



South Essex Rapid Transit Major Scheme Business Case

Appendix 5D Public Transport Impacts

April 2010



A partnership project between Essex County Council, Southend-on-Sea Borough Council and Thurrock Council



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Appendix 5Di Initial Bus Service Impact Assessment

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South Essex Rapid Transit

Initial Bus Service Impact Assessment

Final Report

December 2009

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1 Introduction and Summary of Conclusions

- 1.1 This report is an initial investigation into the potential effects of the South Essex Rapid Transit (*sert*) proposals on the local bus network, as represented primarily in May 2008 timetables. Other planned transport projects and public transport strategies current in Thames Gateway South Essex (TGSE) are also taken into account.
- 1.2 The promoters (Essex, Southend and Thurrock councils) are committed to a continuing engagement with the operators providing existing bus services in the area, to ensure that *sert* becomes welcomed as a positive element within an integrated public transport network that will contribute significantly to sustainable development.
- 1.3 The review focuses on the two routes included in the initial *sert* scheme, as shown in **Appendix 1**. These have been the subject of public consultation during the spring and summer of 2009.
- 1.4 *sert* is primarily aimed at serving new development, and linking into existing communities and infrastructure. Therefore, much of the patronage for *sert* will be from new demand. The effect on current services was considered in this context.
- 1.5 It is concluded that overall *sert* will have a positive effect on the bus network in Essex, and provide many benefits for users and opportunities for the bus operators.
- 1.6 *sert* routes will overlap with some existing bus routes in several places. In these locations, some passengers will inevitably transfer to *sert*. For many (if not most) others however, the existing services will better meet their travel needs and they will continue to use them. On some existing services, particularly those which overlap significantly with *sert* services, it may be necessary for operators to recast routes and frequencies and in some cases to take the opportunity to upgrade some existing services to become part of the *sert* network.
- 1.7 It should be noted that where *sert* and existing services share parts of routes, the conventional bus services will also be able to take advantage of using the priority measures (subject to meeting the relevant quality standards that will be set). This will mean that the operators can benefit from aspects such as speed and reliability of operation for their services, this will help ensure that they not only retain existing customers, but also make it more likely that they will be able to secure new customers too, even considering their operation alongside the new *sert* network. The net result will be an improvement in the quality, and potentially the profitability of many existing bus routes in TGSE.

2 Background

- 2.1 *sert* will be an innovative and adaptable form of public transport that delivers most of the features of a tram at a lower cost. Providing a first-rate system and a step-change in public transport in South Essex which is seen as essential in ensuring that people have a realistic alternative to the car and one that significantly and positively complements the sustainable development of TGSE.
- 2.2 *sert* will be a high quality form of public transport that utilises a package of congestion-beating measures - it will be fast, frequent, reliable and easy to use. *sert* will use modern, high quality, environmentally friendly vehicles, with level access boarding, GIS, CCTV and where necessary, will run in its own dedicated lanes. Vehicles will also have technology which sends a signal to traffic lights to change to green when *sert* approaches, to ensure fast and reliable journey times are maintained. Services will be frequent, so that passengers can just "turn up and go". There will be high quality, easily-identifiable *sert* stops, with real time information displays. Tickets will be purchased in advance to minimise dwell time at stops.
- 2.3 *sert* will significantly enhance the existing public transport network in TGSE. It will link new housing and employment areas with existing residential areas, town centres and other key passenger attractors & generators. To some extent *sert* will duplicate existing routes. This will mean that existing commercial and subsidised bus services may be modified and/or upgraded as a result, to produce an enhanced bus network overall which will attract a greater number of passengers compared with the present network.
- 2.4 Key objectives of *sert* are to help deliver regeneration and economic development and to integrate communities with new development sites and key public transport interchanges. With the development of *sert* being aligned with a more effective network of inter-connecting conventional public transport services, through the introduction of new and improved interchanges, the promoters of *sert* are confident that this can be achieved.

3 Assumptions

- 3.1 At this stage of the development of the *sert* corridors, there are elements of the final product that have yet to be finalised, and where practical considerations and best practice will be incorporated from positive experiences elsewhere. Therefore, the analysis in this report is underpinned by a number of assumptions. Most of these assumptions relate in some shape or form to the quality of the service that will be delivered.
- 3.2 In moving towards more certainty on these aspects of the *sert* proposals, input from key stakeholders and the public in general will be crucial. Achieving and maintaining a high level of quality throughout the journey experience will be key to the success of the system. In particular, a step change in quality and reliability will be very important to ensure that *sert* and a revised bus service network are accepted as a realistic alternative to travelling by car in South Essex.
- 3.3 At the present time, the key assumptions are:
- | The priority measures provided on the *sert* routes may also be used by conventional bus services (subject to satisfying certain quality standards) and taxis where appropriate.
 - | Dedicated transit lanes or segregated transitways will be provided wherever needed, with non-segregated sections having ‘red-route’ type waiting and loading controls, where existing restrictions or non-compliance would otherwise introduce unacceptable delays.
 - | It may not always share boarding/alighting facilities. *sert* stops will generally be located about 1.2km apart (broadly one *sert* stop for every 3 bus stops). This may reduce where additional stops will provide better interchange facilities and/or access to key destinations.
 - | It is expected that *sert* fares will be broadly similar to those of conventional bus services. Key to the fares policy for *sert* is that an integrated ticketing system will be available, allowing seamless transfer between *sert* services and other public transport services.
 - | *sert* services will most likely be provided through an agreement between the promoters and one or more operators, utilising new powers provided by the Local Transport Act 2008.
 - | On all *sert* routes, frequencies will be at least:

Monday - Saturday	0500hrs - 0700hrs	every 20 minutes
Monday - Saturday	0700hrs - 1900hrs	every 10 minutes
Monday - Saturday	1900hrs - 2300hrs	every 20 minutes
Sunday/Bank Holiday	0800hrs - 0900hrs	every 20 minutes
Sunday/Bank Holiday	0900hrs - 1900hrs	every 15 minutes
Sunday/Bank Holiday	1900hrs - 2300hrs	every 20 minutes.

4 Review of Existing Public Transport Services

Introduction

- 4.1 This section explores the characteristics of bus services operating in the vicinity of the proposed individual *sert* routes, and considers the potential level of effect upon them. It will be for individual operators to determine precisely how their existing services may need modifying or upgrading to integrate with *sert* and the positive messages that it will bring to the area.
- 4.2 The effect of each *sert* route is considered in isolation from other *sert* services.
- 4.3 The individual *sert* route summary analyses are shown below – the full analysis is documented within **Appendix 4**.
- 4.4 It should be noted that no passenger / revenue data has been available to date for commercial services. Southend Council do not currently sponsor any services, nor do they require passenger numbers to be reported in anything other than an aggregated form for year end reporting purposes. The data provided for Thurrock services has also been aggregated and thus cannot be easily apportioned to the routes within this study. Therefore the high level assumptions made in terms of effect on existing services need to be treated with some caution, as these are based on professional judgement.
- 4.5 Information has been drawn from individual operator websites, leaflets and from Essex County Council timetable booklets (dated May 2008).

sert 1 - Lakeside, Grays, Basildon Town Centre, Basildon Enterprise Corridor

- 4.6 The rapid nature and extended operating times of *sert* is likely to make it the preferred option for many existing bus passengers. This is not only in respect of local passengers within Thurrock, but also longer distance travellers between Lakeside or Grays and Basildon. The avoidance of the major housing areas such as Chadwell St.Mary, Stanford-le-Hope and Corringham will enable significantly faster journey times to be achieved. This would ensure that the service becomes more attractive to the longer distance traveller in the area. Local travel would still be facilitated by the existing suite of local bus services. Existing services would then be in a better position to more effectively serve the local traveller, particularly as the planned developments within the eastern side of Thurrock come into being.

sert 2 - Progress Road, Southend Hospital, Southend Town Centre, Seafront

- 4.7 *sert* route 2 will provide a realistic alternative to current bus services. It will give passengers the opportunity to move quickly from Southend town centre, Travel Centre, rail stations and other stops on route to the new development at Roots Hall, Southend Hospital, the future park-and-ride site and industrial sites at Airborne Close and Progress Road. The route will connect with the many other services that operate around the town enabling access to *sert* from a wider catchment. With a

fast high frequency service that has attractive and spacious vehicles the service is well capable of reducing highway congestion.

Overall Impacts

- 4.8 *sert* will result in greater public transport uptake across Thames Gateway South Essex. Passengers will be encouraged to use the service to travel more directly and quickly to their destination. Normal services will stop more frequently than *sert* and as a result generally retain the majority of current patronage. Many of the existing services will link to *sert* and enable travel to destinations only reached conveniently by car today. The priority measures provided for *sert* will also enable the quicker movement of conventional bus services.
- 4.9 The detailed effect of the *sert* routes on current bus services is considered in **Appendices 2 and 3.**

5 Review of Public Transport Projects, Plans and Strategies

Documents Reviewed

- 5.1 This section takes an initial look at the known passenger transport strategies, policies and forward plans of the local authorities and considers how each is affected by the *sert* routes. Once again, as more certainty is achieved over routes and specification, a more detailed analysis of effect on other projects and plans will be undertaken. This analysis is undertaken on a route by route basis.
- 5.2 The following strategies and policies have been considered, as part of this process:
- | Essex Accessibility Planning Strategy
 - | Essex Alternative Travel Measures Policy
 - | Essex Community Safety Initiative
 - | Essex Fares & Integrated Ticketing Policy
 - | Essex Local Transport Plan 2006-11
 - | Essex Passenger Transport Emission Reduction Policy
 - | Essex Road Passenger Transport Strategy 2006-11
 - | Essex Route Management Strategy
 - | Essex Traffic Management Strategy
 - | Essex Transport Asset Management Plan (TAMP)
 - | Regional Transport Strategy
 - | Southend on Sea Local Transport Plan 2006-11
 - | Southend on Sea Passenger Transport Strategy 2006-11
 - | Thurrock Bus Information Strategy 2003
 - | Thurrock Bus Strategy 2003
 - | Thurrock Council Concessionary Fares Scheme
- 5.3 The potential effect of the following schemes and projects has been considered also;
- | A13 Passenger Transport Corridor
 - | Basildon Bus Station Redevelopment
 - | Basildon Hospital Expansion
 - | City Beach
 - | Eastwood A127, Progress Road Junction

- | Fryerns, Craylands Development
- | Gardiners Lane South Strategic Connection to A127
- | The Green Grid Project (South Essex)
- | Pitsea Flyover Refurbishment
- | Priory Crescent / Cuckoo Corner
- | Prittlewell Bell Junction
- | Sadlers Farm Junction
- | Southend DDA Kerb Programme
- | Southend Hospital Bus & Taxi Interchange
- | Southend, Victoria Public Realm Improvement

General Principles

- 5.4 The Essex Road Passenger Transport Strategy sets out a number of measures, which inform the main policy focus. *sert* is supportive of most of these, and is indeed specifically mentioned as a measure in its own right for relieving congestion in the TGSE area. *sert*'s objectives are outlined within Appendix H of the Road Passenger Transport Strategy 2006-11. It is also in line with the focus of Essex's Regional Transport Strategy and the Accessibility Planning Strategy.
- 5.5 The Thurrock Bus and Information Strategies do not specifically mention *sert*, however the *sert* package is generally in line with the overall aspirations of them.
- 5.6 The Southend on Sea Passenger Transport Strategy 2006-11 also makes no reference to *sert*.
- 5.7 The Essex 2006-11 Local Transport Plan specifically identifies *sert* within its Vision, as being '*...essential to further strengthen Essex's substantial and growing bus networks, and provide choice in travel.*' *sert* is clearly a core project supporting to varying degrees 4 of the 5 LTP objectives namely; Tackling Congestion, Delivering Accessibility, Creating Safer Roads and Promoting Better Air Quality. In general terms, much of the LTP refers to both a countywide and a local aspiration /intention to improve public transport reduce congestion and promote sustainable transport measures - as such *sert* is highly supportive of the LTP. Whilst the Southend LTP 2006-11 does refer to *sert*, it is much less clear on its aspirations for it. It should also be noted that the various routings shown within the Southend LTP differ from the current route plans.
- 5.8 The three local transport authorities have set up the Thames Gateway South Essex Transportation Board, (TGSETB) to ensure that major projects of mutual interest, such as *sert* are driven forward. They have a shared objective '*to reinforce the development of key Public Transport Interchanges*' - it will be important that prominence is given to the *sert* services, when these are being developed. This could affect the quality, style and design, which ideally will need to reflect the standards and brand that *sert* is setting - in order to reinforce the consistency and quality of the 'PT Product'.

- 5.9 Some of the aforementioned issues if suitably addressed could go some way towards enhancing the picture of bus travel within Thurrock, as depicted within the 'background' section of the Thurrock Bus Strategy. This states that on average a Thurrock resident made 15 bus journeys per year – against the national average at the time, of circa 40. It also recognised that Thurrock had 'a poor bus network with low levels of customer satisfaction'. The main objective of the Thurrock bus strategy 2003 was to increase passenger numbers by 35% by 2010/11. Hence there is great potential for *sert* to start to rebalance modal share within Thurrock, so long as *sert* is guaranteed to be the right product, with the right package of benefits and located in the right area – as local people seem to have been heavily dependant on the car, which will require significant persuasion to change. Timescales are not wholly compatible however.
- 5.10 The Essex CC Route Management Strategy includes widening and upgrading works on the A13, which *sert* route 1 utilises. It is therefore likely that the RMS will have some effect on *sert*. The project team will investigate further the timescales and scope of works, in order to see where joint working might be achieved. In a similar way, it will be beneficial for this project to link into the Essex TAMP (Transport Asset Management Plan). In this way remedial works required to satisfy the TAMP (or indeed as part of ordinary highway maintenance processes) can be undertaken in co-ordination with potential highway and footway modifications necessitated by the *sert* project. In this regard, the sooner that finalised stop locations and their associated prime pedestrian and cycle access routes can be established, the sooner the required works can begin to be phased in with other highway works – thus potentially preventing duplication of work and saving costs.
- 5.11 As an example, Southend Council are known to have almost completed an extensive programme of bus stop upgrades throughout the Council area – which for many stops means installation of DDA compliant kerbing, whilst at others shelters and other facilities are being added too. Once *sert* routings have been finalised, following consultation, the upgrade programme at *sert* stops can be adapted to reflect potential revised infrastructure requirements – which could mean altering bus stop locations.
- 5.12 The effective and thoughtful location of *sert* stops and prime pedestrian / cycling access routes to them, should be determined through reference to the aspirations of the Essex Community Safety Initiative, which cites better street lighting, increased use of CCTV and better design of isolated walkways, amongst its target items.
- 5.13 The Essex Traffic Management Strategy lays down guidance on the use of bus lanes, development of telematics and the enforcement of bus lanes & stops. The main bus operators are supportive of the need to ensure that traffic regulation orders are adhered to, with particular reference to parking at bus stops.
- 5.14 The Green Grid Project is also an initiative that has the promotion of sustainable transport, including passenger transport on its agenda. Resources have already been secured, which can partly be channelled into developing passenger transport interchanges, promoting passenger transport and generally increasing accessibility.
- 5.15 The Essex CC Passenger Transport Emission Reduction Policy currently states that the County Council is seeking to secure quality services utilising Euro 4 engine technology. Therefore as the project approaches the point of agreement on vehicle

design, this policy should be cross checked, to establish the current policy aspirations and seek to understand the potential effects of their incorporation.

- 5.16 The various concessionary fares schemes operating in the area could all be contributors to the overall revenue income for the *sert* services, dependant on how the services are registered / classified. There are various schemes in operation currently offering a range of ticketing products. Each of the main operators has a different product range, with varying validities and cost base. Some are available on bus, whilst others can be accessed via means such as 'paypoint'. Equally the local authorities have different products currently available to bus passengers - for example Essex has an 'Essex Sunday Saver' ticket, valid throughout the county (but not currently in Thurrock or Southend) at a cost of £2.70. Products such as this will need careful consideration, prior to being embedded within the *sert* suite of products. Similar issues arise with the existence in some areas of student passes. Key, though, is to ensure that *sert* fares are integrated appropriately with other public transport fares.
- 5.17 As the process of precise route determination progresses, it will be productive to ensure close liaison with the Essex Travel Plan Co-ordinator, who is charged with ensuring the effective implementation of much of the Alternative Travel Measures Policy. They should be able to provide guidance on current workplace travel patterns and share information on elements within the travel surveys that have been undertaken in the area. They are also likely to have developed strong links with key local employers, to ensure that promotion of *sert* is facilitated.

***sert* 1 - Lakeside, Grays, Basildon Town Centre, Basildon Enterprise Corridor**

- 5.18 The Basildon Hospital expansion project could provide additional opportunities for *sert* to make a significant effect. If redesign is underway, it may be feasible to incorporate a through route for *sert* vehicles, across the site, rather than the current practice of double running on the current single access road. It would be hugely beneficial for sustainable transport generally and *sert* specifically if the opportunity was to be taken to provide a significant passenger interchange facility at this key location.
- 5.19 Traffic queues extend to varying degrees along Christopher Martin Road and Eastmayne, affecting the Cranes Farm Road and Whitmore Way roundabouts. Additionally Cranes Farm Road is considered to be a congestion hot spot - therefore any priority that *sert* is given to traverse this main thoroughfare should take this issue into consideration.

***sert* 2 - Progress Road, Southend Hospital, Southend Town Centre, Seafront**

- 5.20 A Park & Ride site is planned for the Progress Road area of Eastwood, which is planned to form a western terminal for this service. The service is destined to then travel rapidly, initially along the A127, then heading south to serve Southend Hospital and on to the town centre and seafront.
- 5.21 The junction of A127 & Progress Road in Eastwood is currently scheduled for improvement by March 2011. Although currently bus services do not use Progress Road, there is potential for dedicated *sert* lanes to be installed along it, with

priority given to *sert* at the A127 junction, for whichever direction *sert* routes might be planned to go at that point. The Progress Road area is set to see major redevelopment of the current brown field sites, hence a service along this highway could be of significant benefit to the potential new businesses.

- 5.22 The A127 generally within Southend Borough has been identified as suffering particularly badly in terms of traffic congestion. It would be very beneficial therefore that this *sert* route should have its own operating lanes. A large scheme is also planned for the Prittlewell Bell junction on Victoria Avenue. This involves the removal of a footbridge, thus enabling a widening to the junction approaches to be undertaken. This is not being undertaken specifically for *sert*, although *sert* may well gain from it.
- 5.23 The Southend Victoria Public Realm Improvement Scheme is an exciting project designed to provide a much more welcoming feature for persons arriving at Southend Victoria Railway Station. The public space is intended to become a key attractor within the town centre, creating a pleasant and safe environment for people to meet, visit and more importantly for *sert*, to provide an easy to use multi modal transport interchange. This will mean that access to the rail station for buses (and *sert*) in both directions will be made easier and safer – particularly from the public perspective.
- 5.24 Another area where infrastructure is being installed imminently is at Southend Hospital, where a bus and taxi interchange is being constructed.

Other Projects

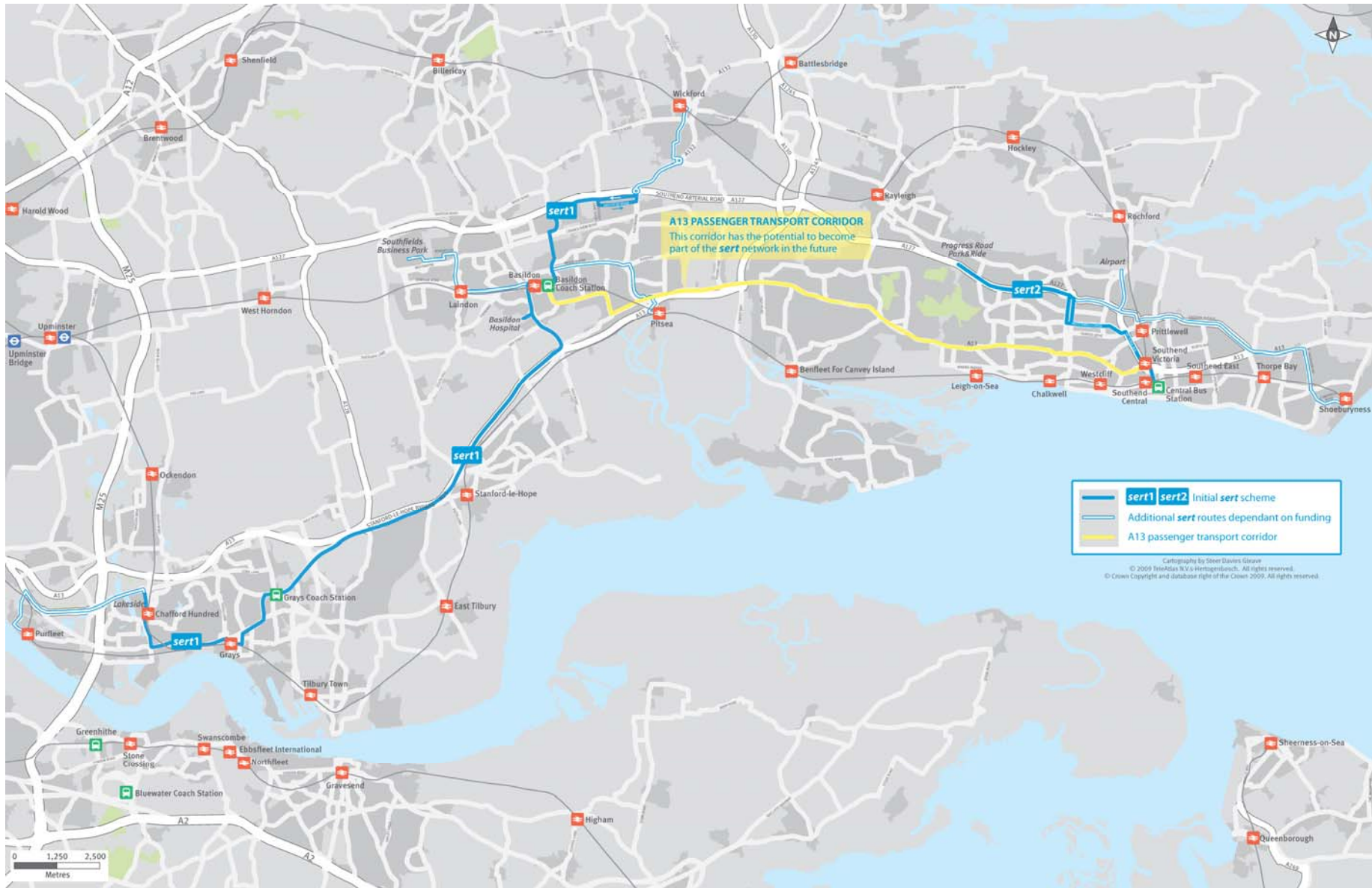
- 5.25 The principal additional public transport scheme that Essex CC is promoting in South Essex is the A13 Passenger Transport Corridor (PTC). This is a scheme of improvements to the bus infrastructure and highway junction layouts between Basildon and Hadleigh, with bus priority elements focussed on the section between Sadlers Farm roundabout and Hadleigh. Although the A13 PTC is not part of the initial *sert* proposals, it is likely to become part of the *sert* network at a future stage.
- 5.26 Essex CC is progressing a major scheme at Sadlers Farm roundabout, designed to remove a major source of particularly peak hour delays. Once again this is not connected with the initial roll out of *sert*, however for future phases this could be of greater importance.

6 Conclusions

- 6.1 *sert* will have a positive effect on the public transport network in South Essex, Thurrock and Southend and provide many benefits for users and opportunities for bus operators. The introduction of the *sert* network will however have some effect on the existing bus operations in all three of the areas considered in this study. This effect will of course grow, as the *sert* network grows over time. It is not however considered that *sert* will become an eventual replacement for the entire bus network, and most existing travel needs will continue to be served by conventional bus services. However, the combined network of *sert* and conventional bus services will result in an increased number of passengers travelling by bus compared with the present network.
- 6.2 The quality, speed and frequency of the *sert* services are intended to offer an option that is at least as attractive, if not better, than the private car. Consequently, there will be a real probability that some existing bus passengers may be prepared to walk slightly longer distances, in order to access these high profile and efficient services. Clearly, there will be some people (e.g. elderly people, those with disabilities relating to mobility, parents accompanying children in prams) for whom this may be impractical. For this reason, it is important that the level of existing bus service provision is broadly maintained in order to ensure social inclusion.
- 6.3 The positioning of the *sert* stops will play a very important role, in aiding the acceptability of the routes and ensuring their accessibility to passengers. It is likely that in order to maximise the project's potential, a number of other highway improvements will need to be made, in order to ensure that pedestrians can reach the *sert* stops easily and safely from within the more densely populated areas where the bus routes currently operate. This may mean improvements to lighting, construction or upgrading of additional footways, implementation of drop kerbs at suitable locations and provision of new access routes. Early liaison with Highways Managers will be important in order to determine a strategy for achieving the requirements as cost effectively as possible.
- 6.4 The potential effects of and on *sert* are many and varied. Collectively they have the ability to come together in an impressive integrated 'all encompassing' project. The *sert* project team is committed to enhancing public transport, and believes that the introduction of the *sert* network will deliver huge benefits to existing and future public transport users. Inevitably, some existing services will change over time, but it is anticipated that those changes will result in increased patronage and greater operational stability for the bus operators.

APPENDIX 1

















INITIAL *sert* ROUTES



APPENDIX 2

sert IMPACTS ON BUS NETWORK - BASILDON AND THURROCK

Summary of *sert* Impacts on Bus Network - Basildon and Thurrock

Route	Type of Service	Affected Local Bus Service	Potential Impact	
<i>sert</i> 1 Lakeside Grays Basildon Town Centre Basildon Enterprise Corridor	Commercial Services	Arriva route 5 Southend-Basildon-Lakeside		
		Ensign route 22 Aveley-Lakeside-Grays		
		Ensign route 44 Lakeside-Purfleet-Grays-Orsett Hospital		
		Ensign route 66 Ockendon-Lakeside-Grays-Chadwell St. M		
		Ensign route 73 Lakeside-Grays-Chadwell St. Mary		
		Ensign route 83 Lakeside-Grays-Chadwell St. Mary		
		Ensign route 88 East Tilbury-Grays-Lakeside		
		First route 99 Little Thurrock-Basildon-Wickford		
		First route 100 Chelmsford-Basildon-Lakeside		
		First route 200 Basildon-Lakeside		
		Stephensons route 800/1 Southend/ Hockley-Thurrock College		
		Subsidised Services	Route 44 Lakeside-Purfleet-Grays	
			Route 100 Chelmsford-Basildon-Lakeside	
			Route 150 Basildon-Lakeside	
			Route 268/9 Blackmore-Grays	
Route 374 West Horndon-Grays				

APPENDIX 3

sert IMPACTS ON BUS NETWORK - SOUTHEND

Summary of *sert* Impacts on Bus Network - Southend

Route	Type of Service	Affected Local Bus Service	Potential Impact
<i>sert</i> 2 Progress Road Southend Hospital Southend Town Centre Seafront	Commercial Services	Arriva routes 7/8 Rayleigh-Southend-Shoeburyness	●
		Arriva route 9 Rayleigh-Southend-Shoeburyness	●
		First route 20 Hullbridge-Rayleigh-Southend	●
		First route 21/21A/21B Canvey-Southend Hospital-Southend	●
		First route 25 Basildon-Southend	●
		Arriva route 29 North Leigh-Southend	●
		NIBS route 222 Rayleigh-Southend	●
		Stephensons route 250 South Woodham-Southend	●
	Subsidised Services	First route 825 Basildon-Wickford-Southend Schools	●
		First route X30 Stansted Airport-Southend	●
		Routes 7/8 Rayleigh-Southend-Shoeburyness	●
		Route 11A Chelmsford-Southend	●
		Route 20 Hullbridge-Rayleigh-Southend	●
		First route 21/21A/21B Canvey-Southend Hospital-Southend	●
		Route 251 Warley-Southend	●

APPENDIX 4

DETAILED ANALYSIS OF EFFECT ON INDIVIDUAL BUS SERVICES

1. INTRODUCTION

1.1 The analysis below represents the supporting information behind the concluding assessments of the potential effect of *sert* on the existing passenger transport networks, as shown in Section 4 of the main report.

1.1 The effect of each *sert* route is considered in isolation from other *sert* services.

1.2 It should be noted that no passenger / revenue data has been provided for commercial services, and only limited summary data has been provided for some of the subsidised services. Therefore the assumptions made in terms of passenger extraction from the existing services should be treated with some caution.

1.3 Information has been drawn from individual operator websites, leaflets and from neighbouring Essex County Council timetable booklets.

1.4 The anticipated effects of the individual *sert* route analyses are shown below. They are structured as follows – *sert* area, *sert* route number, commercial bus services (by route number) and sponsored bus services (by route number). The inclusion within the commercial or sponsored services list has been determined using the narrative within the May 2008 ECC timetable booklets, in the absence of further advice. Levels of potential effect have been graded as:

I **Blue:** *sert* service may attract a significant number of passengers away from the existing service for at least some of the route where this converges with a *sert* route. Upgrading of the route to *sert* specification may be a suitable action in order to maintain commercial feasibility.

I **Amber:** *sert* services may attract some passengers away from the existing service, and some minor adjustments to existing services may be required to maintain commercial feasibility.

I **Green:** Few passengers will be attracted away from existing services, and there is likely to be no effect on their commercial feasibility.

2. *sert* 1 - LAKESIDE, GRAYS, BASILDON TOWN CENTRE, BASILDON ENTERPRISE CORRIDOR

Commercial services

Arriva route 5 Southend - Basildon - Lakeside

2.1 This core Monday to Saturday route gives passengers access to Southend, Pitsea, Basildon, Grays and Lakeside retail centres as well as Basildon Hospital. *sert* could provide a viable alternative for passengers wishing to travel quickly between the Basildon, Grays and Lakeside retail centres as well as to Basildon Hospital.

Level of effect: **Blue**

Ensign route 22 Aveley - Lakeside - Grays

2.2 This daily service enables passengers to access Lakeside and Grays town centre. This half hourly service is likely to be affected by *sert* as about one third of the route between Grays town centre and Lakeside is duplicated. There are many competing services over this part of the route. The frequency and speed benefits of *sert* are likely to make it a preferred option.

Level of effect: **Blue**

Ensign route 44 Lakeside - Purfleet - Grays - Orsett Hospital

- 2.3 This service enables passengers in Purfleet to access Lakeside and links Purfleet, West Thurrock and Socketts Heath to Grays town centre. This service is likely to be partially affected by *sert* in the overlapping sections between Socketts Heath, Grays town centre and West Thurrock. There is already a number of overlapping conventional bus services on these sections.

Level of effect: Amber

Ensign route 66 Ockendon - Lakeside - Grays - Chadwell St.Mary

- 2.4 This Monday to Saturday service enables passengers to access the major retail area of Lakeside, as well as Grays town centre. This service is likely to be partially affected by *sert* as it is duplicated between Grays town centre and Orsett Road and between Grays town centre and Lakeside. There are other competing services over this part of the route; however the frequency and journey time benefits of the *sert* route is likely to make it a preferred option.

Level of effect: Amber

Ensign route 73 Lakeside - Grays - Tilbury

- 2.5 This daily service enables passengers to access the major retail area of Lakeside, as well as Grays town centre. This service is likely to be affected by *sert* as about half of the route is duplicated. The overlapping section of the route is between Socketts Heath centre and Lakeside. There are many competing services over this part of the route, however the frequency and reduced journey times of the *sert* route is likely to make it a preferred option.

Level of effect: Blue

Ensign route 83 Lakeside - Grays - Chadwell St.Mary

- 2.6 This Monday to Saturday daytime service enables passengers to access the major retail area of Lakeside, as well as Grays town centre. This service is likely to be affected by *sert*, as about two thirds of it is duplicated. The overlapping section of the route is between Socketts Heath and Lakeside. There are many competing services over this part of the route, however the frequency and reduced journey times of the *sert* route is likely to make it a preferred option.

Level of effect: Blue

Ensign route 88 East Tilbury - Grays - Lakeside

- 2.7 These two return trips enable East Tilbury residents to access Grays and Lakeside retail areas, Monday to Friday. The service is duplicated by *sert* route T1 between Socketts Heath and Lakeside. In practice few short trips are likely to be made on this service wholly between these points, as the service is so infrequent - as there are a number of much more regular services that will be more naturally used by these residents. The level of effect is therefore considered to be negligible.

Level of effect: Green

First route 99 Little Thurrock – Basildon – Wickford

- 2.8 This schoolday only trip is unlikely to be affected in its entirety by a single *sert* service, although many of the desired trips could potentially be undertaken by connecting *sert* services.

Level of effect: Amber

First route 100 Chelmsford – Basildon – Lakeside

- 2.9 This core Monday to Saturday daytime route gives passengers the opportunity to access Chelmsford, Billericay, Basildon, Grays and Lakeside retail centres as well as Basildon Hospital. *sert* would provide a viable alternative for passengers wishing to travel quickly between the Basildon, Grays and Lakeside retail centres as well as to Basildon Hospital.

Level of effect: Blue

First route 200 Basildon – Lakeside

- 2.10 This core Monday to Saturday daytime route gives passengers the opportunity to access Basildon, Grays and Lakeside retail centres as well as Basildon Hospital. *sert* could provide a viable alternative for passengers wishing to travel quickly between the Basildon, Grays and Lakeside retail centres as well as to Basildon Hospital.

Level of effect: Blue

Stephensons routes 800/1 Southend / Hockley – Thurrock College

- 2.11 These college day only trips are unlikely to be affected at all by the introduction of *sert*.

Level of effect: Green

Subsidised services

Route 44 Lakeside – Purfleet – Grays;

- 2.12 This Sunday service enables passengers in Purfleet to access Lakeside as well as Grays town centre. This service is likely to be partially affected by *sert* in the overlapping section between Grays town centre and West Thurrock.

Level of effect: Amber

Route 100 Chelmsford – Basildon – Lakeside

- 2.13 This Monday to Saturday evening route gives passengers the opportunity to access Chelmsford, Billericay, Basildon, Grays and Lakeside retail centres as well as Basildon Hospital. *sert* would provide alternatives for passengers wishing to travel between Lakeside, Grays and Basildon town centre.

Level of effect: Blue

Route 150 Basildon – Lakeside

- 2.14 This Sunday route gives passengers the opportunity to access Basildon, Grays and Lakeside retail centres as well as Basildon Hospital. *sert* is likely to provide a viable alternative for passengers wishing to travel between Lakeside, Grays and Basildon town centre.

Level of effect: Blue

Route 268/9 Blackmore - Grays

- 2.15 This infrequent service is unlikely to be materially affected by *sert*, as most passengers will be long distance travellers for Grays. There is a relatively small section of overlapping route, between Lodge Lane and Grays town centre, where there are many competing services.

Level of effect: **Green**

Route 374 West Horndon - Grays

- 2.16 This infrequent service is unlikely to be materially affected by *sert*, as most passengers will be long distance travellers for Grays. There is a relatively small section of overlapping route, between Socketts Heath and Grays town centre, where there are many competing services.

Level of effect: **Green**

3. *sert 2 - PROGRESS ROAD, SOUTHEND HOSPITAL, SOUTHEND TOWN CENTRE, SEAFRONT*

*Commercial services**Arriva routes 7/8 Rayleigh - Southend - Shoeburyness*

- 3.1 These routes operate on a daily basis with services Monday to Saturday every ten minutes, reducing to every 30 minutes evenings and Sundays. These services operate to many different locations outside of Southend providing the passenger many opportunities to both board and alight at differing locations. These services will connect with the *sert 2* service at Woodgrange Drive, town centre stops and Southend Hospital. The additional connections will mean passengers gain choice to travel to industrial areas as well as connecting to services on Rayleigh Road. *sert 2* could compete with the route between Southend and Prittlewell.

Level of effect: **Amber**

Arriva route 9 Rayleigh - Southend - Shoeburyness

- 3.2 This route operates daily with services Monday to Saturday every 12 minutes, reducing to every 30 minutes evenings and Sundays. The route passes through the town centre and leads out to the residential areas of Prittlewell, Westcliff and Eastwood. The route connects with *sert 2* at the Kusaal, town centre and industrial areas of Prittlewell and Eastwood. The service also gives the opportunity for passengers to travel quickly to Southend Hospital and the Eastwood corridor where there is also access to other services. *sert 2* could compete with the route between Southend and Prittlewell.

Level of effect: **Amber**

First route 20 Hullbridge - Rayleigh - Southend

- 3.3 This route operates daily with services every 15 minutes Monday to Saturday and with limited evening services. Sunday operation is every 30 minutes. *sert 2* would connect at the town centre and Southend Hospital and give passengers the opportunity to travel to the industrial areas at Airbourne Close and the southern end of Progress Road. It is likely that for some passengers travelling between Eastwood Kent Elms and Southend the more frequent *sert* service would be seen as an attractive option.

Level of effect: **Blue**

First route 21/21A/21B Canvey - Southend Hospital - Southend

- 3.4 This route operates daily with services every 20 minutes Monday to Saturday and hourly on Sundays. The service connects with *sert 2* at the town centre and Southend Hospital, allowing passengers to access the industrial areas at Eastwood. It is possible that passengers travelling between Southbourne Grove and Southend would be attracted to the more frequent *sert* service. While *sert* is likely to take some local traffic between Southbourne Grove & Southend, it is considered that this is unlikely to materially affect the way in which the remainder of the route is operated.

Level of effect: **Blue**

First route 25 Basildon - Southend

- 3.5 This route operates daily with services every 30 minutes Monday to Saturday and every hour on Sundays with limited evening services. It is possible that passengers travelling between Eastwood Kent Elms and Southend would be attracted to the more frequent *sert* service.

Level of effect: **Blue**

Arriva route 29 North Leigh - Southend

- 3.6 This route operates daily with services every 15 minutes Monday to Saturday, every hour on Sundays and limited evening services. The service operates on a high frequency basis in the more traditional residential areas of the borough and provides access to many schools on route. It is possible that passengers travelling between Prittlewell, Fairfax Drive and Southend would be attracted to the more frequent *sert* service. There may also be some passengers attracted from the northern end of this route, which is close to the A127.

Level of effect: **Blue**

NIBS route 222 Rayleigh - Southend

- 3.7 This Sunday service gives passengers the opportunity to access Southend and Rayleigh retail centres. It is likely that passengers travelling between Eastwood Kent Elms and Southend would be attracted to the more frequent *sert* service.

Level of effect: **Blue**

Stephensons route 250 South Woodham - Southend

- 3.8 This infrequent weekday route is unlikely to be materially affected by *sert*, as most passengers will be longer distance travellers.

Level of effect: **Green**

First route 825 Basildon - Wickford - Southend Schools

- 3.9 These schoolday only trips are unlikely to be affected to any great degree by the introduction of *sert*. There would effectively be some duplication and at a far higher frequency between Eastwood and the High Schools in Prittlewell Chase.

Level of effect: **Green**

First route X30 Stansted Airport - Southend

- 3.10 This is a daily limited stop service from Southend to Stansted Airport via Chelmsford. The added connections with *sert 2* will allow greater flexibility for passengers wishing

to travel to outlying areas and reduce the need to travel to Southend travel centre or for part of the way by car. It is likely that passengers travelling between Eastwood Kent Elms and Southend would be attracted to the more frequent *sert* service. However, this is estimated to be only a minimal number of current passengers, as most travel over a long distance.

Level of effect: **Green**

Subsidised services

Routes 7/8 Rayleigh - Southend - Shoeburyness

- 3.11 This evening and Sunday service gives passengers the opportunity to access Shoeburyness, Southend town centre, the northern side of Southend, Southend Airport and Rayleigh. Although this service receives some subsidy from Essex County Council it is small and only affects the service between Hockley and Rayleigh. The route would only be duplicated over the short section from Southend to Prittlewell.

Level of effect: **Amber**

Route 11A Chelmsford - Southend

- 3.12 This Sunday only interurban service is unlikely to be affected to any great degree by the introduction of *sert*. There would effectively be some duplication and at a higher frequency between Eastwood, the Southbourne Grove area and the town centre.

Level of effect: **Green**

Route 20 Hullbridge - Rayleigh - Southend

- 3.13 The main service is operated commercially with only a couple of late Sunday journeys to Hullbridge subsidised by Essex County Council. The service gives passengers the opportunity to access Southend town centre and Rayleigh late on Sunday evenings. It is likely that passengers travelling between Eastwood Kent Elms and Southend would be attracted from the existing service to the more frequent *sert* service.

Level of effect: **Blue**

First route 21/21A/21B Canvey - Southend Hospital - Southend

- 3.14 This Monday to Saturday evening service gives passengers access to Southend Hospital and town centre. It is possible that passengers travelling between Southbourne Grove and the town centre would be attracted to the more frequent *sert* service. While *sert* is likely to take a proportion of local traffic between Southbourne Grove and Southend, it is considered that this is unlikely to materially affect the way in which the remainder of the route is operated.

Level of effect: **Blue**

Route 251 Warley - Southend

- 3.15 This Sunday service gives passengers the opportunity to access Southend, Rayleigh, Wickford, Billericay and Brentwood retail centres. It is likely that passengers travelling between Eastwood Kent Elms and Southend would be attracted from the existing service to the more frequent *sert* service.

Level of effect: **Blue**

CONTROL SHEET

Project/Proposal Name South Essex Rapid Transit

Document Title Initial Bus Service Impact Assessment

Client Contract/Project No.

ISSUE HISTORY

Issue No.	Date	Details
V4	21 July 2009	Draft report for bus operator review
V5	4 Dec 2009	Revised to reflect initial <i>sert</i> scheme

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South Essex Rapid Transit Major Scheme Business Case

Appendix 5Dii *sert* Rail Impacts Study

April 2010



A partnership project between Essex County Council, Southend-on-Sea Borough Council and Thurrock Council

sert Rail Impacts Study

December 2009

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Document Control Sheet

Project Title South Essex Rapid Transit

Report Title **sert** Rail Impacts Study

Revision 05

Status Issued for review by National Express

Control Date 4 December 2009

Record of Issue

Issue	Status	Author	Date	Check	Date	Authorised	Date
01	Draft	Chris Seaman	15 May 2009	John Mooney	20 May 2009	John Mooney	20 May 2009
02	2 nd draft	Chris Seaman	5 June 2009	John Mooney	9 June 2009	John Mooney	9 June 2009
03	3 rd draft	Chris Seaman	9 June 2009	Chris Ferrary (SDG)	15 June 2009	Nigel Astell (ECC)	15 June 2009
04	4 th draft	Chris Seaman	16 July 2009	Nigel Astell (ECC)	17 July 2009	Nigel Astell (ECC)	17 July 2009
05	For NX review	Chris Seaman	4 Dec 2009	Nigel Astell (ECC)	27 Nov 2009	Nigel Astell (ECC)	27 Nov 2009

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1 Introduction, Summary and Conclusions

This report is an initial investigation into the potential effects of the South Essex Rapid Transit (**sert**) proposals on the current local rail network. Other planned transport projects and public transport strategies current in Thames Gateway South Essex (TGSE) are also taken into account.

The promoters are committed to a continuing engagement with operators providing existing rail and bus services in the area to ensure that **sert** becomes part of an integrated public transport network that will contribute to sustainable development.

The review focuses on the two routes included in the initial **sert** scheme, as shown in **Appendix A**. These have been the subject of public consultation during the spring and summer of 2009.

sert is primarily aimed at serving new development, and linking it into existing communities and infrastructure. Therefore, much of the patronage for **sert** will arise from new demand. Therefore it will not generally be necessary for **sert** to compete with existing services for customers. The effect on existing rail services has been considered in this context.

The initial group of **sert** services are likely to have an overwhelmingly positive effect on the existing rail services within TGSE as they will be providing high quality, fast, frequent and reliable feeder services to key locations such as Southend, Basildon and Grays.

The provision of **sert** feeder services is likely to have a positive environmental impact for the residents and businesses located in the locale of railway stations with which **sert** has an interchange. This is in the form of reduced pressure on often limited station car parking facilities and as a result a knock on effect of an improved quality of life for people located here, as a result of a reduced number of rail travellers seeking to park in the vicinity.

The **sert** project team will pursue a partnering approach to the development of interchanges between rail and **sert**, as this will bring significant benefits to all parties through the provision of an enhanced passenger transport offering.

2 Background

sert will be an innovative form of public transport that delivers most of the features of a tram at a lower cost. Providing a first-rate system and a step-change in public transport in South Essex is essential to ensure people have a realistic alternative to the car that complements the sustainable development of TGSE.

sert will form a high quality public transport network that utilises a package of congestion-beating measures – it will be fast, frequent, reliable and easy to use. **sert** will use modern, high quality, environmentally friendly vehicles, with level boarding, GIS and CCTV. Where necessary, it will run in its own dedicated lanes. Vehicles will have technology which sends a signal to traffic lights to change to green on approach in order to maintain reliable journey times. Services will be frequent so that passengers can just "turn up and go". There will be high quality, easily-identifiable **sert** stops, with real time passenger information displays. Tickets will be purchased in advance to minimise dwell time at stops.

sert will integrate well with the existing public transport network in TGSE. It will link new housing and employment areas with existing residential areas and town centres.

Key objectives of **sert** are to help deliver regeneration and economic development as well as to integrate existing communities with new development sites and key public transport interchanges. With the development of **sert** being aligned to the existing extensive network of connecting conventional public transport services, the promoters of **sert** are confident that this can be achieved.

3 Review of Rail Transport Projects and Plans

3.1 Introduction

This section takes an initial look at the known passenger rail transport strategies, policies and forward plans of the local authorities, Network Rail and the train operating companies and considers how each is affected by the **sert** routes. As more certainty is achieved, a more detailed analysis of the effects on other projects and plans will be undertaken. This review is undertaken on a route by route basis.

3.2 List of Projects, Plans and Strategies

Many other projects within the three authorities' various plans and strategies refer to an underlying theme of seeking to move existing car travellers to a more sustainable mode of transportation, of which rail is clearly one. These have not been specifically highlighted within this study.

The following strategies and policies have been considered as part of this study:

- Crime Reduction Programme
- C2C Smartcards
- C2C 12 Carriage Trains on North Thameside Rail Loop (within GA RUS)
- Double Tracking the Ockendon Line
- Draft East of England Plan
- Essex Local Transport Plan 2006-2011
- Essex Rail Policy
- Essex Rail Strategy 2006-2011
- Greater Anglia RUS
- Green Grid South Essex
- Plusbus
- Regional Economic Strategy
- Regional Transport Strategy
- Shellhaven Development (DP World London Gateway)
- Southend Airport Rail Station Proposals
- Southend-on-Sea Local Transport Plan 2006-2011
- Thurrock Local Transport Plan 2006-2011
- Thurrock Transport Strategy 2008-2021 (Draft)

3.3 General Principles

The Essex Rail Strategy has four main objectives, all of which would be supported by the introduction of **sert** as a support mechanism for the mainline rail network. These objectives are to:

- Promote rail as part of an integrated public transport system that will retain existing and attract new passengers
- Provide a high class seamless journey experience
- Develop the accessibility of the rail system
- Ensure the long term future and viability of the Essex rail network.

The Essex Local Transport Plan (LTP) 2006-11, as well as the Regional Economic and Transport Strategies all identify the importance of maintaining strategic movements by public transport (generally) and rail (specifically). Their vital role in meeting strategic access requirements to London in particular is recognised. The spirit of this is also contained within the Southend LTP.

As the detail of the implementation of the East of England Plan, and its accompanying Implementation Plan are determined, it is feasible that the requirement for new and enlarged railway stations may be seen as key elements for addressing the accessibility needs of the many thousands of new homes planned for TGSE. It is acknowledged that such infrastructure enhancements however usually have a high cost attached to them. Thus it will be important to ensure that **sert** is incorporated into the design of new or modification of existing infrastructure as it is being considered, to avoid incurring additional cost. The development of multimodal interchanges is also an aspiration with the South Essex Green Grid project, which also carries its own funding for suitable schemes.

On the same theme, Thurrock's LTP focuses on improving interchange facilities at C2C stations. The Thurrock Transport Strategy takes this a stage further and states that it will audit all existing PT interchanges and aim for them all to be brought up to a high standard. Involvement of the **sert** project team in this process will help ensure that infrastructure destined to be shared by **sert** is constructed within the appropriate design guides and in agreed locations.

The Crime Reduction Programme within the Essex Rail Strategy suggests that a core part of attracting new customers will be the assurance that passengers are safe on the network. This is a view also expressed by the Southend LTP. The measures applied as part of this programme could be developed to integrate with **sert** in some locations.

Essex's LTP has identified that interventions such as better pedestrian access to stations will contribute towards the increased acceptability of public transport as an

alternative to the car. The desire to improve pedestrian access is a mutually beneficial joint aspiration for the rail network and **sert**.

Thurrock's LTP recognises a shortfall in parking spaces at Grays, although in this instance the authority is looking to address the shortfall through alternative measures such as **sert**, as the provision of additional spaces would be particularly difficult to achieve.

The Essex LTP identified that the majority of commuter flows are in the direction of London – as such it determined that one area for concentrated attention was in assisting movements to rail stations. **sert** will be well placed to help fulfil this aspiration. The LTP identified that the C2C network was operating over capacity – although it is acknowledged that the LTP was written well before the current recession. The capacity issues are echoed by the Thurrock Transport Strategy.

The introduction of **sert** will encourage some commuters who currently travel by car for the entire trip to leave their car at home and use a combination of **sert** and rail instead.

The redevelopment of London Gateway could provide an opportunity to develop a new passenger rail link from the site into the C2C network, in addition to being served by **sert**. This could be achieved through construction of new stations and an upgrading of the existing freight line to accommodate passenger traffic. There is an opportunity to develop a fully integrated transport network for London Gateway through a combination of rail, conventional bus and **sert**.

It is understood that smartcard ticketing is likely to be introduced on the current C2C route in 2013 whether or not the current franchise is extended. It follows therefore that the **sert** project team will need to be consulted during the development of this product in order to ensure that opportunities for integrated ticketing are pursued.

The Plusbus product is well established throughout TGSE, with the 3 main commercial bus operators accepting the tickets. The intention is for **sert** to participate in Plusbus.

3.4 **sert 1 – Lakeside, Grays, Basildon Town Centre, Basildon Enterprise Corridor**

There are plans identified within the Essex LTP to develop enhanced bus and rail interchange facilities in Basildon. This project is of significant relevance to **sert**.

The proposals to double track the Ockendon branch would enable a more frequent service to Chafford Hundred station. If this project does go ahead then there may be a case for **sert** to serve the station.

The Thurrock Transport Strategy suggests a potential station at West Thurrock. If the station does get built then there may be a case for **sert** to serve the new station.

3.5 **sert 2 – Progress Road, Southend Hospital, Southend Town Centre, Seafrost**

There are no known rail projects specific to this route.

4 Review of Existing Rail Services

4.1 Introduction

This section explores the characteristics of rail services operating close to the proposed **sert** routes, and considers the potential effect of **sert** on them. The **sert** project team has already held discussions with individual operators that run rail services in TGSE and will continue this engagement in future to consider how services and infrastructure may be best integrated.

There are two train operators within the area. These are National Express East Anglia (operating a suburban branch of the Great Eastern Line), and C2C (operating on the North Thameside and Basildon lines). An outline of their operation is included below, followed by a consideration of the effect of **sert** on them.

Table 1 shows estimates of the total amount of passengers using each of the rail stations that will be served the first phase of **sert** based on extracts from Delta Rail's 2007/08 Usage Data Report.

Station Name	Estimated Passenger Entries per Annum	Estimated Passenger Exits per Annum	Estimated Number of Interchanging Passengers per Annum
Basildon	1,265,706	1,272,567	-
Chafford Hundred	1,014,635	1,051,194	-
Grays	1,443,117	1,441,232	59,047
Prittlewell	52,149	61,116	-
Southend Central	958,288	945,998	25,369
Southend Victoria	1,992,028	1,986,605	735

Table 1 – Extracts from Delta Rail's estimated annual passenger numbers at selected stations (2007/08 financial year)

National Express East Anglia

National Express East Anglia (NXEA) operates services from (inter alia) Southend Victoria to London Liverpool Street with key interchanges at Wickford (where the Southminster branch line feeds in), Shenfield, Romford and Stratford.

This broadly operates at a 20 minute frequency during the daytime Monday to Saturday, reducing to half hourly in the evenings and on Sundays.

The availability of cycle and car parking at the two stations relevant to the initial phase of **sert** are shown in Table 2.

Station	No. of Car Parking Spaces	No. of Cycle Parking Spaces
Prittlewell	41	6
Southend Victoria	11	10

Table 2 – Car and cycle parking facilities at relevant NXEA stations

Table 2 shows that at Southend Victoria it is evident that any additional form of transport provision would be particularly appropriate, given the current low level provision (broadly 1 space per 647 passengers). Similar data for cycles shows that Prittlewell has one cycle space for broadly every 31 passengers. The figure for Southend Victoria is 1 space per 711 passengers.

C2C

C2C operates services between Shoeburyness and London, Fenchurch Street. This line divides at Pitsea, with one branch operating via Basildon and Upminster and the other via Stanford-le-Hope and Grays. At Grays there is a further split, with some services operating via Chafford Hundred and Upminster, and others via Purfleet.

In Southend the frequency of the rail services mean that a well established ‘metro’ type facility is provided. **sert** is unlikely to have an impact on this arrangement, partly as the operating areas are quite different, but also because the C2C brand is firmly and positively established within the locale. However, C2C could benefit from a joint marketing initiative with **sert** in order to attract new users who would use **sert** as a feeder.

Trains operate at the frequencies shown in Table 3. Only the sections of line potentially relevant to **sert** operations are shown in this table.

Route Section	Day / time period	Frequency
Shoeburyness – London	Monday to Saturday (daytime)	4 per hour
	Monday to Saturday (eves)	3 per hour
	Sunday	2 per hour
Pitsea – Grays – Chafford Hundred – Upminster	Daily	2 per hour

Table 3 – C2C service frequencies

Table 4 shows the amount of provision for car and cycle parking at the various C2C stations that the initial phase of **sert** is likely to serve.

Station	No. of Car Parking Spaces	No. of Cycle Parking Spaces
Basildon	0	20
Chafford Hundred	105	20
Grays	150	44
Southend Central	150	30

Table 4 – Car and cycle parking facilities at relevant C2C stations

Table 4 shows that the level of car parking provision varies. Even the stations with a more generous level of provision, such as Chafford Hundred and Grays, still fall short of the ideal requirement for busy stations (one space for roughly every 35 passengers). Cycle parking per passenger is the most constrained at Basildon, where there is one space per 226 passengers.

Thus it can reasonably be assumed that the introduction of **sert** should materially relieve the pressures on the available car parking facilities. It is also highly likely that in providing a high quality and high frequency feeder service, **sert** will both encourage modal shift and induce additional journeys to be made – which will have a positive effect on passenger numbers for the railway businesses.

General Comments

At all of the stations that **sert** would serve, the provision of a fast and frequent feeder service could be a significant factor in persuading some people who currently travel by car for entire trips to switch to a combination of **sert** and rail. This would in turn also reduce the pressure on generally limited parking facilities at or around the stations, although it is not anticipated that this would be to such an extent as to affect car parking income for the rail operators. It would however be likely to have the knock-on effect of reducing the number of rail passengers parking in nearby residential streets surrounding the rail stations, so offering some quality of life benefits to local residents. It is also likely that **sert** will induce additional trips as well as complementing the railway by providing a high quality end to end journey experience, so encouraging modal shift away from the car.

The **sert** project team will be keen to commence discussions with regard to the integration of fares and ticketing products at an appropriate stage, as this element is likely to involve complex negotiations. It will also necessarily involve various bus operators.

4.2 sert 1 – Lakeside, Grays, Basildon Town Centre, Basildon Enterprise Corridor

The level of effect of this route on the existing rail network is considered to be low. Whilst there is likely to be some local traffic between Chafford Hundred and Grays,

this is likely to be relatively small – in practice there are already local bus services operating on this route.

Whilst there is a rail station at Basildon, it is not on the same line as Grays and Chafford Hundred. Few through rail passengers would be expected currently, as this would involve a change of trains in Pitsea or Upminster. Direct bus services currently exist, which are relatively attractive compared with rail.

- 4.3** **sert 2 – Progress Road, Southend Hospital, Southend Town Centre, Seafront**
sert route 2 will have potential to boost the level of rail patronage by providing fast and effective feeder services from some of the key housing areas within the district.

The only length of existing rail line that it will theoretically have approximate commonality is Prittlewell to Southend Victoria. However, due to the very short distance between Prittlewell and Victoria stations, any **sert** passengers would be more likely to come from parallel bus services rather than the railway.

4.4 **Summary**

In providing a more effective feeder service throughout the day, **sert** combined with the modern rolling stock on C2C in particular, is likely to provide a combined service that is sufficiently attractive to cause existing car commuters to consider changing their mode of travel as well as inducing additional rail trips to be made. This will more than offset the negligible number of passengers that may be lost to **sert** from the rail network.

Careful development of the marketing strategy for an integrated passenger transport network centred on rail and **sert** is likely to prove fruitful to both modes.

Overall, **sert** will be overwhelmingly complementary to the TGSE rail network.

Appendix A – Initial *sert* Routes

