Coastal Community Health Report

September 2021

SOUTH EAST
LOCAL ENTERPRISE
PARTNERSHIP

Contents

Introduction

There has long been an understanding that some of the nation's coastal communities are amongst the most deprived both economically and with regards to health outcomes. This issue has again come to the fore in national debate with the recent publication of the Chief Medical Officer's Annual Report 2021, Health in Coastal Communities.

The purpose of this report is to explore this issue in more depth for the Coastal Communities within the South East Local Enterprise Partnership (SELEP) area. Adopting approaches similar to those used in the CMO's Annual Report to define Coastal Communities, these communities are then compared across three key health indicators to identify the variation in health outcomes compared to averages for the SELEP area as a whole.

Further analysis is then completed to examine two key economic variables which are likely to have a strong influence on health outcomes. Communities are then categorised in relation to economic conditions and health outcomes.

The results of this analysis show that there is significant variation across Coastal Communities, with some places enjoying good health outcomes while others have very poor health outcomes. While there is variation between communities, a number of towns stand out as having both very poor health outcomes combined with severe economic distress, as shown in Table 1.

Table 1 Coastal towns with poor health outcomes and severe economic distress

Town
Clacton
Dover
Folkestone
Harwich
Hastings
Margate
Ramsgate
Sheerness

The analysis is then supplemented with an investigation into data for the current priority public health issue, namely recent COVID infection rates and vaccination take-up.

The format of the report is to provide a headline summary of the core findings in the next section, followed by a summary of the analysis of COVID data. The headline results are then followed by separate sections which provide more detailed discussion and analysis of each of the indicators used in the headline analysis.

In the interests of transparency an Appendix then provides technical information on precisely how coastal communities used in this report have been defined. It should be noted at this stage that these are defined using a statistical geography level of middle super output area (MSOA).

Key Results Summary

The main results are provided as a categorisation of each coastal community on two separate scales, one for health outcomes and one for economic context. This information can be presented in matrix form as shown below in Table 2.

It is clear that there is not a perfect correlation between economic context and health outcomes, but equally it is clear that there is strong tendency for central axis alignment in the matrix, and for poor health to only be associated with the presence of economic issues and distress.

Table 2 - Coastal Communities: Health Outcome and Economic Context

	Favourable Economic	Average Economic	Some Economic Issues	Severe Economic Distress
Good Health	East Sussex Hythe Seaford Whitstable			Newhaven
Average Health	Essex Haven Gateway Essex Thames Gateway Heart of Essex Maldon	East Kent Peacehaven	Broadstairs Minster (Sheppey)	Eastbourne Southend-on-sea
Some Health Issues		Deal Herne Bay Walton	Bexhill Canvey Island	
Poor Health			Kent Thames Gateway	Clacton Dover Folkestone Harwich Hastings Margate Ramsgate Sheerness

Three indicators have been used to assess health outcomes, and while a wider range of indicators was available, time constraints required a selection to be made. The available data was considered to be those published at MSOA geography through the Public Health England Fingertip Local Health Profiles. The aim was to focus on general health outcomes in the widest sense (i.e. all cause mortality) as well as capturing aspects of health which are potentially amendable to public health interventions (i.e. preventable mortality). Child injury was added to provide a third health dimension.

For the economic context category, datasets were identified which were also available at MSOA level which captured the concepts of incomes and labour market activity.

The selection of indicators used is shown in Table 3 below.

Table 3 - Indicator Selection for the core analysis

Indicator Short Name	Fuller Indicator Description	Time period
All-cause mortality	Deaths from all causes, all ages, indirectly standardised ratio	2015 to 2019
Child injury	Crude rate of hospital admissions caused by unintentional and deliberate injuries in children (aged under 15 years) per 10,000 resident population	2015/16 to 2020/21
Preventable mortality	Standardised mortality ratio for deaths from causes considered preventable, aged under 75 years	2015/16 to 2020/21
Income	Net average annual household income after housing costs (equivalised)	2018
Claimants	The percentage of working age population included in the claimant count - those claiming Jobseeker's Allowance plus those who claim Universal Credit and are available for work	June 2021

All indicators are reported with statistical confidence intervals, due to MSOAs being small area geography and the high likelihood that small variations between places are a result of random chance events in the measurement period and a not a result of any underlying real difference in outcomes. When aggregating indicators up to community level, in all cases confidence intervals ($\alpha = 5\%$) have been calculated at the community level and have been used to assess whether differences between communities are statistically significant or not.

The approach for categorising communities against each indicator was to allocate a score which is colour coded based on statistically significant difference to the average outcome as follows:

Statistically significant difference to average	Score	Colour Code
More than 10% better than average	1	
Better than average but not by 10% or more	2	
No different to average	3	
Worse than average but not by 10% or more	4	
More than 10% worse than average	5	

The full results for all indicators using the colour coding are show in Table 4 below.

Table 4 – Indictor results using statistical difference to average outcome, sorted by Health Index

Town/community	Health Index	All-cause mortality	Child injury	Preventable mortality	Economic Index	Income	Claimants
Clacton	4.7				5.0		
Hastings	4.7				5.0		
Sheerness	4.7				5.0		
Margate	4.3				5.0		
Dover	4.3				4.5		
Folkestone	4.0				4.5		
Harwich	4.0				4.5		
Ramsgate	4.0				4.5		
Kent Thames Gateway	4.0				3.5		
Bexhill	3.7				3.5		
Canvey Island	3.3				3.5		
Deal	3.3				3.0		
Herne Bay	3.3				3.0		
Walton	3.3				3.0		
Eastbourne	3.0				4.5		
Southend-on-sea	3.0				4.5		
Broadstairs	3.0				3.5		
Minster (Sheppey)	3.0				3.5		
East Kent	3.0				3.0		
Peacehaven	3.0				3.0		
Essex Thames Gateway	3.0				2.5		
Essex Haven Gateway	3.0				2.0		
Heart of Essex	3.0				2.0		
Maldon	3.0				2.0		
Newhaven	2.7				4.0		
East Sussex	2.3				2.5		
Seaford	2.3				2.5		
Hythe	2.3				2.0		
Whitstable	2.3				2.0		

The Health Index and Economic Index shown in Table 4 are simply the average score across the supporting indicators. The Index values in Table 4 are the underlying numbers which were used to produce the matrix categorisation of coastal communities in Table 1.

COVID Summary

To understand the current situation with COVID in coastal communities, two indicators were selected as shown in Table 5.

Table 5 - Indicator Selection for the COVID analysis

Indicator Short Name	Fuller Indicator Description	Time period
Infection	Positive tests per 10,000 population Wave 3 to-date	May 2021 to August 2021
Vaccination	Percentage of the population with first dose administered	Up to 4 Sept-21

As with other indicators, comparison between communities was based on statistical significance using the same approach as outlined in the previous section. Results are shown in Table 6.

Table 6 – COVID Indictor results using statistical difference to average outcome, sorted by Health Index

Town/community	Health Index	Economic Index	COVID infection	COVID Vaccination
Clacton	4.7	5.0		
Hastings	4.7	5.0		
Sheerness	4.7	5.0		
Margate	4.3	5.0		
Dover	4.3	4.5		
Folkestone	4.0	4.5		
Harwich	4.0	4.5		
Ramsgate	4.0	4.5		
Kent Thames Gateway	4.0	3.5		
Bexhill	3.7	3.5		
Canvey Island	3.3	3.5		
Deal	3.3	3.0		
Herne Bay	3.3	3.0		
Walton	3.3	3.0		
Eastbourne	3.0	4.5		
Southend-on-sea	3.0	4.5		
Broadstairs	3.0	3.5		
Minster (Sheppey)	3.0	3.5		
East Kent	3.0	3.0		
Peacehaven	3.0	3.0		
Essex Thames Gateway	3.0	2.5		
Essex Haven Gateway	3.0	2.0		

Town/community	Health Index	Economic Index	COVID infection	COVID Vaccination
Heart of Essex	3.0	2.0		
Maldon	3.0	2.0		
Newhaven	2.7	4.0		
East Sussex	2.3	2.5		
Seaford	2.3	2.5		
Hythe	2.3	2.0		
Whitstable	2.3	2.0		

It can be seen that coastal communities have generally benefited from low COVID infection rates in Wave 3. The main exceptions are those communities closest to London and in the Thames Gateway area. However, the communities with worse scores on the Health and Economic Indices show as having had average infection rates rather than low infections.

Vaccination take-up has also generally been strong so far in coastal communities, with the exception of those communities with the worse scores on the Health and Economic Indices.

All-cause mortality

- Indicator: Deaths from all causes, all ages, Indirectly standardised ratio, 2015 to 2019
- Source: Public Health England

All-cause mortality is a fundamental measure of the health status of a population. It represents the cumulative effect of the prevalence of risk factors, prevalence and severity of disease, and the effectiveness of interventions and treatment. Differences in levels of all-cause mortality reflect health inequalities between different population groups.

Overview

Age-cause mortality across SELEP is slightly lower than the national rate, but coastal and non-coastal communities are statistically significantly different from the average. Mortality is 3% higher than national for Coastal Communities and 3.5% below national for non-coastal communities.

Table 1 – All cause, all age mortality, compared to national average

Communities	Compared to national average	Lower confidence Interval	Upper confidence interval
Coastal	3.0% above	2.2%	3.7%
Non-coastal	3.5% below	3%	4.1%
SELEP	1.3% below	0.8%	1.7%

Unsurprisingly, this top-level result hides significant within-geography variation within both coastal and non-coastal communities. Further analysis can provide more detailed insights into his variation.

One approach might be to rank all communities by mortality rates, but given the size of the confidence intervals, reflecting the potential for random chance events to influence results in a given measurement period, it is more appropriate to group communities in relation to statistical difference from the average using confidence intervals. This is shown in the Table 2.

It is clear from Table 2 that there are some stack differences between coastal and non-coastal communities in where they lie in the range of variation from the average. More than 50% of the population of non-coastal communities benefit from living in areas with lower mortality than average, compared to just 25% of coastal community population. Nearly half of this difference is due to a high proportion of coastal community populations having mortality no different from the average, but the remainder is mostly down to a much higher proportion of coastal community population living in areas with significantly high mortality rates.

Table 2 – All cause, all age mortality, by statistical difference from average

Statistical difference to average	Population 2019 Thousands	Proportion Coastal Population	Proportion Non-Coastal Population
More than 10% better	576.6	2%	18%
Significantly better but no more than 10%	1,271.6	23%	33%
No different from average	505.2	20%	8%
Significantly worse but no more than 10%	1,474.4	37%	34%
More than 10% worse	436.1	19%	7%
TOTAL	**4,264.0**	**100%**	**100%**

This analysis can be extended to see how this variation plays out at SELEP Federated Area, as shown in the following table.

Table 3 - All cause, all age mortality for coastal communities by Federated Area

Federated Area	10% better	Better	No different	Worse	10% worse
KMEP		11.7%	30.0%	29.9%	28.5%
OSE			3.4%	79.7%	16.9%
SE		20.9%	27.9%	20.9%	30.2%
TES	5.7%	53.5%	13.5%	27.3%	
All coastal	**1.6%**	**22.5%**	**20.2%**	**37.0%**	**18.8%**

Team Essex Sussex benefits from the most coastal community population enjoying better than national average mortality rates and none which are 10% worse. Nearly all Opportunity South Essex coastal communities are below national average, but is should be noted that Southend-on-sea is by far the dominant community in terms of population size in this area.

Kent and Medway and Success Essex both have more balanced distributions of populations between better than national average and 10% worse, with both having the highest of proportions of population in the 10% worse than national average category.

Child injury

- Indicator: Crude rate of hospital admissions caused by unintentional and deliberate injuries in children (aged under 15 years) per 10,000 resident population, 2015/16 to 2020/21
- Source: Hospital Episode Statistics (HES) NHS Digital

Injuries are a leading cause of hospitalisation and represent a major cause of premature mortality for children and young people. They are also a source of long-term health issues, including mental health related to experience(s).

Overview

Hospital admissions due to injury for children are below national average across SELEP, but coastal and non-coastal communities are statistically significantly different from the average. Admissions are 5.6% lower than national for Coastal Communities and 13.2% below national for non-coastal communities. It should be noted that rates are much lower across the south and east of England compared to the north, which will reflect a range of factors.

Table 1 – Child injury, compared to national average

Communities	Compared to national average	Lower confidence Interval	Upper confidence interval
Coastal	5.6% below	3.7%	7.5%
Non-coastal	13.2% below	12.1%	14.3%
SELEP	11.2% below	10.2%	12.1%

As with other indicators, this top-level result hides significant within-geography variation within both coastal and non-coastal communities. Further analysis can provide more detailed insights into his variation.

As discussed in the previous section one approach might be to rank all communities by admission rates, but given the size of the confidence intervals, which reflects potential for random chance events to influence reported numbers, it is more appropriate to group communities in relation to statistically significant difference from the average.

Due to the relatively small numbers involved with this measure (some below 100), most communities are not statistically different from the average, with any apparent variations in the headline measure likely to be due to random chance, rather than real differences in causes and outcomes. However, non-coastal communities are weighted towards lower admissions with coastal more weighted towards the average.

Table 2 – Hospital admissions for child injury, by statistical difference to average

Statistical difference to average	Population 2019 Thousands	Proportion Coastal Population	Proportion Non-Coastal Population
More than 10% better	142.4	16.5%	19.2%
Significantly better but no more than 10%	83.0	7.8%	11.8%
No different from SELEP average	336.1	50.9%	40.9%
Significantly worse but no more than 10%	103.3	11.3%	14.1%
More than 10% worse	106.8	13.5%	14.0%
TOTAL	**771.6**	**100%**	**100%**

This analysis can be extended to see how this variation play out at SELEP Federated Area as shown in the following table.

Table 3 - Hospital admissions for child injury by Federated Area

Federated Area	10% better	Better	No different	Worse	10% worse
KMEP		12.2%	76.4%	4.3%	7.0%
OSE	81.5%	15.4%	3.1%		
SE			48.9%	51.1%	
TES			51.8%	7.1%	41.1%
All coastal	**16.5%**	**7.8%**	**50.9%**	**11.3%**	**13.5%**

Team Essex Sussex has the most child population where hospital admissions are more than 10% higher than the SELEP average. Nearly all Opportunity South Essex coastal communities are significantly better than SELEP average, but is should be noted that Southend-on-sea is by far the dominant community in terms of population size in this area.

Kent and Medway communities are heavily weighted towards no difference to average with some areas significantly worse. Success Essex coastal communities are almost equally split between no difference to SELEP average and worse than average.

Preventable mortality

- Indicator: Standardised mortality ratio for deaths from causes considered preventable, aged under 75 years, 2015/16 to 2020/21
- Source: Public Health England

Deaths are considered preventable if, in the light of the understanding of the determinants of health at the time of death, all or most deaths from the underlying cause could potentially be avoided by public health interventions in the broadest sense. This indicator sends out a clear signal of the importance of prevention as well as treatment in reducing avoidable deaths.

Overview

Preventable deaths for population aged under 75 are below national average across SELEP but coastal and non-coastal communities are statistically significantly different from the average. Preventable deaths are 9.3% above the national for Coastal Communities and 15.1% below national for non-coastal communities.

Table 1 – Preventable deaths, age under 75, compared to national average

Communities	Compared to national average	Lower confidence Interval	Upper confidence interval
Coastal	9.3% above	7.1%	11.5%
Non-coastal	15.1% below	13.8%	16.4%
SELEP	7.2% below	6.1%	8.4%

As with other indicators, this top-level result hides significant within-geography variation within both coastal and non-coastal communities. Further analysis can provide more detailed insights into his variation.

As discussed in the previous sections one approach might be to rank all communities by admission rates, but given the size of the confidence intervals, which reflects potential for random chance events to influence reported numbers, it is more appropriate to group communities in relation to statistical difference from the average. This is shown in the Table 2.

Table 2 shows that non-coastal community populations are weighted towards preventable mortality rates which are more than 10% better than the average, whereas coastal community populations are more heavily weighted to worse than average with a significant proportion where outcomes more than 10% worse than average.

Table 2 – Preventable deaths population aged under 75, by statistical difference from average

Statistical difference to average	Population 2019 Thousands	Proportion Coastal Population	Proportion Non-Coastal Population
More than 10% better	1,200.1	0%	26.8%
Significantly better but no more than 10%	422.6	4.4%	19.9%
No different from average	1,476.1	28.8%	23.9%
Significantly worse but no more than 10%	293.6	33.5%	15.1%
More than 10% worse	465.7	33.4%	14.3%
TOTAL	**3,858.6**	**100%**	**100%**

This analysis can be extended to see how this variation plays out for coastal communities at SELEP Federated Area and this is shown in the following table.

Table 3 - Preventable deaths population aged under 75, by Federated Area

Federated Area	10% better	Better	No different	Worse	10% worse
KMEP		6.8%	19.9%	23.1%	50.1%
OSE			20.1%	79.9%	
SE			58.5%		41.5%
TES		6.8%	29.3%	35.4%	28.5%
All coastal	**0%**	**4.4%**	**28.8%**	**33.5%**	**33.4%**

Kent and Medway communities are most heavily weighted towards 10% worse than average, with the majority of population with worse than average outcome. Success Essex has a similar high proportion of population with 10% worse than average outcome, but with the majority of population in communities with no difference to the average.

OSE is heavily weighted to worse than average but with no community more than 10% worse, with TES having a fairly even split between no difference to average, worse than average and 10% worse.

Income

- Net average annual household income (equivalised) after housing costs
- Source: ONS Income estimates for small areas, 2018

Incomes estimates for small areas are model-based estimates for financial year. Net annual household income is the sum of the net income of every member of the household, including benefits and it is calculated net of income tax, national insurance, council tax, pension contributions, and child maintenance payments. The following are removed to arrive at net incomes after housing costs: rent, water rates, mortgage interest and ground rent.

Overview

Average household income is above national average across SELEP, but coastal and non-coastal communities are statistically significantly different from the average. Coastal communities have average household incomes 4.1% below the national while for non-coastal communities average household incomes are 7.7% above national average.

Table 1 – Income

Communities	Compared to national average	Lower confidence Interval	Upper confidence interval
Coastal	4.1% below	2.5%	5.6%
Non-coastal	7.7% above	6.6%	8.8%
SELEP	4.0% above	3.1%	4.9%

As with other indicators, this top-level result hides significant within-geography variation within both coastal and non-coastal communities. Further analysis can provide more detailed insights into his variation.

As discussed in the previous section one approach might be to rank all communities by incomes, but for this particular dataset, the results are modelled based estimates which come with margins of uncertainty expressed as confidence intervals. As such it is more appropriate to group communities in relation to statistically significant difference from the average. This is shown in the Table 2.

Table 2 shows that non-coastal community households are weighted towards having average incomes levels at average and better than average. Coastal communities are weighted in the opposite direction with no coastal communities with better than average household incomes.

Table 2 – Average household income by statistically significant difference from average

Statistical difference to average	Households 2018	Proportion Coastal Households	Proportion Non-Coastal Households
More than 10% better	51,300		4.1%
Significantly better but no more than 10%	414,600		33.2%
No different from average	817,400	36.4%	48.9%
Significantly worse but no more than 10%	420,400	43.8%	13.7%
More than 10% worse	112,500	19.8%	
TOTAL	**1,816,200**	**100%**	**100%**

This analysis can be extended to see how this variation plays out for coastal communities across SELEP by Federated Area as shown in the following table.

Table 3 – Average household income by Federated Area compared to average

Federated Area	10% better	Better	No different	Worse	10% worse
KMEP			46.6%	35.3%	18.2%
OSE			3.2%	96.8%	
SE			57.1%	11.1%	31.7%
TES			31.3%	41.3%	27.4%
All coastal	**0.0%**	**0.0%**	**36.4%**	**43.8%**	**19.8%**

Nearly all coastal community households in OSE live in areas with below average household income, with this result dominating by Southend-on-sea which accounts for the majority of households.

Apart from OSE, all other Federated Areas have high proportions of households within communities where average household income is more than 10% below the average for SELEP.

Claimants

- The percentage of working age population included in the claimant count, June 2021
- Source: DWP

The claimant rate is a good proxy measure for unemployment which has the benefit of being available on a frequent basis and at low levels of statistical geographic.

Overview

The claimant rate for SELEP is much lower than the national average, but coastal and non-coastal communities are statistically significantly different from the average. Coastal communities have a claimant rate which is proportionately 16.4% higher than the national average whereas for non-coastal communities the claimant rate is proportionately 16.4% below the national average.

Table 1 – Benefits

Communities	Compared to national average	Lower confidence Interval	Upper confidence interval
Coastal	16.4% higher	15.4%	17.4%
Non-coastal	16.4% lower	15.8%	17.0%
SELEP	7.3% lower	6.8%	7.8%

As with other indicators, this top-level result hides significant within-geography variation within both coastal and non-coastal communities. Further analysis can provide more detailed insights into his variation.

As discussed in the previous section one approach might be to rank all communities by claimant rate, but given the size of the confidence intervals, which reflects potential for random chance events to influence reported numbers, it is more appropriate to group communities in relation to statistical difference from the average. This is shown in the Table 2.

Table 2 shows that non-coastal community populations are weighted towards having significantly lower claimant rates than the average, although a significant proportion also live in communities with high claimant rates. Almost exactly the opposite is true for coastal communities with the majority of the coastal population living in communities where the claimant rate is more than 10% higher than average.

Note that the average claimant rate for SELEP was 5.1%, so for a community to be classified as having a rate 10% higher, we would need to be statistically confident the rate was 5.6% or higher.

Table 2 – Claimant rate by statistically significant difference from average

Statistical difference to average	Working Age Population 2019	Proportion Coastal Population	Proportion Non-Coastal Population
More than 10% better	1,024,500	12.1%	50.6%
Significantly better but no more than 10%	174,000	3.9%	7.9%
No different from average	394,800	16.3%	15.0%
Significantly worse but no more than 10%	167,100	7.8%	6.0%
More than 10% worse	807,200	59.9%	20.5%
TOTAL	**2,567,600**	**100%**	**100%**

This analysis can be extended to see how this variation plays out for coastal communities across SELEP by Federated Area as shown in the following table.

Table 3 – Claimant rate for coastal communities by Federated Area compared to average

Federated Area	10% better	Better	No different	Worse	10% worse
KMEP	10.9%		26.4%	12.0%	50.7%
OSE		3.4%	16.0%		80.5%
SE	50.8%		8.1%		41.0%
TES		12.1%	7.0%	12.1%	68.8%
All coastal	**12.1%**	**3.9%**	**16.3%**	**7.8%**	**59.9%**

It can be seen that across all Federated Areas, coastal community populations experience high claimant rates.

Success Essex is somewhat an exception with a high proportion of coastal community populations also living in communities with low claimant rates. These include Maldon and the non-urban coastal communities of Essex.

Appendix – Defining Coastal Communities

As the recent Whitty report has highlighted "there is no nationally agreed definition or consensus on what constitutes a 'coastal community'. Academics, institutions, and policy makers have adopted a variety of definitions."

Previous government research into Coastal Communities has focussed on "principal seaside towns" of which 7 were identified within the SELEP area. However, previous work commissioned by SELEP sought to understand coastal communities in full, and all coastal communities, of whatever type or size, were included within the research. Recent discussion at the Coastal Communities working group agreed that this approach should continue in future research and data collection, with a desire to understand both common issues across all coastal communities, and also to understand differences between such communities through the development of a typology of coastal communities.

The general approach of the Whitty report to consider a 'coastal community' as any settlement along the coast (including village, town and city) would seem to be a good place to start. The next step is to define a settlement and following the ONS approach of defining settlements as continuous built-up areas we can begin to make some headway.

For the purpose of the current research the population threshold of 10,000 is used to define towns, to ensure a manageable list of towns to be considered, with coastal towns being any town with a foreshore.

To ensure all coastal populations and smaller settlements are captured, including rural communities, an approach similar to that used by Plymouth University in the Whitty report was then used to capture other coastal populations, as outlined in the next paragraph.

Using QGIS and working with the small area statistical geography of Lower Super Output Areas (LSOA), an LSOA which has a population weighted centroid within 2.5 km of a coastline is defined as coastal. This distance, while slightly arbitrary is based on average walking speed and defines a coastal population as one within roughly 30 minutes walking distance to the coast. An ultra-generalised shapefile clipped to the coastline (Mean High Water mark) was used to perform the calculation, which has the advantage of including certain more estuarine communities which are a noticeable feature in parts of Essex, for example along the rivers Blackwater, Crouch and Stour, which the Coastal Communities working group have agreed should be included within the coastal community definition.

However, to ensure alignment with the Coastal Community Working Group membership, estuarine communities along the Thames such as Dartford, Gravesend and Grays have been removed from the analysis.

Returning to coastal communities at the town level, it should be noted that ONS approaches to defining towns through built-up area (BUA) analysis are derived by algorithms based on 2011 data. In the vast majority of cases these algorithms perform well, and more detailed human examination combined with local knowledge of the towns involved would not result in any disagreement with the results in terms of the extent of these towns. However, a few minor variations from ONS results can be derived from a more detailed review and the table below outlines the adjustments made to the standard ONS town definitions in defining the coastal town

populations for the current SELEP research. In all cases but one, this is simply a question of deciding where single built up areas should be broken into exactly which sub-divisions or where apparently separate but close proximity built up areas should be considered as one settlement.

Town Name	**Population 2019**	**Explanation of different treatment from ONS**
Bexhill	45,800	ONS - sub-division of Hastings BUA
Broadstairs	23,600	ONS - sub-division of Thanet BUA
Canvey Island	38,900	
Clacton-on-Sea	58,900	Including Jaywick BUA
Deal	33,100	Slight extension to include recent development
Dover	45,000	
Eastbourne	125,000	
Folkestone	55,300	ONS - sub-division of Folkestone BUA, slight variation on dividing line between sub-divisions
Harwich	22,500	
Hastings	92,700	ONS - sub-division of Hastings BUA
Herne Bay	41,200	ONS - sub-division of Herne Bay/Whitstable BUA
Hythe	13,800	ONS - sub-division of Folkestone BUA, slight variation on dividing line between settlements
Maldon	23,200	Including Heybridge Basin BUA
Margate	66,900	ONS - sub-division of Thanet BUA
Minster (Swale)	25,200	
Newhaven	14,700	
Peacehaven	20,400	
Ramsgate	41,900	ONS - sub-division of Hastings BUA
Seaford	24,600	Including Rookery Hill BUA
Sheerness	13,400	
Southend-on-Sea	183,100	Southend BUA sub-division, excluding Hullbridge, Rayleigh & Rochford BUA sub-divisions
Walton-on-the-Naze	19,500	Including Kirkby-le-Soken BUA
Whitstable	34,100	ONS - sub-division of Herne Bay/Whitstable BUA
TOTAL	**1,063,000**	

It should also be noted that when defining the 112 major towns and cities of the UK, ONS also made manual decisions around where to divide or aggregate BUAs and their sub-divisions to represent the towns as people know them, and for 16 towns and cities used manual adjustments to the boundaries produced by the algorithm, similar to the type of adjustments outlined above.

While various important economic datasets are available at LSOA geography and the above town definitions can be used to work with such datasets, the health data which is used in this report comes at a slightly higher aggregated statistical geography of Middle Super Output Area (MSOA). Accordingly, a best match to MSOA geography was applied, which in many cases was identical to that defined at LSOA level, but in those cases where a town boundary crossed through an MSOA, the decision was taken to only include the full MSOA population where more than half were within the town boundary.

The resulting population difference between using LSOA and MSOA geography to define the coastal towns was just 10,800 or a 1% difference, and such a small difference will not have any significant impact in the results of town level data analysis when using MSOA geography.

Town Name	**Population of town defined at LSOA level**	**Population of town using best match MSOA**
Bexhill	45,800	45,800
Broadstairs	23,600	22,400
Canvey Island	38,800	38,800
Clacton-on-Sea	58,900	62,200
Deal	33,100	31,300
Dover	45,000	48,600
Eastbourne	123,400	120,600
Folkestone	55,300	53,800
Harwich	22,500	23,500
Hastings	92,700	92,700
Herne Bay	41,200	42,800
Hythe	13,800	21,300
Maldon	23,200	23,200
Margate	66,900	70,100
Minster (Swale)	25,200	23,500
Newhaven	14,700	13,100
Peacehaven	20,400	23,400
Ramsgate	41,900	41,800
Seaford	24,600	24,600
Sheerness	13,400	13,400
Southend-on-Sea	183,100	183,100
Walton-on-the-Naze	19,500	19,500
Whitstable	34,100	32,600
TOTAL	**1,061,400**	**1,072,200**

For other coastal community population in non-town areas, a similar best match approach from LSOA to MSOA geography was used, with populations then grouped to NUTS 3 geography to define the following populations.

Non-town coastal community grouping	**Population 2019**
East Kent	28,200
East Sussex	19,300
Essex Haven Gateway	43,000
Essex Thames Gateway	7,900
Heart of Essex	34,200
Kent Thames Gateway	33,400