

Southend Local Transport Plan 3 Evidence Base September 2010



plan - design - enable

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Executive Summary

The Transport Act 2000 requires Local Transport Authorities (County Councils, Unitary Authorities and partnerships in metropolitan areas) in England to produce and maintain a Local Transport Plan (LTP). The first five-year LTPs were submitted in 2000, covering the period from 2001/02 to 2005/06. Second LTPs were submitted to the Department for Transport in March 2006, covering the period 2006/07 to 2010/11.

The Local Transport Act 2008 introduced more flexibility in terms of the governance and planning regarding LTPs. The Act removed the need for five-year plans and instead enabled local transport authorities to produce longer term strategies supported by shorter term implementation plans, with the time period to be determined by the Local Transport Authorities themselves. Third LTPs are to be submitted to the Department for Transport by the end of March 2011.

The Local Transport Planning process has brought about a step change in the way that Local Authorities plan strategically for transport in their areas. Good transport is a vital factor in building sustainable local communities. It contributes to the achievement of stronger and safer communities, healthier children and young people, equality and social inclusion, environmental objectives and better local economies. Where transport fails, these aspirations are put at risk.

In November 2008, the Department for Transport published 'Delivering a Sustainable Transport System' which set out how transport can contribute to meeting the five national goals of:

- Supporting economic growth.
- Tackling climate change.
- Promoting equality of opportunity.
- Contribute to better safety, security and health.
- Improving quality of life and a healthy natural environment.

The Government's guidance on second LTPs presented a step change in the degree to which evidence of issues and challenges was required and the need for evidence in plan making has continued to evolve with the introduction of the Government's guidance for producing third LTPs. The Department for Transport now wants to see Authorities framing their transport strategies on robust evidence relating to the specific challenges or problems each local area faces under the five goals. Authorities should identify these problems and priorities on the basis of clear evidence and data.

With this in mind, work has been ongoing to develop an evidence base for Southend's third LTP and this paper presents a summary of the issues that have emerged from this work in the form of a SWOT (strengths, weaknesses, opportunities, and threats) analysis for each DaSTS goal.

Support the Economy

Strengths

- Good connectivity by rail to London and the region during the day.
- Relatively short journey times by road to the sub region and also more widely.
- Rail patronage is increasing.
- High percentage of schools have a travel plan in place.
- Travel to school by car has been declining.
- The growth in traffic levels has declined since 2004.
- Low levels of car commuting (15% of all car trips) to the town centre.

Weaknesses

- Severe peak time congestion on the A127 and A13.
- The rate of GVA growth in Southend has lagged behind that for the region.
- Higher unemployment rate in comparison to the region and nationally.
- Risk of inundation by high tides affecting road and rail networks.
- 56% of commuting trips are undertaken by car or van.
- Single occupancy of vehicles remains high at 29% in the interpeak period.
- Declining bus patronage as shown by NI 177.
- Evening and Sunday bus service frequency is less than week day service frequency.

Opportunities

- Relatively high growth for jobs and housing.
- Airport growth is forecast to provide an additional 6,700 jobs, a good quality interchange is required to ensure employees have good access.
- Scope to increase travel to work by train, at present only 13% of travel to work within the Borough is undertaken by train;
- Scope to increase travel to work by bus, at present only 6% of travel to work within the Borough is undertaken by bus, minibus or coach.
- Rail could potentially be used for shorter, Borough wide, journeys;
- Potential to further reduce the number of children travelling to school by car;
- Scope for modal change for commuting is high with 57% travelling less than 10km;
- Parking management to either reduce the number of car parking spaces available in the town centre, or make them less attractive. Parking sites give good opportunities for regeneration.

- Opportunity of co-ordination of events, roadwork's and traffic incidents between Southend Borough Council and Essex County Council.
- To increase the number of tourists visiting the Borough.

Threats

- Jobs and housing growth may put pressure on current traffic levels;
- Town centre regeneration may put additional pressure on congestion levels;
- Impact of rising sea levels on both coastal roads and coastal rail;
- Extremes of climate impact on the network in both summer and winter, raising maintenance costs.
- The vulnerability of the cliffs slipping along the seafront.
- Major incidents on the A127 A13 and A130 etc. impacting on the free movement of vehicles.
- Threat of congestion to punctuality of bus services.
- Threat of congestion to sustainable travel modes.

Tackle Climate Change & Air Quality

Strengths

- Southend has low per capita road transport CO₂ emissions;
- Fuel consumption from personal travel is decreasing, albeit marginally;
- Methane emissions from transport are low.
- CO₂ emissions from road transport decreased between 2005 and 2006 and remained unchanged between 2006 and 2007.

Weaknesses

- Other transport (air and water transportation etc.) is the primary source of Nitrous Oxide emissions in Southend and road transport is the second largest source.
- Fuel consumption from freight travel is increasing, albeit marginally.
- The majority of road transport CO₂ emissions in Southend arise from cars and traffic, namely cars on non-principal roads.

Opportunities

- Majority of road transport CO₂ emissions in Southend arise from personal travel, namely cars on non-principal roads. Therefore, this is where the greatest opportunities lie for reducing transport CO₂ emissions.
- To promote more sustainable travel and reduce the need to travel through growth planning.

- Decreased summer rainfall (better summer weather) may mean increased visitor numbers to the area, although this would need to be catered for in a sustainable manner.
- Increases in annual mean temperature may promote walking and cycling.
- To take advantage of new technologies and developments in vehicle improvements.
- To use cleaner alternative fuels.
- To improve the townscape to improve water permeability.
- Implement asset management (turn off street lights at certain times etc.)

Threats

- Increasing rainfall and temperatures may threaten transport infrastructure.
- An increase in traffic and thus congestion and queues especially on the A13 and A127, could lead to a further increase in CO₂ emissions.
- The Rayleigh Road (A1015), Prince Avenue (A1158) and Eastern Avenue (A1159) are at risk from the 1% annual probability river flood.
- Increased number of air frost days and winter precipitation (if coupled with lower winter temperatures) could negatively impact on winter maintenance regime and threaten infrastructure through freezing and impact on winter maintenance regime.
- Increased precipitation could lead to increased flood risk of key infrastructure routes.
- Increase in sea levels could affect the Essex Thameside railway line between Benfleet and Leigh.
- Increased precipitation may threaten the viability of walking and cycling.

Equality of Opportunity

Strengths

- Majority of commuting distances to work are less than 10km.
- Good accessibility, using sustainable modes, to employment sites within the Borough.
- Good accessibility, using sustainable modes, to both primary and secondary schools.
- Good accessibility to GPs using sustainable modes.

Weaknesses

- Poor accessibility (over 30 minutes by walk or public transport), using sustainable modes, to hospitals from the ward of Shoeburyness and parts of the wards of Thorpe and Southchurch.
- Poor accessibility (over 30 minutes by walk or public transport), using sustainable modes, to further education from the wards of St. Laurence and Chalkwell and parts of Belfairs, Thorpe and Shoeburyness.

- In spite of low commuting distances, a third of travel to work is undertaken as a car driver.
- Where data is available for accessibility, the more deprived areas fair much worse than the average resident in Southend in all areas of assessment.

Opportunities

- Short distances travelled for employment suggest there is considerable scope for affecting modal change in Southend from the car to more sustainable modes.
- Cycling Town status can be used to affect modal change, and the evidence from the previous group of towns suggests that change can be significant.
- Improve accessibility to further education from certain areas. This may help bridge the qualifications gap shown by the data between Southend and the region and more widely.
- Essex University campus should help to bridge the qualification gap.
- Consideration of improving accessibility to the levels seen in Brighton for bus and train services.
- Housing growth should be accompanied by opportunities for sustainable travel to and from essential services and places of employment.
- Employment growth should be accompanied by opportunities for sustainable commuting.
- More should be done to promote the nine rail stations serving Southend as a 'metro' system for the Borough to complement the bus network for short distance travelling for leisure and work.
- The wider health impacts of sustainable travel should not be ignored.

Threats

- More lucrative work prospects in London will always induce people to commute to the capital, by both train and car.
- As a tourist destination the message of using sustainable modes may not reach visitors who may tend to travel by private car.
- Greater prevalence of 'at risk' groups in Southend is a concern – the key messages on transport may not reach them unless addressed by a specific education and promotional programme.

Safety and Security

Strengths

- There has been a good reduction in the number of people slightly injured, and killed or seriously injured, as well as children killed or seriously injured, with steady reductions over the years. The reduction in fatalities is less impressive but still reasonable.

- Compared to similar areas, relatively few car occupants become casualties, with the reduction being good over the years, including a 100% reduction in children killed or seriously injured as car occupants.
- Compared to national levels, no roads are at a particularly high risk in terms of the rate of killed or seriously injured accidents.
- CCTV coverage is good within public spaces at railway stations, which should enhance feelings of personal safety.

Weaknesses

- The accident rate, whether measured by population or traffic volume, is high, with only average reductions evident.
- There is a high casualty rate for pedestrians and cyclists, especially child cyclists with quite low reductions over the years.
- A relatively high number of motorcyclists are casualties.
- A relatively high proportion of accidents involve 17-19 year olds.
- All children killed or seriously injured were either pedestrians or cyclists in 2008.
- Only two of the nine rail stations have secure stations accreditation and there is little staff cover at stations after dark during the weekend. CCTV coverage outside stations is patchy, including covering cycle storage.

Opportunities

- The relatively good reduction in the number of pedestrians or cyclists killed or seriously injured can be used as a platform for an improved reduction in all severities for these at-risk groups.
- Although the reduction in motorcyclist casualties is low, it is reasonable compared to the performance of other areas. This relatively good performance can be used as a platform for further more vigorous progress.
- The London Road A13 and the Southend Arterial Road A127 both have significant numbers of injury accidents. This clustering could enable the development of targeted route interventions.
- Child accidents tend to get a little denser towards the town centre, which could offer an opportunity for area-wide based approaches to accident prevention.
- The same is the case for pedestrian and cyclist accidents, although there are clearer patterns. Both have significant numbers on the A13 London Road and around the Kursaal ward, and pedestrian accidents have a strong concentration in the town centre.

Threats

- The road safety issues around the safety of pedestrians and cyclists could hamper efforts to deliver modal shift, including children on the school run.

- The London Road A13 and the Southend Arterial Road A127 both have significant numbers of injury accidents. This will add to the levels of congestion and low average traffic speeds evident on these key routes. This could also increase risks to public safety in surrounding residential areas as traffic diverts.
- The significant clustering of accidents on the north side of the town centre could have an adverse impact on its regeneration.
- There is little obvious clustering of child injury accidents, with the possible exception of the area on the north side of the town centre, which might make traditional engineering approaches to accident prevention less effective.
- Potential risks to personal security at many rail stations might deter people from using the train for some journeys, which could either reduce accessibility or increase car dependency.
- Although feelings of personal safety are better than comparable places, it is still a particular issue after dark, which could adversely impact on accessibility opportunities for vulnerable and equality groups, as well as increase car dependency, especially in St. Luke's, Kursaal and Southchurch wards.

Quality of life and a healthy natural environment

Strengths

- Southend does not have any air quality management areas.
- The percentage of people satisfied with public transport information and local bus services has increased by 3% and 6% respectively between 2006 and 2008.
- The Place Survey states that most of the time people felt that they are being treated fairly by local services.
- Compared to other Local Authorities Southend has one of the lower Index of Multiple Deprivation (IMD) scores.
- Due to the increasing implementation of travel plans and projects such as the walking bus, the number of children travelling to school by car has decreased over the past three years.
- A relatively low proportion of people travel to work by car compared to other comparator Authorities, due to the number of commuters within the town.
- Southend has a large number of parks and open spaces and residents satisfaction towards these and other leisure services is generally good (Place Survey 2008).

Weaknesses

- Southend has a low tranquillity scoring as it is ranked 75th out of 87 for tranquillity.
- There is a problem with road noise on the two main roads that link Southend to London, the A13 and the A127.
- The western side of Southend suffers from light pollution.

- The Place Survey results show that public transport rates fifth for an area which needs improvement.
- The Borough Profile 2009 states that 8% of the Borough population are living in the 10% most deprived areas of the country and within the 20% most deprived in the region. The Kursaal, Victoria and Milton wards are the most deprived wards in Southend.
- Southend is one of the fifth most deprived areas in the East of England regarding child poverty; 9 of the 17 electoral wards within Southend are in the most deprived fifth in the region.
- Life expectancy is around 6 months lower for females in Southend compared to the rest of England. However, for males life expectancy is approximately the same compared to England's average. Southend has the lowest life expectancy in Essex. There is a large 8 year variation in life expectancy across the wards, with the Kursaal ward having the lowest life expectancy.
- There are inequalities between wards. There is a link between the most deprived wards, a low life expectancy and limiting long-term illness.
- Southend has a higher proportion of older people compared with regional and national averages. The wards of Chalkwell, Belfairs and Thorpe are home to the highest percentage of older people.
- During 2007/2008 Southend had the highest combined percentage of obese and overweight children compared to, England, the region, Essex and SEE PCT.
- Southend, in comparison to the East of England and also nationally, has a greater percentage of principal roads which require maintenance.

Opportunities

- The Kursaal, Victoria and Milton wards need investment to increase accessibility and mobility to employment opportunities.
- The Place Survey states that public transport is an area which needs improvement; there is scope for improvements in public transport services, such as, improved bus punctuality.
- To improve noise and tranquillity a series of strategies could be developed along the A127 to give a 'sense of place' especially for residents.
- To further increase the number of children partaking in cycle training to encourage them to cycle to school.

Threats

- The expansion of the airport could potentially detrimentally affect, air quality, noise pollution and tranquillity.
- The Sustainable Community Strategy states that the population of Southend is increasing as a result of in-migration and planned growth; the East of England Plan requires 13,000 jobs and 6,500 additional dwellings to be created between 2001 and 2021. This will

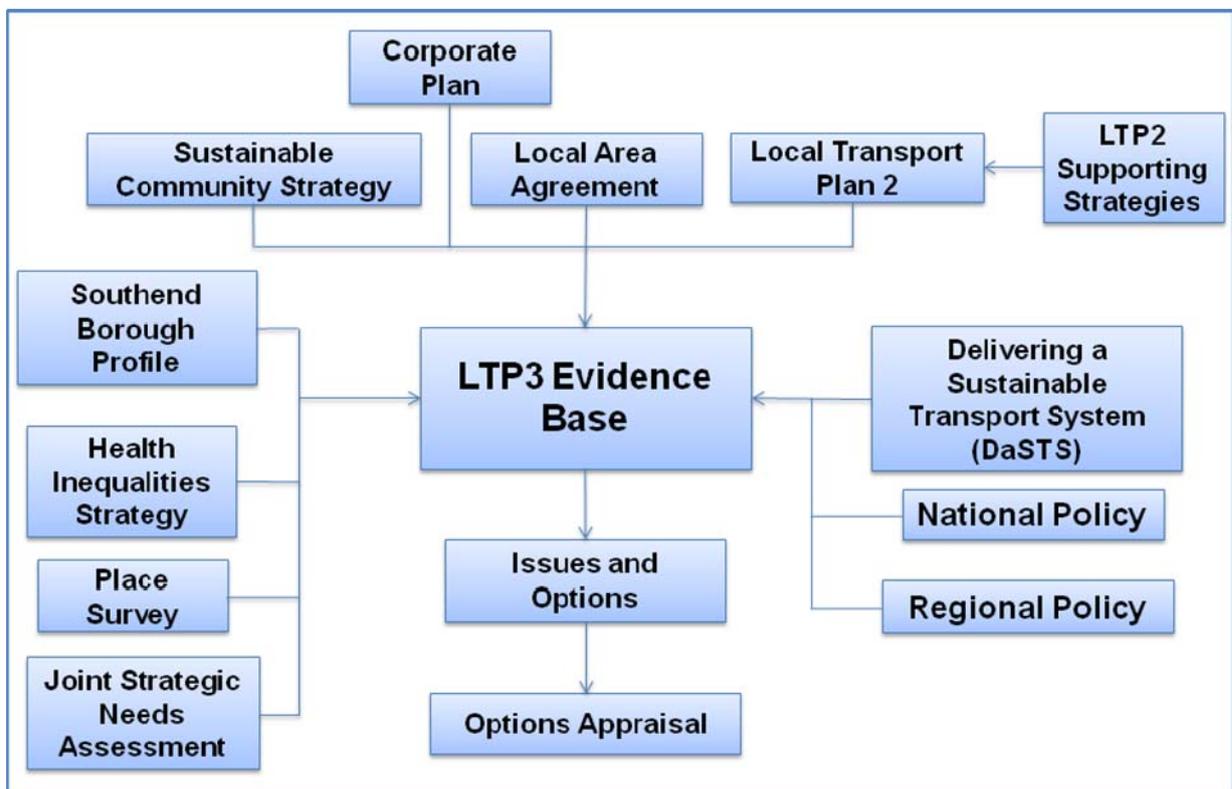
cause an increase in traffic on the roads, especially on the main routes into the town, the A13 and A127, which could lead to an increase in road noise along these routes.

The Process

Development of the Evidence Base for Southend's LTP3 required assessing a wide range of national, regional and local policy statements and documents, as well as a process of data collection from these sources, Census 2001, and from organisations such as the Office for National Statistics.

The figure below presents a simplified explanation of the sources of information for the Evidence Base.

Sources of Information for the Evidence Base



1. Support the Economy

1.1 Background

The Eddington study concluded that there has been a link between the transport system and prosperity throughout history. Transport's key economic role today is to support the success of the UK's highly productive economic centres in the global marketplace and to enable the efficient movement of goods and people. The connectivity of the transport system as a whole is critical in enabling people to get to work and the freight sector to deliver goods. Every day it enables 24 million commuters to get to work and delivers five million tonnes of freight. Good connectivity enables people to reach the jobs that are right for them. However, connectivity can subsequently have an impact on the travel behaviour by encouraging more travel, such as accessing work opportunities further away. This can often result in congestion.

Eddington concluded that congestion and unreliability constrain the UK's economic growth. For businesses, improving journey reliability will generally have more economic benefit through reducing lost productive time than minor improvements in average journey times, although the potential for reducing journey times may be more significant on some routes. Urban congestion is identified as a major problem, as it can have an adverse impact on the local economy and create uncertainty for businesses, which can be quantified as a cost to the economy of the United Kingdom. The costs of congestion are significant – analysis carried out for the Eddington study showed that 8% of UK road traffic is already subject to very congested conditions, and that, without action, congestion is likely to increase by a further 30% nationally by 2025. This increased congestion could see costs to business and freight rise by over £10 billion a year.

Under the Traffic Management Act (2004), Southend Borough Council has a duty to keep traffic, including pedestrians, moving. Congestion causes frustration and delay, and has a significant impact upon the local economy and well being of Southend. More significantly, the environmental impacts of stationary or slow moving traffic is felt in terms of poor air quality, leading to associated health problems, particularly for people with respiratory illnesses.

Congestion also affects the quality of life for residents and visitors by contributing to the general degradation of public spaces. It is detrimental to the overall operation of the transport network, leading to the potential for higher accident rates, compromising public transport reliability and operations, and impeding walking and cycling. Taken together, these effects make sustainable transport modes less attractive and encourage more people to travel by car, further increasing congestion and leading to a vicious cycle that deters people from making more sustainable transport choices.

The importance of congestion and reliability suggests the need to coordinate plans in order to cope with new demand. For example, plans for new housing and employment contained in Local Development Frameworks will need to be coordinated with the planning of the associated

transport improvements and services, to avoid the risk of more congestion and greater unreliability. Another critical area is the continuing effectiveness of the transport system, both in terms of how well it is maintained and in terms of its resilience to cope with potential major disruptions from events such as road traffic accidents, flooding or terrorism is vital in ensuring continuity of service.

Analysis of evidence of economic and transport trends and existing problems is the best way of developing a transport strategy as well as deciding where to target transport interventions.

1.2 Key Characteristics of Southend¹

The following table summarises the key features of Southend.

Subject	Characteristics
Local Government	<ul style="list-style-type: none"> ▪ Unitary Authority responsible for land use planning, transport / highway matters, minerals and waste planning
Character / Population	<ul style="list-style-type: none"> ▪ 164,300 residents (mid-year population estimate 2008) ▪ Catchment population of 325,000 ▪ Land area of 4,163 hectares ▪ Densely developed urban area
Role	<ul style="list-style-type: none"> ▪ Regional / Sub Regional office, shopping, leisure and cultural centre ▪ Major tourist destination with 6.1 million day visitors per year
Economy	<ul style="list-style-type: none"> ▪ 65,500 jobs ▪ Some 5,000 companies ▪ Over 280,000 m² of office floor space centred on town centre ▪ Some 100 hectares of industrial land on 10 key estates ▪ Unemployment rate of 5.31% (January 2010) ▪ Imbalance between number of workers and available jobs ▪ 8th most deprived area in region ▪ Eastern part of town has Objective 2 European funding status
Retail	<ul style="list-style-type: none"> ▪ Southend Town Centre – Major Retail Centre (102,000 m² of ground floor floorspace)

¹ Southend on Sea Core Strategy, December 2007

	<ul style="list-style-type: none"> ▪ District centres at Westcliff (Hamlet Court Road) and Leigh; ▪ Local centres at Southchurch, Thorpe Bay, Eastwood and Shoebury (Ness Road/West Road) ▪ A number of centre Retail Parks at Airport; Greyhound (Sutton Road) and London Road
Built / Natural Environment	<ul style="list-style-type: none"> ▪ Some outstanding examples of Victorian, Edwardian and modern architecture ▪ 695 sites recorded in the Southend Sites and Monuments Record ▪ 8.5 miles of accessible foreshore ▪ 500 hectares of mature parks, woodlands and gardens ▪ Limited countryside separating Southend from nearby settlements
Housing	<ul style="list-style-type: none"> ▪ Nearly 71,000 households (35% one person households) <ul style="list-style-type: none"> • 73% owner occupied • 8% Local Authority Renting • 13% Private Renting • less than 4% Housing Association/Social Landlord Renting ▪ Average Household Size 2.2 persons ▪ 92% of dwellings built at densities of over 50 dwellings per hectare ▪ Significant increase in affordable houses required to 2021
Transport	<ul style="list-style-type: none"> ▪ Major east-west transport corridor to London (40 miles), comprising; <ul style="list-style-type: none"> ▪ Strategic highway corridors A13 / A127 ▪ Two railway lines London Fenchurch Street to Shoeburyness (c2c Rail) and London Liverpool Street to Southend Victoria (NXEA) ▪ River Thames Corridor ▪ 9 railway stations serving Southend. New station at London Southend Airport under construction ▪ London Southend Regional Airport – identified in Government Aviation White Paper (December 2003) as having long term potential to cater for 2 million passengers per annum. Identified as a Major Airport in East of England Plan

	<ul style="list-style-type: none"> ▪ Congestion on highway corridors causing delays and affecting local economy ▪ Key sections operating at or close to capacity ▪ Regeneration opportunities inhibited due to poor access
Regeneration	<ul style="list-style-type: none"> ▪ Southend designated as part of Thames Gateway – National and Regional Priority for regeneration and growth ▪ Identified as 'cultural and intellectual hub and higher education centre of excellence' ▪ Identified as 'Key Centre for Development and Change' and Priority Area for Regeneration
Planned Growth	<ul style="list-style-type: none"> ▪ Jobs led growth to reduce imbalance between workers and local jobs <ul style="list-style-type: none"> • 13,000 additional jobs by 2021; • 6,500 additional dwellings by 2021
Delivery Vehicles	<ul style="list-style-type: none"> ▪ Thames Gateway South Essex (TGSE) Partnership <ul style="list-style-type: none"> • TGSE Transportation Delivery Board (Thurrock and Southend Borough Council's and Essex County Council) ▪ 'Renaissance Southend Limited' – Urban Regeneration Company

1.3 Policy Context

In developing a new Local Transport Plan, it is important to ensure that it is consistent with the international, national, regional and local policy context. The policies and plans outlined below are those that are considered most relevant to transport.

1.3.1 National

In 2008, the Government released a document titled Delivering a Sustainable Transport System (DaSTS). It describes the Government's action plan in response to the recommendations made in the Eddington study to improve transport's contribution to economic growth and productivity, and to the Sterns review for addressing climate change. It recognises that in certain places the current capacity of networks cannot meet the demand that is, or will be, placed on them and that taking action to deal with those areas where unreliability, congestion and poor connectivity are affecting businesses' ability to meet with their clients or get their goods efficiently to market, or are preventing them from employing the best people for the job, should be a priority.

Key challenges are:

- Improving reliability on key routes for business, commuting and freight.
- Increasing size of workforce within 30 minutes of key business centres.

- Improving connectivity between key business centres and national / international networks.
- Facilitating the conditions for housing growth, including limiting congestion.
- Properly design, plan and maintain transport networks to improve resilience.

Spatially, the focus should be on the main urban areas, inter-urban journeys, and access from the urban areas to international gateways. Under the Traffic Management Act (2004) Local Authorities do actually have a legal duty to keep traffic and pedestrians moving. Planning Policy Guidance Note 13 requires new development to reduce the need to travel and secure a modal shift by improving sustainable transport choices, thereby helping to reduce congestion and also improving non-car connectivity and access to work.

1.3.2 Regional

Growth and regeneration in the East of England Plan is focused on the Key Centres for Development and Change, of which Southend is one. It looks to promote efficient access to Key Centres for Development and Change, especially for freight, as well as international gateways. The plan promotes a modal shift, especially for freight, within urban areas, between regional transport nodes and national networks. It also aims to reduce the rate of road traffic growth and provide sustainable access to areas of new development and regeneration, as well as promote economic growth without an associated growth in travel. It further aims to improve journey reliability by tackling congestion, and promote accessibility to employment, especially public transport access to new employment sites.

The Regional Economic Strategy (RES) aims to reduce barriers to employment for the most deprived, make the most of international gateways, increase economic demand in areas with low activity rates, and improve business performance and productivity. Key challenges in the Thames Gateway include a priority for regeneration, deliver employment growth, deliver significant housing growth, and continue to restructure the economy, improve productivity, and tackle high levels of deprivation.

In order to help achieve these outcomes, four priorities for transport have been identified in the RES, which can be summarised as follows:

- **Priority 1** Creating a resilient transport system that is used effectively and efficiently
- **Priority 2** Investing in transport to maximise economic growth
- **Priority 3** Increasing economic benefit to the East of England from major international gateways
- **Priority 4** Reducing the environmental impact of moving goods and people.

In summer 2008 EEDA commissioned the Transport Economic Evidence Study (TEES) for the region, which estimated the economic cost of congestion on the region's network to be up to £2bn per annum by 2021. The report breaks down by Local Authority (Table 1.9) the economic benefits that could be accrued by eliminating congestion.

TEES concluded that the economic costs of congestion are disproportionately borne by the region's urban areas or 'engines of growth'. Targeted investment in key bottlenecks and corridors can bring significant benefits. But the region also needs to reduce the demand for travel if the economic costs of congestion are to be addressed.

1.3.3 Local

Southend's Core Strategy, adopted in 2007, sets out the following aim:

- To secure a major refocus of function and the long term sustainability of Southend as a significant urban area which serves local people and the Thames Gateway.
- To do this there is a need to release the potential of Southend's land and buildings to achieve measurable improvements in the town's economic prosperity, transportation networks, infrastructure and facilities; and the quality of life of all its citizens. This will include safeguarding and improving the standards of the town's amenities and improving the quality of the natural and built environment.

Under Core Policy 3: Transport and Accessibility, the following mechanisms have been identified:

- Improve the A127 / A1159 east-west strategic transport and freight corridor.
- Improving accessibility to key development opportunity sites.
- Providing for the development of quality transport interchanges.
- Widening Travel Choice.
- Making provision and safeguarding appropriate corridors/land for new modes of passenger transport.
- Realising the potential of the River Thames to function as a Sustainable Transport Corridor.
- State of the Art Communications, signing and intelligent transport management systems.
- Safeguarding and enhancing the environment of Environmental Rooms.
- Improving road safety, quality of life and equality of access for all.

Southend's Sustainable Community Strategy outlines following actions:

- Congestion relief will be addressed by encouraging more appropriate use of the highway network (e.g. parking management, route signage, bus priority and intelligent transport systems and targeted improvements).
- The promotion of sustainable travel including car sharing will be taken forward as part of the move easy network.
- Best practice will be considered in developing sustainable transport solutions such as alternative fuels and reducing emissions, especially from UK and EU funded projects.

- Further investment in public transport infrastructure e.g. bus shelters and travel information.
- Continued implementation of the cycle network to key locations to provide safe walking and cycling routes such as the Cinder Path and Prittle Brook Greenway.
- Improvements to the local environment will be through the Environmental Rooms with targeted Maintenance.
- Close alignment with the LDF will continue through the Area Action Plans.
- Work will continue with Renaissance Southend Ltd in developing their Transport and Access Study for the Town Centre and Borough, closely linked with their Regeneration Framework and Town Centre Masterplan.
- Engineering improvements and education linked with Safer Journeys to School and the Walking Bus will progress.
- A Transport and Access strategy for Southend Airport will be developed as part of a Joint Area Action Plan to support expansion.
- The SERT proposals will see a plan for the rapid transit system linking the new employment and housing areas within TGSE. This will be taken forward as part of the Business Case submission to the Government in 2008.
- Proposals to encourage greater use of river transport will be brought forward.
- Establish a coherent car parking and payment strategy including for the Town Centre.

1.4 Data Analysis

This section describes the evidence collected and analysed in relation to supporting economic growth.

1.4.1 Housing and Jobs Growth

Southend has considerable economic and housing growth allocated to it, especially in the main conurbation. The table below shows the forecast requirements² for both homes and jobs in Southend.

Table 1.1 – Forecast housing and jobs growth to 2021

	Housing	Jobs
2001 – 2021	6,500	13,000

The East of England Plan is currently undergoing a consultation on an extension to that would take planning in the region to 2031. Under this a number of different scenarios for housing for the period 2011 – 2031 have been considered that range from an additional 6,080 homes to

² East of England Plan: The Revision to the Regional Spatial Strategy for the East of England. May 2008.

14,000 in Southend. Southend Council has advised that, whilst a proportion of the growth could be accommodated within its current spatial strategy, the growth would require significant Green Belt release in the longer term to meet continuation of the current Plan rate and any further growth would need to consider the role of adjacent land in Rochford District Council.

In terms of employment indicative target jobs for the sub-region of the Thames Gateway, a strategic employment site, is 55,000 between 2001 and 2021.

The Plan consultation reports that the sub area has made slow progress in moving to become a modern knowledge-based, primarily service sector-driven, economy. Deindustrialisation has left a significant economic, social and environmental legacy. Large areas of former industrial land are vacant, and these underutilised resources present huge opportunities for development and growth.

Economic projections for the area suggest an increase in jobs of 37,700 or 14% between 2011 and 2031. This is below the regional average which is an 18% increase in jobs. Planned expansion at London Southend Airport could be a significant driver for jobs in Southend.

1.4.2 Economic Performance

Gross Value Added per head in Southend was £15,728 (2007³), which is 82.4% of the figure for the whole of the East of England, and lies within the range £15,717 (Thurrock) and £26,968 (Peterborough). This has increased from £11,146 (1999), which was 86% of the regional average and the lowest in the region, a rise of 41.1%, compared to a rise of 47.4% for the region as a whole.

This data suggests that although there has been economic growth in Southend, the rate of growth has been relatively modest in comparison to the regional average and, although Southend does no longer have the lowest GVA per head in the region, in comparison to the region as a whole, GVA per head has fallen behind.

The unemployment rate⁴ in Southend was 5.8% (2007) compared to 4.5% in the East of England and 5.4% nationally.

The higher unemployment rate would equate with a low GVA per head figure for the Borough.

The following table shows a range of key economic statistics for the Borough.

Table 1.2 – Key economic data for Southend

Criteria	Southend (number)	Southend (%)	East of England (%)	Great Britain (%)
Working age population (2007)	96,400	59.5	61.0	62.2

³ Office for National Statistics. <http://www.statistics.gov.uk/statbase/Product.asp?vlnk=14650>

⁴ Office for National Statistics.

<http://neighbourhood.statistics.gov.uk/dissemination/LeadTableView.do?a=3&b=276844&c=southend&d=13&e=9&g=405474&i=1001x1003x1004&m=0&r=1&s=1267391680768&enc=1&dsFamilyId=1724>

Criteria	Southend (number)	Southend (%)	East of England (%)	Great Britain (%)
Job Seekers Allowance claimants (June 2009)	4,897	5.1	3.4	4.1
Economically Active (Oct 07 – Sep 08)	77,900	78	81.2	78.8
Monthly average unemployment rate (2008)	-	2.9	1.9	-

1.4.3 Risk of Economic Disruption

The Government has published a National Risk Register which sets out the national assessment of the likelihood and potential impact of a range of different risks that may directly affect the UK.

Southend, represented on the Essex Local Resilience Forum, assessed the risks facing the area. The main risks identified as impacting on Southend are:

- SS Richard Montgomery, a ship wreck which lies just off the Medway approach Channel.
- Risks from Southend Airport and QinetiQ, Shoebury / Foulness also exist.
- Risk of flooding and severe weather is also a real risk to the UK and Southend.
- Threats to the UK include swine flu, suspect packages and terrorism.
- External risk factors including the political or financial.

The above evidence raises a number of questions related to the extent to which transport improvements may have a part to play and the extent to which transport itself might be adversely affected. These are:

- Do businesses, especially in the key business centre of Southend, have good access to regional, national and international transport networks in order to access markets and meet business contacts? Can the connectivity of the transport network play a role in expanding the labour market to improve job matching and help overcome the skills shortages in Southend and thereby support the creation of higher value jobs?
- Does the level of connectivity influence commuting distances? Is there a high level of in / out-commuting? What are the main commuting flows? What is the impact of this pattern of commuting on modal choice?
- What is the extent to which the jobs and housing growth will increase travel demand?
- Does current and forecast congestion potentially have an adverse impact on the development of the more strategic employment sites? Does current and future congestion potentially have an adverse impact on business efficiency and productivity through its effect on journey reliability for business travellers, freight and logistics

operations? If so, this could possibly adversely impact on job creation by making the area less attractive for inward investment.

- Is there a risk that forecast congestion may stifle the required housing growth?
- Is there any potential for modal shift in order to tackle congestion, and where is this potential?
- Are there any transport issues that relate to the viability and regeneration of the town centre, such as congestion, road safety or accessibility by non-car means?
- Will key transport routes, especially those important for economic productivity, be able to operate effectively?

The following review and analysis of evidence will examine the transport aspects of these questions.

1.4.4 Wider Connectivity

This section will consider the questions:

- Do businesses have good access to regional, national and international transport networks in order to access markets and meet business contacts?
- Can the connectivity of the transport network play a role in expanding the labour market to improve job matching and help overcome the skills shortages in Southend and thereby support the creation of higher value jobs?

Connections to regional, national and international transport networks

Southend, because of its geography, has some obvious restrictions in its connectivity with other parts of the region and more widely. The main road corridors are the A127 and A13 which head west parallel to the River Thames towards the eastern end of the M25 and London. The A130 allows access to the Chelmsford, and connects with the A12 providing a link towards the Haven Gateway and further north into Norfolk. Links to the north east and east of Southend are relatively poor.

Table 1.3 shows there are reasonable driving / commuting times from Southend to key centres in the East of England and to London. However, the A127 suffers from severe congestion, especially during peak hours, in both outbound and inbound directions. Annual Average Daily Flow on the section of the A127 in Southend peaks at almost 47,000 vehicles⁵.

Table 1.3 – Driving time and distance from Southend to neighbouring KCDCs⁶

Destination	Distance (km)	Driving time
Basildon	23	24m
Colchester	68	59m

⁵ <http://www.dft.gov.uk/matrix/Search.aspx>

⁶ www.theaa.com

Chelmsford	34	33m
Luton	111	1hr 24m
London	70	1hr 25m
Cambridge	115	1hr 27m
Peterborough	175	2hr 5m
Norwich	162	2hr 14m
Ipswich	95	1hr 18m
Thurrock	41	39m

It is also possible to travel outside of Southend by bus / coach, but in comparison to travelling by private vehicle, the time taken increases dramatically making daily 'there and back trips' unrealistic in most cases (Table 1.4).

Table 1.4 – Bus travel from Southend to other regional transport nodes⁷

Destination	Typical Travel Time (hr:min)	Frequency (number of buses per hour)
Basildon	1hr 8m	5
Colchester	3hr 3m	0
Chelmsford	1hr 15m	1
Luton	4hr 41m	1
London	2hr 57m	1
Cambridge	3hr 5m	1
Peterborough	6hr 0m	1
Ipswich	3hr 0m	0
Stansted	1hr 37m	1
Thurrock	2hr 12m	4

There are two railway lines from the Borough that provide links to London Fenchurch Street and London Liverpool Street. A total of nine railway stations serve the Borough, and a new station is currently under construction at London Southend Airport.

⁷ www.traveline.org.uk and Southend Borough Council
 Southend-on-Sea Borough Council – Local Transport Plan 3
 Evidence Base – June 2010

Table 1.5 – Rail connections / services to regional transport nodes and London⁸

Southend to:	Train			
	07:00 - 10:00		16:00 - 19:00	
	Frequency	Minimum journey time	Frequency	Minimum journey time
Basildon	9	22m	6	21m
Colchester	11	1hr 3m	8	1hr 15m
Chelmsford	11	44m	7	46m
Luton	12	2hr 5m	10	2hr 2m
London	35	54m	30	57m
Cambridge	12	2hr 25m	13	2hr 25m
Peterborough	9	2hr 29m	10	2hr 31m
Norwich	6	2hr 6m	7	2hr 21m
Ipswich	9	1hr 22m	8	1hr 41m
Stansted	16	1hr 59m	14	1hr 55m
Thurrock	5	37m	5	51m

Tables 1.2 to 1.5 show there is good connectivity to Regional Travel Nodes, Basildon and Thurrock from Southend by public transport and driving time. The sources used to collect the data in these tables suggest that there is no particular advantage in choosing to travel by car to Basildon or Thurrock.

Table 1.5 above shows that daily ‘there and back’ journeys for business purposes are not restricted by a lack of frequency from Southend. This availability of trains to the rest of the East of England and London should not restrict Southend’s ability to attract businesses to the Borough.

London Southend Airport is located to the north of the Borough. Southend Airport mainly operates passenger charter and business flights, cargo flights, pilot training, and recreational

⁸ Source: www.thetrainline.com

flying. Maintenance facilities for aircraft up to Boeing 757 and Airbus A321 size are also available.

The airport submitted a planning application in October 2009 to introduce improvements to the airport that would allow for the construction of a new passenger terminal, extension of the current runway, passenger numbers increasing from 48,000 (2008) to 2 million (2020), and the creation of 6,700 new jobs.

1.4.5 Commuting for work

This section will consider:

- Does the level of connectivity analysed above influence commuting distance?
- What is the impact of commuting on modal choice?
- Is there any scope for behavioural change?

Employer access to its potential workforce is clearly a critical matter for job creation and job matching, particularly in key business centres. The distances people are prepared to commute is influenced by many factors, including the availability of local jobs and the connectivity of the transport network. In the previous section it was shown that connectivity, especially by road, is good. This might be expected to influence commuting patterns.

Table 1.6 below shows the distance and travel time to Key Centres for Development and Change, namely those places with a large and growing workforce. Table 1.7 shows those towns that are within approximately a thirty minute commute from Southend by either car or by train.

Table 1.6 – Distance and driving time to KCDCs

Destination	Distance (km)	Driving time
Colchester	68	59m
Chelmsford	34	33m
Luton	111	1hr 24m
London	70	1hr 25m
Cambridge	115	1hr 27m
Peterborough	175	2hr 5m
Norwich	162	2hr 14m
Ipswich	95	1hr 18m
Stansted	80	1hr 3m

Table 1.7 – Towns within approximately 30 minutes commute of Southend

Southend to:	Time (mins)	
	Car	Train
Hockley	16	10
Rochford	11	6
Rayleigh	13	14
Benfleet	17	15
Canvey Island	24	Nearest railway station is Benfleet
Basildon	24	23
Wickford	22	19
Billericay	30	25

The evidence shows that there is a significant catchment area within easy reach of Southend resulting in a plentiful labour supply for the Borough.

Table 1.8 below shows the total productivity costs of congestion per annum by KCDC. Southend has the lowest productivity cost of £4.6m and a low cost of £62 per worker compared to the other KCDC's.

Table 1.8 – Total Productivity Costs of Congestion per Annum by KCDC⁹

KCDC	2012 Productivity (GVA per annum)	Total Cost	2021 Total Productivity Cost per worker (GVA per annum)
Hemel Hempstead	£31.4m		£612
Watford	£10.4m		£179
Thurrock	£9.5m		£133
Stevenage	£8.9m		£190
Harlow	£8.1m		£186

⁹ Source: Developing Transport Options for the London Arc & Thames Gateway 'Engines of Growth'
 Southend-on-Sea Borough Council – Local Transport Plan 3
 Evidence Base – June 2010

Welwyn Hatfield	£6.6m	£108
Basildon	£5.9m	£96
Southend-on-Sea	£4.6m	£62

The Transport Economic Evidence Study¹⁰ (TEES) reported that corridors which have a particularly severe productivity impact include the A13/A127 and parallel rail routes. Although in terms of KCDCs Table 1.8 shows Southend has the lowest productivity costs of congestion, Table 1.9 below shows the potential benefits that could be accrued in Southend from eliminating congestion in the region.

Table 1.9 – TEES costs of congestion statistics for Southend

Local Authority	Year / Increase	Total economic benefits to businesses and residents (£m per annum)	Total economic benefits to businesses only (£m per annum)
Southend	2003	16	9.5
	2021	34	19.8
	Increase	213%	208%
Rochford	2003	10.3	4.9
	2021	21.5	10.3
	Increase	209%	210%
Basildon	2003	22.2	14.6
	2021	45.7	29.0
	Increase	206%	199%
Castle Point	2003	9.1	4.7
	2021	19.3	10.1
	Increase	212%	215%

Although Southend starts from a lower base in absolute terms, because it has a lower GVA per annum, the potential percentage increase in benefits through reducing congestion outweigh those accruing to its near neighbours

Table 1.9 shows a breakdown of distances travelled to work by residents of the Borough and compares this to the population of the East of England and nationally. It can be seen that 57% of the resident population of Southend commutes less than 10km. This is broadly similar to commuting patterns to the East of England and nationally. Table 1.10 shows that 56% of the working population in Southend commutes by car, a figure less than the regional and national averages. Taken together it would suggest there is wide scope to reduce these shorter commuting journeys by car and enabling modal shift to walking, cycling, and public transport.

¹⁰ http://www.eeda.org.uk/files/TEES_Final_Report.pdf
 Southend-on-Sea Borough Council – Local Transport Plan 3
 Evidence Base – June 2010

Table 1.10 – Travel to work distances breakdown

Group	Southend	%	East	%	England	%
All People	70177	-	2579378	-	22441497	-
Works mainly at or from home	5617	8	243485	9	2055224	9
Less than 2km	16399	23	517466	20	4484082	20
2km to less than 5km	15205	22	437395	17	4510259	20
5km to less than 10km	8132	12	354182	14	4094614	18
10km to less than 20km	5299	8	379857	15	3412081	15
20km to less than 30km	2958	4	201209	8	1197605	5
30km to less than 40km	1586	2	107616	4	527840	2
40km to less than 60km	8634	12	108875	4	487683	2
60km and over	2352	3	90977	4	607571	3
Other		6		5		6

The data also shows a higher relative percentage (12%) of Southend residents commuting between 40km and 60km which, presumably, is indicative of commuters travelling to London. Table 1.11 shows 13% of Southend commuters travel by train, compared to 6% in the East of England and 4% in England. This again, suggests this is mainly made up of commuters to London.

A survey conducted in March 2005 and reported in a parking study¹¹ by Atkins found that of all car trips made to the town centre, 15% were for commuting, compared to 36% for shopping, and 32% for leisure, between the hours of 7am and 7pm.

Most visitors to the town centre come from areas close to the central area (i.e. postcode zones SS0, SS1 and SS2). Over two-thirds (63%) live within the Borough and a further one-fifth (22%) live in the areas immediately beyond the Borough boundary; making a total of 85% (six out of every seven) that come from within the Borough or immediately neighbouring areas.

¹¹ Southend Regeneration Studies Town Centre Parking & Access Study: Parking Strategy Report, Atkins, May 2008
[Southend-on-Sea Borough Council – Local Transport Plan 3 Evidence Base – June 2010](#)

Commuting or business visits are made regularly, and very likely every weekday. Commuters are the most distinctive group of car park users: typically they arrive early in the morning (usually before 9 am) and park all day either at work or somewhere near to where they work. Alternatively, they might drive to a railway station to commute to (say) London and park there all day.

The study also found that only about 3% of visitors to the town centre travel by cycle.

This low figure for commuting would suggest there may be limited scope for reducing peak time (i.e. 7am to 9am) congestion into the town centre through modal shift, but there is greater scope for encouraging modal shift for shopping and trips which make up more than two thirds of all car trips to the town centre.

Table 1.11 – Mode of travel to work

Group	Southend	%	East	%	England	%
All People	70,177	-	2,579,378	-	22,441,498	-
Works mainly at or from home	5,617	8%	243,485	9%	2,055,224	9%
Underground, metro, light rail or tram	142	0%	21,688	1%	709,386	3%
Train	9,288	13%	156,054	6%	950,023	4%
Bus, minibus or coach	4,205	6%	102,838	4%	1,685,361	8%
Taxi or minicab	397	1%	11,693	0%	116,503	1%
Driving a car or van	35,852	51%	1,518,613	59%	12,324,166	55%
Passenger in a car or van	3,811	5%	150,642	6%	1,370,685	6%
Motorcycle, scooter or moped	713	1%	28,637	1%	249,456	1%
Bicycle	1,917	3%	100,193	4%	634,588	3%
On foot	8,002	11%	233,737	9%	2,241,901	10%
Other	233	0%	11,798	0%	104,205	0%

Single vehicle occupancy levels over time are another indicator of the level of congestion in a location, and show the potential for affecting behavioural change.

Table 1.12 – Percentage of vehicles with single occupancy

	Actual 2005	Target 2005	Actual 2006	Target 2006	Actual 2007	Target 2007
AM	15	15	14	16	16	17
Interpeak	28	27	31	29	29	30
PM	25	26	25	27	23	27

Table 1.12 shows that although single occupancy has increased in the AM peak the rate of increase has been less than expected. Perhaps surprisingly, the interpeak level of single occupancy is almost double that of the AM peak. Again the expected growth in the interpeak has not materialised over the years assessed. In the PM peak the percentage of vehicles with single occupancy has declined since 2005.

It is important to understand the degree to which people of working age work locally and the degree to which there is out-commuting and in-commuting. Comparing the census information for those people that live or work in a particular area enables the balance between in and out commuting to be determined more accurately. Table 1.13 and 1.14 below show the net totals for those who commute in from elsewhere to work in Southend and those who live in Southend and commute out.

Table 1.13 – In-commuting to Southend

	Number	Percentage
In-commuting flow (people who work in Southend but do not live in Southend)	19,762	31
Southend residents who work in Southend	43,528	69
Total	63,290	100

As shown previously in the table above, 69% of people who work in Southend also live in Southend, meaning that the remaining 31% or 19,762 of Southend's workforce commute in from elsewhere.

Table 1.14 – Top 3 In-commuting flows by mode

Area of residence	Total	Train	Bus, Minibus Or Coach	Taxi	Car Driver	Car Passenger	Motor-cycle	Bicycle	Walk
Rochford	8,624	6%	10%	0%	73%	7%	1%	2%	1%
Castle Point	5,193	8%	11%	0%	70%	7%	1%	1%	1%
Basildon	2,071	15%	5%	0%	69%	8%	1%	0%	2%

Looking at the top three in commuting destinations for Southend working population in more detail shows that the majority either travel to work from Rochford, Castle Point and Basildon. The majority of Southend workers who live in these other areas travel to work into Southend by car. There is clearly additionally scope to encourage more of these journeys to be made by sustainable modes of transport. The reasons for high car usage are not clear, but may be borne out through surveys, but it could be down to the provision of parking spaces at key employment sites in Southend, or poor availability of public transport to these sites.

Table 1.15 – Out-commuting

	Number	Percentage
Out Commuting Flows (People who live in Southend but work outside of Southend)	26,441	38
Southend residents who work in Southend	43,528	62
Total	69,969	100

As shown in the table above, 62% of Southend residents who work do so in Southend, meaning that the remaining 38% or 26,441 of Southend's resident workforce commute out to employment elsewhere.

Table 1.16 – Top 3 Out-commuting flows by mode

Area of Workplace	Total	Train	Bus, Minibus or Coach	Car Driver	Car Passenger	Motorcycle	Bicycle	Walk
Basildon	4,705	6%	4%	82%	6%	2%	1%	0%
Rochford	4,341	3%	8%	74%	7%	2%	4%	2%
City of London	3,581	94%	1%	3%	0%	0%	0%	0%

Looking at the top three out commuting destinations for Southend resident’s in more detail shows that the majority either travel to work in Basildon, Rochford or the City of London. With the exception of London, the majority of Southend residents who work in Basildon and Rochford travel to work by car. There is clearly additionally scope to encourage more of these journeys to either be made by train or bus. Commuting car trips from Southend to Basildon exceeds the reverse flow shown in Table 1.14. Again the reasons for these flows would be borne out by surveys, but it could be a consequence of good provision of parking at key employment sites, or poor public transport connections to these sites.

Table 1.17 shows the net commuting flows for Southend, which shows there is an overall net out-commuting of 6,679 people.

Table 1.17 – Net commuting flows¹²

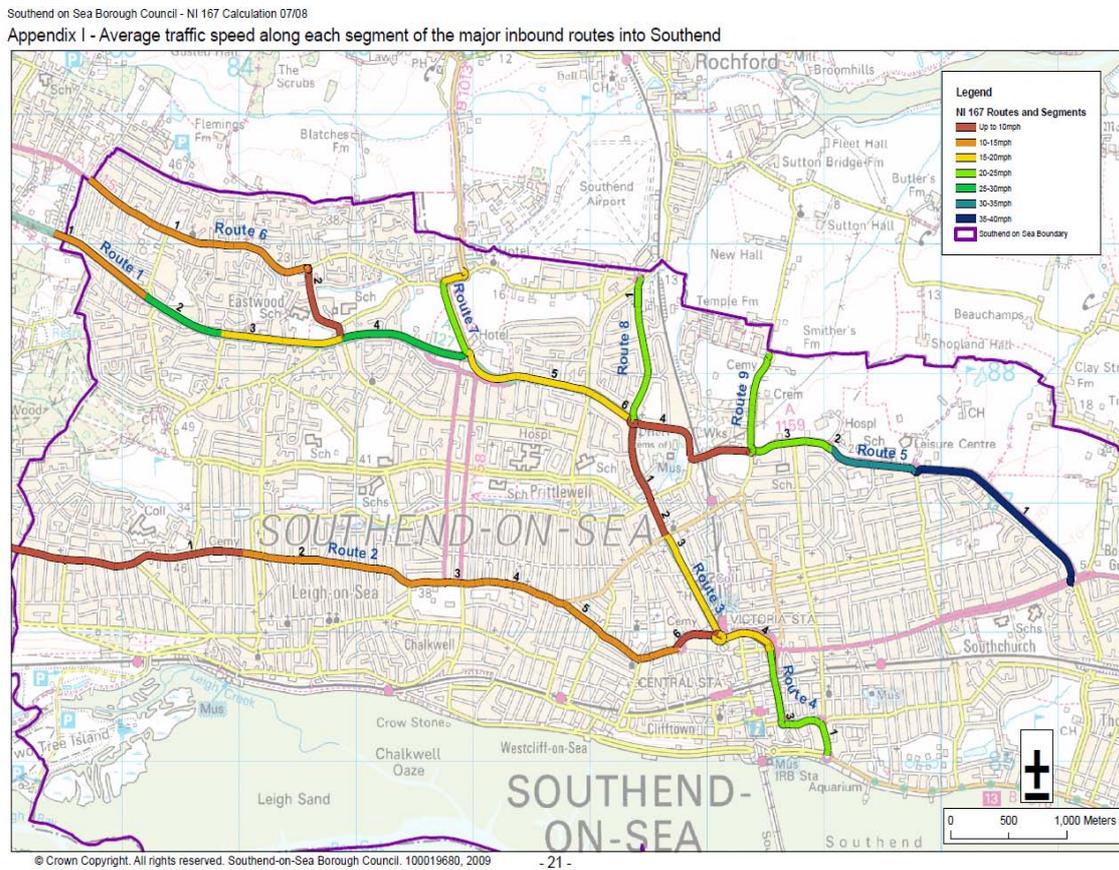
	Number
All people aged 16 to 74 in employment in the area	63,290
All employed people aged 16-74 who are resident	69,969
Net Commuting Flows	-6,679 ¹³

Figure 1.1 is a congestion map of Southend which shows the average vehicle speeds on key routes in and out of the Borough

¹² Source: Census 2001

¹³ This is an indicator of net in and out commuting. A + (plus) means net in-commuting whilst a – (minus) means net out-commuting

Figure 1.1 – Southend speed map



1.4.6 Supply of Parking

The Atkins parking study¹⁴ also found the following:

- 5,500 off street parking spaces (2007).
- Approximately two thirds of these are council controlled.
- Dominated by a small number of Council car parks.
- Car parks are typically 70% full, although some car parks have capacity issues.
- On-street utilization is nearer 90%.
- There is a very sharp drop off in accumulation after 17:00 hours as people leave the town centre, for home, at about the same time.

¹⁴ Southend Regeneration Studies Town Centre Parking & Access Study: Parking Strategy Report, Atkins, May 2008
 Southend-on-Sea Borough Council – Local Transport Plan 3
 Evidence Base – June 2010

- Data suggests that there is a tendency for Southend to provide parking infrastructure to meet peak demand, such as peak time summer holiday demand, rather than year round average levels of demand.
- There is a CPZ in the town centre, but there are plans to extend into residential areas.
- Survey data suggested 85% of people going to the town centre are from within the Borough.

The share of publically controlled parking spaces is unusually high compared to other Local Authorities, and would suggest there is considerable scope to implement parking controls to reduce in commuting by car. This could be by using supply side measures by simply reducing the number of car parking spaces, or using demand measures by, for example, making it more attractive and easier to use sustainable travel modes to get to the town centre, or by increasing the cost of parking.

See section on Town Centre Regeneration for the parking strategy.

1.4.7 Public transport

Southend is served by a network of local bus and inter-urban bus and coach services. The planned expansion of 6,500 dwellings and provision of 13,000 jobs by 2021 will put further pressure on Southend's public transport network. In the 2008 Place Survey 25% of those questioned said good public transport was one of the key factors needed to make somewhere a good place to live, which compares with the results for Thurrock.

Table 1.18 – Place Survey (2008)

Most important factors in making somewhere a good place to live	Southend	Luton	Thurrock	Brighton
Public Transport	25%	22%	25%	n/a
Road & Pavement Repairs	17%	15%	14%	n/a
Level of Traffic Congestion	16%	16%	15%	n/a

But when questioned about what issues need the most improvement (Table 1.19) in Southend, public transport is cited by 18% of those questioned, the same as for Luton, but less than in Thurrock. This may in part be indicative of a certain degree of satisfaction with public transport in the Borough.

Table 1.19 – Perceptions of improvements needed (Place Survey, 2008)

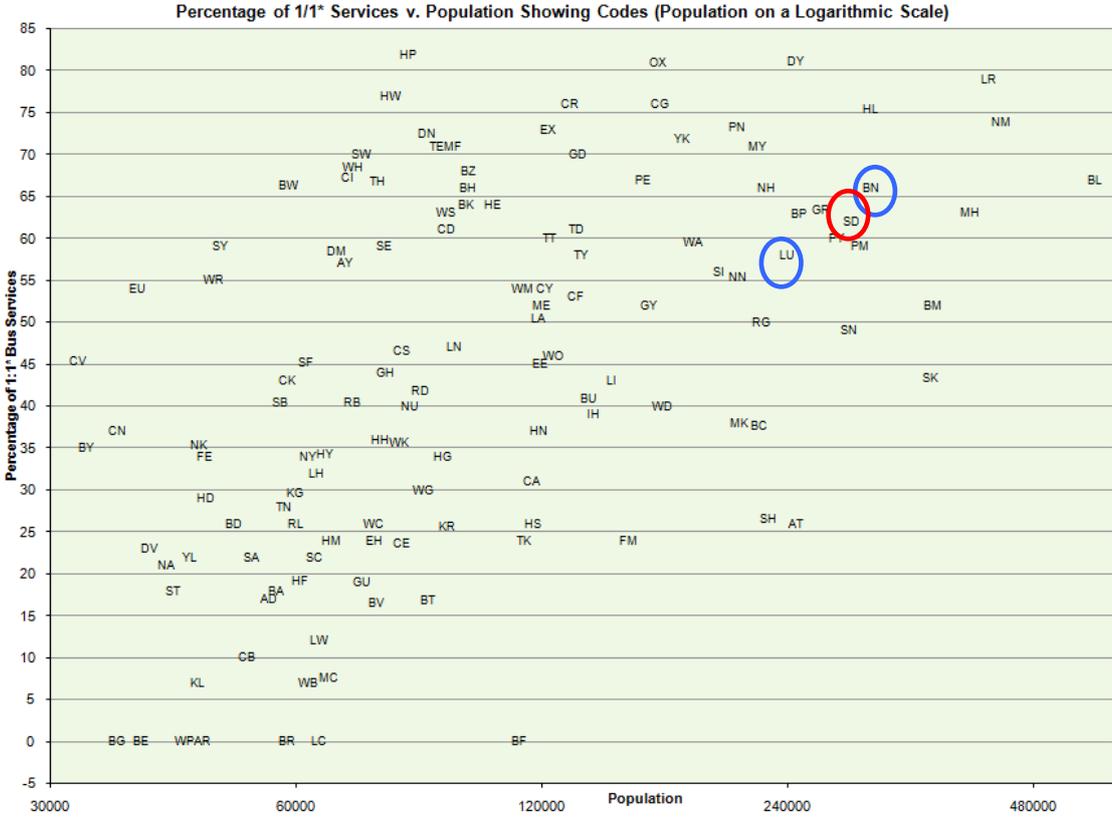
Which issues are most in need for improvement in the Local Area (within 15-20mins walk from where the respondent lives)	Southend	Luton	Thurrock	Brighton
Road & Pavement Repairs	38%	32%	31%	34%
Level of Traffic Congestion	37%	31%	26%	47%
Public Transport	18%	18%	23%	n/a

The Comparison of Urban Bus Systems (CUBS) analyses data for over 130 English urban networks. For CUBS, all bus services have been allocated a grading (1*, 1-4). A service that is considered 'good' and graded 1 or 1* would have to have a headway of every 15 minutes during the daytime, every 30 minutes early morning and mid evening and every 60 minutes Sunday daytime and late evening.

Figure 1.2 below shows a graph of the population by town plotted against the percentage of good bus services. Southend is marked as SD. The graph shows that although Southend has a relatively high population compared to the other towns, approximately 62% of its bus services are considered as good. This is average compared to the other towns, Luton (LU) and Brighton (BN) that are Southend's comparison towns.

Figure 1.2 – Percentage of Good Level Bus Services Plotted against Town Population

(Source: <http://cubs.reseaulutions.com>)



The table below shows the frequency for a sample of bus services which serve Southend for varying times of day. The evidence suggests that there are fewer buses during the weekday evenings which could deter people from using the buses during the morning/day as they will find it harder to access a bus in the evening. There is also a low frequency of buses on Sundays.

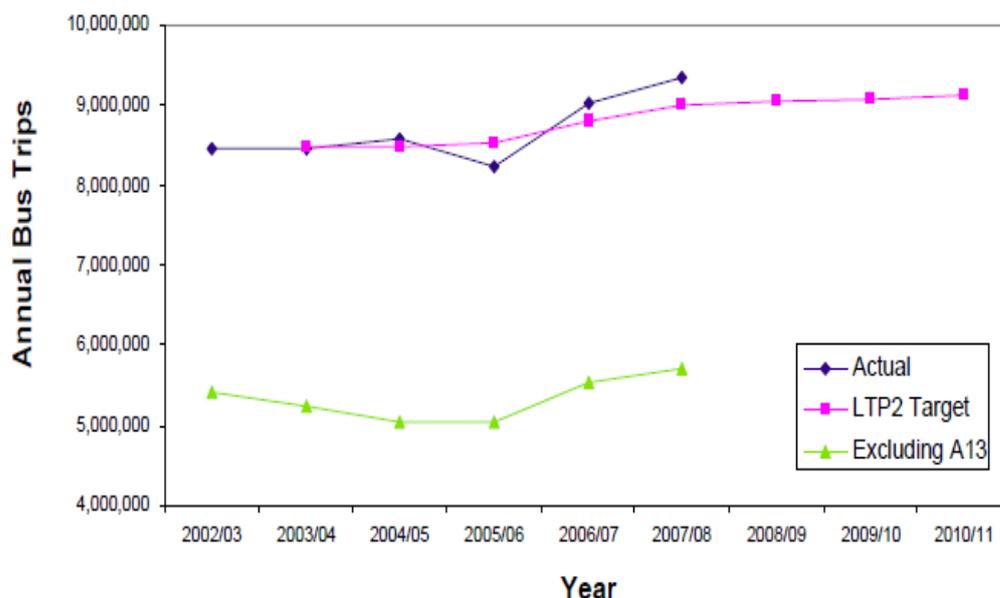
Table 1.20 – Bus Service Frequencies

Bus service	Frequency (average number of buses per hour)				
	Weekday (7am-10am)	Weekday (10am-3pm)	Weekday Afternoon (4pm-7pm)	Weekday Evening (8pm onwards)	Sunday
1	4	6	4	2	2
7/8	6	6	4	1	2
20	4	4	4	2	2
27	3	3	2	1	1

Performance indicators for public transport in Southend show trends of significant decline (Table 1.21). Bus patronage declined by 1.6% between 2007/08 and 2008/09, some 4.5% below the target level, and indicative data suggests patronage in 2009/10 will be approximately 8% below the target level for the year. Of the comparator Local Authorities, where data is available, Luton is showing an increase in patronage.

The LTP2 Progress Report (2008) in contrast reported an increase in passenger numbers between 2005/06 and 2007/08 when data was rebased (Figure 1.3). Nearly half of all bus journeys in Southend are made along the A13 bus corridor (Figure 1.1) However as Figure 1.1 shows the A13 corridor average speeds of between 10-15 mph which does not provide an incentive to switch modes to bus.

Figure 1.3 – Bus patronage during LTP2



Further research to understand the reasons behind the decline in patronage would be desirable; however it can be assumed that some is due to the recent economic downfall.

Table 1.21 – NI 177, Bus Patronage

Year	Southend		Luton		Thurrock		Brighton	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target
2007/08	9,356,000	Baseline	7,894,000	8,391,000	3,416,000	2,700,000	n/a	n/a
2008/09	9,204,421	9,637,000	10,426,000	8,559,000		3,425,000	n/a	n/a
2009/10	*	9,926,000		9,244,000		3,450,000		

*latest data shows an 8% shortfall on the target

When it comes to the performance of bus services in the Borough recent data is not available for Southend or the comparator Local Authorities. Data for 2007/08, the most recent available, show that performance was below (a higher performance target) than in. Relatively poor

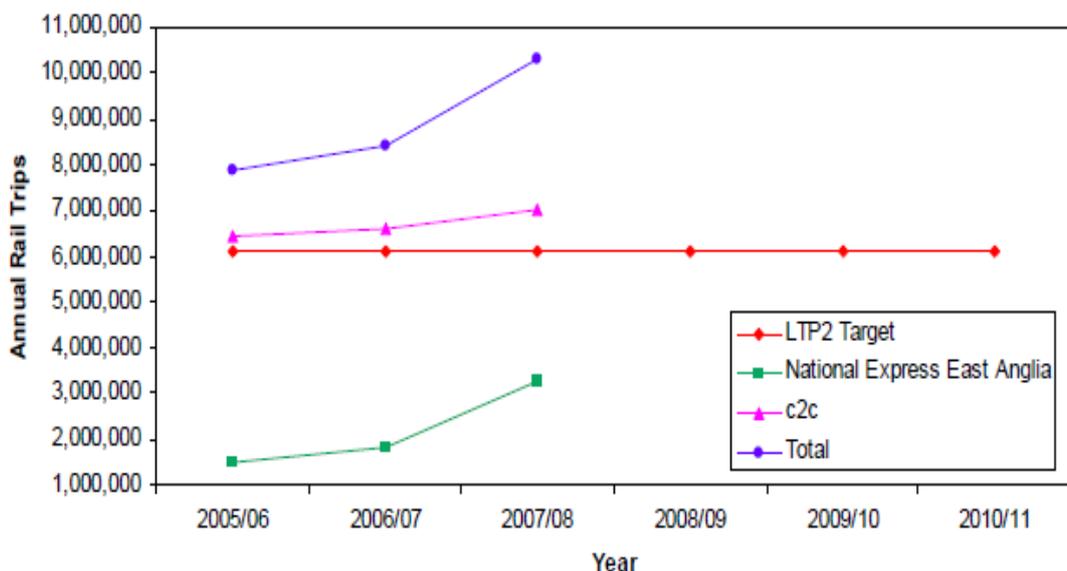
performance in terms of timing can and does deter people, especially those car drivers who would consider a change of mode, from using the bus service.

Table 1.22 – NI 178, Bus services running on time

Year	Southend		Luton		Thurrock		Brighton	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target
2007/08	82%	85%	n/a	n/a	79.50%	75%	n/a	n/a
2008/09	n/a	n/a	n/a	n/a	n/a	77%	n/a	n/a
2009/10						82%		
2010/11						85%		

There are a total of nine rail stations that serve Southend on the c2c line to London Fenchurch Street, and the National Express East Anglia line to London Liverpool Street. Another station is currently under construction to serve London Southend Airport. Table 1.5 shows there are frequent peak hour services to London and to other KCDCs in the East of England. Overall Southend is well connected to the capital and the region by rail.

Figure 1.4 – Growth in rail passenger numbers



There has been significant growth in rail travel within Southend between 2006/07 and 2007/08 of approximately 1.5 million passenger journeys¹⁵. On the c2c line passengers have increased by approximately 3 million between 2003/04 and 2007/08. This has resulted in 10.1 million passenger journeys per annum, exceeding the LTP2 target by 4 million.

¹⁵ LTP2 Progress Report – April 2006 – March 2008.

This data may, however, be representative of longer distance journeys and further work should be done to determine whether passengers, because of the Borough's nine stations, could use rail almost as a suburban metro system.

The construction of a new station at London Southend Airport may result in increased patronage if the airport's proposals for expansion are approved by the planning authority.

Table 1.23 – Southend Stations and levels of service

Service		Southend Central	Southend Victoria	Southend East	Prittlewell	Westcliffe	Thorpe Bay	Shoeburyness	Chalkwell	Leigh
Staffing	Level	P/T	F/T (platform)	P/T	P/T (ticket office)	P/T	P/T	P/T	P/T	P/T
	Hours	Monday-Friday 05:45-22:00 Saturday 06:15-22:00 Sunday 07:15-22:00	Monday-Friday 24 hours Saturday 24 hours Sunday 24 hours	Monday-Friday 05:15-20:30 Saturday 06:15-15:40 Sunday 06:15-15:40	Monday-Friday 06:00-13:00 Saturday 06:00-13:00 Sunday Closed	Monday-Friday 05:45-22:00 Saturday 06:15-15:40 Sunday 06:15-15:4	Monday-Friday 05:15-20:30 Saturday 06:15-15:40 Sunday 06:45-16:00	Monday-Friday 06:15-22:00 Saturday 08:15-17:40 Sunday 07:15-18:40	Monday-Friday 05:15-20:00 Saturday 08:15-17:40 Sunday 06:45-16:10	Monday-Friday 05:15-22:00 Saturday 06:15-20:00 Sunday 06:45-19:40
CCTV	Installed	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Coverage	Within station Cycle storage	Within station Cycle storage	Within station	Car park Cycle storage	Within Station Car park	Within Station Car Park	Within station Car park Cycle storage	Within station	Within station Car park
DfT Safety Accreditation mark		✓		✓						

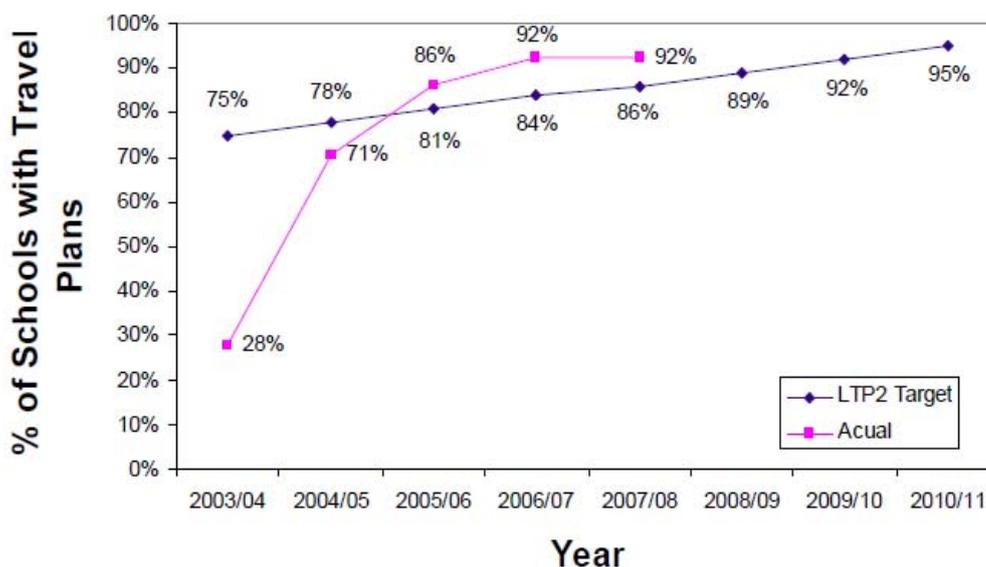
1.4.8 Evidence of modal shift, such as through smarter choices

In this section, consideration is given to answering the following question:

- Is there any potential for modal shift in order to tackle congestion, and where is this potential?

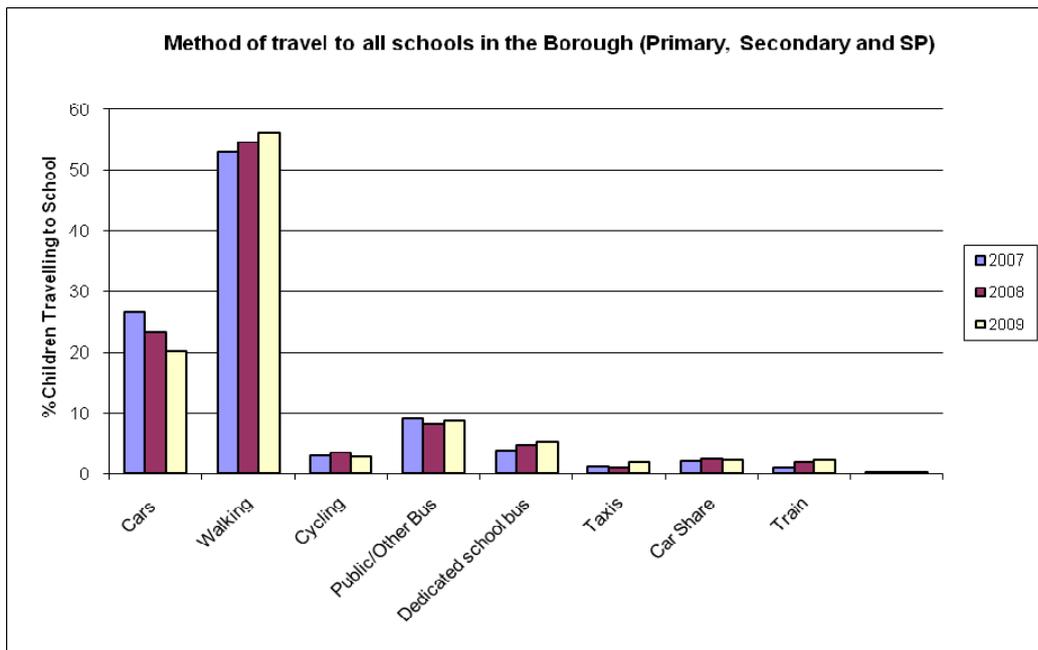
In 2007/08 60 schools (92.3%)¹⁶ out of 65 schools in the Borough had an active travel plan in place against the LTP2 target of 86% in that year. This represents a substantial increase from just 28% in 2003/04 (Figure 1.4). As can be seen from Figure 1.5 the percentage of children travelling to school by car has declined over time, to the benefits of walking numbers, but travel by cycle appears to have remained static.

Figure 1.5 – School travel plans in Southend



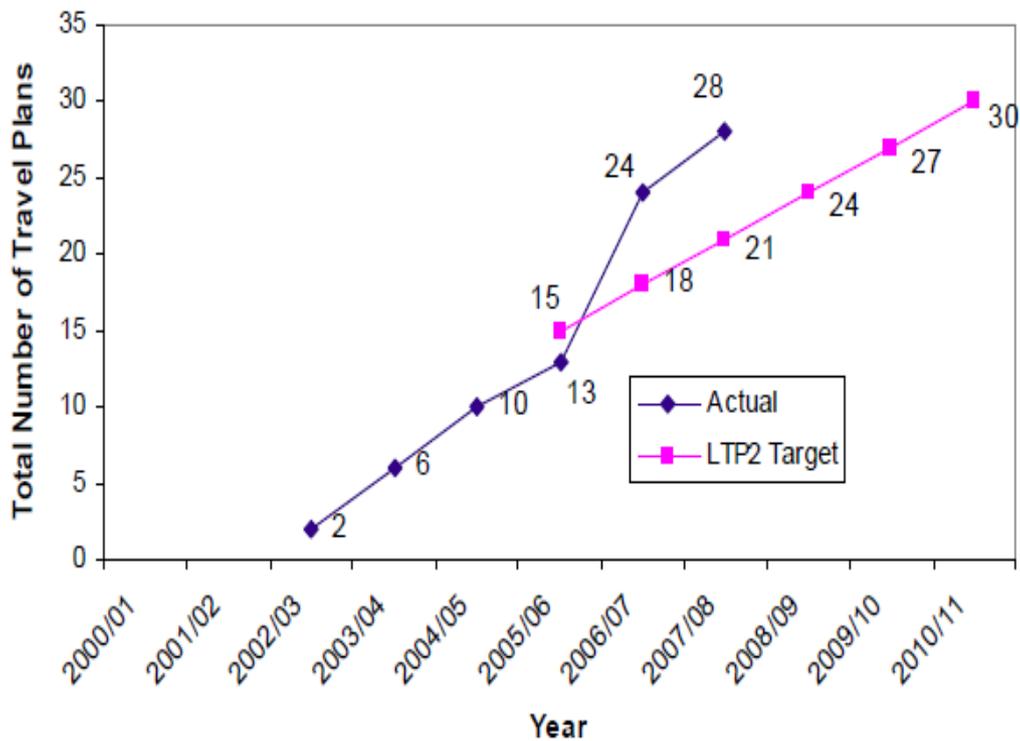
¹⁶ LTP2 Progress Report – April 2006 – March 2008.

Figure 1.6 – Mode of travel to school



By 2007/08 28 workplace travel plans had been implemented in the Borough against a target of 21 for the year, and 2 short of the target of 30 for the end of the LTP2 period (Figure 1.7). Consideration of data in Table 1.9 shows that there is significant scope in Southend for increasing this proportion of people that travel by sustainable modes to work, as 23% of the resident population live within a reasonable walking distance (less than 2km) to work, with a further 34% within a reasonable walking, cycling or bus distance of 2km to 10km. Increased adoption and implementation of workplace travel plans may work to encourage a modal shift in travel to work patterns (Figure 1.7).

Figure 1.7 – Number of workplace travel plans in Southend

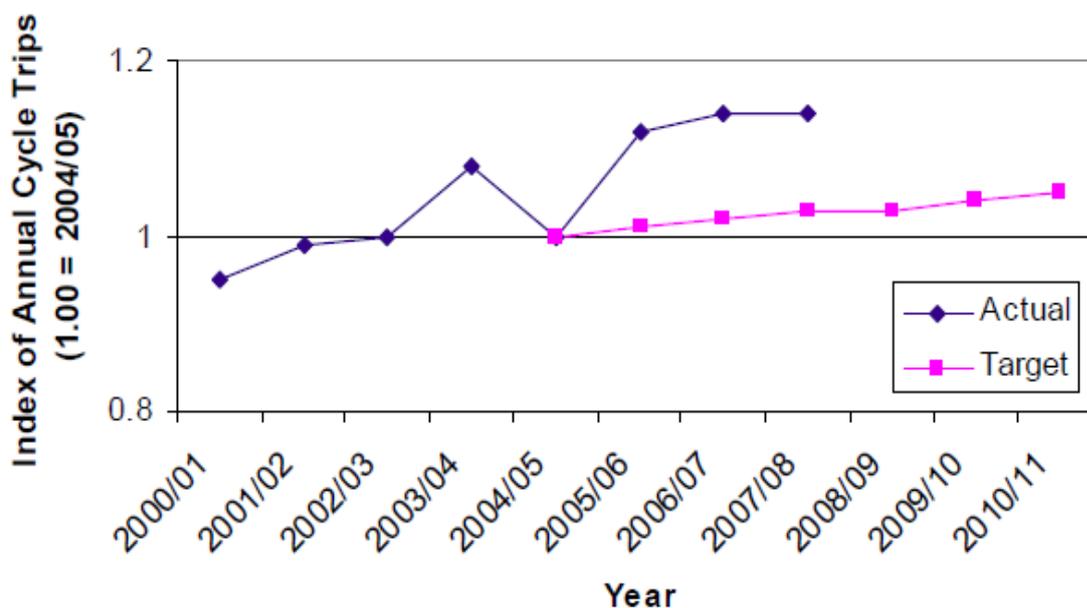


Good progress has been made towards increasing cycling in Southend, which has been awarded Cycling Town status in 2008 which lasts until the end of the LTP2 period in 2011. Southend's cycling strategy has been agreed with Cycling England who will direct schemes for the Borough. The combination of measures proposed include both infrastructure and soft measures with an emphasis on training, promotion and direct marketing.

The LTP2 Progress Report provides examples of progress made, including completion of a 2.5km mainly segregated route along both carriageways of the A127. Other examples include the Council gaining accredited Bikeability status with nine national standard trained instructors working in schools. In 2006/07 594 children were receiving cycle training in schools, but in 2007/08 this number had increased to 822 children.

Overall cycle trips in Southend have increased by 14% from 2004/05 to 2007/08 compared to a target growth rate of 3% over 3 years (Figure 1.8).

Figure 1.8 – Number of cycling trips in Southend



With 23% of Southend’s population travelling less than 2km to work, and 57% travelling less than 10km, there appears to be considerable potential for achieving significant increases in cycling levels in the Borough.

1.4.9 Traffic, congestion and journey reliability

This section considers:

- What is the expected growth in travel demand?
- Will this stifle the economic performance of Southend?

Traffic in the UK is currently measured by the Department for Transport in two ways – the number of vehicle kilometres travelled (distance) and the annual average daily traffic flow (volume). Southend’s LTP2 target for traffic growth is not to exceed 2.1% per annum on local roads. If measured as million vehicle kilometres traffic in Southend has grown from 601 million vehicle kilometres (1994) to a peak of 681 million vehicle kilometres (2004). The growth appears to have then plateaued at 676 million vehicle kilometres in 2007, and is equivalent to traffic levels in 2002. Traffic growth is shown by Figure 1.10 below. Information on what has caused this decline is unavailable at this time. DfT data also shows a recent decline in traffic levels as a result of the recession, and so the expectation in traffic growth in Southend has declined further in recent years.

In terms of traffic flows into Southend Town Centre during the AM peak, they too have decreased against a forecast increase during the LTP2 period, as shown by Figure 1.9.

Figure 1.9 – AM peak traffic flows

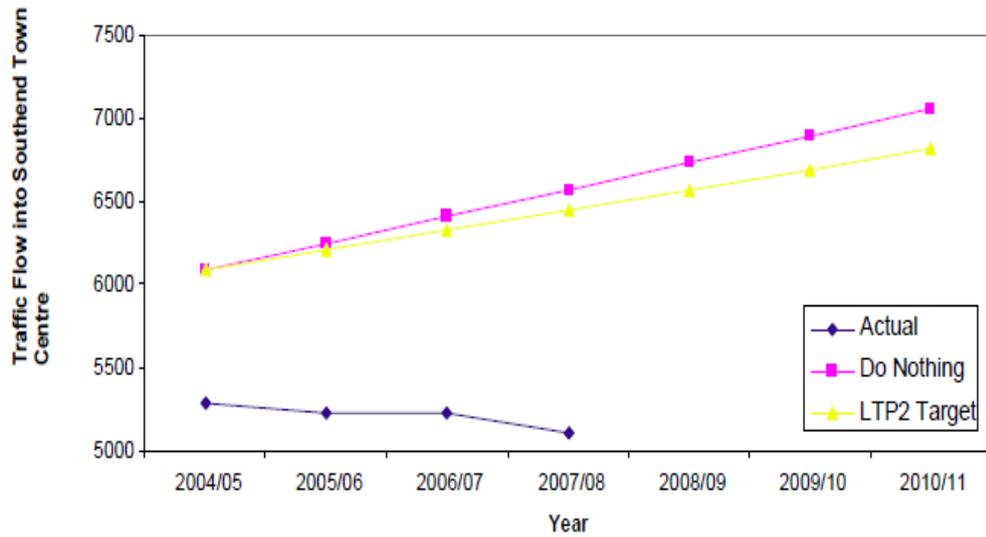
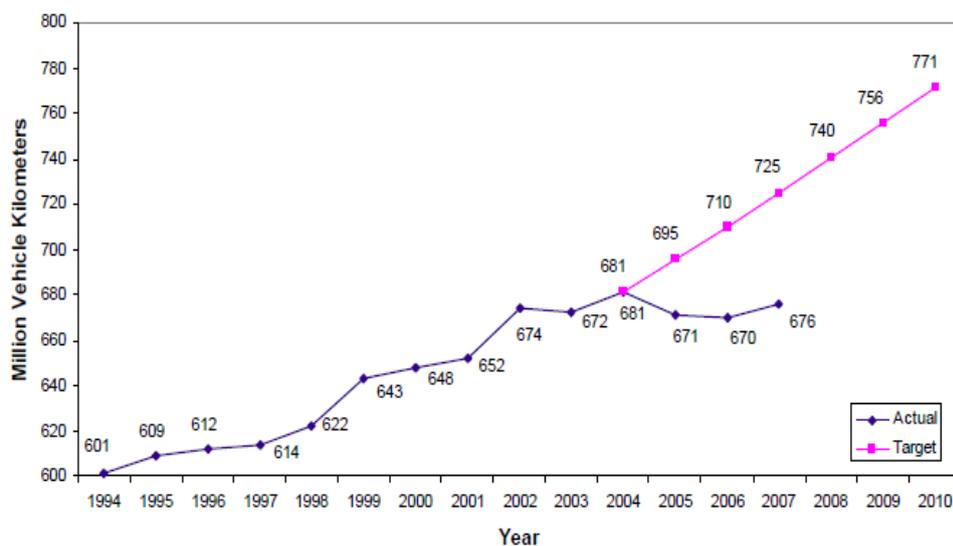


Table 1.24 – NI 167, Congestion – average journey time (minutes: seconds) per mile during the AM peak

	Southend	Luton	Thurrock	Brighton
2005/06	n/a	n/a	n/a	03:57
2006/07	n/a	n/a	n/a	03:56
2007/08	03:51	06:31	n/a	03:44

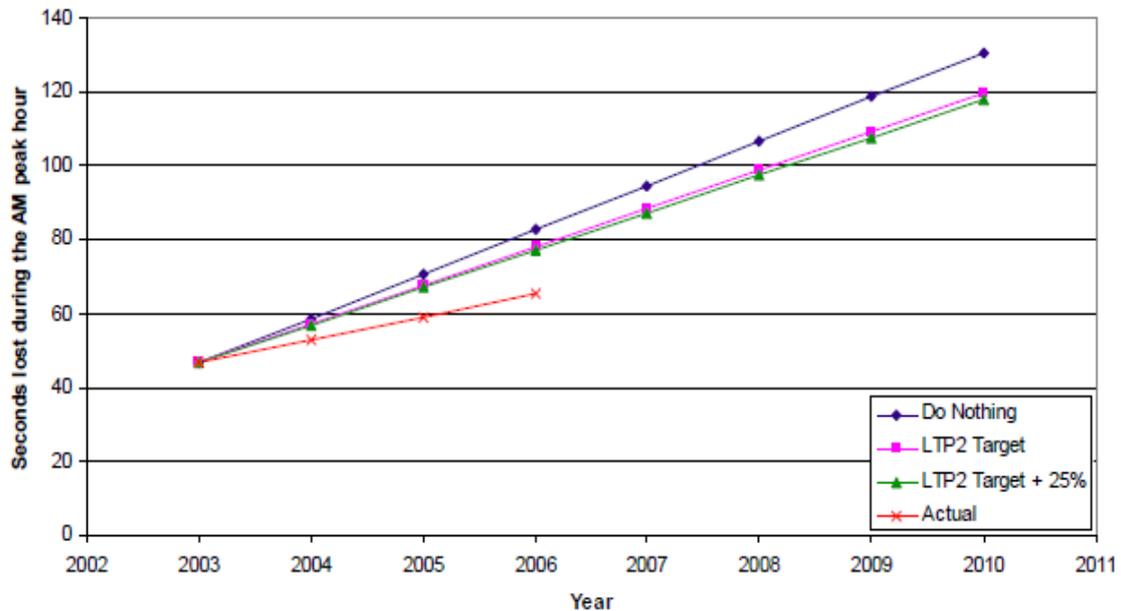
This represents an average speed of 15.5 mph.

Figure 1.10 – Vehicle growth target



However, Traffic is likely to continue to grow (Figure 1.10) as a result of new development within Southend as proposed by the East of England Plan. In particular, the planned expansion of 6,500 dwellings and provision of 13,000 jobs between 2001 and 2021 will put additional pressure on Southend’s transport network. Figure 1.11 shows actual average vehicle delay for the LTP2 period against a ‘do nothing’ scenario.

Figure 1.11 – Average vehicle delay



The London to Southend Movement Study (LOTS)¹⁷ identified the transport problems facing Southend:

- Significant parts of the road network and rail infrastructure are already at capacity.
- If current travel patterns continue, the existing road and public transport networks have insufficient capacity to cater for any substantial growth.
- To retain the existing infrastructure and cater for substantial growth, a significant modal shift would be required from the car to public transport of up to 50%.

The study identifies the need for:

- A step change in transportation provision.
- A combination of highway and public transport infrastructure improvements.
- Complementary land use planning and transport policies.
- A programme of investment to 2021 in the region of £1.6 billion.

¹⁷ London to Southend Movement Study (LOTS). Hyder Consulting, May 2004.

- Although the scale of investment is large, LOTS identified the consequences of not providing for these changes:
- The likelihood of regeneration or new development occurring in Essex Thames Gateway will be small.
- The objectives of the government's Sustainable Communities Plan will not be realised.

1.4.10 Growth

Employment Growth

In Southend's Core Strategy, provision is made for not less than 6,500 net additional jobs by 2011, and not less than 13,000 net additional jobs by 2021. These new jobs will be distributed as shown in Table 1.24.

Table 1.25 – Planned jobs growth

Location	Number of new jobs 2001 – 2021
Town Centre and Central Area	6,500
Shoeburyness	1,500
Seafront	750
Priority Urban Areas*	2,750
Intensification**	1,500

* Westcliff and Leigh, Southchurch Road shopping area, West Road / Ness Road shopping area in Shoebury, and main industrial estates in Borough

** takes into account home working, hot-desking, and small scale employment generating mixed use development.

The Core Strategy requires development proposals involving employment having a requirement to contribute to the creation and retention of a wide range of jobs, educational and re-skilling opportunities. Offices, retailing, leisure and other uses generating large numbers of people should be focussed in the town centre. Industrial and distribution uses will be supported on existing and identified industrial / employment sites, increasing employment densities and / or reinforcing regeneration.

Town centre regeneration

Congestion in and in the immediate vicinity of a town centre can detract from its overall attractiveness for a variety of reasons, including poor air quality and inconvenience.

This could result in some people being deterred from visiting these town centres and warrants further investigation. For town centres to thrive, people need to be able to access them with a reasonable degree of convenience. Southend will be undergoing significant change and development over the coming years as reflected by the Local Development

Framework and its Town Centre Area Action Plan. There is also a complimentary Town Centre Masterplan developed by Renaissance Southend, the Urban Regeneration Company in the town.

Good accessibility to the town centre is crucial to its economic viability and regeneration. The town centre should be accessible by a range of modes of transport providing safe seamless travel facilities, particularly sustainable transport by bus, rail, cycling and walking. It should also be easily accessible to all members of the community. This will include travel involving service deliveries, business, shopping and leisure trips. Access to the town centre by car needs to be managed as part of an integrated town centre transport strategy to improve access to essential routes such as car parks (see 1.4.6 Supply of Parking) and to reduce congestion.

The current transport vision aims to meet these goals by

- The provision of an integrated network of inter-urban buses (South Essex Rapid Transit - *sert*).
- Extension of A13 Passenger Transport Corridor into the town centre linking with the travel centre, east of the Borough and the Airport.
- Improvements at the railway stations (Southend Central and Southend Victoria) to provide for integrated and improved facilities, including the concept of a shuttle bus link.
- junction improvements at A127 (with Fairfax Drive and West Road) and Victoria Circus;
- Park and ride facilities as part of a demand management strategy.
- Improved cycling and pedestrian facilities and completion of the cycle network routes into and through the town centre.

In terms of the strategy¹⁸ for car parking in the town centre, the objective is to maintain the viability of the town centre, and its accessibility for those unable to use more sustainable modes of transport. The strategy, which is intended to meet the requirements of businesses, residents and visitors, aims to:

- Provide a suitable level of public parking provision in order to maintain the vitality and viability of the town centre.
- Support the economic regeneration of the town centre, and manage the impacts of its expansion.
- Discourage private journeys to the town centre by car for commuting and leisure purposes.
- Encourage the use of sustainable modes of transport.

¹⁸ Southend Central Area Masterplan. Final Report, March 2008. Renaissance Southend.

- Provide guidance for levels of private parking associated with new development.
- It also aims to maintain the quality of the built environment by locating car parks on the periphery of the town close to strategic routes, to reduce traffic within the central area as far as possible.

The strategy promotes the use of a Car Park Guidance System as part of the Urban Traffic Control system to make best use of town centre parking stock, with retail and commuter parking being available for evening economy use.

The aim has been to consolidate the existing parking stock within the town centre, to enable development and growth, and provide a smaller number of accessible high quality and secure multi storey car parks and support the retail function of the town centre.

The strategy makes it clear that parking provision will be retained throughout the Masterplan period. However, parking demand management restraint will be necessary for new developments post 2010 (once existing parking standards set out within the Essex).

Planning Officers Association Vehicle Parking Standards (Aug. 2001) have been superseded. It goes on to propose that controlled parking zones within the town centre be reviewed throughout the Masterplan period, with provision of business and residential permits controlled according to advances in passenger transport provision.

1.4.11 Freight / HGVs

In this section, consideration is given to answering the following questions:

- Does current and forecast congestion potentially have an adverse impact on the development of the more strategic employment sites?
- Does current and future congestion potentially have an adverse impact on business efficiency and productivity through its effect on journey reliability for business travellers, freight and logistics operations?

The following Figure shows the Annual Average Daily Flow of HGVs along key routes in Southend over a ten year period starting in 1999.

Figure 1.12 – AADT of HGVs on selected roads in Southend (1999 – 2008)¹⁹

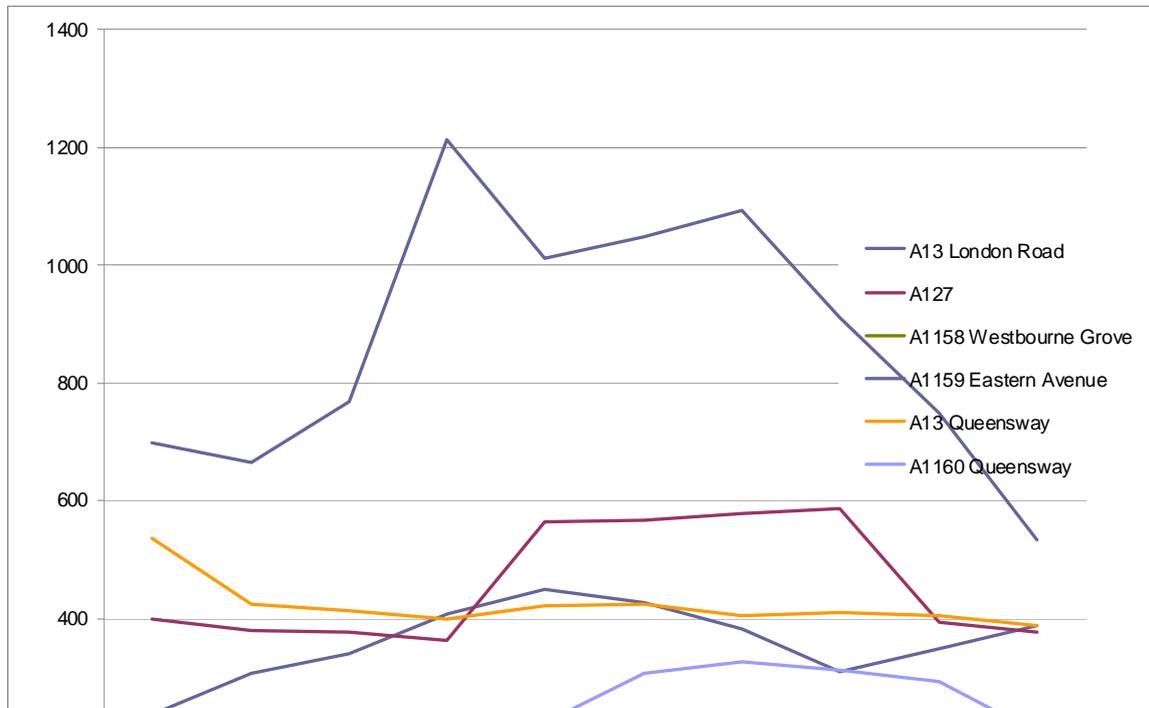


Figure 1.12 shows that volumes increased during the period under consideration, but then started to decline. It can be seen that the decline on the A1159 Eastern Avenue is significant resulting in numbers in 2008 being less than in 1999. This pattern is repeated for the A13 Queensway, and the A127. Further work to consider the reasons behind the decline (increased congestion or a successful freight management strategy) and their impact on the local economy would be desirable.

In terms of London Southend Airport, the amount of freight handled by the airport increased from 143 tonnes (1998) to 326 tonnes (2002) and then fell back to 16 tonnes (2008)²⁰. Stobart Group bought the airport in 2008 which submitted a planning application in 2009 for a runway extension and an increase in passenger numbers up to a potential maximum of 2 million per annum. Any increase in flights will increase the potential for increased bellyhold freight movements from the airport. In bound freight will then need to be transferred by road, or potentially by rail if this can be accommodated by current improvements at the airport.

¹⁹ Source: www.dft.gov.uk

²⁰ Source: UK Airport Statistics 2008 Annual. www.caa.co.uk

1.4.12 Network resilience

Southend is a coastal town and so is particularly at risk from coastal flooding, and rising sea levels as a result of climate change. This would impact on the coastal roads and the c2c line to London.

In addition, extremes of weather in both summer and winter have an impact on the efficient operation of the transport network. As has been seen in the winter of 2009/10 prolonged periods of cold result in an increase in the number of pot holes, and extreme temperatures can also have an adverse impact on tarmac roads. There are resulting demands on stretched maintenance budgets.

1.5 Conclusions / SWOT

Support the Economy

Strengths

- Good connectivity by rail to London and the region during the day.
- Relatively short journey times by road to the sub region and also more widely.
- Rail patronage is increasing.
- High percentage of schools have a travel plan in place.
- Travel to school by car has been declining.
- The growth in traffic levels has declined since 2004.
- Low levels of car commuting (15% of all car trips) to the town centre.

Weaknesses

- Severe peak time congestion on the A127 and A13.
- The rate of GVA growth in Southend has lagged behind that for the region.
- Higher unemployment rate in comparison to the region and nationally.
- Risk of inundation by high tides affecting road and rail networks.
- 56% of commuting trips are undertaken by car or van.
- Single occupancy of vehicles remains high at 29% in the interpeak period.
- Declining bus patronage as shown by NI 177.
- Evening and Sunday bus service frequency is less than week day service frequency.

Opportunities

- Relatively high growth for jobs and housing.
- Airport growth is forecast to provide an additional 6,700 jobs, a good quality interchange is required to ensure employees have good access.
- Create improved public transport, walking and cycling links to the airport

- Scope to increase travel to work by train, at present only 13% of travel to work within the Borough is undertaken by train;
- Scope to increase travel to work by bus, at present only 6% of travel to work within the Borough is undertaken by bus, minibus or coach.
- Rail could potentially be used for shorter, Borough wide, journeys;
- Potential to further reduce the number of children travelling to school by car;
- Scope for modal change for commuting is high with 57% travelling less than 10km; and
- Parking management to either reduce the number of car parking spaces available in the town centre, or make them less attractive while protecting the availability of residents parking. Parking sites give good opportunities for regeneration.
- Improved management of parking offences along key distributors into Southend.
- Opportunity of co-ordination of events, roadwork's and traffic incidents between Southend Borough Council and Essex County Council.
- To increase the number of tourists visiting the Borough.

Threats

- Jobs and housing growth may put pressure on current traffic levels;
- Town centre regeneration may put additional pressure on congestion levels;
- Impact of rising sea levels on both coastal roads and coastal rail;
- Extremes of climate impact on the network in both summer and winter, raising maintenance costs.
- The vulnerability of the cliffs slipping along the seafront.
- Major incidents on the A127 A13 and A130 etc. impacting on the free movement of vehicles.
- Threat of congestion to punctuality of bus services.
- Threat of congestion to sustainable travel modes.

2. Tackle Climate Change

2.1 Background

The importance of climate change as an environmental issue of global significance has increased enormously in the past few years. The Stern Report and the Energy White Paper highlighted the importance of the need to reduce global carbon emissions. Whilst climate change has been identified as one of the most important challenges we face as a global community, it may also have severe repercussions on a local level in Southend.

Increasing atmospheric concentrations of greenhouse gases originating from anthropogenic activities are leading to enhanced warming of the atmosphere and global climate change. The major greenhouse gases are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O), all of which have both natural and anthropogenic sources. In contrast, the three industrial gases – hydrofluorocarbons (HFC), perfluorocarbons (PFC) and sulphur hexafluoride (SF₆) – are potent greenhouse gases, but only originate from anthropogenic sources.

These six greenhouse gases comprise the “basket of emissions” against which reduction targets were agreed at the Third Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC) in Kyoto, Japan in December 1997. The target for the UK is to achieve a reduction of the global warming potential of the six greenhouse gases of 12.5% by 2008-2012 (based on 1990 emissions estimates).

2.2 Policy Context

In developing new Local Transport Plans, it is important to ensure that it is consistent with the international, national, regional and local policy context. However, there are few strategies that have been written in the UK in recent years that do not include some mention of mitigating and adapting to climate change. The policies outlined below are those that are considered most relevant to transport.

2.2.1 International

In recognition of the global nature of the problem of climate change, the United Nations Framework Convention on Climate Change (UNFCCC) was agreed at the Earth Summit in Rio de Janeiro in 1992. As a result of this convention, the Kyoto Protocol, agreed in December 1997, sought to define the international community’s response to the issue of climate change. Developed countries agreed to reduce their overall emissions of a basket of six greenhouse gases by 5.2% below 1990 levels over the period 2008-2012, with differentiated, legally binding targets.

Crucial to achieving climate change goals is securing a global agreement to a realistic, robust, durable and fair framework for the post-2012 period, when the first set of targets under the Kyoto Protocol expires. Beyond 2012 the successor to the Kyoto Protocol, the Copenhagen Accord, recognises that climate change is one of the greatest challenges of the present day and that actions should be taken to keep any temperature increases to

below 2°C. However, the Accord is not legally binding and does not contain any legally binding commitments for reducing CO₂ emissions

The European Commission established the European Climate Change Programme to help identify the most environmentally effective and most cost-effective policies and measures that can be taken at European level to cut greenhouse gas emissions. The immediate goal is to help ensure that the EU meets its target for reducing emissions under the Kyoto Protocol. This requires the 15 countries that were EU members before 2004 to cut their combined emissions of greenhouse gases to 8% below the 1990 level by 2012.

2.2.2 National

The Stern Review on the Economics of Climate Change (2006) assessed a wide range of evidence on the impacts of climate change and on the economic costs, and used a number of different techniques to assess costs and risks. From all of these perspectives, the evidence gathered by the Review led to a simple conclusion: the benefits of strong and early action far outweigh the economic costs of not acting.

The Climate Change Act 2008 introduces a clear, credible, long-term framework for the UK to achieve its goals of reducing carbon dioxide emissions and ensures that steps are taken towards adapting to the impacts of climate change. The Act provides a framework for reducing carbon dioxide emissions by at least 80% by 2050 on 1990 levels, through the following four elements:

- Setting targets in statute and carbon budgeting.
- Establishing a Committee on Climate Change.
- Creating enabling powers.
- Reporting requirements.

In October 2007, Government published Towards a Sustainable Transport System providing a policy framework through which to reduce carbon dioxide emissions from transport and focussing on potential cost-effective emissions reduction pathways for different types of journey and different transport modes. It also looks to ensure that transport systems can adapt to those impacts of climate change which cannot be avoided, to minimise disruption, maintain high levels of safety and ensure transport's continued contribution to the economy. Through this strategy, Government aims to ensure Local Authorities make low carbon travel a priority in their Local Transport Plans, Local Area Agreements and Local Development Frameworks.

The Low Carbon Transition Plan Energy White Paper (DECC, 2009) sets out how the UK will meet the 34% cut in emissions on 1990 levels by 2020 as set out in the carbon budget under the Climate Change Act. It also sets out how transforming the country into a cleaner, greener and more prosperous place to live is at the heart of economic plans for 'building Britain's future' and ensuring the UK is ready to take advantage of the opportunities ahead.

In July 2009, the Department for Transport published *Low Carbon Transport: A Greener Future*. It sets out the actions to deliver cuts in transport emissions of 14% by 2020 on 2008 levels in line with meeting obligations under carbon budgets. This strategy is based on delivering the following themes in support of decarbonising transport in the UK:

- Supporting a shift to new technologies and fuels.
- Promoting lower carbon transport choices.
- Using market-based measures to encourage a shift to lower carbon transport.

Planning Policy Statement: Planning and Climate Change - Supplement to Planning Policy Statement 1 sets out how planning should shape places with lower carbon emissions and that are resilient to climate change now accepted as inevitable, with an expectation to deliver patterns of urban growth that help secure the fullest possible use of sustainable transport for moving freight, public transport, cycling and walking.

2.2.3 Regional

The Regional Environment Strategy contains an overarching priority to reduce greenhouse gas emissions in recognition of the threat of climate change, with a more specific transport goal to reduce road traffic and car dependence. The Regional Economic Strategy has a target to reduce carbon emissions by 60% by 2031 (compared to 1990 levels).

The East of England Plan seeks to reduce the region's impact on, and exposure to, the effects of climate change by:

- Locating development so as to reduce the need to travel.
- Affecting a major shift in travel towards public transport, walking and cycling and away from car use.
- Maximising the energy efficiency of development and promoting the use of renewable and low carbon energy sources.
- Reducing the risk of damage from flooding.

More specifically, policy T1 in the East of England Plan looks to manage travel behaviour and the demand for transport, with the aim of reducing the rate of road traffic growth and ensuring the transport sector makes an appropriate contribution to the required reduction in greenhouse gas emissions. It aims to minimise the environmental impact of travel, by reducing the need to travel, encouraging the use of more environmentally friendly modes of transport, widening choice of modes and also aims to minimise the risk of flooding.

EEDA's Transport Carbon Study (TraCS) examines, at a regional level, the impact that the transport system will have on carbon emissions to 2031 and explores what the impact of different scenarios would be. It shows that carbon emissions from the transport sector in the region will continue to rise if current travel patterns persist and growth continues.

It also shows that cuts to carbon emissions from transport can be achieved through a mix of interventions including new technologies (e.g. low carbon vehicles) and behavioural

change (e.g. reducing the demand for travel, use of alternative modes). However, within the transport sector, reductions of carbon emissions of 60% by 2031, the RES target, are unlikely to be met.

Therefore the region will need to adopt a cross-sectoral approach to reducing carbon, with other sectors such as, housing, industry and agriculture contributing more than their share of cuts. The study highlights the need for early action, which will place the region in a stronger position to compete in a low carbon future.

2.2.4 Local

Locally, the Southend Sustainable Community Strategy (SCS) contains an objective to reduce carbon emissions and minimise the impact of climate change. The strategy goes on to state that, Southend has recognised that climate change is an issue of growing importance. However, to date limited partnership activity has been undertaken in this field. Potential for flooding and land instability have been identified as requiring close attention.

Southend's Local Area Agreement 2008 - 2011 (LAA) has not set a target to reduce carbon dioxide emissions through National Indicator 186 (Per capita reduction in CO₂ emissions in the LA area). However, the LAA has adopted a target for adapting to climate change (National Indicator 188), aiming to achieve Level 3 – having a comprehensive action plan – by 2011.

The Southend Local Development Framework Core Strategy also includes an objective relating to climate change. Objective SO15 should work to secure effective and efficient sustainable development which prevents or minimises local contributions to, and the impact of, climate change, flood risk and the depletion of non-renewable resources, including the application of sustainable construction and operation in all development through the prudent use of natural resources, energy efficiency and low carbon emissions, and the maximum use of renewable and recycled resources.

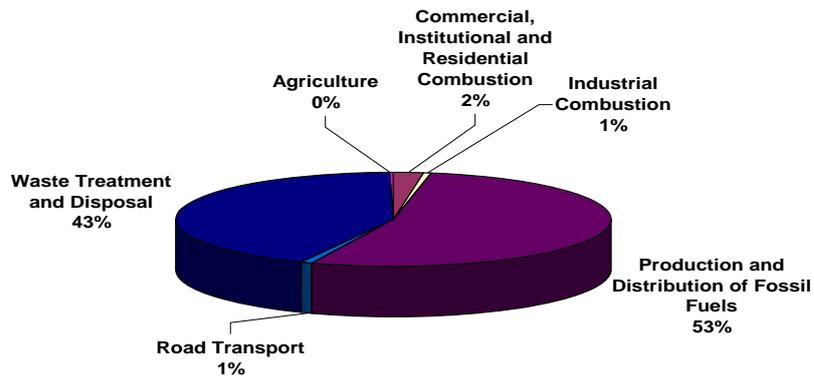
2.3 Data Analysis

This section describes the evidence collected analysed in relation to climate change.

2.3.1 Methane

Methane (CH₄), like carbon dioxide, is naturally occurring and is part of the global carbon cycle, but has a warming effect on the climate 21 times greater than carbon dioxide. The major anthropogenic sources of methane are waste disposal, agriculture, coal mining and leakage from the gas distribution system. Methane emissions in Southend in 2007 from transport were equivalent to 227.2 tonnes of carbon dioxide or 1% (Figure 2.1).

Figure 2.1 – Methane Emissions by sector, 2007²¹



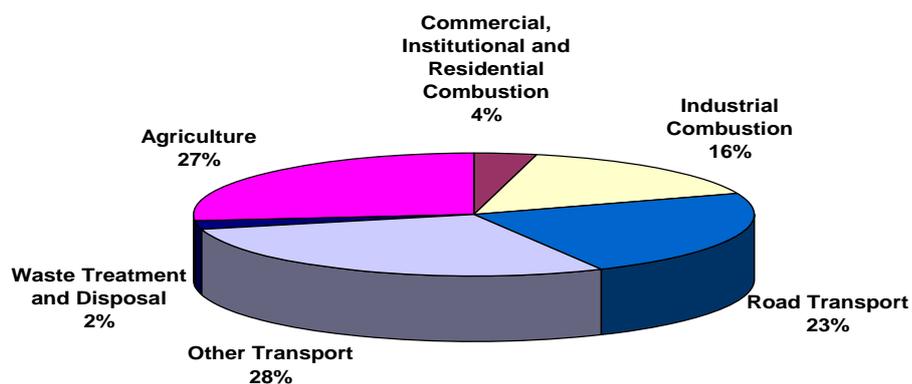
2.3.2 Nitrous Oxide

Nitrous oxide (N_2O) is emitted from natural and anthropogenic sources such as agriculture, biomass burning, coal combustion and some industrial processes. N_2O is a powerful greenhouse gas and has a global warming potential 310 times that of carbon dioxide. However, N_2O emissions in the UK are low, so the overall contribution to global warming is relatively small. The major source of nitrous oxide emissions in the UK are from agricultural activities. Less significant sources include industrial processes, combustion processes in the power generation sector and road transport.

In Southend, N_2O emissions from transport were equivalent to 3,100 tonnes of carbon dioxide in 2007. As can be seen in Figure 2.2, the majority of these emissions arise from other transport (28%) and road transport sources (23%). Efforts to reduce N_2O emissions should be focused on the transport sector in Southend.

²¹ Data Source: National Air Emissions Inventory, 2007

Figure 2.2 – N₂O Emissions by sector, 2007²²



2.3.3 Carbon Dioxide Emissions

Carbon dioxide (CO₂) is the major contributor to greenhouse gas emissions in the UK and arises predominately from the combustion of fossil fuels. In September 2009, the Department for Energy and Climate Change (DECC) released data and a report estimating emissions of CO₂ for Local Authority areas. This data set provides nationally consistent CO₂ emission estimates at Local Authority and regional levels for the years 2005, 2006 and 2007 and represents the primary emissions from the consumption of fuel or other process activities that emit CO₂. This is the data that has been used for this analysis.

Table 2.1 below outlines the total emissions in Southend for each sector and also the proportional contribution each sector makes to the total.

Table 2.1 – CO₂ emissions profile, 2007²³

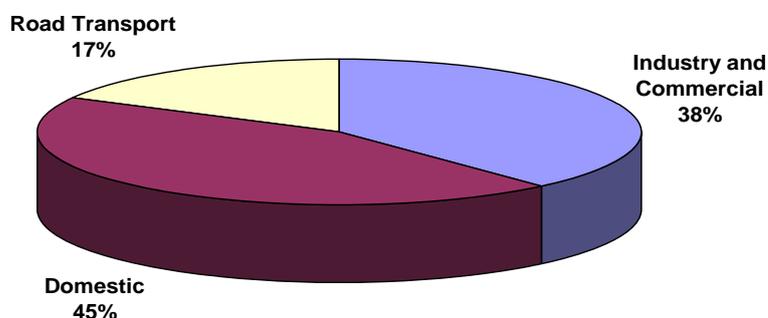
Sector	Tonnes	% of Total	Tonnes Per Capita
Industrial and Commercial	355,656	38%	2.20
Domestic	414,273	45%	2.56
Road Transport	160,108	17%	0.99
Total	930,037	100%	5.74

As can be seen from the table, Southend's largest contributing sector of CO₂ emissions is industrial and commercial sector, followed by the domestic sector. Figure 2.3 outlines the 2007 proportional CO₂ emissions profile for Southend, broken down by sector.

²² Data Source: National Air Emissions Inventory, 2007

²³ Data Source: DECC, Emissions of CO₂ for Local Authority areas, 2007

Figure 2.3 – CO₂ Emissions by sector, 2007²⁴



The DECC CO₂ emissions estimates also provide a more detailed breakdown within each sector. This detailed end user profile for the road transport sector can be seen in Table 2.2.

Table 2.2 – Detailed emissions profile by end user²⁵

Sub Sector	Tonnes	% of Road Transport	% of total
A-Roads Petrol	36,678	23%	4%
A-Roads Diesel	26,848	17%	3%
Minor Petrol	58,290	36%	6%
Minor Diesel	37,499	23%	4%
Road Transport Other	793	0%	0%
Total Road Transport	160,108	100%	17%

As can be seen in Table 2.2 above, vehicles using the minor roads within Southend account for the majority of road transport emissions in Southend and are responsible for 10% of total CO₂ emissions in Southend, with diesel vehicles responsible for 4% and petrol vehicles 6%. Vehicles using “A” roads also contribute 7% to Southend’s total CO₂ emissions.

²⁴ Data Source: DECC, Emissions of CO₂ for Local Authority areas, 2007

²⁵ Data Source: DECC, Emissions of CO₂ for Local Authority areas, 2007

One of the best ways of comparing CO₂ emissions across sectors and between Local Authorities is by considering per capita emissions by sector. Table 2.3 outlines the comparison between Southend, regional and national levels.

Table 2.3 – Comparison of per capita road transport emissions²⁶

Area	Road Transport
Southend	0.99
East of England	2.07
UK	1.72

Per capita road transport emissions in Southend are incredibly low at 0.99 tonnes per capita. This is 52% lower than regional and 42% lower than national per capita road transport emissions. Total road transport emissions have also gone down by 2.4% between 2005 and 2007, although they largely remained unchanged between 2006 and 2007. The most significant contributions towards this overall reduction came from vehicles using A-roads, where petrol emissions fell by -9%, although diesel emissions remained unchanged. Petrol emissions from minor roads also fell, by 5%, but rose by 8% for diesel vehicles. Other road transport emissions fell by 5% over the same period.

2.3.4 Forecast CO₂ Emissions

The East of England Development Agency's (EEDA) *Transport Economic Efficiency Study* in 2008 included an initial assessment of the impact of transport in reducing CO₂ emissions in the Region, which indicated that in a 'Business As Usual' (BAU) scenario, carbon emissions from the Eastern region's strategic transport network would increase by 5% between 2003 and 2021. Furthermore, a parallel study, the Regional Economic Strategy's "Resource-use and CO₂ Emissions Modelling Report" suggests that the region's transport's carbon emissions could rise between 2% and 9% under a range of scenarios.

During 2009, EEDA commissioned the Transport and Carbon Study (TraCS), the purpose of which was to undertake further work to quantify the current and future impact that transport has on total carbon emissions in the Region, identify a realistic target for transport's contribution to the regional carbon reduction target, and outline in detail how this can be achieved and the wider economic impacts of doing so. The TraCS study reviewed the BAU option, and also considered three further scenarios:

- **Scenario 1:** Comprising three elements: supporting a shift to low carbon technologies and fuels, promoting low carbon transport choices, and using market mechanisms.

²⁶ Data Source: DECC, Emissions of CO₂ for Local Authority areas, 2007

- **Scenario 2:** As Scenario 1, but with greater emphasis on promoting low carbon choices such as strong investment in sustainable modes and demand management.
- **Scenario 3:** As Scenario 2 but with strong support for switch to low carbon vehicles/fuels and very strong support for promoting low carbon choices.

Table 2.4 below sets out the CO₂ emissions in 2006, plus the emissions in the East of England in 2031 under each of the above scenarios.

Table 2.4 – Forecast Trends – CO₂ Emissions in the East of England

Source	2006	BAU 2031	Scenario 1 2031	Scenario 2 2031	Scenario 3 2031
Private Road transport (Mt CO ₂)	13.2	16.3	12.6	12.4	11.2
All Transport (Mt CO ₂)	17.0	22.6	16.2	16.0	14.5

It is clear from Table 2.4 above that, compared to estimated total transport emissions in 2006, continuing with “Business As Usual” would result in about a one-third increase in CO₂ emissions by 2031. All of the alternative scenarios summarised above would result in a reduction of CO₂ of 5% and 15% between 2006 and 2031. Even taking account of the fact that the Regional Economic Strategy (RES) baseline year for a reduction in CO₂ emissions was 1990, given the estimated total transport contribution that year was 14.5Mt CO₂, even Scenario 3 results in no overall reduction in CO₂ transport emissions between 1990 and 2031.

It can be concluded from this assessment that the increased travel resulting from the planned growth of the region has no overall impact in reducing CO₂ emissions and, unless more drastic measures are introduced to reduce emissions from the transport sector, then reductions from other sectors will be necessary to achieve the RES target.

2.3.5 Transport Fuel Consumption

The 2007 DECC CO₂ data does not show the breakdown on which vehicle types are responsible for the most CO₂ emissions in an area, but transport fuel consumption by vehicle type can provide a proxy measure, as CO₂ emissions in the transport sector are strongly correlated to the amount of fuel consumed.

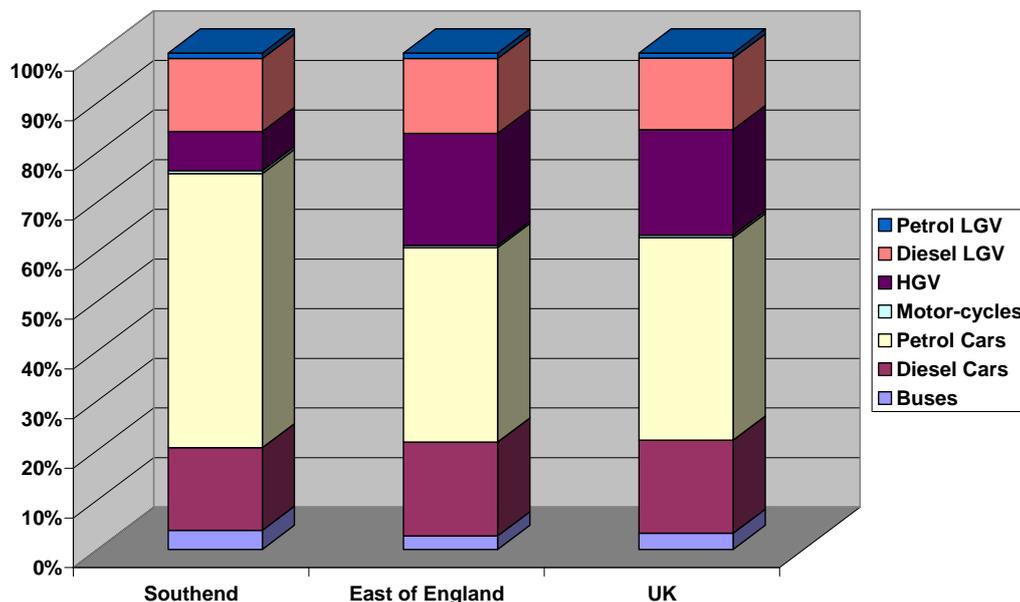
Analysis of road transport energy consumption statistics shows that cars are responsible for consuming the majority of energy at 72%, which is significantly higher than regional and national levels. As can be seen in Figure 2.4, the majority of this fuel consumption arose from petrol cars which account for 55% of total road transport fuel consumption in Southend, with 17% arising from diesel cars. Personal travel (as opposed to freight travel)

accounted for 76% of total fuel consumption, compared with 61% regionally and 63% nationally.

Heavy Goods Vehicles (HGVs) in Southend account for only 8% of road transport fuel consumption, which is substantially lower than national and regional levels of 21% and 23% respectively. Light Goods Vehicles (LGVs) also contributed 16% towards total fuel consumption, which is on par with both national and regional figures. Overall, freight travel accounted for 24% of the total road transport fuel consumption in Southend, compared with 37% and 39% at the national and regional level.

Total road transport fuel consumption has remained unchanged between 2005 and 2007, although there were some significant changes with the vehicle sector. For example, bus consumption increased by 6%, diesel cars by 15% and diesel LGVs by 6%. Conversely, energy consumption from petrol cars, HGVs and petrol LGVs decreased by 5%, 6% and 10%, respectively. This shows that consumption of diesel fuel is clearly on the rise, while petrol fuel consumption is decreasing.

Figure 2.4 –Transport Fuel Consumption, 2007²⁷



2.3.6 Adapting to Climate Change

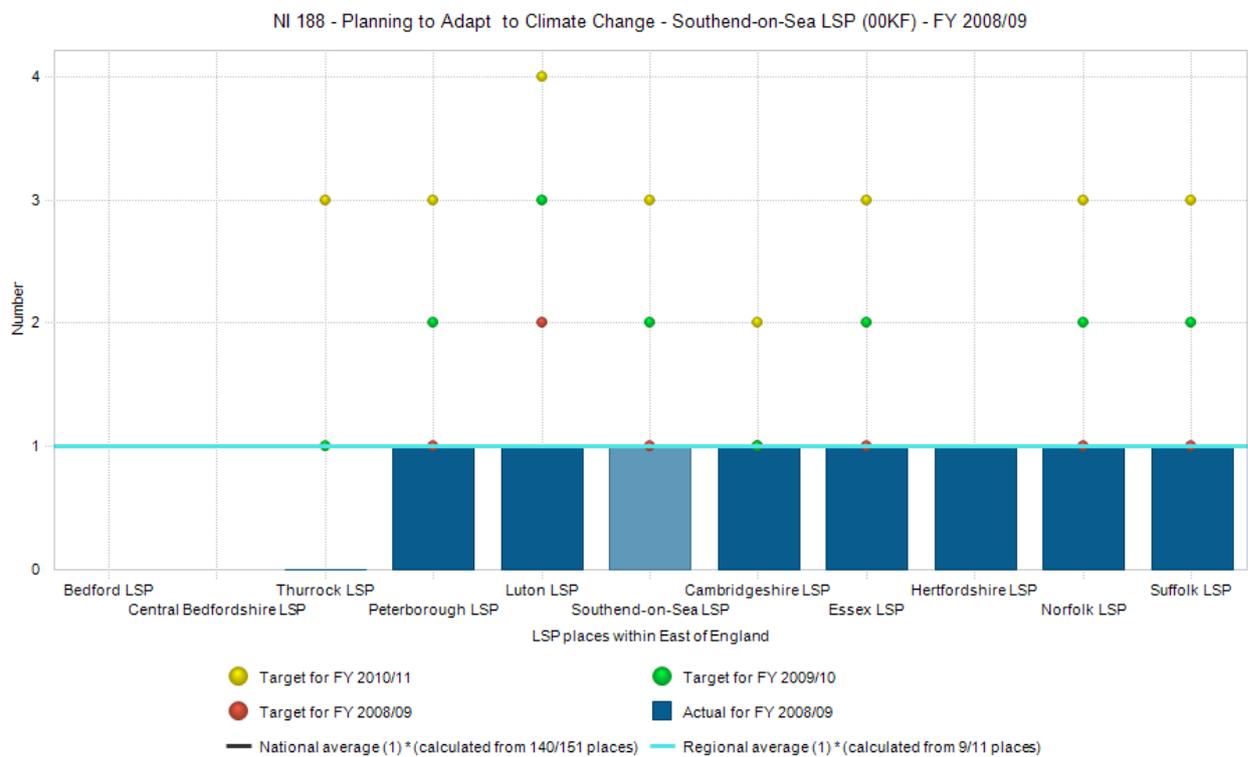
Southend’s Local Area Agreement 2008 - 2011 (LAA) has not set a target to reduce carbon dioxide emissions through National Indicator 186 (Per capita reduction in CO₂

²⁷ Data Source: DECC, 2007

emissions in the LA area). However, the LAA has adopted a target for adapting to climate change (National Indicator 188), aiming to achieve Level 3 – comprehensive action plan – by 2011.

Figure 2.5 highlights a comparison of progress against National Indicator 188 – adapting to climate change across the eastern region, including Southend. Currently, Southend has achieved Level 1 status. This means there is a public commitment to adapting to climate change and also that a climate change impacts assessment has been completed and an evidence base assembled.

Figure 2.5 – NI 188 – Adapting to Climate Change²⁸



2.3.7 Climate: Past and Present

Analysis of climatic data from 1959 – 2008 shows varied results, as can be seen in Table 2.5. The nearest Met Office station data for Southend comes from Manston. Climate data was assessed with consideration for the average annual rate of change.

²⁸ Source: DCLG, Places Analysis Tool

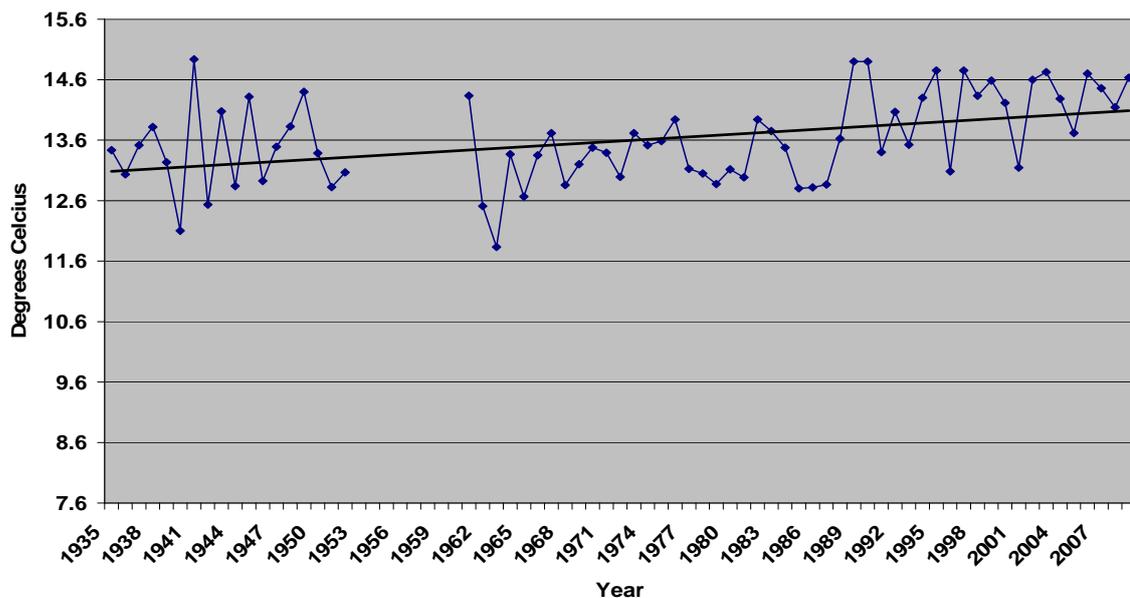
Table 2.5 – Annual Average Rate of Change for Climatic Variables²⁹

Temporal Range		Maximum Temperature °C	Minimum Temperature °C	Air Frost (days)	Rain (mm)	Sun (hours)
2005 - 2009	5 year	2%	1%	16%	10%	3%
2000 - 2009	10 Year	0%	0%	25%	1%	3%
1985 - 2009	25 Year	1%	1%	12%	3%	2%
1961 - 2009	50 Year	0%	0%	16%	2%	NA
1935 - 2009	75 Year	0%	1%	NA	3%	NA

The annual average rate of change in minimum temperatures has remained relatively constant over all of the temporal ranges assessed. However, maximum temperature has increased by 2% over a five year period, and increased by 1% over twenty-five years. The number of days of air frost has varied the most dramatically, with a 25% increase since 2000, but a 16% increase since 1961. Rainfall has increased significantly over the past five years by 10%, whilst the longer-term trends show increases of up to only 3%.

Sunshine hours show marginal increases of up to 2% in the longer-term, and 3% in the shorter term since 2000. Overall, analysis of climatic data shows trends of increased rainfall, air frost days and minimum temperatures. Small, but steady annual increases in rainfall are likely to present additional challenges in Southend in relation to drainage and flood risk.

Figure 2.6 – Annual Average Maximum Temperature (°C) 1935 – 2009³⁰



²⁹ Data Source: Met Office, Historic Station Data for Manston

Figure 2.7 – Annual Average Minimum Temperature (°C) 1935 – 2009³¹

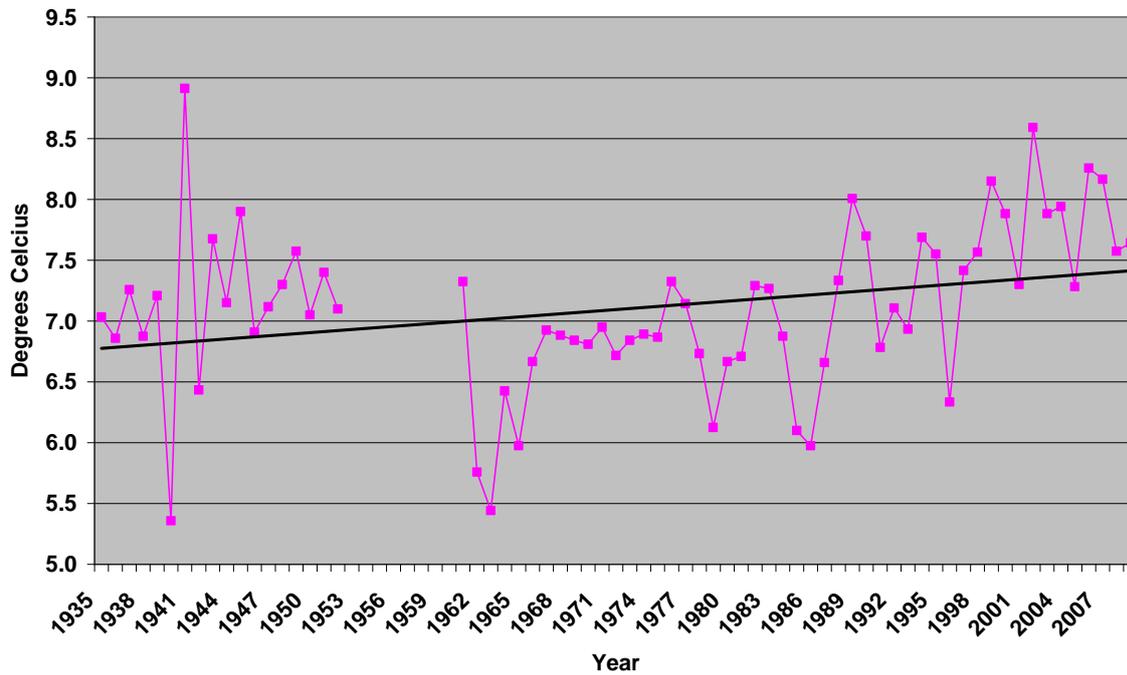
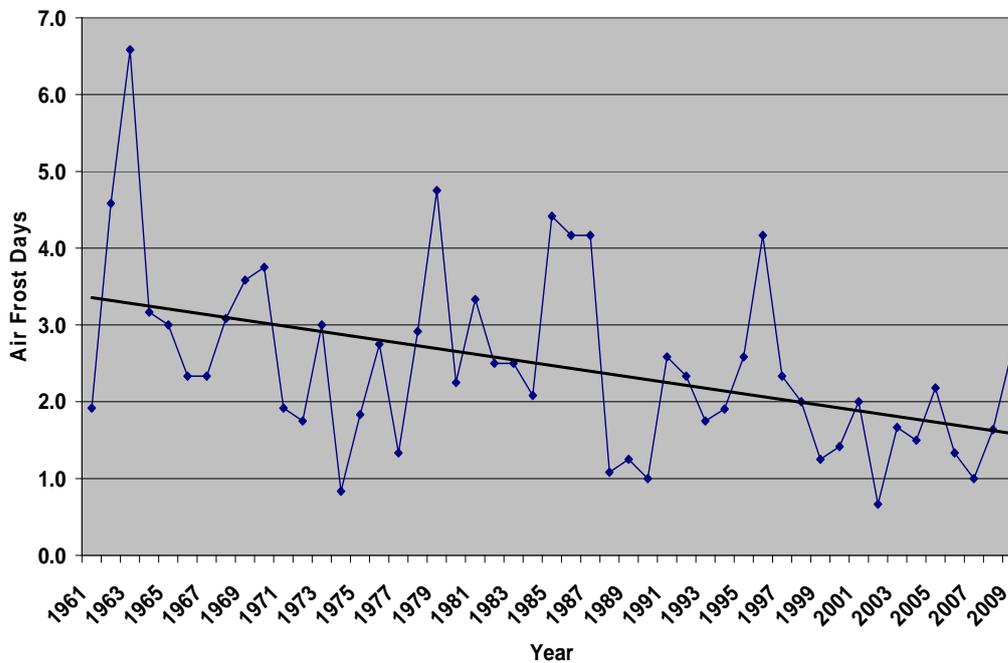


Figure 2.8 – Annual Average Air Frost Days 1961 – 2009³²



³⁰ Data Source: Met Office, Historic Station Data for Manston

³¹ Data Source: Met Office, Historic Station Data for Manston

³² Data Source: Met Office, Historic Station Data for Manston

Figure 2.9 – Annual Average Rainfall (mm) 1935 – 2009³³

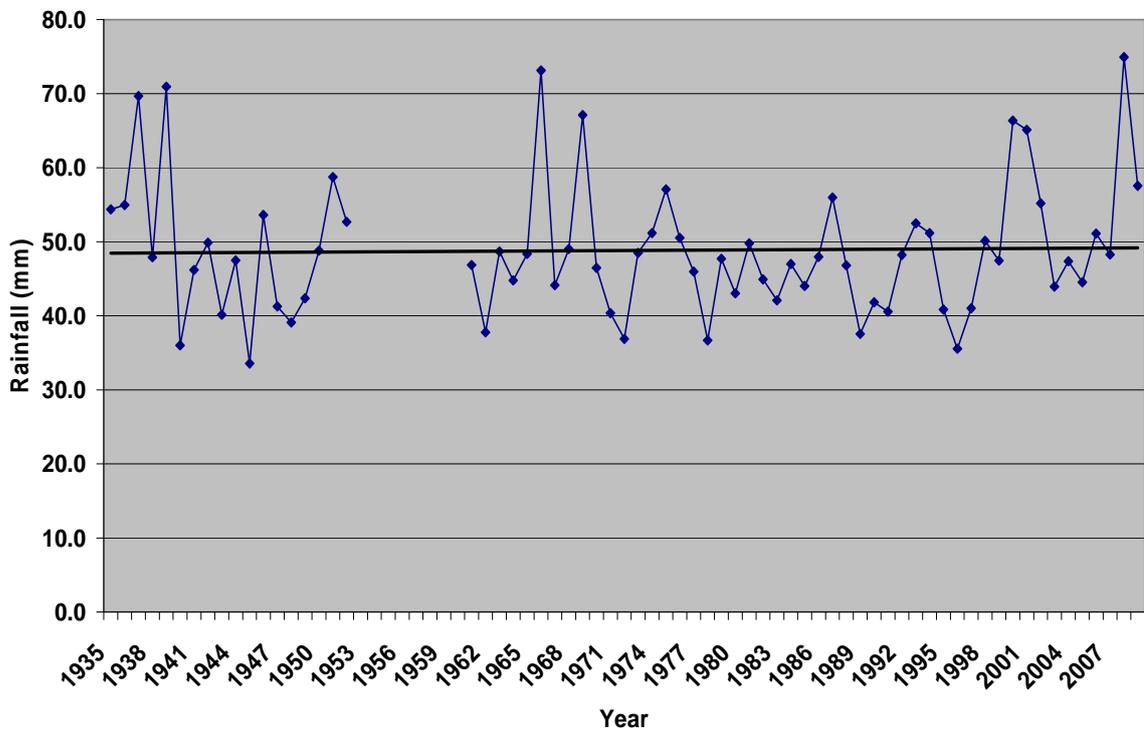
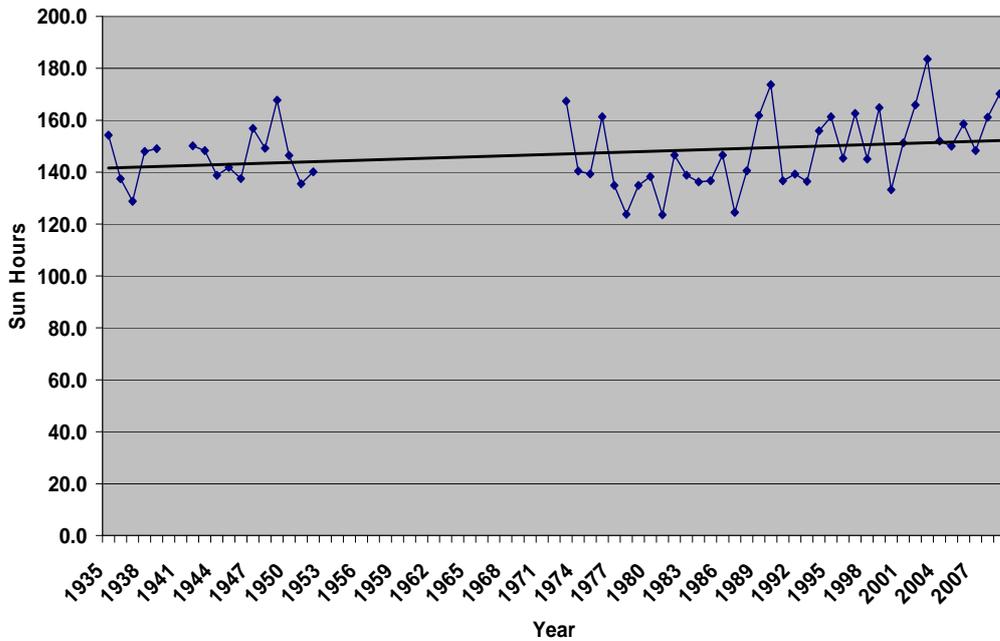


Figure 2.10 – Annual Average Number of Sun Hours 1935 – 2009³⁴



³³ Data Source: Met Office, Historic Station Data for Manston

³⁴ Data Source: Met Office, Historic Station Data for Manston

2.3.8 Climate: Future

The temperature in Central England has already risen by about 1°C since the 1970s, with 2006 being the warmest year in the 348 year record we have. The sea surface temperature around the UK coast has risen by 0.7°C in the last 30 years. Over the last 250 years, there has also been a slight trend for increased rainfall in winter and decreased rainfall in summer, a trend which is in line with the expected changes. In addition, all regions of the UK have experienced an increase in the amount of winter rain that falls in heavy downpours. Sea levels around the UK have risen by about 1mm/year over the 20th century, although recent rates are slightly higher than this.³⁵

In June 2009, new UK climate projections were published, to aid in understanding the possible future climate in the UK. The key findings from the Projections highlight the main types of changes we might see for the UK. These latest projections give us the best information to date with which to understand and deal with the uncertainty of climate change. Key findings of the study include:

- Summer temperature: all areas of the UK will get warmer, there will be a larger increase in summer than in winter.
- Summer precipitation: summer precipitation tends to decrease across the UK.
- Winter precipitation: winter precipitation tends to increase across the UK.

The maps and charts below outline the UK Climate Projections for both the Southend area and the East of England region. The data presented is based on the “medium” emissions scenario because it is consistent with current levels of global emissions, as well as forecasts of future emissions by other independent forecasters, for example, the International Energy Agency. Finally, those projections presented are the “central estimate” of probability (50%), i.e., the projected change that has an equal probability of the change being exceeded or not exceeded.

Temperature

As shown in Table 2.6 below, annual mean temperature increases are predicted, although there appears to be very little seasonal variation within these temperature increases. The smallest temperature increases are likely to be felt in the spring, with the largest felt in the summer.

³⁵ Defra, *Adapting to climate change UK Climate Projections*, June 2009

Table 2.6 – Climate Change Temperature Projections, Medium Emissions, 50% Probability

Climatic Change	Date Range		
	2010 – 2039	2040 – 2069	2070 - 2099
Annual Mean Daily Maximum Temperature (°C)	+1.5	+2.6 to +2.7	+3.6 to +3.7
Annual Mean Daily Minimum Temperature (°C)	+1.4	+2.4	+3.3 to +3.4
Annual Mean Temperature (°C)	+1.4	+2.5	+3.4 to +3.5
Winter Mean Temperature (°C)	+1.4	+2.2	+3.1
Spring Mean Temperature (°C)	+1.3	+2.2	+3.0
Summer Mean Temperature (°C)	+1.5	+2.6 to +2.7	+3.8
Autumn Mean Temperature (°C)	+1.6	+2.7	+3.7
Change in Temperature on the coolest night	+1.3 to +1.6	+1.9 to +2.4	+2.3 to +2.9
Change in Temperature on the warmest day	+1.0	+2.0 to +2.1	+2.5 to +2.8

Precipitation

As can be seen in Table 2.7, the Southend area is likely to experience no changes in overall annual precipitation. However, when looking in more detail at seasonal variation, it becomes apparent that there may be significant increases in winter rainfall and significant decreases in summer rainfall. This is likely to lead to drier summers and wetter winters.

Table 2.7 – Climate Change Precipitation Projections, Medium Emissions, 50% Probability Precipitation

Climatic Variable (% Change)	Date Range		
	2010 – 2039	2040 – 2069	2070 – 2099
Annual Precipitation	0%	0%	0%
Winter Precipitation	+5% to +6%	+12% to +14%	+16% to +18%
Spring Precipitation	0 to -1%	0%	0%
Summer Precipitation	-5% to -8%	-18% to - 19%	-22% to - 23%
Autumn Precipitation	+2%	+2%	+1%
Change in Precipitation on the Wettest Day	+6% to +7%	+12% to +14%	+16% to +17%

Sea Level Rise and Storm Surges

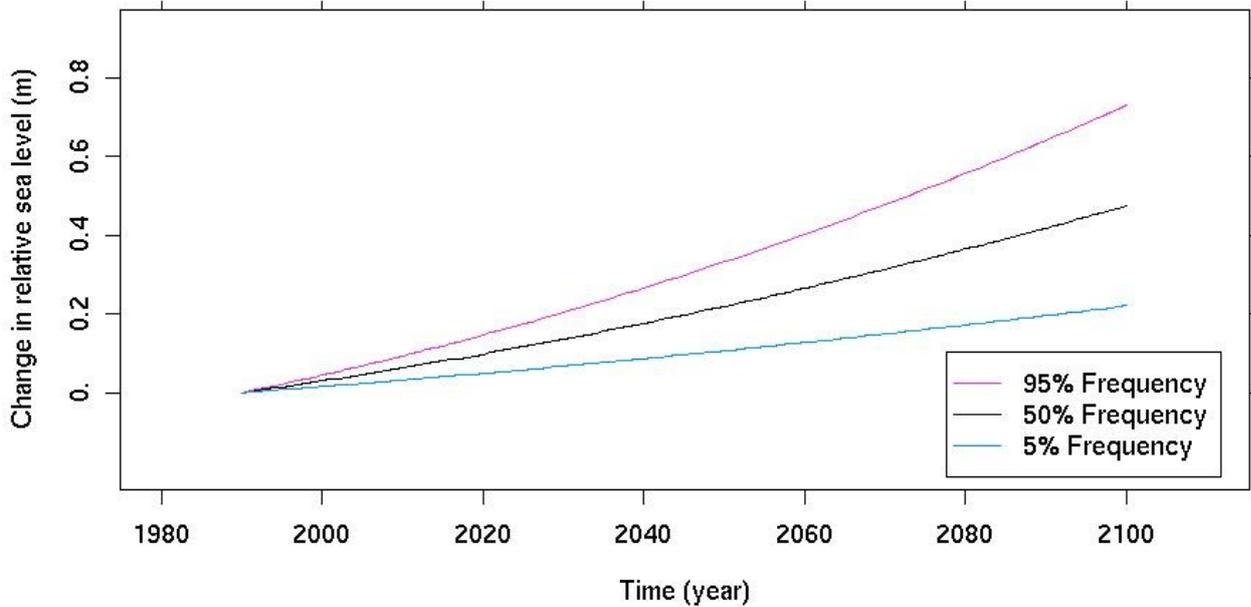
In terms of sea level rise relative to 1990, Southend may experience increased sea levels of between 22cm and 73cm by 2100.

Figure 2.11 – Relative Sea Level Rise to 2100



Plot Details:

Data Source: Sea Level Rise
 Variables: rel_sea_level_rise
 Emissions Scenario: Medium
 Location: Grid Box No. 23523



The projected future trends in storm surge are less than 9cm above current average storm surge levels, by 2100, not including sea level rise, everywhere around the UK, and in many places this is within what might be expected through existing natural variation. Project future trends in storm surges in the Southend area are outlined in Table 2.8 below.

Table 2.8 – Future Storm Surge Trends

Uncertainty level (%)	Long-term linear trend in skew surge (1951-2099) for return level of 2 years (mm/yr)	Long-term linear trend in skew surge (1951-2099) for return level of 10 years (mm/yr)	Long-term linear trend in skew surge (1951-2099) for return level of 20 years (mm/yr)	Long-term linear trend in skew surge (1951-2099) for return level of 50 years (mm/yr)
5	-0.271	-0.425	-0.484	-0.562
50	-0.115	-0.152	-0.165	-0.182
95	0.041	0.121	0.154	0.199

The Thames Estuary 2100 (TE2100) project was published in April 2009 for consultation and this piece of work has provided a major contribution to the UKCP09 Marine report. TE2100 is a long term flood risk management plan for London and the Thames estuary and covers the Southend area. TE2100 describes the actions that are needed in the short (2010-2035) medium (2035-2070) and long term (2070-2100) to manage flood risk, and who will undertake them. Key findings of the study include:

- Sea level rise in the Thames over the next century due to thermal expansion of the oceans could be between 20cm and 88cm; this is in line with current Defra guidance.
- There is still much uncertainty over the contribution of polar ice melt to increasing sea level rise. At the extreme it may further raise maximum sea levels up to +2m (including thermal expansion) by the end of the century – although this is thought highly unlikely.
- Climate change is less likely to increase storm surge height and frequency in the North Sea than previously thought.
- The worst case (highly unlikely) maximum sea level prediction has been revised down to +2.7 metres by the end of century.
- Under current Defra guidance or even under this worst climate change scenario we will not require a tide excluding outer estuary barrage in the estuary.

2.3.9 Climate Change Impacts

Earlier this chapter outlined the local climate changes that have been projected within the Southend area over a number of date ranges. Each of the projected changes in climate may lead to impacts on the transport network. In September 2009, the Transport Planning Society published *Local Transport: Adapting to Climate Change*, a briefing note which outlines the potential impacts that climate change may have on different types of transport. These impacts are described in more detail in Table 2.9.

Table 2.9 – Local Transport Climate Change Impacts, Considerations and Vulnerabilities

Weather/Climate Impacts	Roads/Pavements	Cycling/Walking	Buses/Trains/Trams	Structures
Coastal Erosion and Storm Surges	Realignment of routes Collapse of cliffs taking down infrastructure Temporary or permanent inundation of infrastructure Communities and or services cut off e.g. home, hotels, roads, beach access routes, ports and harbours			
Heatwaves –	Surface damage	Surface damage	Buckling rails, speed	Surface and

increases in extreme temperatures	such as melting tarmac Subsidence and heave	such as melting tarmac Overheating of paths and discomfort Modal shift away from walking and cycling due to discomfort	restrictions and emergency timetables Overheating and discomfort/health risk for passengers Modal shift to cars due to discomfort	structural damage
Increases in average daily temperatures	Longer growing season and increased verge / embankment maintenance Drought and lower water tables causing ground shrinkage, unstable ground, subsidence, landslides, etc			
Heavy Rainfall and Flooding	Network failures due to flash flooding			
	Landslips Damage to pavements	Pedestrian subways more likely to flood and take longer to clear	Higher risk for underground networks Flooding of train / tram power sources	Embankments unsafe or collapse Landslides bring down structures Bridges damaged or washed away
High winds and storms	Unsafe buildings and consequent transport diversions Fallen trees and associated debris – blocking routes / safety risk			Vulnerability of / danger from movement of lightweight structures (traffic signs, lighting, street furniture) Vulnerability of exposed structures / bridges
		Modal shift to cars and public transport	Damage to overhead power lines	
Severe Weather Generally	Disruption to normal traffic flows with people unable to travel, confused about what networks are running, or marooned en route Risks to passenger safety Impact on outdoor workforce and public transport staff			

	Failures of “just in time” supply chains, most importantly food supplies	
Indirect Impacts	<p>Increase in tourist visitors from overseas and UK visitors staying in the UK</p> <p>Changes in visitor travel patterns – especially to coastal locations</p> <p>Population movements away from urban heat islands and locations that suffer from frequent floods</p> <p>Changes in economic sectors / employment patterns</p> <p>Inward migration from countries that are suffering more severe climate change</p>	

Additionally, the UK Climate Projections detailed in the previous section concluded that, in terms of transport, the likely impacts of the climate change projections include:

- Road surfaces will need to be more heat resilient to cope with higher projected summer temperatures and drainage improved to allow for increases in rainfall intensity.
- Alternative routes may need to be found or existing routes protected for road and rail infrastructure.³⁶

In 2002, the East of England Sustainable Development Round Table appointed consultants to undertake a study to provide guidance for a range of policy initiatives and practical actions for regional adaptation to climate change, *Living with Climate Change in the East of England* (2003). In climate change terms, the sub-region in which Southend lies is particularly vulnerable to water resource deficiencies, sea level rise, and fluvial flooding. This sub-region is also likely to be at risk from subsidence.

This sub-region will face additional pressures due to the major development proposed in the area, which will in turn affect its ability to adapt appropriately, if at all. There will, therefore, be particular pressures in relation to the vulnerability of property and infrastructure, to which Local Authorities and other service providers must respond. The water supply issues facing this sub-region will also be very significant in terms of driving adaptation responses on the part of water service providers.

The main climate changes affecting transport infrastructure are those leading to increased flood risks. Existing transport infrastructure will be susceptible to fluvial flooding, and the location of new infrastructure will be affected by flood risk. Storm events and wetter weather could lead to flooding of transportation infrastructure and where the possible impacts might result in blocked roads or severe damage there will also be traffic management issues.

³⁶ Defra, *Adapting to climate change UK Climate Projections*, June 2009
[Southend-on-Sea Borough Council – Local Transport Plan 3 Evidence Base – June 2010](#)

The adverse effects of more extremely hot days in summer (resulting in melting of tarred road surfaces and buckling concrete surfaces) may be balanced by reduced costs as a result of warmer winters with fewer frosty days and less snow (resulting in less frost damage to road surfaces and less frequent need to clear snow and to salt roads). It is also possible that climate change could lead to increased risk of road accidents from both wetter winter and warmer summer conditions.

The impacts of climate change on transportation gateways, such as rail and air travel, include increased susceptibility of landslip on railway embankments, fewer ice/snow-related delays to rail and air travel, and increased likelihood of enforced speed reductions due to buckling rails in extreme heat. In response to these climate change impacts it is important for the region to invest in public transport systems that will be appropriate for hotter and more extreme conditions.

Climate change will also affect infrastructure outside the region, which could have a knock-on effect in the East of England. In particular impacts on London's transport infrastructure would have a serious knock on effect for businesses throughout the East of England and workers who commute from the region into London.

A wide range of adaptation measures may be needed to adapt road and rail infrastructure (including road surfaces and rail tracks, earth structures, bridges and gantries) to make it more resilient to the impacts of climate change. As an example, changes to rail track specifications may be necessary to prevent buckling in warmer summer temperatures. Other measures could include the use of more durable materials, 'climate proofed' designs, and improved drainage. Furthermore, Local Authorities should also ensure that the maintenance programme for roadside verges takes into account the lengthening of the growing season and the need to cut vegetation over a long time period while ensuring that biodiversity is not unduly affected.

2.3.10 Flood Risk Vulnerability

South Essex Strategic Flood Risk Assessment: Southend

In November 2006, Scott Wilson completed the South Strategic Flood Risk Assessment (SFRA), which assessed flood risk at across South Essex in preparation for Local Development Frameworks. This SFRA considered the planning context and provides the framework for robust and sustainable flood risk management solutions in areas where a balance is required between susceptibility to flooding and wider spatial planning pressures.

The majority of the Borough of Southend lies at an elevation of 15m AOD or more. Higher areas of the Borough are typically located in the west whilst coastal plains/foreshore (at or below 0m AOD) dominate in the east. The main water bodies of interest in Southend are the North Sea, Thames Estuary, Prittle Brook and Eastwood Brook. The Thames Estuary forms the southern boundary of the Borough and meets the North Sea at Southend.

The Borough of Southend contains coastal, fluvial and estuarine systems posing a flood risk to large areas of the Borough. The most significant events in this area, in terms of potential for flooding, tend to be storm surges, coinciding with high spring tides to produce high tidal water levels.

The main source of fluvial flooding in the Borough is from Prittle Brook, a tributary of the River Roach. Prittle Brook flows through the Borough of Southend in an easterly direction from Belfairs Park towards Priory Park at Prittlewell where it flows northwards to meet the River Roach at Sutton Ford Bridge. A second smaller tributary of the River Roach, Eastwood Brook, is also a source of fluvial flooding in Southend. This tributary flows east through the Eastwood area of Southend before turning north to join the River Roach at Rochford. Flooding of these watercourses results from significant quantities of rainfall falling in the catchment, accumulating to cause flows in excess of the carrying capacity of the channel.

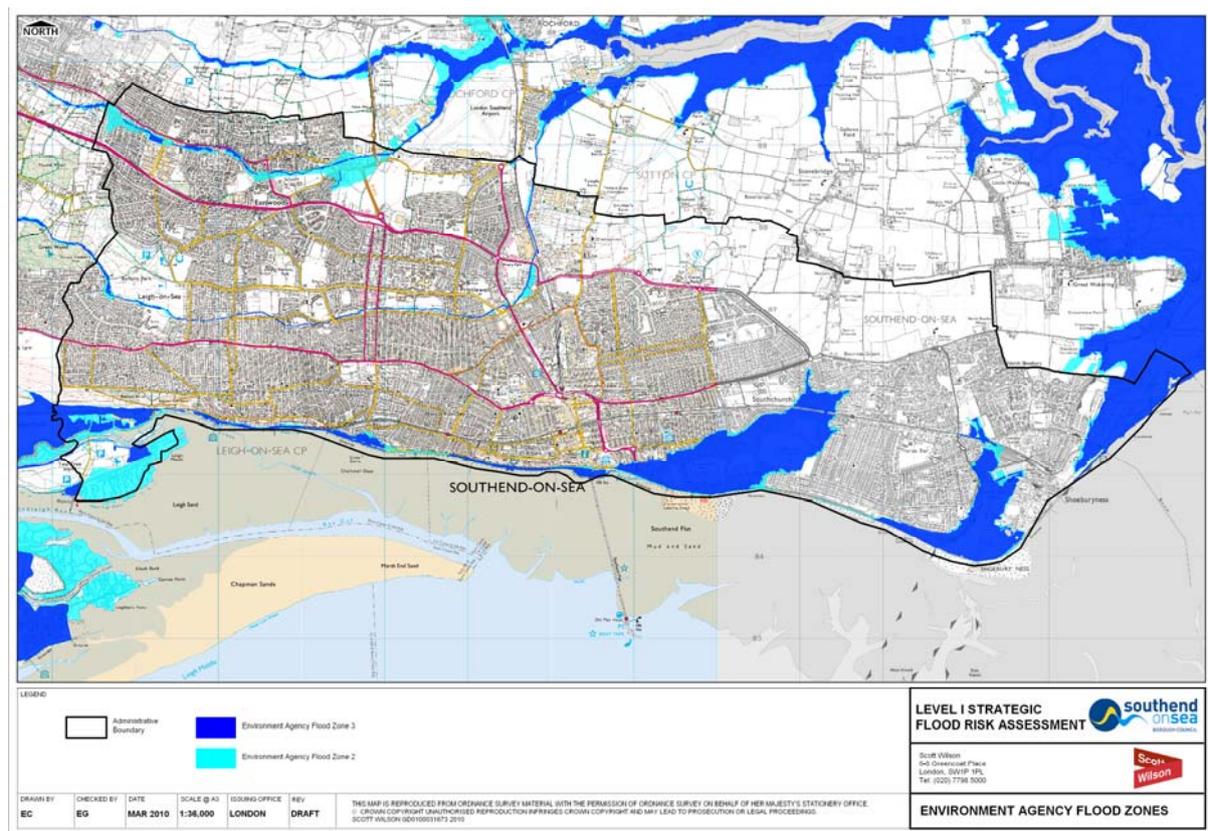
The North Sea and Thames Estuary are the bodies of water potentially responsible for tidal flooding in Southend. Tidal flooding can result from a storm surge (wind driven waves and low atmospheric pressure), high spring tides or a combination of these events. In areas protected from flooding by sea defences, tidal flooding can occur through either a breach in the sea defences, failure of a mechanical barrier or overtopping of defences. Where defences are not present flooding is typically widespread.

The Strategic Flood Risk Assessment (SFRA) – Level 1

The Level 1 SFRA provides a strategic overview of the potential sources of flooding across Southend-on-Sea and forms the evidence base for undertaking the sequential test. This Level 1 SFRA has drawn on existing information and data to provide a strategic assessment of the flood risk posed to the Borough of Southend-on-Sea from all sources of flooding. The document presents Flood Zone Maps that delineate the Flood Zones outlined in PPS25 as Flood Zone 1, low probability, Flood Zone 2, medium probability, Flood Zone 3a, high probability and Flood Zone 3b, functional floodplain, see figure 2.12 below.

The Level 1 SFRA has confirmed that the two main sources of flooding within the Study Area are tidal flooding from the Thames Estuary (either residual risk via failure of a flood defence or actual risk via overtopping of a defence) and fluvial flooding from the Prittle Brook, Eastwood Brook and Willingale watercourse.

Figure 2.12 - The Environmental Agency Flood Zone Locations



The South Essex Catchment Flood Management Plan

The South Essex Catchment Flood management Plan (CFMP) was completed in 2009 in order to assess how flood risks might change over the next 50 to 100 years, and how those change could be managed. It found that, in Southend and Rayleigh, there are currently there are 505 properties and 955 people at risk from the 1% annual probability river flood. This is estimated to increase to 1,161 properties and 2,314 people by 2100 as a result of climate change. The study also found that there is some agricultural land as well as the A1015, A1158 and A1159 that are at risk from the 1% annual probability river flood (Figure 2.12).

Thames Estuary 2100

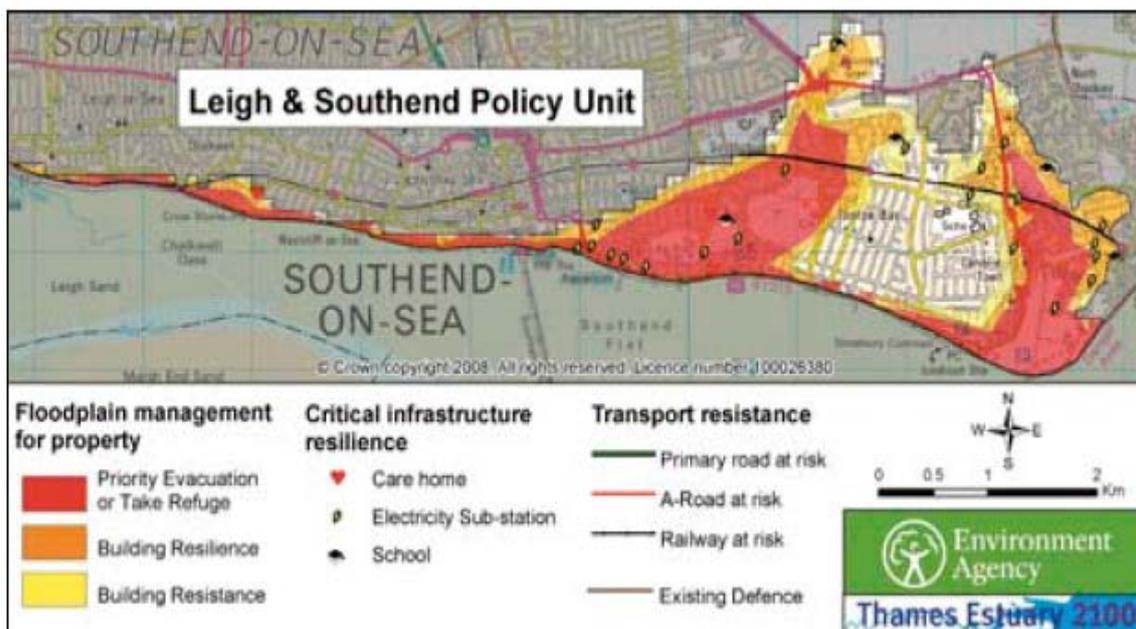
In addition to the SFRA, the Thames Estuary 2100 (TE2100) project was published in April 2009 for consultation. TE2100 is a long term flood risk management plan for London and the Thames estuary. The Plan describes the actions that are needed in the short (2010 - 2035) medium (2035 - 2070) and long term (2070 - 2100) to manage flood risk, and who will undertake them.

TE2100 describes Southend as a continuous sea frontage with beaches and very extensive (designated) intertidal areas and a pier. Whilst most of Southend is on high ground and not at risk from tidal flooding, much of the seafront is at risk of flooding and there is a

flood defence along the entire frontage. There are five schools, six care homes and 21 electricity sub stations within the flood risk area. This is an important amenity and recreation area, with a parallel road and footpaths along much of the frontage. The two main areas of floodplain are to the east of the city centre.

The number of properties at risk is relatively small but, as the standard of protection is lower than elsewhere on the estuary, the flood risk is relatively high at 0.5% (or 1:200) per annum or greater compared to the general standard of 0.1% (or 1:1,000) elsewhere in the estuary. Figure 2.13 shows the areas in Southend identified as “at risk” through TE2100.

Figure 2.13 – At Risk at Leigh and Southend Policy Unit



2.4 Air Quality

Southend does not have any Air Quality Management Areas (AQMA's). The Environmental Yearly Screening Assessment of 2009 shows that there are no AQMA's proposed for the near future.

Southend Borough Council measures air quality in the Borough using an automatic air quality monitoring station, which is located in Chalkwell Park and has been operating since July 2001. The site is classified as urban background and measures concentrations of oxides of nitrogen, sulphur dioxide, carbon monoxide, ozone and Particulate Matter 10 (PM₁₀). This site is part of the UK Automatic Urban and Rural Network, which is operated on behalf of the Department for Environment, Food and Rural Affairs (DEFRA).

The table below shows that levels of Nitrogen Dioxide decreased between 2001 and 2004, however increased during the years of 2005 and 2007. During 2006 the lowest

statistic for Nitrogen Dioxide was collected. Compared to Luton³⁷ which had a maximum one hour mean of 200 $\mu\text{g}/\text{m}^3$ during 2005, Southend has a low level of NO_2 pollutants.

The statistics for PM_{10} show that the annual mean between 2001 and 2006 has gradually increased however in 2007 there was a drop. Luton had an annual mean of 50 $\mu\text{g}/\text{m}^3$ in 2005 which is over twice that of Southend.

The statistics for Carbon Monoxide in Southend have decreased between 2001 and 2007 and it is hoped that during the future this will continue to decrease.

Southend does not have a problem with Sulphur Dioxide.

Table 2.10 – Monitoring Results for Southend Chalkwell Park Site, 2001-2007³⁸

Pollutant	Statistic	2001	2002	2003	2004	2005	2006	2007
Nitrogen dioxide (NO_2)	Annual mean ($\mu\text{g}/\text{m}^3$)	26.1	24.6	25.3	23.8	24.4	20.4	24.8
	Max. 1 hour mean ($\mu\text{g}/\text{m}^3$)	177.9	138.0	134.0	107.0	149.0	120.0	168.0
	Exceedences of hourly objective	0	0	0	0	0	0	0
	Data capture (%)	95.5	95.9	82.6	91.5	92.0	97.7	98.9
Particles (PM_{10})	Annual mean	19.2	19.7	21.3	17.9	21.8	24.3	20.8
	Maximum 24 hour mean	102.9	110.1	70.4	81.0	57.3	87.0	177.0
	Exceedences of 24 hour mean objective	4	4	13	0	3	0	15
	Data capture (%)	97.1	96.5	83.2	95.7	93.7	96.6	93.5
Carbon monoxide	Annual mean	0.3	0.26	0.3	0.4	0.3	0.2	0.2
	Max daily running 8 hr mean	2.9	1.4	2.1	1.4	1.4	2.1	1.1
	Data capture	96	93	88	52	94.3	88.4	88.6
Sulphur dioxide	Exceedences of 15 min mean objective	0	0	0	0	0	0	0
	Exceedences of hourly mean objective	0	0	0	0	0	0	0
	Exceedences of 24 hour mean objective	0	0	0	0	0	0	0
	Data capture	97	96	81	95	94	94	94

³⁷ Luton Borough Council Local Air Quality Management Progress Report 2005

³⁸ <http://microsites.essexcc.gov.uk/>

2.5 Conclusions / SWOT

Analysis of evidence and data resulted in the identification of strengths, weaknesses, opportunities and threats (SWOT) currently related to addressing climate change in Southend.

Tackle Climate Change & Air Quality

Strengths

- Southend has low per capita road transport CO₂ emissions;
- Fuel consumption from personal travel is decreasing, albeit marginally; and
- Methane emissions from transport are low.
- CO₂ emissions from road transport decreased between 2005 and 2006 and remained unchanged between 2006 and 2007.

Weaknesses

- Other transport (air and water transportation etc.) is the primary source of Nitrous Oxide emissions in Southend and road transport is the second largest source.
- Fuel consumption from freight travel is increasing, albeit marginally.
- The majority of road transport CO₂ emissions in Southend arise from cars and traffic, namely cars on non-principal roads.

Opportunities

- Majority of road transport CO₂ emissions in Southend arise from personal travel, namely cars on non-principal roads. Therefore, this is where the greatest opportunities lie for reducing transport CO₂ emissions.
- To support and make the best use of the regional 'Plugged in Places' bid to provide for a network of electric car charging points.
- To promote more sustainable travel and reduce the need to travel through growth planning.
- Decreased summer rainfall (better summer weather) may mean increased visitor numbers to the area, although this would need to be catered for in a sustainable manner.
- Increases in annual mean temperature may promote walking and cycling.
- To take advantage of new technologies and developments in vehicle improvements.
- To use cleaner alternative fuels.
- To improve the townscape to improve water permeability.
- Implement asset management (turn off street lights at certain times etc.)

Threats

- Increasing rainfall and temperatures may threaten transport infrastructure.
- An increase in traffic and thus congestion and queues especially on the A13 and A127, could lead to a further increase in CO₂ emissions.
- The Rayleigh Road (A1015), Prince Avenue (A1158) and Eastern Avenue (A1159) are at risk from the 1% annual probability river flood.
- Increased number of air frost days and winter precipitation (if coupled with lower winter temperatures) could negatively impact on winter maintenance regime and threaten infrastructure through freezing and impact on winter maintenance regime.
- Increased precipitation could lead to increased flood risk of key infrastructure routes.
- Increase in sea levels could affect the Essex Thameside railway line between Benfleet and Leigh.
- Increased precipitation may threaten the viability of walking and cycling.

3. Equality of Opportunity

3.1 Background

Improving accessibility is integral to delivering transport improvements, in helping people get where they need to. Accessibility to jobs and services is fundamental to a properly functioning society. It enables people to make the most of their lives and realise their aspirations, potential and ambitions by gaining access to work, training or education; it enables people to be healthier through gaining access to healthy food and healthcare facilities; and it helps people to lead fulfilling and independent lives.

As well as being important for the individual, accessibility is a key component of improving community cohesion, the vibrancy of neighbourhoods, and social inclusion, giving people the opportunity to play a full and active part in society. Better accessibility can have a positive effect on the economy by, for example, improving the labour supply both in terms of quality, through better training and education, as well as through easier access to job opportunities.

Changing land use patterns, increases in journey distances, fears of crime and the decline in the use and viability of alternatives to the car have meant that many groups and individuals can be excluded from activities and job opportunities that are more easily available to others. Solving such accessibility problems is not only about transport mobility but also about locating and delivering services and new development in ways that enable people to reach them more easily. Reducing the need to travel is the most sustainable way to improve accessibility, having fewer adverse impacts on congestion or the environment.

3.2 Policy Context

3.2.1 International

In developing new Local Transport Plans, it is important to ensure that it is consistent with the international, national, regional and local policy context. The policies outlined below are those that are considered most relevant to transport.

3.2.2 National

The Government's Social Exclusion Unit's report, *Making the Connections*, looked at how social exclusion can be caused by poor transport accessibility. It highlighted the need for:

- Improving public transport, cycling and walking networks.
- Making services more accessible.
- A multi-agency, evidence-led approach.

The national transport policy in recent years has been about improving accessibility to jobs and services, especially for those most in need. It has aimed to ensure that transport and accessibility plays its part in promoting social inclusion through equality of opportunity, and tackling deprivation.

Equality of access is considered to be an element of community cohesion and a range of other wider social and economic policies, including regeneration. The national policy has been focused on reducing the need to travel, such as through locating services and other development close to where people live, and also about providing the transport connections, such as cycle routes or bus services, that enable people without a car to make their journeys.

In addition, an important element is ensuring accessibility for different groups of people such as people with disabilities so that opportunities are available to all local people. The most comprehensive review of research is the “Evidence based review on mobility” undertaken by the Department for Transport (DfT) in 2006. The review highlights that people’s relationship with transport is dynamic, and as people get older their changing lifestyles trigger new travel needs and experiences of transport. Cross-cutting this, the review also demonstrates diversity in travel needs and experiences among people at similar life stages, but differentiated on the basis of income, ethnicity, gender and disability.

The DfT review explores how transport affects the lives of different social, geographical and community groups, in particular children and young people, adults (with specific attention to people on low income and from black and minority ethnic groups), gender, disabled people, and older people. For each of these groups the review focused on five themes; travel behaviour, travel choices, attitudes to travel, barriers to mobility and the measures to overcome barriers.

3.2.3 Regional

The Regional Transport Strategy in The East of England Plan builds on the national policy, focusing on a clear priority to promote accessibility to jobs and services and improving travel by sustainable modes, especially for disadvantaged areas. In urban areas there needs to be a greater focus on improving the public realm and promoting walking and cycling, as well as bus use. For rural areas the focus is on improving access to service centres through innovative transport measures such as community transport.

The Regional Economic Strategy promotes supporting those who are disadvantaged to achieve their potential; building social capital by strengthening links between people, within and between neighbourhoods.

3.2.4 Local

Locally, the focus of wider strategies in Southend is on accessibility improvements being part of a tool kit to tackle the disadvantage and inequalities seen in parts of the town.

3.3 Data Analysis

3.3.1 An ageing population

In the UK people are living longer and life expectancy is increasing. As such the number of older people as proportion of the total population is rising. The situation is no different in Southend as can be seen in the table below.

Table 3.1 – Southend’s ageing population³⁹

	2006	2031
Number of over 65s (000)	29.3	44.2
Total population	159.9	179.9
Over 65s as a % of the total population	18	25

This has an obvious implication of equality of opportunity for the elderly in terms of access to key services as well as a resource impact on Southend Council which has to fund concessionary fares for the elderly. Although forecast data is not available, the estimated outturn for 2007/08 was £1.6m, and the budget for 2008/09 was £2.11m. The Local Government Association reported in 2008 that Southend had a 0.7m shortfall in its concessionary fares budget.

3.3.2 Access to healthcare

The following table⁴⁰ indicates that compared to the rest of the region and nationally, there is more inequality in Southend. This is shown by a higher incidence of benefit claimants in the Borough.

Table 3.2 – Benefit Claimants

	Southend (%)	East of England (%)	England (%)
All People of Working Age Claiming a Key Benefit	16	11	14
Job Seekers	3	2	2
Incapacity Benefits	8	5	7

This section will consider the extent of barriers to accessing healthcare, especially given an ageing population in Southend and the higher incidence of health related benefits such as incapacity.

3.3.2.1 General Practitioners

The Figure below shows that the majority of areas in Southend have good access to a local GP on foot or by public transport. The overall picture of accessibility to a GP is relatively good with just one ward indicating red which means its residents typically take

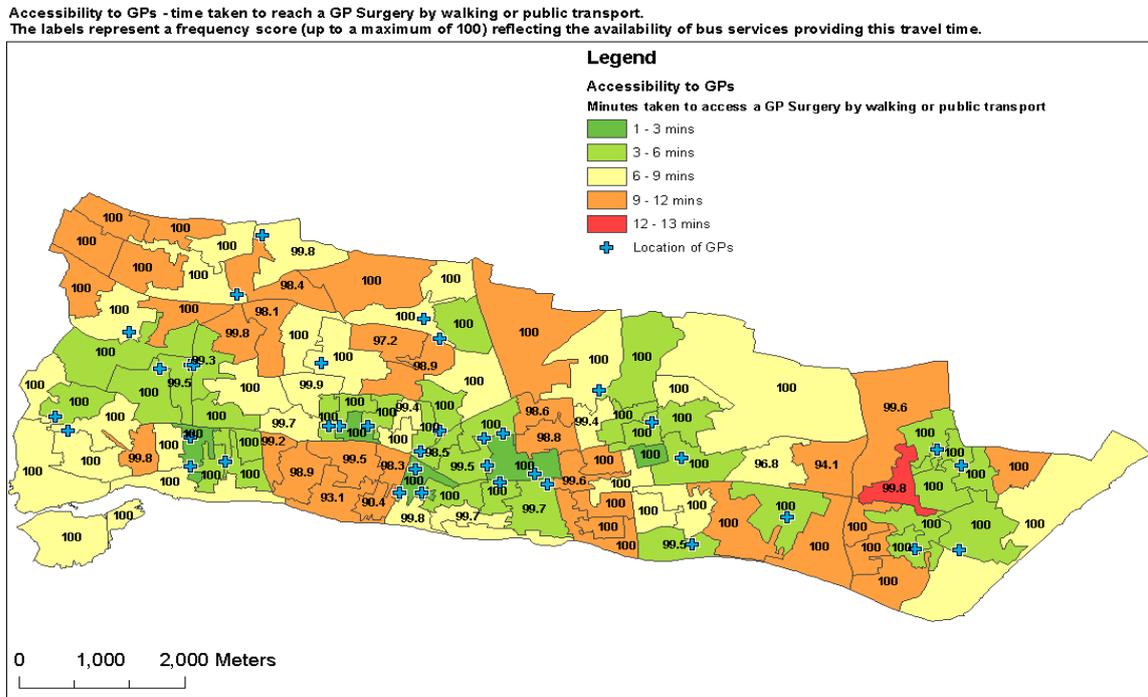
³⁹ www.statistics.gov.uk/STATBASE/product.asp?vlnk=997

⁴⁰ Office of National Statistics.

<http://neighbourhood.statistics.gov.uk/dissemination/LeadTableView.do?a=3&b=276844&c=southend&d=13&e=6&g=405474&i=1001x1003x1004&m=0&r=1&s=1267317214703&enc=1&dsFamilyId=1623>

12-13 minutes to access a GP surgery on foot or by public transport. The data shows that even in those areas where access time is longest, the frequency of bus services is still relatively high, for example, an index score of 99.8 in the red coloured area, and the worst being 98.1.

Figure 3.1 – Accessibility to GPs



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The following table shows the percentage of residents in Southend and comparable areas with access to GP surgeries. Although access is generally not as good as in Brighton, in terms of other unitary authorities in the East of England, access in Southend is on a par if not better. Accessibility to GPs increases in all these towns when it comes to travelling by private car.

Table 3.3 – Accessibility to GPs in comparator authorities

GP		Brighton	Luton	Southend	Thurrock
Target population = all households	% of target population weighted by the access to GPs by walk / PT	90	65	69	66
	% of target population weighted by the access to GPs by cycle	81	78	82	71
	% of target population weighted by the access to GPs	95	95	95	94

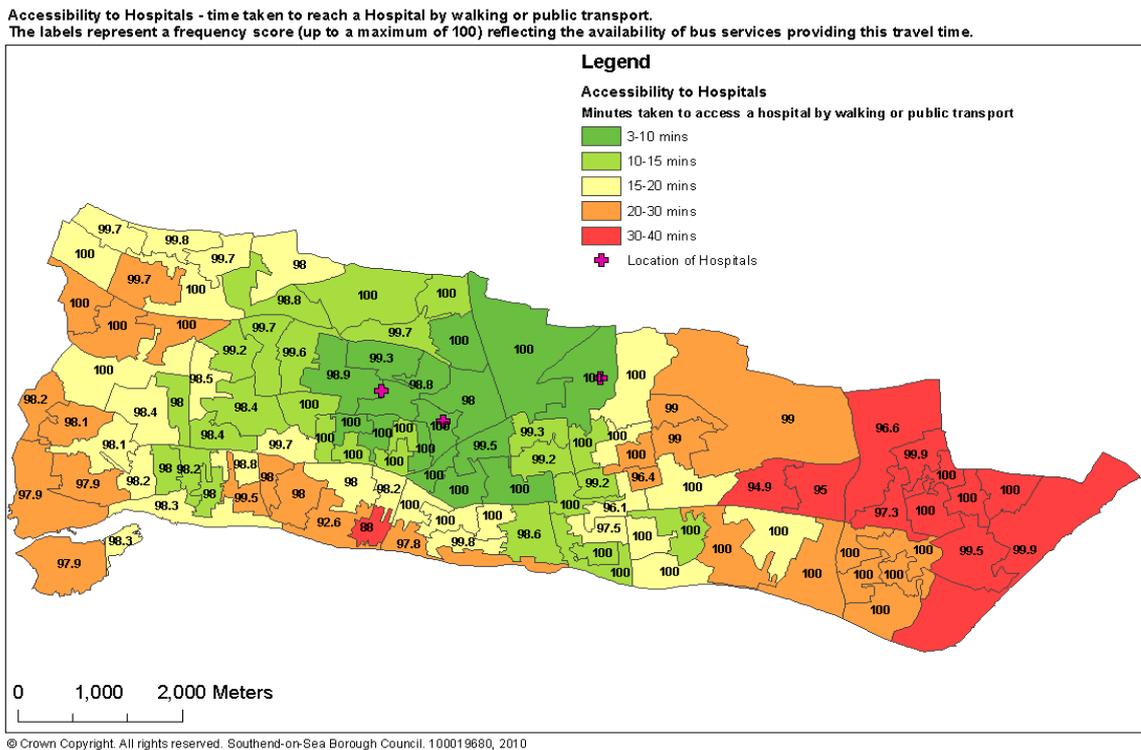
	by car			
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3.3.2.2 Hospitals

Hospitals, compared to more local services such as GPs or primary schools, are few and far between and so generally less accessible by walking and cycling, with public transport being more important for many. The percentage of the adult population of Southend without access to a car or van stood at 28.6% in 2001. This is higher than the East of England average (19.8%) and the average for England (26.84%)⁴¹.

The Figure below shows that peripheral areas of the Borough, especially to the east in Shoeburyness are least accessible to Southend’s hospitals by walking or public transport with travel times of 30 - 40 minutes. These results are not surprising given that the two hospitals are located centrally and there are fewer public transport links to the far east of the Borough than there are centrally or to the west.

Figure 3.2 – Accessibility to hospitals



In comparison to similar areas Southend fares worse than residents in Brighton, but it is broadly comparable to Luton and Thurrock. Southend has a similar geography to Brighton and further analysis would clarify why accessibility to hospitals in Southend is

⁴¹ Office for National Statistics
<http://neighbourhood.statistics.gov.uk/dissemination/LeadTableView.do?a=3&b=276844&c=southend&d=13&e=1&g=405474&i=1001x1003x1004&m=0&r=1&s=1267301139937&enc=1&dsFamilyId=51>

worse than in Brighton by sustainable modes. As with access to GP surgeries, accessibility increases significantly by private car.

Table 3.4 – Accessibility to hospitals in comparator authorities

Hospitals		Brighton	Luton	Southend	Thurrock
Target population = all households	% of target population weighted by the access to hospitals by walk / PT	52	45	41	34
	% of target population weighted by the access to hospitals by cycle	64	46	50	30
	% of target population weighted by the access to hospitals by car	92	88	90	82

Of the at risk population⁴² only 0.9% live within 30 minutes of a hospital by walking or public transport.

3.3.3 Access to education

The following table⁴³ shows the percentage of people in Southend between the ages of 16 and 74 with varying levels of qualification, up to and including level 5 (degree or higher degree) in comparison with the region and nationally. The data indicates that Southend fairs worse in terms of the percentage of people with no qualifications and the percentage of people with the highest qualifications. The Borough does fair better at level 2, which is equivalent to 5 GCSE passes or NVQ level 2 pass.

⁴² Defined as those households without a car

⁴³ Office of National Statistics.

<http://neighbourhood.statistics.gov.uk/dissemination/LeadTableView.do?a=3&b=276844&c=southend&d=13&e=5&g=405474&i=1001x1003x1004&m=0&r=1&s=1267318312213&enc=1&dsFamilyId=39>

Table 3.5 – Qualification levels in Southend

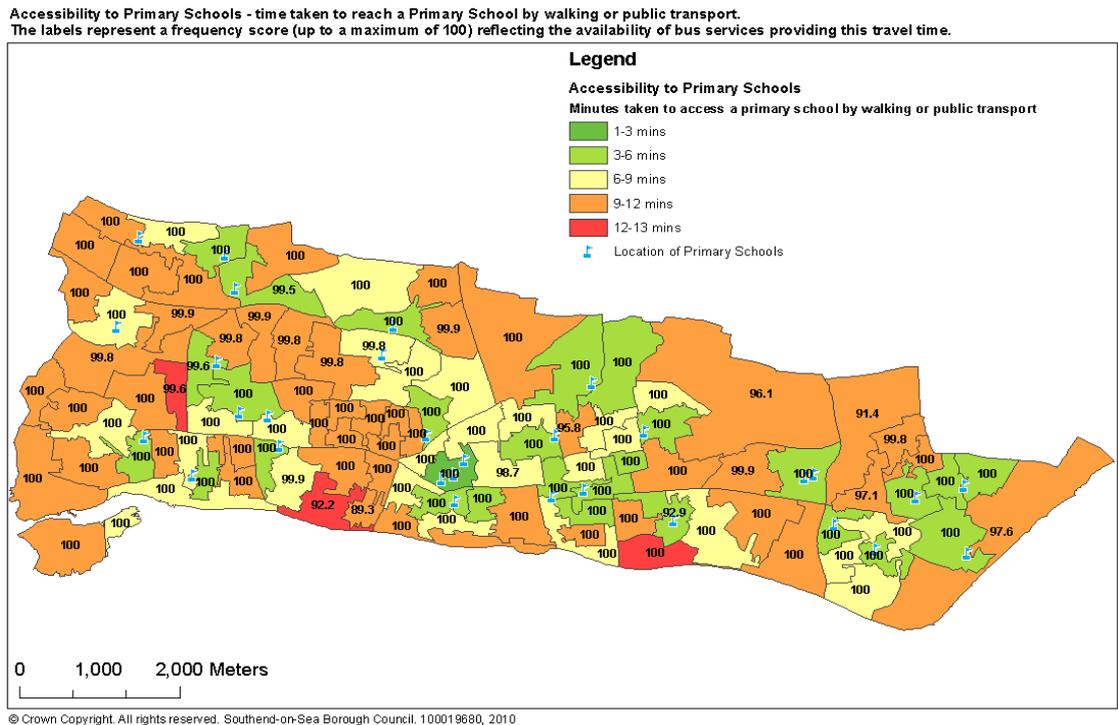
	Southend (%)	East of England (%)	England (%)
People aged 16-74 with: No qualifications	29.79	27.94	28.85
People aged 16-74 with: Highest qualification attained level 1	19.44	18.21	16.63
People aged 16-74 with: Highest qualification attained level 2	21.8	20.54	19.36
People aged 16-74 with: Highest qualification attained level 3	7.8	7.94	8.34
People aged 16-74 with: Highest qualification attained level 4 / 5	13.64	18.14	19.9
People aged 16-74 with: Other qualifications / level unknown	7.54	7.23	6.92

The following section will examine whether accessibility barriers to education, both compulsory and further education, affect educational attainment in the Borough.

3.3.3.1 Primary

For the majority of 5-10 year olds in Southend, they appear to be able to access their local primary school within 9-12 minutes on foot or by public transport. However, there are 3 wards where travel time using sustainable modes increases to 12-13 minutes. The Figure below shows that none of these wards contains a primary school, but that is also the case for other wards where the travel time taken is lower. Accessibility may be affected by bus routes or physical barriers to walking that increase travel time.

Figure 3.3 – Accessibility to primary schools



In comparison with other similar areas, accessibility to primary school by sustainable modes is worse in Southend than Brighton, Luton or Thurrock. However, Southend’s performance on accessibility improves when looking at cycling and by private car.

Table 3.6 – Accessibility to primary schools in comparator authorities

		Brighton	Luton	Southend	Thurrock
Primary Schools Target population = 5-10 year olds.	% of target population weighted by the access to primary schools by walk / PT	50	49	45	49
	% of target population weighted by the access to primary schools by cycle	81	81	79	75
	% of target population weighted by the access to primary schools by car	89	90	90	89

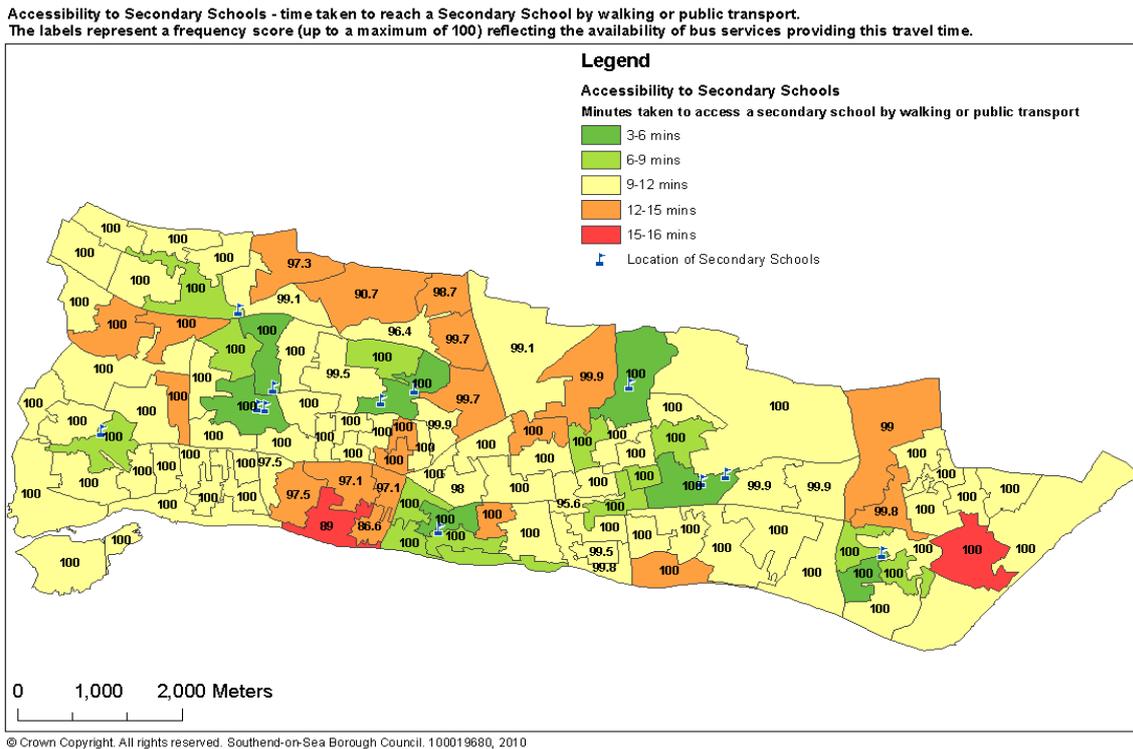
When considering the percentage of the at risk population⁴⁴ who can access schools by sustainable modes with 15 minutes, the average percentage across the Borough is 18% with a range of 0% to 82%.

⁴⁴ Defined as 5-10 year olds in receipt of free school meals
Southend-on-Sea Borough Council – Local Transport Plan 3
Evidence Base – June 2010

3.3.3.2 Secondary

The figure below shows there are fewer secondary schools in the Borough than there are primary. But, as with primary schools, access to secondary schools in Southend appears to be a 9 - 12 minute journey by foot or public transport for most pupils. There are two wards where the journey takes 15 - 16 minutes using these sustainable modes.

Figure 3.4 – Accessibility to secondary schools



In comparison with similar authorities, accessibility to secondary schools appears to be better in Southend with 57% of pupils being able to access a secondary school by walking or by public transport. In Brighton, which has a similar geography to Southend, the figure is less than 50%.

Table 3.7 – Accessibility to secondary schools in comparator authorities

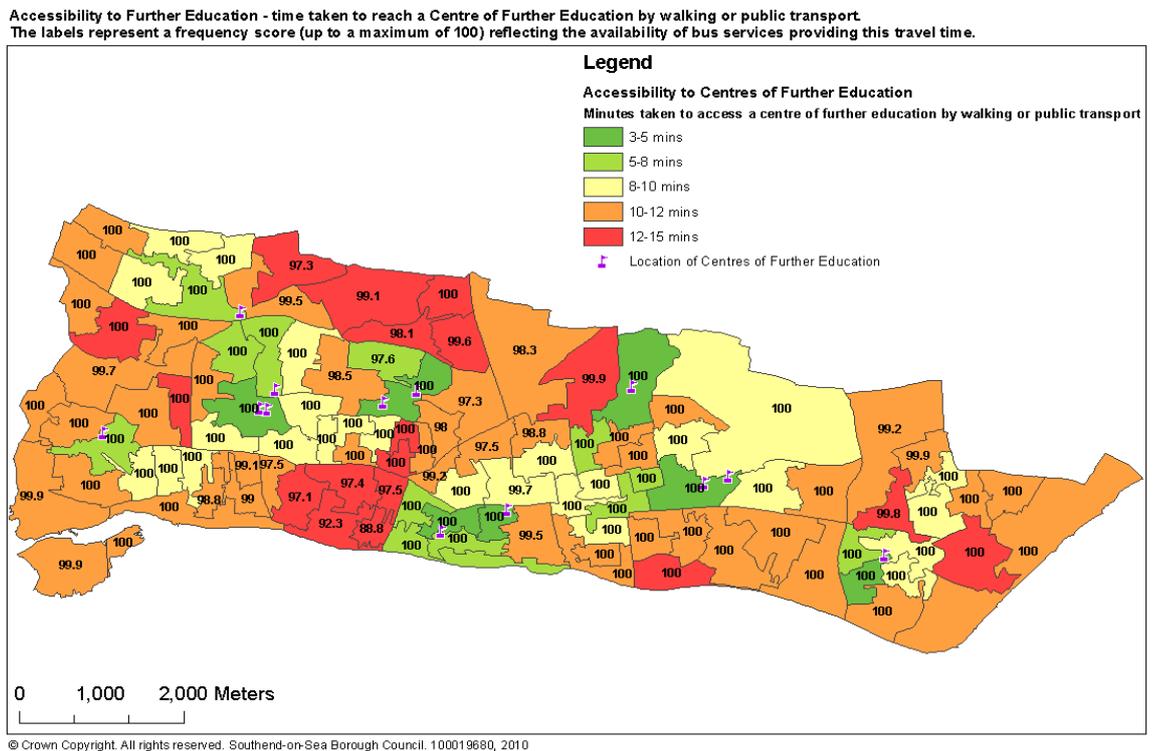
		Brighton	Luton	Southend	Thurrock
Secondary Schools	% of target population weighted by the access to secondary schools by walk / PT	49	52	57	50
Target population = 11-15 years olds.	% of target population weighted by the access to secondary schools by cycle	56	65	67	57

	% of target population weighted by the access to secondary schools by car	92	94	94	91
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3.3.3.3 Further Education

The figure below shows a similar number of further education establishments in Southend, but the number of wards from which accessibility by walking or public transport has increased to 12 - 15 minutes has increased significantly as shown by the red colouring below.

Figure 3.5 – Accessibility to further education



In the comparator group, access to further education by sustainable modes in Southend is higher than other authorities, and significantly higher than in either Luton or Thurrock.

Table 3.8 – Accessibility to further education in comparator authorities

		Brighton	Luton	Southend	Thurrock
Centres of Further Education	% of target population weighted by the access to Further Education by walk / PT	68	54	73	49
Target population = 16-19 years olds.	% of target population weighted by the access to Further Education by cycle	57	43	70	30

	% of target population weighted by the access to Further Education by car	95	93	97	89
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3.3.4 Access to employment

Within Southend, there are 93,600 residents of working age, accounting for 58.5% of the Boroughs total population. Across the Borough, there are a number of medium and large employers with at least 100 employees on site, together with multiple high employment areas comprised of numerous small businesses. Industries of note within the Borough include Aviation, Banking, and Leisure and Tourism. Figure 3.6 shows the location of these major employment sites within the Borough, which shows there are a number of major employment sites in the north of the Borough, located between the A127 and the Borough boundary, and a large cluster within the centre of the Borough. A third cluster sits to the east of Southend, in Shoeburyness.

Figure 3.6 – Location of Major Employment Sites

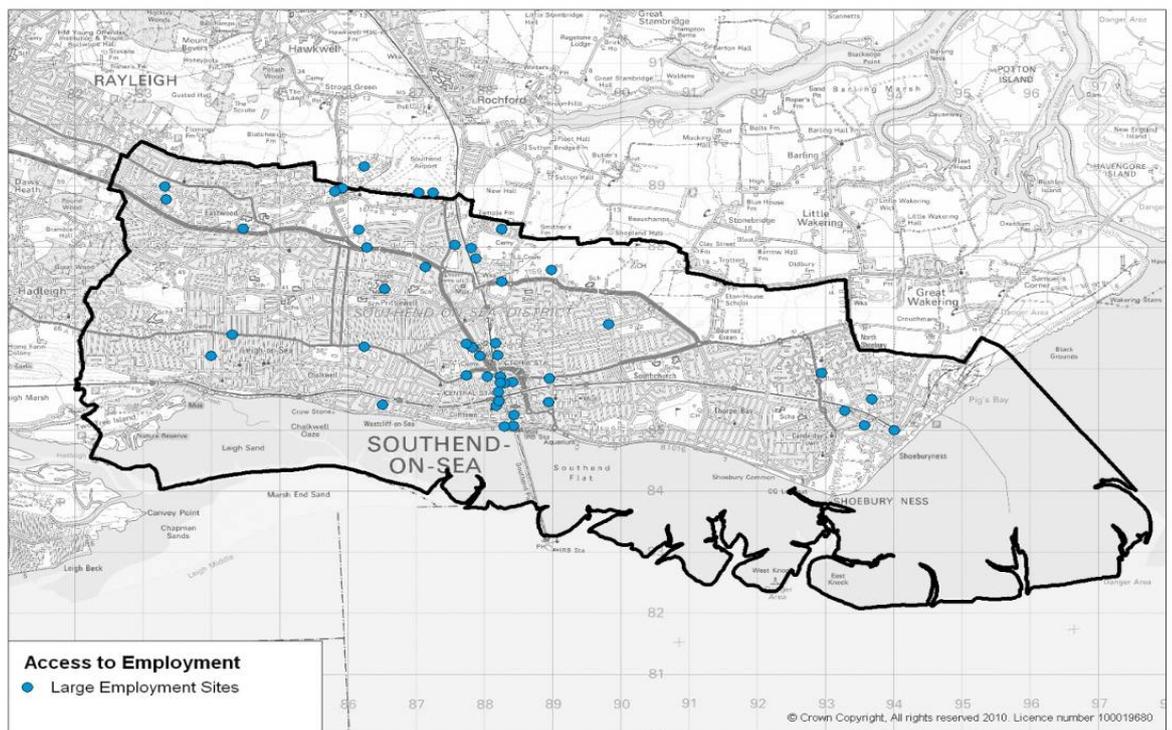


Figure 3.7 shows the accessibility levels within Southend to the nearest major employment site during the morning rush hour of 8am till 9am. The majority of residents within the Borough (99%) are within a 10 minute journey time of the nearest major employment site.

Figure 3.7 – Accessibility to Nearest Large Employment Site

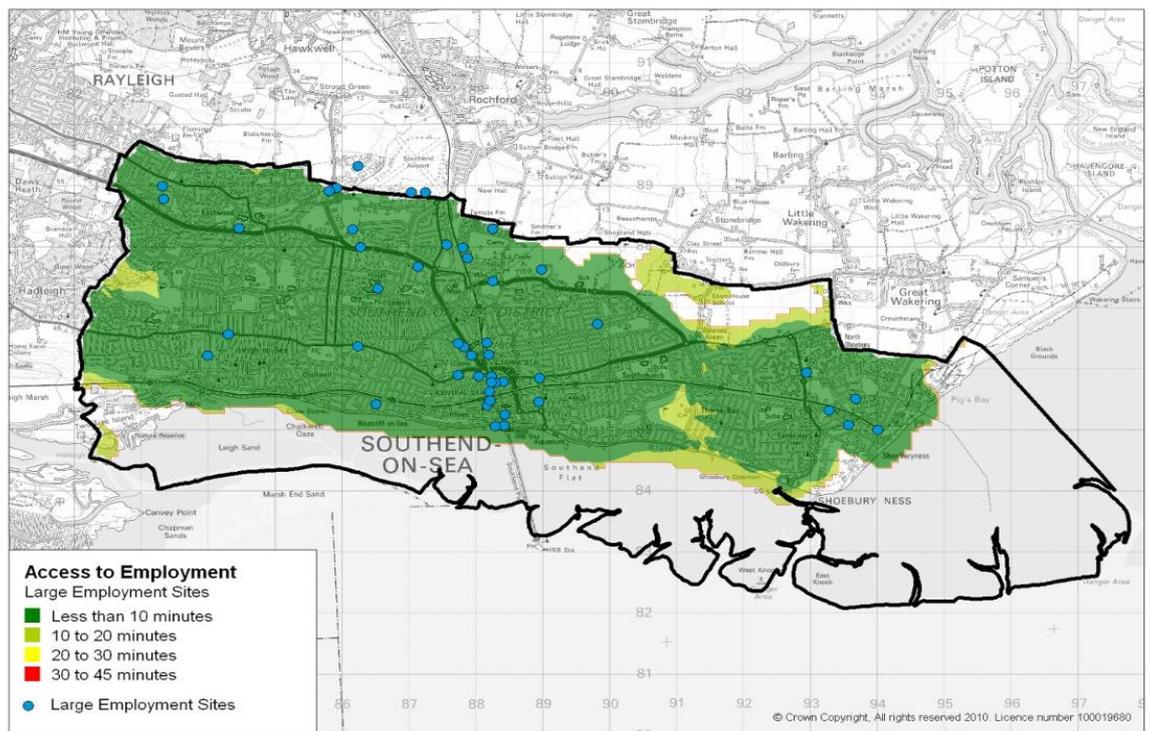


Table 3.9 shows the proportion of working age residents who are able to access the nearest major employment site within the Borough. The table shows that nearly all working age residents are within 10 minutes of a site, with only 1% having a journey time longer than 10 minutes. This however does not take into account the actual preferred workplaces of employees, or the true spread of employment within the Borough.

Table 3.9 – Proportion of working age residents living within 45 minutes of a large employment site

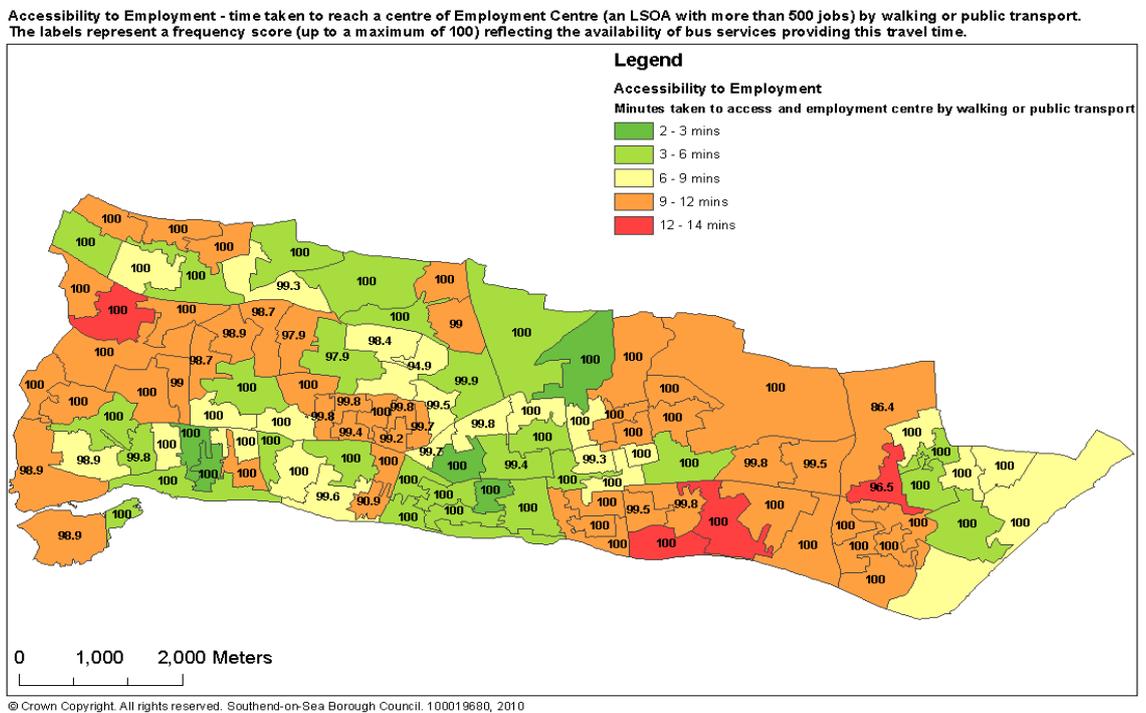
Journey Time Threshold	Proportion	Cumulative
Up to 10 minutes	99%	99%
10 to 20 minutes	1%	100%
20 to 30 minutes	0%	100%
30 to 45 minutes	0%	100%

Overall, access to the nearest major employment sites within Southend is good, with all the social groups studied showing that at least 99% are within a 10 minute journey time. However, these do not take into account actual employment patterns within the Borough.

As with access to GPs, hospitals, and education, the figure below clearly shows that access to employment on foot, or by public transport is well provided for in the Borough with residents in just 4 wards experiencing a journey of 12 - 14 minutes.

However, given congestion levels experienced by Southend, it would suggest that the public may not be aware of this opportunity and there is considerable scope for improving the provision of information and affecting behavioural change.

Figure 3.8 – Accessibility to employment



In the comparator group, there is very little difference in accessibility to employment between the authorities.

Table 3.10 – Accessibility to employment in comparator authorities

		Brighton	Luton	Southend	Thurrock
Employment Target population = 16-74 year olds.	% of target population weighted by the access to employment centres by walk / PT	87	84	84	82
	% of target population weighted by the access to employment centres by cycle	82	78	80	70
	% of target population weighted by the access to employment centres by car	98	98	98	97

Unlike access to healthcare and education, people are likely to travel much further on a daily basis in order to get the career they want. The preceding analysis makes certain assumptions of location of employment. The following table shows a breakdown of travel to work distances for residents of Southend⁴⁵ in 2001.

Table 3.11 – Distance travelled for employment

Group	Southend	%	East	%	England	%
All People	70177	-	2579378	-	22441497	-
Works mainly at or from home	5617	8	243485	9	2055224	9
Less than 2km	16399	23	517466	20	4484082	20
2km to less than 5km	15205	22	437395	17	4510259	20
5km to less than 10km	8132	12	354182	14	4094614	18
10km to less than 20km	5299	8	379857	15	3412081	15
20km to less than 30km	2958	4	201209	8	1197605	5
30km to less than 40km	1586	2	107616	4	527840	2
40km to less than 60km	8634	12	108875	4	487683	2
60km and over	2352	3	90977	4	607571	3

In general, data for Southend are comparable with the East of England and nationally. It also shows that 57% of the Borough's working population's commute is less than 10km suggesting there is considerable scope for the use of sustainable modes and transfer to these from the private car, alleviating congestion in the town.

The following table shows the mode choice⁴⁶ for travel to work for the resident population in Southend, the wider region and also nationally.

⁴⁵ Office of National Statistics.

<http://neighbourhood.statistics.gov.uk/dissemination/LeadTableView.do?a=3&b=276844&c=southend&d=13&e=16&g=405474&i=1001x1003x1004&m=0&r=1&s=1267313899062&enc=1&dsFamilyId=121>

⁴⁶ Office for National Statistics.

<http://neighbourhood.statistics.gov.uk/dissemination/LeadTableView.do?a=3&b=276844&c=southend&d=13&e=16&g=405474&i=1001x1003x1004&m=0&r=1&s=1267313899125&enc=1&dsFamilyId=125>

Table 3.12 – Mode of transport used for commuting to employment

Group	Southend	%	East	%	England	%
All People	111789	-	3884104	-	35532091	-
Works mainly at or from home	5617	5	243485	6	2055224	6
Underground, metro, light rail or tram	142	0	21688	1	709386	2
Train	9288	8	156054	4	950023	3
Bus, minibus or coach	4205	4	102838	3	1685361	5
Taxi or minicab	397	0	11693	0	116503	0
Driving a car or van	35852	32	1518613	39	12324166	35
Passenger in a car or van	3811	3	150642	4	1370685	4
Motorcycle, scooter or moped	713	1	28637	1	249456	1
Bicycle	1917	2	100193	3	634588	2
On foot	8002	7	233737	6	2241901	6
Other	233	0	11798	0	104205	0
Not currently working	41612	37	1304726	34	13090593	37

Although the majority of travel to work journeys are less than 10km in Southend, almost a third of all journeys by residents are undertaken as car drivers, with just 8% by train, 4% by bus, and 7% on foot.

In 2008 Southend was awarded Cycling Town status by the Department for Transport. Southend will be allocated £3.2m between 2008/09 and 2010/11 and another £3.2m match funded by the Council to promote cycling to schools and work places; improving the cycling infrastructure of the town; and getting the wider community involved in cycling through training and education. Results from the phase of cycle demonstration towns have shown that the investment can lead to significant increases in cycling levels in these towns.

Travel by train times from Southend to destinations in the East of England and to London are shown by the following table⁴⁷:

⁴⁷ Source: The Trainline and TheAA.com

Table 3.13 – Comparison of peak hour train and car travel

Southend to:	Train				Car
	07:00 - 10:00		16:00 - 19:00		Minimum Journey time
	Frequency	Minimum journey time	Frequency	Minimum journey time	
Colchester	11	1 hr 3m	8	1 hr 15m	59m
Chelmsford	11	44m	7	46m	33m
Luton	12	2hr 5m	10	2hr 2m	1 hr 24m
London	35	54m	30	57m	1 hr 25m
Cambridge	12	2hr 25m	13	2hr 25m	1 hr 27m
Peterborough	9	2hr 29m	10	2hr 31m	2hr 5m
Norwich	6	2hr 6m	7	2hr 21m	2hr 14m
Ipswich	9	1 hr 22m	8	1 hr 41m	1 hr 18m
Stansted	16	1 hr 59m	14	1 hr 55m	1 hr 3m

The data suggests that train travel time is comparable to car journey time for these trips, with some exceptions, and that there is a high frequency of services available during peak hours. This should act to make train travel more attractive than use of a private car.

The following table shows the workforce available within a half hour commuting distance of Southend:

Table 3.14 – Locations within approximately 30 minutes of Southend

Southend to:	Time (mins)	
	Car	Train
Hockley	16	10
Rochford	11	6
Rayleigh	13	14
Benfleet	17	15
Canvey Island	24	35
Basildon	24	23

Wickford	22	19
Billericay	30	25

Again the data suggests travelling by train compared to the car is beneficial in the majority of cases in terms of travel time.

3.3.5 Accessibility of transport infrastructure

Southend's LTP2 Progress Report 2008 states that in 2007/08 50% of Arriva's bus fleet and 41% of First's bus fleet complied with DiPTAC accessibility levels. At present Southend has 286 raised kerbs to aid boarding at bus stops.

In Brighton, 84% (2008) of the Brighton and Hove Bus and Coach Company's fleet was wheelchair accessible, against a target of 54%. Additionally, by that time over 260 raised bus borders had been implemented.

3.4 Conclusions / SWOT

Analysis of evidence and data resulted in identification of strengths, weaknesses, opportunities, and threats relating to how transport can help promoting equality of opportunity in Southend.

Equality of Opportunity

Strengths

- Majority of commuting distances to work are less than 10km.
- Good accessibility, using sustainable modes, to employment sites within the Borough.
- Good accessibility, using sustainable modes, to both primary and secondary schools.
- Good accessibility to GPs using sustainable modes.

Weaknesses

- Poor accessibility (over 30 minutes by walk or public transport), using sustainable modes, to hospitals from the ward of Shoeburyness and parts of the wards of Thorpe and Southchurch.
- Poor accessibility (over 30 minutes by walk or public transport), using sustainable modes, to further education from the wards of St. Laurence and Chalkwell and parts of Belfairs, Thorpe and Shoeburyness.
- In spite of low commuting distances, a third of travel to work is undertaken as a car driver.
- Where data is available for accessibility, the more deprived areas fair much worse than the average resident in Southend in all areas of assessment.

Opportunities

- Short distances travelled for employment suggest there is considerable scope for affecting modal change in Southend from the car to more sustainable modes.
- Cycling Town status can be used to affect modal change, and the evidence from the previous group of towns suggests that change can be significant.
- Improve accessibility to further education from certain areas. This may help bridge the qualifications gap shown by the data between Southend and the region and more widely.
- Essex University campus should help to bridge the qualification gap.
- Consideration of improving accessibility to the levels seen in Brighton for bus and train services.
- Housing growth should be accompanied by opportunities for sustainable travel to and from essential services and places of employment.
- Employment growth should be accompanied by opportunities for sustainable commuting.
- More should be done to promote the nine rail stations serving Southend as a 'metro' system for the Borough to complement the bus network for short distance travelling for leisure and work.
- The wider health impacts of sustainable travel should not be ignored.
- To reduce traffic congestion to improve bus reliability and thus make it more attractive, especially for shorter journeys.

Threats

- More lucrative work prospects in London will always induce people to commute to the capital, by both train and car.
- As a tourist destination the message of using sustainable modes may not reach visitors who may tend to travel by private car.
- Greater prevalence of at risk groups in Southend is a concern – the key messages on transport may not reach them unless addressed by a specific education and promotional programme (e.g. on sustainable travel, and public transport information).

4. Safety and Security

4.1 Background

There are a number of policy areas that need to be considered in order to achieve improvements in personal and public safety and security, and which therefore impact on mortality and morbidity.

Road safety continues to be a major concern nationally, despite considerable progress in reducing road traffic accidents (RTA). RTA's impact on a range of wider policy areas:

- They are a significant cause of mortality and morbidity, and are one of the most common causes of death amongst people aged 18 - 24. As well as the human suffering, this represents a considerable impact on the resources of the health service.
- Community severance in rural and urban areas, affecting the vibrancy of neighbourhoods.
- High traffic speeds, a common cause of collisions, generate more pollutants and carbon dioxide emissions.
- Safety concerns are a contributory factor of social exclusion and poor accessibility, especially for those who are most vulnerable.
- RTA's cause significant delays on the roads, reducing the efficiency of the transport network and causing frustration.
- The cost to the economy of road traffic collisions resulting in injury. Road deaths and injuries are estimated to cost some £19 billion a year nationally.

Personal security, or crime and the fear of crime, when walking, cycling or using public transport, is a major concern for many people, especially particular members of the community such as women and those from ethnic minorities. Although crime is relatively uncommon on public transport, research has found that very high proportions of people express concerns about their safety. Similarly, and especially at night, many people do not feel safe outside in their area.

The regulated security regimes for aviation, maritime transport and rail include a wide range of measures designed to reduce vulnerability and deter terrorism. These regimes are regularly reviewed in the light of new intelligence. In addition, longer-term decisions about the design and operation of infrastructure and services may have implications for the security of our transport networks. Other major disruptions to the transport network that affect general public safety can happen, such as the fuel train crash in Italy in 2009.

4.2 Policy Context

In developing new Local Transport Plans, it is important to ensure that it is consistent with the international, national, regional and local policy context. The policies outlined below are those that are considered most relevant to safety and security.

4.2.1 National

Local Authorities have a duty to improve road safety. This has tended to focus on reducing the number and severity of casualties and there are national performance indicators that measure progress towards casualty reduction. 'Killed or Seriously Injured' (KSI) casualties, especially with regard to children, tend to have a greater policy priority. Recent emerging policy from the Department for Transport has increased the focus on the more serious accidents, particularly fatal, and is widening its focus on the more vulnerable road users to include pedestrians and cyclists as well as children.

There has been an increased awareness of the need to mitigate or prevent major public safety incidents, such as terrorist attacks in the light of the London bombings, but also other non-malicious events such as major catastrophic transport accidents.

Reducing crime and the fear of crime, as well as low level anti-social behaviour, is an important national policy area. The National Community Safety Plan has a number of policy approaches where transport may have synergies, including building stronger communities and contributing to community cohesion, and improving the overall safety of the environment. This prioritises targeting key communities.

The challenges identified in the Department for Transport's new policy document, Delivering a Sustainable Transport System, include:

- Reducing accidents, especially Road Traffic Accidents.
- Reducing the social and economic costs of transport to public health.
- Reducing the vulnerability of transport networks to terrorist attacks.
- Reducing crime and the fear of crime on transport networks.

4.2.2 Regional

At the regional level, in addition generally to improving safety on roads, there is recognition of the importance of improving the safety of cyclists and pedestrians by improving the safety of the public realm. Seven high level challenges have been identified by the region in its response to DaSTS. These are:

- Population growth and demographic change;
- Increasing health inequalities;
- Causes of mortality;
- Physical disability;
- Safety and security;
- Crime; and
- Air quality.

4.2.3 Local

One of the main ambitions of the Sustainable Community Strategy is to create a safer community for all. Improving road safety is key objective to achieve the ambition for the Borough, as is reducing crime, the fear of crime and anti-social behaviour. Southend

strives to deliver safer roads across the Borough and is committed to reducing the number and severity of casualties. Improvements to public transport and the environment are seen as a way to reduce the fear of crime, which deters people from walking and using public transport particularly in evenings.

In the adopted core strategy for the Local Development Framework, improving road safety is one of the components of Policy CP3: Transport and Accessibility. It also highlights the need for good quality street furniture and townscape design to promote community safety, and the strategy tends to link road safety with accessibility.

4.3 Data Analysis

This section describes the evidence collected analysed in relation to safety and security.

4.3.1 Crime and personal security

Compared to national figures, Southend has relatively low crime rates. Locally however, Southend has the second highest number of crimes in Essex, after Harlow. The perceived fear of crime is also an issue in Southend.

The police area known as Southend Central accounts for the above average rating for Southend within Essex as it is the only area within the Borough with a high rating compared to the rest of Essex. There are five areas of Southend that lie within the 10% most disadvantaged in the country with the main focus of deprivation in the central wards of Milton, Victoria and Kursaal and these are the ones that tend to have the higher crime levels. In these areas, the level of crime is rated as the most important issue that needs improving, whereas it is fourth across Southend as a whole.

However, the average number of crimes in Southend Central has recently decreased from 593.7 to 475 (20%). Southend Central covers the three wards of Victoria, Kursaal and Milton. Overall the average number of crimes in Southend have recently decreased from 1265.3 to 1121.7 (11.4%)

Crime has consistently fallen over the last 10 years. However, it is recognised that some criminal offences in particular generate fear and insecurity and can change the way that people go about their daily lives.

The average number of anti-social behaviour incidents in the Borough has also recently decreased, from 974 to 927 (-4.8%). However Southend Central is still classified as high compared to the rest of Essex even though the average number of anti-social behaviour incidents in this area has decreased from 400 to 366.7 (-8.3%).

The average number of violent crimes has recently decreased from 256.7 to 245.3 (-4.4%). This makes Southend average compared to the rest of Essex. However Southend Central has recently seen the average number of violent crimes decrease from 593.7 to 475 (-20%), through this volume still makes it a high crime area when compared to the rest of Essex.

A key area that needs to be tackled is perception of safety at night on public transport. According to the Home Office, crime levels on public transport are actually very low.

Despite this, many people are concerned about their personal security. Perceived safety and security at rail stations is influenced by areas that fall within transport policy, such as:

- The availability and visibility of staff at stations.
- Darkness or lack of lighting.

4.3.2 Public Safety and Security

In terms of public safety rather than personal safety, the Government has published a National Risk Register which sets out the national assessment of the likelihood and potential impact of a range of different risks that may directly affect the UK. In this, 'attacks on transport' has been rated as the most likely risk to occur nationally. Locally, the Essex Resilience Forum sits at the apex of Essex's local civil protection arrangements. Its overall purpose is to ensure that there is an appropriate level of preparedness to enable an effective multi-agency response to emergencies which may have a significant impact on the communities of Essex. The Essex Resilience Forum has developed a Community Risk Register. The overview risk assessment process covers the whole County of Essex as well as the two Unitary Authorities of Southend and Thurrock.

The risk assessments only cover non-malicious events (i.e. hazards) rather than threats (i.e. terrorist incidents). This does not mean that the forum is not considering threats within its risk assessment work, but given the sensitivity of the information supporting these risk assessments and the potential for use by adversaries, specific details will not be made available. Over 100 risks have been assessed, many of which pose a medium or high risk. Some 13 of these risks are related to transport accidents.

Transport Implications

The above evidence raises a number of questions related to the extent to which transport may have a part to play in relation to personal and public safety and security:

- Are there any aspects of transport that could potentially increase the risk of crime or the fear of crime, especially when using public transport and particularly in Southend Central where crime is more of an issue?
- Are there any aspects of crime or personal security that could potentially adversely impact on people's accessibility of choice of transport mode?
- Are there any aspects of transport that could potentially increase the risks to public safety or security, such as transport accidents involving fuel or explosives?

In addition, this chapter will carry out a comprehensive analysis of Road Traffic Accidents, a key element of transport policy impacting on people's safety. The road safety analysis will particularly consider the safety of vulnerable road users, such as pedestrians and cyclists.

4.3.3 Road traffic accident casualty severity

In Southend, the reduction in 2008 was 47% compared to the 1994 to 1998 average, taken as the baseline. It was also 14% below the 2007 total. Overall, this is slightly better than the regional performance and exceeds the national target of a 40% reduction by 2010. It can also be seen that Southend has performed well compared to similar unitary authorities in the region, with the reduction being more than double that evident in Thurrock and 23% greater than in Luton. There has therefore been a good reduction in Killed or Seriously Injured casualties in Southend.

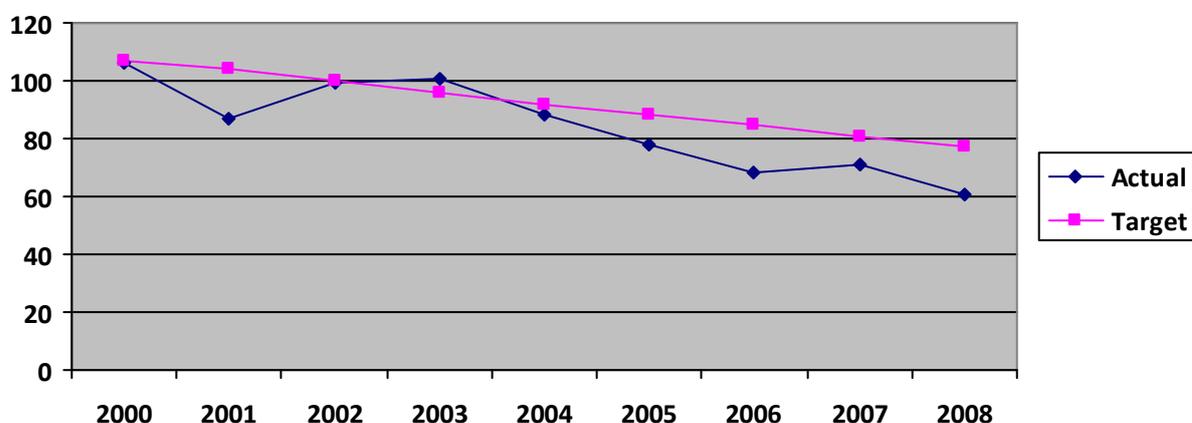
Table 4.1 – KSI casualties⁴⁸

	1994-98 av.	2000	2001	2002	2003	2004	2005	2006	2007	2008	Change baseline to 2008	Change 1994-98 to average 2006-08
Luton	89	70	63	59	57	57	64	55	55	65	-27%	-34%
Southend	115	106	87	99	101	88	78	68	71	61	-47%	-42%
Thurrock	128	96	129	114	164	116	112	118	110	78	-39%	-20%
East of England	4997	4559	4379	4072	3992	3845	3587	3328	3177	2808	-44%	-38%

⁴⁸ Source. Road Casualties Great Britain 2008

Southend has consistently been ahead of target rate of casualty reduction in recent years, as shown in Figure 4.1.

Figure 4.1 – Trend of KSI casualties in Southend



Whereas the number of KSI casualties in the East of England has reduced by 44% from the 1994 to 1998 average baseline, the number of fatalities has only reduced by 27% from the baseline. The majority of the decrease has been between 2007 and 2008; very recently.

At an individual authority level the number of fatalities can fluctuate by a relatively large amount from one year to the next, especially for small Unitaries such as Southend, hence absence of local figures for the reduction up to 2008 in Table 4.2 below. It is therefore difficult to draw meaningful conclusions as to differences between authorities. However, Table 4.2 does show the reduction for the average between 2006 to 2008 from the 1994 to 1998 average. Although this should still be treated with caution, Southend's performance looks reasonable.

Table 4.2 – Fatal casualties⁴⁹

	1994-98 ave.	2000	2001	2002	2003	2004	2005	2006	2007	2008	Change from 1994-98 to ave. 2006-08
Luton	4	4	4	11	3	6	3	1	2	2	-58%
Southend	4.8	6	6	6	7	4	4	1	6	3	-31%
Thurrock	7.2	4	16	9	14	8	10	16	8	10	+57%

⁴⁹ Source. Road Casualties Great Britain 2008

Region	361.2	413	381	383	365	354	342	350	337	263	-22%
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However, recent data shows a worrying increase in KSI casualties, as shown in Table 4.3 below. The increase for 2009 up to August is over 100% compared to the same period in 2008, though this should be treated with caution as the data for the full calendar year is not shown. Nevertheless, the data show a significant reversal of some of the progress made in recent years and could mean that the 40% national target is not achieved after all.

Table 4.3 – Recent changes in KSI in Southend⁵⁰

Time period	Severity		
	Fatal	Serious	KSI
Jan-Aug 2008	1	37	38
Jan-Aug 2009	6	73	79

⁵⁰ Source. Southend Borough Council
 Southend-on-Sea Borough Council – Local Transport Plan 3
 Evidence Base – June 2010

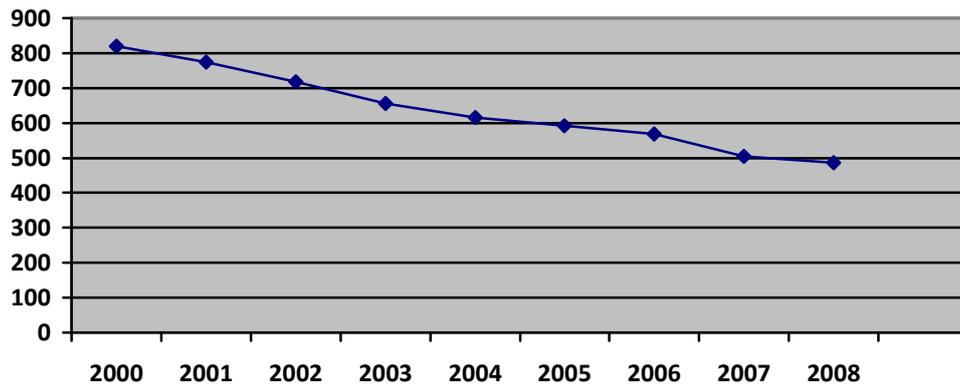
Table 4.4 – Slight injury casualties⁵¹

	1994-98 av.	2000	2001	2002	2003	2004	2005	2006	2007	2008	Change from 1994-98 to 2008
Luton	734	633	665	666	602	526	534	607	605	589	-20%
Southend	756	819	774	718	655	615	592	569	505	487	-36%
Thurrock	809.4	919	826	770	684	725	695	600	525	522	-35%
Region	25183	26866	26304	25121	24310	24203	23567	21696	21037	19028	-24%

Table 4.4 above on slight injury casualties shows that the reduction since the 1994 to 1998 baseline has been good, being 50% greater than the regional reduction. Early data for 2009 suggests that the decline has continued. Figure 4.2 below shows that the reduction has been quite steady over the years.

⁵¹ Source. Road Casualties Great Britain 2008

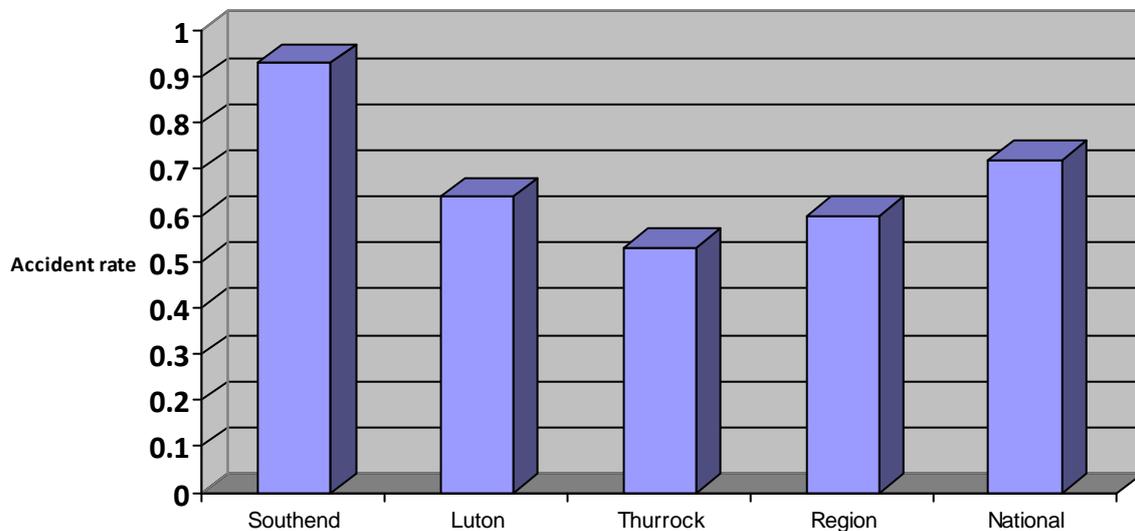
Figure 4.2 – Slight injury casualties in Southend



4.3.4 Accident and casualty rate

The road traffic accident rate⁵² (as a function of resident and workforce population) comprises part of the 'outdoor environment' sub-domain of the Indices of Deprivation 2007. Using this measure, Southend is shown to have a much higher accident rate as a function of resident and daytime population than similar Local Authorities in the region and is the only one to exceed the national rate, as shown below in Figure 4.3.

Figure 4.3 – Accident rate by population



Casualty rate as a function of traffic volume also shows that Southend has a high rate, being more than double that of the region and Thurrock. Similarly, the KSI casualty rate is high though not quite as pronounced, being 80% higher than that for the region and Thurrock.

⁵² Accidents per 1000 resident and workplace population

Table 4.5 – Casualty rate by traffic volume⁵³

	1994-98 average	2008	Reduction
Southend	140	82	-41%
Thurrock	69	36	-49%
Luton	111	77	-30%
Region	62	38	-38%
England	74	47	-37%

Table 4.6 – KSI casualty rate by traffic volume⁵⁴

Area	1994-98 average	2008	Reduction
Southend	18	9	-50%
Thurrock	9	5	-52%
Luton	12	8	-36%
Region	10	5	-52%
England	11	6	-48%

Tables 4.5 and 4.6 above also show that the reduction in casualty rate has been on a par with the rates generally evident elsewhere, though considerably greater than Luton (37% greater for the reduction in the rate for all severities).

Table 4.7 – Slight casualty rate by traffic volume⁵⁵

Area	1994-98 average	2008	Reduction
Southend	121	73	-40%
Thurrock	60	31	-48%
Luton	99	70	-30%
Region	52	33	-35%
England	63	41	-35%

With regard to the slight casualty rate, a national target of a 10% reduction by 2010 from the average for 1994 to 1998 was set. This has been exceeded by some margin in Southend, where a 40% reduction had been achieved by 2008.

⁵³ Casualties per 100 million vehicle km. Source. Road Casualties Great Britain 2008

⁵⁴ Rounding up or down to whole numbers for the casualty rate results in percentage reductions that appear not to match accurately the apparent reductions

⁵⁵ Source. Road Casualties Great Britain 2008

4.3.5 Road user groups

Table 4.8 below compares how casualties amongst the various road user groups in Southend compares with similar Local Authorities.

Table 4.8 – Casualties by road user type for 2008⁵⁶

	Pedestrians		Cyclists		M/C	Car	Bus	LGV	HGV	Total
	Child	All	Child	All						
Southend	34	107	21	67	54	295	7	9	3	548
Thurrock	19	47	7	26	52	421	2	22	19	598
Luton	47	115	10	36	55	418	16	8	3	654

HGV, bus and LGV casualty numbers are very small, combined being only 3% of casualties in Southend. Car occupant casualties, although being 54% of total casualties in Southend, are low in number compared to elsewhere. In Thurrock and Luton car occupants comprise 70% and 64% of casualties. Motorcyclist casualties are similar in number to comparable Local Authority areas, although they do represent a slightly higher proportion of casualties, comprising almost 10% in Southend whereas in both Luton and Thurrock they are approximately 8.5%.

However, the striking statistic concerns cyclists, including child cyclists. Although fortunately small in number, three times as many child cyclists are hurt in road traffic accidents in Southend compared to Thurrock, whilst the number is more than double that in Luton. Similarly for all cyclist casualties, Southend cyclist casualties are 150% higher than in Thurrock, and almost double the Luton figure.

Table 4.9 – Change in casualty numbers (all severities) by mode of travel from 1994-98 to 2008⁵⁷

	Pedestrians	Pedal Cycles	M/Cs	Cars	All Modes
Luton	-26%	-45%	+6%	-17%	-20%
Southend	-30%	-39%	-17%	-40%	-37%
Thurrock	-40%	-53%	-28%	-38%	-36%
Region	-32%	-37%	-12%	-27%	-28%
England	-39%	-32%	-11%	-27%	-28%

⁵⁶ Source. Road Casualties Great Britain 2008

⁵⁷ Source. Road Casualties Great Britain 2008

For all road user groups together, Southend has a very good track record of casualty reduction, showing the highest reduction in Table 4.9 above. This is especially the case for the reduction in car occupant casualties, with the reduction being 135% greater than in Luton, and almost 50% greater than that evident regionally or nationally.

The reduction in motorcyclist casualties has been generally low for most places. With this in mind, Southend's performance has been relatively quite good, but this should not distract from the fact that the reduction is still low at only 17%.

Southend has done less well in terms of pedestrian and cyclist casualty reduction. Of the comparators, only Luton has achieved a lower reduction than Southend, whilst the reduction in Thurrock has been a third greater. With regard to cyclist casualty reduction, although Southend has done well in comparison to the region and the country as a whole, it has performed worse than the two similar Local Authorities, with the reduction being 26% less than in Thurrock. Given the high actual number of cyclists in Southend, the modest reduction achieved should be a cause for concern.

4.3.6 At-risk road user groups

The Government set a target of a 50% reduction in child KSI casualties by 2010 compared to the 1994 to 1998 baseline. With a reduction of 62% in 2009 against the 1994 to 1998 baseline, the East of England has already achieved the Government's target of a 50% reduction in children KSI by 2010. The numbers for an individual authority can fluctuate randomly by a relatively large amount from one year to the next due to the small numbers involved. Table 4.10 therefore shows the average casualty numbers for the last three years compared to the baseline figure of 1994 to 1998.

Table 4.10 – Children KSI

	1994-98 av.	2000	2001	2002	2003	2004	2005	2006	2007	2008	Change baseline to 2008	Change 1994-98 to average for 2006- 08
Luton	21	18	11	13	14	17	6	9	9	10	-52%	-55%
Southend	18	22	16	20	14	10	8	9	8	5	-72%	-59%
Thurrock	21	15	10	10	12	18	6	12	12	11	-48%	-44%
East of England	565.2	471	407	360	375	328	294	270	265	218	-61%	-56%

The reduction in children KSI's in Southend is higher in Southend than in the other areas shown in Table 4.10 above, though in most cases this is a fairly marginal difference.

However, all five children KSI's in Southend in 2008 were pedestrians (four) or cyclists (one); the very modes of travel that School Travel Plans aim to promote. It is therefore worth considering the safety of child cyclists and pedestrians in a little more detail, looking at all casualty severities. Table 4.11 below shows the figures for Southend in comparison with similar Local Authority areas. Both Luton and Southend have more than twice the number of child cyclist or pedestrian casualties compared to Thurrock, but the reduction since the 1994 to 1998 average has been lower in Southend than in the other two Local Authority areas.

Table 4.11 – Child pedestrian and cyclist casualties in 2008 and 1994-98 average⁵⁸

	Peds. 2008	Cyclists 2008	Total 2008	Peds 94-98	Cyclists 94-98	Total 94-98	Change in total
Southend	34	21	55	53	30	83	-34%
Thurrock	19	7	26	38	26	64	-59%
Luton	47	10	57	74	23	97	-41%

Apart from children, the main other at-risk groups are pedestrians, cyclists and motorcyclists. Table 4.12 below summarises some of the analysis looked at earlier. In summary, Southend has a high number of cyclist casualties with a fairly low reduction in casualty numbers of the years, and a low reduction in motorcyclist casualties, though not too dissimilar to other areas.

Table 4.12 – Casualty reduction for at-risk groups

Road user group	1994-98 average	2008	% reduction in Southend	% reduction in Thurrock	% reduction in Luton	% reduction in region
Pedestrians	152	107	-30%	-39%	-26%	-32%
Cyclists	109	67	-39%	-53%	-45%	-37%
Motorcyclists	65	54	-17%	-28%	+6%	-12%

Table 4.13 below shows the actual numbers of KSI's. The numbers are fortunately quite small and so this makes definitive conclusions difficult. However, it does seem that Southend does not have a particular issue relative to other areas, with motorcyclist casualties actually being considerably lower.

Table 4.13 – KSI casualties for at-risk groups in 2008⁵⁹

	Southend	Thurrock	Luton
Pedestrians	18	15	27
Cyclists	5	4	5
Motorcyclists	15	24	20

⁵⁸ Source. Road Casualties Great Britain 2008

⁵⁹ Source. Road Casualties Great Britain 2008

If the reduction since the 1994 to 1998 baseline is analysed, Southend has done remarkably well, with the highest reductions for each of the at-risk groups, though again the numbers are quite small and can vary significantly from one year to the next.

Table 4.14 – KSI casualty reduction for at-risk groups⁶⁰

Road user group	1994-98 average	2008	% reduction in Southend	% reduction in Thurrock	% reduction in Luton	% reduction in England
Pedestrians	39	18	-54%	-35%	-25%	-42%
Cyclists	17	5	-70%	-69%	-37%	-31%
Motorcyclists	17	15	-12%	+4%	+43%	-9%

If figures for casualty rate for all casualty severities are used rather than actual numbers, it once again suggests that Southend has a particular issue with cyclist casualties, the rate being more than twice that in Luton or Thurrock. Southend also has the highest pedestrian casualty rate and is more than double the rate in Thurrock and almost double the rate in the region. In contrast, the casualty rate for motorcyclists is very similar to the other areas analysed in Table 4.15.

Table 4.15 – Casualty rate (all severities) per capita⁶¹ for at-risk groups (2008)

Mode	Southend	Luton	Thurrock	Region	England
Pedestrians	0.65	0.6	0.31	0.34	0.48
Cyclists	0.41	0.19	0.17	0.28	0.29
Motorcyclists	0.33	0.27	0.34	0.37	0.38

The high casualty rate for cyclists in 2008 is partly a result of the low reduction in the rate since the 1994 to 1998 baseline; similarly for pedestrians.

Table 4.16 – Reduction in casualty rate (all severities) per capita⁶² for at-risk groups (2008)

Mode	Southend	Luton	Thurrock	Region	England
Pedestrians	-30%	-29%	-46%	-38%	-35%
Cyclists	-38%	-47%	-59%	-43%	-37%

⁶⁰ Source. Road Casualties Great Britain 2008

⁶¹ Per 1,000 head of population

⁶² Per 1,000 head of population

Motorcyclists	-17%	-4%	-36%	-20%	-17%
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4.3.7 Summary of Accident Data

The following is a summary⁶³ of casualty rates for the three year period of August 2006 to July 2009. It should be borne in mind that high percentages can be obtained when dealing with low numbers.

Pedestrians

- 34.7% (82) of all KSI casualties are pedestrians.
- 41.5% (34) of all KSI pedestrian casualties are aged between 5 and 16 years old.
- 23.2% (19) of all KSI pedestrian casualties are aged over 65 years old.
- 33.1% (80) of all slight pedestrian casualties are aged between 8 and 16 years old.

Motor Cyclists

- 22.5% (53) of all KSI casualties are motor cyclists.
- 17.0% (9) of all KSI motor cyclist casualties are aged between 16 and 19 years old.
- 35.8% (19) of all KSI motor cyclist casualties are aged between 20 and 24 years old.
- 32.1% (17) of all KSI motor cyclist casualties are aged between 30 and 49 years old.
- 38.1% (48) of all slight motor cyclist casualties are aged between 30 and 49 years old.
- 41.3% (55) of all slight motor cyclist casualties are aged between 16 and 24 years old.

Pedal Cyclists

- 10.2% (24) of all KSI casualties are pedal cyclists.
- 20.8% (5) of all KSI pedal cyclist casualties are aged between 30 and 39 years old.
- 22.5% (40) of all slight pedal cyclist casualties are aged between 12 and 15 years old.
- 15.7% (28) all slight pedal cyclist casualties are aged between 30 and 39 years old.

⁶³ Southend-on-Sea Accident and Casualty Trends September 2009

Car Drivers

- 17.4% (41) of all KSI casualties are car drivers.
- 14.6% (6) of all KSI car driver casualties are aged between 17 and 19 years old.
- 17.1% (7) of all KSI car driver casualties are aged over 65 years old.
- 39.3% (590) of all slight casualties are to car drivers.
- 27.8% (147) of all slight car casualties are aged between 17 and 24 years old.
- 49.8% (293) of all slight car casualties are aged between 25 and 49 years old.

Car Passengers

- 11.9% (28) of all KSI casualties are car passengers.
- 32.2% (9) of all KSI car passenger casualties are aged between 17 and 24 years old.
- 28.6 (8) of all KSI car passengers casualties are aged between 40-49 or over 65 years old.
- 18.3% (275) of all slight casualties are car passengers.
- 31.3% (85) of all slight car passenger casualties are aged between 17 and 24 years old.

Occupants of Buses and Other Vehicles

- Occupants of buses and other vehicles represent 5.6% (98) of all casualties in the Borough. There is one notable result.
- 55% (26) of all slight bus occupant casualties are aged 50 years old and over.

4.3.8 Accident locations

The Eurorap analysis for 2009 rated all A roads in the country as being between low and high risk. Only the A13 showed up as having a slight problem, being rated as a low to medium risk.

Looking at Figure 4.4, this seems to be borne out. The A13 London Road has a number of accidents along its entire length, through Leigh on Sea, Westcliff and into Southend. The A127 Southend Arterial Road also has a high number of accidents, though they seem to be more clustered at major junctions, notably with the A1015 Rayleigh Road, B1013 Nestuda Way, and A1159 Manners Way. The north side of the town centre also has a concentration of injury accidents, notably on Short Street / Chichester Road, and the roundabouts on the A13 Queensway.

Figure 4.4 – Location of traffic accidents

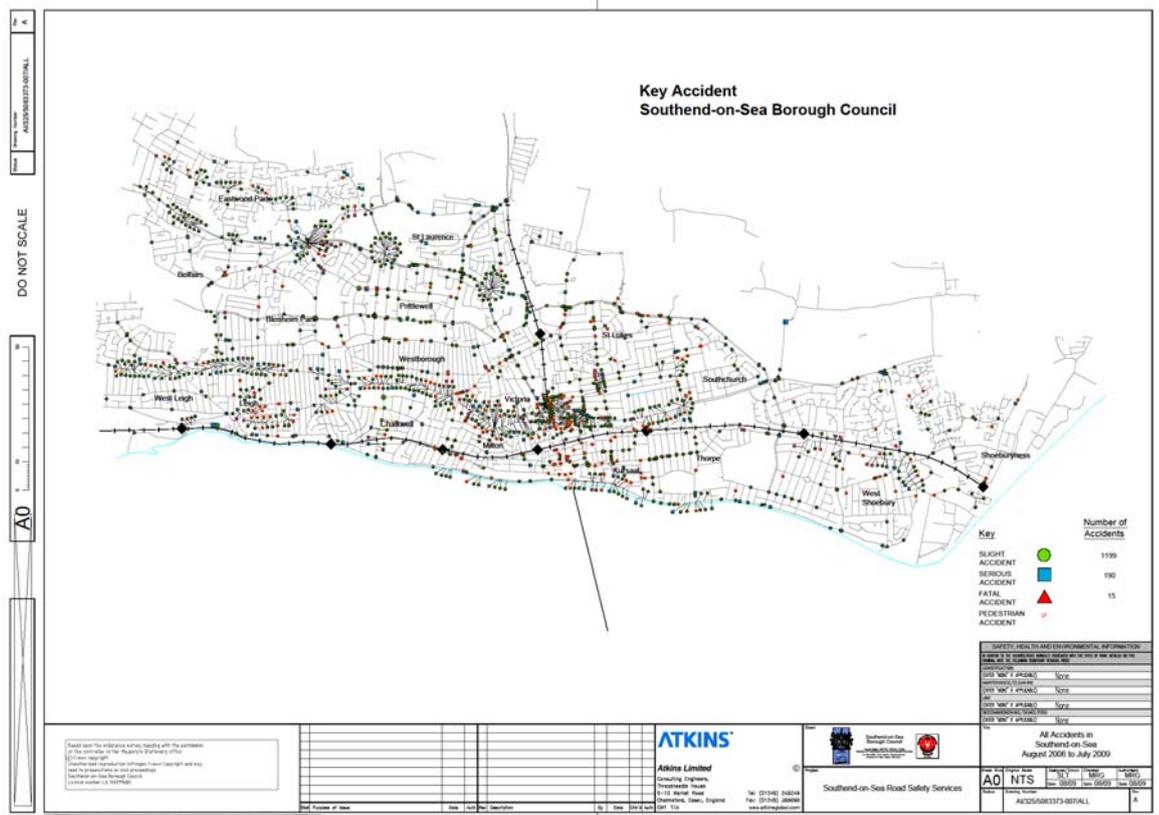
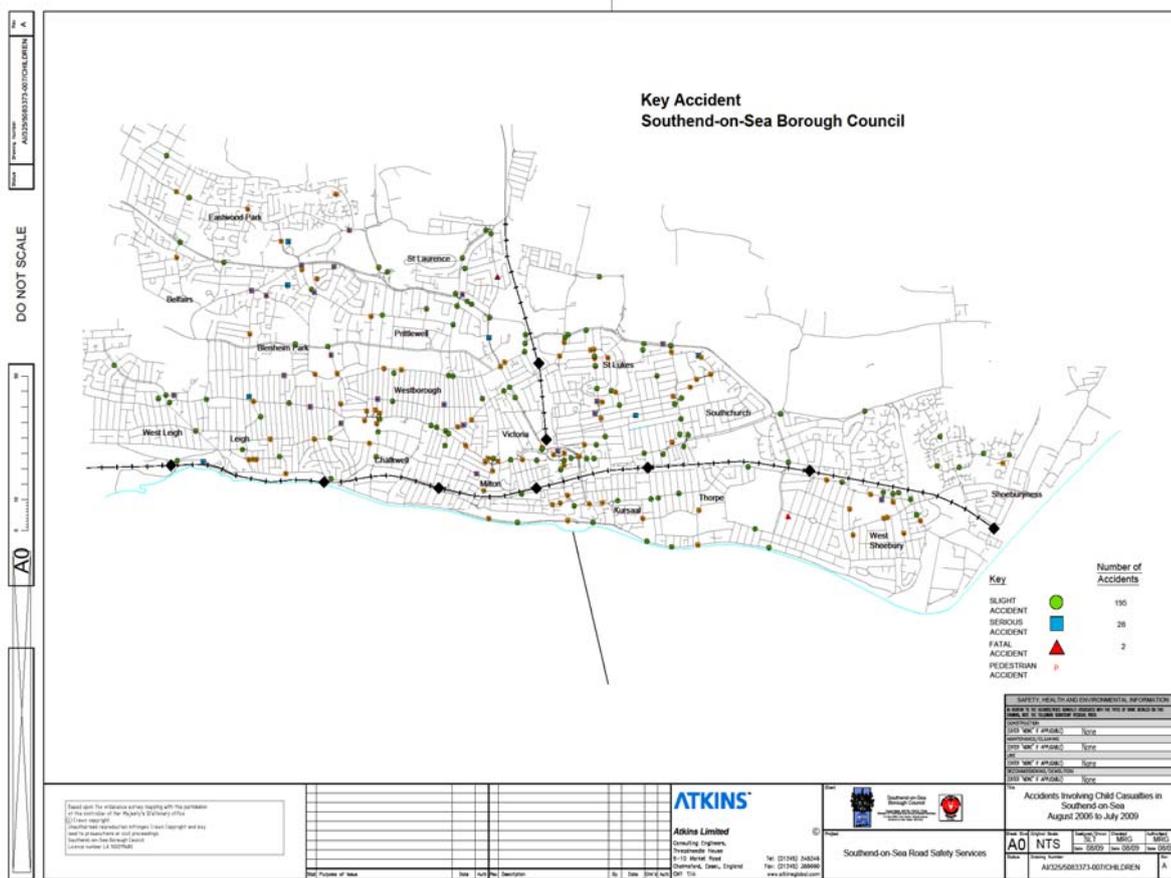


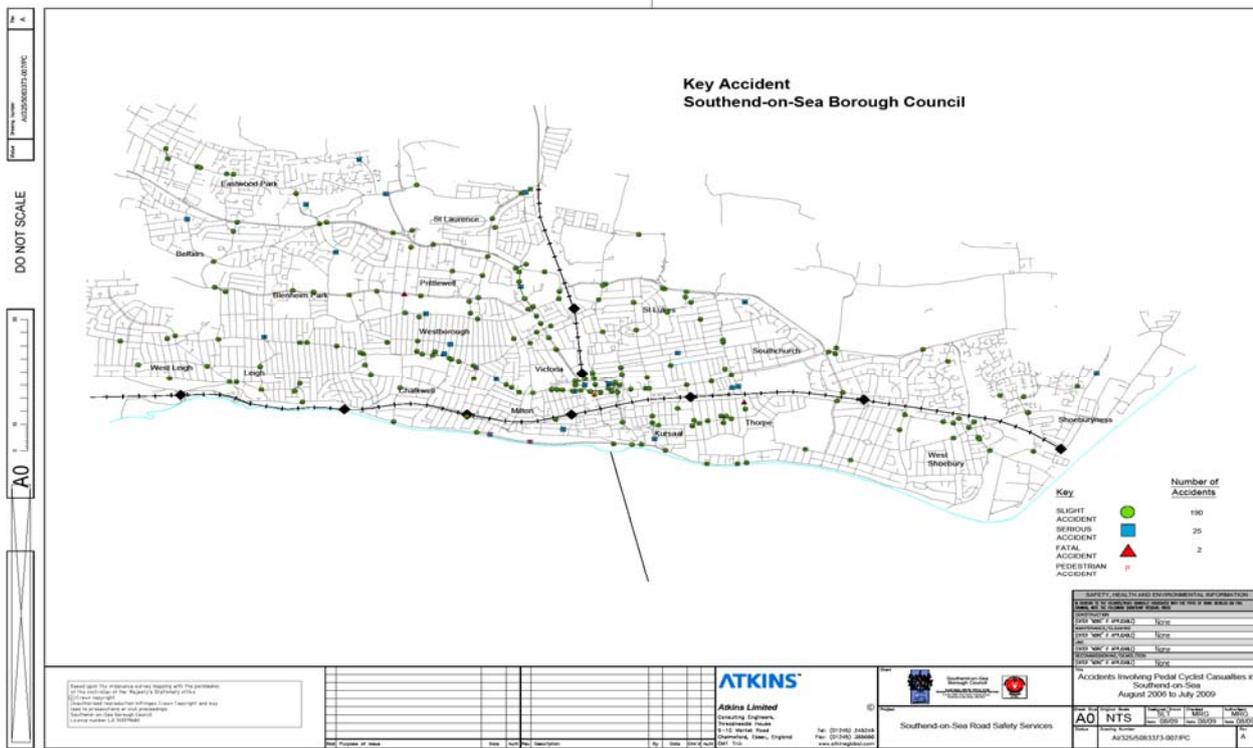
Figure 4.5 shows accidents involving child injuries. This does not seem to show any particular clustering, although the accident locations tend to get slightly denser towards the town centre, especially on the A13 London Road and on the north side of the town centre.

Figure 4.5 – Location of road traffic accidents involving child injuries



Pedestrian accidents shown at Figure 4.6 tend to cluster in very clear areas. Apart from in the centre of Leigh on Sea, the main cluster is Southend town centre, especially along Chichester Road and south of the railway. Further areas where the accidents are denser are along the A13 London Road from the junctions with the B1015 West Road towards the centre, and other areas close to the town centre such as St Lukes and Kursaal.

Figure 4.7 – Location of cyclist accidents



4.3.9 Personal security and transport

National evidence has indicated that personal security is notably influenced by a number of transport factors, namely staffing at stations.

The Secure Stations Scheme is an accreditation scheme operated by the Department for Transport. The scheme was started in 1998 and is open to the operators of any rail network policed by the British Transport Police. Each station is assessed separately; operators may choose to opt-in or out of the scheme from time to time and accreditation for stations may lapse.

The criteria for accreditation cover four key areas:

- Design of the station.
- Management of the station.
- Management of crime levels.
- Passenger perception of security.

The Department for Transport's website lists accredited stations, including those shown in Table 4.17. The only two in the area are Southend Central and Southend East, out of nine stations.

Table 4.17 – Factors related to perceived personal security at rail stations⁶⁴

	Staffing	CCTV coverage	Secure station accreditation
Southend Central	Part time to late evening	Within station and cycle storage	✓
Southend Victoria	Full time	Within station and cycle storage	
Southend East	Part time to early evening weekdays and mid afternoon weekends	Within station	✓
Prittlewell	Part time to early afternoon weekdays/ Saturday, closed Sunday	Car park and cycle storage	
Westcliff	Part time to late evening weekdays and mid afternoon weekends	Within station and car park	
Thorpe Bay	Part time to early evening weekdays and mid afternoon weekends	Within station and car park	
Shoeburyness	Part time to late evening weekdays and late afternoon weekends	Within station, car park and cycle storage	
Chalkwell	Part time to late evening weekdays and late afternoon weekends	Within station	
Leigh	Part time to late evening weekdays and early evening weekends	Within station and car park	

In terms of secure stations accreditation, this does not compare especially well with other areas. More than half of stations in Essex have accreditation, whilst more than half in Luton / Bedfordshire have accreditation.

How safe people feel in their area is also a key transport consideration as people may walk for an entire journey or walk to a bus stop / train station. The 2008 Place Survey assessed perceptions of neighbourhood safety. During the day, almost nine in ten of those providing a valid response (87%) reported feeling safe, including 44% of respondents

⁶⁴ Source. www.dft.gov.uk and www.networkrail.co.uk

who feel very safe. However at night this proportion fell by almost half, with 36% feeling fairly or very unsafe after dark. 12% feel very unsafe.

Although a concern, this compares quite well with Luton. In Luton during the day, only 80% stated that they felt either very or fairly safe, while 9% feel unsafe to some extent. However at night the proportion who felt safe fell to 35%, while 45% stated that they felt unsafe.

Respondents in all areas generally report feeling safe during the day, with 84%-89% of respondents from all areas reporting that they feel safe during this time. Respondents who live in the West feel safest after dark, with over half (56%) feeling safe there, compared to around two fifths in South Central, North Central and East.

Figure 4.8 below shows how the proportion of respondents who feel safe during the day varies by ward. The highest scoring wards for this indicator are Eastwood Park, St. Laurence, Belfairs, Leigh and Thorpe; the lowest scoring is Kursaal. It is interesting to note that Kursaal ward also featured in terms of pedestrian and cyclist accidents (see earlier section).

Figure 4.8 – Proportion of respondents who feel safe during the day – breakdown by geography

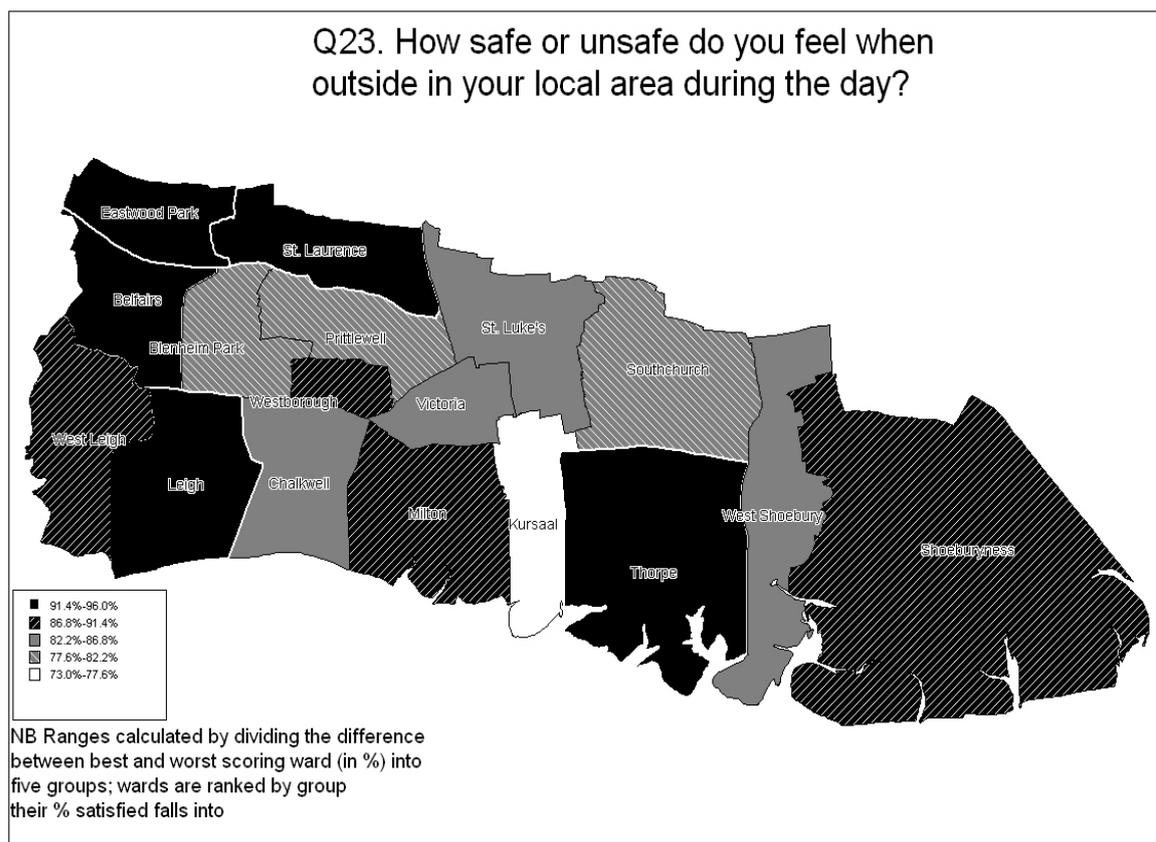
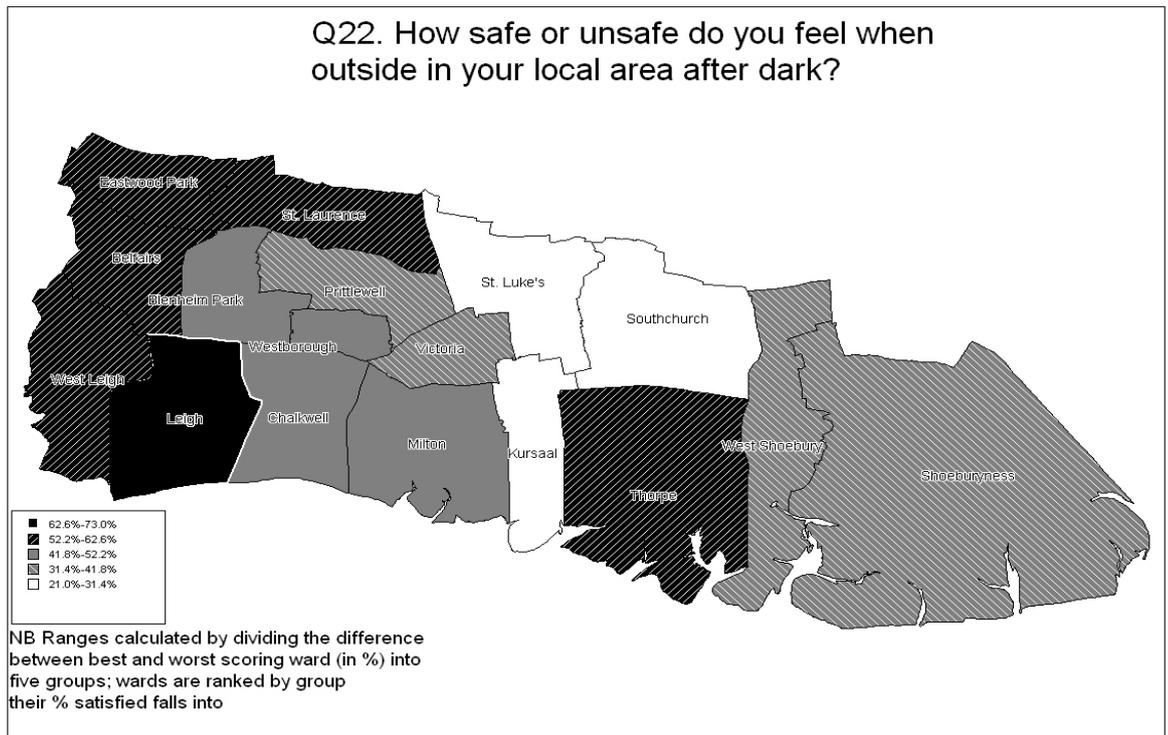


Figure 4.9 shows how the proportion of respondents who feel safe after dark varies by ward. The highest scoring ward for this indicator is Leigh; the lowest scoring wards are St. Luke's, Kursaal and Southchurch.

Figure 4.9 – Proportion of respondents who feel safe after dark – breakdown by geography



4.3.10 Public safety and transport

The Essex Resilience Forum has produced a Community Risk Register to identify the main risks facing Essex. This includes safety risks to Southend associated with its transport system or transport accidents, of which there are 13.

The main roads from London to Southend are A13 and A127. When these or any other major roads are blocked for any reason, the consequential impact on the surrounding areas can be dramatic. It is not unusual for places to become grid locked for a time, causing safety concerns. With the increase in traffic through residential areas, necessitated by diversions, there is also an enhanced risk of accidents involving vehicles carrying hazardous cargos. This risk has been assessed as 'medium'.

The forum has also identified risks associated with the runway at the airport. The runway could have risk implications for other transport links within the immediate area as at one end the approach to the flight path crosses the Liverpool Street to Southend Victorian railway line; and at the other, the A127 Southend Arterial Road is located a short distance beyond the runway thresh-hold. However on balance, this does not seem to be an issue for the Local Transport Plan. Similarly, those transport accident related risks associated with maritime or railway accidents are not issues for the Local Transport Plan.

4.4 Conclusions / SWOT

Safety and Security

Strengths

- There has been a good reduction in the number of people slightly injured, and killed or seriously injured, as well as children killed or seriously injured, with steady reductions over the years. The reduction in fatalities is less impressive but still reasonable.
- Compared to similar areas, relatively few car occupants become casualties, with the reduction being good over the years, including a 100% reduction in children killed or seriously injured as car occupants.
- Compared to national levels, no roads are at a particularly high risk in terms of the rate of killed or seriously injured accidents.
- CCTV coverage is good within public spaces at railway stations, which should enhance feelings of personal safety.

Weaknesses

- The accident rate, whether measured by population or traffic volume, is high, with only average reductions evident.
- There is a high casualty rate for pedestrians and cyclists, especially child cyclists with quite low reductions over the years.
- A relatively high number of motorcyclists are casualties.
- A relatively high proportion of accidents involve 17-19 year olds.
- All children killed or seriously injured were either pedestrians or cyclists in 2008.
- Only two of the nine rail stations have secure stations accreditation and there is little staff cover at stations after dark during the weekend. CCTV coverage outside stations is patchy, including covering cycle storage.

Opportunities

- The relatively good reduction in the number of pedestrians or cyclists killed or seriously injured can be used as a platform for an improved reduction in all severities for these at-risk groups.
- Although the reduction in motorcyclist casualties is low, it is reasonable compared to the performance of other areas. This relatively good performance can be used as a platform for further more vigorous progress.
- The London Road A13 and the Southend Arterial Road A127 both have significant numbers of injury accidents. This clustering could enable the development of targeted route interventions.

- Child accidents tend to get a little denser towards the town centre, which could offer an opportunity for area-wide based approaches to accident prevention.
- The same is the case for pedestrian and cyclist accidents, although there are clearer patterns. Both have significant numbers on the A13 London Road and around the Kursaal ward, and pedestrian accidents have a strong concentration in the town centre.

Threats

- The road safety issues around the safety of pedestrians and cyclists could hamper efforts to deliver modal shift, including children on the school run.
- The London Road A13 and the Southend Arterial Road A127 both have significant numbers of injury accidents. This will add to the levels of congestion and low average traffic speeds evident on these key routes. This could also increase risks to public safety in surrounding residential areas as traffic diverts.
- The significant clustering of accidents on the north side of the town centre could have an adverse impact on its regeneration.
- There is little obvious clustering of child injury accidents, with the possible exception of the area on the north side of the town centre, which might make traditional engineering approaches to accident prevention less effective.
- Potential risks to personal security at many rail stations might deter people from using the train for some journeys, which could either reduce accessibility or increase car dependency.
- Although feelings of personal safety are better than comparable places, it is still a particular issue after dark, which could adversely impact on accessibility opportunities for vulnerable and equality groups, as well as increase car dependency, especially in St. Luke's, Kursaal and Southchurch wards.

5. Quality of Life and a Healthy Natural Environment

5.1 Policy Context

In developing new Local Transport Plans, it is important to ensure that it is consistent with the International, National, Regional and Local Policy context. The policies outlined below are those that are considered most relevant to transport. The policy context for additional environmental and quality of life that is not directly transport related will be covered through the Strategic Environmental Assessment.

5.1.1 International

The Air Quality Framework Directive (96/62/EC) on ambient air quality assessment and management defines the policy framework for 12 air pollutants known to have a harmful effect on human health and the environment. The limit values for the specific pollutants are set through a series of Daughter Directives. A new air quality directive (Directive 2008/50/EC) came into force in June 2008, and will be transposed into national legislation by June 2010. The Environmental Noise Directive (2002/49/EC) relates to the Assessment and Management of Environmental Noise (the Environmental Noise Directive). It concerns noise from road, rail and air traffic and industry. It focuses on the impacts of noise on individuals, and it complements existing EU legislation which sets standards for noise emissions from specific sources. It requires Member States to make Strategic Noise Maps for major agglomerations along major roads, major railways and major airports within their territories. Action plans will also have to be drawn up and must be designed to manage noise issues and effects including noise reduction if necessary.

5.1.2 National

The driving force behind improving health and quality of life through transport comes from the transport white paper, Towards a Sustainable Transport System (TaSTS), and the delivery plan for the white paper, Delivering a Sustainable Transport System (DaSTS). It outlines that city and regional challenges for health and quality of life include:

- Reduce social and economic costs of transport to public health, including air quality impacts.
- Improve health outcomes for individuals through encouraging and enabling more physically active travel.
- Reduction of noise.
- Minimise the impacts of transport on the natural environment and seek solutions which deliver long-term environmental benefits.
- Minimise the impacts of transport on heritage, landscape and communities.
- Improve the quality of transport integration into streetscapes and the urban environment.

- Improve the journey experience of transport users of urban, regional and local networks including at the interfaces with national networks and international networks.
- Improve access to leisure activity and social contact which enhances people's personal wellbeing and sense of community.

The Air Quality Strategy (2007) sets out a way forward for work and planning on air quality issues. It also reiterates the air quality standards and objectives to be achieved and introduces a new policy framework for tackling fine particles. Furthermore, the strategy identifies potential new national policy measures which modelling indicates could give further health benefits and move closer towards meeting the strategy's objectives. Planning Policy Statement 23 (PPS23) covers systems for pollution control, air quality, water quality and development on land affected by contamination. Planning Policy Guidance Note 13 (PPG13) Transport sets out guidance on reducing the need to travel, especially by private car, and promoting more sustainable transport choices for people and moving freight. Planning Policy Guidance 24 (PPG24) guides Local Authorities in England on the use of their planning powers to minimise the adverse impact of noise. It outlines the considerations to be taken into account in determining planning applications both for noise-sensitive developments and for those activities which generate noise. It explains the concept of noise exposure categories for residential development and recommends appropriate levels for exposure to different sources of noise. It also advises on the use of conditions to minimise the impact of noise. The Government's White Paper on public health, was published in November 2004 with a focus on health promotion and the reduction of health inequalities. The White Paper seeks to 'make it easier for individuals to make healthy choices'. In addressing health inequalities, the solution is to make it easier for individuals from disadvantaged groups to exercise healthier choices. Six priorities were then identified as over-arching, two of which, reducing obesity and improving diet and nutrition and increasing exercise, can be directly related to transport.

5.1.3 Regional

Policy T1 of the East of England Plan expects that its objectives to increase passenger and freight movement by more sustainable modes, while reflecting the functionality required of the region's transport networks, will lead to improved air quality. Policy ENV7 also encourages a reduction in pollution, including emissions, noise and light pollution, and address public health issues by requiring that new development be of high quality which complements the distinctive character and best qualities of the local area and promotes urban renaissance and regeneration. *Healthy Futures*, the Regional Health Strategy for the East of England (December 2005) is defined by a Vision to improve the health of the population and to reduce health inequalities in the East of England. It aims to improve health in sustainable communities, encourage health at key life stages, and improve health in a connected region.

Six high level challenges have been identified by the region in its response to DaSTS. These are:

- Lifestyles – work/life balance;
- Environmental capacity and erosion of the regional landscape;
- Erosion of regional landscape;
- Ecological footprint;
- Tranquillity and noise; and
- Waste disposal.

5.1.4 Local

The Essex, Southend and Thurrock County Sports Partnership, Sportessex, has published a number of strategies in line with the regional framework for sport. The aim of these strategies is to shape the way in which people are introduced to, experience and value sport and how they then incorporate it into their lifestyles. An underlying theme to achieving the sport related objectives is the importance of the associated transport infrastructure that is required for members of the public to participate in activities.

Within Southend, the Sustainable Community Strategy (SCS) aims to 'create a thriving regional centre which celebrates and enriches the community'. Objectives identified within the SCS that relate to the quality of life and health of Southend residents include:

- a) To promote community wellbeing through increased participation in sport and culture.
- b) To increase the number of adults and children who eat a healthy diet and take regular exercise and to reverse the trend in increasing levels of obesity.
- c) To increase the use of public transport, walking and cycling; and to improve road safety.

The following current and planned actions within Southend will help achieve the above objectives:

- a) Increase physical activity levels across key target groups to support improved health outcomes including reduction in obesity levels; Replacement of the Warrior Swim Centre and refurbishment/redevelopment of key locations such as the Priory museum and the Pier.
- b) Development of a South East Essex Obesity and Weight Management Strategy which supports children and adults to become more active, eat a healthy diet and lose weight.
- c) Continued implementation of the cycle network to key locations to provide safe walking and cycling routes; Further investment in public transport infrastructure; Ongoing implementation of the rapid transport scheme within South Essex (SERT).

Southend's Local Area Agreement (LAA) is shaped around seven priorities which form a short term action plan to deliver the SCS. The LAA identifies indicators that can be used to measure progress against the priorities, of which 'people KSI in road traffic accidents' and 'adult participation in sport' are both regularly assessed to monitor performance within the Borough.

Within the Local Development Framework (LDF), the Core Strategy Development Plan Document (DPD) aims to 'Secure a major refocus of function and the long term sustainability of Southend as a significant urban area which serves local people and the Thames Gateway' using a number of strategic objectives. The following strategic objectives (SO) are particularly associated with the quality of life and health of residents in Southend:

- SO13 – Secure the social and physical infrastructure related to improving the health, education, life-long learning and wellbeing of all sectors of the community.
- SO14 – Deliver high quality, well designed and attractive urban and natural environments which are safe, people friendly and distinctive, and which respect and enhance existing character and local amenity.
- Policy CP3 within the Core Strategy DPD relates to Transport and Accessibility and describes how improvements to transport infrastructure will be made by implementing the following:
 - Widening travel choice, particularly by car share, rail, bus, cycling and walking including the completion of National and Regional Sustrans cycle routes and the development of bus priority corridors.
 - Making provision for new modes of passenger transport including South Essex Rapid Transit (*serf*) and potential 'Park and Ride' schemes.
 - Improving road safety, quality of life and equality of access for all.
- The Central Area Masterplan (CAM) has a close relationship with emerging policies within the LDF (particularly regarding the Central Area and Seafront Area Action Plans). This document has been produced by the Urban Regeneration Company for the Borough, Renaissance Southend Ltd. and also highlights the importance of health of residents with the objective to 'facilitate access to and movement in and around Southend Town Centre in a sustainable manner; and to encourage walking and cycling'.

5.2 Data Analysis

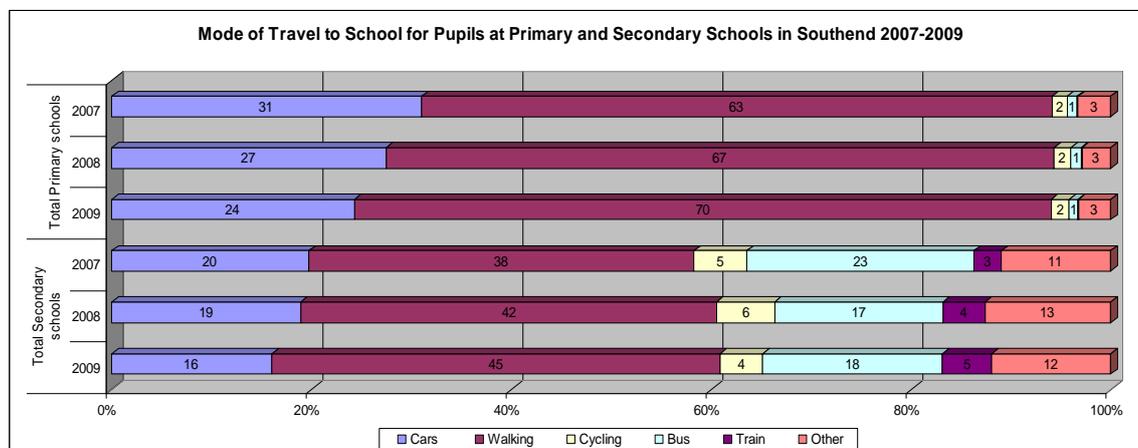
5.2.1 Active travel

Method of Travel to School

Figure 5.1 below indicates that over the past 3 years, there has been a steady increase in the number of school children walking to both primary and secondary schools. This trend

has likely been due to the implementation of school travel plans in the area and the implementation of schemes such as the 'walking bus'.

Figure 5.1 – Mode of travel to school in Southend⁶⁵



NI 198 is defined as: Children travelling to school – mode of transport usually used and is used by Local Authorities to measure the percentage of schoolchildren aged 5-16 that travel to school by car (including vans and taxis). In comparison to the Boroughs of Luton and Thurrock, Southend performs well; with only 22% of school children aged 5-16 travelling to school by car (see Table 5.1). This value is also well within the target set by Southend Borough Council that states that less than 31% of children should travel to school by car, van or taxi.

Table 5.1 – NI 198 Outturn for Southend and peer authorities (2008/2009)⁶⁶

	Southend	Brighton	Luton	Thurrock
NI 198	22.0% (2008/09)	Data not available	26% (2008/09)	27.7% (2007/08)

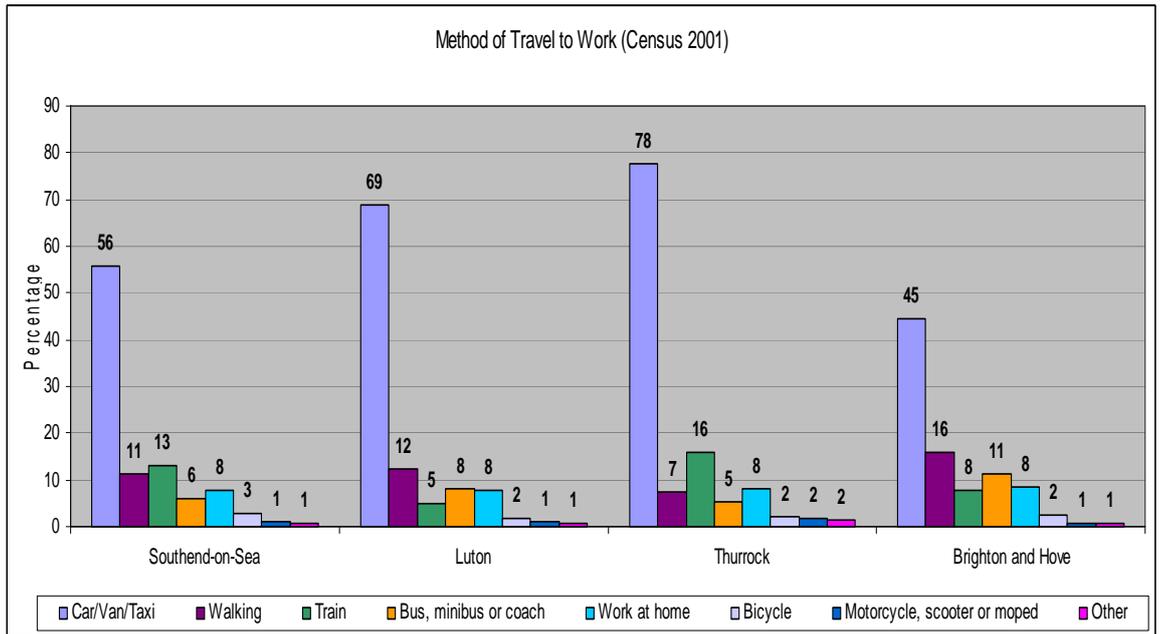
Method of Travel to Work

The 2001 census data indicates there were less people travelling to work by car in Southend than in Luton or Thurrock. Residents therefore use more sustainable means of transport such as train, bus, cycling and walking in the Borough than those in peer Authorities Luton and Thurrock. However compared to Brighton, Southend does not perform quite so well, with only 45% of people travelling to work by car in Brighton compared to 56% in Southend.

⁶⁵ Source: Raw data has been taken from the Schools census (DCSF)

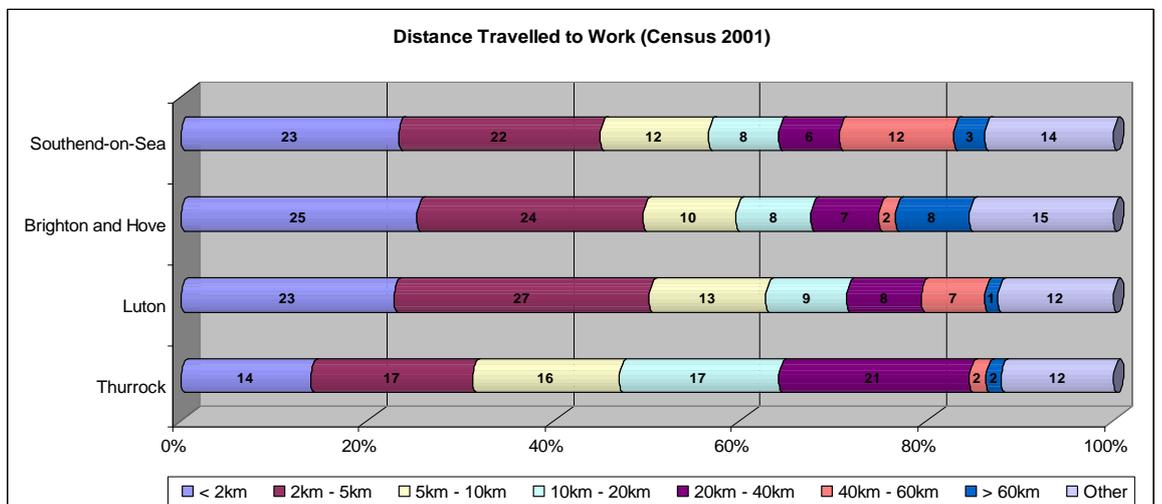
⁶⁶ Source: Luton Council website; Thurrock Council website; Southend - in house source.

Figure 5.2 – Method of travel to work⁶⁷



Distance Travelled to Work

Figure 5.3 – Distance Travelled to work by residents in employment within each Borough and are between the ages of 16-74⁶⁸



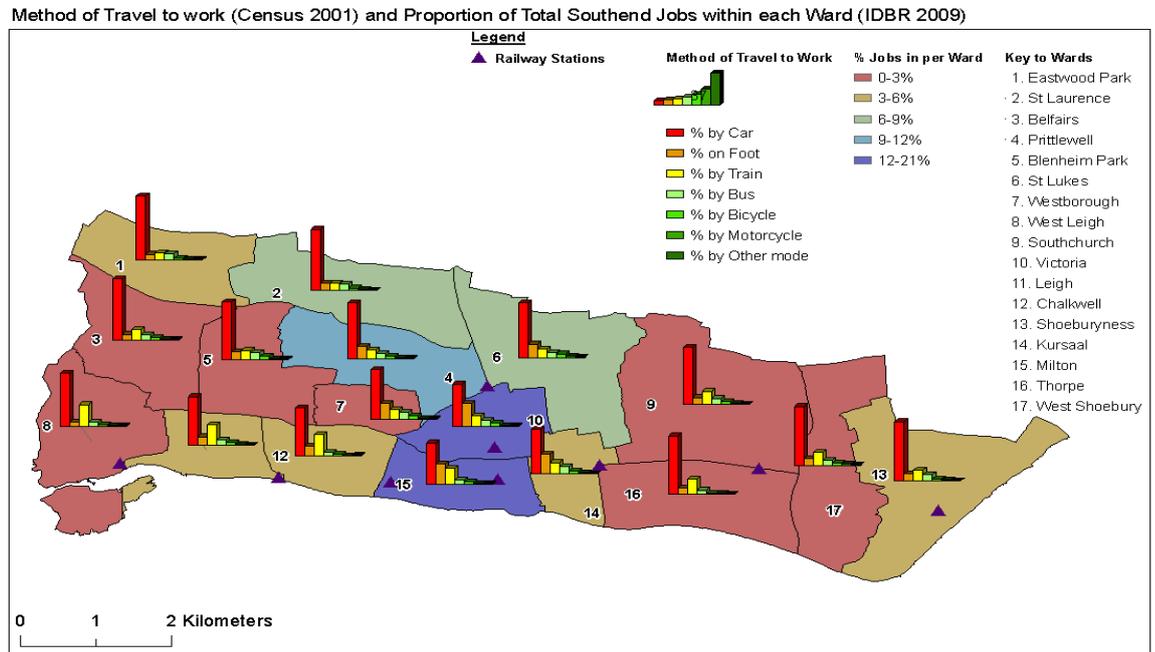
There is a relatively high proportion (23%) of residents that travel less than 2km to work. This would indicate there is either work available in the ward they live in or the immediately surrounding areas. The majority of the 15% of residents who travel 40 or more kilometres to work are likely to account for the population within the Borough that commute to London for work. Figure 5.4 shows that a relatively high proportion of people

⁶⁷ Source: 2001 Census

⁶⁸ Source: 2001 Census

travel to work by train within the wards of West Leigh, Leigh and Chalkwell. This is consistent with the locality of railway stations from which commuters use the C2C service to London.

Figure 5.4 – Method of travel to work and proportion of jobs in each ward⁶⁹

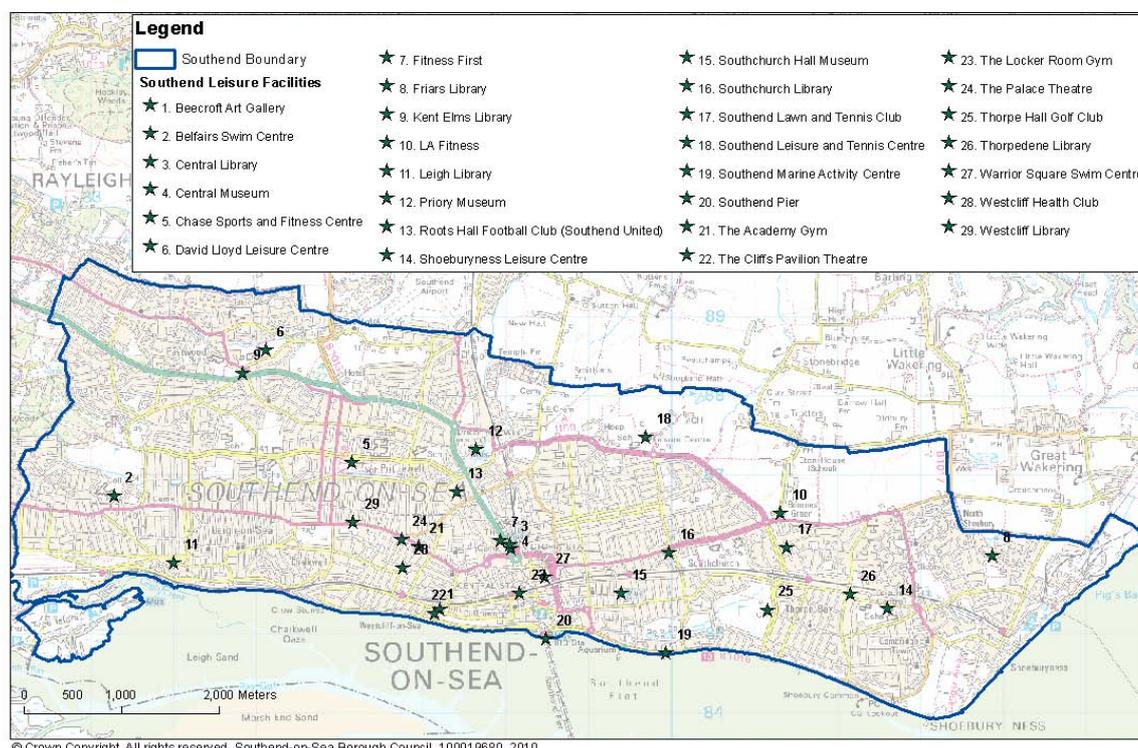


5.2.2 Access to leisure

Figure 5.5 shows the location and frequency of leisure facilities in the Borough. This includes two theatres, seven libraries, various museums and activities centres along with five leisure centres run on behalf of the council and a number of privately owned fitness centres and gyms. In addition to centres of leisure, there are a number of parks and open spaces that are spread across the Borough.

⁶⁹ Source: 2001 Census and 2009 Interdepartmental Business Register (IDBR)

Figure 5.5 – Leisure facilities within Southend



The Place Survey 2008 (Table 5.2 below) identified that residents were least satisfied with the sports and leisure facilities within the Borough, with only 45% of respondents being satisfied with the service the council provides. Since this survey was carried out, work has begun to build a new diving and swim centre at Garons Park that will eventually replace the swimming pool at Warrior Square. In addition, planning permission has been granted to build a new football stadium to replace that at Roots Hall. The new proposal will be situated on land at Fossetts Farm and will incorporate a 22,000 seat football stadium including 114 bedroom hotel, conference facility, associated food and drink outlets, and 127 flats and 19,881m² of retail space.

Table 5.2 – Extracts from the Place Survey 2008

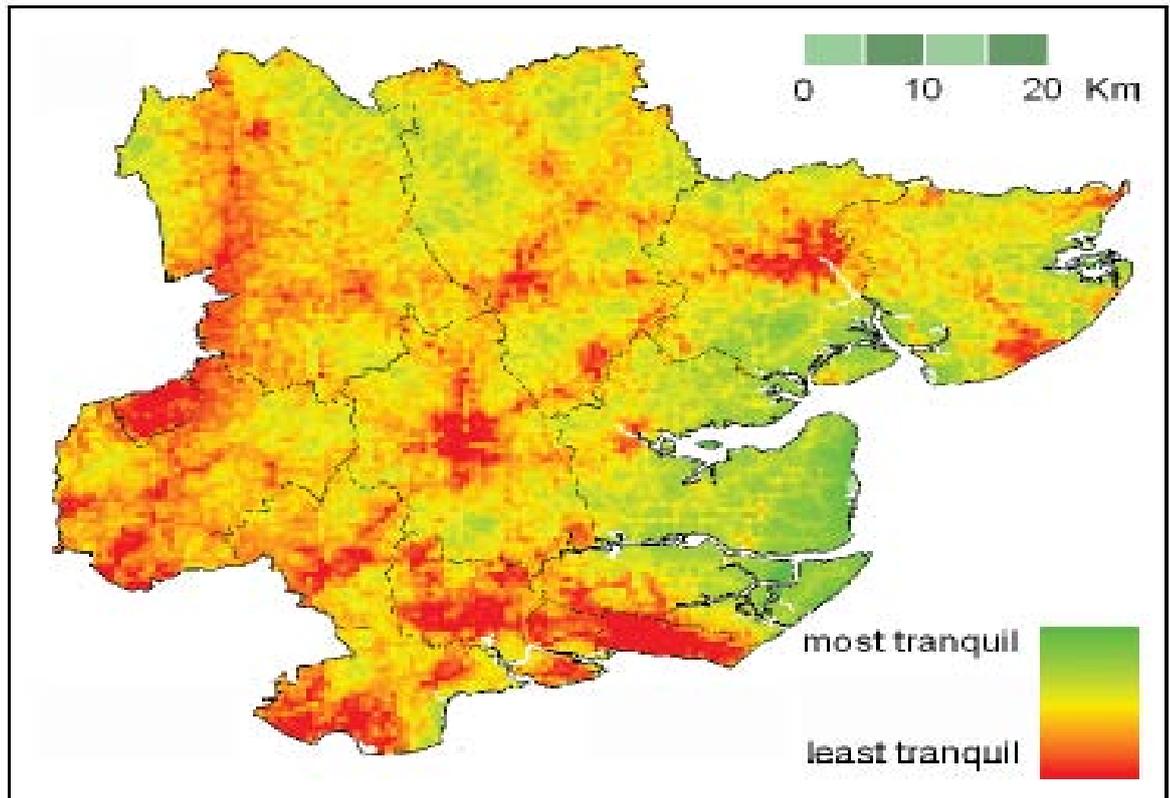
	Used in Past Year	Satisfaction with services (where used)			Consider that the service need improving	Important in making somewhere a good place to live
		Satisfied	Neither	Dissatisfied		
Parks and Open Spaces	87%	80%	13%	7%	8%	33%
Sport/ Leisure Facilities	46%	45%	33%	22%	13%	8%
Theatres/ Concert	59%	72%	19%	9%	7%	13%

Halls						
Libraries	57%	81%	15%	4%		
Museums/ Galleries	36%	56%	34%	11%		

5.2.3 Natural environment

Noise Pollution and Tranquillity

Figure 5.6 – Tranquillity Map of the County of Essex⁷⁰



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Table 5.3 shows that mean tranquillity score for a number of local areas. The higher the number (a positive score), the more tranquil the area is, the lower the number (a negative number), the less tranquil the area is. Southend Borough Council ranks 75th out of 87, which suggests the area is not tranquil. Compared to the similar Authorities of Thurrock and Brighton and Hove Unitary Authorities, Southend is the least tranquil, however when compared to Luton, Southend is more tranquil. There will be threats to tranquillity from increased road capacity and more aeroplane takeoffs and landings.

⁷⁰ Source: <http://www.cpre.org.uk/campaigns/landscape/tranquillity/national-and-regional-tranquillity-maps/county-tranquillity-map-essex>

Table 5.3 – Local Tranquillity Scores

Rank	Local Authority area	Mean Tranquillity Score
1	Northumberland	28.6
30	Essex	-8.15
57	Thurrock	-25.2
60	Brighton and Hove	-37.0
75	Southend	-55.6
85	Luton	-70.8
87	Slough	-79.5

Figure 5.7 below shows the road noise map produced by Defra. Although this map is not derived from direct roadside measurements, it does indicate estimated levels of road noise and its reach across the East of England. Figure 5.8 shows road noise for the Borough. The two roads that are highlighted within the Borough of Southend are the A127 and the A13, which cause noise on certain section above 75 decibels.

Figure 5.7 – Road Noise⁷¹

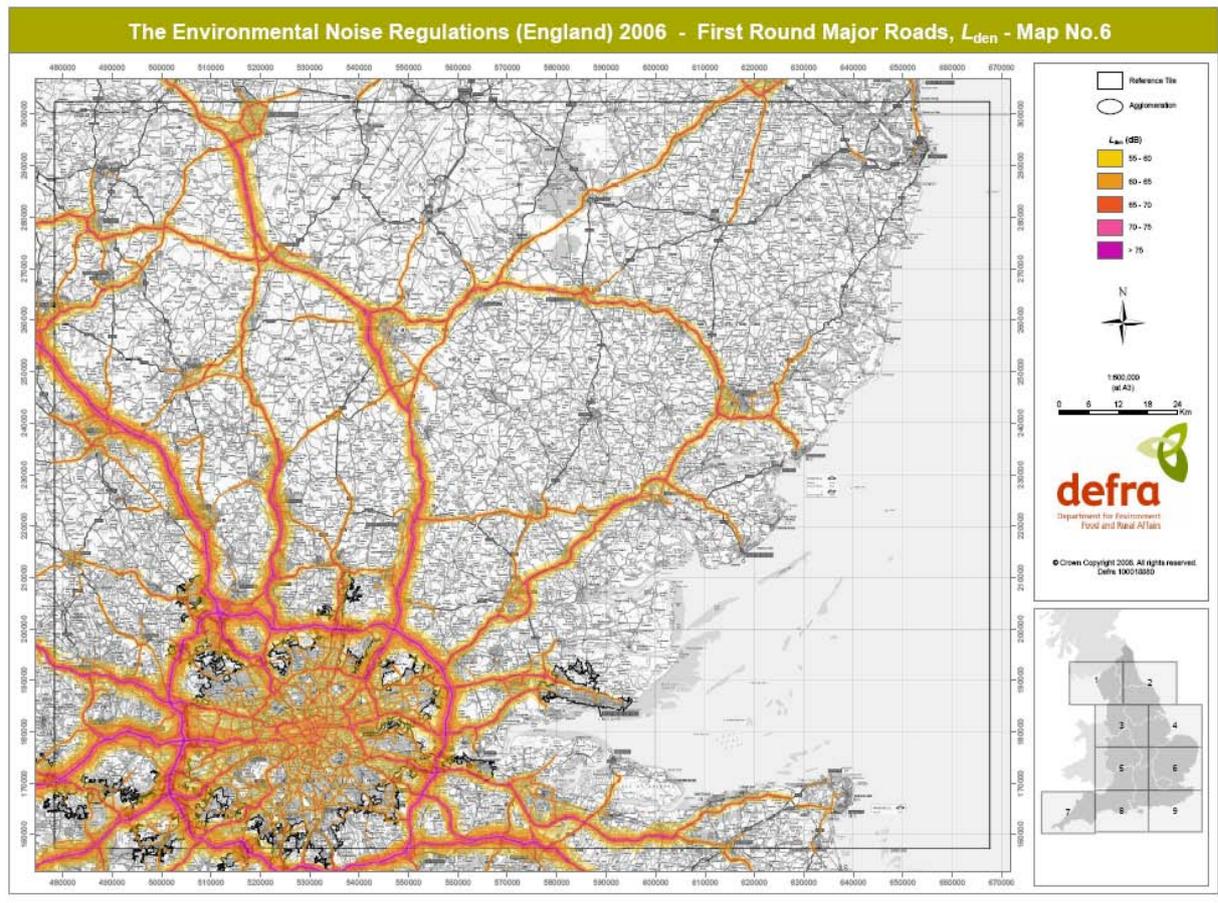


Figure 5.8 – Road Noise in the Borough of Southend⁷²

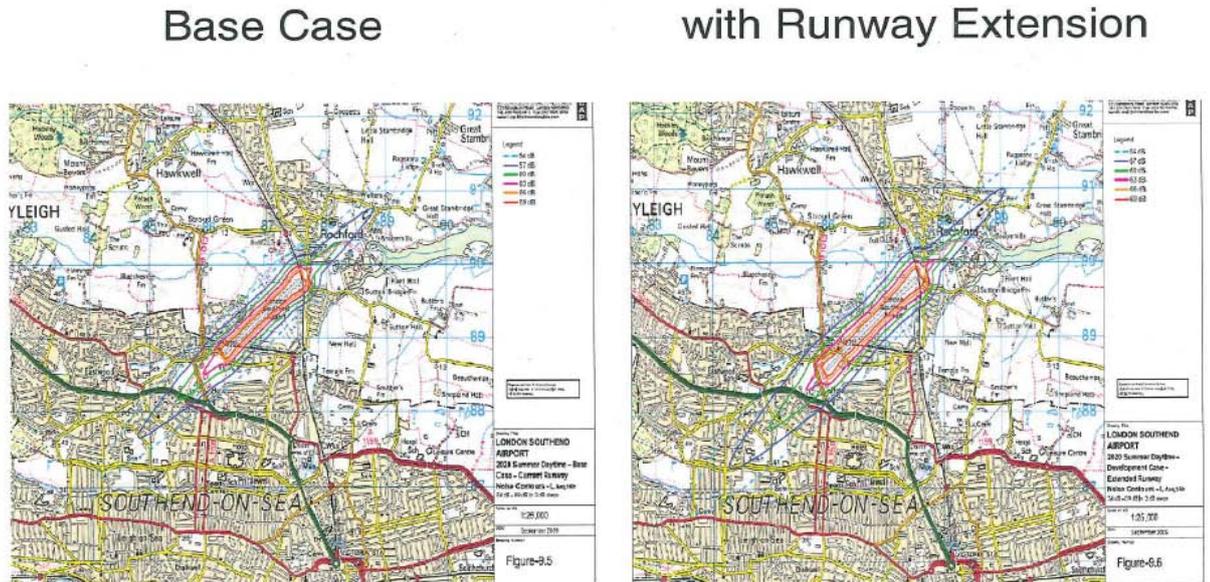


⁷¹ Source: http://www.defra.gov.uk/environment/quality/noise/mapping/transportation/roads/documents/England_Major_Roads_Map_No_6_Lden_300_DPI_A3.pdf

⁷² Source: Defra, noise mapping

There are proposals for London Southend Airport to be extended. Figure 5.9 shows London Southend Airport noise contours before and after the runway lengthening. The proposals increase the area of the noise contours by a diminutive amount.

Figure 5.9 – Noise contours of London Southend Airport⁷³

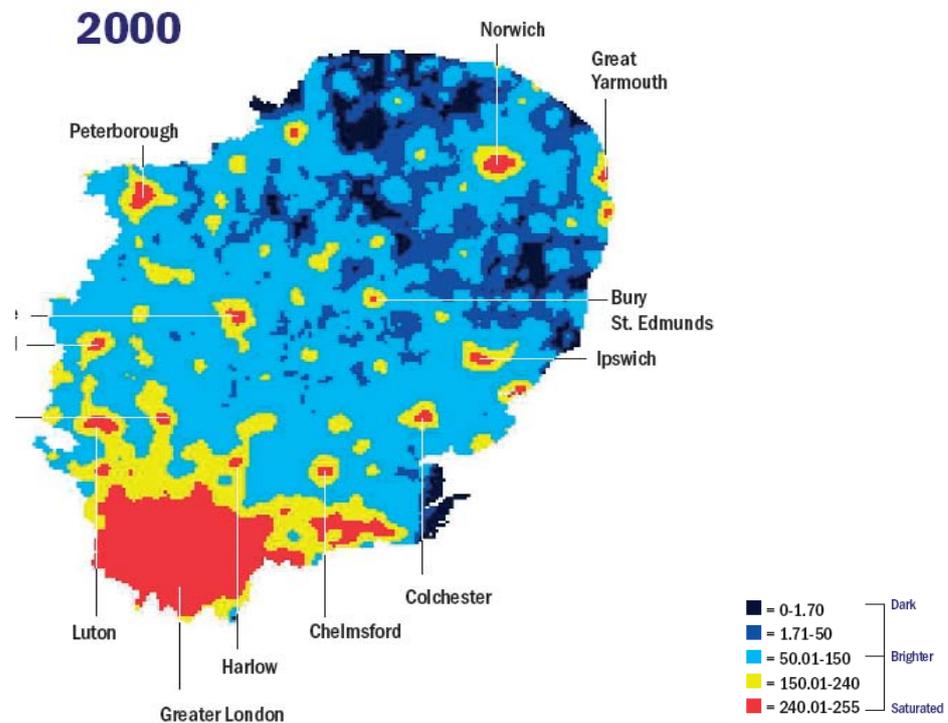


⁷³ Source: Southend Airport Expansion Proposal Document
 Southend-on-Sea Borough Council – Local Transport Plan 3
 Evidence Base – June 2010

Light Pollution

Figure 5.10 below (provided by the Campaign to Protect Rural England) shows the levels of light pollution emitted across the East of England at night during 2000.

Figure 5.10 – Light Pollution



The map was created from pixels representing square kilometres. They are a colour representation of satellite measurements of artificial light at night. The light is measured on a range from 0 to 255; 0 means the satellite is detecting no light in that pixel (dark blue) and 255 means the satellite's detector is saturated with light (red).

Figure 5.10 shows that a large part of Southend, considering Southend's size, suffers from brighter to saturated light pollution.

Southend's Greenspace, Nature Reserves and Protected sites

Protected sites within Southend fall within a variety of different classifications, such as SSSI (Sites of Special Scientific Interest), SPA (Special Protection Areas), Ramsar (European Classification) and Nature Reserves. Many of these overlap each other but are protected for different reasons usually according to the habitat under protection.

The Generalised Land Use Database uses a computerised process to identify different land parcels and in 2005, approximates that 1,316ha of land within the Borough was Greenspace (with a total land area of Southend being 4,146ha). Borough records indicate there are 43 areas designated as parks and open spaces that are spread quite evenly across the town. This implies that most residents would have only a short distance to travel to reach an area of open space for recreation. The JSNA states that there is a link between access to green space and good mental health. Good mental health also

impacts on physical health. According to the Place Survey 2008, the issue of having parks and open spaces within the local area was ranked the fourth most important factor in making somewhere a good place to live. Overall, only 8% of respondents of the Place Survey identified parks and open spaces as requiring improvement.

5.2.4 Experience of travel

Public Transport

The Southend Place Survey (2008) explains the key results of the place survey. Questions asked include:

- What are the most important factors in making somewhere a good place to live?
- Are the levels of crime acceptable?
- How clean are the streets?
- Are you satisfied with the health services?
- How satisfied are you with the public transport services?

Table 5.4 below compares the 2006 and 2008 Place survey results for public transport. The percentage of respondents that are satisfied with both the local bus service and the public information they are provided with, has increased from 2006 to 2008.

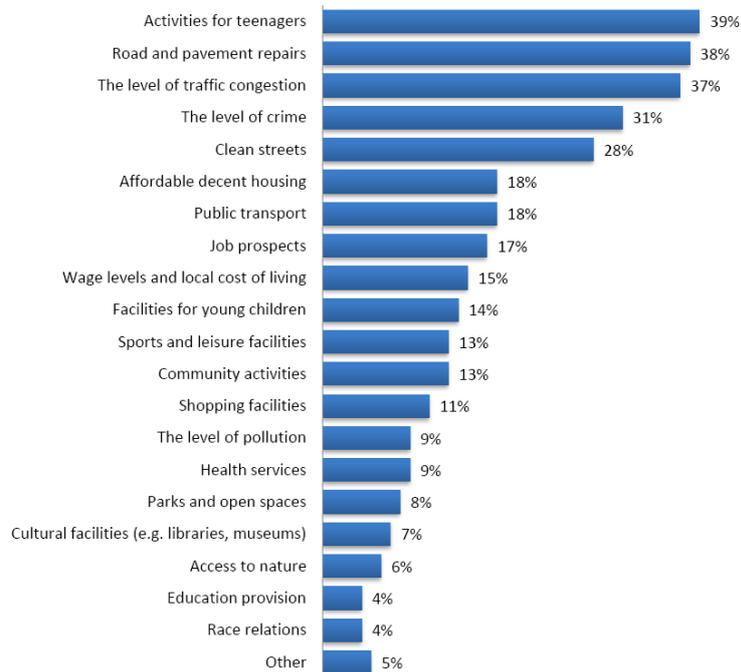
Table 5.4 – Comparison of 2006 and 2008 Place survey Results⁷⁴

Statement	2006	2008
Percentage satisfied with public transport information	46%	49%
Percentage satisfied with local bus service	50%	56%

Figure 5.11 below shows results of the question, “What things do you think need improving in the local area?” 18% of people stated that public transport was one area which needed improving. Public transport rates 6th in the list for areas which need improvement.

⁷⁴ Source: Southend Place Survey (2008)

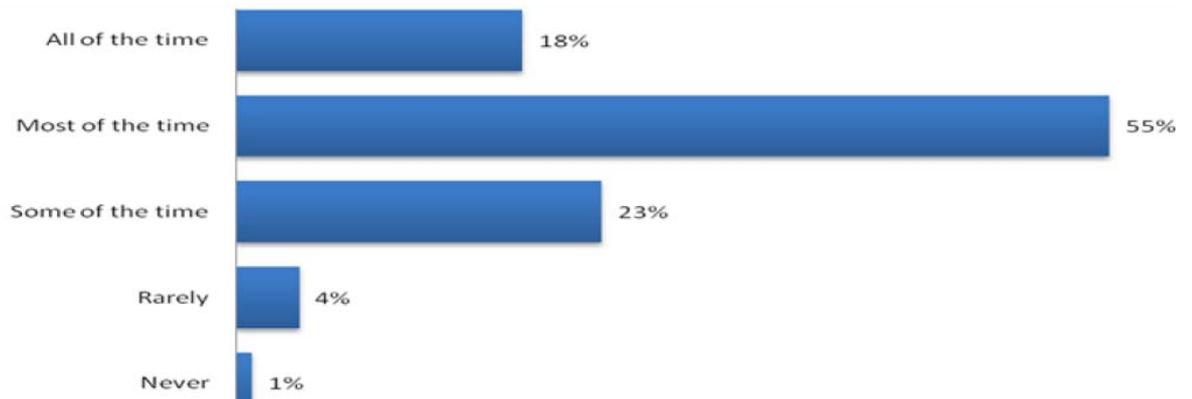
Figure 5.11 – Results for Southend on ‘Things that most need Improving in the Local Area’⁷⁵



N.B. Used an un-weighted sample base of 1,302

Figure 5.12 below shows the results of NI 140, fair treatment by local services, which includes public transport services. The figure shows that just under three quarters (73%) of those providing a valid response, have been treated fairly all or most of the time. Just under a quarter (23%) feel they have been treated fairly by public services some of the time, while fewer than one in twenty feel this has rarely or never been the case.

Figure 5.12 – Results of NI 140, Fair Treatment by Local Services



Road Condition

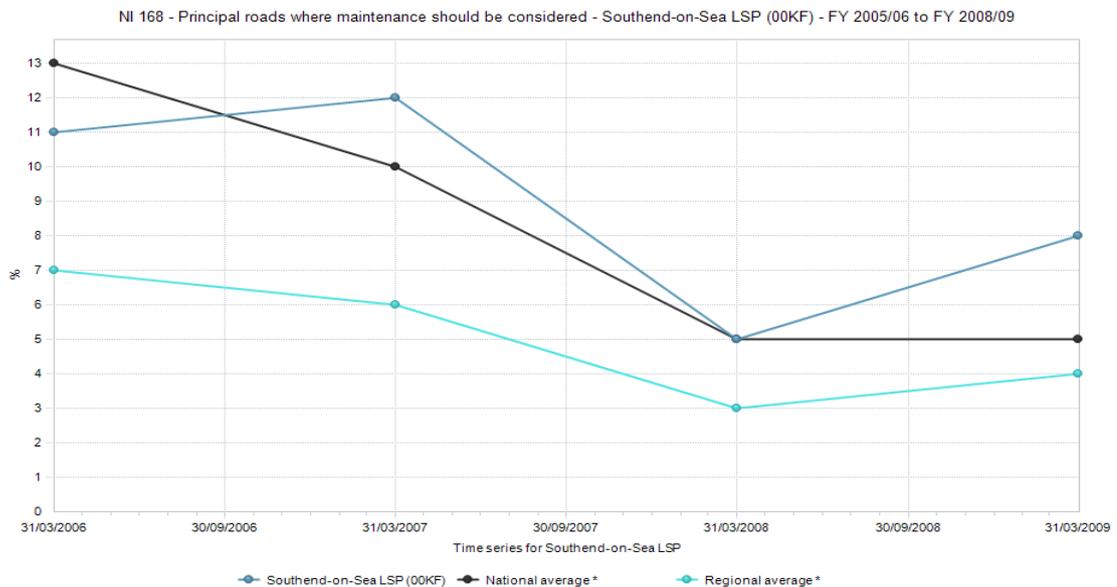
The condition of roads and footways can seriously alter perceptions of journey experience for transport users. The Place Survey (2008) shows that 38% of respondents felt that road and pavement repairs were the second most important area which needs improving.

⁷⁵ Source: Southend Place survey (2008)

Figure 5.13 below shows the percentage of principal roads that require maintenance within Southend compared to the national and regional average between 2006 and 2009. Southend has a higher percentage of principal roads which require maintenance compared both nationally and regionally. The percentage of principal roads which require maintenance within Southend have been fluctuating between 2006 and 2009. The lowest percentage of principal roads in Southend that required maintenance was during March 2008 at 5%; however during 2009 the percentage increased to 8%. The percentage of roads requiring maintenance in Southend since September 2006 has been greater than both the regional and national averages.

Figure 5.14 shows the percentage of principal roads requiring maintenance in Southend (8%) compared to other Local Authorities in the East of England. This shows that during 2008/2009 Southend has the highest percentage of roads that require maintenance.

Figure 5.13 – NI 168, Principal Road Condition Comparing Southend, National and Regional⁷⁶



⁷⁶ Source: DCLG, Places Analysis Tool

Figure 5.14 – NI 168, Principal Road Condition, Comparing Southend to Local Authorities in the East of England⁷⁷

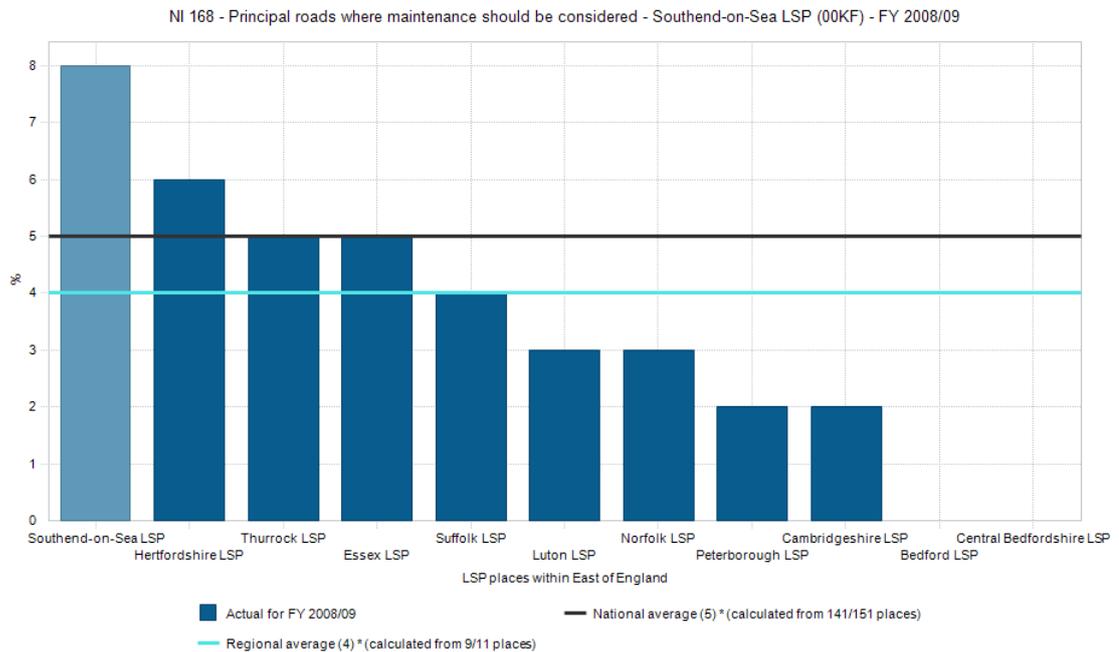


Figure 5.15 below shows the percentage of non-principal roads that require maintenance within Southend compared to the regional and national averages between 2006 and 2009. Compared to the national average Southend has a lower percentage of non-principal roads which require maintenance. From March 2006 to March 2008 Southend had a greater percentage of non-principal roads that require maintenance than the regional average. However, since March 2008 the percentage of non-principal roads in Southend requiring maintenance is lower than both the national and regional averages.

Figure 5.16 shows the percentage of non-principal roads requiring maintenance in Southend (6%) compared to other Local Authorities in the East of England. Compared to the other Local Authorities during 2008/2009 Southend has an average percentage of roads that require maintenance.

⁷⁷ Source: DCLG, Places Analysis Tool

Figure 5.15 – NI 169, Non-Principal Road Condition Comparing Southend, National and Regional⁷⁸

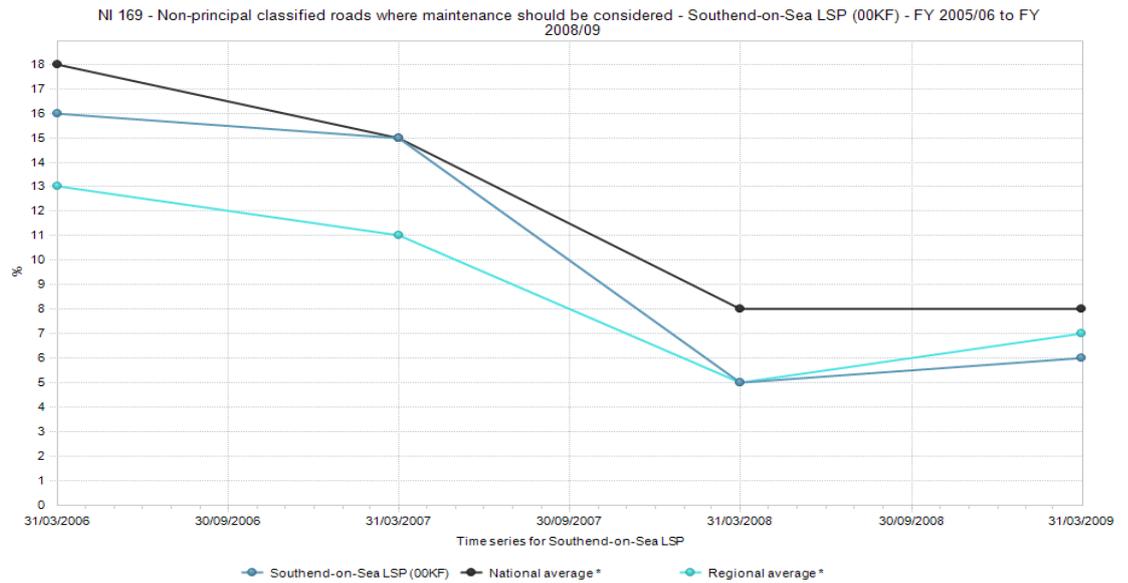
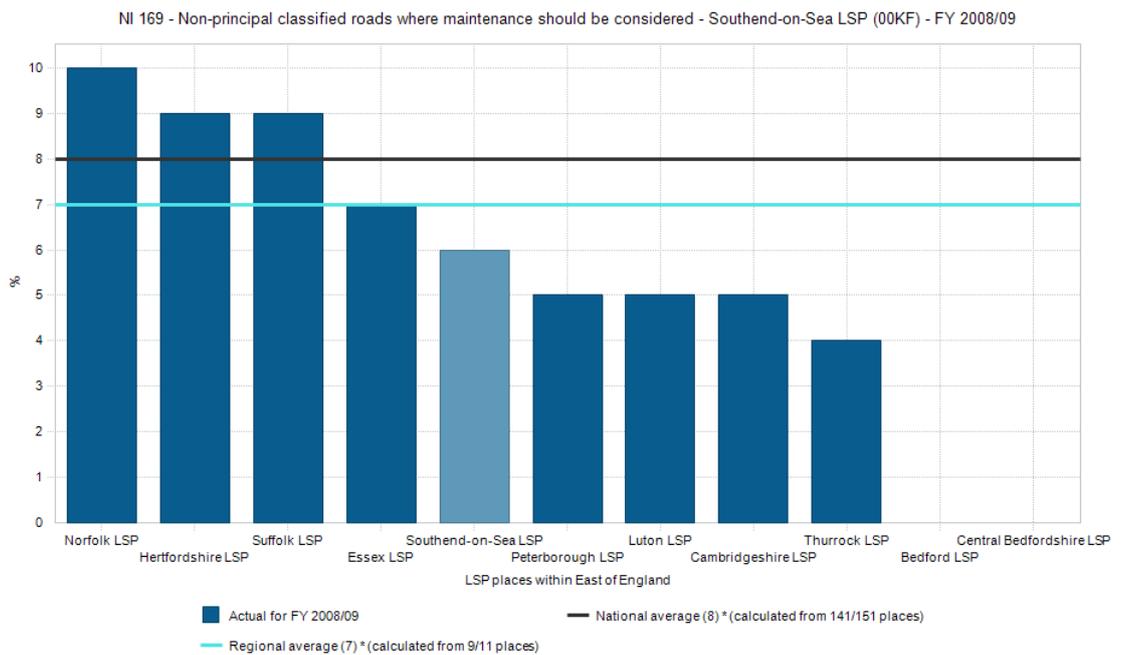


Figure 5.16 – NI 169, Non-Principal Road Condition, Comparing Southend to Local Authorities in the East of England



Quality of Transport Interchange

There are nine stations and two train lines which operate in the Borough. Southend Stations Cycle Parking Audit (November 2009) recorded the number of cycle stands at each of the nine stations in the Borough of Southend. Each station was assigned to one of the six Network Rail categories, see the definitions below.

⁷⁸ Source: DCLG, Places Analysis Tool

- Category A – National hub: Major terminus stations providing access to major centres and connecting major cities across the UK e.g. London Euston, Leeds.
- Category B – Regional hub: Servicing important cities, towns or other business centres e.g. Cambridge, Colchester, Stratford (London).
- Category C – Important feeder: Important regional connections as well as having the capacity and facilities to serve large numbers of passengers e.g. Southend Victoria, Luton, Basildon.
- Category D – Medium staffed: Serving local populations, acting as pick-up points and commuter stations e.g. Southend Central.
- Category E – Small staffed: Serving areas with smaller populations than C and D stations, and mainly acting as pick-up points e.g. Shoeburyness.
- Category F – Small unstaffed.

Table 5.5 below shows the details of each of the nine stations in Southend and includes the number of people that used each station, the number of cycle stands and spaces, and the number of car parking and disabled parking spaces.

The table shows that the station with the most facilities is Leigh-on-Sea Station, which has the most cycle stands and spaces and the most parking and disabled parking spaces. There are three stations, Chalkwell, Southend Central and Southend East which do not provide any designated disabled parking spaces. Prittlewell Station is the only station which does not have a bus stop within the walk distance of 200m, all the other stations provide a good interchange between trains and buses which encourages sustainable transport mode uses to travel to and from the stations. All the stations offer a good amount of cycle parking, but according to the Southend Standards Parking Audit. The nine stations within the Borough of Southend provide good interchanges as the table suggests.

Table 5.5 – Station Details⁷⁹

TOC	Station	Category*	Footfall* (07/08)	Usable cycle stands*	Usable cycle spaces*	Car parking spaces	Disabled parking spaces	Bus stop within 200m
C2C	Leigh-on-Sea	C	1,791,120	44	60	496	5	Y
	Chalkwell	C	1,312,625	8	16	0	0	Y
	Westcliff	F	1,026,443	7	14	50	3	Y
	Southend Central	D	1,929,655	17	34	150	0	Y

⁷⁹ *Source: Southend Stations Cycle Parking Audit document. The rest of the information is from the National Rail website.

	Southend East	D	1,459,251	4	8	207	0	Y
	Thorpe Bay	D	751,675	8	16	73	3	Y
	Shoeburyness	E	599,069	13	24	28	2	Y
NXEA	Prittlewell	E	113,265	4	8	41	1	N
	Southend Victoria	C	3,979,368	22	42	11	1	Y

5.2.5 Wellbeing

National Indicator 5 rates the overall satisfaction within the local area. Southend was awarded a percentage of 82.6, which rates very highly when compared to other Local Authorities, see Table 5.6 for comparisons.

Table 5.6 – National Indicator 5: Overall / General Satisfaction with Local Area

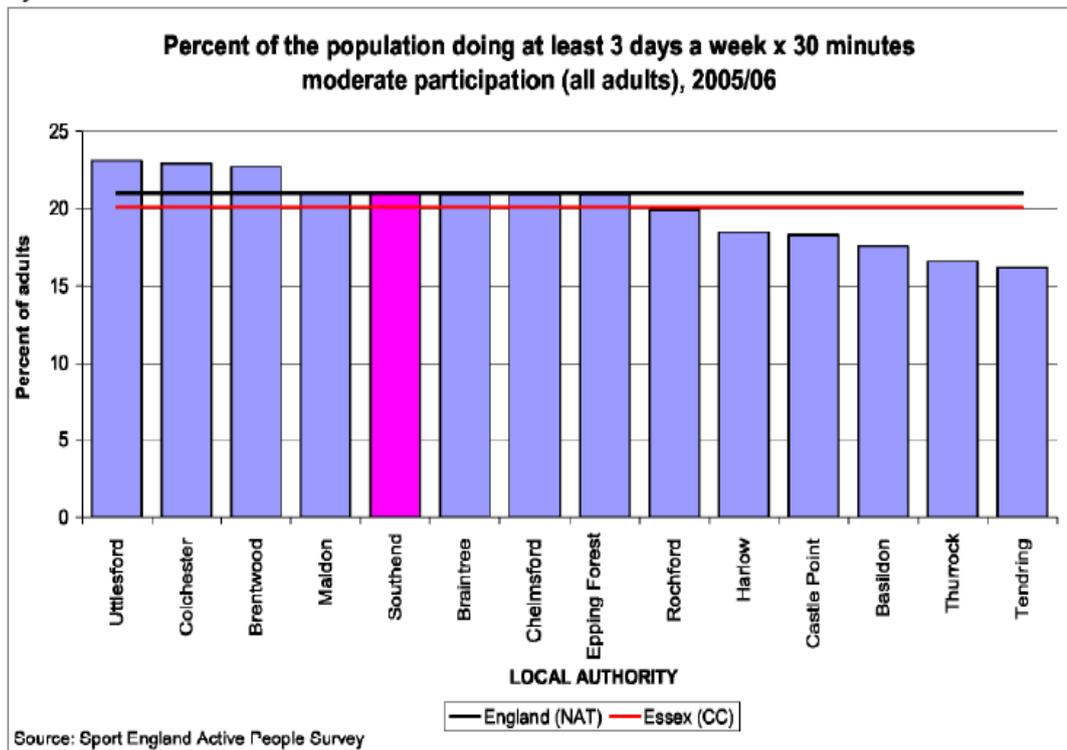
	All Authorities %	All Unitaries %	All counties %	Essex %	Brighton & Hove %	Luton %	Thurrock %	Southend %
Mean	81.2	79.2	84.0	85.2	85.9	72.4	63.9	82.6
Upper Quartile	86.4	84.6	86.0					

Physical Activity

Over the last 25 years there has been a significant decrease in physical activity as a part of daily routines, but a small increase in the proportion of people taking physical activity for leisure in the UK (Faculty of Public Health, 2005). Walking and cycling as a mode of transport has decreased since the 1970s and the dramatic increase in the use of cars has contributed significantly to this.

The Active People survey by Sport England in 2005/06 found that 23.7% of adult males did at least 30 minutes of moderate physical activity three times a week and only 18.5% of adult females. At just over 21%, Southend has the fifth highest level of the adult population participating in moderate physical activity in Essex.

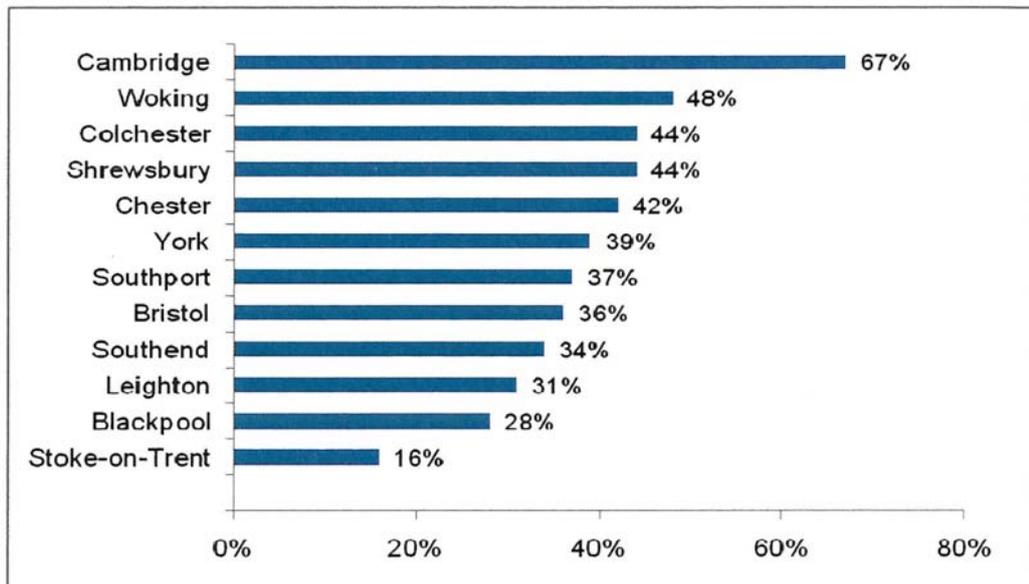
Figure 5.17 – Percentage of Population undertaking at least 3 days a week x 30 minutes Moderate Participation, 2005/2006



The Draft Headline Findings Baseline Survey Report compares cycling behaviour in the 12 new areas participating in the Cycling City and Towns (CCT) programme, which was conducted between July and November 2009. The report was prepared to inform CCTs' development of their Local Transport Plans.

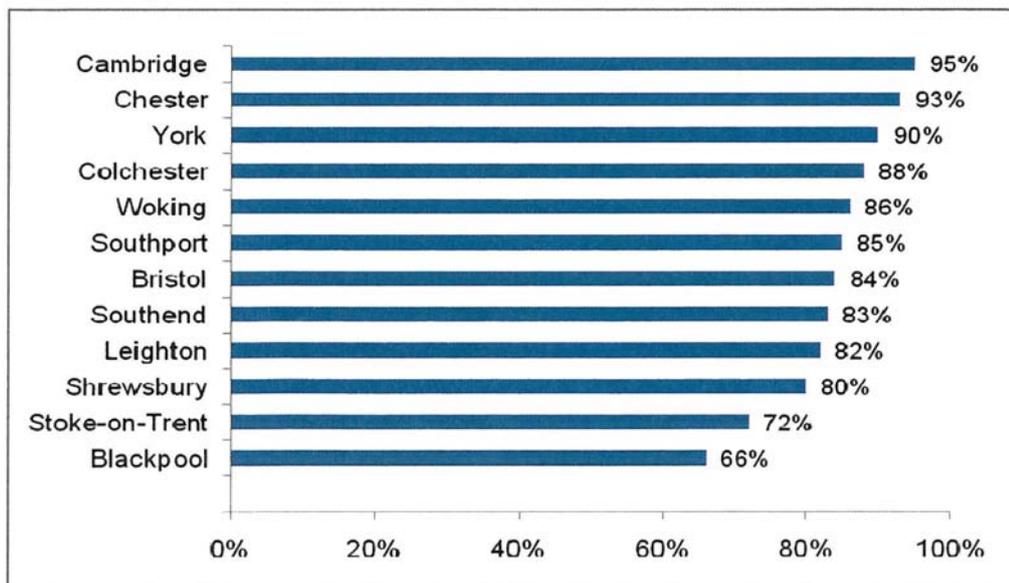
The figures below show the proportion of adults and children who have a bicycle available for their use (either a bicycle they own or one they had access to). In Southend more than 4 in 10 adults and more than 8 in 10 children have a bicycle available.

Figure 5.18 – Percentage of Adults with a Bicycle available by CCT



Base: all adults. Base size varies by town

Figure 5.19 – Percentage of Children with a Bicycle available by CCT



Base: all children. Base size varies by town

The figures below show the proportion of cyclists that had ridden a bike at least once in the 12 months prior to the survey in each CCT, as well as the proportion of the population and proportion of cyclists who cycle once a week or more often. In Southend 28% of the adult population had cycled at least once in the 12 months (ranked 7th out of 12 CCT's) prior to the survey and 18% of the adult population were frequent cyclists. Southend ranked 4th out of the 12 CCT's with a high proportion of child cyclists. A very

high 82% of the child population had cycled at least once in the 12 months prior to the survey and 66% of the child population were frequent cyclists.

Figure 5.20 – Percentage of Adult Cyclists by CCT

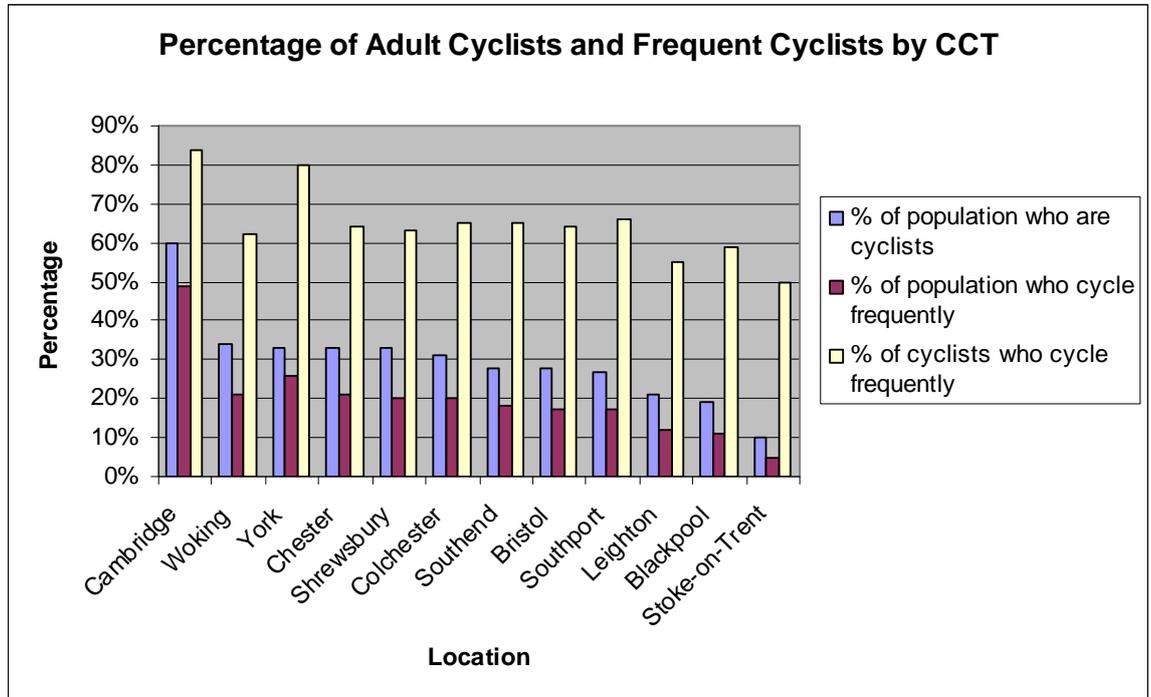
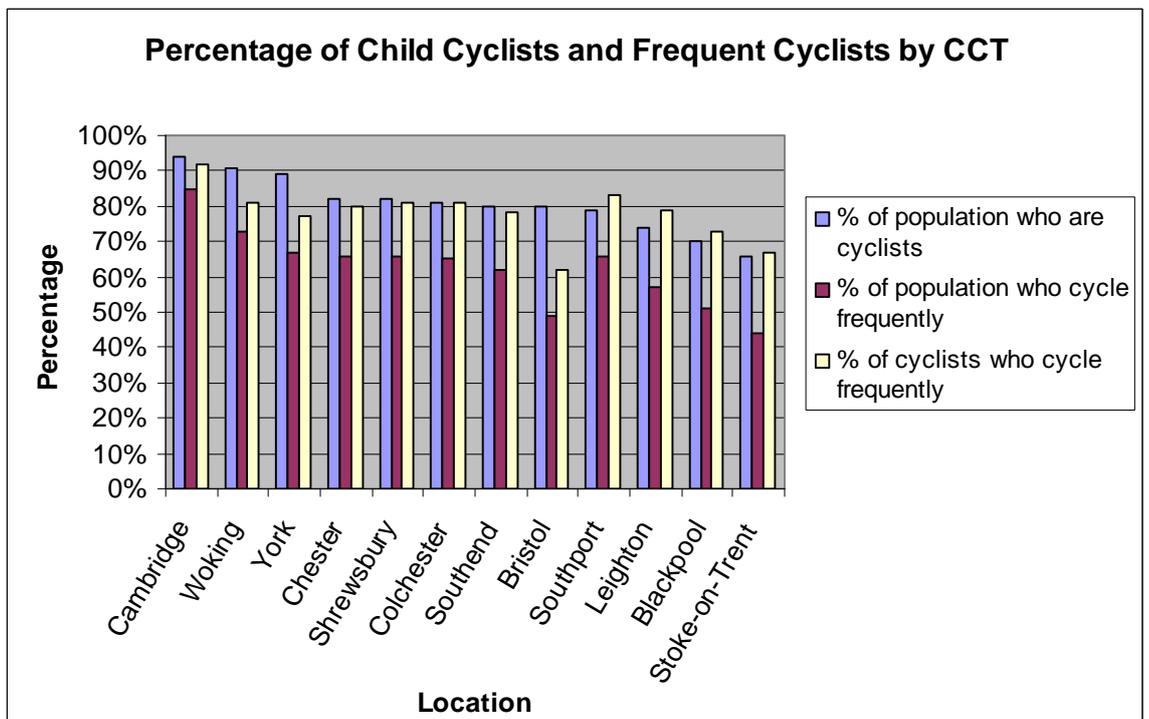
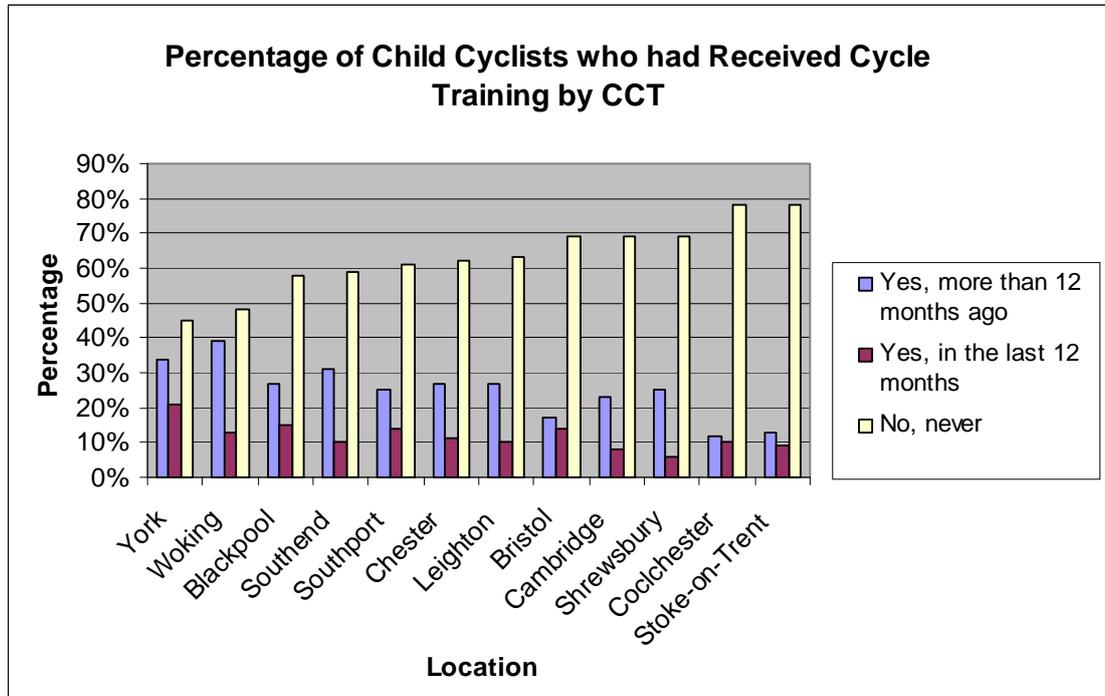


Figure 5.21 – Percentage of Child Cyclists by CCT



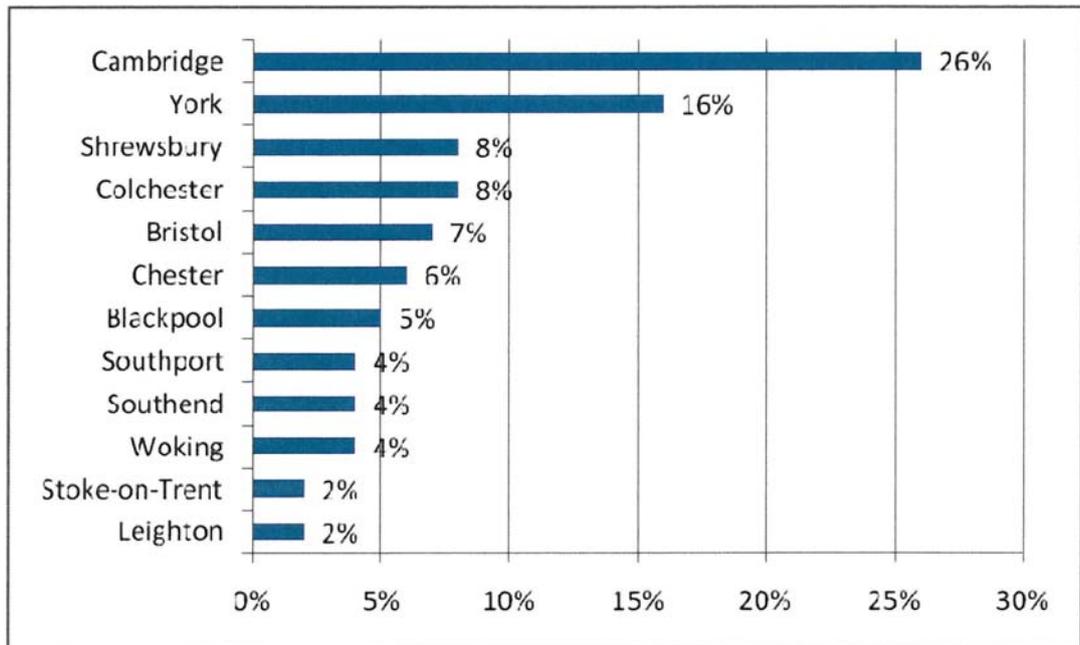
The figure below shows the proportion of child cyclists who had received cycle training. In Southend 41% of child cyclists had received cycle training of which 31% had training more than 12 months ago and 10% within the last 12 months. 59% had not received any training.

Figure 5.22 – Percentage of Child Cyclists who had Received Cycle Training by CCT



The figure below shows the percentage of adults who usually cycle to work. 4% of Southend’s adult population usually cycle to work, compared to the highest at 26% in Cambridge and the lowest of 2% in Leighton. There is scope here to encourage cycling to work.

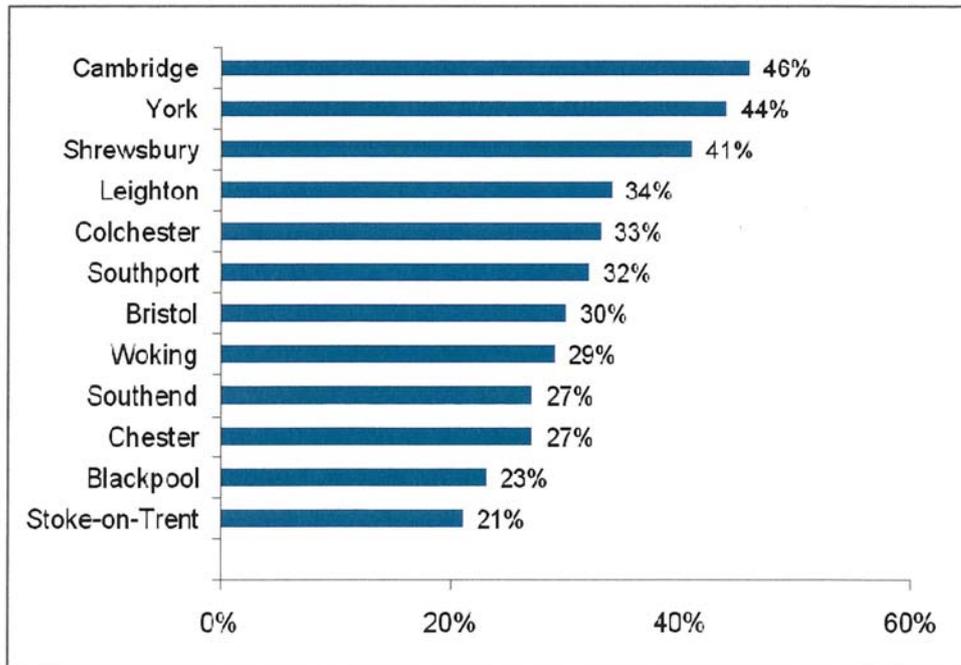
Figure 5.23 – Percentage of Adults who usually Cycle to Work by CCT



Base: Adults who travel to work. Base size varies by town.

The figure below shows the proportion of children who travel to school by bicycle. 27% of children usually cycle to school in Southend, compared to 21% in Stoke-on-Trent and 46% in Cambridge.

Figure 5.24 – Percentage of Children who usually Cycle to School by CCT

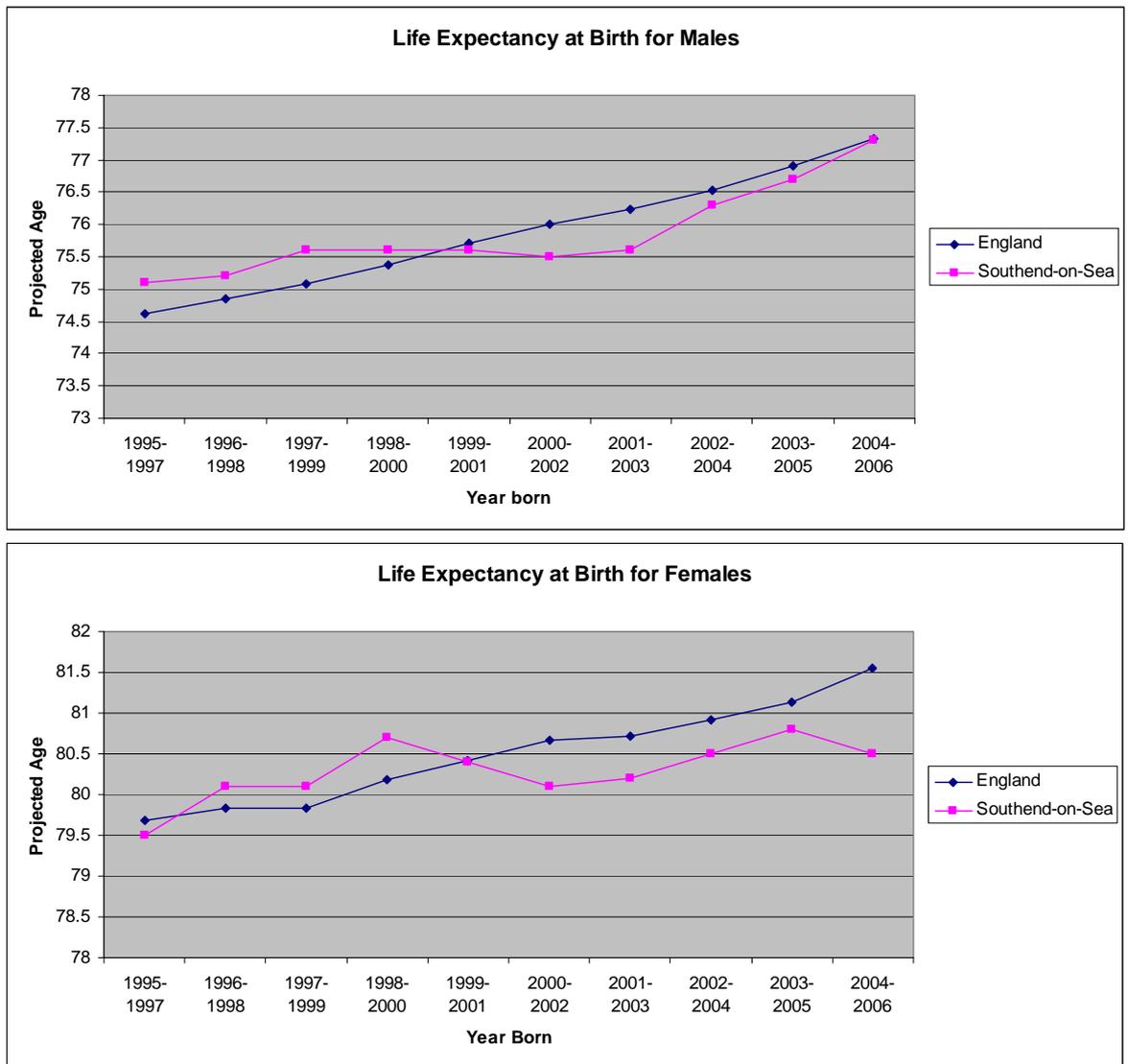


Base: All children with a bicycle available and who have a daily journey to school. Base size varies by town.

Life Expectancy at Birth

Figure 5.25 below shows Life expectancy at birth for Southend in comparison with England. (The pink line shows the data for Southend and the dark blue line shows the data for England.) For males life expectancy has improved by 2.2 years from 1995-1997 to 2004-2006. For females it has improved by 1.4 years over the same time period. Life expectancy for males is approximately the same as for England but for Females it is slightly lower for Southend by around six months.

Figure 5.25 – Male and Female Life Expectancy at Birth⁸⁰



Life expectancy varies across the region with Southend on Sea having the lowest life expectancy in Essex (78.1 years); this is comparable to the whole of England’s average life expectancy at 78.3 years (Figure 5.26).

⁸⁰ Source: Southend Joint Strategic Needs Assessment (JSNA)
 Southend-on-Sea Borough Council – Local Transport Plan 3
 Evidence Base – June 2010

Figure 5.26 – Life Expectancy at Birth by Local and Unitary Authority⁸¹

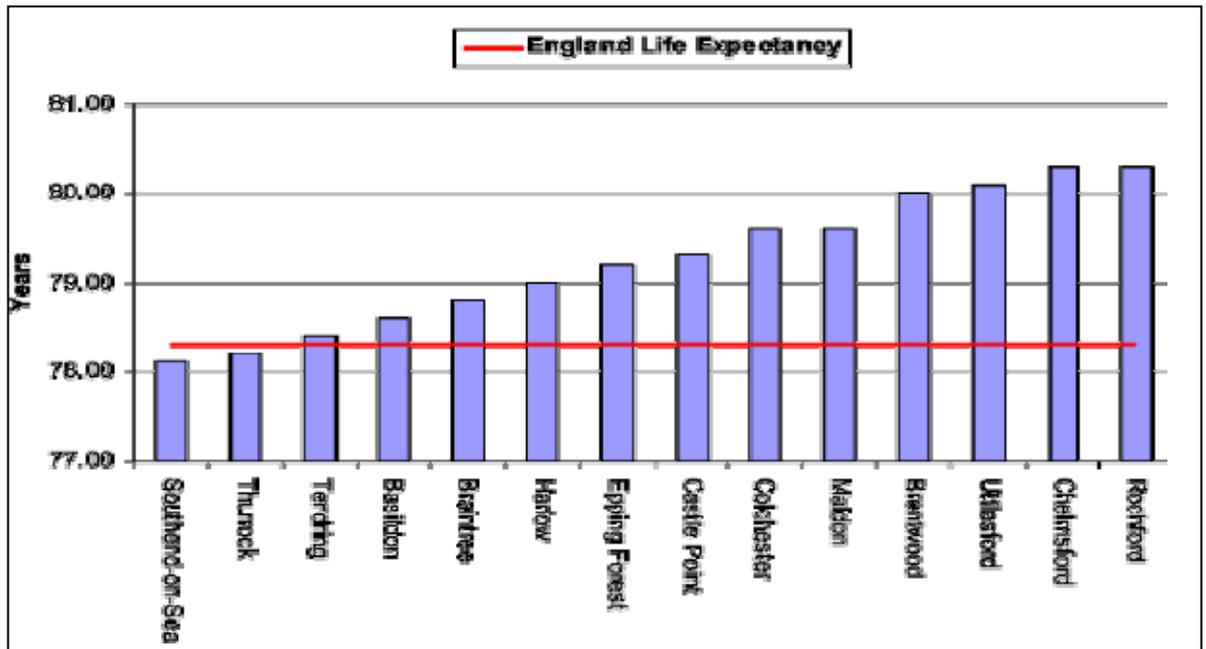
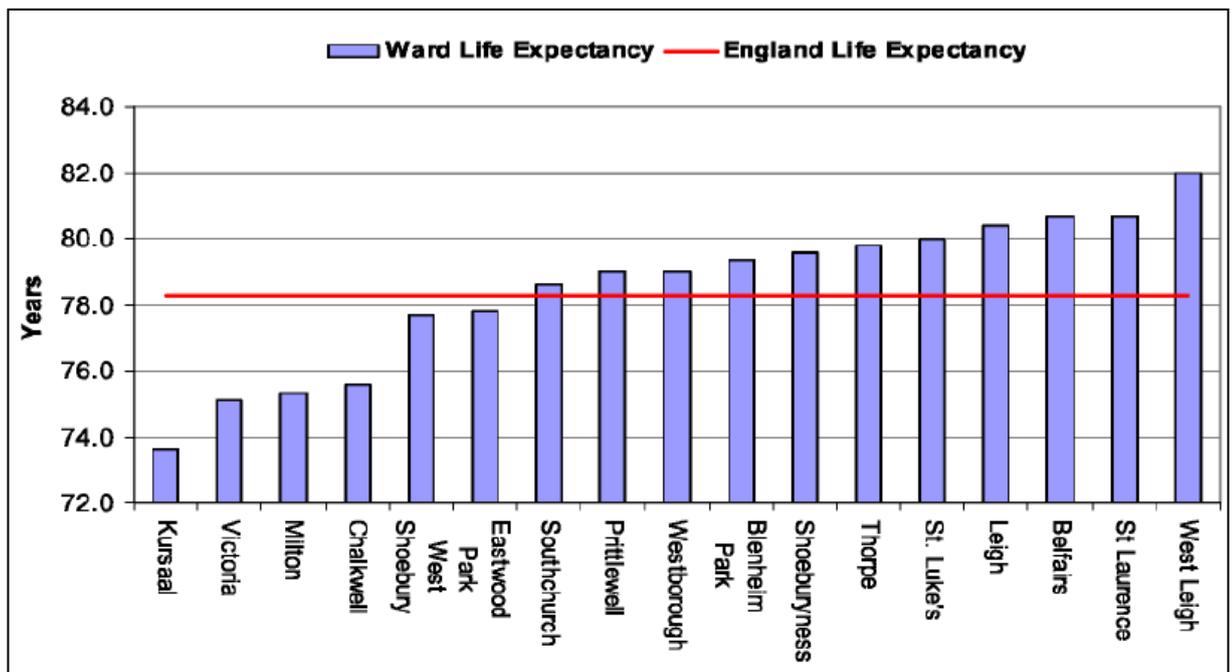


Figure 5.27 below shows that there is an 8.4 year variation in life expectancy across the wards ranging from just under 74 years in the Kursaal ward and 82 years in the West Leigh ward.

Figure 5.27 – Life Expectancy at Birth by Ward in Southend⁸²



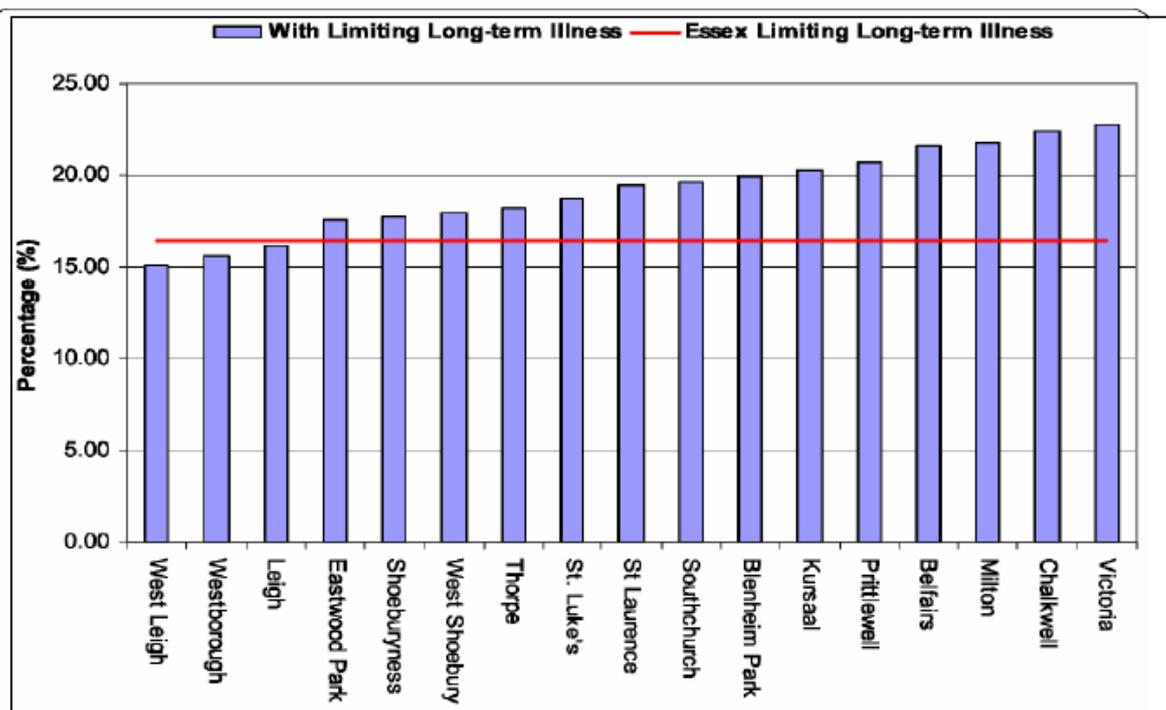
⁸¹ Source: Southend JSNA

⁸² Source: Southend JSNA

Limiting Long-Term Illness

Life Expectancy and limiting long-term illness have a positive correlation. The wards with the lowest life expectancy (Kursaal, Victoria, Milton and Chalkwell) also have a high percentage of residents with a limiting long-term illness. This directly relates to the wards with the highest deprivation.

Figure 5.28 – Limiting Long-Term Illness by Ward in Southend⁸³

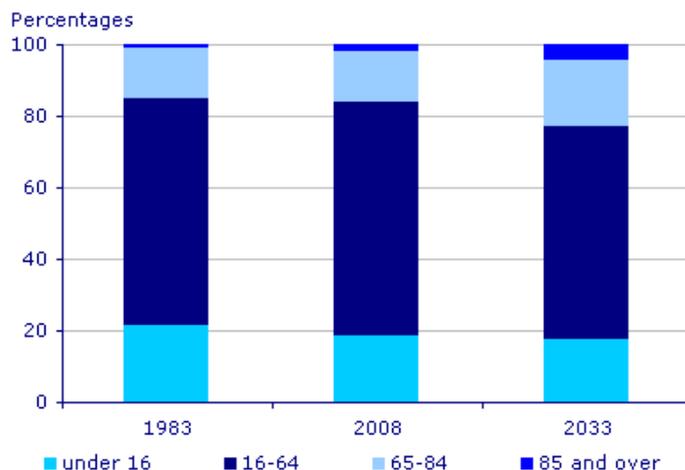


⁸³ Source: Southend JSNA

The Ageing Population

The population of the UK is ageing. As shown in Figure 5.29, the population of over 65's has increased between 1983 and 2008 and the proportion of those under 16 has decreased over the same time period. It is predicted that this trend will continue over the next 15 years.

Figure 5.29 – Population by Age, UK, 1983, 2008 and 2033⁸⁴



The 2008 population estimates indicate that there is a higher proportion of people over 65 living in Southend (18.1%) compared to the Region (16.9%) or the Nation as a whole (16.1%) (see Table 5.7).

Table 5.7 – Proportion of the population falling in the youngest and oldest age groups⁸⁵

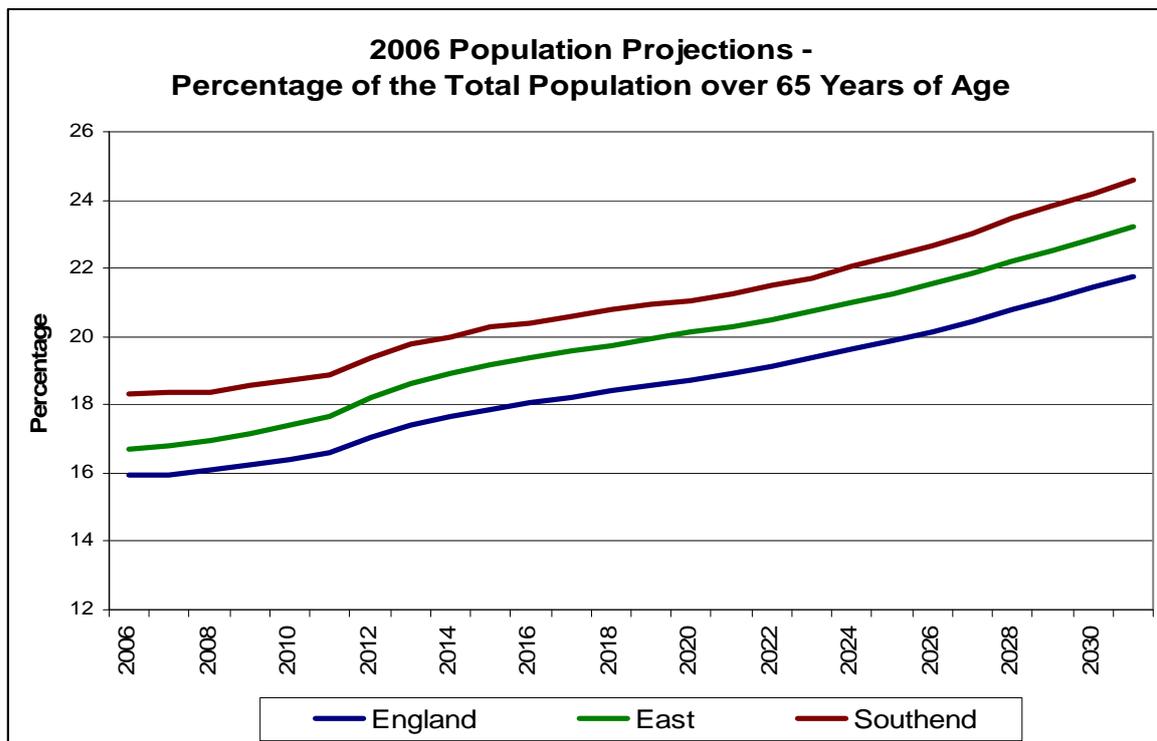
Location	Age Range of Total Persons		
	0-15	65+	85+
England	18.8%	16.1%	2.2%
East of England	19.0%	16.9%	2.3%
Southend	19.0%	18.1%	3.0%

The most recent population projections produced by the Office for National Statistics (ONS) were based on the 2006 midyear population estimates. The graph in Figure 5.30 illustrates that the proportion of older people in Southend is predicted to increase to 24.6% by 2031, whilst the Regional and National proportions are likely to rise to 23.2% and 21.7% respectively over the same time period.

⁸⁴ Source: ONS Article on Ageing Population

⁸⁵ Source: ONS 2008 Mid-year Population Estimates

Figure 5.30 – ONS population projections for the proportion of the population aged over 65. Based on 2006 midyear population estimates⁸⁶



The 2008 population estimates are also available by ward as Experimental Statistics (see Figure 5.31). In 11 of the 17 wards in the Borough there are a higher proportion of people over 65 than the National or Regional averages (16.1% and 16.9% respectively). The wards with the highest percentage of older people are Belfairs and Thorpe with 26.5% and 24.6% of residents over 65 respectively.

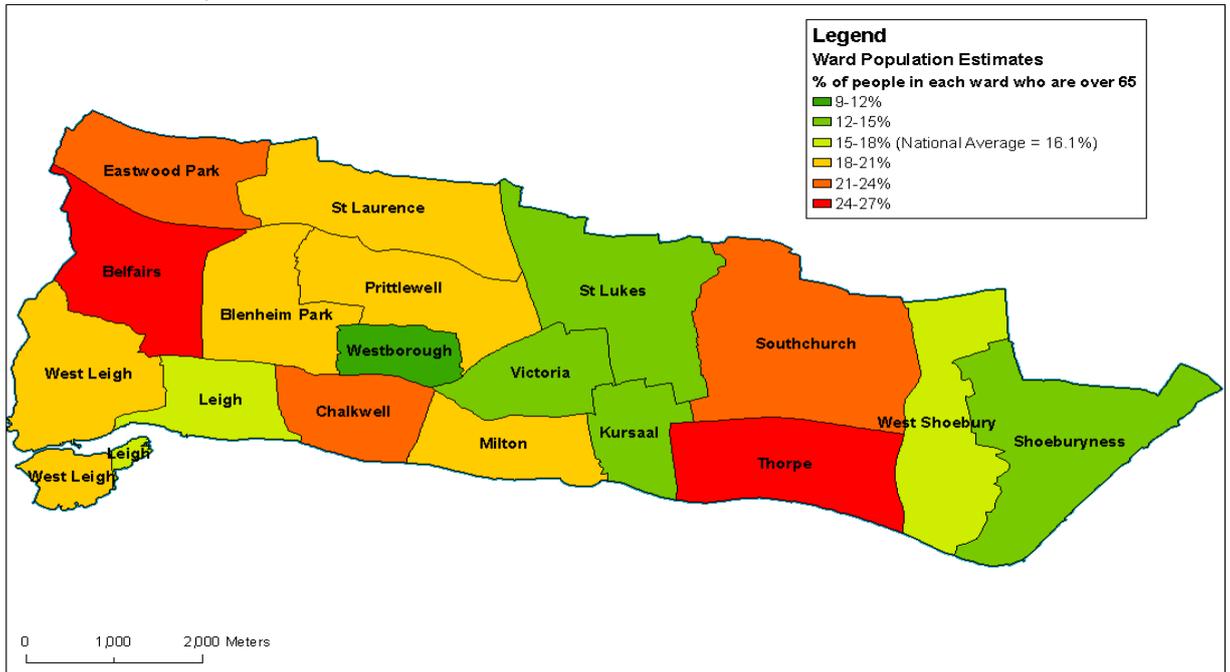
Figure 5.32 illustrates which wards have the highest proportion of residents over 85. The ward with the highest percentage of this age group is Chalkwell, with 6.3% of its residents above the age of 85, which is considerably higher than the Borough, Regional or National averages (3.0%, 2.3% and 2.2% respectively). Within Southend, there are only 3 wards in which the proportion of residents above the age of 85 is equal to or below the National average (Westborough (1.1%), St. Lukes (2.2%) and Shoeburyness (1.5%)).

In summary, Southend is an area with a high percentage of older people as residents, who predominantly live in the North West of the Borough or to the East of the town centre. According to the ONS population projections, the proportion of older people within Southend will continue to be at least 2% higher than the National Average up to the year 2031.

⁸⁶ Source: ONS

Figure 5.31 – Distribution of over 65s in Southend⁸⁷

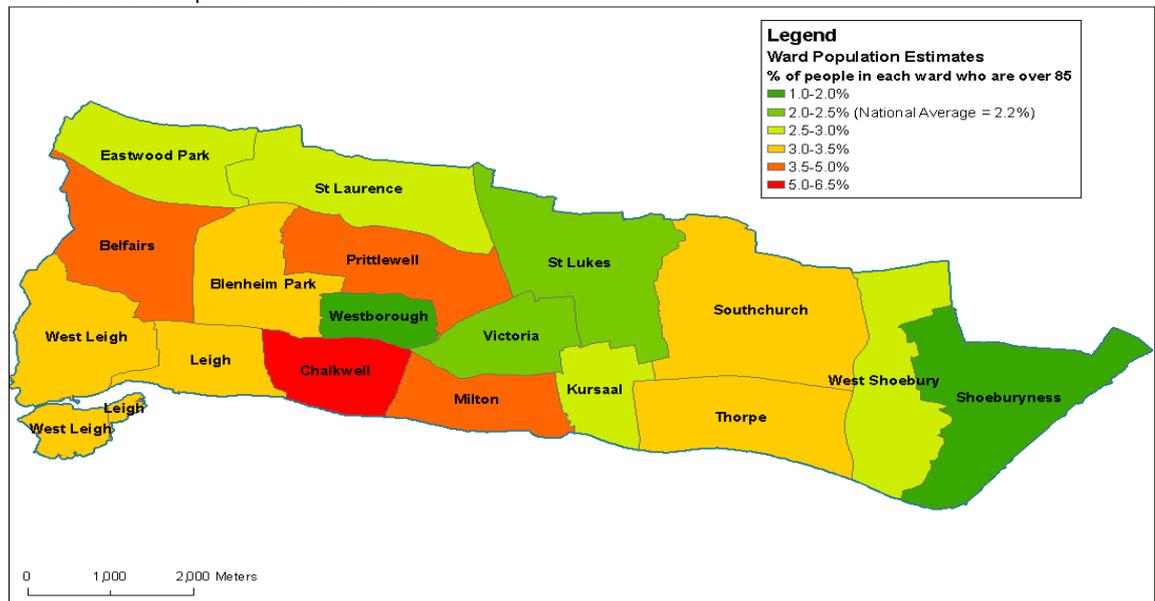
The proportion of the total population of each ward who aged 65 or above.
Based on 2008 Population Estimates



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Figure 5.32 – Distribution of over 85s in Southend⁸⁸

The proportion of the total population of each ward who aged 85 or above.
Based on 2008 Population Estimates



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⁸⁷ Source: ONS

⁸⁸ Source: ONS

Childhood Obesity

Table 5.8 and Figure 5.33 below show the percentage of overweight and obese children in reception class. Southend is showing a higher rate of obesity compared to the rest of the South East Essex Primary Care Trust (SEE PCT) area. However, the percentage is lower than that of the region and England. The level of children who are overweight (13.8%) however is higher than all other comparison groups. Southend has the overall highest combined percentage of all comparators in this table 23%, whereas Essex has the lowest combined percentage of 21.1%.

Table 5.8 – Obesity in Reception aged Children 2007/2008

	% of obese children	% of overweight children
Southend	9.2	13.8
SEE PCT	8.3	12.9
Essex	8.7	12.4
East of England	9.3	13.1
All England	9.6	13.0

Figure 5.33 – Childhood Obesity⁸⁹

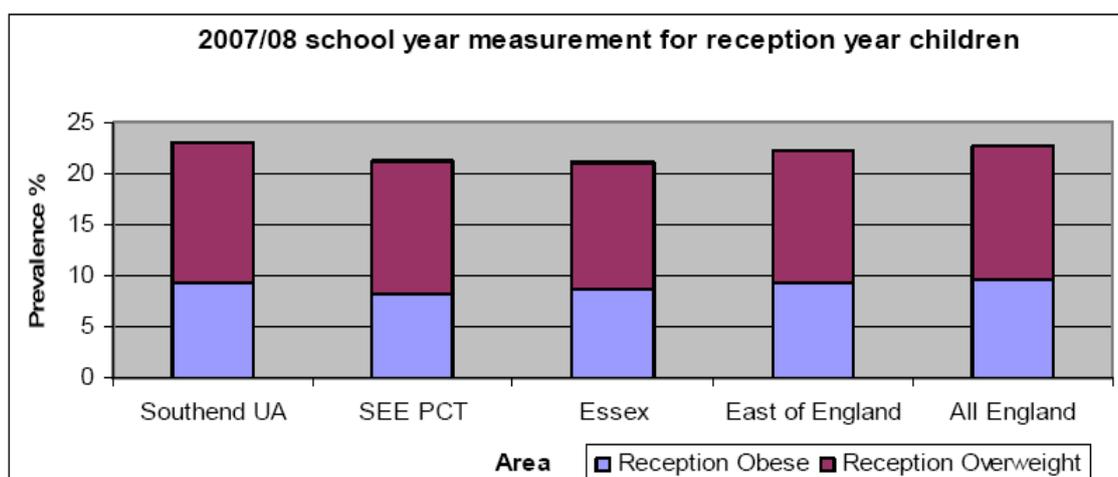


Table 5.9 below shows the percentage of overweight and obese children in year 6. Southend is showing a high rate of obesity compared to the other locations (18.7%). This rate is over 100% more than the reception class of the same year. The level of children who are overweight (14.1%) however is lower than all other comparison groups. Southend has the overall highest combined rate of all comparators in this table 32.8%, whereas Essex is the lowest combined rate of 30.9%.

⁸⁹ Source: Southend Borough Profile 2009

Table 5.9 – Obesity in Year 6 Children

	% of obese children	% of overweight children
Southend	18.7	14.1
SEE PCT	16.8	14.4
Essex	15.9	15.0
East of England	16.7	14.3
All England	18.3	14.3

5.2.6 Deprivation

The Southend 2009 Borough Profile sets out the areas of deprivation within the Borough of Southend. There are different types of deprivation that can affect families such as ill health, low income, poor housing, and unemployment. Deprivation is measured by the Indices of Deprivation (IoD); the latest series of IoD was compiled in 2007. To give the best possible comparability the IOD brings together 37 different indicators which cover specific aspects or dimensions of deprivation: Income, Employment, Health and Disability, Education, Skills and Training, Barriers to Housing and Services, Living Environment and Crime. These are weighted and combined to create an Indices of Multiple Deprivation (IMD).

The Index of Multiple Deprivation 2007 (IMD 2007) which forms part of the IoD 2007 is based on the small area geography known as Lower Super Output Areas (LSOAs). LSOAs have between 1000 and 3000 people living in them with an average population of 1500 people. In most cases, these are smaller than electoral wards, thus allowing the identification of small pockets of deprivation.

There are two wards in Southend (Kursaal and Victoria) in which every LSOA is ranked within 20% of the most deprived areas in the Region. There is an estimated 18,978 people living in these two wards which equates to 11.7% of the Borough population. Across Southend it is estimated that 12,331 people (8% of the Borough population) are living in the 10% most deprived areas of the country. Figure 5.27 below shows the location of LSOAs within the Borough that fall within the 10% most deprived in the Country and within the 20% most deprived in the region. The figure shows there is a high level of Multiple Deprivation in Southend.

Figure 5.34 – Map of Multiple Deprivation by Ward

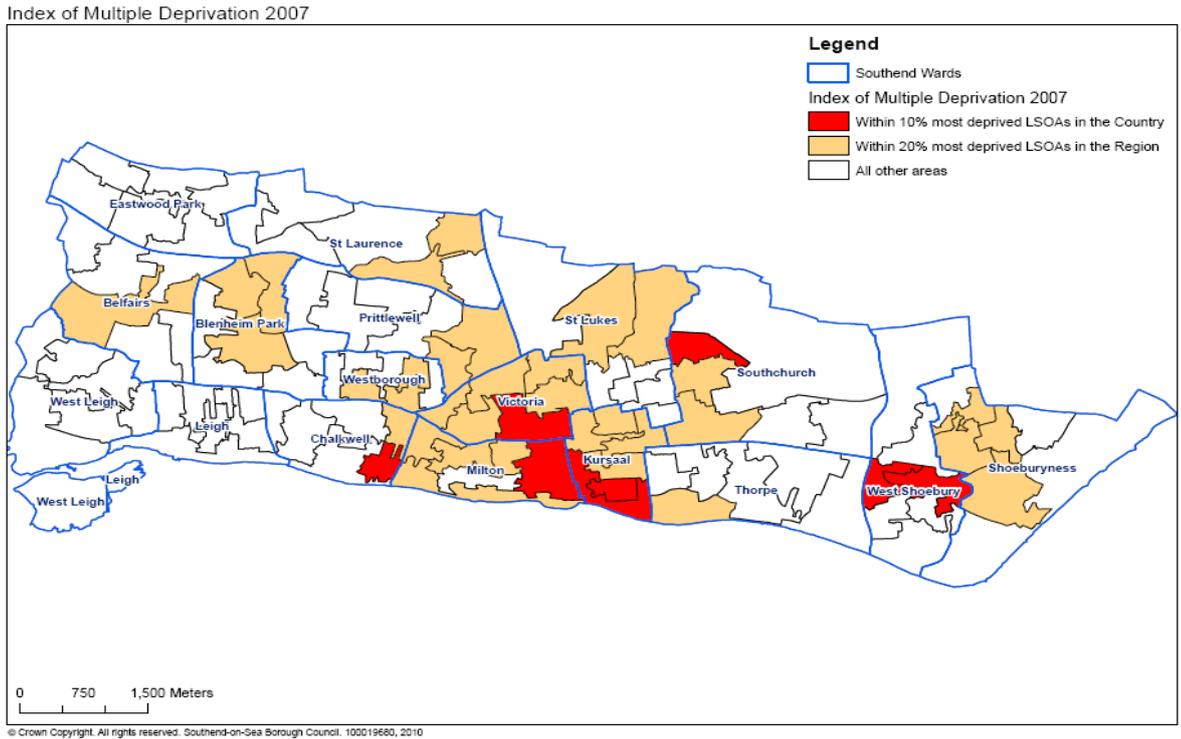


Figure 5.28 below shows the IMD scores of all wards within Southend. It can be seen that the Kursaal ward has the highest IMD score and West Leigh has the lowest. The Kursaal IMD score is almost seven times higher than the West Leigh score.

Figure 5.35 – Index of Multiple deprivation by ward in Southend (2007)

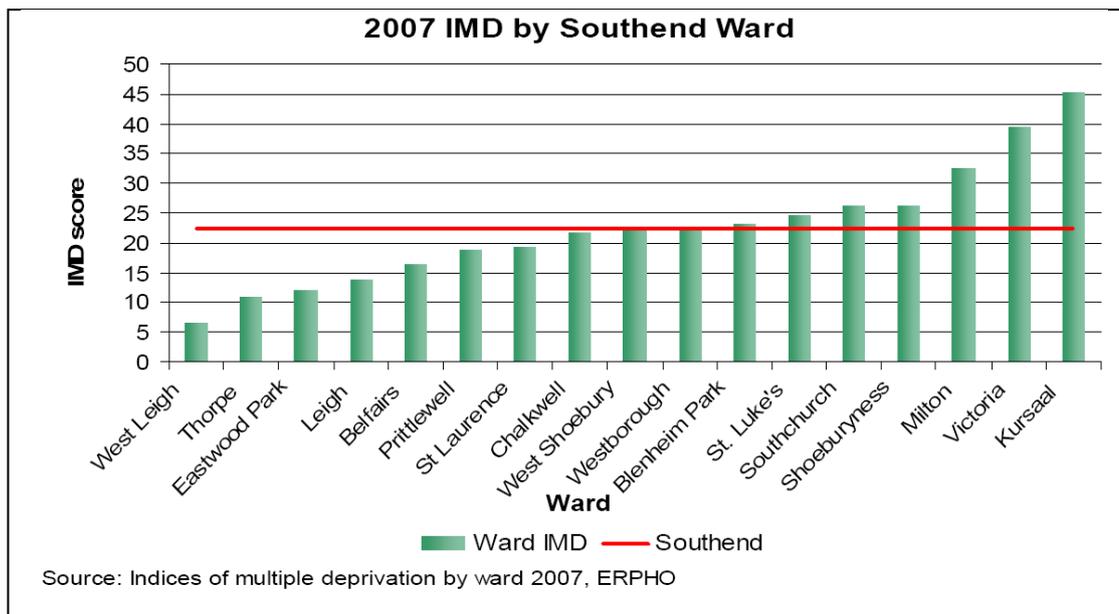


Figure 5.36 below shows the IMD score for Southend in comparison to other Local Authorities, of which the majority are also coastal communities. It shows that overall Southend has one of the lower IMD scores. Blackpool Unitary Authority has the highest IMD score whilst Bath and North East Somerset have the lowest.

Figure 5.36 – IMD for Southend and LA comparators

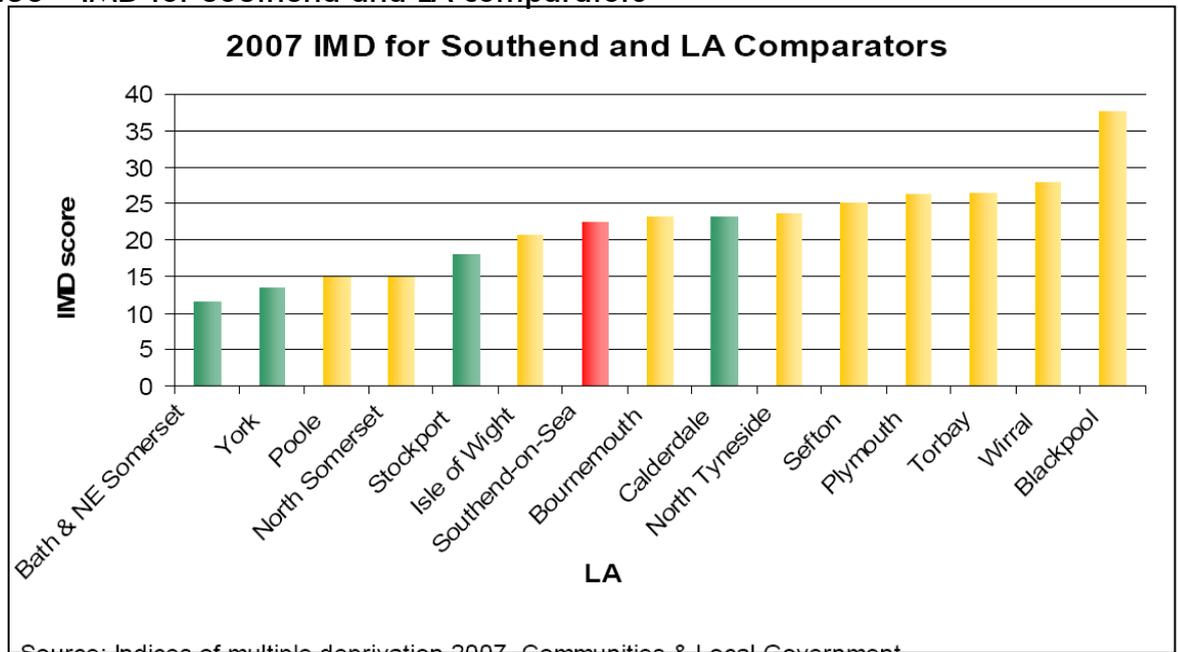
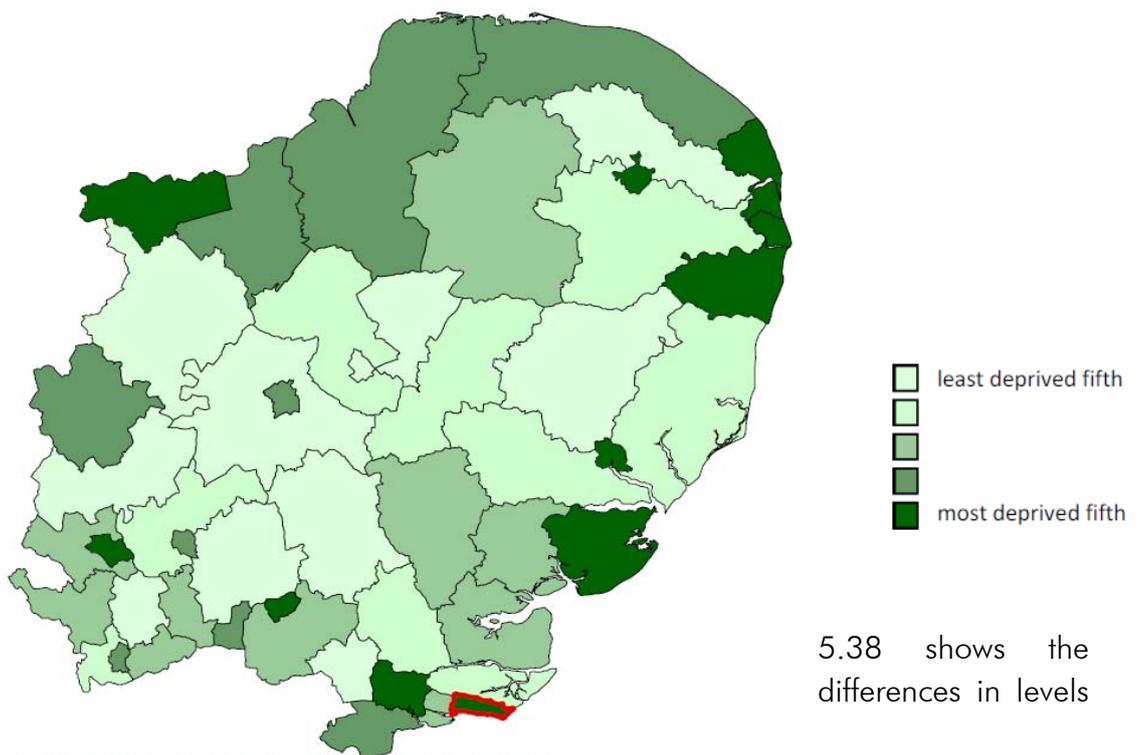


Figure 5.37 below shows the differences in levels of child poverty between the districts in the East of England. The map shows that Southend is one of the fifth most deprived areas within the region.

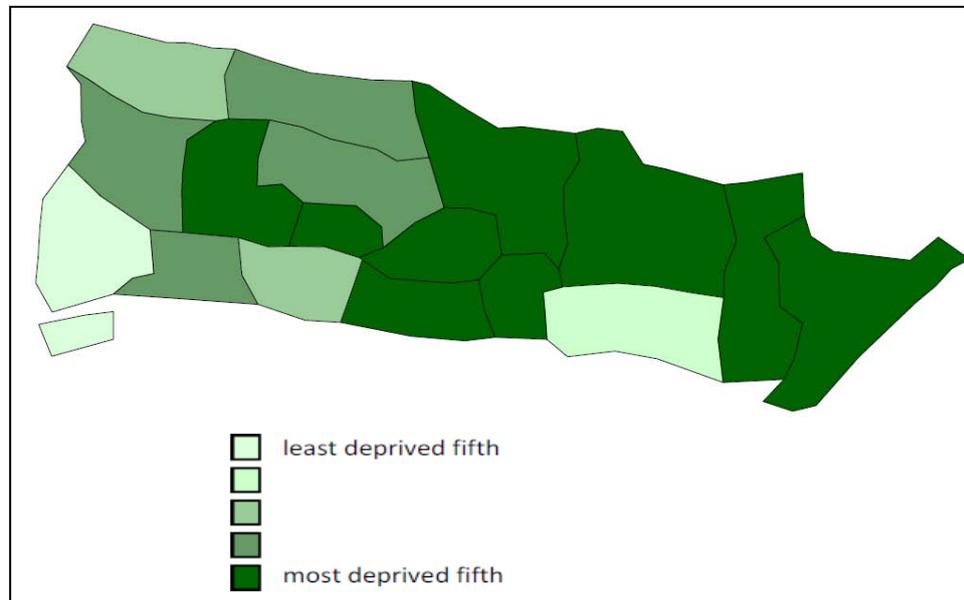
Figure 5.37 – Child Poverty in the East of England



Figure

of child poverty between the wards within Southend, based on levels of poverty across the Eastern region. Of Southend's 17 electoral wards over 50% (9) of the wards are in the most deprived fifth within the region. Southend does have 11% (2) wards (West Leigh and Thorpe) that are within the least deprived fifth in the region.

Figure 5.38 – Child poverty in Southend by ward



5.3 Conclusions / SWOT

Quality of life and a healthy natural environment

Strengths

- Southend does not have any air quality management areas.
- The percentage of people satisfied with public transport information and local bus services has increased by 3% and 6% respectively between 2006 and 2008.
- The Place Survey states that most of the time people felt that they are being treated fairly by local services.
- Compared to other Local Authorities Southend has one of the lower Index of Multiple Deprivation (IMD) scores.
- Due to the increasing implementation of travel plans and projects such as the walking bus, the number of children travelling to school by car has decreased over the past three years.
- A relatively low proportion of people travel to work by car compared to other comparator Authorities, due to the number of commuters within the town.
- Southend has a large number of parks and open spaces and residents satisfaction towards these and other leisure services is generally good (Place Survey 2008).

Weaknesses

- Southend has a low tranquillity scoring as it is ranked 75th out of 87 for tranquillity.
- There is a problem with road noise on the two main roads that link Southend to London, the A13 and the A127.
- The western side of Southend suffers from light pollution.
- The Place Survey results show that public transport rates fifth for an area which needs improvement.
- The Borough Profile 2009 states that 8% of the Borough population are living in the 10% most deprived areas of the country and within the 20% most deprived in the region. The Kursaal, Victoria and Milton wards are the most deprived wards in Southend.
- Southend is one of the fifth most deprived areas in the East of England regarding child poverty; 9 of the 17 electoral wards within Southend are in the most deprived fifth in the region.
- Life expectancy is around 6 months lower for females in Southend compared to the rest of England. However, for males life expectancy is approximately the same compared to England's average. Southend has the lowest life expectancy in Essex. There is a large 8 year variation in life expectancy across the wards, with the Kursaal ward having the lowest life expectancy.
- There are inequalities between wards. There is a link between the most deprived wards, a low life expectancy and limiting long-term illness.
- Southend has a higher proportion of older people compared with regional and national averages. The wards of Chalkwell, Belfairs and Thorpe are home to the highest percentage of older people.
- During 2007/2008 Southend had the highest combined percentage of obese and overweight children compared to, England, the region, Essex and SEE PCT.
- Southend, in comparison to the East of England and also nationally, has a greater percentage of principal roads which require maintenance.

Opportunities

- The Kursaal, Victoria and Milton wards need investment to increase accessibility and mobility to employment opportunities.
- The Place Survey states that public transport is an area which needs improvement; there is scope for improvements in public transport services, such as, improved bus punctuality.
- To improve noise and tranquillity a series of strategies could be developed along the A127 to give a 'sense of place' especially for residents.

- To further increase the number of children partaking in cycle training to encourage them to cycle to school.

Threats

- The expansion of the airport could potentially detrimentally affect, air quality, noise pollution and tranquillity.
- The Sustainable Community Strategy states that the population of Southend is increasing as a result of in-migration and planned growth; the East of England Plan requires 13,000 jobs and 6,500 additional dwellings to be created between 2001 and 2021. This will cause an increase in traffic on the roads, especially on the main routes into the town, the A13 and A127, which could lead to an increase in road noise along these routes.

Glossary

Abbreviation	Meaning / Definition
AADT	Average Annual Daily Traffic
AAP	Area Action Plan
AOD	Above Ordnance Datum (i.e. above sea level)
AQMA	Air Quality Management Area
c2c	Train Operator connecting Southend to London Fenchurch Street
CCT	Cycling City and Towns
CCTV	Closed Circuit Television
CFMP	Catchment Flood Management Plan
CO ₂	Carbon Dioxide
CPZ	Controlled Parking Zone
DaSTS	Delivering a Sustainable Transport System
DCLG	Department of Communities and Local Government
DECC	Department of Energy and Climate Change
DEFRA	Department for Food and Rural Affairs
DPD	Development Plan Document
DfT	Department for Transport
EEDA	East of England Development Agency
EU	European Union
GCSE	General Certificate of Secondary Education
GP	General Practitioner
GVA	Gross Value Added
HGV	Heavy Goods Vehicle
IMD	Index of Multiple Deprivation
KCDC	Key Centre for Development and Change
KSI	Killed or Seriously Injured
LAA	Local Area Agreement
LDF	Local Development Framework
LGV	Light Goods Vehicle
LOTS	London to Southend Movement Study
LSOA	Lower Super Output Area
LTP	Local Transport Plan
M/C	Motorcycles
NI	National Indicator
N ₂ O	Nitrous Oxide
NO ₂	Nitrogen Dioxide
NVQ	National Vocational Qualification
ONS	Office of National Statistics
PCT	Primary Care Trust
PM ₁₀	Particulate Matter
PPG	Planning Policy Guidance
PPS	Planning Policy Statement
PT	Public Transport

RAMSAR	International wetlands designation
RES	Regional Economic Strategy
RTA	Road Traffic Accident
SCS	Sustainable Community Strategy
<i>sert</i>	South Essex Rapid Transit
SFRA	Strategic Flood Risk Assessment
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SWOT	Strengths Weaknesses Opportunities and Threats
TGSE	Thames Gateway South Essex
UKCP	United Kingdom Climate Projections