

M2 Junction 5 Improvements Environmental Statement Volume 2 - Appendix I Population and Human Health June 2019

Status: A1 APPROVED - PUBLISHED

Document Ref: HE551521-ATK-EPC-RP-LM-000004



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Document Title	Volume 2 - Appendix I Population and Human Health
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Distribution	
Document Status	A1

Revision History

Version	Date	Description	Originator	Checker	Reviewer	Authoriser
C02	21/05/19	Final for Publication	SH	AR	LS	HC
C01	22/02/19	Draft for Review	SH	AR	RB	RB

Reviewer List

Name	Role
Environment Support Centre	SES Environment Group

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Appendix I (Population and Human Health)

Appendix I. Population and Human Health

I.1 Baseline conditions

I.1.1 The information below sets out an overview of the existing baseline conditions for physical, mental and social wellbeing of relevance for the proposed Scheme. It presents a high-level review of existing conditions, using available secondary data, including the ‘best fit’ of Middle Super Output Areas (MSOAs) that cover the extent of the proposed Scheme and NHS clinical areas, as follows:

- ONS;
- Census 2011;
- BHF 2018;
- DfT;
- NHS Digital Mental Health Services Data Set monthly report; and
- Public Health England.

I.1.2 The baseline identifies particular priority groups (e.g. families with children and adolescents [children and adolescents], people who are physically or mentally disadvantaged [elderly people, people with physical disabilities, people with other health problems], people of certain ethnicity and/or gender, and people who are materially disadvantaged [low income, no car, unemployment]) because changes to overall health determinants can have greater or lesser effects on population sub-groups depending on, for example, their age, health, status, income and social support. Sensitive groups are more likely to be susceptible to the impacts of the proposed Scheme than other social groups.

Demographic Profile

Table I.1: Population of the Core Study Area (LSOAs) (2011)

MSOAs	Population
Maidstone 011D	2,445
Swale 008A	1,749
Swale 008B	1,545
Swale 009A	2,432
Swale 013C	1,497
Total	9,668

(Source: ONS Census 2011)

I.1.3 Table I.1 above shows that the population for the Core Study area, used to define the characteristics and sensitivity of communities based on the likely effects on physical, mental and social wellbeing, is 9,668. 51.4% of the population is female.

Table I.2: Population and Population Change (2012, 2016, 2038 estimate)

Area	Population 2016	% change 2012-2016	2038 estimates	Growth to 2038
Swale	145,042	+6.3%	175,423	21%
Maidstone	166,360	+6.4%	203,103	23%
Medway	278,500	+4.6%	337,413	22%
Tonbridge & Malling	127,293	+5.1%	151,622	19%
Kent	1,540,400	+5%	1,833,444	19%
England	55,268,100	+4.1%	62,991,970	14%

(Source: Revised 2012-2016 mid-year population estimates released 22 March 2018)

- I.1.4 Table I.2 above shows that the population for Kent is just over 1.54 million people, making it the largest non-metropolitan local authority area in England. The total population (2016) for the local authority areas of Maidstone and Swale where M2 junction 5 is situated accounts for around 20% of the total population for Kent. The population for Swale, Maidstone, Medway, and Tonbridge and Malling accounts for almost half (47%) of the total population for Kent.

Table I.3: Population and % Sensitive Groups (2011)

Geography	Population	% under 16	% over 65	Year
Core Study Area	9,668	17.3%	20.6%	2011
Swale	135,835	20%	16.7%	2011
Maidstone	155,143	19.1%	17.1%	2011
Medway	263,925	20.2%	14%	2011
Tonbridge and Malling	120,805	20.7%	16.9%	2011
South East LEP	8,634,750	19%	17.2%	2011
England	53,012,456	18.2%	16.3%	2011

(Source: ONS Census 2011)

- I.1.5 The population profile in Table I.3 above shows the % of the population in the Core Study Area aged under 16 (17.3%) to be lower than the national average (18.2%) and lower than figures for Maidstone (19.1%) and Swale (20%).
- I.1.6 The proportion of the population aged 65 and over in the Core Study Area (20.6%) is significantly greater than the England average (16.3%) and greater than that for Swale (16.7%) and Maidstone (17.1%).

General Health

Table I.4: General Health of Residents (2011)

Geography	Very good health	Good health	Fair health	Bad health	Very bad health
Core Study Area	47.2%	34.8%	13.4%	3.6%	1.1%
Swale	44.3%	35.9%	14.1%	4.4%	1.3%
Maidstone	48.1%	35.1%	12.4%	3.4%	1%
Medway	45.7%	36.2%	13%	4%	1.1%
Tonbridge and Malling	49.9%	34.3%	11.8%	3.1%	0.9%
South East LEP	49%	34.6%	12%	3.4%	1%
England	47.2%	34.2%	13.1%	4.2%	1.2%

(Source: ONS Census 2011)

I.1.7 As indicated in Table I.4 above, and taken as a whole, the general health of residents in the Core Study Area (82% with good or very good health; 4.7% with bad or very bad health) is generally better than the England (81.4% and 5.4% respectively) and Swale averages (80.2% and 5.7%), and slightly worse than Maidstone (83.2% and 4.4%).

I.1.8 General health in Swale is worse than the England average and the other local authority areas.

Table I.5: Long-term Health Problem or Disability of Residents (2011)

Geography	Day-to-day activities limited a lot	Day-to-day activities limited a little	Day-to-day activities not limited
Core Study Area	8.0%	9.0%	83.0%
Swale	8.6%	10%	81.4%
Maidstone	6.9%	8.9%	84.2%
Medway	7.5%	8.9%	83.6%
Tonbridge and Malling	6.3%	8.6%	85.1%
South East LEP	6.9%	8.8%	84.3%
England	8.3%	9.3%	82.4%

(Source: ONS Census 2011)

I.1.9 Table I.5 above shows that limiting long term illness or disability is generally less prevalent in the Core Study Area (17%) compared to the England average (17.6%) and Swale (18.6%), and more prevalent than Maidstone (15.8%).

I.1.10 Limiting long term illness or disability is more prevalent in Swale than the other local authorities and regional average.

Table I.6: Cardiovascular Disease (CVD) death rates per 100,000 - all ages 2014/16

Geography	Men	Women	Total
Swale	286.4	203.2	243.6
Maidstone	296.6	187.1	236.1
Medway	315.8	201.0	252.7
Tonbridge and Malling	273.0	162.7	207.5
South East LEP	286.3	192.2	234.3
England	311.0	205.4	252.7

(Source BHF 2018 (standardised))

- I.1.11 Air pollution is associated with several adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most sensitive in society: children and elderly people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas.
- I.1.12 Table I.6 above highlights that mortality rates overall from cardiovascular disease for Maidstone (236) and Swale (244) is less than the average for England (253). One of the key priorities for the Kent Joint Health and Wellbeing Strategy is a reduction in the under-75 mortality rate from cardiovascular disease (rate per 100,000). Coronary heart disease (CHD) and chronic obstructive pulmonary disease (COPD) are reported as the top two causes of preventable deaths in the Swale area.
- I.1.13 Swale Borough Council currently has five AQMAs. These are within 200m of the defined Affected Road Network for the scheme. Maidstone Borough Council maintains a single AQMA. The Affected Road Network extends into the Medway Council administrative area. Medway Council has three AQMAs. Tonbridge and Malling Borough Council has seven AQMAs.

Table I.7: Killed or seriously injured on roads

Geography	Local Count	Local Value
Swale	181	42.4
Maidstone	242	49.0
Medway	224	27.0
Tonbridge and Malling	180	47.7
England	-	39.7

(Source: Public Health England – Local Authority Profiles 2018)

- I.1.14 The number killed or seriously injured on the roads in Swale (42.4 per 100,000 population), Maidstone (49.0 per 100,000 population) and Tonbridge and Malling (47.7 per 100,000) is more than the England average and significantly greater than Medway (27.0 per 100,000).

Social Wellbeing

Table I.8: Index of Multiple Deprivation (2015)

Geography	IMD - Rank of average score (out of 326)	IMD - Proportion of LSOAs in most deprived 10% nationally
Swale	77	16.47%
Maidstone	198	2.1%
Medway	81* (* out of 152 South East Counties and Unitary Authorities)	N/A
Tonbridge and Malling	274	0%
Kent	100* (* out of 152 South East Counties and Unitary Authorities)	5.65%

(Source: ONS 2015)

- I.1.15 By showing mortality rates charted to deprivation, Kent Health Inequalities Action Plan demonstrates that the overall mortality gap between the richest and poorest in Kent is increasing over time and there is a highly significant correlation between relative deprivation and life expectancy across the county for many of the district council areas.
- I.1.16 As shown in Table I.8 above, the character of the districts within the vicinity of the Scheme is variable. Swale witnesses relatively high levels of deprivation, ranked 77th out of 326 local authorities in the 2015 Index of Multiple Deprivation (where 1 is the most deprived and 326 the least deprived) (ONS 2015). Of the 21 neighbourhoods in Kent that fall within the 10% most deprived in England, 7 of these are within Swale (Sheerness East, Murston, Leysdown and Warden, Sheerness West, Sheppey Central, Queensborough and Halfway, and Davington Priory) with high concentrations of deprivation, particularly in the areas of health, income, benefits, employment and skills. Around 24% of children in Swale live in child poverty.
- I.1.17 Deprivation generally, has increased in Swale and Maidstone since the publication of the last IMD in 2010.

Table I.9: Proportion of Resident Population aged 16-64 claiming Job Seekers Allowance (August 2018)

Geography	August 2018
Core Study Area	0.35%
Swale	0.8%
Maidstone	0.9%
Medway	1.1%
Tonbridge and Malling	0.7%
South East	0.6%
England	0.9%

(Source: ONS census 2011)

I.1.18 Table I.9 above shows the proportion of the resident population aged 16-64 claiming Job Seekers Allowance in the Core Study Area is below the England average (0.9%) and figures for Swale (0.8%) and Maidstone (0.9%).

Table I.10: Proportion of Resident Population aged 16-64 claiming Benefits (May 2018)

Geography	May 2018
Core Study Area	1.58%
Swale	2.8%
Maidstone	1.2%
Medway	2.0%
Tonbridge and Malling	0.9%
South East	1.3%
England	2.1%

(Source: ONS NOMIS 2018)

I.1.19 As shown in Table I.10 above, the Core Study Area has a lower proportion of the resident population aged 16-64 claiming benefits (1.58%) than the England average (2.1%) and Swale (2.8%). Maidstone has a significantly lower proportion of claimants (1.2%) compared to the England average and Swale.

Table I.11: Mental Health admissions to hospital rate per 100,000 population

Geography	Rate
England	87.5
South East (Kent, Surrey and Sussex)	85.6
NHS Medway CCG	83.8
NHS Swale CCG	67.9
NHS West Kent CCG	64.4

(Source: NHS Digital Mental Health Services Data Set monthly reports www.fingertips.phe.org.uk)

I.1.20 For the purposes of mental health assessment, the Scheme predominantly encompasses the NHS Clinical Commissioning Group (CCG) areas for Swale and Medway covering a patient population of over 400,000, and parts of West Kent, covering a patient population of around 480,000.

I.1.21 As provided in Table I.11 above, the mental health admission rate for Medway (83.8 per 100,000) is similar to the England average (87.5) and the South East (Kent, Surrey and Sussex). Mental health admissions for Swale CCG (67.9) and West Kent (64.4) CCG are both lower than the England average.

I.1.22 Amongst the main causes of death for people with a mental health condition is cardiovascular disease, cancer and pulmonary disease. Those affected by these conditions die 20 years earlier than a person with no mental illness on average¹.

¹ Kent Health and Wellbeing Strategy

Public Health Profile

Table I.12: Public Health Profile for Swale and Maidstone local authority areas

Domain	Indicator	Period	Swale		Maidstone		England		
			Local Count	Local Value	Local Count	Local Value	Eng Value	Eng worst	Eng best
Our Communities	Deprivation score (IMD 2015)	2015	n/a	25.7	n/a	15.6	21.8	42.0	5.0
	Children in low income families (under 16s)	2014	6,440	23.6	4,455	15.2	20.1	39.2	6.6
	Statutory homelessness	2015/16	121	2.1		2.1	0.9		
	GCSEs achieved	2015/16	863	55.2	1,043	61.5	57.8	44.8	78.7
	Violent crime (violent offences)	2015/16	2,755	19.6	2,951	18.2	17.2	36.7	4.5
	Long term unemployment	2016	384	4.4	193	1.9	3.7	13.8	0.4
Children's and young people's health	Smoking status at time of delivery	2015/16	309	19.0	184	9.7	10.6	26.0	1.8
	Breastfeeding initiation	2014/15	998	63.8	1,433	75.8	74.3	47.2	92.9
	Obese children (Year 6)	2015/16	312	19.6	294	18.6	19.8	28.5	9.4
	Admission episodes for alcohol-specific conditions (under 18s)	2013/14-15/16	32	33.5	26	24.7	37.4	121.3	10.5
	Under 18 conceptions	2015	79	29.5	57	20.4	20.8	43.8	5.4
Adult health and lifestyle	Smoking prevalence in adults	2016	n/a	20.2	n/a	17.4	15.5	25.7	4.9
	Percentage of physically active adults	2015	n/a	58.5	n/a	60.7	57.0	44.8	69.8
	Excess weight in adults	2013-15	n/a	69.0	n/a	66.0	64.8	76.2	46.5
Disease and poor health	Cancer diagnosed at early stage	2015	273	48.7	374	55.0	52.4	39.0	63.1
	Hospital stays for self-harm	2015/16	314	227.9	419	256.4	196.5	635.3	55.7
	Hospital stays for alcohol-related harm	2015/16	765	555.6	815	508.0	647	1,163	374
	Recorded diabetes	2014/15	7,806	7.1	7,667	5.9	6.4	9.2	3.3
	Incidence of TB	2013-15	15	3.6	38	7.8	12.0	85.6	0.0
	New sexually transmitted infections (STI)	2016	489	549.3	679	654.2	795	3,288	223
	Hip fractures in people aged 65 and over	2015/16	123	497.1	188	624.2	589	820	312

Domain	Indicator	Period	Swale		Maidstone		England		
			Local Count	Local Value	Local Count	Local Value	Eng Value	Eng worst	Eng best
Life expectancy and cause of death	Life expectancy at birth (Male)	2013-15	n/a	78.3	n/a	80.2	79.5	74.3	83.4
	Life expectancy at birth (Female)	2013-15	n/a	82.8	n/a	83.5	83.1	79.4	86.7
	Infant Mortality	2013-15	15	2.9	13	2.2	3.9	8.2	0.8
	Killed and seriously injured on roads	2013-15	160	37.9	187	38.5	38.5	103.7	10.4
	Suicide rates	2013-15	52	14.4	42	9.9	10.1	17.4	5.6
	Smoking related deaths	2013-15	n/a	n/a	n/a	n/a	283.5		
	Under 75 mortality rate: cardiovascular	2013-15	280	73.4	263	63.0	74.6	137.6	43.1
	Under 75 mortality rate: cancer	2013-15	550	143.7	565	133.7	138.8	194.8	98.6
	Excess winter deaths	2012-15	173	14.5	310	23.4	19.6	36.0	6.9

(Source: Public Health England - Local Authority Profiles 2017)

* Note: Key to table - red indicates worse than the national average; green indicates better than the national average, with coloured gradings.

Local Health Determinants

Public Health

- I.1.23 Most people in the Core Study Area consider their health to be good or very good and are free from long-term health problems or disabilities - at 82%, which is better than the England average (81.4%). The proportion of people in Swale with good or very good health (80.2%) is lower than the England average and significantly lower than Maidstone (83.2%). Limiting long-term illness or disability is less prevalent in the Core Study Area (17%) and Maidstone (15.8%) compared to the England average (17.6%) and Swale (18.6%).
- I.1.24 Public Health England figures highlight that Swale performs worse than the England average on all community wellbeing indicators, including deprivation, child poverty, statutory homelessness, violent crime and long-term unemployment. Maidstone generally performs better than the England average on community wellbeing. The exceptions are statutory homelessness which is more than double the England average and violent crime.
- I.1.25 Maidstone performs better than the England average on all children and young people's health indicators. Swale has less under 18s admissions for alcohol specific conditions and marginally less obese children (year 6) than the England average, however other indicators perform worse than the England average, including comparatively high under-18 conception rates.
- I.1.26 For adult health and lifestyle indicators, Swale and Maidstone have a greater proportion of physically active adults than the England average, however excess weight and smoking prevalence in adults are greater in both areas than the England average.
- I.1.27 Swale performs significantly better than the England average on disease and poor health indicators such as hospital stays for alcohol related harm, incidence of TB and sexually transmitted disease, and hip fractures in people aged 65 and over. However, recorded diabetes and hospital stays for self-harm are both greater than the England average. Early stage cancer diagnosis is lower in Swale than the England average.
- I.1.28 Maidstone generally performs well on disease and poor health, including hospital stays for alcohol related harm which is significantly below the England average. Early stage cancer diagnosis, recorded diabetes, incidence of TB and sexually transmitted disease and all better than the England average. However, hospital stays for self-harm and hip fractures in people aged 65 and over are both worse than the England average.
- I.1.29 Maidstone performs very well on life expectancy and cause of death indicators, including life expectancy for males and females, infant mortality, killed or seriously injured on the roads, suicide rates, and under 75 mortality rates for cardiovascular disease and cancer. Winter deaths in Maidstone are greater than the England average.
- I.1.30 Swale performs variably, with infant mortality, killed or seriously injured on roads, under 75 mortality rates for cardiovascular disease and cancer, and winter deaths all better than the England average. However, coronary heart disease (CHD) and chronic obstructive pulmonary disease (COPD) are reported as the top two causes of preventable deaths in the Swale area. Life expectancy rates for males and

females, are less than the England average. Suicide rates in Swale are around 45% higher than the England average.

Mental Health and Social Wellbeing

- I.1.31 Major risk factors for mental health problems are poverty, poor education, unemployment, social isolation and major life events. Socially excluded and deprived people are at a higher risk of developing mental health problems. Amongst the main causes of death for people with a mental health condition are cardiovascular disease, cancer and pulmonary disease. Those affected by these conditions die 20 years earlier in Kent than a person with no mental illness on average².
- I.1.32 The mental health admission rate for Medway Clinical Commissioning Group (CCG) is similar to the average for England and the South East (Kent, Surrey and Sussex). Mental health admissions for Swale CCG and West Kent CCG are lower than the England average. Notwithstanding this, Swale CCG has the highest burden of health need for people with mental illness in Kent and a higher than England average prevalence of depression. One of the priorities in Swale and Maidstone is enhancing the quality of care around mental health. Swale also aims to reduce the prevalence of alcohol and drug misuse.
- I.1.33 Swale and Maidstone suffer a higher level of violent crime than the England average, with 19.6 and 18.2 offences respectively per 1,000 residents compared to 17.2 across England (2015-16).
- I.1.34 Statutory homelessness in Swale and Maidstone (2.1 crude rate per 1,000 households) (2015/16) is more than double the national average (0.9 per 1,000 households). Smoking prevalence and excess weight in adults is also greater in Swale and Maidstone than the England average.

Inequalities

- I.1.35 Inequalities in health is primarily a socio-economic relationship. The poorer people are, the greater the likelihood of early onset disability and chronic disease and shorter life span. In contrast, those who are of high status have expectations of a much greater disability free life span and of a good old age. People with low socio-economic status are at greater risk of behaviours causing ill health.
- I.1.36 Swale exhibits significant health inequalities, reflecting the economic divergences that exist between the most disadvantaged wards (on the Isle of Sheppey and in Sittingbourne) and the more affluent parts of the Borough. Swale is the second most deprived district within Kent and is ranked 77 out of the 326 districts in England. 16% of the Lower Super Output Areas (LSOAs) in Swale are within the 10% most deprived in England. Life expectancy is 8.6 years lower for men and 4.2 years lower for women in the most deprived areas of Swale than in the least deprived areas.
- I.1.37 Levels of health and wellbeing in Maidstone are generally good, being largely above national and regional averages. This position, however, hides some pockets of deprivation and ill health. Maidstone is the fourth least deprived district within Kent and is ranked 198 out of the 326 districts in England. 2% of LSOAs are within the 10% most deprived in England. Life expectancy is 6.4 years lower for men and

² Kent Health and Wellbeing Strategy

4.0 years lower for women in the most deprived areas of Maidstone than in the least deprived areas.

Wider Health Determinants

Socio-Demographic Profile

- I.1.38 People who are materially disadvantaged (e.g. low socio-economic status) are at greater risk of behaviours causing ill health. They will have higher smoking rates, a poorer diet; have less opportunity to take part in social activities and poorer mental health.
- I.1.39 The population of the core study area in the 2011 Census is 9,668. The core area has a relatively ageing population, which will have a range of implications. An ageing population is associated with higher incidence of physical and mental illness, the latter ranging from diseases such as stroke, diabetes and dementia, to the effects of social isolation.
- I.1.40 Swale's population numbered 145,042 in 2016 and is forecast to rise by 21% to 2038. Swale witnesses relatively high levels of deprivation, ranked 77th out of 326 local authorities. 16.5% of Lower Super Output Areas in Swale are within the 10% most deprived nationally. This high level of deprivation and social and economic polarisation is likely to exert a detrimental influence on the population's physical, mental and social-wellbeing. The proportion of the resident population unemployed and proportion aged 16-64 claiming Benefits is greater than the England average. The population of Swale is predominantly white and 3.4% of the population is from a BME group. Educational attainment to at least Level 4 or higher in Swale (22.6%) is well below the England average.
- I.1.41 Of all the local authority districts in Kent, Maidstone has the largest population with 166,360 people. This is forecast to rise by 23% to 2038. Maidstone witnesses moderate levels of deprivation, ranked 198th out of 326 local authorities, however there are pockets of deprivation. 2.1% of Lower Super Output Areas in Maidstone are within the 10% most deprived nationally. The proportion of the resident population unemployed and proportion aged 16-64 claiming benefits is less than the England average. 5.9% of the population of Maidstone is from a BME group. Educational attainment to at least Level 4 or higher in Maidstone (34.5%) is below the England average.

Sensitive Groups

- I.1.42 The baseline identifies the following priority/sensitive groups. Sensitive groups are more likely to be susceptible to the impacts of the proposed Scheme than other social groups.

Families with children and adolescents

- I.1.43 There are over 1,670 children aged under 16 in the core study area.
- I.1.44 Young people are at risk of a number of wider determinants of health that are associated with poor health outcomes either while young or later in life, such as teenage pregnancy, unemployment, insecure housing, poor quality housing, lone

parenthood, mental health issues, binge drinking, chlamydia and other sexually transmitted infections, poor diet, and bullying and harassment.

- I.1.45 There are 27,167 children aged under 16 in Swale. More than a quarter (26.87%) of the children living in low income families in Kent, live in two districts - Thanet and Swale. Almost 6,500 children (20.3%) in Swale live in low income families. Swale has a high proportion of children living with lone parents or in low income families living in larger families, those with four or more children.
- I.1.46 In Swale, in Year 6, 19.6% (312) of children are classified as obese. The rate of alcohol-specific hospital stays among those under 18 is 34. This represents 11 stays per year. Levels of teenage pregnancy, GCSE attainment, breastfeeding initiation and smoking at time of delivery are worse than the England average.
- I.1.47 There are 29,632 children aged under 16 in Maidstone. 4,460 children (13%) live in low income families. Maidstone district has a highest proportion of children in low income families living in families with one child in the county (24.6%). This is higher than the average for Kent (21.3%).
- I.1.48 In Maidstone, in Year 6, 18.6% (294) of children are classified as obese. The rate of alcohol-specific hospital stays among those under 18 is 25*, better than the average for England. This represents 9 stays per year. Levels of GCSE attainment are better than the England average.

People of certain ethnicity and/or gender

- I.1.49 4,960 residents in the core study area are female; this accounts for over half (51.3%) of the total population.
- I.1.50 In Swale women account for 50.6% of the population, men account for 49.4%. For women, this increases to 51.6% for the 65-74 age group, 62.8% aged 85-89 and 69.9% aged 90+.
- I.1.51 In Maidstone, women account for 50.7% of the population. This increases to 51.7% for the 65-74 age group, 61.5% aged 85-89 and 70.9% aged 90+.
- I.1.52 Life expectancy is 8.6 years and 6.4 years lower for men in the most deprived areas of Swale and Maidstone respectively than the least deprived areas. For women life expectancy is 4.2 years and 4.0 years lower for women in the most deprived areas of Swale and Maidstone respectively than the least deprived areas.
- I.1.53 2.3% of residents in the core study area is from a BME group (i.e. non-White British).
- I.1.54 3.4%, 4% and 5.9% of the population of Swale, Tonbridge and Malling, and Maidstone respectively is from a BME group which is lower than the average for the South East (9.3%), Medway (10.4%) and significantly lower than the England average (14.6%).

People who are physically or mentally disadvantaged

- I.1.55 20.6% of the population in the core study area is aged 65+, which is greater than the England average, Swale and Maidstone. Elderly people are more likely to suffer from social isolation, loss of mobility, deterioration in physical health,

deterioration in income, and loss of family and friends. They are also less able to recuperate from episodes of ill-health.

- I.1.56 16.7% of the population in Swale is aged 65+³. The population of Swale CCG who reach 65 years can expect to live a further 18.4 years compared to 19.6 years for Kent and Medway. Swale CCG has the lowest life expectancy at 65+ of all CCGs.
- I.1.57 17.1% of the population in Maidstone is aged 65+4. It is estimated that there are over 7,000 people aged 65+ in Maidstone who live alone. Of those, just fewer than 3,000 report their health as being bad or very bad. There are currently 2118 people in Maidstone suffering with dementia; this is expected to double over the next 30 years. Hip fracture in the over 65s in Maidstone is higher than the national average.
- I.1.58 There is no single measure of disability, however the 2011 Census asked people if they had a Limiting Long-Term Illness (LLTI) and 17% of the population in the core study area, 18.6% in Swale and 15.8% in Maidstone has a long-term problem or disability. More people generally are developing multiple long-term conditions. 9% of patients aged 18+ in Swale have a diagnosis of depression.

People who are materially disadvantaged

- I.1.59 Swale has areas of high deprivation levels compared to other parts of Kent with a significant number of people living in temporary accommodation and the second highest percentage in Kent of children living in poverty⁵. Therefore, in Swale CCG people have the greatest risk of poor outcomes. People living in deprived neighbourhoods are more likely to experience multiple disadvantage, die earlier, and have more years in long-term ill health.
- I.1.60 Swale and Maidstone witness relatively high levels of deprivation. Of the 21 neighbourhoods in Kent that fall within the 10% most deprived in England, 7 are within Swale. The least deprived LSOA's in Maidstone are located on the edge of the urban area and on the rural hinterland.

Living Environment

- I.1.61 Swale and Maidstone are ranked the 77th and 198th most deprived in Living Environment in England, a measure which encompasses quality of housing, air quality and road traffic accidents.
- I.1.62 Swale and Maidstone need to address the housing needs of an increasingly elderly population, poor affordability and the slow delivery of development.
- I.1.63 Swale and Maidstone have a wide range of community uses provided by public, private and voluntary sectors. These can contribute to health and wellbeing through promoting social cohesion, relaxation and recreation, and are a resource of particular importance to children and vulnerable households. However, the location and quality of facilities, and accessibility to them, is subject to spatial and social variation.
- I.1.64 Public Health England inform that long and short-term exposure to air pollution are known to adversely affect health. Short-term exposure (over hours or days) to elevated levels of air pollution can cause a range of effects including exacerbation of asthma, effects on lung function, increases in hospital admissions and mortality.

³ ONS Census 2011

⁴ ONS Census 2011

⁵ Final Draft: Mental Health Needs Assessment for Adults in Kent (Swale CCG 2014)

For Swale and Maidstone, the Public Health Outcomes Framework (PHOF) informs that an estimated 5.5% of all-cause mortality is attributable to air pollution. It is also likely that air pollution places an additional burden on many people, being a contributory factor in bringing deaths forward, rather than being the sole cause of death for individuals. Evidence shows how air pollution disproportionately affects sensitive groups, such as children, elderly adults, and people with existing medical conditions. Individuals and families with a low income may also be affected in this way, as they are more likely to live in accommodation near the busiest, most polluted roads because it tends to be cheaper.

I.1.65 Noise and vibration also negatively affect health and wellbeing in Swale and Maidstone in a spatially differentiated way, with some areas subject to significant disturbance. The dominant sources of noise include road and rail traffic, construction, noisy neighbours, entertainment venues, pavement cafés/outdoor seating, noisy building services, plant and equipment.

I.1.66 Further details on living environment determinants of health can be found within the baseline assessments of the following other technical chapters:

- Air Quality;
- Noise and vibration;
- Waste and materials; and
- Road drainage and the water environment.

Economic Baseline

Table I.13:: Economic activity rates

Area	Economic Activity	Unemployment rate
Swale	77.1%	5.4%
Maidstone	79.9%	3.2%
Medway	81.5%	5.8%
Tonbridge & Malling	76.7%	2.8%
Kent	79.8%	3.3%
South East LEP	80%	3.8%
England	81.4%	4.5%

I.1.67 Kent's (79.8%) economically active rate is higher than England's (78.6%), but lower than the South East (81.4%). The local authorities fluctuate above and below England's average, with Tonbridge and Malling (76.7%), Swale (77.1%), Maidstone (79.9%) and Medway (81.5%). Medway has a higher Economic activity rate than the South East of England, however a higher unemployment rate of 5.8% and beyond the other areas.

I.1.68 Swale also has a relatively high unemployment rate (5.4%) and low employment rate (73%), whilst the other Local Authorities (LA's) employment rates are close to Kent's (3.3%). These are presented in Table I.13 above.

Table I.14: Employment occupation and population skills levels

Area	Percentage of employment in SOC 1-3	Percentage of Population with NVQ4+
Swale	39.1%	22.6%
Maidstone	52.2%	34.5%
Medway	40.1%	31.0%
Tonbridge & Malling	48%	35.2%
Kent	45.4%	33.6%
South East	49.9%	41.4%
England	46.1%	38.3%

- I.1.69 Tonbridge and Malling, Swale and Medway all have a lower percentage of its population working in Standard Occupation Classification (SOC) 1-3 job roles (managerial, technical and professional) than that of the South East as shown in Table I.14 above. Instead the employment is more concentrated in skilled trades, where Swale (14.4%) and Medway (15.6%) both have significantly higher concentrations in the skilled trade sectors relative to that of England (10.2%).
- I.1.70 Swale also has a significantly higher employment in processing, plant and machine operatives (11.7%) compared to England's (6.2%). This reflects the share of Swale's (i.e. Sittingbourne) economy that is based on processing goods which come in from (or go out of) Dover and are transported through the rest of the UK. As such, any improvements or disruptions to the M2 could impact these businesses and this supply chain in particular.
- I.1.71 Kent and the four local authorities all have a lower percentage with qualification level National Vocational Qualifications (NVQ) 4 or above than England (38.3%), with Swale being the lowest at 22.6%.

Table I.15: Average wages

Area	Gross Average Annual Resident Income (£)	Gross Average Annual Workplace Income (£)
Swale	32,148	31,872
Maidstone	38,585	28,651
Medway	33,139	32,275
Tonbridge & Malling	43,450	31,342
Kent	37,052	31,890
South East LEP	37,480	32,127
England	36,118	36,107

Wages

- I.1.72 Residents of Maidstone (£26,519), and Tonbridge and Malling (£28,710) both have higher average annual incomes than England (£25,604) as shown in Table I.15 above. Swale (£22,125) and Medway (£23,951) both have lower average annual residential incomes than England. The average annual workplace incomes of all of the local authorities and Kent (£31,890) is lower than that of England (£36,107), with Swale being particularly low again at £28,651.
- I.1.73 The study area differentials in wages likely reflect the dominant types and sectors of employment. The large differential in Maidstone and Tonbridge and Malling's residential wages over workplace wages may reflect a significant share who commute into London to higher paying jobs.

Table I.16: Distance travelled to work

Area	Average distance travelled to work (km)
Swale	19.50
Medway	18.60
Maidstone	17.90
Tonbridge & Malling	18.90
South East LEP	18.60
England	14.90

Table I.17: Travel to work modes and destination

Area and destination	Public transport – non-road	Public - road	Private - road	Active/ other	Total
Swale					
Working Locally (in Swale)	2%	1%	47%	17%	66%
Working in rest of Study Area	1%	0%	21%	0%	22%
London	6%	1%	5%	0%	12%
Maidstone					
Working Locally	1%	4%	39%	16%	60%
Working in rest of Study Area	1%	1%	24%	1%	26%
London	7%	1%	7%	0%	14%
Medway					
Working Locally	1%	4%	42%	13%	60%
Working in rest of Study Area	1%	1%	18%	0%	20%
London	8%	2%	9%	0%	19%

Area and destination	Public transport – non-road	Public - road	Private - road	Active/ other	Total
Tonbridge & Malling					
Working Locally	1%	1%	34%	13%	49%
Working in rest of Study Area	1%	1%	21%	1%	24%
London	15%	1%	11%	0%	27%

(Source: NOMIS Census 2011)

- I.1.74 The average distance travelled of all the local authorities and South-Eastern England is a lot higher than that of England on a whole, Swale being particularly high at 19.5 km as shown in Table I.16 above.
- I.1.75 As shown in Table I.17 above the majority of the population of Swale and Maidstone work locally or in the surrounding area. Medway and Tonbridge & Malling have a significant proportion of their population commuting to London. Table K.6 also shows that all the local authorities, in particular Swale and Medway, have a high level of private road commuters for those working in the study area (working locally and working in rest of study area).

Table I.18: Car availability by households

Area	Percentage of households with cars
Swale	79.9%
Medway	78.1%
Maidstone	83.9%
Tonbridge and Malling	86.2%
Kent	80.0%
South East LEP	80.0%
England	74.2%

(Source: NOMIS Census 2011)

- I.1.76 All the local authorities have a higher percentage of their population owning cars than the national level, with Maidstone and Tonbridge and Malling having the highest car ownership levels as shown in Table I.18 above. This supports the findings of private road use being the most significant mode for work journeys and of longer average distances travelled to work.

Table I.19: Business shares for key sectors

Area	Manufacturing share of units	Construction share	Transport and storage share	Retail share
Swale	6%	17%	6%	12%
Maidstone	4%	15%	5%	12%

Area	Manufacturing share of units	Construction share	Transport and storage share	Retail share
Medway	5%	18%	5%	13%
Tonbridge & Malling	4%	14%	3%	11%
Kent	5%	14%	4%	13%
South East LEP	5%	15%	4%	13%
England	5%	11%	4%	13%

(Source: NOMIS UK Business Counts, 2017)

I.1.77 Swale has a higher share of its businesses in manufacturing (6%), construction (17%), and transport and storage (6%) than the nation levels as shown in Table I.19 above. Maidstone (15%), Tonbridge and Malling (14%) and Medway (18%) also have higher percentages in construction. The shares of business in the retail sector are consistent across the areas.

Sensitivity of Determinants

I.1.78 Sensitivity of direct determinants, as outlined below, depends on whether the determinant is likely to be directly affected by changes to wider determinants caused by the proposed Scheme and whether the determinant is well placed to deal with impacts. This is summarised in Table I.20 below.

Table I.20: Sensitivity of direct health determinants

Determinant	Features identified in baseline	Sensitivity	Comment
Physical health	General physical health	Low	General health of the core study area population is good, thus should not be substantially affected by changes to wider health determinants resulting from the Scheme
	Excess weight/obesity	High	An acute health issue, particularly in children, linked to lifestyle therefore likely to be affected by changes to wider health determinants resulting from the Scheme.
	Road-related injuries/deaths	High	An acute health issue directly linked to the road environment and partly linked to the built environment thus could be affected by changes to wider health determinants resulting from the Scheme.
	Cardiovascular deaths	Medium	An acute health issue, partly linked to exposure to air pollution thus could be affected by changes to wider determinants resulting from the Scheme.
	Cancer deaths	Low	Slightly lower than average and unlikely to be affected by changes to wider health determinants resulting from the proposed Scheme.
	Dementia diagnosis	Low	An ageing population but should not be substantially affected by changes to wider

Determinant	Features identified in baseline	Sensitivity	Comment
			health determinants resulting from the proposed Scheme
	Incidence of TB	Low	Unlikely to be affected by changes to wider health determinants resulting from the proposed Scheme
	Incidence of STIs	Low	Unlikely to be affected by changes to wider health determinants resulting from the proposed Scheme
	Smoking-related deaths	Low	Unlikely to be affected by changes to wider health determinants resulting from the proposed Scheme
	Alcohol related harm	Low	Unlikely to be affected by changes to wider health determinants resulting from the proposed Scheme
Mental and social wellbeing	General mental and social wellbeing	High	An acute health issue, likely to be affected by changes to wider health determinants resulting from the proposed Scheme
	Suicide rates	High	An acute health issue, particularly in Swale, likely to be somewhat affected by changes to wider health determinants resulting from the proposed Scheme
	Violent crime	Medium	An acute health issue, likely to be somewhat affected by changes to wider health determinants resulting from the proposed Scheme
Inequalities	Social/demographic inequalities	Medium	The changes to wider health determinants resulting from the proposed Scheme may affect different socio-demographic groups differentially
	Spatial inequalities	Medium	Proposed Scheme is located in a wider area that includes deprived parts of districts, therefore spatial inequalities may be affected by changes to wider health determinants

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Registered office Bridge House, 1 Walnut Tree Close, Guildford GU1 4LZ
Highways England Company Limited registered in England and Wales number 09346363