2019) and the London Datastore (2020). The data has been provided for the wider South East Local Enterprise Partnership (SELEP) region, presented in Table 10.3, which shows that, between 2019 and 2045, the economy of the SELEP area will be subject to significant growth and change. For example, the forecast shows that there is projected to be a 17.9% increase in employment across the region and a 14.7% increase in total employment jobs available.

**Table 10.3 SELEP forecasting model: 2017 baseline results**

Employment categories	2019	2045	% change
Employees in employment (000s)	1,643.3	1,938.1	17.9%
Self-employed (000s)	321.7	318.6	-1.0%
Total employment: jobs (000s)	1,971.4	2,262.0	14.7%
Total workplace employed people (000s)	1,859.2	2,109.4	13.5%

Source: Cambridge Econometrics (2019)

10.1.9 As Havering is not part of the SELEP region, data is presented separately in Table 10.4. The table sets out total borough employment projections for Havering taken from the London Datastore (2020), which show that, between 2016 and 2050, employment is forecast to grow by 12% (SQW, 2018).

**Table 10.4 Havering employment forecasts**

	<b>2016</b>	<b>2050</b>	<b>% change</b>
Havering	92,000	103,000	12%

*Source: Economic Evidence Base: Havering (SQW and BBP Regeneration, 2018)*

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