Intelligence & Strategic Analysis

SOUTHAMPTON CITY COUNCIL

Southampton Strategic Assessment (JSNA)

Loneliness and Social Isolation in Southampton

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Contents

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1. Overview

1.1 Defining loneliness and social isolation

The issues of loneliness and social isolation are receiving increasing attention nationally due to their negative impacts on individual health and wellbeing. While the terms 'loneliness' and 'isolation' are sometimes used as if they were synonymous, they refer to two different concepts. Isolation refers to separation from social or familial contact, community involvement, or access to services. Loneliness, by contrast, can be understood as an individual's personal, subjective sense of lacking these things to the extent that they are wanted or needed.

It is therefore possible to be isolated without being lonely, and to be lonely without being isolated. For instance, an older person can be physically isolated (living on one's own, not seeing many other people etc.) without feeling lonely. For some, physical separation is even a result of choice. Similarly, one can feel lonely in the midst of other people. However, evidence suggests that one of the most effective ways of combating loneliness is to combat isolation (Public Health England, 2015).

1.2 Why is tackling social isolation important?

The links between loneliness and poor health are well established. In their 2012 review of the evidence on loneliness and social isolation, the Social Care Institute for Excellence highlighted that being lonely has a significant effect on individuals' health (LGA, 2016). It can have physically and emotionally damaging effects resulting in higher blood pressure, depression, poor nutrition, decreased immunity, anxiety, fatigue and social stigma.

It is also associated with higher rates of mortality; comparable to well-established risks such as smoking and alcohol consumption. Weak social connections carry a health risk that is more harmful than not exercising, twice as harmful as obesity, and is comparable to smoking 15 cigarettes a day or being an alcoholic (Bristol City Council, 2014). Indeed, the Marmot Review into health inequalities found that "individuals who are socially isolated are between two and five times more likely than those who have strong social ties to die prematurely." (Marmot, 2010).

It is also linked to higher incidence of dementia, with one study reporting a doubled risk of Alzheimer's disease in lonely people compared with those who were not lonely. As a result of these health impacts, lonely individuals tend to make more use of health and social care services, and are more likely to have early admission to residential or nursing care. Tackling loneliness is, therefore, relevant to a number of important agendas for local authorities, in particular public health (LGA, 2016).

Tackling loneliness not only alleviates the suffering, and improves the quality of life, of individuals, but it also brings wider benefits to local communities. For example tackling loneliness can reduce the demand for costly health, care and other interventions and, by reconnecting individuals to their communities, it can give renewed access to older people's economic and social capital. Whilst hard

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cost benefit analysis of loneliness is still scarce, existing data indicates good returns on investment. Given the high cost of the health, social care and other services required by lonely individuals if their circumstances are not addressed, there is a strong case for investment in this area, particularly given the relatively low cost of many effective interventions.

2. Who is at risk and why?

The Marmot Review stated clearly that inequalities in health arise because of inequalities in society; in the conditions in which people are born, grow, live, work, and age. Taking action to reduce inequalities in health does not require a separate health agenda, but rather action taken across the whole of society. Yet, focusing solely on the most disadvantaged will not reduce health inequalities sufficiently. To reduce the steepness of the social gradient in health, the Review argued that actions must be universal, but with a scale and intensity that is proportionate to the level of disadvantage; this was termed 'proportionate universalism'.

Central to the Review's final report, Fair Society: Healthy Lives (2010), was a life course perspective. Disadvantage starts before birth and accumulates throughout life. Therefore, action to reduce health inequalities should start before birth and be followed through the life of the child. Research into social isolation has tended to focus on older people, generally those aged 65 and over (Victor et al 2000). However, a 2006 New Zealand based study highlighted the impact of social isolation throughout the life course (Bristol City Council, 2014). By following people from childhood into adulthood the research concluded that social isolation in children has persistent and cumulative detrimental effects on adult health. The research indicated that social isolation tended to persist throughout life, and the longer an individual was isolated the worse their adult health. The researchers also suggested that it was possible that social isolation disrupts constructive and restorative processes that enhance physiological capacities, as suggested by evidence that lonely individuals experience disrupted sleep and engage in passive rather than active coping strategies in their everyday lives.

In September 2015 Public Health England produced a report looking at reducing social isolation across the life course arguing that while social isolation is more commonly considered to occur in later life, it can occur at all stages of life. The report outlines four key life stages where social isolation can occur:

2.1 Pregnancy and early years

Pregnancy can present an opportunity to create new social networks which provide a supportive social environment. However, this is not always the case. A survey conducted on behalf of the charity Family Action found that one in five mothers lack support networks to help them through pregnancy and are unaware of the services available to help with depression (PHE 2015). Among mothers in low income households, the proportion is greater, at one in three.

There is a well-established link between social disadvantage and poor self-rated health among mothers with new-born infants. There is also an independent link between social isolation and poor

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self-rated health among new mothers. A mother who is economically deprived, has inadequate social networks or is depressed is also disadvantaged in the degree to which they can provide a good start in life for their child (PHE, 2015).

2.2 Children and young people

Children who are socially isolated in school may have low perceived social efficacy (a lack of belief in their ability to control events in their life) and experience anxiety and social withdrawal. Behavioural problems at school can lead to a child missing out on a crucial opportunity to develop social skills which may limit the potential for creating the supportive social networks across the life course that contribute to good health. Children who experience social isolation in childhood tend to have lower educational outcomes and lower adult social class (based on occupation), and higher likelihoods of smoking, obesity and psychological distress in adulthood.

Findings suggest that childhood social isolation may have enduring effects on the clustering of metabolic risk markers such as overweight and elevated blood pressure in adult life. Witnessing domestic abuse can also damage a child's development. Other adverse childhood experiences such as sexual abuse are also associated with social isolation later in life. A study using the British 1958 birth cohort examined the influence of childhood adversity on social relations and mental health at age 45. In this study, measures of childhood adversity included neglected appearance, maternal absence, paternal absence, being in care, parental divorce, and physical and sexual abuse by a parent. The study found that childhood adversity was related to negative aspects of close relationships and network size and to poorer mental health at age 45.

Young people who care for others have an increased risk of social isolation. When young people are required to take on too many caring responsibilities or carry out caring roles that are not appropriate, their health, wellbeing, safety and development can be adversely affected. There are a substantial number of young carers: Surveys of young carers have found substantial numbers reporting stress, anxiety, low self-esteem and depression.

Girls most at risk of teenage pregnancy include those who dislike school and those who come from a socially disadvantaged background (both of which are associated with an increased risk of social isolation). Teenage pregnancy in turn can bring stigma and material deprivation; both of these may increase the risk of social isolation for parents and children. Children of teenage mothers with inadequate social networks and living in deprived circumstances face considerable disadvantages from the very start of life, contributing to the intergenerational cycle of disadvantage.

Risks for social isolation among children and young people are also related to social and cultural norms, beliefs and attitudes. A number of studies show that obesity in childhood and adolescence can result in low self-confidence and can limit the ability to make friends. Analysis of the UK's Millennium Birth Cohort Study (MCS) found that obese children as young as three years for boys, and five years for girls have significantly greater peer relationship problems than healthy weight children of the same

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age. In addition, there is evidence that obese children and adolescents are more at risk of being bullied than those of average weight. Ethnicity can also be associated with increased risk of social isolation among children and young people. For example, ethnic minority children who start life from an economically disadvantaged position and linguistic barriers are at increased risk of social isolation. A report by the children's charity Barnardo's found that ethnic minority children are subject to racially motivated bullying and harassment at school.

Evidence shows that children living with a disability or a long-term health condition are at increased risk of being bullied at school. Evidence based on two longitudinal studies in the UK – the Millennium Birth Cohort Study (MCS) and the Longitudinal Study of Young People in England (LSYPE) – found an increased likelihood of being bullied among children with special educational needs (SEN) and among children with a longstanding limited illness (LSLI) compared with their peers without.

Being a young person not in education, employment or training (known as NEET) has a detrimental effect on the prospect of leading a happy and productive life. More than one in 10 (13%) young people report feeling too anxious to leave the house and this increases to 35% among NEETs. More than a third (36%) often feel anxious about everyday situations, rising to 52% for NEETs. A fifth claim they "fall apart" emotionally on a regular basis. This increases to a third for NEETs (PHE, 2015). Being NEET also means missing out on opportunities to develop skills and experience leading to disadvantage in the labour market. In turn this contributes to income deprivation and may adversely affect relationships, increasing the likelihood of social isolation. All of these disadvantages accumulate to increase the risk of experiencing poor health across the life course.

2.3 Working-age adults

Adults of working age (16–64), receive less attention than other groups when it comes to studies of social isolation. However, as with other age groups, experiences and life transitions occur that can lead to social isolation. A survey conducted by the Royal Society for the Encouragement of Arts, Manufactures and Commerce (RSA) highlighted that a major benefit of social networks is the empowerment of individuals; conversely, disconnection from networks of influence signals disempowerment. Another significant finding was that 50% of unemployed people were socially isolated, though it was uncertain whether this was due to income deprivation or loss of contacts due to unemployment, or both.

There are a range of negative consequences for working-age adults who are unemployed, one of which is being isolated from networks of influence. The long-term unemployed are at greater risk of becoming socially isolated than those in employment; this in turn negatively impacts upon labour market opportunities. One mechanism by which unemployed people become socially isolated is through the loss of daily contact with colleagues. Another cause is withdrawal from friends and family because of embarrassment and/or the need to cut back on the expenses associated with socialising, the latter being associated with a lower income. Thus the effects of social isolation and long-term unemployment reinforce one another. The RSA report Power Lines

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found that unemployment doubles the likelihood of men becoming isolated and more than quadruples the likelihood among women.

A study of participants in the 1958 British birth cohort at ages 42, 45 and 50 found that for both men and woman, having fewer than five friends at age 45 predicted poorer psychological wellbeing at 50, and having a partner was associated with larger kinship networks. However, contact with larger kinship networks was shown to benefit men's wellbeing but not that of women. This raises the point that there are often negative as well as positive aspects to relationships within kinship networks, which affect men and women differently.

Among ethnic minority communities, barriers to social inclusion, including those associated with social disadvantage, housing problems, and language barriers, may contribute to increased risk of social isolation. According to the Mental Health Foundation, ethnic minority people living in the UK are more likely to be diagnosed and admitted to hospital for mental health problems, experience a poor outcome from treatment and to disengage from mainstream mental health services. This signals a circular relationship between social exclusion and deterioration in mental health.

Addiction can be both rooted in, and the cause of, social isolation. Adverse social experiences such as isolation, abandonment and neglect, especially during the early stages of life, increase an individual's risk of developing drug addiction. Inadequate social networks may contribute to both causes and consequences of alcohol addiction. For example, alcohol use as an effort to establish contact with others and cope with loneliness is widely recognised as a gateway to drinking problems and in turn, addiction can lead to social isolation. Substance abuse may strain social support relationships, leading to social isolation. Addiction can also bring extreme forms of social isolation such as homelessness and criminality. In such cases social isolation manifests itself in withdrawal from people or institutions that represent mainstream society. Social isolation is a common experience for homeless people, which adds further adversity to their lives.

2.4 Retirement and later life

Some retired and older people are at risk of social isolation, which, when experienced at older ages, increases the risk of mortality. In particular, three life events are associated with social isolation among older people: retirement and losing connection with colleagues; falling ill and becoming less mobile; a spouse dying or going into care.

A meta-analysis of 148 studies covering over 300,000 study participants who were on average 63.9 years old at the beginning of the studies, reported that having adequate social relations is associated with a 50% greater likelihood of survival over seven-and-a-half years of follow-up compared with those without adequate social relations. Findings from the English Longitudinal Study of Ageing show that people from disadvantaged socioeconomic groups are less likely to take part in social activities

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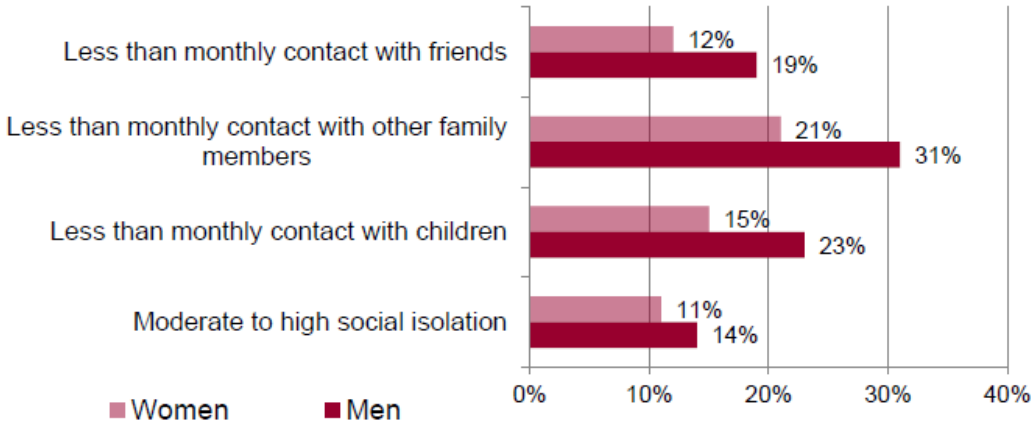
and volunteering than their more advantaged peers and are more likely to face greater limitations in physical and mental functioning.

Both men and women can become isolated in older age. However, a recent analysis of data from the English Longitudinal Study of Ageing reported by Independent Age highlighted that older men are more isolated than older women. For older men 14% reported experiencing moderate to high social isolation compared with 11% of women (see figure 1).

Figure 1: Isolation among men and women aged fifty and over: England, 2012/13 (PHE, 2015)



Note: Source does not provide statistical significance

Source: Beach and Bamford, ILC 2014; analysis of data from the English Longitudinal Study of Ageing[110]

Older people belonging to ethnic minority groups may experience language barriers and experience higher levels of poverty than those from the general population. One study has shown that the levels of loneliness are very much higher among people from ethnic minorities (with the exception of the Indian population) than for the general population but are broadly comparable with rates of loneliness reported for older people in their countries of origin. The social isolation of older ethnic minority people is of further concern as people in this group are less likely to access services for older people.

The prevalence of disease is higher in more deprived groups; people in the least affluent socioeconomic group have a 60% higher prevalence of chronic diseases than those in the highest socioeconomic group. The least affluent group also experience 30% greater severity of disease. The isolation of people with long-term health conditions can have further detrimental health effects. For example, because of its physical and psychological effects, cancer can limit mobility, increase loneliness and decrease social support networks.

The risk of social isolation is greater for people with dementia. A 2013 report by the Alzheimer's Society found dementia sufferers at higher risk of social isolation through a loss of social networks and social support. The report found that 70% of people with dementia stop doing things they used to

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because of lack of confidence, 68% because they were worried they would get confused, 60% because they were worried about getting lost and 60% because of a loss of mobility. Additionally, the survey found that loss of friends due to dementia was a key determinant of social isolation for sufferers: 28% of sufferers had lost friends following their diagnosis. Social isolation itself has been associated with the risk of developing dementia, illustrating a two-way relationship.

Housing conditions, such as cold homes, may contribute to social isolation. In England, over half of households in fuel poverty comprise people aged over 60. The home environment is important for the wellbeing of older people and although the majority of households in fuel poverty comprise older people, people of all ages living in fuel poverty may become more socially isolated due to not being able to afford to participate in social activities outside the home and not feeling comfortable inviting friends into a cold home.

Given that social isolation relates to network size and diversity, and frequency of contact, it is easy to see how retirement and older age increase the risk of social isolation. Social networks shrink with retirement and loss of working colleagues, friends and relations, and the reduction of income associated with retirement may limit social activities, especially for those on lower incomes. Social networks become less accessible with decreased mobility: it becomes more difficult to participate. When some or all of these events happen and result in social isolation, the consequences can include unmet healthcare needs and premature death.

3. Level of population need

3.1 Measuring loneliness and social isolation

Research over decades has found a fairly constant proportion (10-13 per cent) of older people feeling lonely often or always (LGA, 2016). Over the same time period, there has been a growing percentage of older people who sometimes feel lonely. As populations age, ever more individuals are likely to be lonely. Recent estimates place the number of people aged over 65 who are often or always lonely at over one million. The population that is socially isolated, and therefore at risk of loneliness, is considerable. A report from the LGA (2016) summarising recent research estimated that:

- Over 1 million older people say they are always or often feel lonely
- 12 per cent of older people feel trapped in their own home
- 6 per cent of older people leave their house once a week or less
- 17 per cent of older people are in contact with family, friends and neighbours less than once a week, and 11 per cent are in contact less than once a month
- Over half (51 per cent) of all people aged 75 and over live alone

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3.2 Benchmarking prevalence

Nationally loneliness is measured in the ONS Opinions and Lifestyle Survey, whilst local data for Southampton was collected as part of the City Survey, which asked residents questions about social isolation including the extent to which they felt lonely in their daily life. Due to the similar methodology used in the two surveys, the results are comparable and show that loneliness in Southampton is slightly lower than the national average. Overall, 1 in 7 (14.6%) of residents aged 16+ in Southampton reported feeling lonely in their daily life (compared to 15.4% for England), whilst 6 in 10 (59.2%) reported not feeling lonely at all. The prevalence increases for the over 65's to nearly 16% in Southampton, with national data suggesting that this dramatically increases amongst those aged over 80 (see figure 2).

Figure 2: Proportion of people reporting high levels of loneliness in their daily lives (score of 6-10)

	All Residents	Working Age (16-64)	65-79	Over 80's	65+
Southampton *	14.6%	14.6%			15.9%
England **	15.4%	14.8%	14.5%	29.2%	

** Source: Southampton City Council City Survey 2016*
*** Source: ONS Opinions and Lifestyle Survey 2014/15 - as quoted in Measuring National Well-being: Insights into Loneliness, 2015*

Based on the City Survey findings there are an estimated 30,000 residents in Southampton (aged 16+) who feel lonely in their daily lives, with approximately 5,200 of those aged over 65. This only provides an insight into those who are feeling lonely, not about all those who are socially isolated.

In addition, it should be noted that measuring loneliness can be problematic, especially the self-reported indicators used in the City Survey. Stigmatisation of loneliness may make people unwilling to identify as such, resulting in bias and undercounting. Also the self-reporting of loneliness may be susceptible to gender bias if people feel it is more "acceptable" for women to report loneliness (Victor et al 2000); this may be reflected in the 2016 Southampton City Survey which found that 16% of women reported feeling lonely compared to only 13% of men. Nonetheless the figures reported above give some indication of the situation in Southampton.

3.3 Who is lonely in Southampton?

The Southampton City Survey provides some insight into the demographic differences of loneliness, with higher levels of loneliness seen amongst BME communities (22%), those who are not working (24%), those who have a disability (20%), people for whom English is not their first language (24%), and residents that are in poor health (35%). Due to the relatively small sample size, the city survey does not provide the comprehensive low-level geographical data that is needed to provide targeted interventions and it does not provide information on those who are considered at risk, or cover children and young people.

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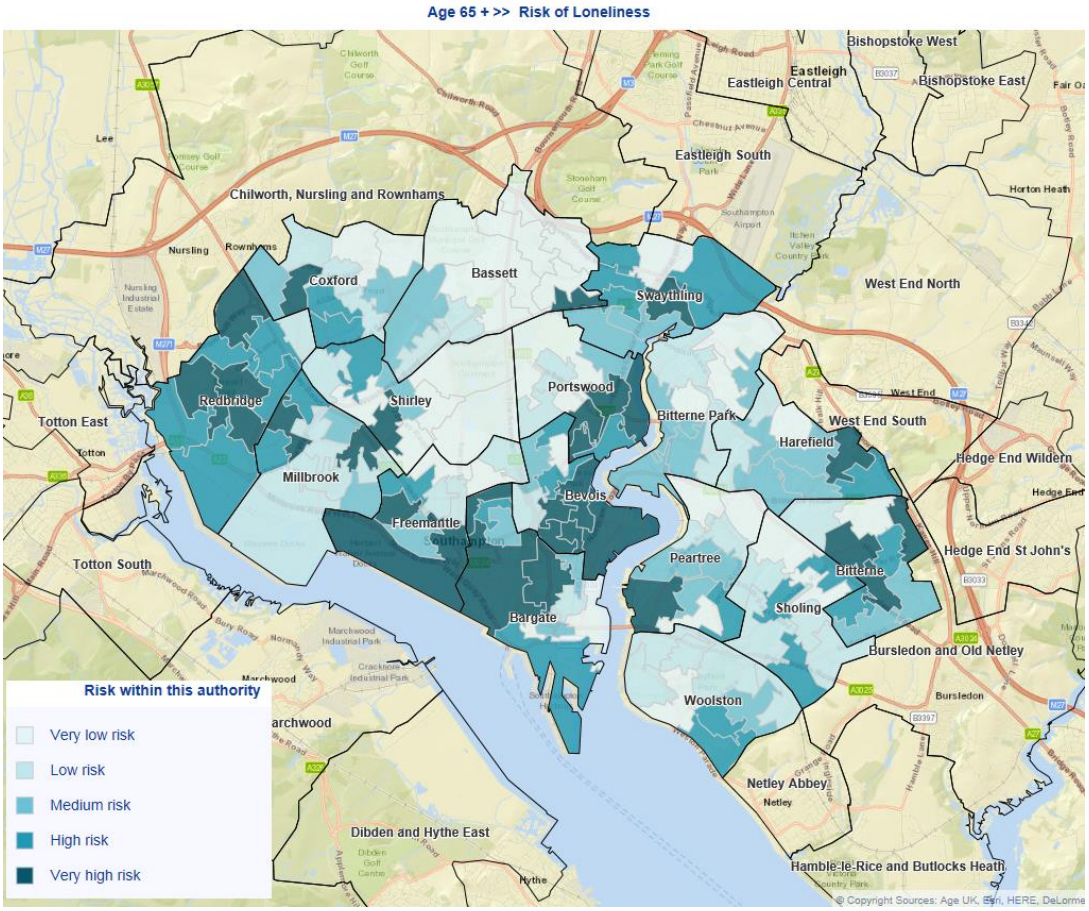
Data on many of the characteristics mentioned above and the risk factors outlined in previous sections of this report is available and can be geographically mapped. However, individually they do not robustly identify people who are lonely or socially isolated per say; consideration needs to be given to how these factors are combined and weighted to create a comprehensive spatial picture of risk.

Age UK have attempted to do this in developing their UK loneliness maps which show the relative risk of loneliness across 32,844 neighbourhoods (LSOAs) in England. They have used the English Longitudinal Study of Ageing (ELSA) to identify significant risk factors for those reporting being lonely in their daily life and used these to model the relative risk of loneliness. The final model was based on the four variables from the 2011 Census which were reported to predict around 20% of the loneliness observed amongst older people aged 65+:

- Age
- Marital status (divorced or separated)
- Self-reported health status (poor health)
- Household size (one-person households)

Figure 3 illustrates the distribution of loneliness in Southampton, relative to all neighbourhoods in the city. The highest levels of risk are shown in the wards of Bargate, Bevois and Freemantle.

Figure 3: Age UK loneliness risk map



There are limitations to these maps. Firstly, not all factors associated with loneliness are available at neighbourhood level, and so are not included; this may introduce bias. The maps also only show the risk of loneliness and not the actual prevalence of loneliness. In addition, the analysis was based on the ELSA dataset and so only applies to the over 65's; loneliness in younger age groups is not considered.

4. Social Isolation Index for Southampton (SIIS)

4.1 SISS methodology and data sources

As a result of these limitations and a local demand for increased intelligence on social isolation, a local Social Isolation Index for Southampton has been developed in an attempt to provide some further insight into areas at increased risk in the city.

In order to produce a Social Isolation Index for Southampton (SIIS) it was decided that social isolation should be tracked over the different life stages outlined by Public Health England as well as an overall score for social isolation in Southampton, rather than just focusing on older people. Several different methodologies were reviewed, and data used in these models assessed along with other known datasets available measuring some additional risk factors identified in the literature for each stage of the life course. Datasets also needed to be available at a small area level in order to assess differences between neighbourhoods in the city. Similar to the Age UK methodology, it was decided to use data at Lower Super Output Area (LSOA) level; these are Census geographical blocks of between 1,000 to 3,000 people and 400 to 1,200 households. The following data sources were identified:

- 2011 Census: All data is available at the geographical level (LSOA) required to give a small area overview of social isolation in Southampton. The Southampton response rate for the 2011 Census was 93% making it the most comprehensive dataset available.
- MOSAIC: Although other local authorities had built indices of loneliness and social isolation based on MOSAIC, it is not used extensively in the SIIS due to the lack of transparency around methodology and the inability to use MOSAIC to monitor trends over time.
- Adjusted Clinical Groups Tool (ACG): Health data, primarily on disease prevalence collected at GP level but available at small area level (LSOA).
- Other: Where factors contributing to social isolation were identified but were not available from these sources, an alternative source was identified and used. For example, data from the National Child Measuring Programme was used for the childhood obesity measure.

The SIIS examines social isolation across the different life stages outlined in the Public Health England report. However, in SIIS, pregnancy and early years are not an individual group, partly because of the low numbers of teenage mothers (identified as being at risk of social isolation) at lower super output area level, and because the data for new mothers is likely to show a fairly even distribution across

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LSOAs. Instead it is recommended that new mothers are targeted for schemes aimed at reducing social isolation by health visitors and other people who are likely to be in contact with new mothers.

Research has also shown that lesbian, gay, bisexual and transgender (LGBT) people are also at risk of loneliness and social isolation due to the stigma and isolation they deal with in their daily lives. Older people in the LGBT are at particular risk of social isolation and loneliness as they are more likely to live alone and they are less likely to have children to call upon in times of need than people who are not LGBT (Greenwood, 2015). People who are LGBT have not been included in the SIIS as information is not available at the low geographical level required for the SIIS. The City Survey question on loneliness shows that 9% of people who are LGBT feel lonely compared to 14% of people who are heterosexual. However this was based on a small sample and so the findings are not significant. It is recommended that this group is focused on when planning interventions.

The indicators used at the different life stages are outlined in figure 4 below with a full justification for each indicator available in the appendices. For indicators that appear in all life stages, the indicator in each life stage is just relevant to that age group. For example with provision of unpaid care indicator, for the Young People life stage this just relates to people aged 0-15 who provide unpaid care, the Working-age population group will just include people aged 16-64 who provide unpaid care, the Older People group will include people aged 65 and over who provide unpaid care and the overall category will include everybody of all ages who provide unpaid care.

Figure 4: Indicators used in the SIIS

Life Stage	Indicators	Data Source
Young People (aged 0-15)	English is not the main language	Census (2011)
	Long term health problem or disability	Census (2011)
	Provides Unpaid Care	Census (2011)
	Excess weight – Year 6	NCMP (2013/14-2015/16 pooled)
	Not in employment, education or training (NEET)*	Client Caseload Information System (31/01/2017)
	Income Deprivation Affecting Children	Index of Multiple Deprivation (2015)
Working-age population (aged 16-64)	No Cars or vans in households	Census (2011)
	English is not the main language	Census (2011)
	Long term health problem or disability	Census (2011)
	Provides Unpaid Care	Census (2011)
	No qualifications	Census (2011)
	Unemployment benefits	ONS (May 2016)
	Single Person Households	Census (2011)
	Divorced, separated or widowed	Census (2011)
	Lone parent at address	MOSAIC (2015)
	Depression or bi-polar disorder	ACG (March 2016)
	Post-natal depression	MOSAIC (2015)
	Deprivation	Index of Multiple Deprivation (2015)

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Older People (aged 65 and over)	No Cars or vans in households	Census (2011)
	English is not the main language	Census (2011)
	Long term health problem or disability	Census (2011)
	Provides Unpaid Care	Census (2011)
	Single Person Households	Census (2011)
	Divorced, separated or widowed	Census (2011)
	Age-related macular degeneration OR glaucoma	ACG (March 2016)
	Depression or bi-polar disorder	ACG (March 2016)
	Elderly population aged 80+	ONS (MYPE 2015)
	Income Deprivation Affecting Older People	Index of Multiple Deprivation (2015)
Overall Score	No Cars or vans in households	Census (2011)
	English is not the main language	Census (2011)
	Long term health problem or disability	Census (2011)
	Provides Unpaid Care	Census (2011)
	Single person households	Census (2011)
	Age-related macular degeneration OR glaucoma	ACG (March 2016)
	Depression or bi-polar disorder	ACG (March 2016)
	Divorced, separated or widowed	Census (2011)
	Lone Parents	MOSAIC (2015)
	Elderly population aged 80+	ONS (MYPE 2015)
	Deprivation	Index of Multiple Deprivation (2015)

**The NEET indicator is people aged 16-18 but has been included in the Young People category following the model outlined by Public Health England. For a full explanation of this indicator see the Appendix.*

Data was collected at LSOA level for each of the above indicators. The data was then ranked in order for each indicator from 'best' LSOA to 'worst' LSOA and then split into 10 equal groups known as deciles. Once LSOA deciles had been calculated for each indicator, an average score was calculated for each LSOA in each age category and an overall score; these scores were taken as an indicator of the potential risk of social isolation in each LSOA relative to all other LSOAs in the city.

It was considered whether each measure should be weighted in accordance with how much it contributed towards social isolation. In the literature reviewed for the report there was no indication that the indicators should be weighted; the Public Health England Report did not mention weighting indicators, Essex did not weight variables in their research and neither did Hampshire. Medway did include weighting in their report by asking a stakeholder group to score each indicator for its suitability to predict social isolation, however this was very subjective and there was no evidence offered supporting this methodology. Given this and the time and resource constraints, it was decided to initially give equal weight to each indicator, although the provision to change this was built into the model to allow this to be altered at a later date if necessary.

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4.2 SIIS Results

The average scores were mapped in quintiles (5 equal groups) showing the *relative* risk (from high to low) against all other LSOAs in the city. Maps were also produced using the average SIIS score to show the range scores and highlight areas with the very highest scores and therefore risk of social isolation. Further analysis of the relationship between deprivation and the SIIS at LSOA level was conducted using linear regression.

The four maps shown in figures 7, 8, 9 and 10 illustrate social isolation at the different life stages across Southampton as well as the overall score (larger versions of the maps can be found in the appendix to this report). The results show some geographical similarities between the very high risk groups amongst young people and the working age population. This may be because both groups are experiencing social isolation for the same reason, for example if English is not the main language for the young people then it is unlikely to be the main language for the adults in the same household. Or the reasons for social isolation might be different but related, for example if an adult is socially isolated because of a long-term condition and a young person in the same household could be socially isolated because they are providing care for that adult.

Figure 5: Table of the 5 areas most 'at risk' of social isolation for each age group

Young People			Working-age population		
Ward	**LSOA**	**SIIS Score**	**Ward**	**LSOA**	**SIIS Score**
Freemantle	E01017194	7.3	Redbridge	E01017245	7.7
Swaythling	E01017272	7.0	Millbrook	E01017210	7.7
Redbridge	E01017238	7.0	Bitterne	E01017167	7.7
Shirley	E01017251	7.0	Redbridge	E01017237	7.5
Bargate	E01017137	7.0	Redbridge	E01017240	7.4
Southampton Median: 4.4			Southampton Median: 4.6		

Older people			Overall Score		
Ward	**LSOA**	**SIIS Score**	**Ward**	**LSOA**	**SIIS Score**
Coxford	E01017182	7.8	Shirley	E01017250	7.3
Portswood	E01017234	7.4	Redbridge	E01017245	7.2
Bargate	E01017139	7.3	Bitterne	E01017166	7.2
Shirley	E01017250	7.2	Woolston	E01017280	7.2
Woolston	E01017281	7.1	Redbridge	E01017237	7.0
Southampton Median: 4.4			Southampton Median: 4.3		

The table in figure 5 shows the wards which had the 5 highest ranking LSOAs for social isolation in each age group. This table further highlights the differences in the location of people at risk of social isolation by age group, with there being no LSOAs (in the 5 highest ranking) appearing in more than one age group. Although individual LSOAs are different, one area which does feature in each age group

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is Redbridge ward. Redbridge LSOAs feature heavily in the top 5 for working age adults (3 LSOAs) and also in the index for Young People (1 LSOA). None of the 5 highest scoring LSOAs for older people are in Redbridge, but the ward does contain LSOAs in the most at risk quintile. Although there are some wards which contain high proportions of the highest risk people in each age group (most prominently in Redbridge) the geographical difference between the two groups should be taken into consideration.

Figure 6: Relationship between Social Isolation and Index of Multiple Deprivation

Further investigation using linear regression was done into the relationship between the different age-groups and deprivation based on the scores provided by the SIIS by comparing the SIIS scores with the Index of Multiple Deprivation (IMD). The results illustrated in figure 6 show that the link between deprivation and social isolation was strongest in the working-age population and weakest amongst the older people age population. As the SIIS for the working-age population includes the IMD as an indicator, the relationship was tested by including and then excluding the IMD indicator. When the IMD indicator was excluded from the working-age population score and compared to the IMD, the R^2 value was reduced by 0.064 to 0.684. The results below include the IMD in the Working-Age population score. Therefore, the assumption should not be made that interventions amongst older people that are targeting issues relating to deprivation are also targeting social isolation.

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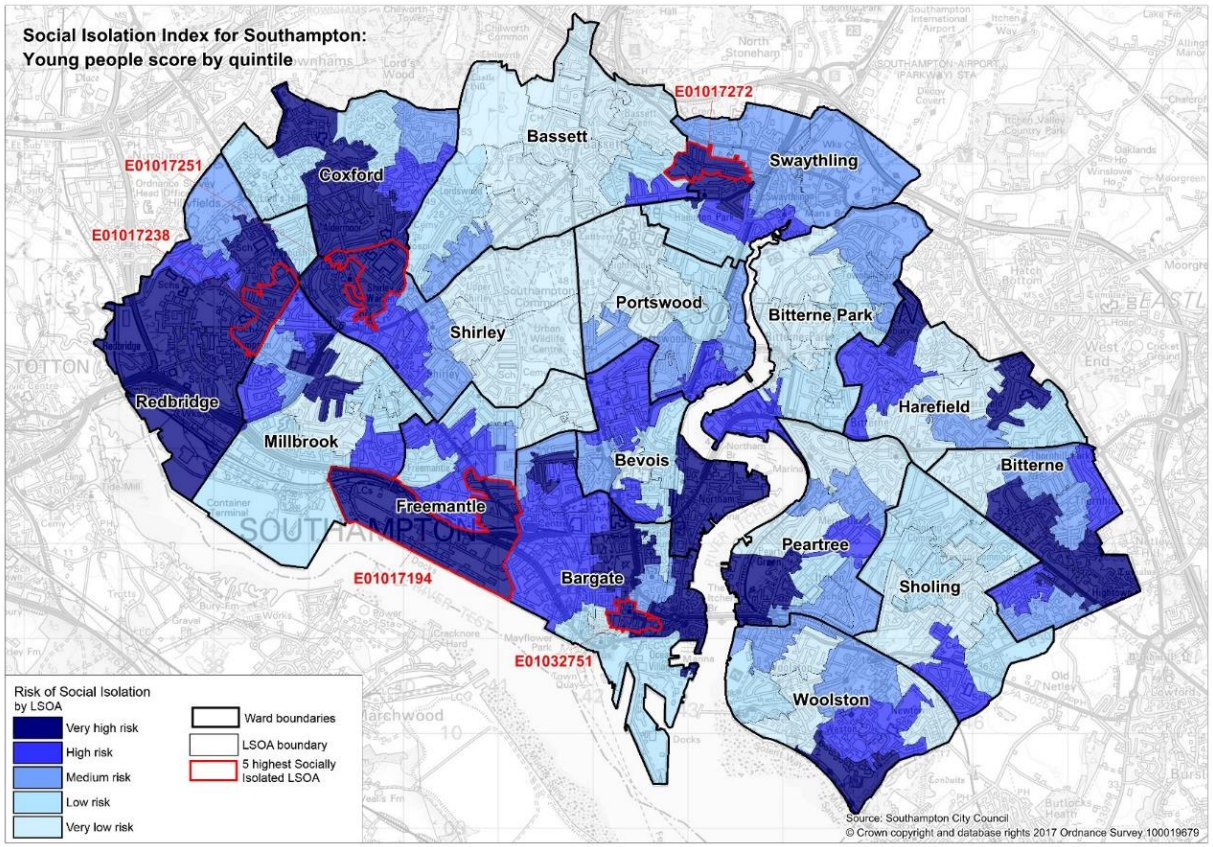
Figure 7: Young People ranges and quintiles



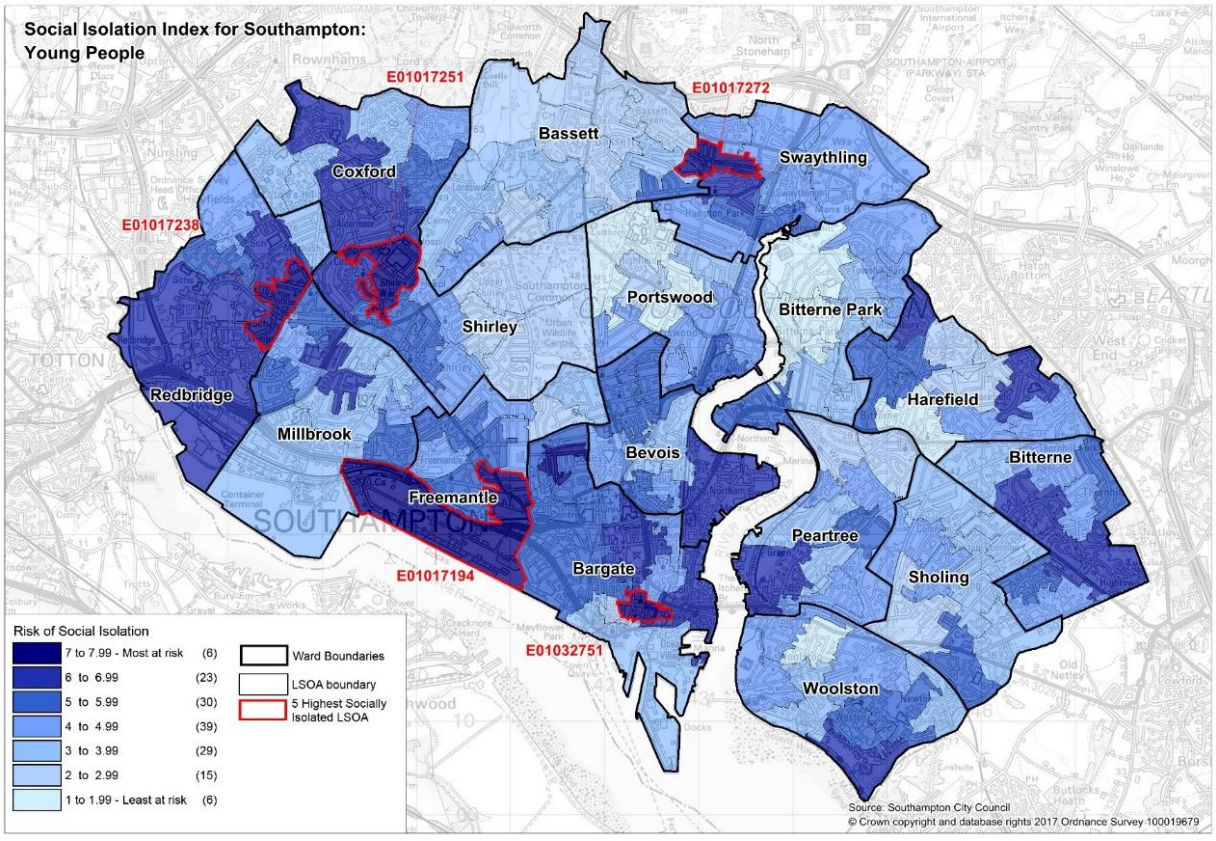


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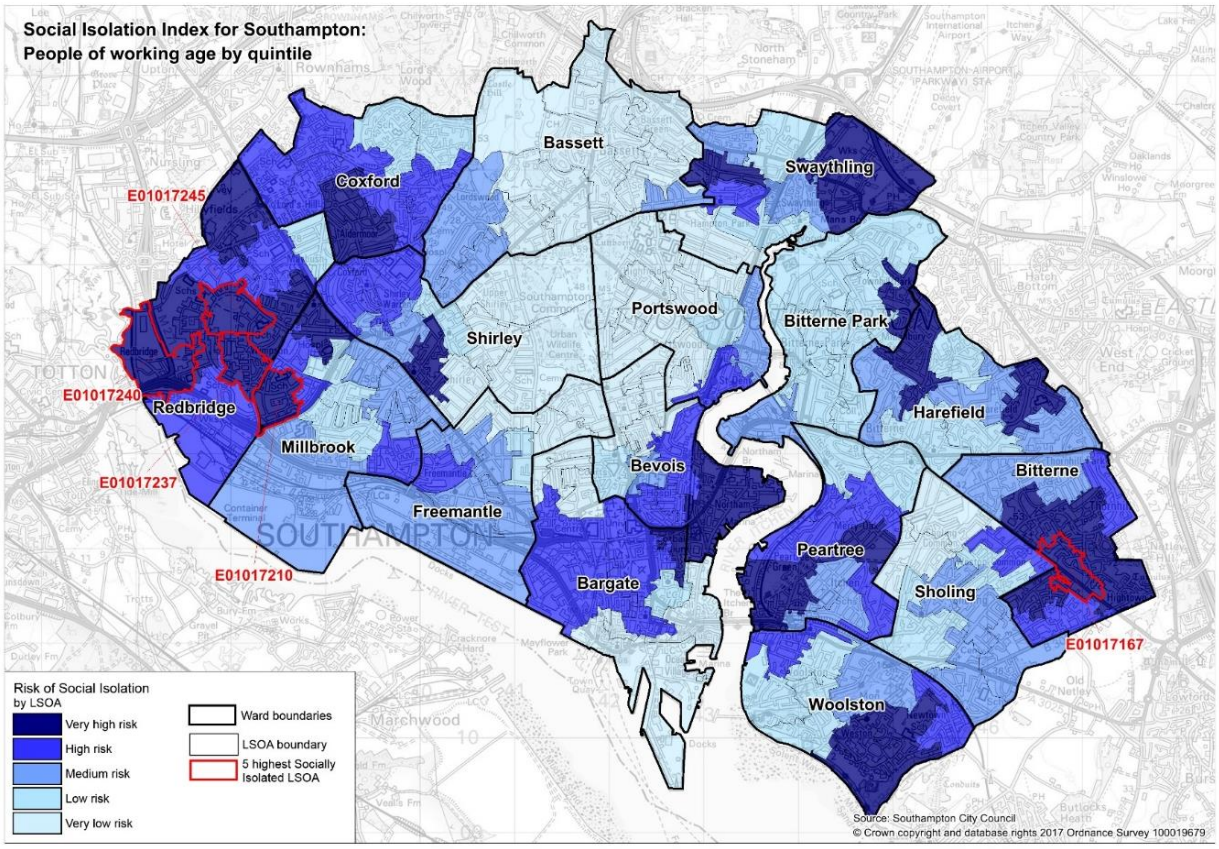
Figure 8: People of working age ranges and quintiles



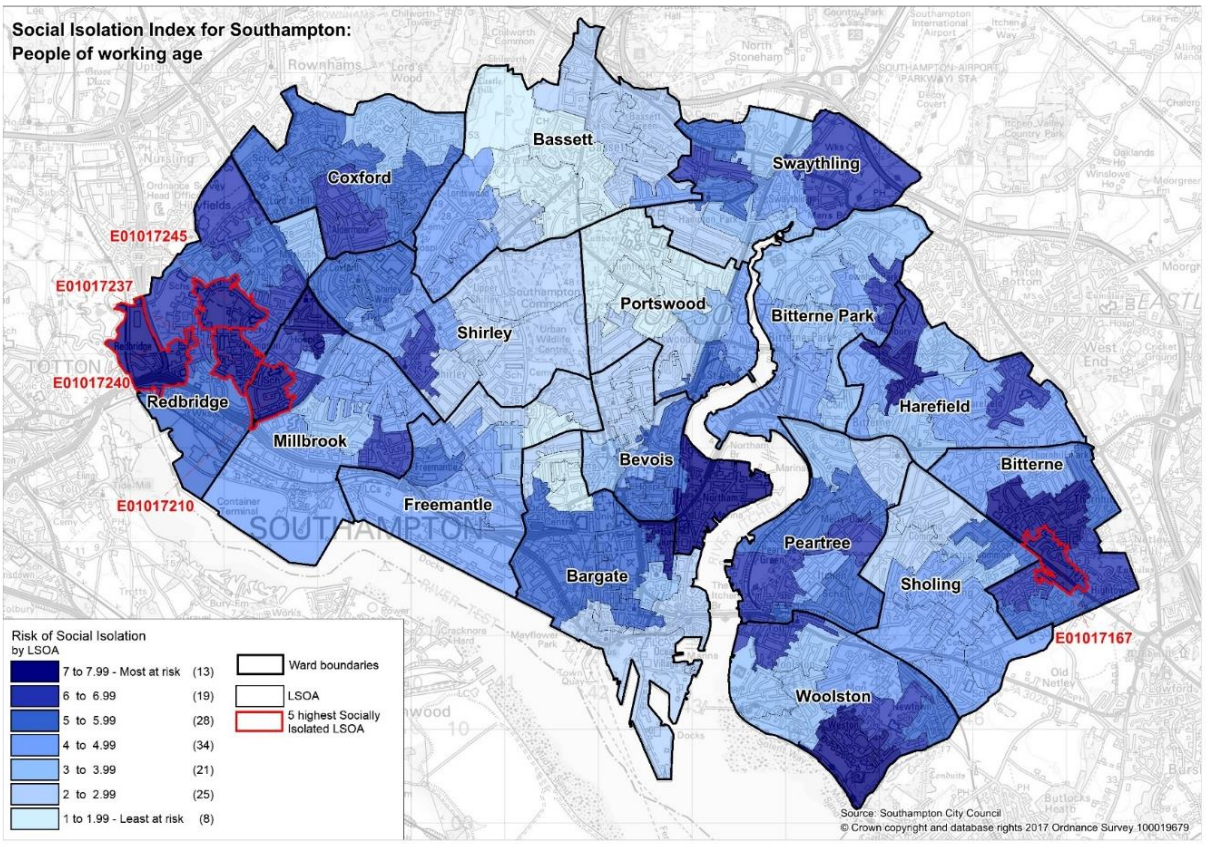


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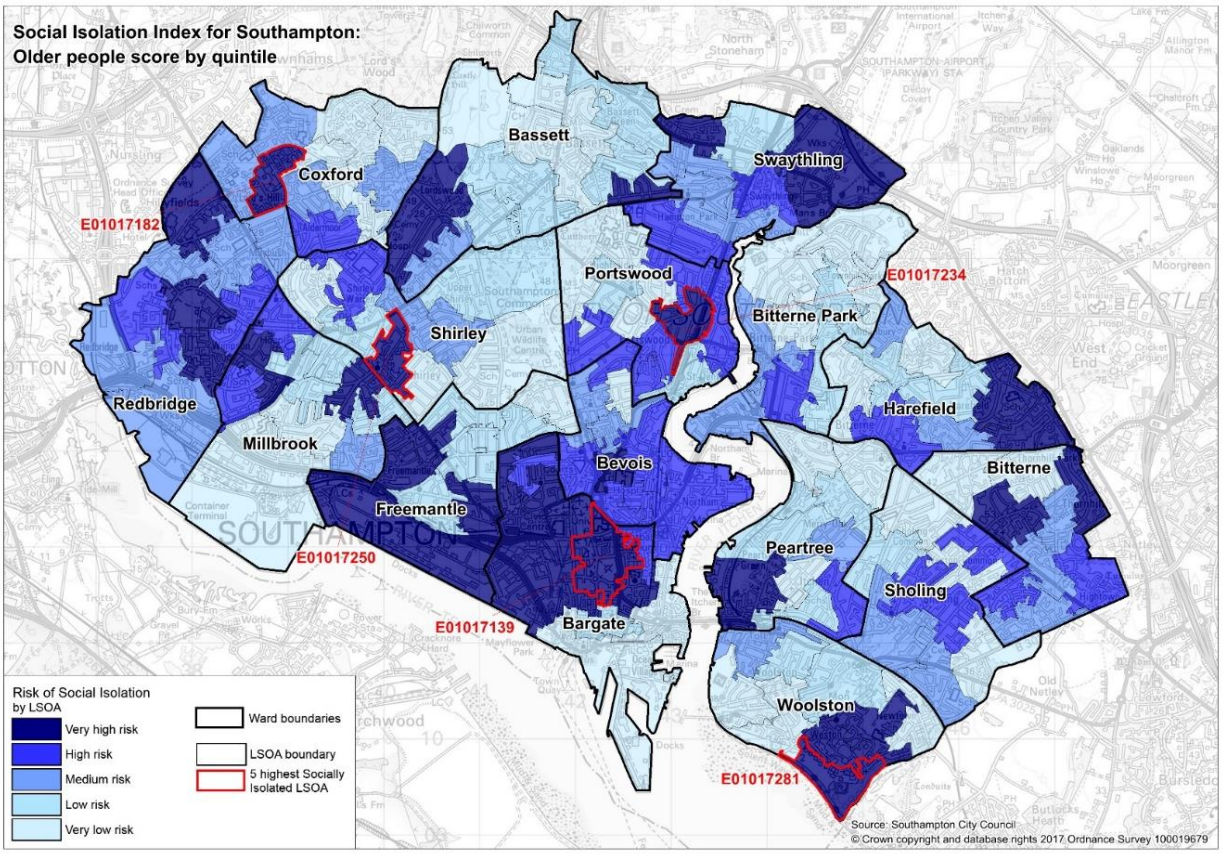
Figure 9: Older People ranges and quintiles



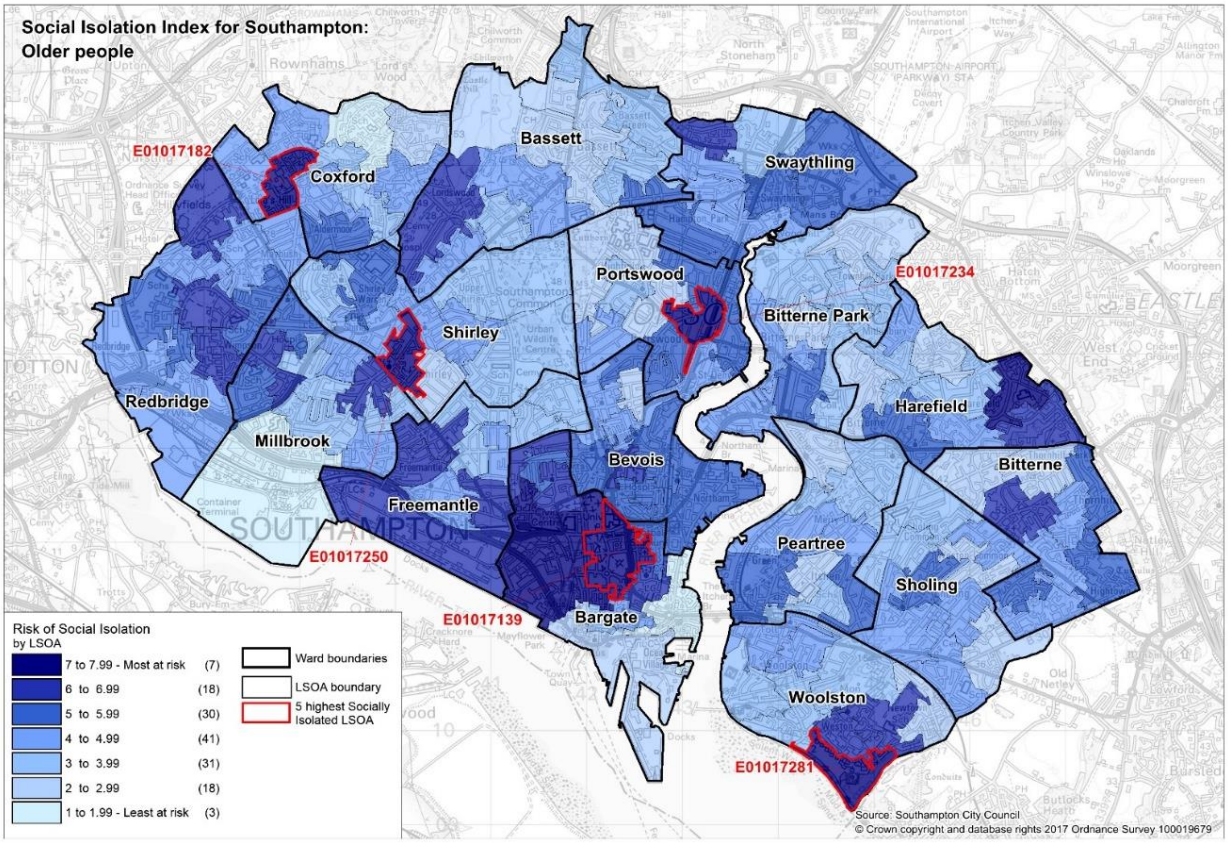
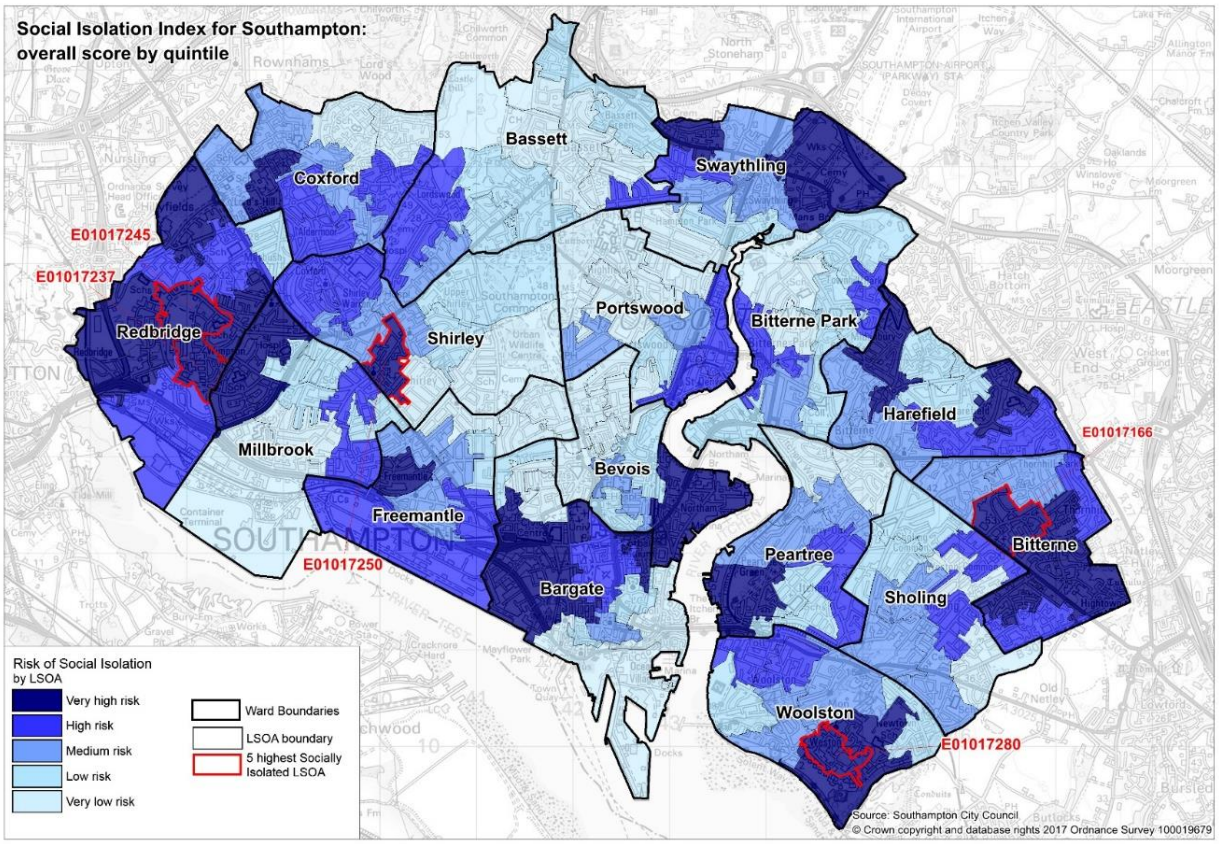
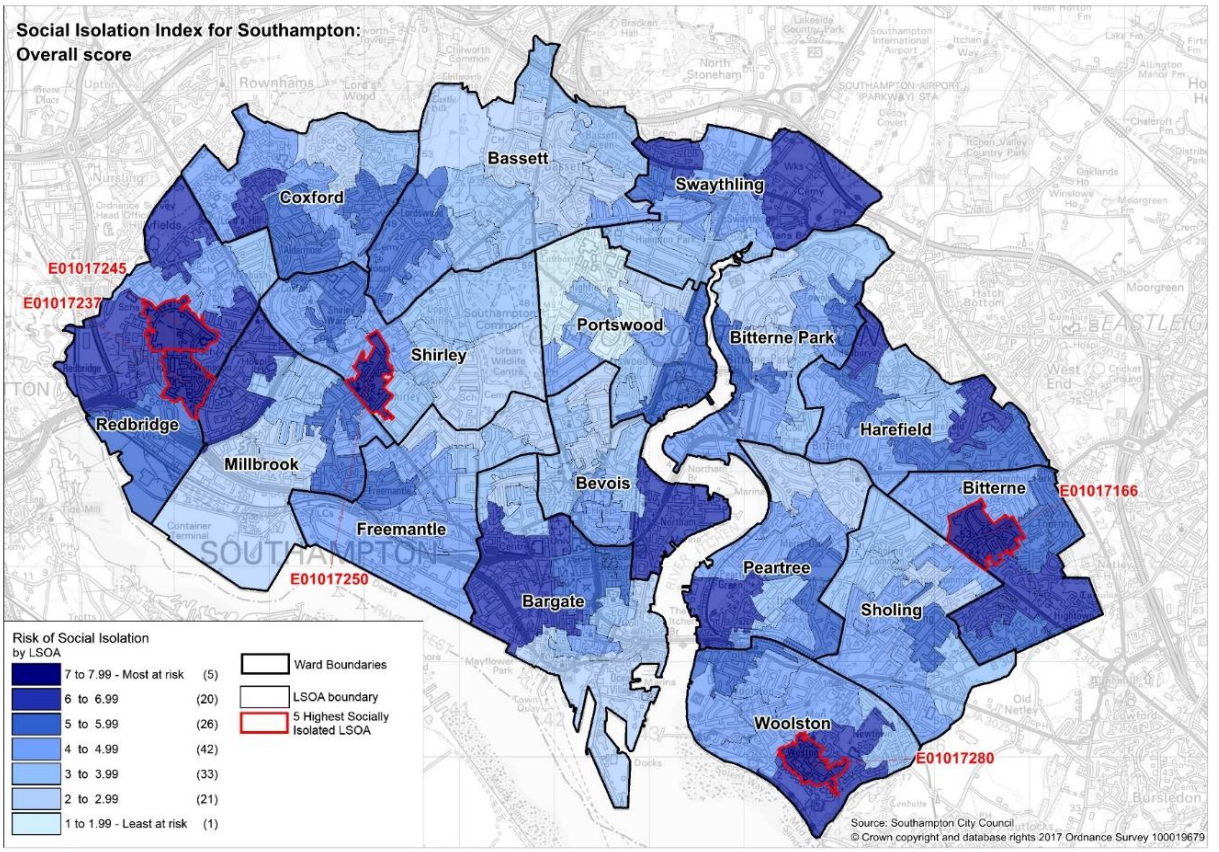


Figure 10: Overall Score ranges and quintiles





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4.3 Limitations

Although the SIIS maps may be useful in showing areas of the city that are potentially at a higher risk of social isolation for the targeting of services, the model does have a number of limitations which should be noted:

- Decisions on which variable to use (although based on evidence from the literature) and how to weight them may be somewhat arbitrary.
- The different life stages use different indicators and there are different numbers of indicators in each life stage making it difficult to make meaningful comparisons between the life stages.
- The index is restricted by what data is available, for example people who are LGBT have been highlighted as a group at risk of social isolation (PHE 2015) but they are not included in the SIIS because of the lack of data.
- As much of the data is based on the 2011 Census it is somewhat out of date and will not be able to be updated for a number of years.
- The SIIS scores are *relative* and not *absolute*; the SIIS therefore only shows where people are potentially at a higher risk of social isolation compared to other areas in the city. It does not necessarily identify where people are socially isolated, or indeed if this is a problem.
- As with similar social isolation indices created elsewhere, the results are not 'falsifiable' and the margin for error is unknown.

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5. Recommendations

- In Southampton residents at all life stages are at risk of social isolation, interventions to address this issue in Southampton should be tailored to the different factors contributing to social isolation in these age groups.
- Approaches towards tackling social isolation in young people and the working-age population should take a whole family approach, for example if a person is identified as socially isolated because they are a carer, steps should be taken to see if the person they are careering for is also at risk of social isolation.
- The difference in location of those at very high risk of social isolation in the different age groups highlights that in different areas, different methods of interventions should be used.
- Amongst the working-age population there is a strong relationship between deprivation and risk of social isolation, interventions that address issues related to deprivation (e.g. unemployment) can also be used to address social isolation.
- Due to the weaker link between social isolation and deprivation in younger people and the even weaker link between social isolation in older people, caution should be taken about the impact on social isolation that an intervention targeted on deprivation would have.
- Further surveys commissioned by Southampton City Council should focus on social isolation questions rather than loneliness to measure isolation over time. For example following the questions in the Duke Social Support Index which asks for the number of times in the past week the respondent has spent time with someone not living with them (Wardin et al. 2013).
- New parents have been identified as groups susceptible to social isolation but are not included in the SIIS for reasons outlined above, these groups should be targeted when planning measures to prevent social isolation.
- Lesbian, Bi-sexual, Gay and Transgender (LGBT) groups are also a group identified as being at risk of social isolation but not included in the analysis, special consideration should also be given to this group when targeting interventions.

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Appendix 1 - Indicator Rationale:

Age-related macular degeneration OR glaucoma:
Research has shown that limiting activity due to a fear of falling is very common in older adults with visually impairing eye disease. Although this compensatory strategy may protect against falls, it may also put people at risk for social isolation and disability (Wang et al 2012).

Depression or bi-polar disorder:
As with other long-term conditions, depression and bi-polar disorder can both lead to being socially isolated which in turn can make depression worse (Public Health England 2015).

Deprivation:
For young people, living in poverty can mean missing out on social events such as birthday parties, chronic stress and missing out on learning opportunities if there is a cost involved. It can also lead to stigma and bullying due to visible signs of poverty and difference which then lead to social isolation (The Children's Society 2015). Similarly in later life, deprivation can lead to stress, illness and missing out on social events (Public Health England 2015).

English is not the main language:
Among ethnic minority communities language barriers, may contribute to an increased risk of social isolation at all life stages (Public Health England 2015).

Excess weight – year 6:
A number of studies show that obesity in childhood and adolescence can result in low self-confidence and can limit the ability to make friends. Analysis of the UK's Millennium Birth Cohort Study (MCS) found that obese children as young as three years for boys, and five years for girls have significantly greater peer relationship problems than healthy weight children of the same age (Public Health England 2015).

Lone parents:
Lone parents can be more at risk from social isolation than other parents as money may be tighter limiting opportunities for social interactions and due to the stigma attached to being a lone parent (First Steps 2013).

Long-term health problem or disability:
Evidence shows that children living with a disability or a long-term health condition are at increased risk of being bullied at school which in turn leads to social isolation and loneliness. The isolation of adults with long-term health conditions can have further detrimental health effects. For example, because of its physical and psychological effects, cancer can limit mobility, increase loneliness and decrease social support networks (Public Health England 2015).

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No access to car or vans:
Access to vans or cars can hinder chances to create social networks and take part in activities, especially if the area lacks good public transport connections (Public Health England 2015).

No qualifications and claiming unemployment benefits:
There are a range of negative consequences for working-age adults who are unemployed, one of which is being isolated from networks of influence. The long-term unemployed are at greater risk of becoming socially isolated than those in employment; this in turn negatively impacts upon labour market opportunities. One mechanism by which unemployed people become socially isolated is through the loss of daily contact with colleagues. Another cause is withdrawal from friends and family because of embarrassment and/or the need to cut back on the expenses associated with socialising, the latter being associated with a lower income (Public Health England 2015).

Older people:
Older people are included as a separate at risk group as they are considered particularly at risk from social isolation due to retirement, increased risk of illness and losing a spouse (First Steps 2013).

Post-natal depression:
Nearly a third of new mums from low-income households lack local support networks to help them through pregnancy and are unaware of services to help with depression. Women who do not have friends or family nearby who they can turn to if they feel isolated through pregnancy or immediately after the birth of their child putting them at risk of social isolation (Public Health England 2015).

Provision of care:
People who provide care for others have an increased risk of social isolation amongst all age groups. When young people are required to take on too many caring responsibilities or carry out caring roles that are not appropriate, their health, wellbeing, safety and development can be adversely affected. As the population is ageing, an increasing number of older caregivers will be providing care over a long period, during which time they will be burdened both by care-giving and by the physiological effects of their own ageing. Amongst all age groups, low resistance to stressors, lowering of the immune system, fatigue, anorexia, non-intentional weight loss and physical inactivity are frequently associated with care-giving; these in turn increase the risk of social isolation (Public Health England 2015).

Single person household and people who are divorced, separated or widowed:
Whilst living alone, widowhood or illness do not automatically result in loneliness, they can make people significantly more vulnerable to loneliness and social isolation (Public Health England 2015).

Unemployment:
There are a range of negative consequences for working-age adults who are unemployed, one of which is being isolated from networks of influence. The long-term unemployed are at greater risk of becoming socially isolated than those in employment; this in turn negatively impacts upon

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labour market opportunities. One mechanism by which unemployed people become socially isolated is through the loss of daily contact with colleagues. Another cause is withdrawal from friends and family because of embarrassment and/or the need to cut back on the expenses associated with socialising, the latter being associated with a lower income (Public Health England 2015).

Young people not in education, employment, or training (NEET):

Being a young person not in education, employment or training (known as NEET) has a detrimental effect on the prospect of leading a happy and productive life. More than one in 10 (13%) young people report feeling too anxious to leave the house and this increases to 35% among NEETs. More than a third (36%) often feel anxious about everyday situations, rising to 52% for NEETs. A fifth claim they "fall apart" emotionally on a regular basis. This increases to a third for NEETs. Being NEET also means missing out on opportunities to develop skills and experience leading to disadvantage in the labour market. In turn this contributes to income deprivation and may adversely affect relationships, increasing the likelihood of social isolation. All of these disadvantages accumulate to increase the risk of experiencing poor health across the life course (Public Health England 2015).

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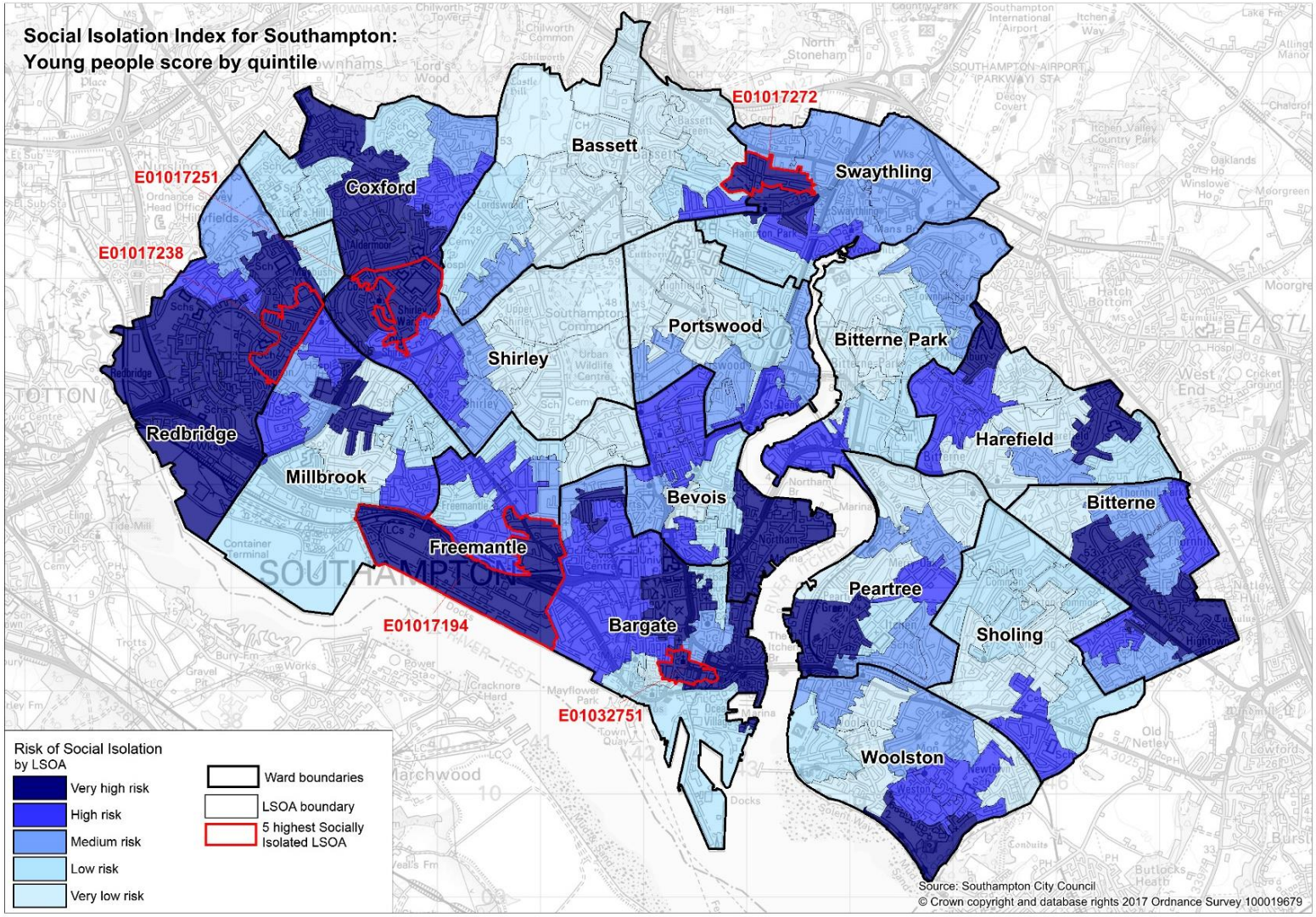
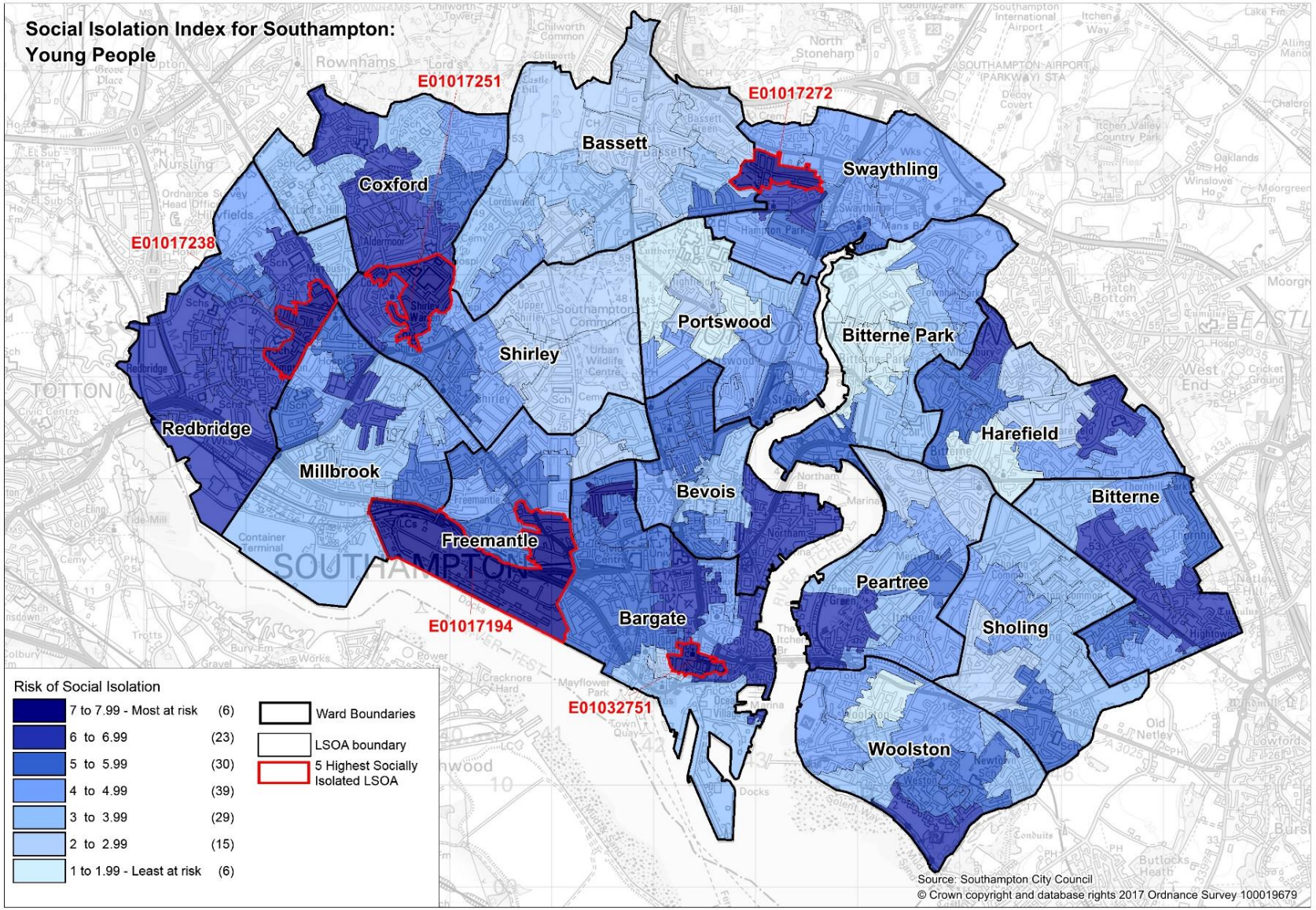
Appendix 2 – Maps showing SIIS ranges and quintiles for each life stage




Social Isolation Index for Southampton:
Young People
E01017251
E01017272
E01017238
E01017194
E01032751
Bassett
Swaythling
Coxford
Portswood
Bitterne Park
Shirley
Redbridge
Harefield
Millbrook
Bevois
Bitterne
Freemantle
Peartree
Bargate
Sholing
Woolston
Risk of Social Isolation
7 to 7.99 - Most at risk (6)
6 to 6.99 (23)
5 to 5.99 (30)
4 to 4.99 (39)
3 to 3.99 (29)
2 to 2.99 (15)
1 to 1.99 - Least at risk (6)
Ward Boundaries
LSOA boundary
5 Highest Socially Isolated LSOA
Source: Southampton City Council
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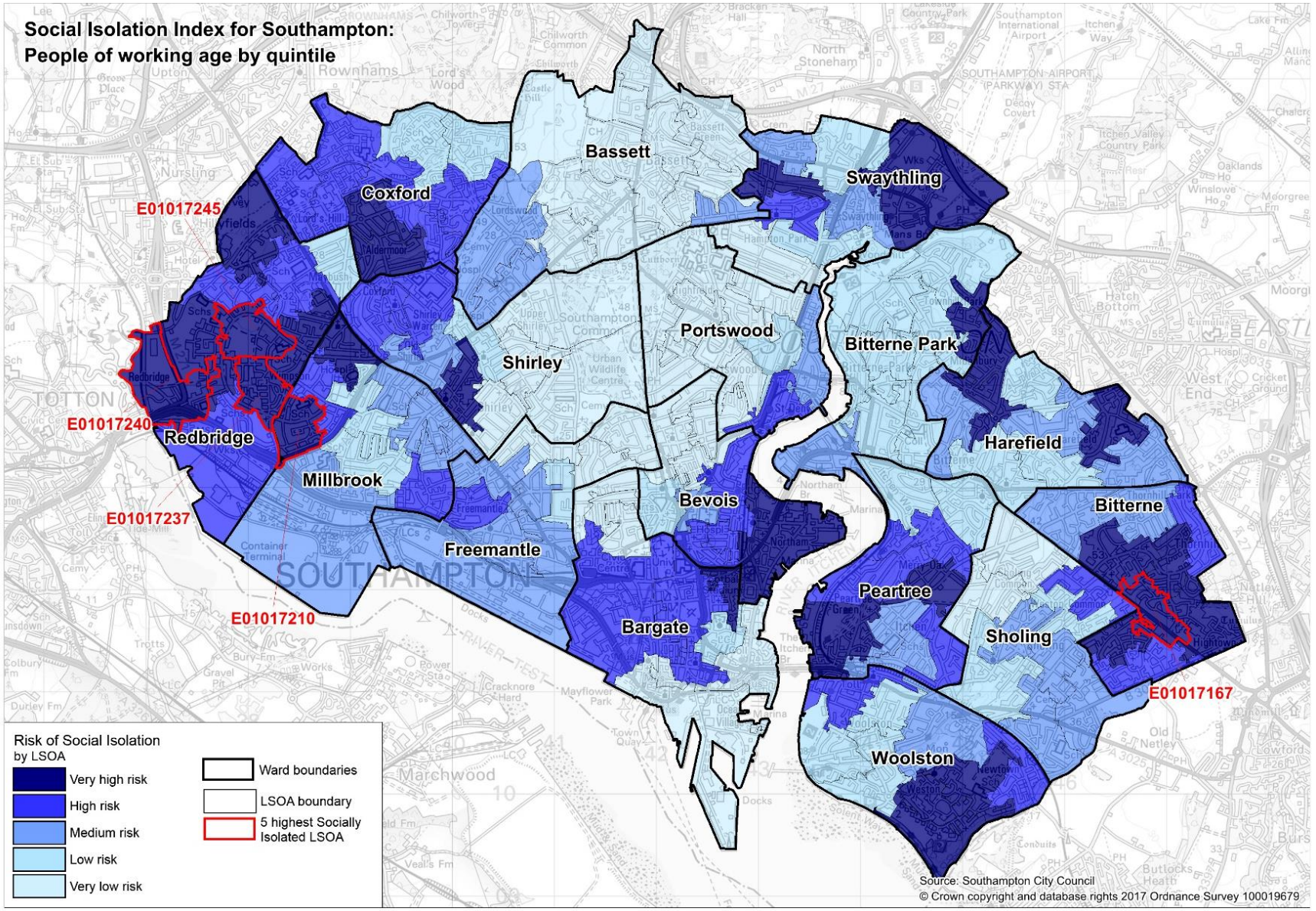
Social Isolation Index for Southampton:
People of working age by quintile
Bassett
Swaythling
Coxford
E01017245
Portswood
Bitterne Park
Shirley
Harefield
E01017240
Redbridge
Millbrook
Bevois
Bitterne
E01017237
Freemantle
Peartree
Bargate
Sholing
E01017210
E01017167
Woolston
SOUTHAMPTON
Risk of Social Isolation
by LSOA
Very high risk
High risk
Medium risk
Low risk
Very low risk
Ward boundaries
LSOA boundary
5 highest Socially Isolated LSOA
Source: Southampton City Council
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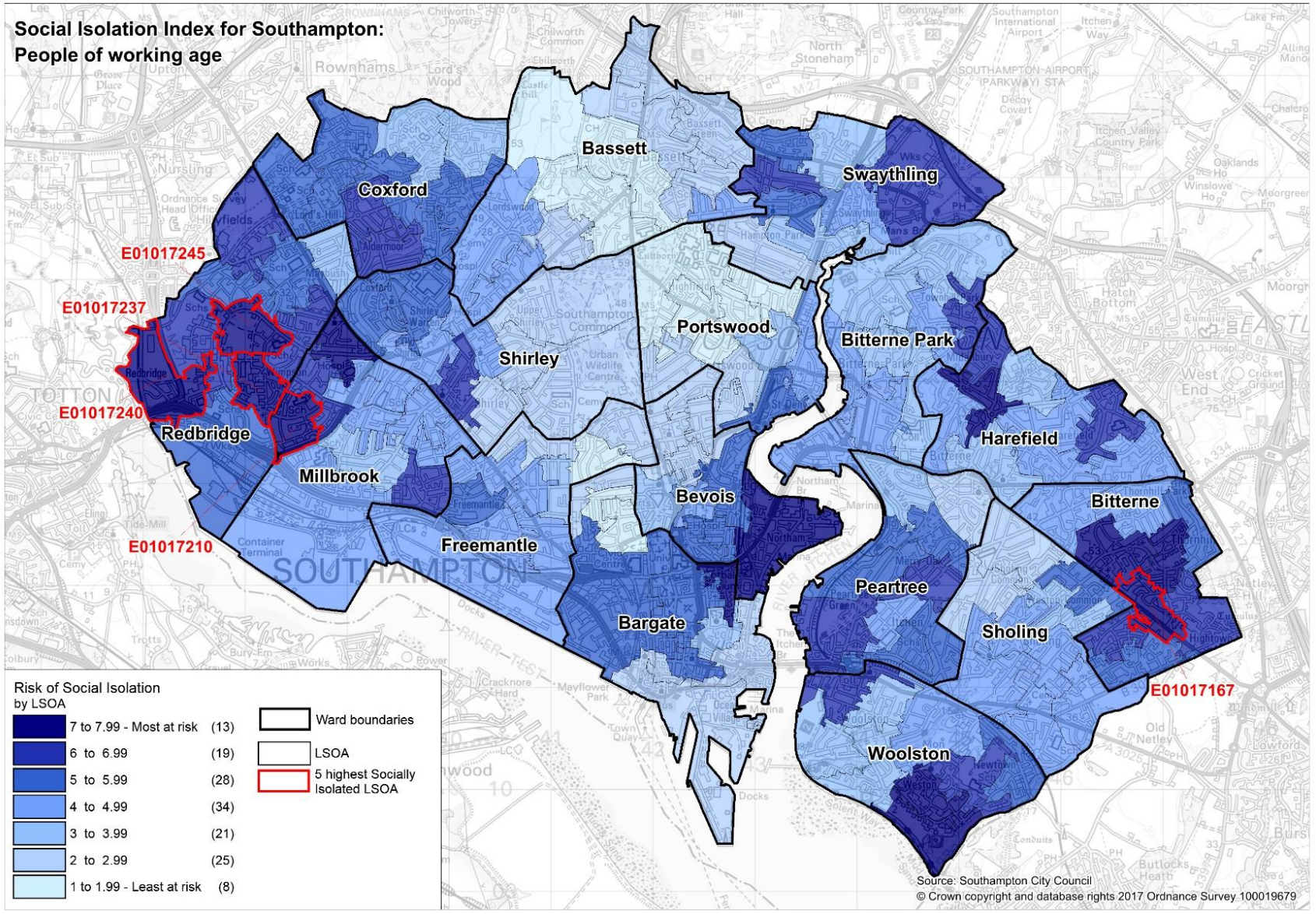
Social Isolation Index for Southampton:
People of working age
Bassett
Coxford
Swaythling
E01017245
E01017237
E01017240
Shirley
Portswood
Bitterne Park
Redbridge
Harefield
Millbrook
Bevois
Bitterne
E01017210
Freemantle
Peartree
Bargate
Sholing
E01017167
Woolston
Risk of Social Isolation
by LSOA
7 to 7.99 - Most at risk (13)
6 to 6.99 (19)
5 to 5.99 (28)
4 to 4.99 (34)
3 to 3.99 (21)
2 to 2.99 (25)
1 to 1.99 - Least at risk (8)
Ward boundaries
LSOA
5 highest Socially Isolated LSOA
Source: Southampton City Council
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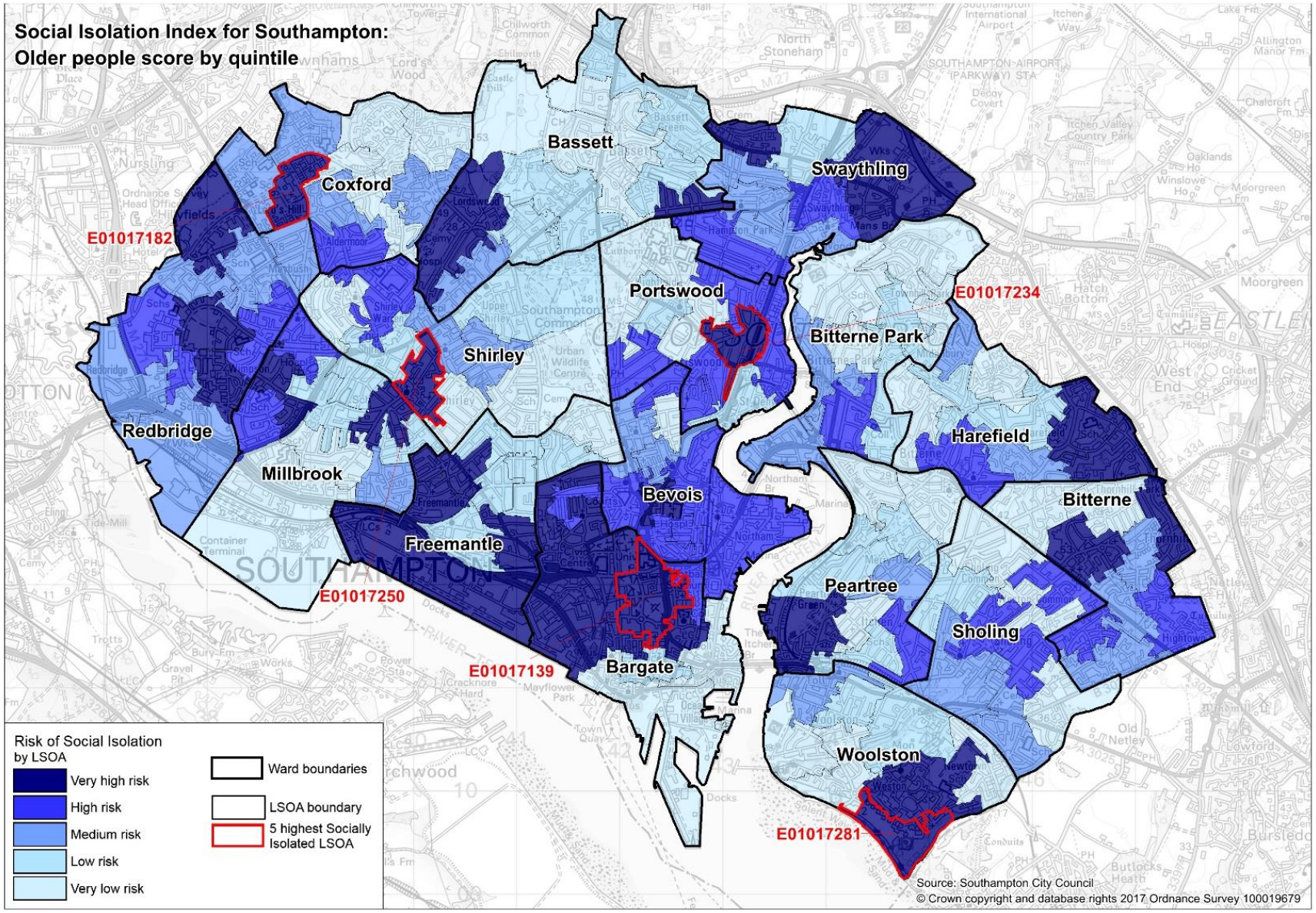
Social Isolation Index for Southampton:
Older people score by quintile
Bassett
Swaythling
Coxford
E01017182
Portswood
E01017234
Bitterne Park
Shirley
Redbridge
Harefield
Millbrook
Bevois
Bitterne
Freemantle
E01017250
Peartree
Sholing
E01017139
Bargate
Woolston
E01017281
Risk of Social Isolation
by LSOA
Very high risk
High risk
Medium risk
Low risk
Very low risk
Ward boundaries
LSOA boundary
5 highest Socially
Isolated LSOA
Source: Southampton City Council
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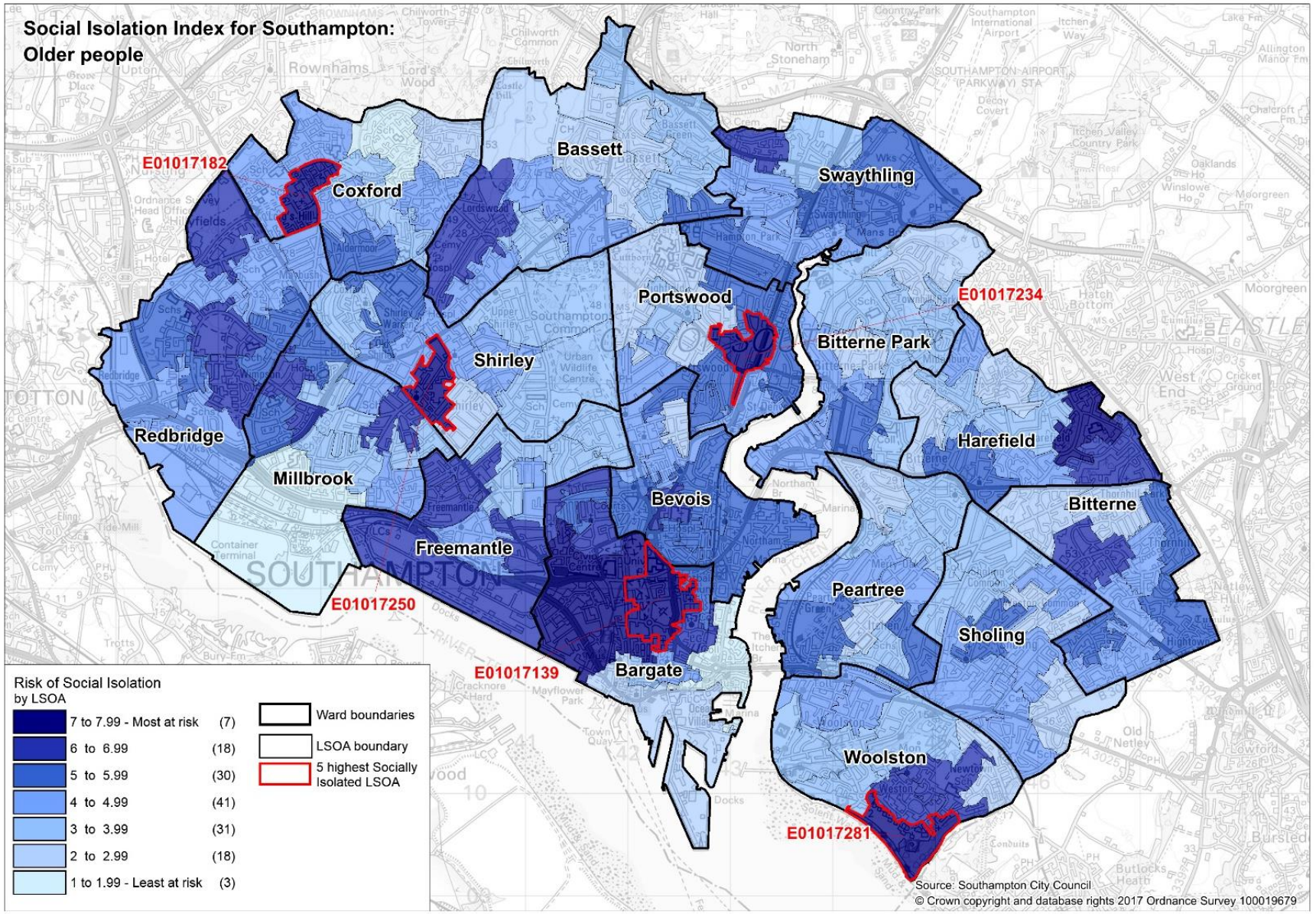
Social Isolation Index for Southampton:
Older people
E01017182
Coxford
Bassett
Swaythling
Portswood
E01017234
Bitterne Park
Shirley
Redbridge
Millbrook
Harefield
Bitterne
Bevois
Freemantle
SOUTHAMPTON
E01017250
Peartree
Sholing
E01017139
Bargate
Woolston
E01017281
Risk of Social Isolation
by LSOA
7 to 7.99 - Most at risk (7)
6 to 6.99 (18)
5 to 5.99 (30)
4 to 4.99 (41)
3 to 3.99 (31)
2 to 2.99 (18)
1 to 1.99 - Least at risk (3)
Ward boundaries
LSOA boundary
5 highest Socially Isolated LSOA
Source: Southampton City Council
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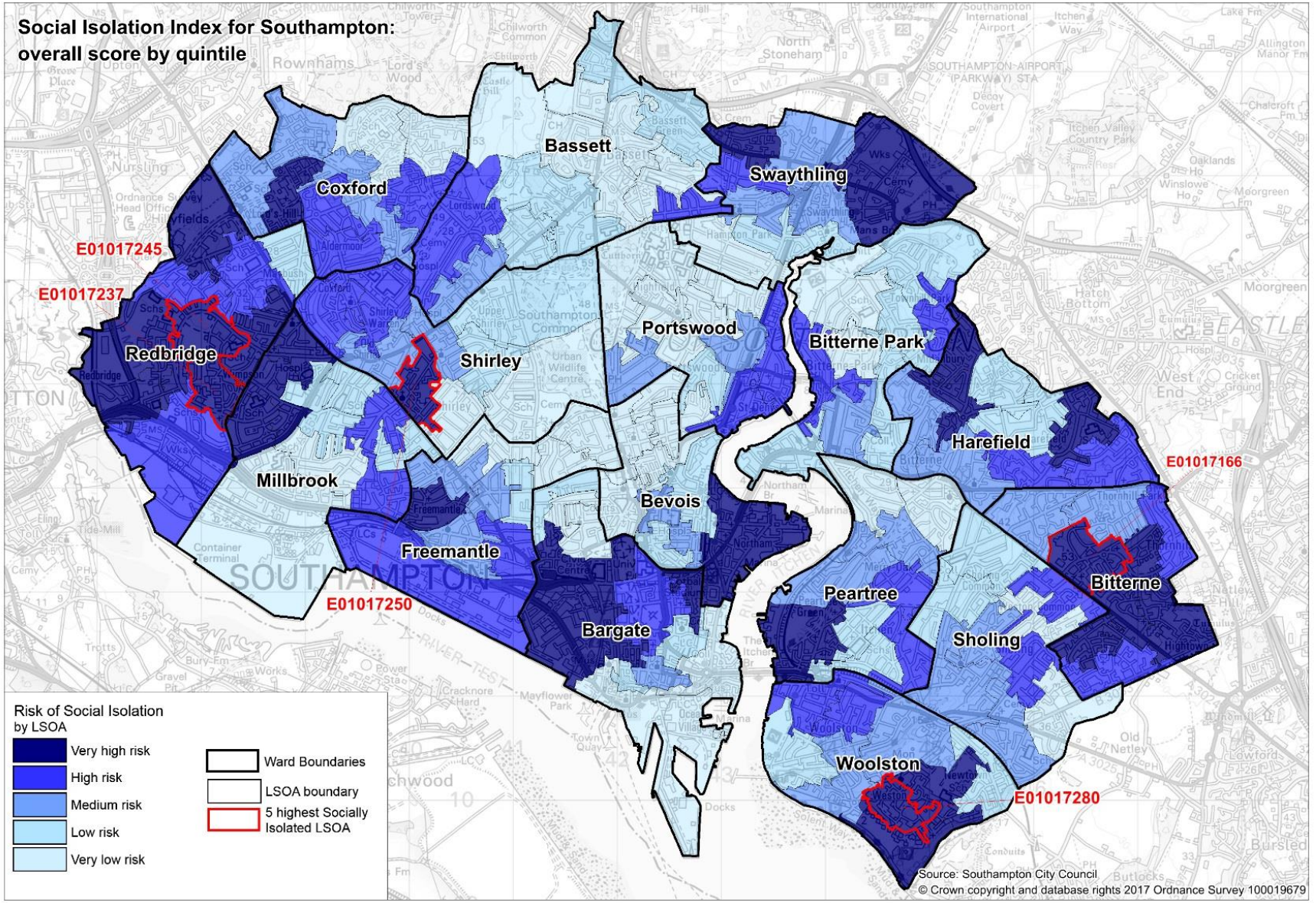
Social Isolation Index for Southampton:
overall score by quintile
Bassett
Coxford
Swaythling
E01017245
E01017237
Redbridge
Shirley
Portswood
Bitterne Park
Harefield
E01017166
Millbrook
Bevois
Freemantle
E01017250
Bargate
Peartree
Bitterne
Sholing
Woolston
E01017280
SOUTHAMPTON
Risk of Social Isolation
by LSOA
Very high risk
High risk
Medium risk
Low risk
Very low risk
Ward Boundaries
LSOA boundary
5 highest Socially Isolated LSOA
Source: Southampton City Council
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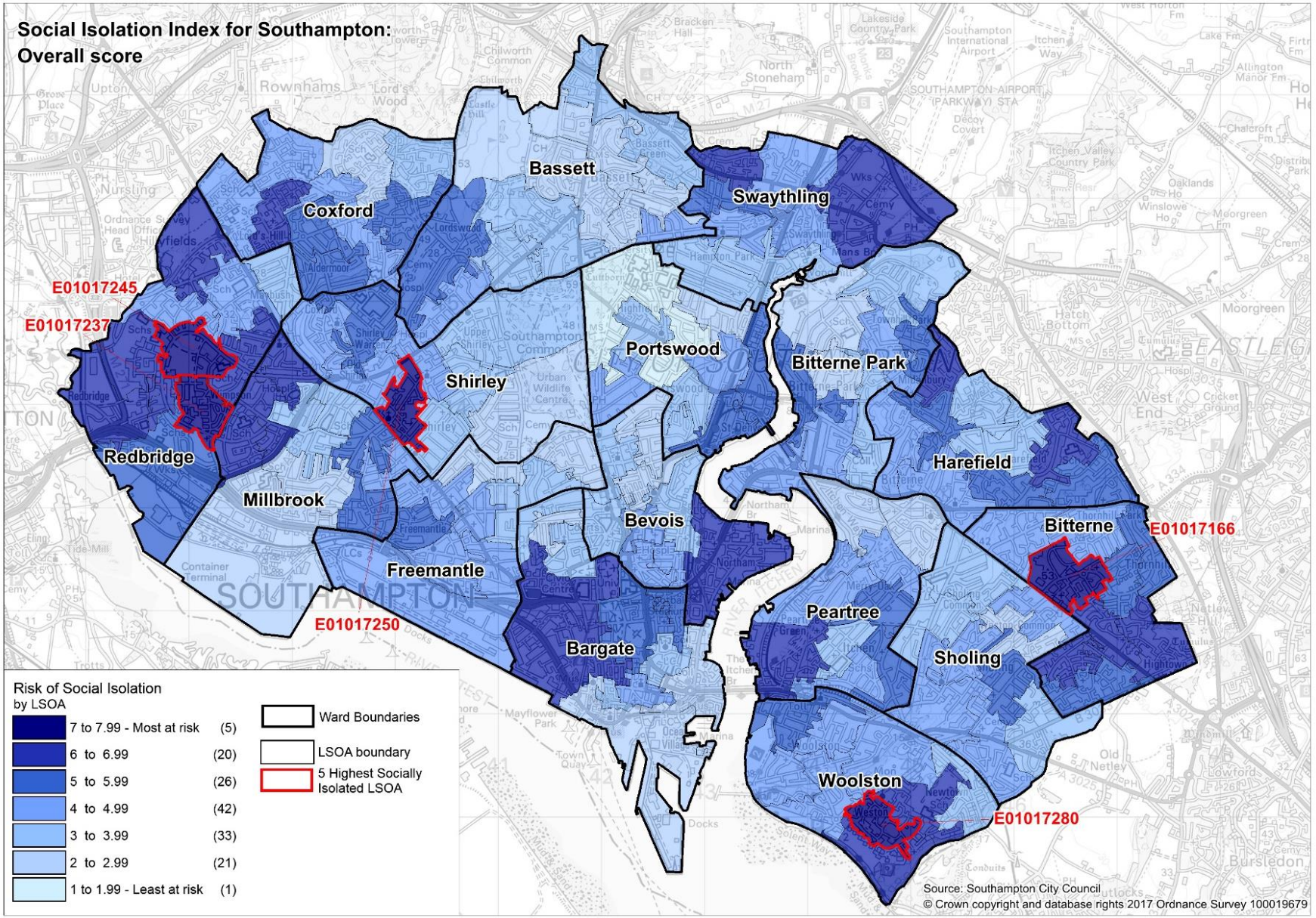
Social Isolation Index for Southampton:
Overall score
Bassett
Swaythling
Coxford
E01017245
E01017237
Portswood
Bitterne Park
Shirley
Redbridge
Harefield
Millbrook
Bevois
Bitterne
E01017166
Freemantle
Peartree
E01017250
Bargate
Sholing
Woolston
E01017280
Risk of Social Isolation
by LSOA
7 to 7.99 - Most at risk (5)
6 to 6.99 (20)
5 to 5.99 (26)
4 to 4.99 (42)
3 to 3.99 (33)
2 to 2.99 (21)
1 to 1.99 - Least at risk (1)
Ward Boundaries
LSOA boundary
5 Highest Socially Isolated LSOA
Source: Southampton City Council
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