

Rail Strategy Development Plan
South Coast Multi Modal Study
Prepared for
Government Office for the South East
August 2002

Halcrow Group Limited

In association with:

Accent

Chris Blandford Associates

DTZ Pida

Baxter Eadie Ltd

Sustainable Futures

Camargue – PR media Consultants

Transportation Research Group, University of
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Executive Summary

The objective of the Rail Strategy Development Plan is to test, in detail, the principal elements of the SoCoMMs rail strategy. This has enabled the strategy to be refined into a form that complies with the needs of key Stakeholders and achieves minimum value-for-money standards.

Refinement of the rail strategy has involved infrastructure and resource costing, timetabling together with economic and financial appraisal. The key recommendations are as follows:

- Investment in new stations at St Leonard's Marina, Glyne Gap, Stone Cross, Shoreham Airport, Littlehampton Parkway, Eastleigh and, possibly, Manston Airport and Witting Farm;
- Further investigation into the closure of around four lightly used stations;
- £49m of investment in station and interchange improvements;
- Significant improvements in service frequencies on lines in East Kent, with six new hourly services on the network serving Ramsgate, Canterbury, Dover, Margate and Faversham;
- A new half-hourly regional express service between Ashford, Brighton, Chichister and Southampton (which includes stops at Ore, Hastings, St Leonards and Bexhill);
- Five services per hour at existing stations between Ore and Bexhill;
- Retention of a Hastings-Gatwick service;
- Double-tracking between Hastings and Ashford;
- In the longer term, construction of a new chord at Eastleigh to allow direct services between Brighton and Southampton Airport, along with general frequency enhancements in West Sussex and South Hants;
- Additional hourly service between Brighton and West Worthing;

Appraisal of the strategy of a whole has indicated a B:C ratio of 1.9 and NPV of £204m. Each element of the strategy also produces a positive NPV. The B:C ratios of individual elements of the strategy are all above 1.0.

1 Purpose of Strategy Development Plan

1 Purpose of Strategy Development Plan

1.1 *Introduction*

The purpose of the strategy development plans is to describe the structure and anticipated performance of multi-modal measures at the local level. Specifically, the *Rail Strategy Development Plan* discusses the range of measures proposed for rail services along the SoCoMMS corridor. It identifies the capital expenditure requirements together with the impact on operational costs. Finally the plans provide feedback to the overall strategy development process by confirming the inclusion of key measures and identifying the broad short, medium and long-term timescales for implementation.

1.2 *Rail Development Plan*

1.2.1 *Objectives*

The specific objectives of the rail strategy development plan are: -

- to develop train service enhancements for the routes along the SoCoMMS corridor
- to identify the infrastructure needs that will enable these enhancements to be introduced
- to identify the capital expenditure and annual operational costs associated with the enhanced train services
- to provide an appraisal of these elements of the overall strategic plan.

1.2.2 *Process and Outputs*

The work has focussed on the development of rail service enhancements using the specifications identified in the development of the strategy within the three geographical groupings of East Kent, East Coastway (Ashford to Brighton) and West Coastway (Brighton to Southampton).

The additional infrastructure that is required to provide the enhanced train services has been reviewed in some detail. The schemes that remain represent the minimum necessary consistent with providing value for money.

The key outputs from the Strategy Development Plan include: -

- A description of the development of rail transport that identifies the assumptions that have been used, together with the comments and qualifications that have arisen from the development process.
- Draft rail service patterns that reflect delivery of the specifications identified in the development of the strategy.
- An appraisal summary table for the rail elements.

In addition, the outputs seek to provide the Strategic Rail Authority with sufficient information for detailed design and development to be undertaken.

1.3

Assumptions

The development of the rail strategy development plan assumes implementation of the following major events: -

- The infrastructure and station improvement schemes contained within the GoVia and South West Trains "best and final offers" (BAFOs) for the South Central and South West passenger franchises respectively.

However, there are indications in the public domain that elements of the GoVia BAFO are now unlikely to be included in the final franchise agreement (e.g. electrification of Ashford-Hastings). Where these exclusions are likely to have an impact on the SoCoMMS development plans particular reference is made within this report to the likely implications.

- The full replacement of all Mark 1 slam-door rolling stock by the target date of 31st December 2004.
- Introduction of the full *Virgin Voyager* cross-country timetable as proposed during 2002/03.
- Introduction of the first phase of CTRL services in late 2003 when capacity will be released on the existing routes through Ashford and Folkestone.
- Introduction of "domestic" services on the CTRL between East Kent and London St Pancras in 2007.

- Replacement of Railtrack as the network operator by Network Rail.
- Introduction of the "holistic" Thameslink 2000 and Govia South Central timetable in 2008, as proposed in early 2002.

2 Strategy for Rail Improvements

2

Strategy for Rail Improvements

2.1

Introduction

One of the major issues identified during the previous stages of the study was that public transport was not seen as an attractive nor as an available alternative means of travel to the private car.

The primary objective of the strategy for rail improvements is therefore to seek to change this perception by capturing a number of strategic elements within the rail strategy development plan. Given real and demonstrable improvements it is believed that potential users will recognise the progress that has been made. This will in turn move the "decision threshold" closer to the point where public transport generally and rail specifically will be seen as both an attractive and available alternative for an increasing number of journeys within the SoCoMMS area.

The strategic elements are summarised in the following sub-sections and developed in detail in later Sections.

2.2

Improvements in the promotion, quality and reliability of train services

A major criticism of the rail services operating within the SoCoMMS area is that of poor product promotion and quality, exacerbated by continuing real and perceived problems associated with train service reliability and punctuality.

An early, urgent and broadly achievable objective in the short term must be to effect significant improvements in these critical areas of public perception.

2.3

Improvements at stations and in interchange facilities

The perceived poor structural condition and presentation of many stations is another major criticism that must be addressed in the short to medium term.

In addition, new initiatives to create more "seamless" journey opportunities through improvements in interchange facilities and the opening of new stations must be considered in the medium to long term.

2.4

Enhanced train service frequencies

Whilst train service frequencies are currently quite good on many parts of the SoCoMMS area, there are inconsistencies that fail to provide regular and easily memorable service patterns for all potential users. Higher frequencies over key sections and a more appropriate mix of express and stopping services will aid the promotion of a more attractive pattern of services.

However, to support these developments, it will be necessary to invest in a range of infrastructure investment schemes to expand the capacity of sections of the SoCoMMS rail routes. The construction of most of these individual schemes will have a major impact on current train service operations and land purchase and Transport & Works Act processes will be necessary in a significant number of cases.

3 Improvements in the Presentation of Train Services

3 Improvements in the Presentation of Train Services

3.1 *Introduction*

This section will amplify the short to medium term measures that can be taken to change the overall perceptions of the rail services.

3.2 *Better Marketing and Promotion*

The increasing public requirement and expectation for improved services across the whole spectrum of commercial activities makes it imperative for rail operators to concentrate on major and ongoing improvements to the following broad categories: -

- Attractive, clean and presentable station facilities and trains with appropriate personal security and safety measures and systems.
- Well-trained, friendly and helpful staff.
- Development and marketing of new service and price products.
- Effective promotion and advertising to the community at large.
- Faultless customer service and media relations.

The importance of these "soft" issues to the future attractiveness and success of rail services cannot be over emphasised. Much public criticism of current services during the study related to the perception that neither the railway companies nor their individual staff put sufficient effort into addressing these relatively simple issues. Since the privatisation of the UK rail network there have been many significant developments in marketing, promotion and customer care across the network and there needs to be a process in place that learns from and builds upon these good examples of "best practice".

A primary example of this concern within the SoCoMMS area emanated from the decision to apply a minimum £10 fare to tickets sold with a *Network Card*, effective from early June 2002. The impact of this decision on the shorter distance flows that are typical of the study area has initially resulted in a significant

fall in public confidence and will probably lead to losses in net revenue. An early decision to offer some form of replacement pricing product within the study area would reverse both of these outcomes.

3.3

Development of Stations and Interchanges

Quality improvements are proposed as enhancements to service accessibility and attractiveness through investment in interchanges, stations and surroundings to provide facilities appropriate to service levels, forecast passenger throughputs and the community served.

At stations the proposals are: -

- Improvement to station approaches to improve station access for passengers, cars, buses, taxis and bicycles at all large stations and the majority of medium and small stations.
- There should be additional points of access for vehicles, cycles and pedestrians and facilities for the loading and unloading of cars, taxis and buses to be independent of adjoining roads.
- Provision of expanded and new car parks.
- Provision of enhanced access to stations through new and upgraded bus and taxi links.
- Provision of additional facilities for bicycle storage.
- Improvements to security through the installation of CCTV, help points, station redevelopment and access controls.
- Improvements to customer information systems and improved information accessibility.
- Interchanges to include real time train and bus departure information.
- Improvements to access for all including tactile paving to assist blind and partially sighted persons and additional facilities for mobility impaired travellers.

- Refurbishment of buildings and station infrastructure.
- Improved ticketing facilities with new ticket windows, on-site and off-site ticket vending machines.

It has been assumed that the TOCs, through the franchising agreements will fund many of the improvements. In addition, it has been assumed that additional car parking will be self-funded through TOC or partnership schemes. The elements that will remain for funding as part of the SoCoMMS strategy will include improvements to interchange facilities at key locations together with general improvements to the structure of buildings.

The total capital investment of £48.4m and "regional" expenditure by category is shown in Table 3.1. Some of this cost may be covered by the Govia franchise and Railtrack, though detailed proposals, by station, are not yet available from these bodies.

Table 3.1: Station Capital Expenditure - £ million

"Region"	Interchanges	Structural Improvements	Total
East Kent	1.8	12.1	13.9
East Coastway	2.1	10.0	12.1
West Coastway	3.3	19.5	22.8
Total	7.2	41.6	48.8

These estimates are indicative and are derived from the work undertaken during 2001 on the development of the new GoVia franchise for South Central. Full details of this expenditure are set out in Appendices A1, A2 and A3.

Finally, no account has been taken of any requirements that may emerge from the enhancement of train services for the extension of platforms to accommodate longer trains.

3.4

New Stations

New stations are proposed to increase rail catchment areas, particularly where there have been substantial local housing and commercial developments in recent years, and to provide the opportunity for "park and ride" facilities. The new station locations, a brief description and indicative capital costs are as follows: -

- **St Leonards Marina**

Located between St Leonards Warrior Square and Bexhill stations east of the site of the former West Marina station - a proposed two-platform station with minimal facilities and a footbridge providing pedestrian access from the existing road-over-rail bridge at the east end of the proposed site. No car parking or vehicle access will be provided.

Estimated capital cost - £4.2m.

- **Glyne Gap**

Also located between St Leonards Warrior Square and Bexhill adjacent to the A259 near the former Galley Hill rail freight sidings - a proposed two-platform station with minimal facilities. Whilst investment in car parking is not proposed, the local authority is in discussions with the developers and owners of adjacent retail businesses about the provision of parking for rail users.

Estimated capital cost - £3.2m.

- **Stone Cross**

Located between Pevensy & Westham and Hampden Park stations close to the local community of Stone Cross - a proposed two-platform station with minimal facilities - no car parking and minimal road access.

Estimated capital cost - £4.1m.

If a location can be found that is close to and accessible from Eastbourne Relief Road, and with few land constraints, the station could be provided with more facilities and parking to meet "Parkway" standards. In this situation the capital cost could rise to £6 - £10m.

- **Shoreham Airport Parkway**

Located between Shoreham-by-Sea and Lancing stations and adjacent to Shoreham Airport - a proposed two-platform station with minimal facilities and a car park.

Estimated capital cost - £4.7m

Given that appropriate access can be provided from the A27, the station could also be provided with more facilities and parking to meet "Parkway" standards. In this situation the capital cost could rise to £6 - £10m.

- **Littlehampton Parkway**

Located between Angmering and Ford stations and adjacent to the local communities of Lyminster and Toddington - a two-platform station with minimal facilities and a small car park.

Estimated capital cost - £4.7m.

It is anticipated that there will be some diversion and abstraction of rail business from adjoining stations in the case of both the new stations at Shoreham Airport Parkway and Littlehampton Parkway. However, it is also anticipated that the major impact will be substantial growth in total rail demand and there will be no changes to the rail services offered at existing stations.

- **Eastleigh MDA**

Located between Hedge End and Eastleigh - a proposed two-platform station with minimal facilities - no car parking and minimal road access. It is anticipated that the funding for this station will come from developer sources and as a consequence the capital requirement has not been included in the SoCoMMS total.

Estimated capital cost - £4.0m.

These estimates are indicative and are derived from the work undertaken during 2001 on the development of the new GoVia franchise for South Central.

Excluding Eastleigh MDA, the funding for these new stations may be expected from a mix of public and private sources, including joint ventures involving train operating companies with construction and banking partners, local authorities or even private developers. The total capital expenditure is shown in Table 3.2 with the detail in Appendix A4.

Table 3.2: New Stations Capital Expenditure - £ million

New Station	Capital
St Leonards Marina	4.2
Glyne Gap	3.2
Stone Cross	4.1
Shoreham Airport Parkway	4.7
Littlehampton Parkway	4.7
Eastleigh MDA (Developer funded) - estimate £4.0m	-
Total	20.9

Consideration should also be given to the development of a new station serving Manston Airport. This will depend upon the result of the current study of airports in the South East of England. The estimated capital expenditure for such a station can be expected to be under £5million. Funding should be provided by the airport operator or developer of the airport site.

During discussions with local authorities reference was made to the construction of a new station at *Wiltong Farm*, a location in the north western corner of the Hastings/St Leonards conurbation. This would be situated on the route between Hastings, Tunbridge Wells and London between the proposed station at West St Leonards and Crowhurst. Although outside the immediate SoCoMMS corridor this proposal would have an impact on rail demand along the corridor, including the possibility for park-and-ride.

3.5

Review of lightly used stations (new sub-section)

Table 3.3 contains a short list of four lightly used stations on the routes encompassed within the SoCoMMS study area. It is recommended that serious consideration be given to the future of these stations.

Table 3.3: Lightly Used Stations

Station	Between	Benefits
Doleham	Ashford - Hastings	Increased route capacity and faster end-to-end journey times.
Three Oaks		
Normans Bay	Hastings - Eastbourne	Reduced impact of new stations on route capacity and journey times.
Pevensey Bay		

If any of these stations are closed there will be minimal savings in personnel, cleaning and maintenance costs. In addition there will be some savings in train movement costs, including traction costs and general maintenance and wear and tear. However, these are notoriously difficult to identify and should be considered minimal. In general therefore it may be assumed that the losses in revenue will balance the reduction in costs.

The major benefit from station closures will be the growth in demand and revenue from the faster journey times between major centres, together with the increase in route capacity that will both assist timetabling and improve service reliability. These benefits are summarised in the table.

3.6

Modernisation of Rolling Stock

The specific improvements to the Rolling Stock include: -

- Replacement, installation and upgrading of rolling stock to improve reliability and safety, including the full replacement of all slam door vehicles by the end of 2004.
- Improvements to the ambience and standards of comfort for existing rolling stock.

- Delivery of large numbers of new trains that will include security cameras, compliance with accessibility regulations, through gangways and internal layouts that minimise dwell times at stations.
- Technically advanced equipment that will both remotely diagnose faults to improve reliability and provide data on loadings for service planning purposes.
- Improved facilities at maintenance depots and stabling sidings that will enhance the presentation and reliability of train services.

The funding for much of this investment is already in place, provided from private sector train leasing companies as well as the train operating companies. The key elements so far as the SoCoMMS strategy is concerned is to ensure that the promised improvements are delivered and that the processes are in place to maintain the high standards that are expected.

The introduction of these significant improvements in rolling stock will create a major opportunity for the train operating companies to substantially grow the business and to meet the SoCoMMS strategy to present an attractive alternative to the private car. However, there remain a number of sensitive issues associated with the seating configuration of the new trains and the limitations on accommodation for bicycles, pushchairs and luggage. These will need to be handled carefully to balance the commercial needs with the public perception of customer service.

4 Train Service Proposals

4

Train Service Proposals

4.1

Introduction

The existing pattern of train services that operate throughout the SoCoMMS area aims to meet a number of diverse and often conflicting objectives.

Firstly, there are the services that radiate from London to all points along the SoCoMMS corridor and that are among the most lucrative operated by the three major train operating companies in the region (Connex South Eastern, GoVia South Central and Stagecoach South West Trains). Some of these services particularly on South Central provide semi-fast services between key centres along both the East Coastway and the West Coastway.

Secondly, there are the local services that are internal to the "Coastway" routes and that provide the all-stations stopping services, and in some cases semi-fast services radiating eastwards and westwards from Brighton. These services are considerably less lucrative and represent local examples of the truly "social railway". With the exception of peak hour commuting, schools and some specific short distance flows, such as the university business in the Brighton/Falmer areas, they are poorly used overall. They are also considered to be unsafe for travel during the evening.

Finally, there are a number of services provided by other train operating companies, such as Virgin Trains and Wessex Trains that penetrate the SoCoMMS area, together with services operated by the South Central and South West Trains that penetrate each others' areas. These generally provide semi-fast services along sections of the SoCoMMS corridor and do create important journey opportunities to/from other parts of the National Rail Network.

The objective of the train service enhancements that have been developed to meet the SoCoMMS strategy is to build on the broad structure that already exists and to provide a mix of fast services linking main centres and frequent local services that is both attractive and memorable. These are summarised in the following subsection. The additional route infrastructure that has been assumed and that will be required to meet these service specifications is described in Section 5.

4.2

Fast Interurban and High Frequency Local Services

The train service specifications and timetables have been developed within three key service groups: -

East Kent - Services operating within the area bounded by Faversham, Margate, Ramsgate, Dover, Folkestone, Ashford and Canterbury.

East Coastway - The core SoCoMMS corridor route between Ashford, Hastings, Eastbourne, Lewes and Brighton.

West Coastway - The remaining core SoCoMMS corridor route between Brighton, Worthing, Chichester, Havant, Fareham and Southampton, including the branches to Littlehampton, Bognor Regis and Portsmouth.

The following broadly describe the train service mix that has been developed for each service group.

4.2.1

East Kent

The primary objective is to increase frequencies on the routes where it is anticipated that rail can become more attractive and competitive, as follows: -

- Canterbury West to Ramsgate increased from one train per hour (tph) in each direction to 2 tph in each direction.
- Dover Priory to Ramsgate increased from 1 tph to 2 tph.
- Ramsgate to Margate increased from 3 tph to 4 tph.
- Faversham to Canterbury East and Dover Priory increased from 2 tph to 3 tph.
- Dover Priory and Folkestone Central to Ashford International increased from 2 tph to 4 tph - a proposal currently being considered by Connex following the opening of the Channel Tunnel Rail Link (CTRL) Section 1 in October 2003. The resources and costs for this enhancement have been excluded from the SoCoMMS estimates.

These enhancements should all be achievable in the short term although some signalling enhancements to increase route capacity between Faversham and Dover

may be necessary - see Section 5. The diagram attached as Appendix B1 details the proposed frequency improvements and service patterns are contained in Appendix C1. The impact on operational resources and costs is detailed in subsection 4.3.

In the medium term following the opening of CTRL Section 2 in 2007, "domestic" train services will be expected to use the entire route between Ashford International and St Pancras. Journey times for new high-speed trains are forecast as follows: -

- Ashford to St Pancras non-stop in 36 minutes (currently about 1¼ hours).
- Folkestone to St Pancras in less than 50 minutes (currently about 1½ hours).

Other journey times via Ashford would include Dover Priory and Canterbury West to St Pancras in just under an hour and Ramsgate in about 1¼ hours. Margate may be served either via Ashford or via the new link at Ebbsfleet with a journey time of about 1 hour 25 minutes via either route, compared with 1 hour 35 minutes at present.

4.2.2

East Coastway

The primary train service objectives on the corridor between Ashford, Hastings, Eastbourne, Lewes and Brighton are to provide a mix of regional express and semi fast inter-urban services linking the key centres together with enhanced frequencies for local services particularly in the Hastings, St Leonards and Bexhill area. The regeneration of Hastings is an important aim here.

New and improved infrastructure will need to be provided including: -

- Double tracking between Appledore and Ore.
- Reversing facilities at Ore To relieve congestion in the Hastings station area.
- Enhancements to signalling to increase route capacity.
- New stations at St Leonards Marina, Glyne Gap and Stone Cross.
- Reinstatement of the fourth platform at Eastbourne.

These enhancements will permit a through service between the East and West Coastway lines. A detailed assessment of capacity and platforming at Brighton station is required as part of the final operational specification for the service.

These schemes are discussed in more detail in Section 5.

The proposed pattern of train service frequencies in the long term is as follows: -

Services to/from London - derived from the evolving timetable for 2008

- Thameslink: Bedford - Eastbourne - 2 trains per hour (tph) in each direction calling at Lewes and Polegate.
- GoVia: Victoria - Ore - 1 tph in each direction calling at Lewes, Polegate, Eastbourne and most stations to Ore. This maintains the important link between the Hastings area and Gatwick Airport. In addition, there will be two other journey opportunities per hour by connection to Thameslink at Eastbourne. Any further through services will only be provided at the expense of services linking Hastings & Eastbourne with Brighton.
- GoVia: Victoria - Eastbourne - 1 tph in the peak hours in the peak direction calling at Lewes, Glynde, Berwick, Polegate and Hampden Park.

East Coastway Services (in each direction)

- New regional express service from Ashford to Brighton: 2 tph calling at Ore, Hastings, St Leonards Warrior Square, Bexhill, Eastbourne, Lewes and Brighton formed of one 2-car diesel unit. The opportunity for this to operate as a through Ashford-Southampton service will be dependent upon capacity issues in the Brighton station area.
- Ore - Brighton - 1 tph calling at all stations to Bexhill, then Stone Cross, Eastbourne, Polegate, Lewes and all stations to Brighton, formed of one 4-car electric unit.
- Ashford - Brighton - 1 tph calling at all stations and formed of a 4-car diesel unit. As an alternative, this may run as two separate services Ashford/Hastings (2-car diesel) and Ore/Brighton (4-car electric).

- Seaford - Brighton - 2 tph calling at all stations - unchanged (4-car electric).

The proposed package of changes in the greater Hastings area will enable an intensive rail service to be offered along the Ore to Bexhill corridor with five trains per hour linking Ore, Hastings, St Leonards Warrior Square and Bexhill. Three trains in each direction will also call at the new stations at St Leonards Marina and Glyne Gap.

The indicative timetable planning that has been undertaken has ignored the constraints that may be imposed by the impact of other services, including the London trains to/from Eastbourne and other operators' services in the Brighton and Hastings areas. In addition, these enhancements will not be achievable until the full range of infrastructure improvement schemes is completed. During the interim period it may prove possible to enhance some services particularly over the Ashford/Hastings route following completion of the planned double tracking.

The diagram attached as Appendix B2 details the proposed frequency improvements and service patterns are contained in Appendix C2. The impact on operational resources and costs is detailed in sub-section 4.3.

4.2.3

West Coastway

The primary train service objectives on the corridor between Brighton, Worthing, Chichester, Havant, Fareham and Southampton, including the branches serving Littlehampton, Bognor Regis and Portsmouth, are to provide a mix of: -

- Fast inter-urban services linking the key centres, including the proposed Ashford/Brighton/Southampton express service, and beyond to other destinations outside the SoCoMMS area.
- Enhanced frequencies for local services particularly between Brighton and Worthing and in the Portsmouth and Southampton areas.

However, the presence of such a potential variety of trains has made it necessary to take a more fundamental approach to timetable development and to avoid infrastructure enhancements that are both too expensive and physically difficult to achieve. As a result only minimal infrastructure investment is proposed in the form of signalling enhancements to increase route capacity at key locations.

It is possible that the route between Fareham and St Denys via Netley will be converted to LRT operation in the medium term as an extension of the proposed Fareham, Gosport and Portsmouth system in the long term. This is likely to be linked with the construction of a chord line south of Eastleigh and the doubling of part of the single-track section between Fareham and Botley. This will enable trains from Brighton and Portsmouth to serve Southampton Airport station. Alternatively, similar infrastructure enhancements could allow a more intensive heavy rail service between Fareham and St Denys. The re-routing of Brighton services via Southampton Airport is scheduled for around 2020. Further analysis of the case for LRT versus heavy rail between Fareham and St Denys would be required nearer the time.

However, in the short term there are clearly some significant difficulties associated with the introduction of new train services west of Havant, through Fareham and via the existing Netley route towards Southampton. In these circumstances, it has not been possible to identify robust enhancements to local train services and it is recommended that a *Capacity Utilisation* review be undertaken, possibly under the sponsorship of the Strategic Rail Authority.

The pattern of services that has been specified and developed is as follows: -

London Services via the Brighton Main Line and Arun Valley Routes - derived from the evolving timetable for 2008 (in each direction)

- Thameslink: King Lynn/Cambridge - Littlehampton (Via Arun Valley) - 2 trains per hour (tph) in each direction.
- GoVia: Victoria - Bognor Regis - 1 tph calling additionally at Littlehampton Parkway.
- GoVia: Victoria - Bournemouth (Via Arun Valley) - 1 tph.
- GoVia: Victoria - Chichester (Via Arun Valley) - 1 tph.

Additional peak period trains will link Portsmouth Harbour and Chichester with Victoria.

West Coastway services (in each direction)

- New regional express service from Brighton to Southampton: 2 tph calling at Worthing, Barnham, Chichester, Havant, Fareham, and Southampton Airport.
- Brighton - West Worthing increased from 2 tph to 3 tph to provide 15-minute interval service with Brighton/Littlehampton train, calling at all stations including Shoreham Airport Parkway. However, it may be necessary for some of these services not to serve West Worthing as a means of providing additional route capacity.
- Brighton - Littlehampton - existing 1 tph calling additionally at Shoreham Airport Parkway and Littlehampton Parkway.
- Brighton - Portsmouth Harbour - existing 1 tph calling additionally Littlehampton Parkway.
- Littlehampton/Barnham - Bognor Regis - existing 2 tph unchanged.
- Brighton - Basingstoke/Reading - existing 1 tph unchanged.
- Brighton - Wales/Wessex - existing irregular trains unchanged.
- Portsmouth Harbour - Wales/Wessex - existing 1 tph unchanged.
- Portsmouth Harbour - Southampton - existing 1 tph unchanged.

It has been assumed that other existing train services between Waterloo and Portsmouth Harbour, Southampton, Bournemouth and Weymouth will remain unchanged.

The indicative timetable planning that has been undertaken has ignored the constraints that may be imposed by the timetabling of other services, including: -

- Brighton Main Line and Arun Valley trains to/from Bognor Regis, Littlehampton, Portsmouth and Bournemouth.
- SWT and Wessex services between Brighton, Portsmouth and Southampton.

- SWT services to/from Waterloo referred to above.
- Virgin Trains to/from Portsmouth and Southampton.

The fundamental approach to timetable development that has been employed is based on the creation of a half-hourly pattern of fast, semi-fast and all stations train services that is regular and predictable to both operators and the users and free of the inconsistencies that can lead to unreliable performance. Nevertheless, there appears to be difficulty in accommodating the full pattern of services, including those to and from major centres outside the SoCoMMS corridor west of Havant. The situation will be made worse if and when the route via Netley is converted to LRT.

The diagram attached as Appendix B3 details the proposed frequency improvements and service patterns are contained in Appendix C3. The impact on operational resources and costs is detailed in sub-section 4.3.

4.3

Operational Resources and Costs

As part of the timetabling process broad estimates have been made of the additional resources and costs associated with the operation of the enhanced services described earlier. These estimates are based on current operational practices and costs at 2002 levels and are summarised by each of the three service groups in the following table.

Table 4.1: Additional Resources & Annual Costs

Service Group	Diesel & electric vehicles		Drivers		Conductors		Vehicle Miles Per annum		Total
	No.	£m	No.	£m	No.	£m	No Millions	£m	£m
East Kent	32	2.9	20	0.6	17	0.4	4.4	1.1	5.0
East Coastway	17	1.9	34	1.0	24	0.6	5.8	1.4	4.9
West Coastway	19	2.1	78	1.4	66	1.0	8.8	1.6	6.1
Total	68	6.9	132	3.0	107	2.0	19.0	4.1	16.0

The additional operational costs associated with the new stations will be largely dependent upon the level of staffing at each location. A general assumption of £0.5 million per annum has been made for all six new stations in total.

4.4

Timetable Implications

In the preceding sub-sections there have been a number of references to the assumptions that have been made within the timetabling work that has been done together with some of the difficulties that have been encountered. These issues are extremely relevant and may in fact mean that few of the enhancements will be achievable in the long run unless there are detailed, unconstrained and flexible discussions with Railtrack and other operators.

There is also little doubt that the timetabling complexities are compounded by the requirement to introduce the express limited stop half-hourly service between Ashford, Brighton and Southampton. The presence of this train on what is predominantly only a two-track railway consumes paths that could otherwise be occupied by semi-fast and stopping train services. The value of this particular train service should be separately appraised before any formal development work commences.

The new stations that are proposed are intended to meet the requirements of growing communities along the South Coast and to provide Parkway facilities as a means of addressing some local traffic congestion. However, the opening of each station does have an impact on the availability of paths for existing and additional trains. To alleviate this impact serious consideration should be given to the continued existence of some of the more lightly used existing stations.

The range of infrastructure projects that will be required to support the proposed level of train services is discussed in detail in the following Section of this document. However, it should be recognised that where individual schemes prove to be difficult or ultimately impossible to achieve this will have an impact on the extent of train service enhancements that can be delivered. Consideration should therefore be given to a medium term strategy that embraces only those schemes that are considered to be achievable.

Finally, there is little doubt that the significant increase in train services will have an impact on road traffic congestion at those many locations where there are busy level crossings. This is further discussed in sub-section 5.3.

4.5

Freight Services

Currently there are limited freight services operating on the routes encompassed by the SoCoMMS study area. At the extremities there are the major movements associated with the Channel Tunnel, between Folkestone and Ashford, and serving the port and industrial areas around Southampton and the Solent. None of these services operate over significant sections of the SoCoMMS area although their presence does have an impact on timetable development. There are also the regular movements of nuclear flask traffic over the branch line between Appledore and Lydd and the irregular movements of aggregates and maritime container traffics to and from the Newhaven area.

In the medium term there are opportunities for rail freight business at Portsmouth, with the development of a multi-modal terminal, and at Dover, where consideration may be given to the reconnection of rail access to the Western Docks and the restoration of train ferry services. These are discussed elsewhere in the SoCoMMS report. In both of these cases, the capacity of the rail system to handle the introduction of a substantial number of freight train services will need to be examined very carefully. It is likely that additional infrastructure will be required in the form of loop lines on the busy routes linking these ports with London and the national rail network.

There are major capacity issues in the Southampton station area that will need to be addressed as the proposed Dibden Bay port development gets underway. This should include the enhancement of the alternative route via Chandlers Ford as a diversionary route avoiding the central Southampton area.

With these exceptions there are few likely opportunities for the development of significant flows of freight traffic within the SoCoMMS area and in fact there would be some difficulty in accommodating freight train services within the busy passenger timetables. Additional infrastructure would be required to accommodate any significant movements outside the period between midnight and 06.00 hours and it is unlikely that such expenditure could be justified.

However, this should not prevent studies being undertaken in connection with the possible expansion and development of the other ports along the SoCoMMS corridor including Ramsgate, Newhaven and Shoreham.

5 Infrastructure Needs

5 Infrastructure Needs

5.1

Introduction and Assumptions

In developing the SoCoMMS strategies through the timetable improvements detailed in the previous section the following general assumptions have been made: -

- The existing track and signalling is fully maintained to current standards. The estimates made for individual schemes assume renewals funded by Railtrack, or its successor, and identify only the increment required to deliver the SoCoMMS strategy.
- The power supply and distribution equipment has been enhanced to meet requirements of the new trains to be introduced before the end of 2004 but with no significant enhancement for additional services.
- Implementation of the following schemes from the GoVia bid for the South Central franchise:-
 - Resignalling between Brighton and Hove and remodelling at Worthing;
 - Reversing and terminating facilities at Chichester;
 - Provision of the new east/north chord at Arundel although this will not be directly relevant to the east/west services along the South Coast.

Clearly in the event that any of these individual assumptions ultimately prove to be incorrect the impact on the SoCoMMS strategies, schemes and train service enhancements will need to be appraised.

5.2

5.2.1

Proposed Route Improvements

Summary

The infrastructure improvement and enhancement schemes that will be required to deliver the train services described earlier are summarised in the following paragraphs. A summary of the capital investment estimates is set out in sub-section 5.2.2.

- **Enhancements to signalling**

These enhancements are intended to: -

- Increase line speeds where appropriate;
- Increase route capacity;
- Provide signalling headway of 3 minutes and junction re-occupation times of 2 minutes at key locations.

These estimates are incremental to other investment in maintenance and renewals.

- **Improvements at Stations and Interchanges**

Full details of these improvements are included in sub-section 3.3.

- **New Stations**

Full details of these new stations are included in sub-section 3.4

- **Double tracking between Appledore and Ore**

This will be required to enable the operation of the proposed pattern of three trains per hour in each direction between Ashford and Hastings. Estimates for this scheme have been prepared against the background that it will not ultimately form part of the GoVia franchise agreement.

- **Provision of reversing facilities at Ore**

To enable trains to turn round clear of the main through lines.

- **Reinstatement of the Platform 4 at Eastbourne**

To meet the requirements for the full Brighton Main Line (BML) and Coastway services.

5.2.2

Capital Investment Requirements

The following estimates for the schemes outlined have been based on the work undertaken during 2001 on the development of the GoVia franchise bid for South Central. They contain reasonable elements to cover land purchase, TOC compensation, possessions and contingencies but exclude Transport and Works Act and project management costs.

Table 5.1: Summary of Capital Investment - £ million

Scheme	East Kent	East Coastway	West Coastway	Total
Enhancements to signalling	5.0	3.8	6.0	14.8
Double tracking between Appledore and Ore	-	20.7	-	20.7
Provision of reversing facility at Ore	-	1.2	-	1.2
Reinstatement of Platform 4 at Eastbourne	-	1.8	-	1.8
Total	5.0	27.5	6.0	38.5

Appendix D contains a breakdown of these estimates.

Funding of the capital investment in these schemes, as with new stations, may be expected from a mix of public and private sources, including joint ventures, although the return on the investment will more than likely require funding from the subsidy support for train services through the franchises.

5.3

South Hants Rapid Transit System

The following schemes are likely to be part of the overall second phase of development of the South Hants Rapid Transit System. It is assumed that this will involve the conversion of the existing "heavy rail" route between Fareham and Southampton via Netley to "light rail" operation. Alternatively, the same infrastructure enhancements could facilitate a more intensive heavy rail service between Fareham and St Denys.

- **Construction of new Eastleigh chord line**

A double track route south of Eastleigh between the Fareham and Southampton lines - to provide a route that avoids reversal at Eastleigh at an estimated cost of £63.6m.

- **Double tracking between Fareham and Botley, excluding section of about one mile through the existing single track tunnels**

To increase route capacity and improve service quality and reliability and with a minimum line speed of 90 mph and a headway of 3 minutes. This will largely involve reinstatement on an existing track formation although there may be some difficulties because of the mainly urban surroundings, estimated at £9.6m.

- **Provision of additional platforms at Fareham**

To meet the requirements of the future train service timetable and LRT (at Fareham) estimated at £3.5m.

5.4

Willingdon Chord

The case for the provision of a new chord line avoiding Eastbourne between Polegate and Stone Cross has been examined in some depth. The provision of this chord would enable more trains to be introduced on the corridor between Brighton, Hastings and Ashford together with end-to-end journey time improvements of up to 12 minutes. However, it has been concluded that an adequate return could not be generated to support the estimated investment cost of £32.2m. Moreover, Eastbourne would lose benefits with the Chord, whilst current regeneration benefits are likely to be insufficient to satisfy the cost. Should other Development or regeneration issues be identified at some future date, this should be reviewed.

5.5

Level Crossings

In sub-section 4.4 reference is made to the impact of the enhanced train service timetable on level crossings. As an example the significant increase in trains from 14 to 18 per hour between Brighton and West Worthing will mean that level crossings on this stretch of line will be closed to road traffic more than they are open.

This situation will clearly aggravate traffic congestion in urban areas that already experience such problems and will need to be addressed during the SoCoMMS 30-year planning cycle.

There are a total of 131 crossings on the rail routes within the SoCoMMS area, of which 20 involve classified roads and within these are a number that cross significant major trunk roads. See Appendix E.

Of the two options open to local authorities and Railtrack, closure is an option that may prove to be difficult to achieve in more than a few minor cases on unclassified roads. The other option is to replace each crossing with a road-over-rail or a road-under-rail-bridge.

A broad estimate for a road-over-rail bridge including associated road works would be between £1.5m and £2.5m. However, no account has been taken of the likely requirement for the acquisition and demolition of adjoining properties in urban situations. Taking £2m as an average, the total investment to replace the key crossings referred to earlier would amount to about £40m, excluding acquisition, demolition and other extraneous costs.

The strategy is not considered to be dependent on the replacement of level crossings, other than at Beddingham. However, it is unlikely that further increases in rail frequencies, beyond those proposed here, will be possible without significant investment in removing level crossings.

6 Economic and Business Case Evaluation

6 Economic and Business Case Evaluation

6.1 *Introduction*

This chapter presents an economic appraisal of the schemes proposed in the SoCoMMS Rail Strategy along with the demand forecasting methodology utilised. The appraisal framework is discussed with the underlying assumptions outlined and the costs and benefits identified

6.2 *Demand Forecasting*

The demand and revenue evaluation of the Rail Development Plan was carried out using a combination of:

- The multi-modal EMME/2 network assignment model developed for the SoCoMMS study;
- An existing Halcrow STREAM (Strategic Revenue Analysis Model) of the South Central rail network.

EMME/2 is a strategic modelling tool that covers both public and private transport modes. It contains two elements:

- Assignment model that creates a fixed origin-destination matrix taking into account journey time, crowding and interchange impacts;
- Distribution and modal split model that estimates the impact of new schemes by taking account of changes in generalised cost and time.

STREAM is a flexible, incremental elasticity model that provides a high level of dis-aggregation of demand and revenue by flow. Key features of the model include:

- Over 50 service quality elasticities, covering rolling stock and station quality, journey time, frequency and price;
- Detailed dis-aggregation of revenue by journey purpose and ticket type;
- Modelling of exogenous growth by flow;

- Explicit modelling of rail competition.

The EMME/2 model was used to estimate the impact of the proposed improvements to train services across the study area including modal shift. The Stream model was used to forecast the impact of station improvements and new stations as it contained dis-aggregate station and flow information. The Stream model also provided a forecast of year on year exogenous growth.

6.3

Timetable Improvements

Appendix B details the proposed improvements in train services per hour along the Coastway corridor. The revenue gains of this improvement for each area are shown in the table below for 2008 in current prices:

Table 6.1: Forecast Timetable Revenue Gains (£000)

East Kent Services	2,889
East Coastway Services	5,086
West Coastway Services	4,648
Total Revenue	12,623

6.4

Station Improvements

A major package of station improvements is also suggested in the development plan. The STREAM model incorporates a series of “flags” than can be altered to indicate changes in stations within the model. All stations included in the model that were listed in Appendix A were assumed to undergo a full re-refurbishment (equivalent to 8% of average fare as suggested by the PDFH). Results from the model indicate a revenue gain of £1.703m. Previous work on South West Trains and Connex was used to indicate what increased revenue would be possible from stations controlled by these two TOC’s. This suggests that additional revenue of £2.174m is feasible giving a total revenue improvement of £3.877m at current prices.

6.5

New Stations

A number of new stations are proposed for the Coastway route. The table below shows the predicted number of passengers per day at each of these stations. An annualisation of 300 was assumed along with an average fare of £2.20 (based on current mean local fares).

Table 6.2: New Stations Demand & Revenue

	Pass/day	Pass/yr	Revenue /yr
St.Leonards Marina	600	180,000	396,000
Glyne Gap	750	225,000	495,000
Stone Cross	350	105,000	231,000
Shoreham Airport	400	120,000	264,000
Eastleigh MDA	750	225,000	495,000
Littlehampton	600	180,000	396,000
Total	3,450	1,035,000	2,277,000

6.6

6.6.1

Appraisal Framework

Government Appraisal Requirements

The economic appraisal was undertaken in accordance with the DfT's 'New Approach to Appraisal' ('NATA') framework and the guidelines set down by the SRA's 'Planning Criteria: A Guide to the Appraisal of Support for Passenger Rail Services'. These are consistent with the Guidance on the Methodology for Multi-Modal Studies (GOMMS).

For the purpose of the economic appraisal we have relied on the DfT guidance published for the appraisal of trunk road investments. The appraisal guidance published by the SRA is broadly in alignment with the DfT framework.

Both the DfT and SRA appraisal guidance require two methodologies:

- (a) a quantitative social cost-benefit analysis using discounted cash flow analysis to generate conventional indicators of economic worth (e.g. net present values, internal rates of return, etc); and
- (b) a multi-criteria analysis which identifies and assesses the non-quantifiable (or non-monetised) impacts.

6.6.2

Social Cost-Benefit Analysis

The multi-criteria analysis involves an assessment of the social cost-benefit analysis employed discounted cash flow techniques and was conducted in real terms with 2002 the price year. Economic costs and benefits were discounted to the price year of 2002 at a real discount rate of 6% per annum, that is, the results are presented in 2002 present values.

The analysis of the individual strategy components was carried out on an incremental basis, each element being assessed in isolation. The marginal impact of the rail strategy as a whole was then assessed against the other elements of the strategy (i.e. highways and demand management).

6.6.3

Multi-Criteria Analysis

The multi-criteria analysis involves an assessment of five key criteria:

- (a) environment;
- (b) safety;
- (c) economy;
- (d) accessibility; and
- (e) integration.

A more detailed description of the above criteria is provided in Section 6.7.2.

6.7

Economic Costs and Benefits

6.7.1

Monetised Impacts

The following table summarises the monetised costs and benefits, which were assessed quantitatively in the cost-benefit analysis using DCF techniques.

Table 6.3: Summary of Monetised Impacts

Monetised Impact	Components Cost and Benefit
Capital Costs	<ul style="list-style-type: none"> • Design costs • Construction costs • Contingencies
Recurrent Costs	<ul style="list-style-type: none"> • Train operating costs • Station operating costs
Journey time improvements	<ul style="list-style-type: none"> • In-vehicle time savings • Waiting time savings • Frequency improvements • Interchange improvements
Performance improvements	<ul style="list-style-type: none"> • Improvements in reliability and punctuality of the service generate revenue otherwise gone
Safety improvements	<ul style="list-style-type: none"> • Avoided costs of road accidents
Rolling stock quality improvements	<ul style="list-style-type: none"> • Valued as percentage of average fare (1 to 5%)
Station quality improvements	<ul style="list-style-type: none"> • Valued as percentage of average fare (1 to 5%)
Road decongestion	<ul style="list-style-type: none"> • Avoided car vehicles miles
Environmental improvements	<ul style="list-style-type: none"> • Noise and vibration saving • Local air quality saving • Global atmospheric pollution
Road maintenance and costs saving	<ul style="list-style-type: none"> • Avoided incremental costs of maintaining roads (egg re-paving and repairs) • Noise and vibration saving

The unit values for the assumptions underlying the quantifiable benefits are presented in Appendix F

6.7.2

Non-Monetised Impacts

The following table summarises the non-monetised costs and benefits, which were identified and assessed qualitatively in the multi-criteria analysis.

Table 6.4: Summary of Non-Monetised Impacts

Non-Monetised Impacts/ Key Criteria	Sub-criteria	Effects	
Environment	Noise	<ul style="list-style-type: none"> • Noise from construction • Increased vibration due to increased frequency 	
	Local air quality	<ul style="list-style-type: none"> • Increased dust during construction • Reduced emissions from diverted car traffic 	
	Landscape/Townscape	<ul style="list-style-type: none"> • Landtake due to construction of new infrastructures 	
	Biodiversity	<ul style="list-style-type: none"> • Potential loss of biodiversity due to construction of new infrastructures (e.g. wildlife and plants) 	
	Heritage	<ul style="list-style-type: none"> • Potential loss of heritage sites or buildings due to construction of new infrastructures 	
	Water	<ul style="list-style-type: none"> • Potential impact on river or coast or flood plains due to construction of new infrastructures 	
	Travel environment/ quality of journey	<ul style="list-style-type: none"> • Reduced crowding • Improved quality of train journey (e.g. smoother ride, quieter in-train environment) 	
Safety	Accidents	<ul style="list-style-type: none"> • Enhancement of train users safety • Increased safety for diverted car users 	
	Travel security	<ul style="list-style-type: none"> • Improved passenger security at station due to staff and retail presence, CCTV, etc. • Improved passenger security on trains 	
Economy	Regeneration	<ul style="list-style-type: none"> • Regeneration of local economy due to improved accessibility to public transport and employment opportunities • Opportunities to generate local employment 	
Accessibility	Access to public transport	<ul style="list-style-type: none"> • Improved access to public transport network 	
	Community links/Severance	<ul style="list-style-type: none"> • Demolition of buildings and landtake due to construction of infrastructure 	
	Option values	<ul style="list-style-type: none"> • Delivery of new services enhances option values for non-users 	
Integration	Interchange	<ul style="list-style-type: none"> • Fewer interchanges required • Integration with existing above-rail networks • Integration with London Underground • Integration with buses 	
		Land use	<ul style="list-style-type: none"> • Regeneration of derelict areas
		Other government policies	<ul style="list-style-type: none"> • Consistency of results with other government policies (e.g. White Paper)

The enhanced service through Hastings will bring about significant regeneration benefits, to Bexhill and Eastbourne also.

Results of the Economic Appraisal

Table 6.5 summarises the results of the cost-benefit analysis for the total SoCoMMS Rail Strategy.

This has been derived from analysis of the strategy within the strategic model. It includes the effort of parking and congestion charging on rail demand.

Table 6.5: Results of the Economic Appraisal for the Overall Rail Strategy

Indicator of Economic Worth	£M
Total Benefits (£m)	431.3
Total Costs (£m)	227.0
Net Benefits (NPV) ⁽¹⁾	204.3
Economic IRR ⁽²⁾	15%
BCR	1.90
NPV/I ⁽³⁾	2.1

Notes: (1) The net economic benefits measured by the incremental net present value ("incremental NPV") might not add up due to rounding errors.

(2) Economic IRR cannot be calculated for some projects because of the profile of the net benefits.

(3) The ratio of net economic benefits to £ of capital investment cannot be calculated in projects where there are only operating costs.

The following points emerge from the above table:

- In incremental NPV terms, the overall SoCoMMS rail strategy delivers net economic benefits of around £204 million.
- The total incremental benefits consist primarily of travel time savings for both existing and new users, performance improvements, and station quality improvements for existing users. Given the large size of the SoCoMMS study area, the positive externalities from diverting car traffic to rail are also significant (e.g. savings in car accident costs).
- Overall, the SoCoMMS rail strategy would provide an internal rate of return of 15%.
- The strategy generates a BCR of 1.9 and a NPV/I ratio of 2.1 for the communities covered by the network.

Table 6.6 summarises the results of the cost-benefit analysis for the SoCoMMS Rail Strategy by scheme. These have been assessed against the Baseline and do not include the effect of other components of the strategy.

Table 6.6: Results of the Economic Appraisal by Scheme

Scheme	Total Costs (£m)	Total Benefits (£m)	Net Benefits (NPV) ⁽¹⁾	Economic IRR ⁽²⁾	BCR	NPV/I ⁽³⁾
Train Service Improvements: West Coastway	92.3	93.5	1.3	6%	1.01	0.22
Train Service Improvements: East Coastway	95.5	119.3	23.7	8%	1.25	0.91
Train Service Improvements: East Kent	75.7	77.9	2.2	6%	1.03	0.47
New Stations	26.8	42.0	15.1	9%	1.56	0.77
Station Refurbishment	46.1	50.3	4.2	7%	1.09	0.09

Notes: (1) The net economic benefits measured by the incremental net present value ("incremental NPV") might not add up due to rounding errors.

(2) Economic IRR cannot be calculated for some projects because of the profile of the net benefits.

(3) The ratio of net economic benefits to £ of capital investment cannot be calculated in projects where there are only operating costs

The following points emerge from this table:

- In incremental NPV terms, the scheme that delivers the greatest benefit is the East Coastway train service improvements scheme, with a net present value of nearly £24 million. This is followed by the new stations scheme which delivers an NPV of just over £15 million.
- The East Coastway train service improvements create total incremental benefits of nearly £120 million this is offset by the total incremental costs of around £95 million (of which capital costs comprise £26 million).
- The NPVs of the individual elements are considerably less than that of the strategy as a whole. This reflects the importance of the demand management measures, together with the synergies from implementing the strategy as one entity.
- The scheme with the highest internal rate of return and BCR is the new stations scheme which provides an internal rate of return of 9%, and generates a BCR 1.56.

- Further tests were conducted of the regional express service alone as an increment to the highway and demand management measures. This generates an NPV of £45m and a B:C ratio of 1.3. This represents the main rail service proposal and, understandably, generates the most benefits (and costs) from the non-station measures. The regional express service is thus confirmed as a key, viable, element of the strategy to which priority should be given.
- Mention has been made to the Willingdon Chord. This was tested as part of an alternative East Coastway strategy, with the regional express half-hourly services using this (i.e. not serving Eastbourne). The B:C ratio of this option was estimated at 0.75. As a result the scheme was not included in the strategy, although this should be reviewed in the future, e.g. if new developments emerge.

6.9

Business Case

The table indicates the NPV of the financial surplus (or deficit) generated by each of the proposed schemes. This covers a 30-year appraisal period.

Table 6.7: Financial Evaluation of Schemes (£m)

Scheme	NPV of:			
	Revenue	Capex	Opex	Net Surplus
West Coastway	89	6	74	9
East Coastway	97	26	59	12
East Kent	60	5	60	-5
New Stations	41	20	6	15
Station Refurbishment	70	46	0	24
Total	356	102	199	55

7 Rail Strategy

7 Rail Strategy

This section summarises in broad terms the strategy for the implementation of the individual measures that may be considered within the short, medium and long term planning cycles for SoCoMMS implementation. (NB dates shown are for commencement of operation)

7.1 *Short Term Improvements - between 2003 and 2006*

- Better marketing and promotion.
- Development of stations and interchanges.
- Modernisation of rolling stock.
- Enhance train service frequencies within existing infrastructure, such as some of the proposals for East Kent and Ore-Hastings-Eastbourne.

7.2 *Medium Term Improvements - between 2007 and 2012*

- Complete development of stations and interchanges.
- Open new stations.
- East Kent - deliver infrastructure investment and complete service enhancements.
- East Coastway - deliver infrastructure schemes and enhance train services.
- West Coastway - deliver infrastructure schemes and enhance train services.
- Introduce regional express service between Ashford, Brighton and Southampton – this is a priority as it supports other elements of the strategy; e.g. demand management measures. Early completion is recommended within this period..

7.3

Long Term Improvements - up to 2022

- Review and re-assess requirement for Willingdon chord. E.g. if new local housing and commercial developments emerge, or a specific regeneration benefit can be identified including the option for developer funding.
- SHRTPhase 2 - review "heavy rail" infrastructure requirements, including Eastleigh chord and track doubling between Fareham and Botley. Assess detailed case for LRT versus heavy rail on the "relieved" Fareham-St Denys line.

7.4

Outputs

The rail strategy will deliver benefits through its outputs as opposed to its inputs. In taking those measures forward through the detailed design process, focus should be retained on the key outputs which are required to support the wider strategy. These include:

- A frequent (half-hourly) regional express service linking major towns and cities on the Coastway, to provide an alternative to car for longer distance journeys;
- A high frequency stopping service on the Hastings-Bexhill-Eastbourne axis, to support local regeneration initiatives;
- Incremental frequency enhancements throughout East Kent;
- Improved access to the network and interchange enhancements throughout.

8 Other Issues Raised at Public Consultation

8 Other Issues Raised at Public Consultation

The opportunity is also taken to briefly note and discuss some of the other rail-related issues that were raised during public consultation.

8.1 *Lewes/Uckfield Re-opening*

Although this is outside the immediate scope of the SoCoMMS area, there is significant public support for this proposal and it is worthy of further study. Onward routes to London could be via Croydon or Tunbridge Wells. However, it would be an expensive scheme and the benefits would largely be confined to the improvement of travel opportunities between the specific urban centres involved. It would not achieve the objective of providing an alternative and competitive main railway corridor to London because of the topography of the route. The benefits from this scheme are likely to accrue beyond the period of this strategy. It should be reviewed in 15 years or in the light of significant market growth. Meanwhile every effort should be made to protect the alignment, both to Lewes and Tunbridge Wells.

8.2 *East Kent*

8.2.1 *Condition of Dover/Folkestone Line*

There is concern that the condition of the tunnels on this route may ultimately lead to temporary or even permanent closure. Consideration should be given to the development of a contingency strategy either to renovate the tunnels or to create an alternative route via a new chord at Canterbury.

8.2.2 *Re-opening of Lydd branch for passenger services*

A doubtful proposition for which there is little obvious justification.

8.2.3 *New stations*

- **Richborough area** - a possible case could be made for a new station to meet the Pfizer development needs.
- **Canterbury Parkway** - an opportunity for a Parkway station at the intersection of the Faversham/Dover and Ashford/Ramsgate routes.

8.2.4

New chord line

There may be a case for one or more chord lines to link the two routes in the Canterbury area to provide more journey opportunities as well as to meet the strategic contingency mentioned above. These are not considered viable on the basis of current demand projections.

8.3

East Coastway

8.3.1

Polegate

The development and expansion of car parking at Polegate may be constrained by the imminent sale of an adjoining site by the Co-op.

8.3.2

Brighton Chord

There are some strong local views that the construction of a chord linking Preston Park and Hove is the only solution to the problems of "rail congestion" at Brighton station. Such a scheme would not only be expensive but could provide less attractive rail services to and from Brighton.

8.3.3

Brighton Station Remodelling

Although not specifically identified as an issue during the timetabling development work that has been undertaken, it is likely that this could emerge as a constraint in the medium to long term.

8.4

West Coastway

8.4.1

Barnham Chord

A chord that would provide a direct link between Bognor Regis and Chichester has been mooted in the past. However, such a scheme would be expensive and the benefits dubious in the light of likely road improvements in the area.

Appendix A

Station Improvement Plans & New Stations

- Capital Expenditure

A1 East Kent

A2 East Coastway

A3 West Coastway

A4 New Stations

A1

NODE	Station	TOC	Category	Approaches		Imp. Bldg. Canopies Platforms £K	Total £K
				Car Parks Bus Inter. £K			
11321	Adisham	SE	M			150	150
11236	Ashford International	SE	L	0		0	0
11320	Aylesham	SE	M			150	150
11322	Bekesbourne	SE	M			150	150
11351	Birchington on sea	SE	S			300	300
11348	Broadstairs	SE	ML	150		600	750
11323	Canterbury East	SE	MH	300		1200	1500
11356	Canterbury West	SE	ML	150		600	750
11357	Chartham	SE	M			150	150
11353	Chestfield & Swalecliffe	SE	M			150	150
11358	Chilham	SE	M			150	150
11343	Deal	SE	ML	150		600	750
11316	Dover Priory	SE	ML	150		600	750
11347	Dumpton Park	SE	M			150	150
11325	Faversham	SE	ML	150		600	750
11232	Folkestone Central	SE	ML	150		600	750
11233	Folkestone West	SE	S			300	300
12383	Hastings - see East Coastway						
11352	Herne Bay	SE	ML	150		600	750
11317	Kearsney	SE	S			300	300
11349	Margate	SE	ML	150		1000	1150
11341	Martin Mill	SE	M			150	150
11345	Minster	SE	S			300	300
11346	Ramsgate	SE	ML	150		600	750
11234	Sandling	SE	S			300	300
11344	Sandwich	SE	ML	150		600	750
11324	Selling	SE	M			150	150
11318	Shepherds Well	SE	M			150	150
11319	Snowdown	SE	M			150	150
12509	St Leonards Warrior Square - see East Coastway						
11355	Sturry	SE	M			150	150
11342	Walmer	SE	S			300	300
11235	Westenhanger	SE	M			150	150
11350	Westgate on Sea	SE	M			150	150
11354	Whitstable	SE	S			300	300
11359	Wye	SE	S			300	300
East Kent Total				1800		12100	13900

A2

NODE	Station	TOC	Category	Approaches Car Parks Bus Inter. £K	Imp. Bldg. Canopies Platforms £K	Total £K
South Central						
11389	Appledore	SC	M		150	150
12392	Berwick	SC	M		150	150
12382	Bexhill	SC	S	150	300	450
12167	Bishopstone	SC	M		150	150
12136	Brighton	SC	L	300	1500	1800
12381	Collington	SC	M		150	150
12380	Cooden Beach	SC	M	150	150	300
12386	Doleham	SC	M		150	150
12376	Eastbourne	SC	MH	300	1200	1500
12394	Falmer	SC	M		150	150
12393	Glynde	SC	M		150	150
11390	Ham Street	SC	M		150	150
12377	Hampden park	SC	M		150	150
12172	Lewes	SC	MH	300	1200	1500
12396	London Road, Brighton	SC	M		150	150
12395	Moulsecomb	SC	M		150	150
12169	Newhaven Harbour	SC	M		150	150
12170	Newhaven Town	SC	M		150	150
12379	Normans Bay	SC	M		150	150
12384	Ore	SC	M	150	150	300
12510	Pevensey & Westham	SC	M		150	150
12378	Pevensey Bay	SC	M		150	150
12391	Polegate	SC	ML	150	700	850
12388	Rye	SC	M	150	150	300
12166	Seaford	SC	ML	150	600	750
12171	Southease	SC	M		150	150
12385	Three Oaks	SC	M		150	150
12387	Winchelsea	SC	M		150	150
	South Central Total			1800	8800	10600
Connex South Eastern						
12383	Hastings	SE	ML	150	600	750
12509	St Leonards Warrior Square	SE	ML	150	600	750
	Connex South Eastern Total			300	1200	1500
	East Coastway Total			2100	10000	12100

A3

NODE	Station	TOC	Category	Approaches Car Parks Bus Inter. £K	Imp. Bldg. Canopies Platforms £K	Total £K
South Central						
12398	Aldrington	SC	M		150	150
13409	Angmering	SC	S		300	300
13097	Arundel	SC	S		300	300
13095	Barnham	SC	ML	300	600	900
13094	Bognor Regis	SC	ML	150	600	750
13413	Bosham	SC	M		150	150
13411	Chichester	SC	ML	300	1499	1799
13407	Durrington on Sea	SC	S		300	300
13404	East Worthing	SC	M		150	150
14416	Emsworth	SC	M		150	150
13412	Fishbourne	SC	M		150	150
13400	Fishergate	SC	M		150	150
13096	Ford	SC	M		150	150
13408	Goring by Sea	SC	M		150	150
12397	Hove	SC	MH	300	1200	1500
13403	Lancing	SC	S		300	300
13410	Littlehampton	SC	S	150	300	450
13414	Nutbourne	SC	M		150	150
12399	Portslade	SC	ML		600	600
13402	Shoreham by Sea	SC	ML	150	600	750
13415	Southbourne	SC	M		150	150
13401	Southwick	SC	M		150	150
14417	Warblington	SC	M		150	150
13406	West Worthing	SC	S		300	300
13405	Worthing	SC	MH	300	1200	1500
	South Central Total			1650	9899	11549
South West Trains						
14022	Ashurst New Forest	SW	M		150	150
14072	Bedhampton	SW	M		150	150
14427	Bitterne	SW	M		150	150
14428	Botley	SW	M		150	150
14422	Bursledon	SW	M		150	150
14418	Cosham	SW	S		300	300
14034	Eastleigh	SW	ML	300	600	900
14420	Fareham	SW	ML	300	600	900
14070	Fratton	SW	S	150	300	450
14423	Hamble	SW	M		150	150
14073	Havant	SW	ML	300	600	900
14429	Hedge End	SW	S		300	300
14071	Hilsea	SW	S		300	300
14029	Millbrook	SW	M		150	150
14424	Netley	SW	M		150	150
14419	Portchester	SW	M		150	150
14069	Portsmouth & Southsea	SW	MH	150	1200	1350
14068	Portsmouth Harbour	SW	ML	150	600	750
14028	Redbridge	SW	S		300	300
14027	Romsey	SW	S		300	300
14074	Rowlands Castle	SW	M		150	150
14425	Sholing	SW	M		150	150
14033	Southampton Airport Parkway	SW	ML	150	600	750
14030	Southampton Central	SW	MH	150	1200	1350
14031	St Denys	SW	M		150	150
14421	Swanwick	SW	M		150	150
14032	Swaythling	SW	M		150	150
14023	Totton	SW	M		150	150
14426	Woolston	SW	M		150	150
	South West Trains Total			1650	9600	11250
	West Coastway Total			3300	19499	22799

Appendix B

Train Service Frequency Enhancements

B1 East Kent

B2 East Coastway

B3 West Coastway

B1

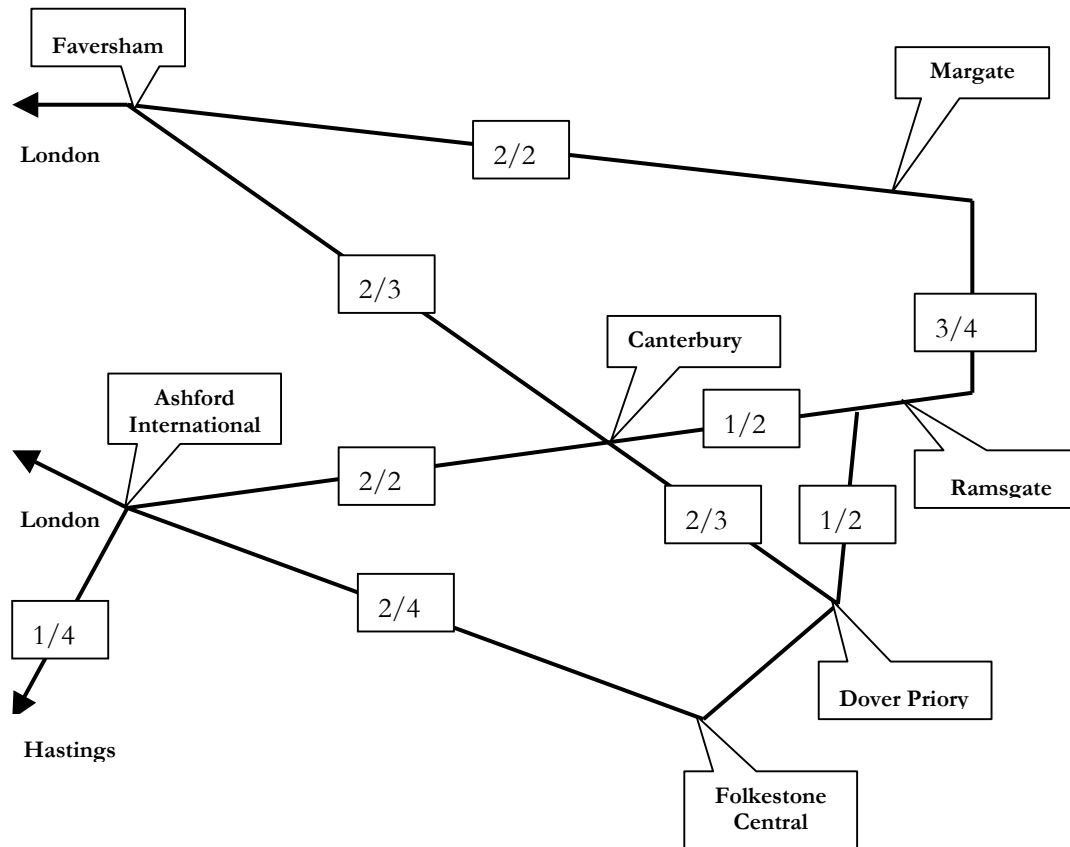
SoCoMMS - Train Service Frequency Enhancements - East Kent

Key:

$2/3$

Present frequency - 2 trains per hour in each direction

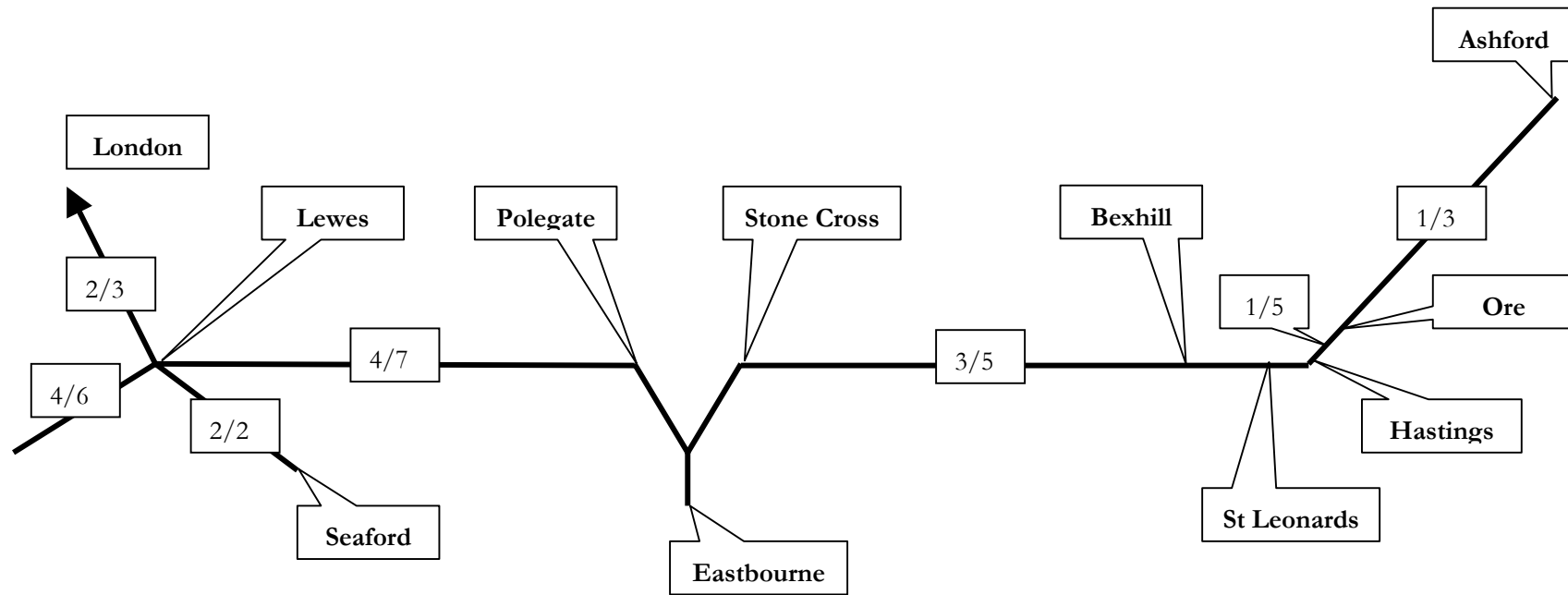
Proposed frequency - 3 trains per hour in each direction



B2

SoCoMMS - Train Service Frequency Enhancements - East Coastway

Key: $\frac{2}{3}$ Present frequency - 2 trains per hour in each direction
Proposed frequency - 3 trains per hour in each direction



Note: On the section between Lewes station and Southerham Junction, the trains per hour will increase from 6 to 9 in each direction.

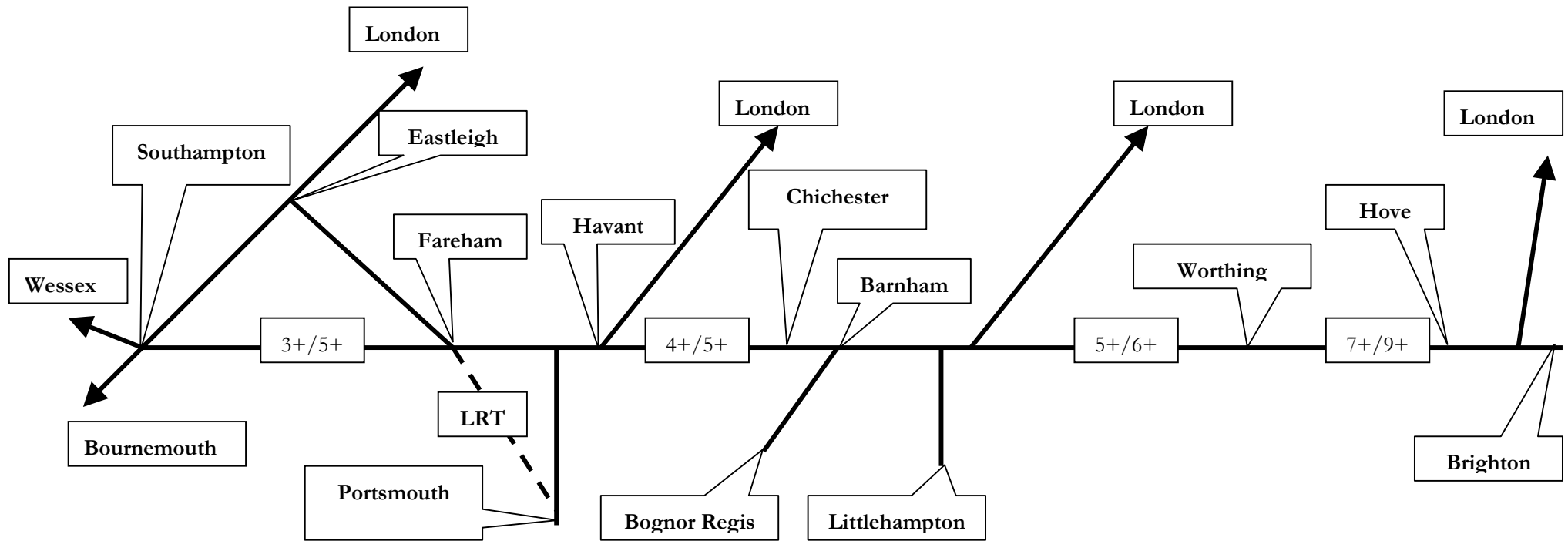
B3

SoCoMMS - Train Service Frequency Enhancements - West Coastway Key Sections

Key:

2/3

 Present frequency - 2 trains per hour in each direction
Proposed frequency - 3 trains per hour in each direction



Appendix C

Train Service Pattern

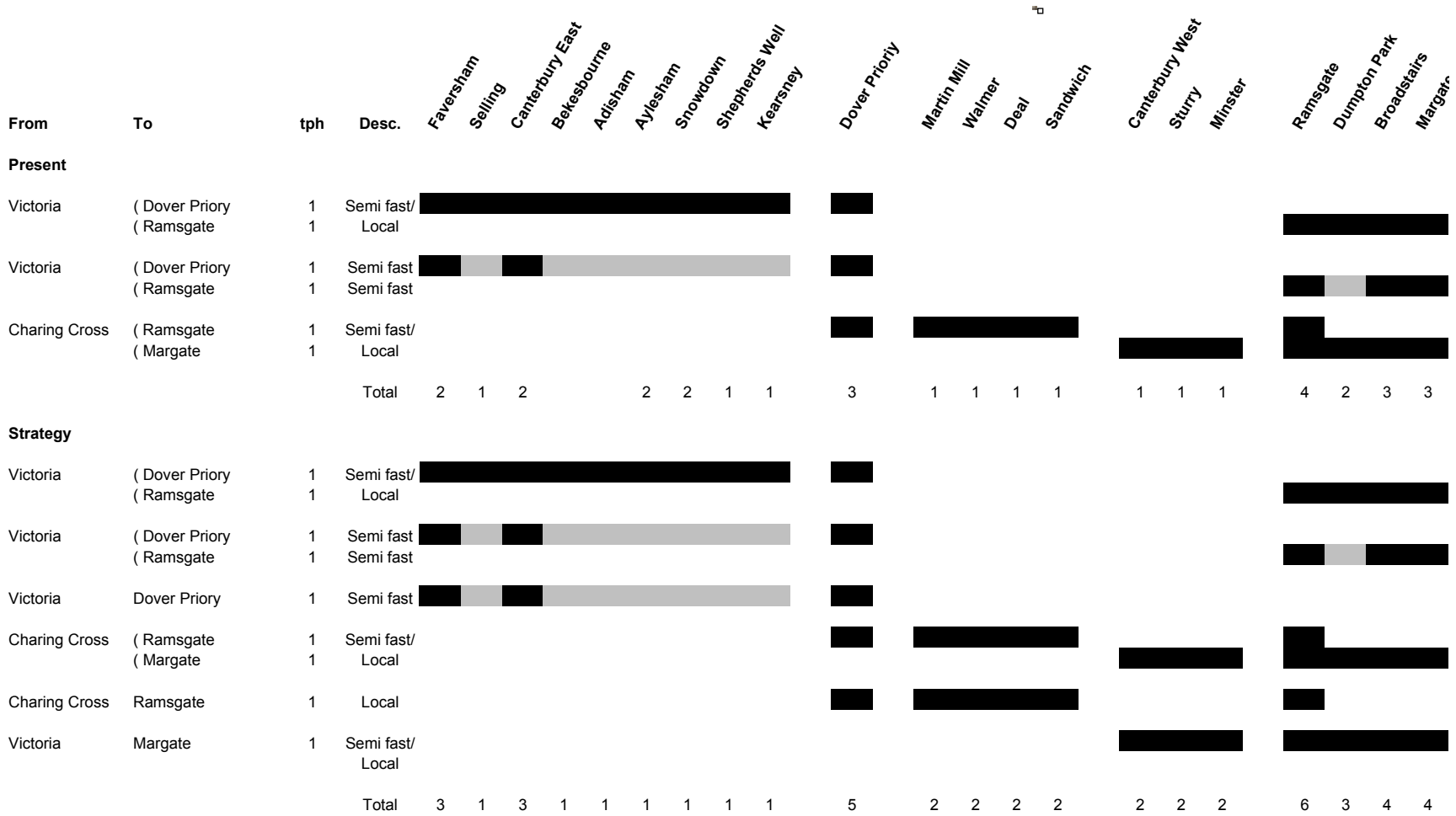
C1 East Kent

C2 East Coastway

C3 West Coastway

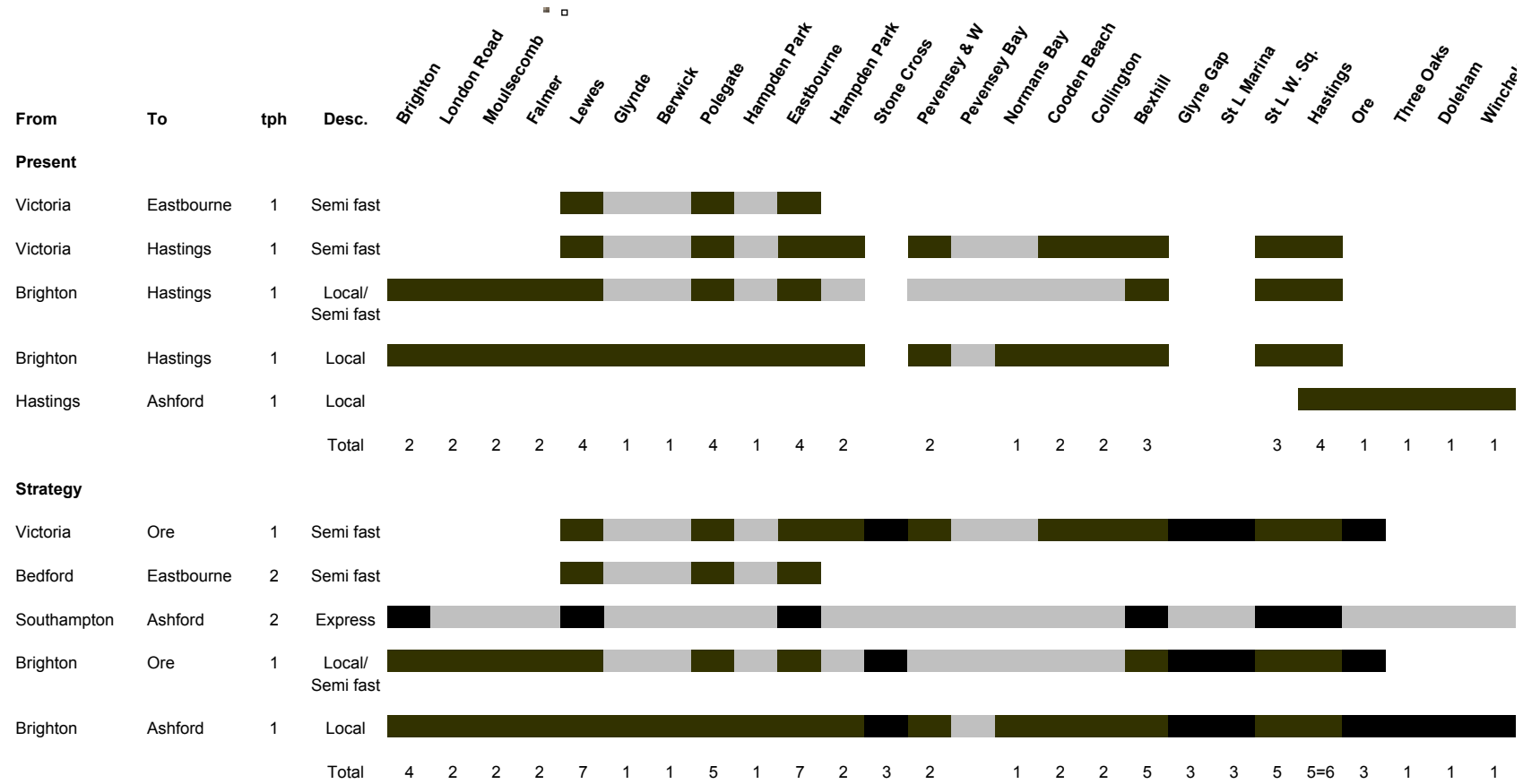
C1

East Kent Train Services - Present Pattern and SoCoMMS Strategy



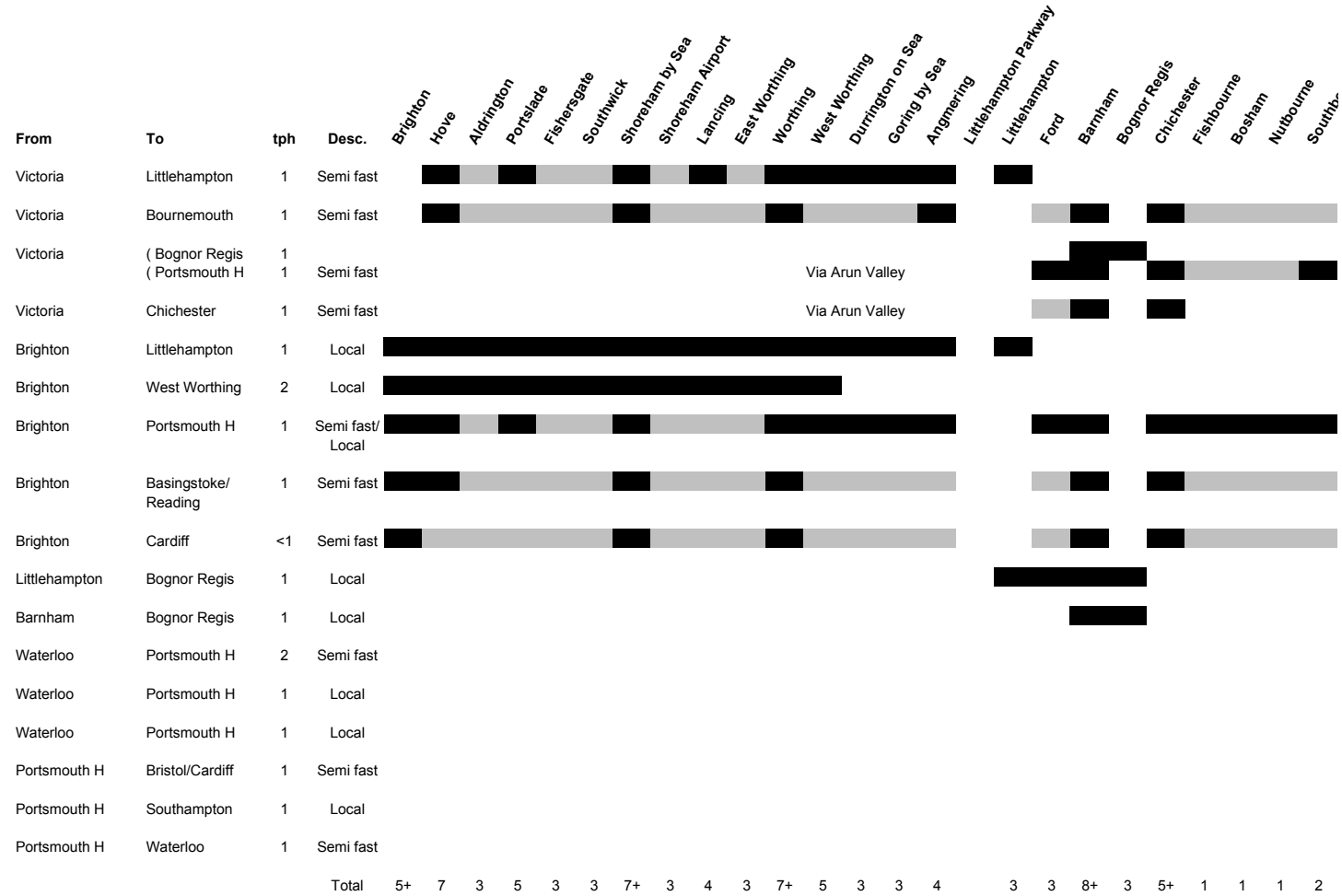
C2

East Coastway Train Services - Present Pattern and SoCoMMS Strategy

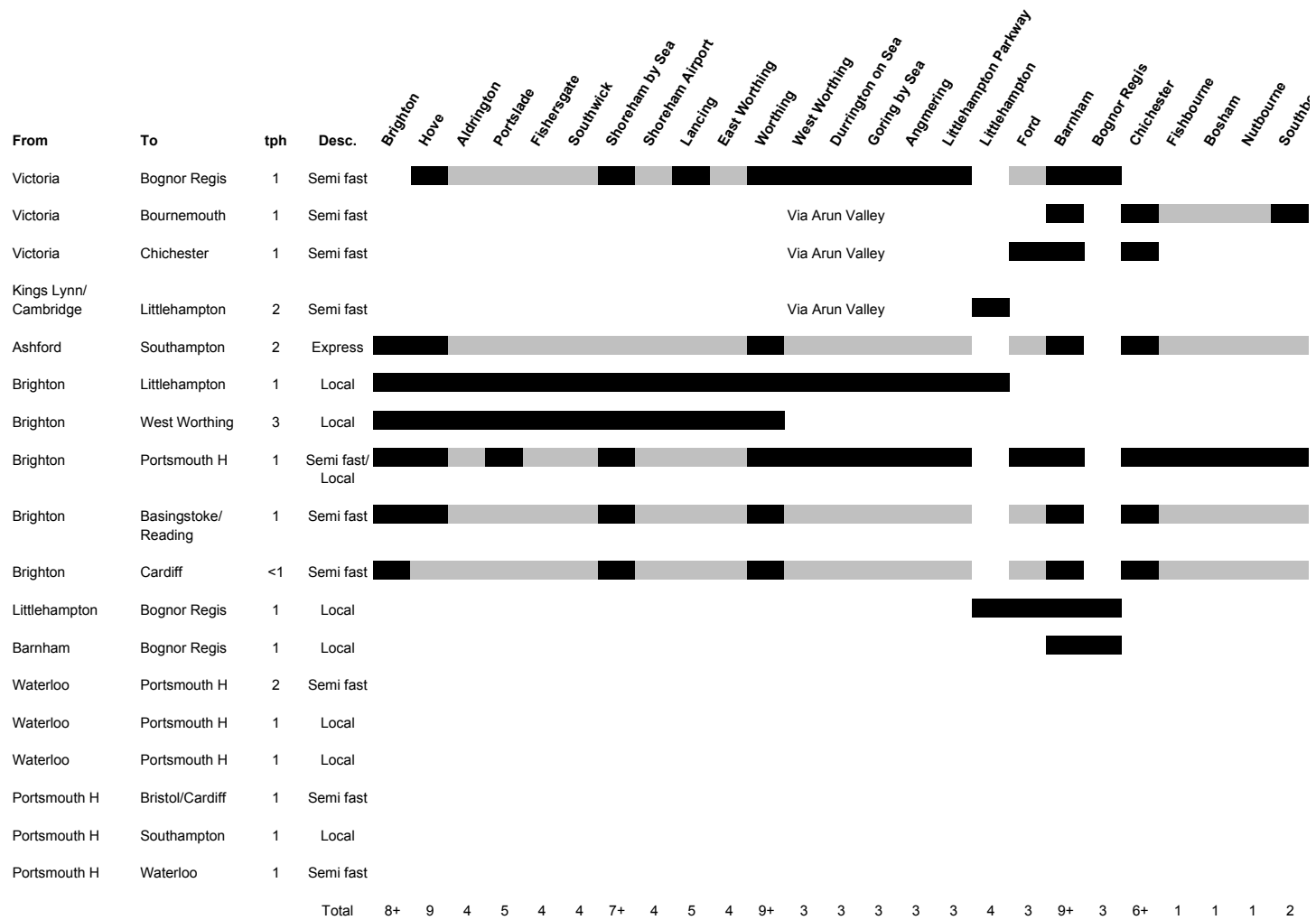


C3

West Coastway Train Services - Present Pattern



West Coastway Train Services - SoCoMMS Strategy



Appendix D

Infrastructure Enhancements - Capital Expenditure

New Stations		Direct Costs					On Costs				Other	
Station	Item	Civil Engin'g £m	Signals & telecomms £m	Car parking £m	F'tbridge/ Sub./Lifts £m	Sub Total £m	Proj. Man. (20%) £m	TOC Com (10%) £m	Poss'ns (10%) £m	TWA £m	Sub Total £m	Land £m
Base												
Eastfields		1.80	0.80			2.60	0.52	0.20	0.20	1.00	1.92	1.00
Estimates												
St Leonards Marina		2.00	0.80		0.40	3.20			0.32		0.32	0.30
Glyne Gap		2.00	0.40			2.40			0.24		0.24	0.30
Stone Cross		2.20	0.40		0.30	2.90			0.29		0.29	0.50
Shoreham Airport		2.20	0.40	0.40	0.30	3.30		0.33	0.33		0.66	0.30
Littlehampton Parkway		2.20	0.40	0.40	0.30	3.30		0.33	0.33		0.66	0.30
Eastleigh MDA		2.00	0.40		0.40	2.80		0.28	0.28		0.56	0.30

Double Tracking		Direct Costs				On Costs				Other	
Scheme	Perm't Way £m	Structures £m	Signals & telecomms £m	Electrif'n £m	Sub Total £m	Proj. Man. (20%) £m	TOC Com (10%) £m	Poss'ns (10%) £m	TWA £m	Sub Total £m	Land £m
Base											
Ashford-Hastings SC BAFO increment	10.76	0.80	3.97	1.78	17.31	3.46	1.90	1.73		7.09	
Estimate											
Ashford - Hastings	10.76	1.60	3.97		16.33			1.63		1.63	
Fareham - Botley	2.69	0.40	2.99	0.89	6.97	0.00	0.70	0.70		1.39	

Reversing Facility		Direct Costs				On Costs				Other	
Scheme	Perm't Way £m	Structures £m	Signals & telecomms £m	Electrif'n £m	Sub Total £m	Proj. Man. (20%) £m	TOC Com (10%) £m	Poss'ns (10%) £m	TWA £m	Sub Total £m	Land £m
Estimate											
Ore	0.30	0.15	0.25	0.25	0.95			0.10		0.10	

New Chord Lines		Direct Costs				On Costs				Other		
Scheme	Perm't Way £m	Structures £m	Signals & telecomms £m	Electrif'n £m	Tunnel £m	Sub Total £m	Proj. Man. (20%) £m	TOC Com (10%) £m	Poss'ns (10%) £m	TWA £m	Sub Total £m	Land £m
Base												
Arundel Chord (HOT/Lvl 2)	2.50	9.52	2.51	0.65		15.18	3.04	1.67	1.52	1.00	7.23	0.50
Estimate												
Willingdon Chord	3.75	14.28	3.77	0.98		22.77		2.28	2.28		4.55	0.75
Eastleigh Chord	5.00	19.04	5.02	1.30	15.00	45.36		4.54	4.54		9.07	1.00

Reinstatement/Additional Platforms		Direct Costs				On Costs				Other		
Scheme	Perm't Way £m	Structures £m	Signals & telecomms £m	Electrif'n £m	F'tbridge/ Sub./Lifts £m	Sub Total £m	Proj. Man. (20%) £m	TOC Com (10%) £m	Poss'ns (10%) £m	TWA £m	Sub Total £m	Land £m
Base												
Eastfields	1.80		0.80			2.60	0.52	0.20	0.20	1.00	1.92	1.00
Estimate												
Eastbourne	0.20	0.25	0.30	0.20		0.95			0.10		0.10	0.50
Fareham	0.50	0.40	0.20	0.20	0.40	1.70	0.00	0.17	0.17		0.34	1.00

Appendix E

Major Level Crossings

Ref.	Location (Between)	Type	Road
East Kent			
1	St Dunstans (Canterbury West)	CCTV	A290
2	Sturry	Other	A28
East Coastway			
3	Appledore	AHB	B2080
4	Star (Appledore/Rye)	AHB	A259
5	East Guideford (ditto)	AHB	A259
6	Grove Road (Rye)	CCTV	A268
7	Ferry Road (Rye)	CCTV	B2089
8	Wallsend (Pevensey Bay)	CCTV	A259
9	Beddingham (Glynde/Lewes)	AHB	A27
West Coastway			
10	West Worthing (Tarring Road)	CCTV	A2031
11	Goring-by-Sea	CCTV	A259
12	Roundstone (Goring/Angmering)	CCTV	B2225
13	Angmering	CCTV	B2140
14	Lyminster (Angmering/Ford)	CCTV	A284
15	Yapton (Ford/Barnham)	AHB	B2132
16	Woodgate (Barnham/Chichester)	CCTV	A29
17	Drayton (ditto)	AHB	B2144
18	Whyke Road (ditto)	CCTV	B2145
19	Stockbridge Road (Chichester)	CCTV	A286
20	Bosham	AHB	B2146

Key

AHB	Automatic half barriers
CCTV	Controlled by CCTV from remote signalling control centre