

Southend Central Area Action Plan

TOPIC PAPER 2: STRATEGIC HIGHWAY NETWORK

March 2017

Topic Paper 2: Strategic Highway Network

This topic paper builds upon the information set out in the Southend Infrastructure Delivery Plan (IDP) (2015)¹ in explaining that the Council has been, and continues to be, successful in implementing key transport improvements and securing future funds to support the growth targets of the adopted Core Strategy (2007).

Local Policy Context

The IDP is a supporting document for the Southend Core Strategy and part of the Local Planning Framework for Southend. The IDP covers the remaining plan period up until 2021. The document includes details of the infrastructure identified by the Council and other service providers as being needed to support the delivery of the Core Strategy.

The IDP assesses the transport infrastructure required to support the planned jobs and housing growth of the Core Strategy, which include those of the SCAAP. The assessment was informed by the SOSBC Transport Team and the Highway Agency.

In compliance with the Transport Act 2000, Southend Borough Council (SBC) has prepared a Local Transport Plan Strategy (LTP3) and an Implementation Plan for the period 2011/2012 to 2026. This, together with the use of the Southend Multi-Modal Transport Model, information sourced from the Local Sustainable Transport Fund and the Better Bus Area application (in terms of levels of infrastructure investment), has informed the IDP assessment. Significant projects and the business case used to inform the development of the South East Local Enterprise (SELEP) Strategic Economic Plan (SEP) are referred to further in this section in terms of transport funding for the planned growth in employment and housing in both Southend and Rochford (predominantly in the context of the Joint Area Action Plan (JAAP) for London Southend Airport and Environs).

Transport context

The Southend transport network is primarily based on east-west movement with the A13 and A127 providing strategic highway connections. The A127 is a key component of the transport network providing the main strategic link to the wider trunk road network across South Essex.

The M25 runs north-south to the west of the region and is at present the only strategic link with Kent via the Dartford crossing. The area is served by rail links from Central London on two lines mirroring the east-west strategic road pattern. Current forecasts suggest that, with the planned development in Southend, congestion will increase, with particular issues on the A127 at principal junctions.

There is a strong focus on improving the A127 Growth Corridor. The Growth Deal agreed between Government and the South East Local Enterprise Partnership (SELEP) includes an allocation of £35.6m Local Growth Fund (LGF) to a programme of capacity enhancements to the A127 in Essex and Southend. The programme includes the following:-

- Kent Elms Junction Improvements (Southend)
- The Bell Junction Improvements (Southend)
- A127 Essential Bridge & Highway Maintenance (Southend),
- A127 Road Safety and Network Resilience Package (Essex)
- A127 Pinch Point - Fairglen Interchange Junction Improvements (Essex)

¹http://www.southend.gov.uk/download/downloads/id/3412/southend_infrastructure_delivery_plan_%E2%80%93_february_2015.pdf

The A127 is essential for the economic prosperity and growth aspirations of south Essex and Southend, including those of the Town Centre and Central Area. Essex County Council and Southend Borough Council are developing a comprehensive asset management plan and have used this data to inform the maintenance programme for the A127 Corridor and this plan underpins our A127 Challenge Fund bid to Government.

However, managing local traffic demand and improving public transport, walking and cycling is a key component of the Southend LTP and these principles have been embedded in the adopted Core Strategy, the Development Management Document (2015), and JAAP (2014), and in the emerging SCAAP. Southend Borough Council's successful bid for £4.82m from the Department for Transport (DfT) funding for the Local Sustainable Transport Fund (LSTF) was announced in June 2012 with the objective of creating economic growth, revitalising the economy and reducing carbon emissions.

The Southend LSTF comprises a package of sustainable travel measures boosting access to the growing employment areas of London Southend Airport/Business Park and Southend Town Centre, and is designed to reduce the current and future demand for short distance car journeys. It contains a series of interdependent measures building on quality cycling and walking routes, marketing and communications, partnerships, travel planning, and complementary Integrated Transport Management Systems. Supported by LTP Integrated Transport Block funding allocations and other grants such as the Better Bus Area Fund and S106 funding, progress is being made in supporting growth whilst encouraging short trips to be made by means other than the car.

Southend-on-Sea's transport priorities

The Southend Local Transport Plan 3 (2015) sets out a transport strategy for a 'Thriving and Sustainable Local Economy'. The policies to achieve this goal include:

- Reduce congestion within the Borough.
- Encourage and facilitate the use of sustainable modes and public transport for travel.
- Better manage vehicle parking capacity.
- Maintain the network to a good standard and ensure it remains resilient to external events.
- Ensure provision of sustainable transport services to support the regeneration of Shoeburyness and other new developments in the Borough.
- Ensure access to London Southend Airport is predominantly by sustainable modes.
- Ensure the movement of freight in the Borough is efficient, and does not adversely impact on residents or the environment.
- Support business, tourism and regeneration.

Strategic transport priorities to support growth

There is also an agreed joint approach by the highway authorities (SBC and Essex County Council) to bid for major scheme funding opportunities in order to deliver the necessary transport solutions. This has been addressed through the South East Local Enterprise Partnership (SELEP) in the Strategic Economic Plan (SEP) to achieve single local growth funding to deliver key pieces of infrastructure. The SEP forms the basis of the Local Growth Fund bid to Government and the funding allocations.

The SELEP has identified twelve transport 'growth corridors' in the SEP. The South Essex area has two corridors comprising the A13 and A127. The subsequent Growth Deal for Southend includes the following, which is also set out in Table 6.1:

- | | |
|--|--------|
| • Local JAAP transport schemes investment and sustainable transport | £3.2m |
| • Local Southend Central Area investment in transport and public realm | £7.0m |
| • A127 Corridor improvements in TGSE area (Southend and Essex) | £35.6m |
| ○ Including £10m for Kent Elms Corner and The Bell junctions | |

- Including £8m for essential highway and bridge maintenance schemes

Southend Central Area has already seen significant public and private sector investment including £25m of infrastructure and public realm works, the UK's first joint municipal-academic library (The Forum £27m) and the University campus development. A package of transport and public realm works designed to unlock potential development sites and accelerate the delivery along Victoria Avenue and in the Central Area are expected to contribute to the delivery of around 2,000 new homes and the creation of up to 6,500 new jobs.

There is a clear opportunity to promote better connectivity across the area through improved utilisation of public transport infrastructure and services, enabling people to gain access to employment, education, leisure and tourism opportunities using public transport, walking and cycling. The focus will be to continue the roll out of walking and cycling projects, the bus real-time system, together with smart ticketing and associated marketing and promotion. This supports all the growth points and corridors with access to public transport and is consistent with Local Sustainable Transport Fund priorities.

The IDP contains further details of the needs, costs and funding to support the Core Strategy growth targets, including those of the town centre and central area. This is complemented by a list of completed and identified transport and public realm schemes serving the Central Area (Appendix A).

Development of the Major Scheme programme (Better Southend) to support growth in housing and employment as identified by the adopted Core Strategy.

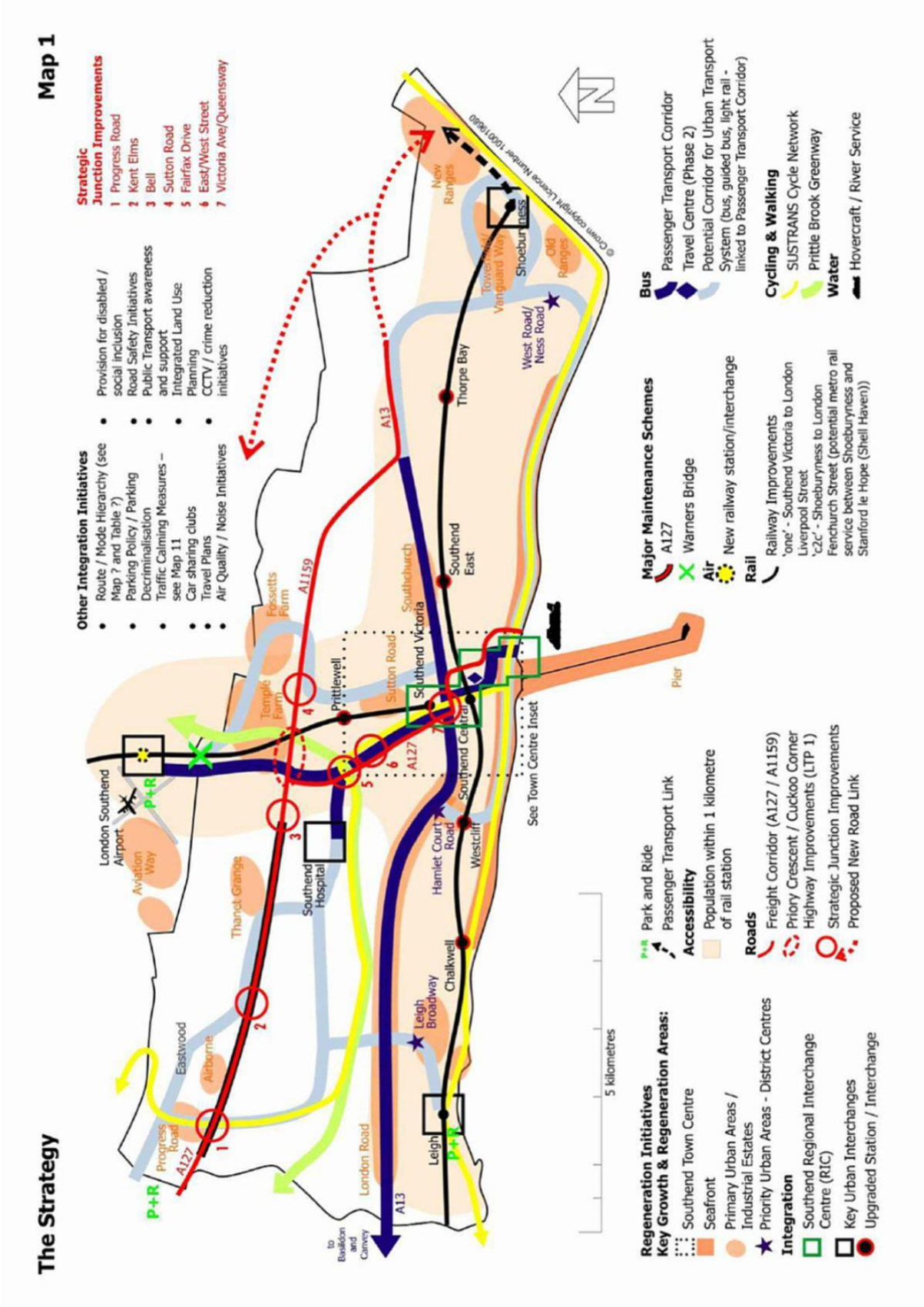
The Local Transport Plan for Southend has consistently identified the necessary transport infrastructure to deliver the Core Strategy target of 13,000 new homes and 6,500 new jobs, including the proportion of growth identified for the town centre, central area and seafront. The LTP2 and LTP3 Strategy Maps (below) show consistency with this target and together with Appendix A the progress made in delivering the schemes, predominantly on the A127 Corridor and within the Town Centre. These support growth in the Central Area and locations within the Southend and Rochford Joint Area Action Plan for the Airport. A DfT Webtag compliant transport model was commissioned to ensure that the economic evaluation of the Business Cases to support the applications for funding could be carried out.

This approach was further described at the JAAP EiP and now forms part of the adopted JAAP policies. As part of this, the A127/B1013 (Tesco) junction was included and this was modified in 2015 to provide additional capacity in advance of works starting to develop the new Airport Business Park.

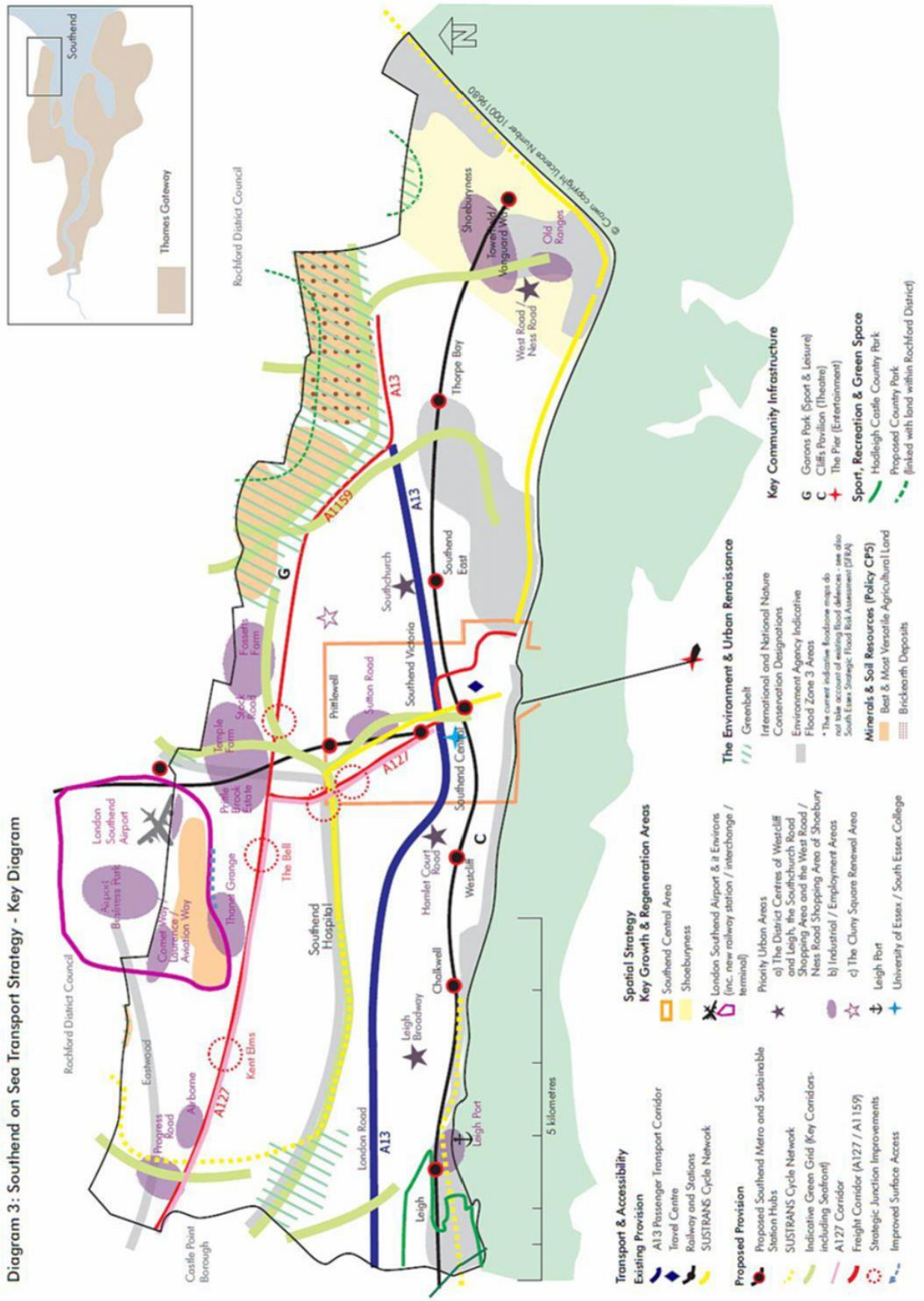
A number of Transport Models have been developed for Southend-on-Sea to support various schemes and take account of the Core Strategy and SCAAP growth targets. These are detailed in **Appendix B** of this paper.

The following Maps (Map 1 and Map 2) depict some of the key transport and junction improvements to facilitate the adopted Core Strategy growth targets by 2021, including for the SCAAP area, identified within two iterations of the Southend Local Transport Plan

Map 1 – Strategy Map (Local Transport Plan 2)



Map 2 – Transport Strategy Map (Local Transport Plan 3)



Appendix A – Completed and Identified Transport and Public Realm Schemes serving the Central Area

A number of transport and public realm schemes have already been successfully delivered in recent years and further are planned within or near the central area aimed at improving transport choice, highway accessibility, connectivity, road safety and the public realm. These are set out below.

- **A127 Progress Road Junction Improvement:** An at-grade improvement at the Progress Road junction (A127) supports the delivery of employment and housing in the Core Strategy. Key locations include the local Progress Road Business Park, industrial areas, London Southend Airport, the Town Centre and Shoeburyness. (£5,062,000 / Community Infrastructure Fund 2 and SoSBC / completion 2011)
- **A127 Cuckoo Corner Junction Improvement:** An at-grade improvement to reflect the need to improve capacity of the junction, reduce severance and improve pedestrian and cycle facilities. The Junction Improvement supports the predicted growth associated with the adopted Core Strategy including that of the London Southend Airport and Southend town centre and central area. The improvement supports growth of Rochford. (£5,000,000 / Department for Transport / completion 2011)
- **A127/A1015 Kent Elms Junction Improvement:** An at-grade improvement to reflect the need to improve capacity of the junction, reduce severance and improve pedestrian and cycle facilities. The Junction Improvement will support the predicted growth associated with the adopted Core Strategy including that of the London Southend Airport and Southend town centre and central area. The improvement will also support growth of Rochford. (£6,500,000 / Local Growth Fund and SoSBC / completion Summer 2017)
- **A127 The Bell Junction Improvement:** An at-grade improvement to reflect the need to improve capacity of the junction, reduce severance and improve pedestrian and cycle facilities. The Junction Improvement will support the predicted growth associated with the adopted Core Strategy including that of the London Southend Airport and Southend town centre and central area. The improvement will also support growth of Rochford. (£5,020,000 / Local Growth Fund and SoSBC / commencing 2018/19)
- **Southend Central Area Transport Schemes:** This includes: Victoria Avenue / East Street junction improvements; Victoria Avenue / Carnarvon Road junction improvements; Great Eastern Avenue improved access; Victoria Avenue service road upgrade; Public Realm Improvements; and London Road improvements (£7,000,000 / Local Growth Fund / between 2016 and 2020)
- **A127/A13 Victoria Gateway Improvement:** The public realm improvement supports regeneration and the delivery of employment and housing in both Southend and across the wider Thames Gateway South Essex. Removing the barrier to direct north south access for pedestrians, cyclist and buses, the scheme has created a strong visual identity and clear sense of arrival at the 'Gateway' to the Central Area. A new transport hub allows transfer between modes directly outside Southend Victoria Railway Station. (£7,600,000 / Homes and Communities Agency, SoSBC and European Structural and Investment Funds / completed 2011)
- **A127/B1013 Tesco Junction Improvement:** An at-grade improvement to reflect the need to improve capacity of the junction, reduce severance and improve pedestrian and cycle facilities. The Junction Improvement will support the predicted growth associated with the adopted Core Strategy including that of the London Southend Airport and Southend town centre and central

area. The improvement will also support growth of Rochford. (£4,700,000 / DfT Pinch Point Programme / completed 2015)

- **City Beach Phase 1:** The improvement to Marine Parade supports the regeneration of Southend's commercial seafront, creates a quality visitor experience, plays a major role in changing perceptions of Southend and promotes the seafront for growth and development opportunities. Previously, wholly dominated by traffic, the seafront was an area of parking conflict, guardrail, signs and speed tables with signalised crossings widely ignored by pedestrians. The seafront, consequently, suffered from severance locally and from the adjacent Town Centre. (£7,600,000 / Homes and Communities Agency and SoSBC, completed 2011)
- **Pier Hill Improvements:** Completed in 2004 and provided improved public realm and links between the central seafront and town centre, including the installation of two lifts.
- **Better Buses Fund:** Introduction of borough wide better interchanges / bus stops improvements, parking and lining reviews to improve bus punctuality and journey time reliability and support for smart card. (£1,577,00 Department for Transport / SoSBC / completed 2014)
- **South Essex Active Travel Fund:** This is a 3 year fund of 3.2m promoting sustainable travel across South Essex, principally for improving access to employment and education.
- **Local Sustainable Transport Fund (LSTF):** the DfT awarded the Council a £4.82m grant (£2.175m capital) in the first tranche of Local Sustainable Transport Funding from 2011/12 to 2014/15. The LSTF programme is designed to continue and boost the promotion and development of sustainable travel started through the LTP3 and the Cycle Southend project. The main objectives of the programme are to create economic growth and revitalise the economy, reduce carbon emissions and help tackle climate change. There are also important links with the active travel and health.
- **Better Queensway:** Regeneration project transforming the town centre with new and improved transport layouts, improved and increased residential accommodation, commercial premises and community space.
- **Improved Car Park Signage and Guidance Systems:** This scheme is to develop and improve the car park signage (including Variable Message Signs) for the whole Borough and to introduce new signage especially for other seafront car parks. (£485,000 / SoSBC / between 2017 and 2020)
- **Car Parking in the Town Centre and Central Seafront:** This scheme is to review options and provide additional car park capacity at sites in the south of the Central Area. (£5,000,000 / SoSBC / between 2017 and 2021)

Appendix B: Southend-on-Sea Traffic Modelling

Models

A multi-modal model was developed of the Southend-on-Sea region in 2010 to cover a base year of 2009 and a forecast year to match the estimated JAAP full build of 2021. The Southend-on-Sea Multi-Modal Model (SoSMMM) consists of a highway model in SATURN, a demand model and public transport model in Emme. The model was calibrated and validated for a base 2009 year and received WebTAG approval from the DfT.

Several VISSIM models have also been developed for areas within the Borough as follows:

- Town Centre Model – covering the area between Queensway, London Road, Western Esplanade and Milton Street. Originally developed in 2008 but more recently revalidated in 2013.
- A127 Corridor Model – initially covering just the Cuckoo Corner and Bell junctions in 2007 but then expanded to Progress Road and to Rochford. Uses SoSMMM forecast outputs to derive forecast flows.
- Sutton Road – covering the Priory Crescent junctions with Cuckoo Corner and Sutton Road and Eastern Avenue junctions with Fossetts Way and Royal Artillery Way.

Modelling work has been undertaken on a number of schemes within Southend since 2010 that has progressed to successful Business Case development to obtain funding, and in many cases implementation of the schemes as follows:

Case Studies of Model Usage for Successful Schemes

Town Centre Model Schemes

The 2008 Vissim model was used to assess the Victoria Gateway scheme, proposed Tesco development at Short Street and Marine Plaza residential development. The updated revalidated 2013 model was subsequently used to assess the S-CATS and Better Queensway schemes. Both models cover the peak periods of 0700-1000 and 1600-1900 and are based on dynamic assignment with trips not assigned to a set route with freedom to change their route based upon traffic conditions.

Victoria Gateway

The Victoria Gateway scheme converted the roundabout of Queensway/Victoria Avenue to a signalised junction and included significant public realm enhancements. The model was used to determine the impact of the scheme whilst providing much improved and safer crossing facilities for pedestrians. The scheme was completed in 2011.

Marine Plaza

The Town Centre model was used to assess the impact of a 350 residential dwelling development for a 2022 forecast year. The Victoria Gateway model was used as the starting point which also includes the closely located City Beach scheme. The results of the modelling concluded that the development scenarios were predicted to operate within capacity with only a minor detrimental impact on the surrounding junctions in both peaks.

S-CATS

The revised 2013 Town Centre model was used to assess a package of transport measures including junction improvements to support the wider objective of delivering an improved and appealing gateway to the centre of Southend-on-Sea for residents and tourists, and to unlock development sites to the east of Victoria Avenue. The following works are proposed:

1. Carnarvon Road / Victoria Avenue junction improvement and to allow right turn movements onto Victoria Avenue.
2. Great Eastern Avenue / Victoria Avenue junction improvement and to allow right turn movements onto Victoria Avenue.
3. Extended right turn lane from Victoria Avenue to East Street.
4. Improvement of cycling facilities on the west side of Victoria Avenue.
5. Improved public realm.

These junction improvements are necessary to help deliver new housing to the east of Victoria Avenue at the former site of the South East Essex College site, deliver an expanded library car park, and to start the process of improving access to the centre of Southend delivering a welcoming gateway to the city.

The Southend-on-Sea Town Centre VISSIM model, originally developed in 2008, was updated and revalidated in 2013 with fresh survey data as well as extended to the north to include the Victoria Avenue corridor to the junction with East Street/West Street. This model was used to assess the impact of the above transport scheme.

The scheme was also assessed against a 2021 Do Minimum scenario which utilised TEMPRO growth to 2021 on the existing road network.

The 2021 Do Something scheme provides 3 infrastructure improvements as follows:

- Victoria Avenue / Great Eastern Avenue – The right turn out of Great Eastern Avenue will be permitted within a single signalised junction and will include widening of Great Eastern Avenue to allow a flared 2 lane approach;
- Victoria Avenue / Carnarvon Road – Similarly the right turn out of Carnarvon Road will be permitted within a single signalised junction; and,
- Victoria Avenue / East Street / West Street – The northbound right turn flare length will be increased to accommodate additional vehicles.

The VISSIM modelling has been undertaken for the weekday AM and PM peak periods representing 7:00-10:00 in the morning peak and 16:00-19:00 in the evening peak respectively. A 15 minute warm-up period has been included to load the network before analysis.

The junction improvements in the DS scenarios result in a **very high BCR of 24.0**.

The high BCR is a result of journey time savings in the DS over the DM, mainly in the AM peak compared to a relatively low construction cost.

Option Variant	Construction Cost (£m)	Discounted Benefit (£m)	Discounted Cost (£)	BCR
Do Something	829,684	18,109,468	755,619	24.0

The sensitivity testing shows that minimal journey time savings still result in a BCR above 2 as the cost is low. Similarly, even if the cost increases by a further 1.5m the BCR is still above 2.

Better Queensway

The Better Queensway scheme proposes the residential redevelopment of the area either side of the Queensway between the junctions with Short Street/Chichester Road and Sutton Road/Southchurch Road. The latter is also proposed to be substantially changed with the north facing slip roads removed and the southbound on-slip also removed to leave a more compact signalised junction. The impact of the proposed scheme has been assessed using the updated 2013 Town Centre VISSIM model. The net change in vehicle trips from the existing to proposed use has been calculated based upon TRICS trip rates and assigned using the existing zone distributions. The proposed layout was initially assessed in LinSig with the optimised signal timings subsequently used in the VISSIM model assessment. In addition to the weekday peaks, a Saturday model has been developed. Six different scheme options have been considered in LinSig with five modelled in VISSIM. The model results have helped to inform the design and Executive Board in making the decision to proceed with the scheme.

A more detailed design of the preferred scheme is currently under tender and will include a more detailed assessment of the proposed development scheme.

A127 Model Schemes

Cuckoo Corner

The Cuckoo Corner junction was the first junction on the A127 corridor to be considered for improvement having a long history of congestion problems, particularly in the morning peak on Priory Crescent. The previous layout consisted of a conventional roundabout with give-way operation.

A number of scheme options were considered initially including a conventional signalised cross roads layout and indirect signalling (metering on the approach to the roundabout), but all failed to predict capacity improvements. The scheme that did predict improvement was anti-clockwise signalling. This involves signalisation of the roundabout (with some physical geometry changes also added including the provision of flares to 3 lanes on all approaches) with each arm provided green in an anti-clockwise rotation. The circulatory carriageway was then all on green with the exception of the circulatory on the immediately opposed approach. The advantage of this arrangement is it allows a continuous flow of traffic with minimal intergreen losses due to the presence of traffic signals on the circulatory.

A model was originally constructed for a 2006 base of the junction in isolation. This was subsequently updated to a base year of 2008 and included the Bell junction. The scheme was then assessed for a base year of 2008 and a proposed year of 2011 in VISSIM with the results fed to TUBA for economic assessment. The economic assessment predicted a large BCR of 18 and ultimately led to a business case for funding of the scheme.

The scheme was built in 2011 and continues to provide improved capacity as predicted.

Progress Road

The Progress Road scheme provided physical and signal enhancements to the A127 junctions with The Fairway and Progress Road. The scheme was modelled in TRANSYT and predicted benefits which ultimately led to an economic and business case for funding and approval. The scheme was completed in 2011 and has improved capacity through the junction.

Southend-on-Sea Airport / Rochford LDF

The Cuckoo Corner/Bell VISSIM model was expanded and revalidated using traffic counts undertaken in 2009 (for the SoSMMM). The revised model extents incorporated Eastwoodbury Lane to the north, Manners Way to the east, Nestuda Way to the west and Prince Avenue to the south. The model was also expanded to cover the AM peak period of 0700-1000 and PM peak period of 1600-1900. The model was validated against observed journey times.

The model was used to assess the impact of the Airport expansion to 2 million passengers per annum and the Joint Area Action Plan (JAAP) business park schemes. The SoSMMM was used to apply flow differences for the forecast year of 2021 for both a Do Minimum with JAAP only and Do Something (DS) with the Airport Expansion to the base VISSIM model flows. The DS network also consisted of the division of Eastwoodbury Lane to allow the expansion of the Airport Runway.

The results showed that the network suffered from a lack of capacity, particularly on the A127 junctions of The Bell and Tesco (Nestuda Way).

Subsequent to the original Airport assessment, the model was expanded to include Rochford with a western boundary of Cherry Orchard Way, northern boundary of Hall Road and eastern boundary of Southend Road. Traffic counts for the Rochford area were undertaken in 2010 and the model was revalidated to observed journey times and queue lengths.

The expanded model was then used to assess the impact of the Rochford LDF that included 1375 dwellings. The SoSMMM was again used to initially determine the strategic impact and to provide the flow forecasts for the DM and DS in 2021.

The model results predicted capacity problems as a result of the JAAP and Rochford LDF traffic at many locations, but identified a potential bottleneck on the A127 at the Tesco A127/Nestuda Way junction, particularly in the PM peak. Funding was secured through the DfT PinchPoint programme, and works to improve the Tesco Junction were completed in 2015, see below.

Tesco (A127/Nestuda Way) Junction

As a result of the above modelling, in 2012 the VISSIM model was extended to cover all junctions on the A127 to Progress Road and was used to assess the impact of junction improvement schemes along the corridor. A revised 2012 DM model was developed to include network and traffic flow changes.

Improvements at The Bell and Kent Elms junctions were predicted to be constrained by the conventional roundabout layout at the Tesco junction. Therefore, it was recommended that the Tesco junction should be improved first to allow for increased throughput of traffic from junction improvements either side at Kent Elms to the west and The Bell to the east.

Several options were assessed for both an interim 2016 year (with half of development growth added) and 2021. The preferred scheme was a similar anti-clockwise signalling arrangement to Cuckoo Corner. This scheme resulted in a large BCR of over 20 and ultimately led to a business case that was submitted as a PinchPoint scheme to the DfT and was successful in the funding application. The scheme was successfully implemented in 2015 and now provides the capacity required to make successful improvements at the Kent Elms and Bell junctions on the A127.

Kent Elms

The A127/A1015 Kent Elms Junction carries 44,000 vehicles (between 7am - 7pm). A junction improvement was required in order to serve additional traffic for the London Southend Airport, Airport Business Parks the area of proposed development adjacent to the Airport (as set out in the Rochford and Southend Joint Area

Action Plan – JAAP) and the Town Centre and eastern Southend. This includes employment and housing sites in both Southend and Rochford.

Earlier modelling undertaken in both the SoSMMM and the A127 VISSIM model indicated significant congestion on the A127 without improvements schemes at the Kent Elms, Tesco and Bell junctions.

The A127 VISSIM corridor model was again used to assess the impact of the Kent Elms scheme in 2016. Several options were assessed with the DM consisting of the as-built Tesco Nestuda Way junction and DS consisting of additional junction improvements at the Bell and Kent Elms junctions.

The preferred Kent Elms scheme consists of an increase of 2 to 3 lanes on the east and westbound exits merging back to 2 lanes, increases to the eastbound right turn storage length, increase from 2 to 3 lanes on the westbound approach, provision of a new standalone pedestrian crossing approximately 140m east of the junction. The proposed scheme is predicted to provide good benefits with a BCR of over 8 and the business case was successful in a funding application to the SELEP. The scheme is currently being implemented and is due to open this year.

The Kent Elms improvements will complement those already completed at A127 Progress Road, A127/B1013 Tesco Roundabout, and A127/A1159 Cuckoo Corner.

This intervention will demonstrate a strong commitment to provide the infrastructure needed to support the employment and housing numbers. The modelling has been based on 2021 projections of traffic growth and whilst this is predicated on full development, it is considered that this is the most credible position to adopt at present given the urgency around boosting economic growth. Whilst the development will be phased over the JAAP period, it must be recognised that in order to encourage the investment and increase the viability of the sites a clear, funded, route for infrastructure development must be put forward to support the JAAP developments and further economic growth.

The A127/A1015 Kent Elms junction improvement works are due for completion Summer 2017.

The Bell

The improvement scheme at the Bell was already assessed as part of the Kent Elms scheme appraisal, but further scheme options will be considered and a business case and funding application will be submitted to the SELEP. The modelling of the new scheme options will again be undertaken using the A127 VISSIM model with forecasts based on the SoSMMM.

The programme of investment in the A127 corridor, supporting the delivery of the planned growth for Southend and JAAP area is to complete the A127 Bell Junction Improvement in 2018/19, supported by the A127 Essential Bridge and Highway Maintenance package.