

ACCESS and CONNECTIONS: EAST SUSSEX

Opportunities to align railway investment to the economic growth requirements of East Sussex

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Sponsor: Railfuture

First published July 2013

**ACCESS and
CONNECTIONS:
EAST
SUSSEX**

Options for rail development within and beyond East Sussex

- Shape quicker, easier links for local economic growth
- Support all who live, work, study in or visit East Sussex
- Help travel to and from neighbouring South East towns
- Respond to current and future commuting needs



The independent campaign for a better passenger and freight rail network

This report was fully-funded by a grant from Railfuture's Fighting Fund

For more information on the Uckfield-Lewes campaign go to
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Registered in England and Wales No. 5011634.
Registered Office:- 24 Chedworth Place, Tattingstone, Suffolk IP9 2ND

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Introduction - East Sussex context

East Sussex is a 530,000 population county. There are dramatic contrasts between Sussex Coast towns such as Eastbourne, Newhaven and Hastings, historic Lewes, Wealden and Rother districts and neighbouring Brighton. This is a human and economic geography where one size does not fit all. Diversity is the essence. A mix of transport solutions will be the appropriate way forward.

External financial and economic pressures are considerable. Challenges and choices are posed by inward investment needs, economic growth targets, population trends and deprivation issues, set against government funding limits and affordability. Achieving local stability and sustainable growth is a highly prized goal, whilst respecting local environmental quality and offering different lifestyles from that of a busy metropolis.

Railfuture's assessment

Railfuture first sought consultancy advice in late 2012. The objective was to develop evidence-based analysis and options, to move towards a locally supported re-opening of the Uckfield-Lewes line. JRC Ltd was appointed after competitive tender, and has worked closely with Railfuture officers since March 2013. The evidence showed early on that a wider perspective was required about East Sussex's needs, travel 'gaps' and opportunities, where Uckfield-Lewes and other possibilities could be put in a unifying context.

This report presents the outcomes of the JRC research, and how East Sussex's accessibility and prospects can be improved for the benefit of communities and businesses, through five main elements:

- **Investment in a direct Coastway connection between Polegate and Pevensey – the Willingdon Chord – to reduce journey times to attractive levels along the main coastal corridor, including within East Sussex, and between Brighton, Sussex Coast and East Kent towns.**
- **Development of an East Sussex Metro linking Eastbourne, Bexhill and Hastings, with more local stations.**
- **Investment options for Uckfield-Lewes which also achieve affordable, attractive and effective journey times between the Weald, the Sussex Coast and Brighton.**
- **Faster journeys and extra capacity between Sussex Coast towns and Gatwick, Croydon and London, via an accelerated East Coastway for inter-urban travel.**
- **Promotion of electrification and other infrastructure, which expand services and connections, stimulate regeneration, and reduce journey times and expand rail access for East Sussex residents and businesses – with direct trains not changes. Particularly there is scope for a Bexhill/St. Leonards/Hastings to London 'Javelin' service cutting up to 30 minutes off London journey times.**

These outputs don't depend on each other. However in total the package offers fundamental change for East Sussex's internal and external links, and thus economic growth, by increasing the whole railway offer.

The rail industry would adopt such outputs through the new 'Long Term Planning Process' (LTPP). Its next stages are to receive comments on the approach and priorities set out in the current 'LTPP passenger market study', and then to proceed to individual route options. At this point East Sussex would need to be ready with its priorities, and with options for third party funding such as from the South East Local Enterprise Partnership (LEP).

The Railfuture propositions for East Sussex are informed by:

- Analysis of East Sussex's distinguishing characteristics, from population and travel statistics.
- Comparison of car with rail journey times, looking at changes to services and infrastructure.
- Assessing options offering strong benefit for East Sussex.
- Linking options to best outcomes for East Sussex's accessibility, economic growth and environmental quality.
- Combination of these assessments into multi-year phased investment, to maximise economic and social benefits.

These propositions are expressed as strategic objectives, unconstrained at this stage by considerations of feasibility and affordability, although we have already been careful in the report to discuss outline feasibility. Network Rail's terminology for this approach is expressed as 'Conditional Outputs'.

Delivery of the outputs requires further study, detailed specification, value for money and ranking of priorities. The focus of this report is on the benefits, with proposals for detailed studies to define the best outcomes in terms of benefit/cost balance.

East Sussex population and jobs

The case for transport investment relies on forward projections of local and regional population, foreseen number of jobs and how these will be accessed, plus numbers of visitors to East Sussex. There are other important factors, such as the availability and location of further and higher education, leisure journeys, and the relative attractiveness of different travel modes.

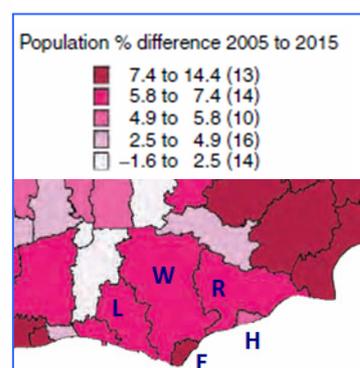
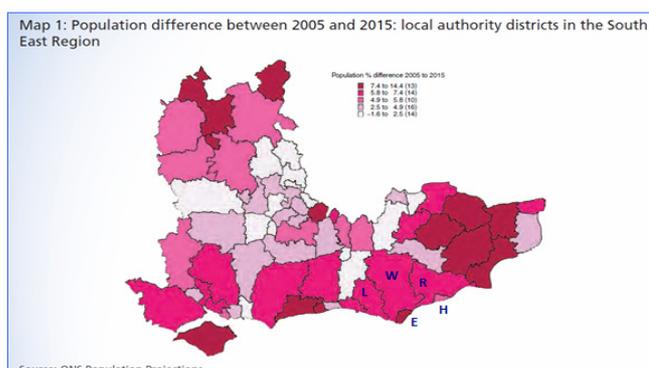
New investment can also increase Gross Value Added (the sum total of the local and regional economic changes), which can be a further measure for returns on investment, beyond the conventional range of travel time savings and other valued outputs.

Population growth

East Sussex's policies favour a low rate of population growth overall, though the county's own population trend set out in East Sussex in Figures (<http://www.eastsussexinfigures.org.uk/webview/welcome.html>) shows a faster real rate. Depending on how population actually grows, East Sussex could see +1.4% to +12% over 15 years to 2026, with variations in the location of greatest growth. The trend does not assume any new transport investment beyond limited existing schemes to 2019, yet would put the existing transport networks under considerable stress.

East Sussex population - Interim policy-based projections, 2011-2026					Trend-based projections				% Growth 2011-2026	
Year	2011	2016	2021	2026	2011	2016	2021	2026 (JRC)	Policy	Trend
England					53,107,169	55,486,580	57,687,784	60,175,636		
South East					8,652,784	9,060,665	9,453,452	9,890,830		
East Sussex	527,209	530,850	531,907	534,774	527,209	546,452	568,291	590,647	1.4%	12.0%
Eastbourne	99,308	100,096	100,145	100,080	99,308	103,353	107,293	111,607	0.8%	12.4%
Hastings	90,173	90,414	90,780	91,367	90,173	92,599	95,459	98,257	1.3%	9.0%
Lewes	97,584	97,873	97,791	97,944	97,584	103,619	109,514	116,208	0.4%	19.1%
Rother	90,729	91,332	91,418	91,723	90,729	94,919	99,822	104,824	1.1%	15.5%
Wealden	149,415	151,135	151,773	153,659	149,415	151,961	156,203	159,751	2.8%	6.9%
Variance between ESCC population trend and policy (trend is faster growth):					15,602	36,384	55,873			
Source: ESCC statistics. JRC projection for 2026 trend is based on 2011-21 trend continuing										

The South East England Public Health Observatory also characterises East Sussex as a growth area, as shown by its mapping below.



In this document, please note that different baseline statistical sources can mean that figures may not agree precisely.

Population age

East Sussex is characterised by a higher than average population age, with under-representation by children, and young and middle-aged adults, compared to the South East or England & Wales as a whole. The disparity within most age groups has increased from 2001 to 2011. See the table on the following page.

The 0-14 age East Sussex population has reduced by -2,600 since 2001 on a district-by-district basis, except in Eastbourne (+500). Despite a significant increase in the 15-29 age group from 2001 (+13,200), this group is still under-represented in the East Sussex population, compared to the South East as a whole. Such under-representation is likely to have economic consequences, as these represent the new generations' commitment to the local economy. The 15-29s have been outweighed by a large increase in older working age and retirement age people (+29,700).

This has multiple consequences both weak and positive for the area economy and for rail demand. The preponderance of older working adults (age 45-64) will point to high reliance on car travel – also influenced by low population density in parts of the county. However the high proportion of elderly residents eg in Sussex Coast towns also points to growing dependence on public transport, as age rises and mobility and incomes reduce, with lesser spending power.

The Planning Minister has warned (29th May 2013) “that the lack of new housing is sending Britain “back to the nineteenth century”, when only the wealthiest could afford their own home. Such a situation would be a recipe for economic stagnation if the young economically-active generation couldn't afford to live locally and easily reach jobs within East Sussex or its neighbours, or alternatively would lead to extensive in-commuting from more affordable housing elsewhere in the South East.

There is a further problem for teenagers and those under 25. It is difficult to obtain affordable car insurance, yet they face the need to travel to work, or move (possibly away from East Sussex) to be closer to the workplace. The accessibility of business parks and other economic growth locations could be a further factor to take into account.

Students must access major centres of further and higher education, such as Hastings, Eastbourne, Lewes and Brighton. Many of this under-25 age group also adopt a lifestyle with affinity to 24/7, and desire quality public transport that connects the major centres of population and retail and leisure activity by offering easy-to-use, 'walk-on' services, along with wide use of social networking.

Population by age in East Sussex county and districts, Super Output Area data, 2011										Variance in %, East Sussex county & districts compared to South East equivalent, 2011											
% population by age in East Sussex county and districts, 2011					% population by age in East Sussex county and districts, 2011					% population by age in East Sussex county and districts, 2011					% population by age in East Sussex county and districts, 2011						
Age	All people	0-14	15-29	30-44	45-64	65+	0-14	15-29	30-44	45-64	65+	0-14	15-29	30-44	45-64	65+	0-14	15-29	30-44	45-64	65+
England and Wales	56,075,912	9,891,138	11,183,239	11,515,165	14,263,297	9,223,073	17.6%	19.3%	20.5%	25.4%	16.4%	-0.1%	+1.4%	+0.1%	-0.6%	-0.7%	-0.1%	+1.4%	+0.1%	-0.6%	-0.7%
South East	8,634,750	1,535,168	1,604,028	1,761,278	2,252,256	1,482,020	17.8%	18.6%	20.4%	26.1%	17.2%	+0.0%	+0.0%	+0.0%	+0.0%	+0.0%	+0.0%	+0.0%	+0.0%	+0.0%	+0.0%
East Sussex	526,671	84,910	83,732	90,763	147,503	119,763	16.1%	15.3%	17.2%	28.0%	22.7%	-1.7%	-2.7%	-3.2%	+1.9%	+5.6%	-1.7%	-2.7%	-3.2%	+1.9%	+5.6%
Eastbourne	99,412	15,574	18,407	18,195	24,933	22,303	15.7%	18.5%	18.3%	25.1%	22.4%	-2.1%	-0.1%	-2.1%	-1.0%	+5.3%	-2.1%	-0.1%	-2.1%	-1.0%	+5.3%
Hastings	90,254	15,659	17,149	17,677	24,368	15,401	17.3%	19.0%	19.6%	27.0%	17.1%	-0.4%	+0.4%	-0.8%	+0.9%	-0.1%	-0.4%	+0.4%	-0.8%	+0.9%	-0.1%
Lewes	97,502	15,832	14,854	16,907	27,755	22,154	16.2%	15.2%	17.3%	28.5%	22.7%	-1.5%	-3.3%	-3.1%	+2.4%	+5.6%	-1.5%	-3.3%	-3.1%	+2.4%	+5.6%
Rother	90,588	13,214	12,047	13,026	26,538	25,763	14.6%	13.3%	14.4%	29.3%	28.4%	-3.2%	-5.3%	-6.0%	+3.2%	+11.3%	-3.2%	-5.3%	-6.0%	+3.2%	+11.3%
Wealden	148,915	24,631	21,275	24,958	43,909	34,142	16.5%	14.3%	16.8%	29.5%	22.9%	-1.2%	-4.3%	-3.6%	+3.4%	+5.8%	-1.2%	-4.3%	-3.6%	+3.4%	+5.8%
Population changes 2001-2011																					
% population changes 2001-2011 by age group																					
Age	All people	0-14	15-29	30-44	45-64	65+	0-14	15-29	30-44	45-64	65+										
England and Wales	+4,033,996	+64,120	+1,408,711	-218,308	+1,869,174	+910,299	+0.7%	+14.4%	-1.9%	+15.1%	+11.0%										
South East	+634,105	+40,264	+158,066	-46,579	+308,956	+173,398	+2.7%	+10.9%	-2.6%	+15.9%	+13.3%										
East Sussex	+34,347	-2,153	+13,216	-6,458	+22,233	+7,509	-2.5%	+18.7%	-6.6%	+17.7%	+6.7%										
Eastbourne	+9,754	+493	-3,612	+723	+4,791	+135	+3.3%	+24.4%	+4.1%	+23.8%	+0.6%										
Hastings	+5,232	-1,232	+2,885	-473	+3,967	+85	-7.3%	+20.2%	-2.6%	+19.4%	+0.6%										
Lewes	+5,318	-375	+1,973	-1,357	+3,734	+1,343	-2.3%	+15.3%	-7.4%	+15.5%	+6.5%										
Rother	+5,166	-362	+1,777	-1,631	+4,006	+1,376	-2.7%	+17.3%	-11.1%	+17.8%	+5.6%										
Wealden	+8,891	-658	+2,971	-3,721	+5,735	+4,564	-2.6%	+16.2%	-13.0%	+15.0%	+15.4%										
Population by age in East Sussex county and districts, Super Output Area data, 2001																					
% population by age in East Sussex county and districts, 2001										Variance in %, East Sussex county & districts compared to South East equivalent, 2001											
Age	All people	0-14	15-29	30-44	45-64	65+	0-14	15-29	30-44	45-64	65+	0-14	15-29	30-44	45-64	65+	0-14	15-29	30-44	45-64	65+
England and Wales	52,041,916	9,827,018	9,774,528	11,733,473	12,394,123	8,312,774	18.9%	18.8%	22.5%	23.8%	16.0%	+0.2%	+0.1%	+3.9%	+5.1%	-2.7%	+0.2%	+0.1%	+3.9%	+5.1%	-2.7%
South East	8,000,645	1,494,904	1,445,962	1,807,857	1,943,300	1,308,622	18.7%	18.1%	22.6%	24.3%	16.4%	+0.0%	-0.6%	+3.9%	+5.6%	-2.3%	+0.0%	-0.6%	+3.9%	+5.6%	-2.3%
East Sussex	492,324	87,063	70,516	97,221	125,270	112,254	17.7%	14.3%	19.7%	25.4%	22.8%	-1.0%	-4.4%	+1.1%	+6.8%	+4.1%	-1.0%	-4.4%	+1.1%	+6.8%	+4.1%
Eastbourne	89,658	15,081	14,795	17,472	20,142	22,168	16.8%	16.5%	19.5%	22.5%	24.7%	-1.9%	-2.2%	+0.8%	+3.8%	+6.0%	-1.9%	-2.2%	+0.8%	+3.8%	+6.0%
Hastings	85,022	16,891	14,264	18,150	20,401	15,316	19.9%	16.8%	21.3%	24.0%	18.0%	+1.2%	-1.9%	+2.7%	+5.3%	-0.7%	+1.2%	-1.9%	+2.7%	+5.3%	-0.7%
Lewes	92,184	16,207	12,881	18,264	24,021	20,811	17.6%	14.0%	19.8%	26.1%	22.6%	-1.1%	-4.7%	+1.1%	+7.4%	+3.9%	-1.1%	-4.7%	+1.1%	+7.4%	+3.9%
Rother	85,422	13,576	10,270	14,657	22,532	24,387	15.9%	12.0%	17.2%	26.4%	28.5%	-2.8%	-6.7%	-1.5%	+7.7%	+9.9%	-2.8%	-6.7%	-1.5%	+7.7%	+9.9%
Wealden	140,024	25,289	18,304	28,679	38,174	29,578	18.1%	13.1%	20.5%	27.3%	21.1%	-0.6%	-5.6%	+1.8%	+8.6%	+2.4%	-0.6%	-5.6%	+1.8%	+8.6%	+2.4%

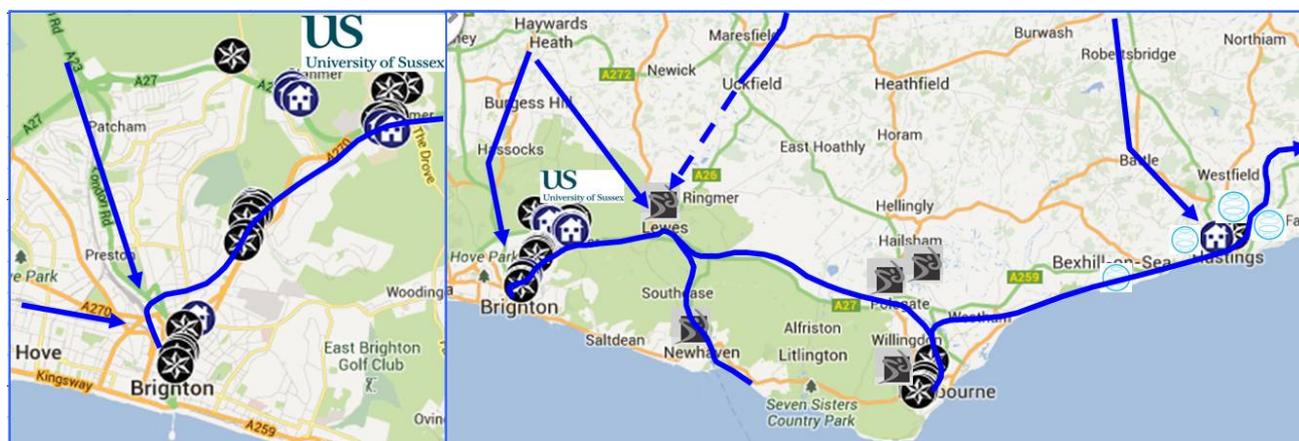
Access to further and higher education

The many colleges for further and higher education in East Sussex are a principal lever for engaging and attracting both skills and employability. This is a regional specialisation along the Sussex Coast. A table of major institutions and their student populations is set out below.

There are fewer centres for further education in neighbouring areas. Kent College – ‘K’ College – is in High Brooms (Tunbridge Wells). As part of Central Sussex College, there is a 6th Form College in Haywards Heath and electrical/energy installation skills training at Burgess Hill.

East Sussex and neighbouring centres of further and higher education				
Education centre	Campus	Student	Employment	Notes
		population	Academic/Admin	
		Gross totals	58,300	6,700
 University of Sussex	Falmer	13,000	2,200	
	affiliated:			
	Institute of Development Studies			
	Sussex Innovation Centre			
	Brighton Institute of Modern Music			
 University of Brighton	Overall	22,000	2,600	
	Brighton Grand Parade	3,500	414	Acad./Admin
	Moulsecoomb	8,000	945	proportioned
	Falmer	7,000	827	by student
	Eastbourne	3,000	355	population
	Hastings	700	83	
affiliated to Uni Sussex & Uni Brighton:		numbers not defined		
Brighton and Sussex Medical School				
 SUSSEX DOWNS COLLEGE	www.sussexdowns.ac.uk	Eastbourne	5,800 FT	1,300
		Newhaven	10,000 Adult	
co-sponsor with East Sussex CC of		Lewes	numbers spread across area	
The Eastbourne Academy		and on employers' premises		
also adult education at Eastbourne, Hailsham, Polegate, Willingdon				
 Sussex Coast College Hastings	www.sussexcoast.ac.uk	Overall	2500 FT	~ 600
		Hastings	5000 PT	
	Ore		numbers spread across area	
ex-Hastings College of Arts & Technology		also training at Bexhill Motor Vehicle Centre, St Leonards Energy Centre		

The East Coastway rail access is important for this East Sussex strength, as shown by the mapping below. Rail travel is also attractive with eligibility for student railcards. Access from East Sussex's hinterland is possible via Lewes and Hastings, and would be beneficial from the central and western Weald if Uckfield-Lewes were open.



The East Sussex economy

East Sussex is typified by small and medium-size employers, and by an economic structure which has to be cost-efficient to compete in larger marketplaces. This is the norm also in the South East. The high volume of small businesses in the Weald is noticeable, though this is partly a function of the district's size. The average rental price of commercial office space in the county is very low: at less than half the average for England & Wales.

Business enterprises by size of business, 2004-2012 - districts								
Number of employees	TOTAL	0 - 4	5 - 9	10-20	20 - 49	50 - 99	100 - 249	250 +
Great Britain	2,081,695	1,574,500	270,595	128,105	65,965	21,570	12,370	8,590
South East	337,810	261,535	40,885	19,055	9,865	3,175	1,925	1,370
East Sussex	19,745	15,295	2,495	1,090	580	150	90	45
Eastbourne	2,635	1,920	370	180	110	25	20	10
Hastings	2,350	1,725	330	165	90	20	15	5
Lewes	3,705	2,835	490	215	110	30	15	10
Rother	3,665	2,885	465	170	90	25	20	10
Wealden	7,390	5,930	840	360	180	50	20	10

Business survival rates are slightly better in East Sussex than in the South East or Great Britain as a whole, with 48.6% of East Sussex businesses formed in 2006 still active in 2011, compared to 47.8% in the South East and 44.9% in GB. However there is a worrying reduction in early business survival for those companies started in 2010, with only 87.6% continuing in 2011 – a significant drop from one year rates over 90% in previous years, though this too has declined year on year. This is unfortunately a sign of the macro-economic pressures where East Sussex is not immune.

Business survival rates, 2006-2011 - East Sussex							
Year of birth of units	Births	1 year	2 years	3 years	4 year	5 year	
East Sussex	2006	100	97.1	82.6	68.8	56.5	48.6
	2007	100	96.1	83.6	65.9	54.9	-
	2008	100	94.0	77.8	61.8	-	-
	2009	100	91.5	73.6	-	-	-
	2010	100	87.6	-	-	-	-

Employment in East Sussex

Total employment numbers are set out below for East Sussex for 2001-2011. These show that the overall number of jobs in the county had dropped back to 2001 levels because of factors such as spending cuts and the recession, with a severe reduction in Lewes District. Employment recovery is forecast to follow regional/national rates, so it may be several years before recent job losses are recovered.

Jobs in East Sussex, by District												
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	change 2001-11
Great Britain	29,283,000	29,477,000	29,747,000	30,042,000	30,539,000	30,339,000	30,667,000	30,689,000	30,266,000	30,235,000	30,865,000	+5.4%
South East	4,299,000	4,363,000	4,309,000	4,308,000	4,423,000	4,327,000	4,400,000	4,396,000	4,303,000	4,372,000	4,438,000	+3.2%
East Sussex	204,000	205,000	205,000	205,000	213,000	207,000	216,000	216,000	217,000	216,000	203,000	-0.5%
Eastbourne	41,000	43,000	44,000	44,000	46,000	44,000	45,000	48,000	46,000	46,000	43,000	+4.9%
Hastings	34,000	35,000	35,000	37,000	37,000	38,000	39,000	34,000	34,000	35,000	37,000	+8.8%
Lewes	41,000	42,000	39,000	40,000	39,000	35,000	39,000	41,000	41,000	42,000	36,000	-12.2%
Rother	32,000	31,000	32,000	31,000	34,000	34,000	35,000	36,000	37,000	34,000	32,000	+0.0%
Wealden	55,000	54,000	55,000	54,000	57,000	57,000	58,000	57,000	58,000	59,000	57,000	+3.6%

The business base of East Sussex is diverse. There are concentrations in Manufacturing and Construction, although the bulk (87% in 2008) is within Service Industries and Tourism. East Sussex has high levels of self-employment (15%) compared to the South East region (10.5%). A higher proportion of its working age residents are self-employed than in most other counties or unitaries in England.

Against this background, the likelihood of travelling to and for work has grown, because of recent job losses locally, and because, as a mostly rural area, there are insufficient jobs to employ all the available working population.

Employment comparisons between East Sussex and neighbours

The data above on jobs is from *East Sussex in Figures*. On a different statistical basis (the ONS 2008 annual business inquiry employee analysis), comparisons are available with other neighbouring districts and unitaries. These provide a relative baseline to compare job availability in East Sussex and neighbouring districts. The ONS 2008 jobs base is contrasted below with the 2011 Census populations.

In 2008 East Sussex offered 183,400 jobs according to the ONS database ¹. This isn't enough for the 2011 local population, of 527,200, even if all jobs were taken up locally. On the same basis, the neighbouring districts and unitaries offered 499,900 jobs in an arc from Brighton & Hove to Shepway.

The locations include Brighton & Hove which is No.2 for jobs in the whole of the South East, after Milton Keynes, and Crawley (No.10 for jobs including Gatwick). East Sussex residents will look to such locations for work, as well as within the county. The relative rates of jobs to local population are shown below:

Jobs and population in East Sussex and neighbouring districts								
Local authority	Total jobs 2008	Jobs rank in South East region	% service jobs	% tourism jobs	total population	pop age 16-64	Pop. rank in South East region	Working age pop. to jobs ratio
South East	4,004,700		80%	8%	8,653,200	5,513,900		1.38
East Sussex	183,400		78%	9%	527,200	315,500		1.72
Eastbourne	42,000	52	83%	9%	99,300	60,200	54	1.43
Hastings	31,300	62	80%	8%	90,200	57,900	57	1.85
Lewes	34,000	60	78%	7%	97,600	58,400	55	1.72
Rother	27,700	65	78%	12%	90,700	50,500	64	1.82
Wealden	48,400	41	73%	10%	149,400	88,500	20	1.83
Neighbours to East Sussex	499,900		81%	9%	1,060,700	686,500		1.37
Brighton and Hove	131,800	2	84%	11%	273,000	192,700	1	1.46
Mid Sussex	58,600	26	79%	9%	140,200	87,500	22	1.49
Crawley	84,400	10	82%	8%	107,100	71,300	41	0.84
Tandridge	37,400	58	81%	7%	83,200	51,600	63	1.38
Sevenoaks	46,600	44	75%	9%	115,400	71,000	42	1.52
Tunbridge Wells	50,700	39	83%	7%	115,200	72,500	39	1.43
Ashford	51,600	37	78%	7%	118,400	73,600	35	1.43
Shepway	38,800	56	79%	11%	108,200	66,300	47	1.71

Sources: ONS mid-year population estimates 2011, ONS business analysis 2008

¹ The differently sourced data on the previous page shows 216,000 jobs in 2008.

The types and proportions of jobs in East Sussex are similar to the averages for its neighbours and for the South East as a whole, though there is a higher percentage employed in tourism in Rother and Wealden.

But the ratio of working age population to available jobs is much higher in East Sussex. So its residents have to travel more often to find jobs, despite the slow and sometimes lengthy journeys incurred. Only Eastbourne has a 'normal' South East balance within East Sussex.

In contrast, among the neighbouring authorities only Shepway has a substantial excess of population to available jobs, while Crawley (including Gatwick Airport) needs to import all the workforce it can.

Local Enterprise Partnerships (LEPs)

East Sussex is a member of the South East LEP. LEPs were formed as business-steered economic hubs as the Government abolished regional development agencies. The South East LEP is England's largest, and also embraces Kent and Essex and unitaries in the catchment. Lewes District is also a member of the neighbouring Coast to Capital LEP which extends from Southampton to Brighton and Croydon.

The role of LEPs is to prioritise economic growth opportunities in their catchment, understand area specialisms, and define best value investment priorities for available infrastructure and business development funding. SELEP has already identified programme priorities including transport infrastructure options (discussed later). Strategic topics as seen by SELEP include:

- The movement of people and ideas.
- Clustering of skills and centres of excellence.
- A sense of place within macro- and micro-economic priorities.
- Identify commonalities not conflicts.
- Unique elements such as coastal communities and international gateways.
- Some deep levels of deprivation even in pleasant places.
- A risk of peripherality.

East Sussex's economic vision

Railfuture's understanding is that it is not East Sussex's policy to aim to be an extended London commuting suburb. The county, its districts, towns and parishes have different lifestyle values and aspirations. This has been expressed clearly in our discussions with councillors and officers. This may be one of the reasons why the Wealden Line Campaign's BML2 project appears to divide opinion among strategic stakeholders.

That isn't to rule out travel to Central London, or nearer centres such as Croydon and Crawley/Gatwick, and clearly many people do journey there. The closer to London, the easier that direction of travel is. However the over-arching economic desire is to instil and encourage economic self-reliance within the county catchment, while supporting

inter-dependence between East Sussex communities and their neighbours. This is more of a local and regional economic focus, not a London commuting dependency. Paradoxically, it isn't necessarily easy or quick to access East Sussex economic centres, or neighbours such as Brighton, either by public transport or car.

East Sussex also looks to national scale linkage to other parts of the UK, and to mainland Europe, where the long distance motorway and rail networks are relevant as well as some internal air routes. Access times to Intercity rail or getting past the M25 ring can be time-consuming.

It is recognised that economic growth will only be secured and sustained successfully through co-operation and internal connectivity. These aspects will be prioritised in different ways by different communities within East Sussex. It is not a case that one economic approach will suit all.

East Sussex knows it needs to be smart to be successful, doing things at the right level, and making the best of the different communities and skill sets – LEPs, counties, districts, towns, parishes, partnerships. There will be diverse and complementary corridors with different appetites for development and change – higher and lower pace areas – with the differences ensuring a complementary offer to each other.

The LEP has stressed that businesses are 'blind' to boundaries, and that it is important to create circumstances for the business and labour markets to work. This underlines the importance of a realistic 'route map' for the short and long term. The common points are: a shared vision that there can be progress; signals that there are things happening; and that more can be made to happen. Businesses and residents also look to global connections, eg via airports and ports, where fast and good connectivity is required. Gatwick is effectively a Sussex Coast airport just as much as a London and national UK airport.

Railfuture commentary

We believe that the East Sussex economic vision, allied to the distribution of population and jobs as shown above, underlines the county's requirements for better connectivity. A county strategy of strengthening viable communities works best with clustering and connecting of skills and centres of excellence. The example of educational strengths and specialisms along the Sussex Coast is a strong precedent.

There are natural regional economic centres within and neighbouring East Sussex, and a combination of access and connectivity merits support and investment. The principal transport networks need to be aligned better with those centres, to help achieve the best for the county and its communities. As we shall see, the role of rail in East Sussex has grown considerably in the past decade, and it offers the potential to be a stronger partner through the next years and decades if investment is shaped to underpin the county's priorities.

East Sussex Travel to Work

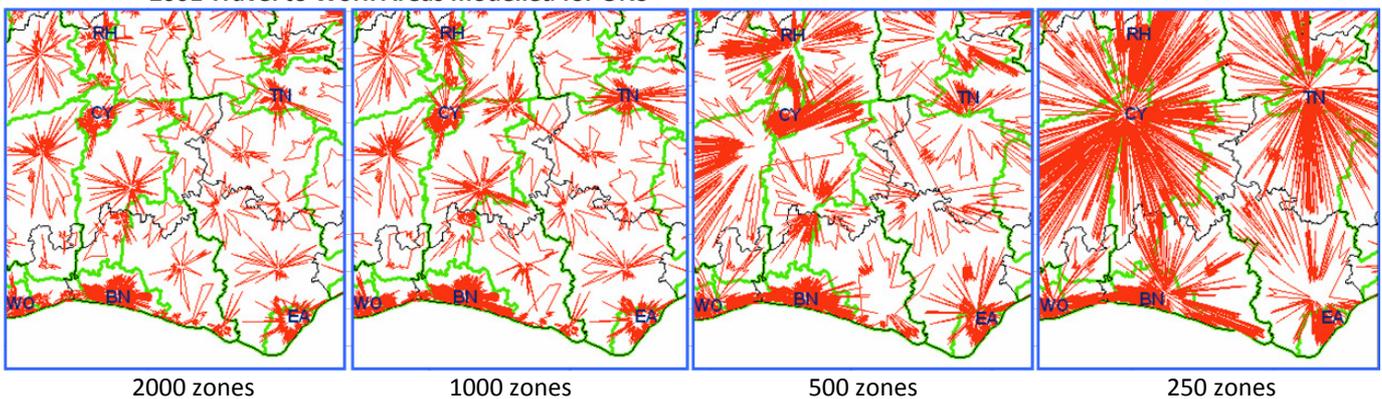
Travel to Work Areas

Analysis sponsored by the Office for National Statistics and published in 2008 set out key commuting zones in England, based on different levels of aggregation of local journeys to work. These are known as Travel to Work Areas (TTWA).

Mapping was derived for several layers of detail and eventually ONS settled on a 243-zone grouping, as this showed a high level of travel contained within the zone boundaries (at least 75% of an area's resident workforce work in the area, and separately 75% of the people who work in the area also live in the area). However higher numbers of zones were also tested, reflecting the existence of other local centres though with more travel to work going beyond the mapping 'cordons'.

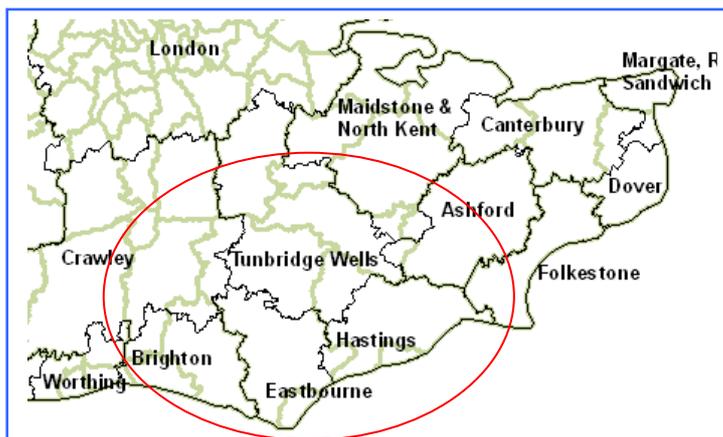
Part of East Sussex was illustrated in more detail in this 2008 research report, with mapping showing different scales of local dependence. This usefully highlights the main travel nodes in the eastern part of the county:

2001 Travel to Work Areas modelled for ONS



The benefit of this mapping is that it also illustrates the hinterlands of principal East Sussex centres, with towns such as Newhaven, Seaford, Lewes, Uckfield, Crowborough, Hailsham and Heathfield. From a travel planning perspective, it underlines that definition of catchments is highly relevant, and that, if planning rail improvements, rail in a rural area can be effective with catchment railheading.

The final TTWA mapping for 2001 census data is very similar to the 250 zones version. The strength of the Brighton, Crawley (including Gatwick and Redhill), Tunbridge Wells and Ashford zones is noted here, and considered later for rail propositions.



East Sussex commuting

East Sussex's current requirement for travel to work is highlighted by the gross and net commuting inflows and outflows for its districts (2001 data). Across East Sussex as a whole, 3 people travelled out of the county for work elsewhere (48,659), for every 1 person commuting into the county (16,380).

Among and between individual districts, the Coastway group (Eastbourne, Hastings, Lewes and Rother Districts) cumulatively amounted to a net 14,800 commuters leaving for work elsewhere, but Wealden District on its own exceeds the whole of the Coastway group, with over 17,500 net outflow, and with a high inflow as well, over 12,300. Eastbourne District stands out as a more balanced catchment with inflows equating to outflows.

Commuting flows 2001	Live in county	In-commuters, county	% In-commuting to all county / district jobs	Out-commuters, county	% Out-commuting among all working residents	Two-way commuting across county border	Net county commuters 2001
East Sussex county	164,380	16,380	9%	48,659	59%	65,039	-32,279
East Sussex districts	Live and work in district	In-commuters, district	% In-commuting to all district jobs, incl travel between districts	Out-Commuters, district	% Out-commuting among all working residents	Two-way commuting across district border	Net district commuters 2001
Eastbourne	26,768	10,404	39%	10,026	27%	20,430	378
Hastings	24,984	7,219	29%	10,779	30%	17,998	-3,560
Lewes	23,567	12,123	51%	17,874	43%	29,997	-5,751
Rother	19,704	8,254	42%	14,078	42%	22,332	-5,824
Wealden	35,392	12,345	35%	29,867	46%	42,212	-17,522
Travel between districts	130,415	50,345	39%	82,624	39%	132,969	-32,279

Distances for travel to work

Most distances travelled are quite short, and are indeed not London commuting. The TTWA maps also confirm this situation. East Sussex had 11.6% of people working at or from home in 2001 (there is later data suggesting this has grown by 2011), which is higher than the South East average. Home-based work was greater than average in Rother and Wealden Districts, and less in Eastbourne and Hastings which have more urban lifestyles.

Distance travelled to work, 2001	All people aged 16-74 in employment	Working at or from home	% working at or from home	Travel less than 5km	5km-20km	Over 20km	Other	% Travel to work less than 5km	% Travel to work 5km-20km	% Travel to work over 20km	Comparison with net out-commuting, 2001
England	22,441,497	2,055,224	9.2%	8,994,341	7,506,695	2,820,699	1,064,538	40%	33%	13%	
South East	3,888,756	386,302	9.9%	1,475,856	1,122,119	691,661	212,818	38%	29%	18%	
East Sussex	211,242	24,511	11.6%	82,659	52,340	37,515	14,217	39%	25%	18%	-32,279
Eastbourne	36,713	3,146	8.6%	21,666	3,977	5,793	2,131	59%	11%	16%	378
Hastings	35,497	3,075	8.7%	20,425	4,287	5,262	2,448	58%	12%	15%	-3,560
Lewes	41,137	4,672	11.4%	13,043	14,452	6,429	2,541	32%	35%	16%	-5,751
Rother	33,380	4,725	14.2%	10,747	9,603	5,822	2,483	32%	29%	17%	-5,824
Wealden	64,514	8,893	13.8%	16,778	20,021	14,208	4,614	26%	31%	22%	-17,522

When travelling to work, about 58-59% of journeys in Eastbourne and Hastings are local, under 5km, but the figure drops to 26-32% in other districts, with Wealden having the

lowest percentage of short travel. Medium distance journeys (5-20km) feature in only 11-12% of travel in Eastbourne and Hastings, but 29-35% elsewhere. There is a fairly constant level of travel to work over 20km, 15-22% across East Sussex. This could be for jobs which are not available within East Sussex, as the absolute figures for over 20km are a similar order of magnitude as the 2001 net out-commuting estimates.

Modes of travel to work

Preferred choices of travel mode for journey to work have changed significantly between the 2001 and 2011 Census.

According to the East Sussex in Figures district-based data, along with a 40% growth in working from home there has also been a 40%+ growth in local travel to work by rail, 19% growth by bus or coach, and nearly 10% increase by driving to work. There have been declines of more than 11% and 16.4% in travel as a car passenger or by powered two-wheeler, but modest increases in travel to work on foot or on a cycle (3-8% overall, with wider variations in districts including decline in Rother and Wealden).

Car travel remains much in the majority, but the rail growth demonstrates that it is increasingly relevant for travel along the four specific corridors that it serves: Brighton Main Line, Coastway network, Hastings-Tunbridge Wells and Wealden. Also notable is that this is an outcome contrasted against a relatively static number of jobs in East Sussex, comparing 2001 and 2011. The conclusion is that there is increased demand for travel to work by rail, for work destinations both within and outside East Sussex.

The strongest change in rail demand for travel to work (+55-59%) is linked to the mainly urban districts of Eastbourne and Hastings – so rail is increasingly providing a worthwhile role there, in alliance with other public transport and green modes. These are also districts where the dominant travel to work is a short journey. In other districts, the 32-36% growth in rail usage is a growth 3-9 times greater than the increase in car driving. The highest absolute use of rail to work is in Wealden District, even though this is rural with sometimes long distances to reach railheads.

There is a material statistical variation which arises within the East Sussex in Figures data and should be reported here. Using parish and super output area data from the same source, compared to district data, the 2011 'working mainly at or from home' volume has declined not increased, compared to 2001. East Sussex 2011 is then listed as 18,796 people home-based, not 34,277, although one would expect home-based working to have increased in the past decade. The comparative percentages which arise are restated overleaf *at the base of the main table*; the whole table is not replicated.

There is some increase in percentage demand, to the advantage of travel-to-work modes (see the East Sussex variation row at the table's base). Also, in the parish/super output area information, taxis had been included within private vehicle use, and are here split out (using taxi information below) to be consistent with other public transport data. However it is the parish/super output area comparative data which has to be used subsequently for 'small area' analyses in this report, because it is that data which is available in detail within East Sussex in Figures.

Modes of travel to work, East Sussex comparisons, district statistics basis, 2001-2011												
Catchment	Employment		Home-based			Private transport			Public transport		Other modes	
	Work mainly at or from home	Driving a car or van	Passenger in a car or van	Motorcycle, scooter or moped	Train, underground, light rail or tram	Bus, minibus or coach	Taxi	Bicycle	On foot	Other method of travel to work		
Mode of travel to work, East Sussex districts, 2011	All people in employment aged 16-74											
England and Wales	26,526,336	14,382,053	1,318,172	207,340	2,312,459	1,897,786	126,515	738,136	2,585,823	129,294		
South East	4,260,723	2,438,105	194,368	35,264	313,168	185,149	15,190	123,577	416,056	20,740		
East Sussex	239,319	135,129	11,526	1,672	16,064	10,089	982	3,800	24,706	1,074		
Eastbourne	44,449	24,111	2,452	274	2,638	2,411	274	1,307	6,201	201		
Hastings	40,671	21,271	2,601	382	2,439	2,269	335	568	6,015	213		
Lewes	45,532	24,304	1,805	335	3,480	3,494	146	776	4,499	180		
Rother	37,583	21,823	1,698	272	2,648	543	89	468	3,350	173		
Wealden	71,084	43,620	2,970	409	4,859	1,372	138	681	4,641	307		
Change in activity, 2001 to 2011, by catchment and mode of travel, East Sussex district based statistics												
England and Wales	+12.3%	+10.2%	-10.8%	-19.7%	+38.1%	+8.6%	+3.3%	+13.4%	+9.4%	+16.9%		
South East	+9.6%	+5.9%	-11.6%	-19.4%	+37.5%	+9.4%	-5.3%	+3.6%	+7.9%	+6.4%		
East Sussex	+13.3%	+9.7%	-11.2%	-16.4%	+40.6%	+19.0%	-11.4%	+3.1%	+7.7%	+11.1%		
Eastbourne	+21.1%	+19.2%	+1.2%	-19.9%	+59.0%	+10.7%	+4.2%	+2.9%	+23.6%	+3.1%		
Hastings	+14.6%	+9.5%	-12.1%	-9.5%	+55.3%	+17.9%	-0.6%	+7.4%	+17.7%	+50.0%		
Lewes	+10.7%	+4.1%	-23.2%	-17.3%	+36.4%	+54.2%	-35.7%	+14.5%	+0.9%	+6.5%		
Rother	+12.6%	+11.4%	-8.8%	-20.0%	+32.5%	-11.3%	-4.3%	-1.9%	-5.3%	+16.1%		
Wealden	+10.2%	+7.5%	-12.1%	-18.2%	+33.3%	-8.5%	-28.1%	-6.5%	-3.5%	-0.6%		
Mode of travel to work, East Sussex districts, 2001	All people in employment aged 16-74											
England and Wales	23,627,754	13,050,529	1,477,211	258,344	1,674,725	1,747,683	122,478	650,977	2,364,633	110,627		
South East	3,888,756	2,301,493	219,850	43,731	227,771	169,312	16,032	119,315	385,450	19,500		
East Sussex	211,242	123,161	12,976	1,999	11,422	8,479	1,108	3,684	22,935	967		
Eastbourne	36,718	20,228	2,422	342	2,177	2,177	263	1,270	5,016	195		
Hastings	35,492	19,422	2,959	422	1,571	1,924	337	529	5,111	142		
Lewes	41,136	23,357	2,350	405	2,551	2,266	227	678	4,461	169		
Rother	33,377	19,585	1,861	340	1,998	612	93	477	3,537	149		
Wealden	64,526	40,569	3,380	500	3,645	1,500	192	728	4,810	309		
Change in activity, 2001 to 2011, by catchment and mode of travel, East Sussex SOA-based statistics												
England and Wales	+12.3%	+17.0%	-7.3%	-17.1%	+43.3%	+11.5%	+3.3%	+17.1%	+20.4%	+54.9%		
South East	+9.6%	+12.6%	-8.1%	-16.6%	+43.7%	+12.2%	-5.3%	+7.0%	+20.3%	+45.3%		
East Sussex	+13.3%	+17.7%	-7.0%	-13.5%	+48.7%	+22.0%	-11.4%	+7.6%	+21.6%	+59.7%		
Eastbourne	+21.1%	+26.8%	+5.0%	-17.0%	+66.9%	+13.3%	+4.2%	+5.1%	+31.7%	+43.6%		
Hastings	+14.6%	+16.4%	-9.0%	-6.7%	+64.7%	+20.9%	-0.6%	+11.6%	+26.2%	+106.2%		
Lewes	+10.7%	+11.6%	-18.4%	-14.6%	+45.7%	+58.1%	-35.7%	+20.6%	+12.7%	+58.8%		
Rother	+12.6%	+21.0%	-4.5%	-15.7%	+38.9%	-8.0%	-4.3%	+4.0%	+14.6%	+64.0%		
Wealden	+10.2%	+15.8%	-6.8%	-14.3%	+40.7%	-6.3%	-28.1%	-1.0%	+19.8%	+45.8%		
% variation in E.Sussex activity, SOA vs District as base, 2011	+0.0%	+7.3%	+4.7%	+3.5%	+5.7%	+2.5%	+0.0%	+4.3%	+12.9%	+43.8%		

Small Areas - travel to work analysis

Just as there are significant variations in travel habit emerging at county and district level, the same is true at smaller population sizes. Within East Sussex these are best understood at Parish level in Lewes, Rother and Wealden Districts, and at Super Output Area (SOA) level in Eastbourne and Hastings.

We apologise that the subsequent volume of data is extensive, but significant changes are best seen at this level of detail, and this leads to important conclusions about future rail investment priority within East Sussex. We begin by establishing, from the SOA/parish statistics, the district-scale differences in public transport usage compared to East Sussex as a whole, and to the South East and England & Wales. Lewes District fares well, but not elsewhere. East Sussex overall is less good on average for public transport use for travel to work than the South East, or England & Wales as a whole.²

Mode of travel to work, Small area statistics, 2011 census	Area type	All people aged 16-74 in employment	Work mainly at or from home	% using Private vehicle, of Total travelling to work	% on foot or cycling, of Total travelling to work	% using Public transport, of Total travelling to work	Public transport % above or below South East average in Census year	Public transport % above or below East Sussex average in Census Year
England and Wales	Nation	26,526,336	1,422,708	67.6%	14.4%	17.3%	+4.3%	+4.9%
South East	Region	4,260,723	279,656	71.4%	14.9%	13.0%	+0.0%	+0.6%
East Sussex	County	239,319	18,796	72.5%	14.4%	12.4%	-0.6%	+0.0%
Eastbourne	District	44,449	2,240	68.1%	18.8%	12.4%	-0.6%	+0.0%
Hastings	District	40,671	2,380	68.0%	18.4%	12.8%	-0.2%	+0.4%
Lewes	District	45,532	3,641	68.0%	14.0%	17.4%	+4.4%	+5.0%
Rother	District	37,583	3,593	76.0%	13.4%	9.9%	-3.1%	-2.5%
Wealden	District	71,084	6,942	79.0%	10.1%	10.2%	-2.8%	-2.2%

Next we need to review how travel to work proportions in individual parishes and SOAs have fared in 2011 (123 locations). There is a large spreadsheet available in support, so to keep it simpler in the report we have used a smaller table set out over the following 2 pages and focusing on:

- Percentages using private vehicle or public transport to work, in each parish or SOA.
- Grading the entries by type of catchment (country/ local centre/urban).
- Then ranking within each area by the extent to which public transport to work is more or less than the average for East Sussex.

There are some potentially surprising results, which require you to ignore some preconceived notions that public transport is always good in towns and always poor in rural areas. The number of localities with public transport travel to work percentages as good as or better than the East Sussex average – a low passmark measured by the English average – are 22 (17.9%) in country areas, 12 (9.8%) at local centres, and 16 (13.0%) in urban areas. Those with public transport usage lower than the East Sussex average are 41 (33.3%) in country areas, 9 (7.3%) at local centres, and 23 (18.7%) in urban areas.

There are more country parishes with average or better public transport use to work (compared with an East Sussex baseline) than the equivalent urban SOAs. Etchingam with a station is a strong example. Generally there is a good rail service available at a railhead. There are some major urban areas such as Bexhill which are weak on public

² It is possible that Lewes is also busier on public transport because of the scale of recent job reductions seen earlier. If so, it would illustrate that public transport is a key element in gaining access to other jobs.

transport use despite rail and buses. Also there are some normative outcomes – for example urbanised Hailsham lost its rail service and has weak usage of public transport.

Mode of travel to work, Small area statistics, 2011 census	Super Output Areas (Eastbourne, Hastings) Parishes (Lewes, Rother, Wealden)	Area type	All people aged 16-74 in employment	% using Private vehicle, of Total travelling to work	% using Public transport, of Total travelling to work	+/- % public transport usage compared to ESCC norm 12.4%
England and Wales		Nation	26,526,336	67.6%	17.3%	4.9%
South East		Region	4,260,723	71.4%	13.0%	0.6%
East Sussex		County	239,319	72.5%	12.4%	
Wealden	Frant	Local centre	784	65.8%	25.1%	12.8%
Lewes	Ditchling	Local centre	770	67.8%	19.3%	6.9%
Lewes	Plumpton	Local centre	916	65.5%	19.1%	6.7%
Lewes	Falmer & St Ann Without	Local centre	149	67.5%	17.9%	5.5%
Rother	Salehurst & Robertsbridge	Local centre	1,189	73.7%	16.2%	3.8%
Lewes	Streat	Local centre	71	77.2%	15.8%	3.4%
Lewes	E.Chiltington & St John Without	Local centre	264	78.7%	15.4%	3.0%
Wealden	Rotherfield	Local centre	1,591	78.1%	14.7%	2.3%
Wealden	Mayfield & Five Ashes	Local centre	1,797	74.8%	14.4%	2.0%
Wealden	Forest Row	Local centre	2,446	68.4%	14.4%	2.0%
Rother	Ticehurst	Local centre	1,815	76.9%	14.0%	1.6%
Wealden	Buxted	Local centre	1,644	80.4%	13.8%	1.4%
Rother	Battle	Local centre	2,910	74.0%	11.8%	-0.5%
Wealden	East Dean & Friston	Local centre	623	83.1%	9.8%	-2.6%
Wealden	Maresfield	Local centre	1,651	82.3%	9.6%	-2.8%
Wealden	Westham	Local centre	3,039	83.4%	9.5%	-2.9%
Rother	Camber	Local centre	608	66.7%	7.4%	-5.0%
Wealden	Pevensy	Local centre	1,263	85.6%	7.3%	-5.1%
Rother	Westfield	Local centre	1,151	85.3%	6.9%	-5.5%
Rother	Fairlight	Local centre	591	87.6%	6.5%	-5.9%
Wealden	Herstmonceux	Local centre	1,275	86.0%	4.0%	-8.4%
Hastings	Central St Leonards	Urban	3,229	49.3%	24.0%	11.6%
Hastings	Castle	Urban	3,250	45.5%	23.0%	10.6%
Wealden	Wadhurst	Urban	2,288	67.0%	22.4%	10.0%
Lewes	Lewes	Urban	8,431	49.4%	21.8%	9.4%
Lewes	Peacehaven	Urban	6,493	71.1%	19.9%	7.5%
Wealden	Polegate	Urban	3,313	74.9%	16.0%	3.6%
Hastings	Gensing	Urban	3,029	56.8%	15.6%	3.2%
Lewes	Seaford	Urban	10,011	71.8%	15.5%	3.1%
Eastbourne	Meads	Urban	4,120	51.9%	15.4%	3.0%
Lewes	Newhaven	Urban	5,899	68.2%	15.0%	2.6%
Hastings	Braybrooke	Urban	2,486	61.1%	14.7%	2.3%
Eastbourne	Hampden Park	Urban	4,581	68.1%	14.6%	2.2%
Eastbourne	Devonshire	Urban	6,430	54.5%	14.5%	2.1%
Eastbourne	Upperton	Urban	4,700	59.4%	14.2%	1.8%
Hastings	Old Hastings	Urban	2,797	64.3%	14.2%	1.8%
Hastings	Tressell	Urban	2,220	69.5%	12.4%	0.0%
Hastings	Ore	Urban	2,223	74.2%	11.9%	-0.5%
Eastbourne	Langney	Urban	4,797	78.7%	11.8%	-0.6%
Lewes	Ringmer	Urban	2,170	77.9%	11.4%	-1.0%
Hastings	Silverhill	Urban	2,318	68.4%	11.0%	-1.4%
Wealden	Crowborough	Urban	10,417	78.8%	10.9%	-1.4%
Hastings	Maze Hill	Urban	2,344	75.9%	10.8%	-1.6%
Eastbourne	Old Town Eastbourne	Urban	5,172	72.2%	10.6%	-1.7%
Eastbourne	Ratton	Urban	4,099	74.3%	10.4%	-2.0%
Hastings	Hollington	Urban	2,383	72.2%	10.4%	-2.0%
Eastbourne	Sovereign	Urban	5,526	79.9%	10.3%	-2.1%
Wealden	Willingdon & Jevington	Urban	3,202	81.7%	10.1%	-2.3%
Hastings	Baird	Urban	1,829	76.1%	10.0%	-2.4%
Eastbourne	St Anthony's	Urban	5,024	74.0%	9.9%	-2.5%
Hastings	Wishing Tree	Urban	2,153	74.5%	9.6%	-2.8%
Hastings	West St Leonards	Urban	2,638	78.9%	9.5%	-2.9%
Rother	Bexhill	Urban	16,341	74.3%	9.2%	-3.2%
Rother	Rye	Urban	1,895	61.6%	8.7%	-3.7%
Hastings	St Helens	Urban	2,164	77.8%	8.2%	-4.2%
Wealden	Uckfield	Urban	7,601	76.6%	7.9%	-4.5%
Hastings	Ashdown	Urban	3,086	81.3%	7.3%	-5.1%
Wealden	Heathfield & Waldron	Urban	5,964	83.1%	7.0%	-5.4%
Hastings	Conquest	Urban	2,522	77.2%	5.7%	-6.6%
Wealden	Hailsham	Urban	9,063	81.2%	5.6%	-6.8%

Mode of travel to work, Small area statistics, 2011 census	Super Output Areas (Eastbourne, Hastings) Parishes (Lewes, Rother, Wealden)	Area type	All people aged 16-74 in employment	% using Private vehicle, of Total travelling to work	% using Public transport, of Total travelling to work	+/- % public transport usage compared to ESCC norm 12.4%
England and Wales		Nation	26,526,336	67.6%	17.3%	4.9%
South East		Region	4,260,723	71.4%	13.0%	0.6%
East Sussex		County	239,319	72.5%	12.4%	
Rother	Etchingham	Country	369	62.3%	25.2%	12.8%
Lewes	Beddingham & Tarring Neville	Country	123	66.3%	23.1%	10.7%
Lewes	Telscombe	Country	3,679	72.5%	20.7%	8.4%
Lewes	Hamsey	Country	309	69.3%	20.0%	7.6%
Lewes	Kingston near Lewes	Country	377	72.8%	18.4%	6.0%
Wealden	Danehill	Country	915	71.4%	17.8%	5.4%
Lewes	Glynde	Country	153	65.5%	17.3%	4.9%
Wealden	Hadlow Down	Country	410	74.6%	16.0%	3.6%
Wealden	Withyham	Country	1,392	75.7%	16.0%	3.6%
Lewes	Westmeston	Country	194	75.6%	15.9%	3.5%
Lewes	Rodmell & Southease	Country	231	72.5%	15.3%	3.0%
Lewes	Wivelsfield	Country	998	77.9%	15.0%	2.6%
Wealden	Fletching	Country	544	74.5%	14.5%	2.1%
Rother	Brightling	Country	211	77.2%	14.4%	2.0%
Lewes	Firle	Country	152	60.9%	14.1%	1.7%
Rother	Burwash	Country	1,252	77.4%	13.8%	1.4%
Lewes	Chailey	Country	1,551	80.8%	13.4%	1.1%
Rother	Playden & East Guldeford	Country	161	71.1%	13.3%	0.9%
Lewes	Newick	Country	1,201	78.6%	13.3%	0.9%
Lewes	South Highton	Country	473	71.0%	13.1%	0.7%
Wealden	Isfield	Country	326	79.9%	13.1%	0.7%
Wealden	Hartfield	Country	1,145	75.6%	12.7%	0.4%
Rother	Dallington	Country	140	85.4%	12.2%	-0.2%
Lewes	Barcombe	Country	695	77.3%	11.9%	-0.5%
Rother	Mountfield	Country	292	79.1%	11.8%	-0.6%
Wealden	Chalvington with Ripe	Country	292	77.8%	11.7%	-0.7%
Wealden	Berwick & Alciston	Country	192	76.4%	11.5%	-0.9%
Rother	Bodiam	Country	197	82.1%	11.1%	-1.3%
Rother	Crowhurst	Country	395	82.8%	10.8%	-1.5%
Wealden	Little Horsted	Country	120	65.7%	10.8%	-1.6%
Rother	Hurst Green	Country	767	82.5%	10.6%	-1.8%
Rother	Whatlington	Country	194	82.4%	10.1%	-2.3%
Wealden	Selmeston	Country	74	76.7%	10.0%	-2.4%
Rother	Pett	Country	382	83.8%	9.5%	-2.9%
Rother	Ewhurst	Country	521	79.6%	9.4%	-3.0%
Lewes	Piddinghoe	Country	119	79.2%	9.4%	-3.0%
Rother	Guestling	Country	626	83.0%	9.3%	-3.1%
Wealden	Laughton	Country	301	82.0%	9.2%	-3.2%
Wealden	Framfield	Country	1,015	83.1%	9.2%	-3.2%
Wealden	Warbleton	Country	710	84.4%	9.0%	-3.4%
Lewes	Iford	Country	103	72.8%	8.7%	-3.7%
Wealden	Long Man	Country	233	82.1%	8.7%	-3.7%
Rother	Beckley	Country	489	82.5%	8.6%	-3.7%
Rother	Sedlescombe	Country	633	81.5%	8.6%	-3.8%
Rother	Udimore	Country	185	82.4%	8.1%	-4.3%
Rother	Icklesham	Country	1,114	79.5%	8.0%	-4.4%
Wealden	Wartling	Country	248	69.0%	8.0%	-4.4%
Rother	Brede	Country	784	84.6%	8.0%	-4.4%
Rother	Iden	Country	192	83.4%	7.6%	-4.7%
Wealden	Horam	Country	1,259	85.0%	7.4%	-5.0%
Wealden	Arlington	Country	294	72.1%	7.0%	-5.4%
Rother	Catsfield	Country	400	86.5%	6.9%	-5.5%
Wealden	East Hoathly & Halland	Country	809	80.3%	6.8%	-5.6%
Wealden	Cuckmere Valley	Country	106	77.3%	6.7%	-5.7%
Wealden	Hellingly	Country	892	87.5%	6.5%	-5.9%
Rother	Rye Foreign	Country	146	77.2%	6.5%	-5.9%
Wealden	Alfriston	Country	335	72.9%	6.2%	-6.2%
Rother	Peasmarsh	Country	566	82.7%	6.2%	-6.2%
Wealden	Ninfield	Country	743	87.3%	6.1%	-6.3%
Rother	Northiam	Country	864	85.8%	5.9%	-6.5%
Wealden	Chiddingly	Country	547	84.1%	5.2%	-7.2%
Rother	Ashburnham & Penhurst	Country	203	82.3%	5.1%	-7.2%
Wealden	Hooe	Country	221	87.8%	2.7%	-9.7%

Overall East Sussex is comparable to the average English & Welsh level of travel to work by foot or cycle, but is distinctly above the average for use of private vehicle, and below average for use of public transport. This is not a sustainable outcome for future travel to work, when increasing numbers of local jobs are desired.

There is already a situation of increasing congestion during the peak periods, on main roads within the county, and on roads approaching major work centres neighbouring the county, such as Brighton, Crawley, Gatwick, Tunbridge Wells and Ashford. So measures to move East Sussex towards the England & Wales average for public transport are worth considering.

As stated at the beginning, this is not to advocate a one-size-fits-all-solution. Out of 123 parishes and SOAs, the breakdown of sole or shared positive results is:

- 55 locations where, for travel to work, the only mode with higher than ESCC average is by private vehicle: this extends across the range of rural, local centres and urban areas (the latter often being the outer suburb or equivalent).
- 22 locations when both private vehicle and public transport usage are higher than ESCC average: this is generally correlated with expected use of rail and railheading.
- 17 locations where a combination of public transport and foot/cycle are all better than average: this is mostly urban catchments in Eastbourne, Hastings and Lewes, and a few rural areas where communities are close to stations, such as Glynde and Plumpton, plus Falmer when the student population will walk or cycle to the station or use the bus.
- There are then a variety of areas which show only public transport as better than average (a real mix, 10 of them, with no single characteristic). Another 10 show an interesting combination of private vehicle and foot/cycle as successful but public transport being weak. Of these, some are remote rural, but others are urban such as Uckfield and Bexhill, and one is drawn to the conclusion that public transport there is just not offering the services or links that local people want.
- Finally there are 9 locations where only foot/cycle is above average: a mix including some urban locations, rural and others which are a short cycle ride from a major centre (eg, Camber, accessible to Rye).

A telling 'cut of the pack' for small area statistics is size of the working population in the areas with higher than average use of public transport for travel to work, compared to those performing poorly. Some large population areas are delivering poor public transport usage, with only 2 out of 6 areas above a 7,000 working population achieving good results. Of those, the better performers are Lewes and Seaford, while the poorer performers are Bexhill, Crowborough, Hailsham and Uckfield.

Overall the average or better results for public transport travel to work are generated among only 43% of the East Sussex working age population catchment.

	0-1000	1001-2000	2001-3000	3001-4000	4001-5000	5001-6000	6001-7000	7001-8000	8001-9000	9001-10k	>10k
Ave or better	22	10	5	5	3	1	2	0	1	0	1
Total number	63	19	15	8	5	5	2	1	1	1	3
Working pop.	0-1000	1001-2000	2001-3000	3001-4000	4001-5000	5001-6000	6001-7000	7001-8000	8001-9000	9001-10k	>10k

Prioritising candidates for improved public transport

This points to an important policy task awaiting action by East Sussex and its districts, if public transport including rail is to fulfil a stronger role in future years and decades.

Re-sorting the small area statistics into size of working population, and then targeting two groups of candidates – those below the East Sussex average, and those below the England & Wales average – creates an initial group of localities where one would expect to see significant policy action and a plan to develop the public transport offer through service improvements and infrastructure investment.

Priority is suggested for the areas with larger working populations, as having the potential to achieve greatest change with targeted interventions. The affordability and value for money of those interventions may also be higher because of the size of population. Suggested interventions are discussed in a following section.

The list below follows a descending order of population size, for each of the two categories, down to a working population of ca. 1,000:

Mode of travel to work, Small area statistics, 2011 census	Super Output Areas (Eastbourne, Hastings) Parishes (Lewes, Rother, Wealden)	Area type	All people aged 16-74 in employment	% using Private vehicle, of Total travelling to work	% on foot or cycling, of Total travelling to work	% using Public transport, of Total travelling to work	
Top 30 East Sussex parishes/SOAs where public transport % travel to work lower than ESCC average (12.4%)							
	Rother	Bexhill	Urban	16,341	74.3%	15.9%	9.2%
	Wealden	Crowborough	Urban	10,417	78.8%	9.7%	10.9%
	Wealden	Hailsham	Urban	9,063	81.2%	12.6%	5.6%
	Wealden	Uckfield	Urban	7,601	76.6%	15.1%	7.9%
	Wealden	Heathfield & Waldron	Urban	5,964	83.1%	9.1%	7.0%
	Eastbourne	Sovereign	Urban	5,526	79.9%	9.0%	10.3%
	Eastbourne	Old Town Eastbourne	Urban	5,172	72.2%	16.7%	10.6%
	Eastbourne	St Anthony's	Urban	5,024	74.0%	15.8%	9.9%
	Eastbourne	Langney	Urban	4,797	78.7%	8.8%	11.8%
	Eastbourne	Ratton	Urban	4,099	74.3%	14.8%	10.4%
	Wealden	Willingdon & Jevington	Urban	3,202	81.7%	7.6%	10.1%
	Hastings	Ashdown	Urban	3,086	81.3%	10.6%	7.3%
	Wealden	Westham	Local centre	3,039	83.4%	6.6%	9.5%
	Rother	Battle	Local centre	2,910	74.0%	13.7%	11.8%
	Hastings	West St Leonards	Urban	2,638	78.9%	10.9%	9.5%
	Hastings	Conquest	Urban	2,522	77.2%	16.4%	5.7%
	Hastings	Hollington	Urban	2,383	72.2%	16.6%	10.4%
	Hastings	Maze Hill	Urban	2,344	75.9%	12.7%	10.8%
	Hastings	Silverhill	Urban	2,318	68.4%	20.0%	11.0%
	Hastings	Ore	Urban	2,223	74.2%	13.3%	11.9%
	Lewes	Ringmer	Urban	2,170	77.9%	10.2%	11.4%
	Hastings	St Helens	Urban	2,164	77.8%	13.3%	8.2%
	Hastings	Wishing Tree	Urban	2,153	74.5%	15.5%	9.6%
	Rother	Rye	Urban	1,895	61.6%	28.9%	8.7%
	Hastings	Baird	Urban	1,829	76.1%	13.2%	10.0%
	Wealden	Maresfield	Local centre	1,651	82.3%	7.4%	9.6%
	Wealden	Herstmonceux	Local centre	1,275	86.0%	9.5%	4.0%
	Wealden	Pevensy	Local centre	1,263	85.6%	6.6%	7.3%
	Wealden	Horam	Country	1,259	85.0%	7.1%	7.4%
	Rother	Westfield	Local centre	1,151	85.3%	7.3%	6.9%

Mode of travel to work, Small area statistics, 2011 census	Super Output Areas (Eastbourne, Hastings) Parishes (Lewes, Rother, Wealden)	Area type	All people aged 16-74 in employment	% using Private vehicle, of Total travelling to work	% on foot or cycling, of Total travelling to work	% using Public transport, of Total travelling to work
Top 20 East Sussex parishes/SOAs where public transport % travel to work between 12.4% (ESCC avge) and 17.3% (England/Wales)						
Lewes	Seaford	Urban	10,011	71.8%	12.1%	15.5%
Eastbourne	Devonshire	Urban	6,430	54.5%	30.3%	14.5%
Lewes	Newhaven	Urban	5,899	68.2%	16.3%	15.0%
Eastbourne	Upperton	Urban	4,700	59.4%	25.7%	14.2%
Eastbourne	Hampden Park	Urban	4,581	68.1%	16.6%	14.6%
Eastbourne	Meads	Urban	4,120	51.9%	31.4%	15.4%
Hastings	Gensing	Urban	3,029	56.8%	26.6%	15.6%
Hastings	Old Hastings	Urban	2,797	64.3%	20.6%	14.2%
Hastings	Braybrooke	Urban	2,486	61.1%	23.2%	14.7%
Wealden	Forest Row	Local centre	2,446	68.4%	16.3%	14.4%
Hastings	Tressell	Urban	2,220	69.5%	17.8%	12.4%
Rother	Ticehurst	Local centre	1,815	76.9%	8.3%	14.0%
Wealden	Mayfield & Five Ashes	Local centre	1,797	74.8%	9.7%	14.4%
Wealden	Buxted	Local centre	1,644	80.4%	5.0%	13.8%
Wealden	Rotherfield	Local centre	1,591	78.1%	6.3%	14.7%
Lewes	Chailey	Country	1,551	80.8%	5.3%	13.4%
Rother	Burwash	Country	1,252	77.4%	7.9%	13.8%
Lewes	Newick	Country	1,201	78.6%	7.7%	13.3%
Wealden	Hartfield	Country	1,145	75.6%	10.5%	12.7%
Lewes	Wivelsfield	Country	998	77.9%	6.3%	15.0%

The locations include as high priority a large number of distinctive towns where there are rail services but they are apparently not achieving all that they might. There are also significant parts of the Eastbourne and Hastings urban areas.

Modelling travel around East Sussex

Modelling - comparative car and rail times on travel corridors

We have modelled journey times by car and by rail for main population centres in East Sussex, and included times to urban centres in neighbouring districts. The overall outcome is a clear sense that travel around East Sussex isn't fast! Neither the road nor the rail system has seen large scale investment to reduce journey times or ease bottlenecks. There is potential for significant journey time acceleration which if targeted carefully can benefit major commuting and offpeak travel flows.

The relatively slow inter-urban journeys are also a deterrent to access and connectivity. If one believes the 'constant journey time' theory that most people's barriers to travel rise above about one hour on the move, improving transport isn't all about making commuting shorter, it's also about increasing the *range* of places that a person can get to in an hour – do that and you improve their life and economic opportunities (and thus the economy of the county as well).

Our modelling shows that a range of county-level rail interventions can significantly improve journey times, to the point that there can be a step-change in economic activity because of greater demand within East Sussex and for travel to the neighbouring urban centres and job zones, as travel barriers are overcome. The basis of modelling journey times and comparisons between road and rail are set out below for the three internal East Sussex rail corridors and their hinterland:

- | | |
|---|---|
| <ul style="list-style-type: none">• East Coastway including Marshlink.• Hastings – Tunbridge Wells – London. | <ul style="list-style-type: none">• Weald via Uckfield. |
|---|---|

The East Coastway corridor includes an objective of faster journeys, benefiting Brighton Main Line trains. Options for greater BML capacity for East Sussex are raised on pp. 68-69.

Modelling is based on the following criteria:

- Nodes based where possible on railway stations to give a direct in-vehicle vs rail comparison.
- Microsoft Autoroute Express vehicle journey time modelling programme, which, on low speed settings, represents typical off-peak uncongested point to point journey times while observing speed limits.
- Rail times are for station to station with the 2013 timetable, without assumptions on rail frequency, fares, interchange arrangements and the stations' distance from the centres of catchments – poor scores on these will reduce rail's attractiveness.
- Vehicle times are also station to station, or central nodes where there is no railway, and with omission of car running costs, parking location and parking costs – poor scores on these will reduce car attractiveness. Peak time congestion is modelled, as described overleaf.

- Peak time road modelling includes a variable % journey time increase. This is in three categories: (1) rural origin, en route and destination with lowest additional journey time; (2) a journey mixing elements of urban travel with rural, with mid-range additional time; and (3) urban to urban travel which encounters the greatest delays. For consistency the mid-range additional time has been taken as +30%, this rises to +45% for urban and reduces to +15% for rural (so +/- 50% of mid-range).
- Comparative miles per hour, where referenced, are generally based on the fastest road distance, as that is the competitor for rail to respond to.
- The stated time is therefore a comparison between direct rail and car journey times for offpeak (uncongested) and peak (congested) travel.
- A summary comparative table is also shown, comparing the headline car and rail journey times and showing which is faster in peak and off-peak conditions.
- The individual rail spreadsheets may also include the ability to intervene with journey time changes through a variety of service or infrastructure proposals.
- The consequent outcomes in comparative car and rail time differences can be captured through 'screen grabs' - from a computer screen display.
- The car-rail differential spreadsheets also show the financial benefits of net journey time savings by rail, per passenger, if this is faster than car. The 2013 value of time is taken from WebTAG analyses as an updated £11.11 per passenger hour.
- This can be the start of financial valuation for different investment options.

Some specific journeys have a non-standard modelling basis and are described in the footnote below.³

3

East Coastway:

- Brighton-Ashford road is via Hawkhurst (60.3 miles), times are via M23/M20 (83.9 miles, quicker).
- Road miles to Rye are generally quicker by avoiding the Bexhill/Hastings area.
- Rail timings include 15 minute link to/from Hailsham via Polegate, and 10 minutes wait from Newhaven/Seaford line to access East Coastway trains via Eastbourne.
- Pevensey doesn't have a direct train service to Rye and Ashford; average waiting time is included.

Hastings-Tunbridge Wells Line:

- Off-peak times are faster than peaks with a different train service; modelling includes this option.

Wealden Line:

- A Heathfield bus link to Buxted/Uckfield is included at a 15/20 minute additional journey time.
- Use of the Tunbridge Wells West preserved line is included as a rail journey time test from Brighton, Lewes, Uckfield etc, with a 25mph 'light railway' speed limit imposed, including the possibility of changing at Eridge (5 minute wait) to access towns such as Croydon.
- Potential rail journey times from Uckfield to Lewes are shown at a current speed range, and, if through to Brighton, with a stop at Falmer to serve the Universities there.
- There are more detailed options set out in separate timetable modelling.

Modelling - rail infrastructure options

We have modelled possible changes to point-to-point rail times on the East Sussex rail network. These are dynamic models and use a system developed by JRC Ltd to operate a spreadsheet-based set of infrastructure comparisons and best value options.

The model has already been used successfully for clients. For example:

- Journey time outcomes compared for different options for a 3rd track along the Lea Valley in 2014-2019, for LB Enfield and other clients. This led to JRC recommendations for best value investment within affordability constraints. This project has now been adopted by the Government, Network Rail and TfL in 2013, for 2014-19 national and London area investment.
- Provided timetable modelling for the suburban services from Liverpool Street to West Anglia, for the West Anglia Routes Group. Recommendations were then reviewed and informed choices made by the Greater Anglia franchise holder, National Express East Anglia, for the December 2011 public timetable.

The initial basis for the JRC modelling is Network Rail's Sectional Appendices which set out an extensive railway geography. These specify track arrangements, line and junction speeds, with each location defined spatially. This data is written into the JRC dynamic model, along with modelled train acceleration and braking rates.

Interventions in the form of different line speeds or new alignment, on different sections of railway, and with different train characteristics, can then be devised and tested to show comparative journey times. Options which show best promise for quicker journeys can then be contrasted with the potential costs and timescales to achieve the infrastructure change, and to develop best value outcomes.

Specific infrastructure modelling has been undertaken by JRC for Railfuture, for:

- East Coastway route (Brighton – Lewes – Eastbourne – Bexhill – Hastings – Ore)
- Marshlink (Ashford – Rye – Hastings – Bexhill – Eastbourne)
- Wealden Line (via Lewes – Uckfield – Crowborough – Eridge, then towards Edenbridge and also towards Tunbridge Wells West).

Detailed modelling was not adopted on the Hastings – Tunbridge Wells route because of its existing constrained route features. It was built with considerable difficulty in the Victorian era, and the route's design standards were lower, causing speed and train width restrictions – some track singling has overcome the latter restriction. A nominal test of a 5-10 minute journey time improvement has been considered against an alternative way of reducing Bexhill, St Leonards and Hastings to London times.

The outputs from this modelling can be included in the comparative car vs rail analyses which are referenced above. The main material is primarily a series of interactive spreadsheets. Detailed outputs are discussed in the individual corridor discussions which follow, along with some 'screen grabs'.

Existing railway network

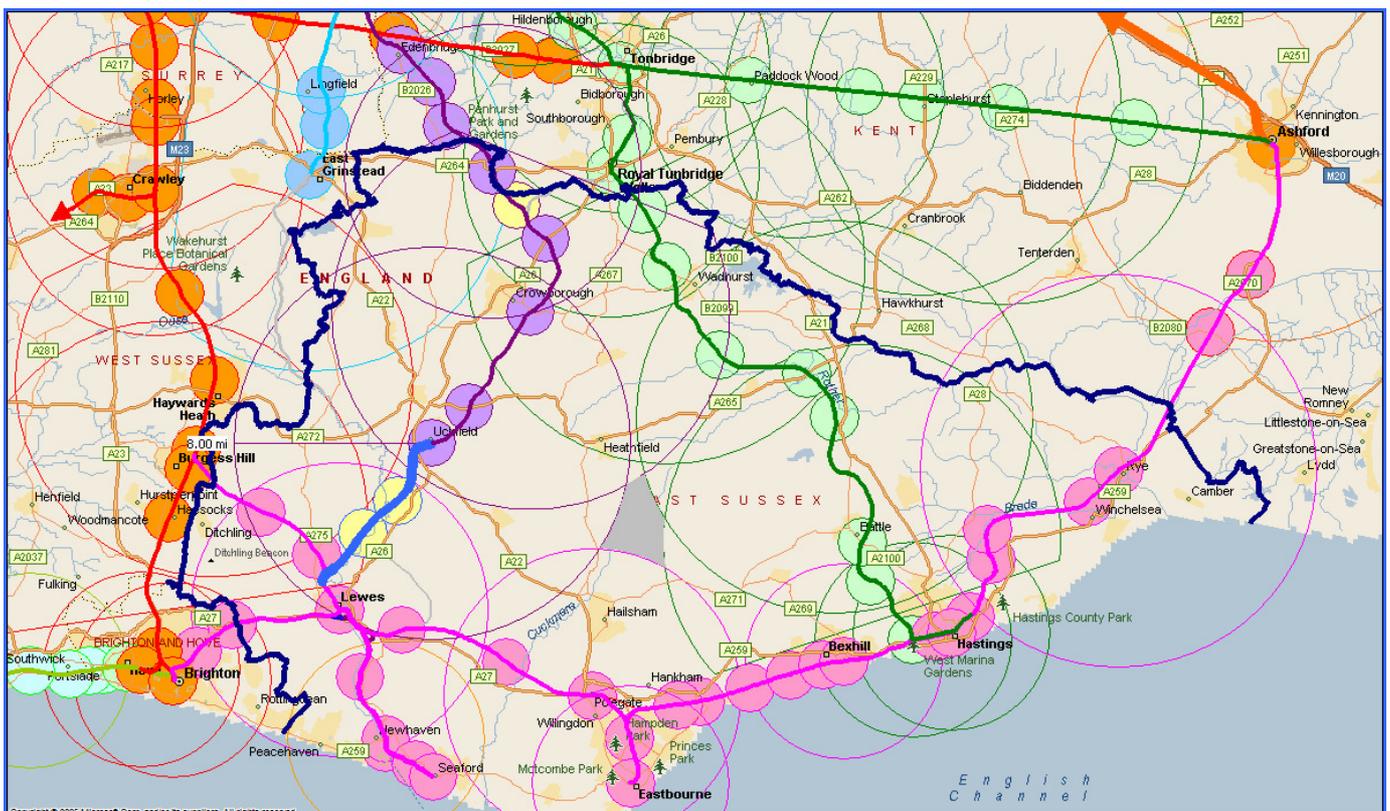
Routes and stations

The main rail corridors in East Sussex have already been stated:

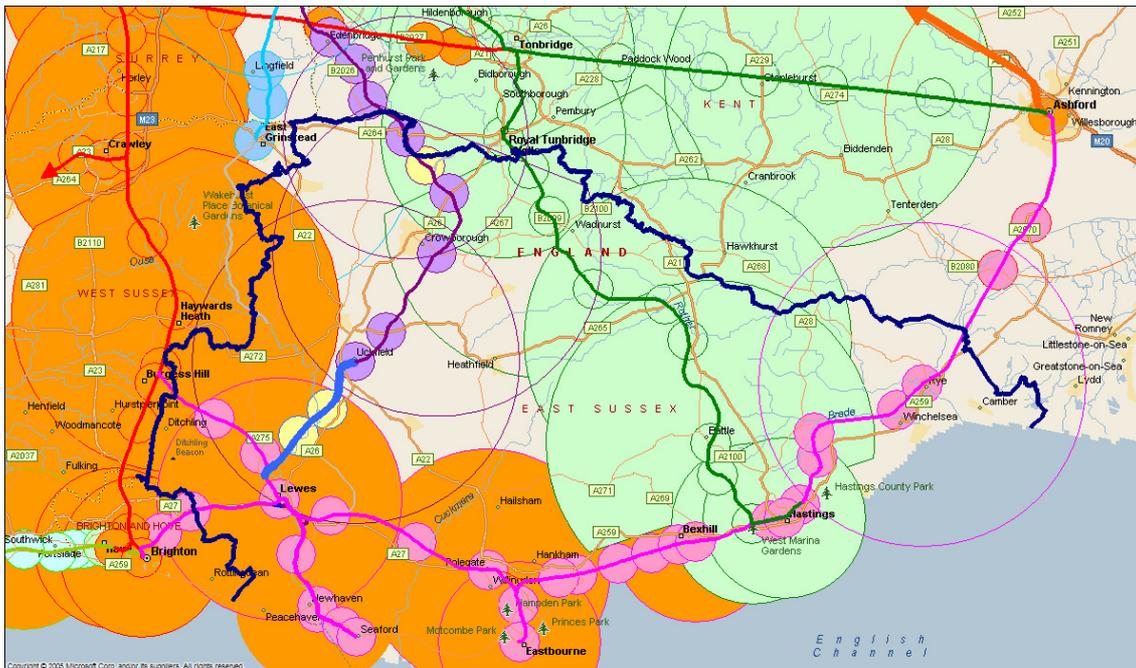
- East Coastway including Marshlink (pink below).
- Hastings – Tunbridge Wells – London (green below).
- Weald via Uckfield (purple below, with Uckfield-Lewes in blue).
- Brighton Main Line and Ashford High Speed are in red/orange.

The map below shows the existing stations on these routes, which are colour-coded for the corridor above. The map also shows walking (1 mile) and driveable catchments to main railheads based on a 15-16 minute journey time. The railhead catchment distance is varied to reflect rural, partly urban or wholly urban road conditions. For longer distance commuters who may start early, the catchments may be larger still as such flows may not compete for road space and average speed, with school and local work trips.

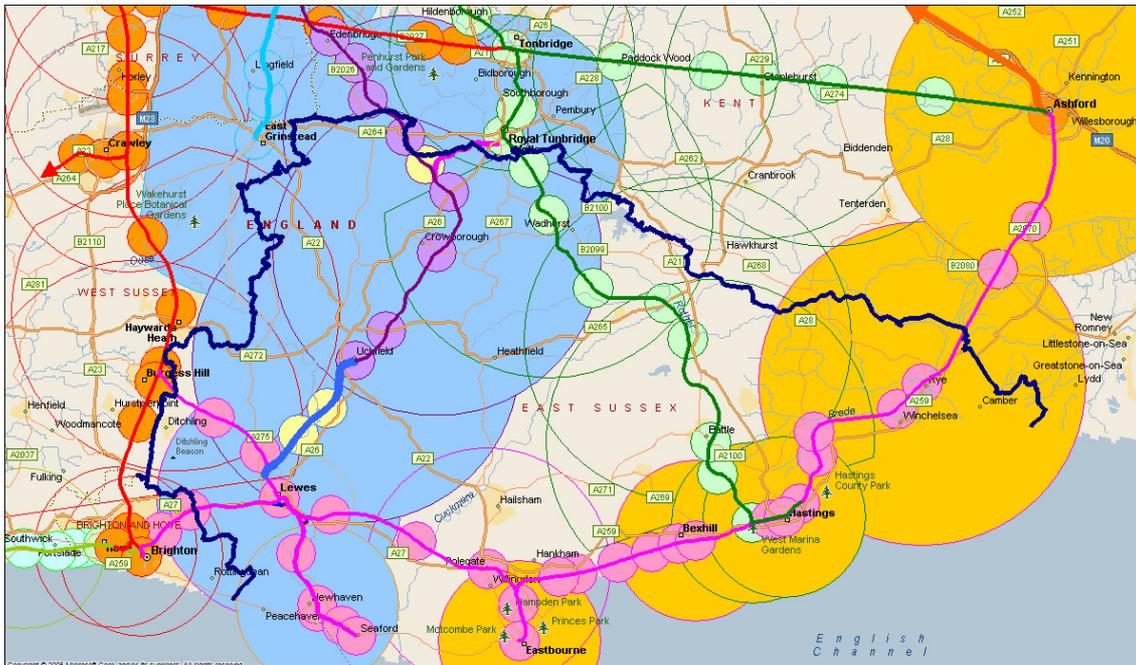
Consequently, despite the few rail lines now open in the Weald, most of the area is accessible by rail (though not to/from all possible destinations). Only a small area (grey) north of Hailsham/south of Heathfield is not within easy railhead access time.



This map doesn't favour any one rail corridor. In the next maps, catchments are shown for (A) Brighton Main Line and Hastings – Tunbridge Wells Line, and (B) for Wealden Line/East Grinstead and via Ashford – Hastings. There is much catchment overlap between the two options, and this shows that different lines can offer substitute routes to London.

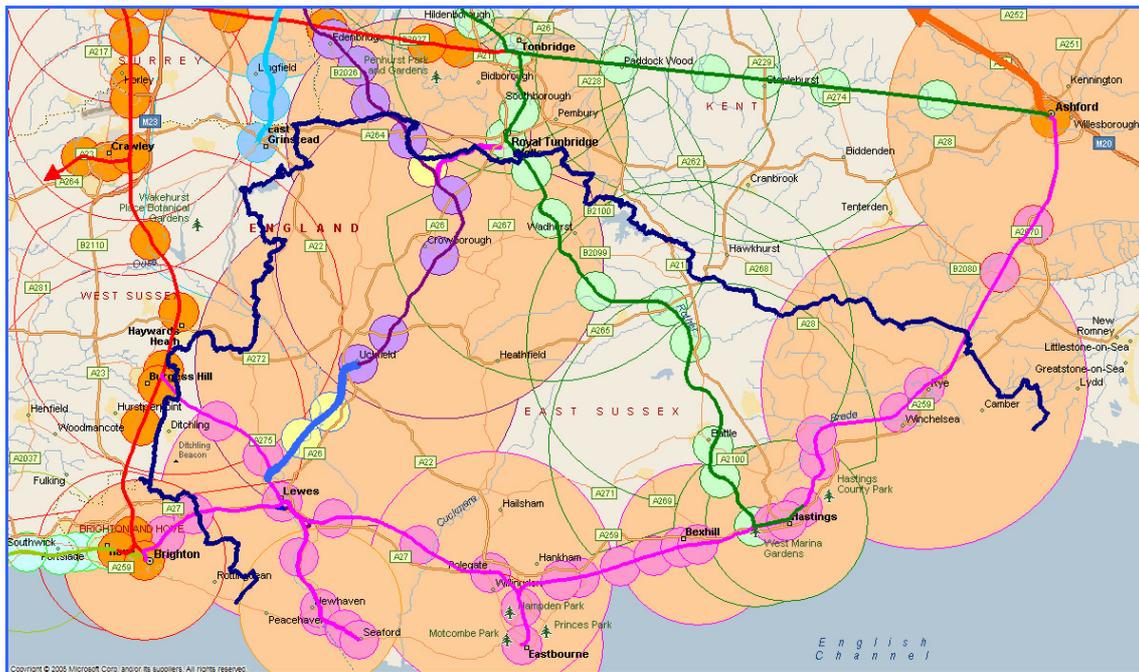


(A) Catchment priority on BML and Hastings-Tunbridge Wells



(B) Catchment priority on Wealden Line/East Grinstead and Ashford-Hastings

Catchment mapping is also relevant for Sussex Coast destinations. In the map overleaf, East Coastway is highlighted, and also the lines via the county town, Lewes, to the hinterland if Uckfield-Lewes were reopened. The access and connectivity achieved for the East Sussex economy is seen clearly, by opening up the Wealden Line for through services to Lewes and the Sussex Coast.



East Coastway and lines via county town (Lewes) to Weald hinterland

Stations and passenger volume

The following geographically arranged table shows the 2011-12 official estimates of passenger demand (entry plus exit) at each station in the East Sussex and neighbouring catchments, and a summary comparison with the previous year 2010-11. Separate tables are then set out for the passenger demand on individual corridors between 2001 and 2011. Changes in peak time usage can be seen in proxy, through comparisons of use of season tickets year on year.

The overall picture is of a railway network which despite little large-scale investment and lacking some links (eg Uckfield-Lewes) has seen rapid growth on most corridors, including rural railhead stations. Recent annual rates of growth vary line by line. Taking just a one year growth rate, from 2010-11 to 2011-12 (the latest available detailed figures from the Office of Rail Regulation), there has been 10% growth on the Wealden Line from Uckfield, 5-7% on East Coastway, Marshlink and the Brighton Main Line. The weakest growth is 2% on the Hastings Direct Line via Tunbridge Wells, and the growth there is largely at urban stations with reductions elsewhere.

The trends are clearer over a 10 year period. The Wealden Line has seen astonishing growth of 255% at local stations, and 230% increase in season ticket travel. The combined East Coastway and Marshlink corridor has seen 50% growth in all day use, and 66% growth in season ticket travel. Brighton itself is similar at 58% and 66% growth respectively, while a check on other Brighton area and West Coastway stations as far as Littlehampton shows 61% and 52% growth. Again the lightweight among a decade’s growth has been the Hastings Direct Line, at 23% all day and only 14% in season ticket travel. Looking just at passenger use of its intermediate stations, this has seen a small 3% growth overall, and an 18% reduction in season ticket use.

Million passengers entry+exit yearly						Season ticket usage 10yr +/-
Station	Local authority	2001- 02	2006- 07	2011- 12	All jnys 10yr +/-	
EAST COASTWAY & MARSHLINK						
Ashford	Ashford	2.01	2.61	3.31	+65%	+52%
Ham Street	Shepway	0.05	0.07	0.09	+86%	+99%
Appledore	Shepway	0.02	0.03	0.03	+100%	+70%
Rye	Rother	0.21	0.31	0.38	+80%	+131%
Winchelsea	Rother	0.01	0.00	0.00	-20%	+15%
Doleham	Rother	0.00	0.00	0.04	+2188%	+24254%
Three Oaks	Rother	0.01	0.00	0.01	-6%	+4%
Ore	Hastings	0.02	0.03	0.11	+486%	+578%
Hastings	Hastings	1.43	1.85	2.01	+41%	+51%
St Leonards WSq	Hastings	0.48	0.57	0.67	+39%	+32%
Bexhill	Rother	0.82	1.09	1.65	+102%	+181%
Collington	Rother	0.09	0.12	0.18	+96%	+112%
Cooden Beach	Rother	0.09	0.10	0.12	+33%	+48%
Norman's Bay	Rother	0.01	0.01	0.01	+63%	+55%
Pevensy Bay	Rother	0.00	0.00	0.00	+135%	+276%
Pevensy & W'ham	Rother	0.12	0.14	0.16	+37%	+92%
Eastbourne	Eastbourne	2.65	3.27	3.59	+35%	+56%
Hampden Park	Eastbourne	0.51	0.55	0.58	+13%	+64%
Polegate	Eastbourne	0.70	0.84	0.94	+35%	+24%
Berwick	Wealden	0.08	0.09	0.08	+2%	-28%
Glynde	Wealden	0.04	0.06	0.07	+79%	+70%
Seaford	Lewes	0.46	0.70	0.78	+68%	+64%
Bishopstone	Lewes	0.02	0.02	0.03	+63%	-5%
Newhaven Harbour	Lewes	0.09	0.06	0.04	-48%	-94%
Newhaven Town	Lewes	0.18	0.26	0.32	+73%	+27%
Southeast	Lewes	0.01	0.01	0.01	+149%	+101%
Lewes	Lewes	1.93	2.56	2.75	+42%	+48%
Falmer	Lewes	0.73	0.92	1.25	+72%	+76%
Moulsecoomb	Brighton & Hove	0.17	0.28	0.37	+118%	+78%
London Rd Brighton	Brighton & Hove	0.31	0.45	0.47	+51%	+63%
Cooksbridge	Lewes	0.02	0.03	0.04	+70%	+63%
Plumpton	Lewes	0.06	0.10	0.14	+111%	+77%
Total (excluding Ashford)		11.31	14.51	16.93	+50%	+66%
Million passengers entry+exit yearly						
Station	Local authority	2001- 02	2006- 07	2011- 12	All jnys 10yr +/-	Season ticket usage 10yr +/-
WEALDEN LINE						
Uckfield	Wealden	0.11	0.26	0.45	+303%	+355%
Buxted	Wealden	0.06	0.13	0.17	+160%	+122%
Crowborough	Wealden	0.14	0.32	0.40	+192%	+161%
Eridge	Wealden	0.03	0.07	0.14	+413%	+335%
Ashurst	TunbridgeWls/Wealden	0.00	0.01	0.02	+429%	+401%
Cowden	Sevenoaks	0.01	0.03	0.05	+473%	+428%
Hever	Sevenoaks	0.01	0.02	0.03	+429%	+750%
Edenbridge Town	Sevenoaks	0.09	0.31	0.33	+275%	+224%
Total		0.45	1.17	1.59	+255%	+231%

Million passengers entry+exit yearly						Season
Station	Local authority	2001-02	2006-07	2011-12	All jnys 10yr +/-	ticket usage 10yr +/-
HASTINGS - TUNBRIDGE WELLS DIRECT LINE						
Ore	Hastings	0.02	0.03	0.11	+486%	+578%
Hastings	Hastings	1.43	1.85	2.01	+41%	+51%
St Leonards	Hastings	0.48	0.57	0.67	+39%	+32%
West St Leonards	Hastings	0.09	0.07	0.08	-7%	-9%
Crowhurst	Rother	0.04	0.05	0.03	-17%	-59%
Battle	Rother	0.46	0.54	0.43	-5%	-50%
Robertsbridge	Rother	0.22	0.24	0.26	+17%	+4%
Etchingham	Rother	0.21	0.23	0.23	+9%	-5%
Stonegate	Rother	0.16	0.16	0.15	-9%	-33%
Wadhurst	Wealden	0.39	0.41	0.40	+4%	-10%
Frant	Wealden	0.09	0.10	0.12	+27%	+19%
Tunbridge Wells	Tunbridge Wells	2.95	3.45	3.53	+20%	+18%
Total (all stations)		6.53	7.71	8.02	+23%	+14%
(excluding Tun.Wells)		3.58	4.26	4.49	+25%	+10%
(excluding TW & Hastings area)		1.65	1.80	1.70	+3%	-18%
Million passengers entry+exit yearly						Season
Station	Local authority	2001-02	2006-07	2011-12	All jnys 10yr +/-	ticket usage 10yr +/-
BRIGHTON	Brighton & Hove	10.15	12.85	16.05	+58%	+66%
OTHER BRIGHTON AREA & PART OF WEST COASTWAY						
Preston Park	Brighton & Hove	0.28	0.29	0.37	+33%	+35%
Falmer	Lewes	0.73	0.92	1.25	+72%	+76%
Moulsecoomb	Brighton & Hove	0.17	0.28	0.37	+118%	+78%
London Rd Brighton	Brighton & Hove	0.31	0.45	0.47	+51%	+63%
Hove	Brighton & Hove	1.58	2.10	2.39	+52%	+40%
Aldrington	Brighton & Hove	0.10	0.13	0.19	+99%	+132%
Portslade	Brighton & Hove	0.54	0.68	1.03	+91%	+86%
Fishersgate	Brighton & Hove/Adur	0.08	0.09	0.11	+29%	+57%
Southwick	Adur	0.22	0.29	0.37	+64%	+66%
Shoreham by Sea	Adur	0.94	1.19	1.44	+53%	+34%
Lancing	Adur	0.65	0.76	0.95	+47%	+29%
East Worthing	Worthing	0.24	0.34	0.33	+38%	+21%
Worthing	Worthing	1.78	2.28	2.59	+46%	+48%
West Worthing	Worthing	0.35	0.53	0.67	+90%	+65%
Durrington on Sea	Worthing	0.43	0.65	0.70	+64%	+42%
Goring by Sea	Worthing	0.31	0.42	0.54	+71%	+30%
Angmering	Arun	0.42	0.61	0.82	+96%	+90%
Littlehampton	Arun	0.56	0.80	1.02	+82%	+103%
Total (Brighton separate)		9.69	12.80	15.62	+61%	+52%

New railway planning priorities

2013 sees the introduction of consultation on new railway planning processes, alongside a new focus on railway franchising priorities. Each element is worthwhile in its own right. Together this is a strong combination which opens up new opportunities for railways to better serve the communities and businesses within their catchments.

The past decade of railway capacity planning has focused on incremental changes, largely driven in the London & South East rail zone by peak time capacity limits. The essence has been to try to squeeze more trains, more efficiently, into existing railway layouts and infrastructure. The main reports justifying these changes have been Route Utilisation Strategies, owned by Network Rail. The last RUSes were published in 2011, and have informed rail industry and Government-supported investment priorities for the next infrastructure investment period (CP5 – Control Period 5 – for 2014-19).

The approach has not however ensured that railway outputs are correctly aligned with the development of local and regional economies. To over-simplify, the railway has looked at flows it can accommodate without major spend, and then focused on those and ignored others.

LTPP railway planning process

The new approach is called LTPP – Long Term Planning Process.⁴ There is a clear sequence to planning within this. First consider what the communities need, what the growth and socio-economic requirements are, among different population and economic activity segments, and how the railway might be adapted to support them. These are called Market Studies. Then there will be Route Studies, to see what is feasible and possibly worth doing on specific corridors. Then we get into the investment nitty-gritty. So a helicopter view first of all.

In practice the process is aimed towards defining and achieving the first round of major investment changes in CP6 – Control Period 6 – for 2019-24. This itself will require clarity on top priorities by 2016, to allow Route Studies and preliminary investment proposals to be developed in time for the regulatory process which will be under way from 2015-16, and for industry prioritisation of CP6 schemes to seek government support in 2017. So although the process seems long and drawn out, it won't be long before it needs clarity, along with support in substantive measure from local authorities and other stakeholders.

In the case of the LTPP for the London & South East rail system, it recognises that making best use of the railway for inter-urban journeys of 30-100 minutes could be a very worthwhile process, along with a greater focus on modern travel requirements such as 24/7 lifestyles, especially among the coming generation of economically-active.⁵

⁴ Link here to Network Rail Long Term Planning Process suite of documents:

<http://www.networkrail.co.uk/Long-Term-Planning-Process/>

⁵ <http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064786452> The conditional outputs foreseen for the LSE area are described in detail in section 7.4, pp.47-53. Outputs relating to non-London travel are described in pp.50-53.

Reducing journey times for principal flows, to 60 minutes or less, is seen as a 'conditional output' [ie, conditional upon feasibility and affordability] with potentially strong benefits for local and regional economies and environmental quality.

As an example elsewhere, Railfuture and JRC have been closely involved in developing, with local authorities and other stakeholders, new outputs for the West Anglia system and the Lea Valley 3-track project, due for delivery in CP5. These 'conditional outputs' were drafted by JRC in consultation with local authorities, Transport for London and other stakeholders, and accepted by the rail industry as the required outputs which rail services and infrastructure should deliver in the next investment period. See the attached link to West Anglia Routes Group documents.⁶

Early awareness of the outcome of Market Studies will be able to influence the initial specification and delivery of the other strategic railway element – franchising.

New franchising guidelines

The Department of Transport's view of the shortcomings of the rail franchising process that led to the collapse of the West Coast franchise bidding in Autumn 2012, has had lessons for further franchising.

The principal outcomes are that there will be clearer ground rules and check-off points for each stage in bidding for a new franchise, and that the outputs being sought from bidders will be more firmly grounded in the priorities for areas served by the new franchise. This is where it allies with the 'conditional outputs' which emerge from the LTPP.

The expected sequence of franchising in the East Sussex area has been set out by the Secretary of State for Transport:

- **Thameslink/Great Northern** franchise will be given a 12 month extension from September 2013 to September 2014.
- Discussion on the new franchise's initial specification was largely concluded by Summer 2012.
- Typically there is a 1-1¼ year period from issue of Invitation to Tender (ITT) to the start of new contract, with an award announcement expected about 3-4 months before the contract starts. Short-listed bidders are already announced: Abellio, First Group, GoVia, MTR and Stagecoach.
- This puts the ITT as due imminently, possibly September 2013 (it was originally due in October 2012⁷ but was then put on hold due to the other franchising difficulties).
- Final input on proposed services and investments is also imminent, with a contract

⁶ <http://www.westangliaroutes.org.uk/clients/westangliaroutes/files/warg-conditional-outputs-overview-apr12.doc>

⁷ <http://assets.dft.gov.uk/consultations/dft-2012-23/consultation-thameslink.pdf>

award in May-June 2014.

- Exceptionally, the **Southern** franchise will be amalgamated with the Thameslink/ Great Northern franchise in July 2015. In addition, some services will transfer from South Eastern in 2014 and in 2018.
- The combined Thameslink/Southern/Great Northern franchise will become the biggest ever let, in volume of income, train operations and staffing.
- The Government intends that the new expanded franchise should run over the period of the major Thameslink project works in London and elsewhere, and will run until September 2020, with a possible two-year extension.
- The major opportunities for influencing project commitments are therefore:
 - Now until start of 2014, in respect of any final changes to franchise commitments outside the Thameslink-specific works.
 - Further into 2014 for adjustments sought for Southern services during the duration of the franchise.
 - By 2019, **with previous years' preliminary project development work already concluded**, for major changes sought during the next franchise due to begin in 2020 or at latest 2022.
- **It will be seen that only urgent changes might be achievable in time for the start of the new 2014 Thameslink/GN franchise or the Southern enrolment in 2015. However now is a good time to start prioritisation and planning and development of new projects for the further franchise due to start in 2020-22.**
- The next **South Eastern** franchise has been put back by several years, with an announcement in the EU Official Journal now expected in November 2016, public consultation after that (though informal input can take place earlier), an ITT in April 2017, and contract award in February 2018 with the new franchise beginning in June 2018.

These franchise processes are relevant for 'Next Steps' priorities, see pp. 73 onwards.

Input by East Sussex and other stakeholders for the Thameslink/GN/Southern franchise will be relevant for most services in East Sussex.

The South Eastern network will be relevant for actions on the Hastings-Tunbridge Wells direct line, and any interaction between Marshlink trains to and from Ashford International, and other services calling at Ashford including the Javelin high speed trains.

Options for rail service development and new infrastructure

Introductory remarks

We can now assess, corridor by corridor, the scope for rail service improvements and infrastructure improvements that can benefit the East Sussex economy.

The county population is growing. The local jobs situation is one of concern. A healthy population balance will require better accessibility and connectivity to existing and expanding centres of work, both within the county and in neighbouring districts. We have the evidence of significant public transport shortfall in different parts of the county, including communities which have a large working population.

The rail industry's new planning processes set out clear objectives for railways to justify their existence and define new purpose, aligned alongside the local and regional economical and social priorities. While the outcomes of any large scale additional investment may not be seen for 5-10 years, there will be a range of shorter term initiatives to be able to advance through the franchising processes. Medium scale actions may be justified to Government and individual franchisees as contractual variations, particularly if there is clear local authority and stakeholder backing for the propositions.

We see that there are some 'natural' corridors where inter-urban rail has already achieved much more over the past decade, and at a pace faster than equivalent change in road traffic volume (East Coastway and Marshlink, and Brighton area). There is a rural rail corridor which has been astonishingly successful in growth (Wealden Line) despite lack of connection to the Sussex Coast, and one which appears to be struggling although from a larger baseline volume (Hastings Direct).

The approach adopted here is not to assume that 'lines on maps' are automatically self-validating. The philosophy is to:

- Ask what the outputs – to achieve outcomes – should be along each corridor, informed by the evidence on current and future issues.
- See what options are available to achieve relevant change in the current service structure.
- Identify scope for infrastructure change that can open up larger scale revisions to service patterns and connectivity.

It is NOT the task of this report to try to reach definitive conclusions on best value. That is for local authorities and other stakeholders to form judgements, for the rail industry to review, and for Railfuture to seek to persuade. However it is possible to point to sets of options which may be more affordable, deliverable and relevant than others. The assessment begins with some generic options common to all corridors.

Generic outputs to improve public transport

G1 Output: Marketing and integrated ticketing

The experience in the London Region in the 1980s with a new all-modes Travelcard was that public transport passenger volumes expanded over 15% in a few years without large scale capital investment. Better marketing such as a combined diagrammatic map for rail and tubes, and new bus mapping also assisted this process.

Once again from 2005-10 the introduction of Oyster and Pay-As-You-Go in London further increased public transport's popularity: a 'click-in' electronic travel pass with capacity for stored fares and inter-availability between all public transport modes. In the case of London Underground, journeys rose by 26% and this result was across the week, not just on Monday-Friday. So the network became more relevant for more people's lifestyles.

There was also growth of jobs and population, though not of the same magnitude. Broadly a 10-15% growth is attributable to better ticketing and marketing, for urban areas. This is an outcome which may be well worth having. In rural areas, the proportion of journeys which may benefit from integrated ticketing could be lower, so a range of 5-10% might be more realistic.

Within East Sussex and its neighbours, this could be approached through co-ordinated ticketing by operators, led either by operators themselves or with local authority and Government assistance. There are clearly proprietorial and revenue allocation issues in having a single pass valid on different bus and rail operators where there is no single co-ordinating transport authority. So it isn't assumed that results might be quick.

However the introduction on the Southern rail franchise of the ITSO ticketing specification - the 'Key' - now allows an expanding range of rail services to offer click-in electronic rail travel. Integrated bus/rail zones may follow. It is desirable that specific connecting bus routes and urban bus zones, mentioned in the individual corridor sections, should be accessible with the Southern ITSO system.

Inter-availability of integrated ticketing for Brighton & Hove, Lewes, Eastbourne and Hastings urban areas would be very desirable, to offer a seamless travel offer throughout East Coastway urban zones and, eventually, East Sussex.

G2: Output: Car parking and station railheads

The report's mapping shows that with variable in-vehicle journey times depending on the roads traversed, the effective access distance between a railhead and somewhere 15 minutes distant can typically be 4 to 8 miles (or further in some cases and times of day).

Adequate parking capacity at accessible railheads is therefore a key element in opening up rail services to support economic growth in both rural and suburban locations. The earlier mapping (pp.29 onwards) highlights locations which provide all-round accessibility for railhead travel in multiple directions. The new station car park planned for Uckfield in Spring 2014 is the latest demonstration of this principle in practice.

G3 Output: Bus interchange and foot and cycle access

The easier the access and interchange, the more reliable and trusted that multi-stage journeys become. Providing this at individual stations is a matter of discussion and definition of detailed requirements. Nevertheless the principles of providing high quality and easy availability of facilities is endorsed here. The Uckfield Transport Hub, with whose development Railfuture has been closely associated, is seen as a model of its kind for effective partnership working and delivery of shared objectives.

G4 Output: Travel planning advice

A seamless journey should be stimulated or reinforced by high quality information not just throughout the journey but in travel planning and guidance on timekeeping and next journey options, etc. Public transport is effectively competing with the car and, in some cases, with the choice of undertaking different activities in different ways.

East Coastway Corridor

We start with this corridor rather than the report's original genesis, the Wealden Line, because of the East Coastway corridor's importance to East Sussex. The logic of the observed passenger volume – about 17 million passenger entries and exits depending on how it is counted – makes it the most important rail corridor for the county.

Current service pattern

Aside from the short section in the Hastings area where Hastings-Tunbridge Wells-London trains overlap, the bulk of services are provided currently by the Southern franchise. Basic service levels vary:

- 1 through train per hour (tph), semi-fast, between Brighton, Lewes, Eastbourne, Bexhill, Hastings - and on via Marshlink to Rye and Ashford (reviewed pp.49-56).
- 2 tph between Eastbourne and London via Lewes, with variable stopping patterns and the faster one continuing to the Hastings area calling at most stations.
- 1 tph local stopping train between Brighton and Bexhill/Hastings via Eastbourne.
- 2 tph Brighton-Falmer-Lewes-Newhaven-Seaford.
- 1 tph Brighton-Falmer-Lewes shuttle.

Cumulatively there are 5 tph between Brighton and Lewes (1 fast, 4 stopping), 4 tph between Lewes and Eastbourne, and 3 tph between Eastbourne and Bexhill/Hastings. Services are topped up at London commuter times, principally between Eastbourne, Lewes and London, and with two extra trains also from Seaford (one in the evening). The overall effect is to provide a mostly 2 tph through service between any two distant urban centres, and 3-4 tph between neighbouring towns (5 tph Brighton-Lewes), but with notable variation in journey times between fast and local services.

Corridor journey times and infrastructure gap

Car journeys are typically under 40 mph between major urban areas during the off-peak, and under 30 mph in peak periods based on a variable increase in peak journey time.⁸ Rail station to station times are competitive offpeak on the Eastbourne-Hastings-Ashford and Brighton-Lewes-Eastbourne sectors, if looking at the fast train options. They would be less attractive when reviewing stopping train times. Fast trains are quicker than car for point-to-point journeys in peak periods for most destinations where there is a direct rail service.

The journey time factor is worsened for all rail journeys crossing Eastbourne east-west and vice versa, because through trains have to reverse at Eastbourne to resume eastwards or westwards. This incurs a roundly 20 minute total time reversing via Eastbourne, between Polegate and Pevensey. This is for a distance of 4 miles – so 12 mph! A new chord at Willingdon has been proposed by various stakeholders which would allow direct trains to take 7 minutes instead. An alignment is available under the Jubilee Way bridge outside Hampden Park.

⁸ As discussed already, the variability of peak time car journeys is taken in current modelling as +15% rural, +30% for a rural-urban journey, and +45% for a largely or wholly urban trip.

Some passengers do change trains at Hampden Park station outside Eastbourne, using the footbridge to the other platform to catch a preceding train leaving Eastbourne. There is a penalty in relying on changing trains and hoping this will work. The interchange estimate for Hampden Park was about 70,000 in 2011-12, minor compared to total volume.

Comparative peak times by car and fast rail along the East Coastway and Marshlink corridor are set out below, with the net journey time advantages by car or fast rail:

Coastway connectivity	Semi-urban taken for various A27 and other cross-country journeys where significant extent of countryside encountered														Rural
	CAR PEAK journey times (minutes, blue) and mph (green, quickest road distance between O&D)														Semi-Urban
30.9	31.2	31.5	31.1	31.6	31.8	31.6	31.4	27.2	28.0	28.3	31.4	28.3	28.0	31.4	Ashford
33.4	31.0	33.6	30.7	32.0	32.4	32.0	35.9	23.2	25.1	23.3	Rye	23.3	25.1	31	66
28.5	26.7	28.0	24.6	20.7	20.8	21.4	21.4	14.6	9.7	Hastings	9	13.9	20	33	69
29.0	27.1	27.9	24.6	21.2	21.9	22.0	21.4	13.9	9	St.Leonards	22	22	20	44	81
31.2	29.3	30.1	26.8	23.0	23.6	23.9	24.2	Bexhill	21	35	36	45	54	88	101
33.1	29.8	30.9	26.0	22.5	22.2	20.3	Pevensey	16	39	54	64	64	48	88	101
26.8	27.0	21.2	24.3	15.5	26.8	Eastbourne	16	33	33	48	51	51	48	88	101
33.3	27.7	27.7	22.8	21.3	Hailsham	22	13	33	33	48	51	51	48	88	101
33.1	28.8	27.2	21.1	Polegate	10	17	31	48	62	64	78	78	64	81	114
27.2	22.1	18.1	Seaford	26	32	22	38	55	68	68	81	81	68	81	116
28.6	22.6	Newhaven	12	33	39	35	34	64	66	77	77	77	64	77	104
21.7	Lewes	22	29	26	30	36	44	75	75	78	91	91	75	77	117
Brighton	25	33	41	36	42	54	44	62	62	78	91	91	62	78	117

Coastway connectivity	RAIL journey times (blue) and mph (green, compared using quickest road distance between O&D)														Pink shows times incl. connections for some journeys
34.1	34.5	32.3	29.4	37.5	29.3	46.4	31.1	40.6	41.0	44.7	53.7	44.7	41.0	53.7	Ashford
37.1	33.9	30.5	24.7	32.8	22.8	45.3	24.7	34.2	35.5	40.3	Rye	40.3	35.5	22	22
35.9	35.4	27.4	20.3	23.9	17.9	48.5	37.1	31.8	28.0	Hastings	18	28.0	28.0	42	42
37.0	36.8	28.5	20.8	24.7	18.8	53.7	41.7	40.3	3	St.Leonards	23	40.3	28.0	47	47
37.4	37.2	27.9	19.3	22.6	16.0	62.4	45.8	Bexhill	7	10	30	10	7	54	54
32.5	28.8	21.6	13.1	12.8	9.3	36.0	Pevensey	11	18	21	65	21	18	89	89
45.0	49.2	18.9	11.2	38.6	26.5	Eastbourne	9	15	22	25	45	25	22	69	69
35.5	30.7	23.6	13.4	14.4	Hailsham	22	38	49	56	59	72	49	56	96	96
50.3	62.5	29.2	14.2	Polegate	15	7	23	34	41	44	52	44	41	81	81
31.5	37.8	26.3	Seaford	39	54	47	62	67	74	77	97	67	74	121	121
35.3	54.7	Newhaven	8	31	46	39	54	59	66	69	89	59	66	113	113
48.5	Lewes	9	17	12	27	20	35	40	47	50	70	40	47	94	94
Brighton	11	27	35	24	39	32	45	52	59	62	82	52	59	106	106

Coastway connectivity	PEAK JOURNEY TIME DIFFERENCES														
	CAR-RAIL difference in jny time, RAIL FASTER = BLUE, CAR FASTER = RED. GREEN = Value of time savings per faster rail jny @ £11.11 (2013 value of time)														
2.0	1.9	0.5	0.0	2.8	0.0	6.0	0.0	4.9	4.1	4.5	2.9	4.5	4.1	2.9	Ashford
1.7	1.2	0.0	0.0	0.3	0.0	3.5	0.0	2.6	1.8	2.4	Rye	2.4	1.8	-16	-16
3.0	3.0	0.0	0.0	1.3	0.0	5.8	2.9	2.2	1.1	Hastings	-13	Hastings	-24	-24	
3.0	3.1	0.3	0.0	1.3	0.0	5.9	3.2	2.5	-6	St.Leonards	-10	St.Leonards	-22	-22	
1.9	2.0	0.0	0.0	0.0	0.0	4.5	1.8	Bexhill	-13	-12	-14	Bexhill	-12	-27	
0.0	0.0	0.0	0.0	0.0	0.0	1.3	Pevensey	-10	-17	-15	+20	Pevensey	-15	+1	
4.0	3.0	0.0	0.0	1.9	0.0	Eastbourne	-7	-24	-32	-32	-19	Eastbourne	-32	-32	
0.5	0.5	0.0	0.0	0.0	0.0	Hailsham	+0	+16	+8	+8	+21	Hailsham	+8	+8	
2.3	2.6	0.4	0.0	0.4	0.0	Polegate	+5	+10	-7	-7	-2	Polegate	-7	-15	
1.0	2.2	0.7	Seaford	+13	+22	+25	+31	+19	+12	+13	+19	Seaford	+12	+7	
1.2	2.4	Newhaven	-4	-2	+4	+16	+4	+1	+1	+1	+8	Newhaven	-2	-3	
2.5	Lewes	-13	-12	-14	-3	-16	+1	-11	-17	-16	-7	Lewes	-17	-10	
Brighton	-14	-6	-6	-12	-3	-22	+1	-10	-16	-16	-9	Brighton	-16	-11	

Peak journey time comparisons, East Coastway, with present rail infrastructure

As can be seen there is an advantage by rail in peak periods, but this is limited by the availability of fast trains. The journey times are also measured between stations, and without waiting time. Therefore while rail has been successful in growing its business along East Coastway, by 50% in a decade and 66% in season ticket travel, it is not as competitive as it could or should be on this main inter-urban corridor, taking guidance from the LTPP.

Travel to and from places off the main line, such as the Newhaven and Seaford line and to the District centre of Hailsham, is also not competitive. This has been tested by modelling a 10 minute waiting penalty for interchange at Lewes for East Coastway, from Newhaven and Seaford, and a possible 15 minute bus connection between a train at Polegate and arriving in Hailsham.

Gaps in the public transport offer

Public transport shortcomings from the preceding population and travel to work analyses include poor public transport travel to work percentages in the following places:

- The whole of Bexhill.
- All Hastings SOA catchments (though this may also be linked to high deprivation levels where better public transport can assist access to jobs and skills).
- Some areas of the Eastbourne and Wealden Districts in the Eastbourne urban area, mostly remote from railway stations.
- Hailsham Town, 3½ miles from Polegate, which lost its trains in 1968.
- Ringmer, an expanding village 3 miles from Lewes (discussed in Wealden section).
- Lack of a walk-on urban rail service Eastbourne-Bexhill/Hastings. Some area statistical indicators suggest this section of railway is a candidate for 'Metro' frequency and indeed wider urban marketing, to address local journey patterns.

Separately, local planning processes and the South East Local Enterprise Partnership have suggested several additional stations on the railway between Eastbourne and Hastings to serve new housing and other developments. If implemented, these would strengthen the policy case for a Metro service on this section:

- **Stone Cross**, north of Hampden Park and west of Pevensey & Westham.
- **Glyne Gap**/Bulverhythe, east of Bexhill and west of St. Leonards.
- **St. Leonards Marina**/West St. Leonards, on the Coastway line adjoining the Hastings Direct station.

To this should be added the railway's specific shortcomings:

- The 'via Eastbourne' requirement for all journeys crossing that zone.
- There are also line speed limits which can be reviewed:
 - 55-70 mph between Brighton junctions and Lewes.
 - Sections of 70-80 mph between Lewes junctions and Polegate in an otherwise 90 mph railway.
 - 70 mph maximum on the largely straight railway east of Eastbourne to Bo-Peep junction (St. Leonards).

Conditional outputs for East Coastway Corridor

These are phrased as outputs required from the rail infrastructure and the franchisee. There may be different ways of achieving the outputs, but that would be for assessment during the Route Studies phase. Generic outputs as discussed above, are not repeated in the individual corridor commentary.

Some possible ways of delivering the desired outputs are however used to illustrate what could be achieved, and are based on JRC timetable modelling.

EC1 Output: Reduce main inter-urban Coastway times by 10-15 minutes

For the main Sussex Coast sector, between Brighton/Haywards Heath/Lewes, to east of Eastbourne.

Headline journey time examples would be Brighton to Hastings in under 50 minutes, and Lewes to Bexhill in under 30 minutes. JRC sees the primary means of speeding-up such journeys as creating a new Willingdon Chord north of Hampden Park. It is likely that at least 3 tph would be required, to offer overall frequency with new direct services to make the new route attractive.

Overall travel times to Eastbourne would need to be protected by changes to the timetable plan.

A journey time of under 50 minutes (Brighton-Hastings) and under 30 minutes (Lewes-Bexhill) would also support creation of a repeatable hourly or more frequent cycle of interchanges with other lines and connecting buses.

EC2 Output: Reduce main inter-urban Coastway times by a further 1-5 minutes (cumulatively 11-20 minutes with **EC1**) through selected timetable changes and line speed improvements.⁹

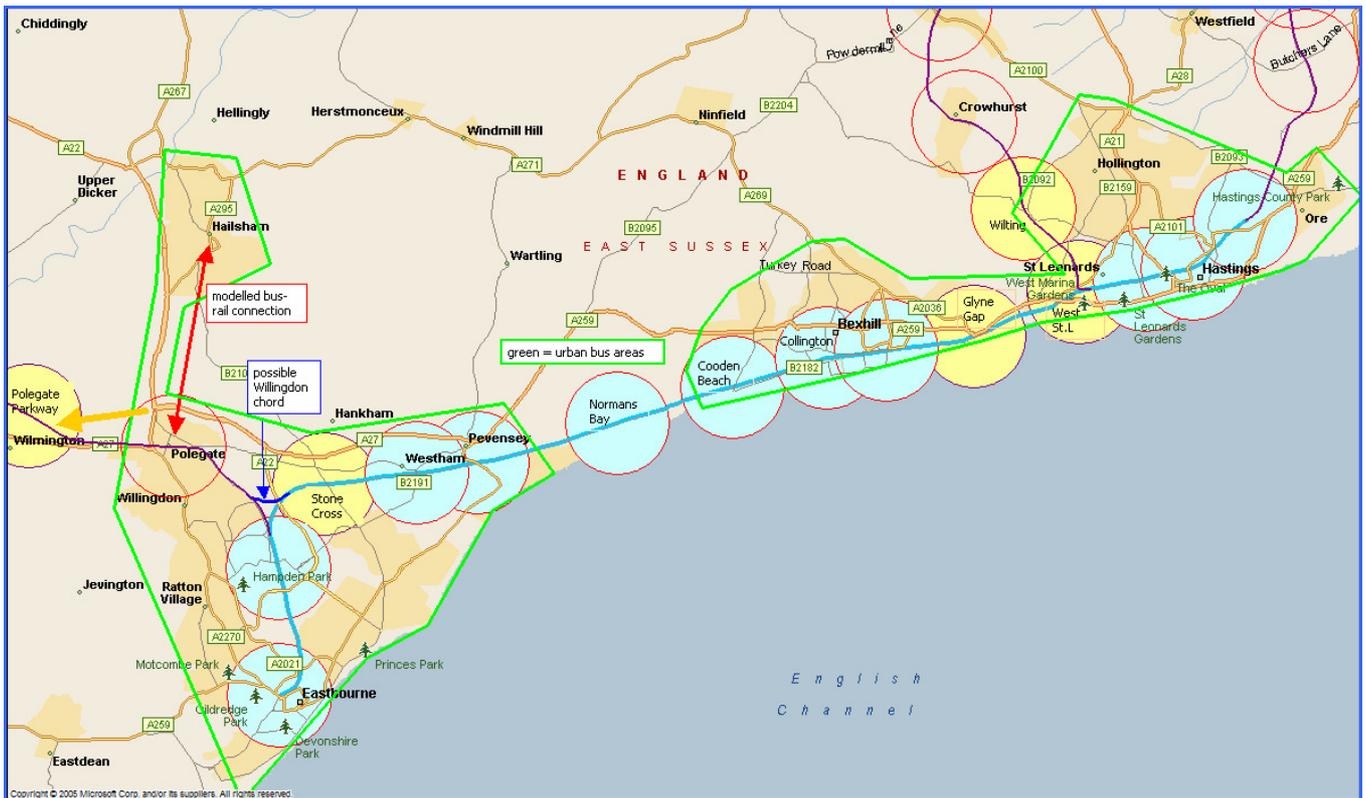
EC3 Output: Fast journey times achieved at least ½-hourly on main inter-urban sectors

To allow intending passengers to plan inter-urban journeys with more variety of travel times. For example this could permit Brighton-Lewes-Bexhill-Hastings fast trains every 30 minutes instead of hourly.

EC4 Output: Introduce new local stations between Eastbourne and Hastings

For example as proposed in SELEP studies, to increase urban accessibility to Coastway rail services. The map overleaf shows the location of existing stations and catchments served (here based on a ¼ mile very local catchment), and the possible location for new stations. It also shows the possible location of the Willingdon Chord, and a local Hastings station at **Wilting** on the Direct line to Tunbridge Wells which is another station proposed by the South East LEP.

⁹ Line speed improvements will be effected in November 2013 when the East Coastway resignalling is complete (90mph Polegate to Lewes). Pevensey to Bo Peep will be possible when further work is completed to some culverts (ref:- Simon Chapman of Network Rail at Southern Stakeholder Forum, on 18th June 2013).



EC5 Output: Create ‘East Sussex Metro’ services between Eastbourne and Hastings

To formalise a walk-on service with better rail frequency and regularity (eg 15-20 mins.), between these centres, with rail becoming the preferred choice for travel within major centres and within station catchments. This is illustrated above.

EC6 Output: Stronger bus links: Polegate-Hailsham and Eastbourne, Bexhill, Hastings

To create hub and spoke services between the strengthened rail corridor and outlying catchments – Hailsham lacking its railway, plus the outer catchments of Eastbourne and Hastings. An example could be a guaranteed 15 minute connector Polegate-Hailsham. This is illustrated above.

EC7 Output: Study case for a Polegate Parkway station

A possible Parkway station with high parking capacity for railheading is between Polegate and Berwick, at the end of an A27 trunk road extension.

Consequences of implementing conditional outputs

The outcomes sought aren’t exclusively faster and easier journeys, though conventionally journey time savings will represent more than half or three-quarters of all measured social benefits. The other social outcomes will be reductions in road congestion and improvements in road user safety, and wider economic benefits.

Employment and area economic benefits include:

- A larger, deeper pool of labour, and more closely-connected, competitive firms
- Greater contact and knowledge sharing.
- Increases in effective job density as journey times are reduced.
- Increased output from new jobs if located with good accessibility.
- Higher tax revenues for new or higher output jobs.

Detailed analysis of such benefits should be part of Route Studies on the merits of individual schemes. **We highlight here the journey time benefits.** The previous peak car and rail journey times have been modified in the tables below, to include JRC timetable modelling for fast trains with the Willingdon Chord and faster Brighton-Lewes line speed. There are no assumptions about other rail changes, nor about more road congestion. Higher frequency on inter-urban rail and Metro sections should make rail more competitive and stimulate public transport travel, catering for the growth in overall travel demand.

Coastway connectivity	Semi-urban taken for various A27 and other cross-country journeys where significant extent of countryside encountered														Rural
															Semi-Urban
															Urban
															Ashford
CAR PEAK journey times (minutes, blue) and mph (green, quickest road distance between O&D)	30.9	31.2	31.5	31.1	31.6	31.8	31.6	31.4	27.2	28.0	28.3	31.4	31.4	38	Rye
	33.4	31.0	33.6	30.7	32.0	32.4	32.0	35.9	23.2	25.1	23.3	31.4	31.4	66	Hastings
	28.5	26.7	28.0	24.6	20.7	20.8	21.4	21.4	14.6	9.7	9	31	31	69	St.Leonards
	29.0	27.1	27.9	24.6	21.2	21.9	22.0	21.4	13.9	20	22	44	44	81	Bexhill
	31.2	29.3	30.1	26.8	23.0	23.6	23.9	24.2	21	35	36	45	45	88	Pevensey
	33.1	29.8	30.9	26.0	22.5	22.2	20.3	16	39	54	57	64	64	101	Eastbourne
	26.8	27.0	21.2	24.3	15.5	26.8	22	16	33	48	51	51	51	88	Hailsham
	33.3	27.7	27.7	22.8	21.3	10	17	13	33	48	51	59	59	96	Polegate
	33.1	28.8	27.2	21.1	18.1	26	22	31	48	62	64	78	78	114	Seaford
	27.2	22.1	18.1	12	33	39	35	38	55	68	68	81	81	116	Newhaven
	28.6	22.6	Newhaven	12	33	39	35	38	55	68	68	81	81	116	Lewes
	21.7	Lewes	22	29	26	30	36	34	51	64	66	77	77	104	Brighton
	25	33	41	36	42	54	44	44	62	75	78	91	91	117	

Coastway connectivity	Pink shows times incl. connections for some journeys														
RAIL journey times (blue) and mph (green, compared using quickest road distance between O&D)	39.8	40.0	41.9	37.5	44.6	33.8	46.4	31.1	40.6	41.0	44.7	53.7	53.7	22	Ashford
	45.4	41.7	43.0	33.7	42.5	27.9	45.3	24.7	34.2	35.5	40.3	48	48	42	Rye
	47.4	47.8	44.0	30.7	33.9	23.0	48.5	37.1	31.8	28.0	Hastings	18	18	42	Hastings
	49.6	49.6	47.1	32.0	36.2	24.4	53.7	41.7	40.3	St.Leonards	3	23	23	47	St.Leonards
	52.5	55.1	49.8	31.5	36.6	21.8	62.4	45.8	Bexhill	7	10	30	30	54	Bexhill
	48.8	45.8	41.6	22.5	29.4	14.2	36.0	Pevensey	11	18	21	65	65	89	Pevensey
	48.0	49.2	18.9	11.2	38.6	26.5	Eastbourne	9	15	22	25	45	45	69	Eastbourne
	39.6	30.7	23.6	13.4	14.4	Hailsham	22	25	36	43	46	59	59	83	Hailsham
	54.8	62.5	29.2	14.2	7	15	7	10	21	28	31	44	44	68	Polegate
	33.5	37.8	26.3	Seaford	39	54	47	36	41	48	51	71	71	95	Seaford
	38.2	54.7	Newhaven	8	31	46	39	28	33	40	43	63	63	87	Newhaven
	59.3	Lewes	9	17	12	27	20	22	27	34	37	57	57	81	Lewes
	9	25	33	22	35	30	30	30	37	44	47	67	67	91	Brighton

Coastway connectivity	GREEN = Value of time savings per faster rail jny @ £11.11 (2013 value of time)														
PEAK JOURNEY TIME DIFFERENCES	4.8	4.3	5.3	3.6	5.2	1.0	6.0	0.0	4.9	4.1	4.5	2.9	2.9	-16	Ashford
CAR-RAIL difference in jny time, RAIL FASTER = BLUE, CAR FASTER = RED.	4.4	3.6	3.3	1.3	2.7	0.0	3.5	0.0	2.6	1.8	2.4	1.3	1.3	-24	Rye
	5.4	5.4	4.6	2.4	3.7	0.9	5.8	2.9	2.2	1.1	Hastings	-13	-13	-24	Hastings
	5.8	5.5	5.1	2.7	3.7	0.9	5.9	3.2	2.5	St.Leonards	-6	-10	-10	-22	St.Leonards
	4.7	4.4	4.0	1.3	2.3	0.0	4.5	1.8	Bexhill	-13	-12	-14	-14	-27	Bexhill
	2.6	2.2	1.8	0.0	0.6	0.0	1.3	Pevensey	-10	-17	-15	+20	+1	-27	Pevensey
	4.4	3.0	0.0	0.0	1.9	0.0	Eastbourne	-7	-24	-32	-32	-19	-19	-32	Eastbourne
	1.2	0.5	0.0	0.0	0.0	Hailsham	+0	+9	+3	-5	-5	+8	+8	-5	Hailsham
	2.7	2.6	0.4	0.0	0.0	Polegate	+5	-10	-3	-12	-20	-15	-15	-28	Polegate
	1.4	2.2	0.7	Seaford	+13	+22	+25	+5	-7	-14	-13	-7	-7	-19	Seaford
	1.5	2.4	Newhaven	-4	-2	+7	+4	-10	-22	-28	-25	-18	-18	-29	Newhaven
	2.9	Lewes	-13	-12	-14	-3	-16	-12	-24	-30	-29	-20	-20	-23	Lewes
	-16	-8	-8	-14	-7	-24	-24	-14	-25	-31	-31	-24	-24	-26	Brighton

Peak journey time comparisons, East Coastway, with selected rail improvements

Nominal direct comparisons between peak car and rail journey times now show a headline time advantage for rail of over 30 minutes between Brighton and the Hastings area, and 24 minutes quicker by rail between Lewes and Bexhill. Total time is also reduced to a headline 30 minutes between Eastbourne and Brighton. After allowing for access and waiting time, rail is now strongly competitive with car for main inter-urban peak journeys. Rail is now relevant for longer inter-urban journeys from Hailsham, to Lewes, Brighton and the Hastings area.

Coastway connectivity											
OFF-PEAK JOURNEY TIME DIFFERENCES											
CAR-RAIL difference in jny time, RAIL FASTER = BLUE, CAR FASTER = RED, GREEN = Value of time savings per faster rail jny @ £11.11 (2013 value of time)											
	0.0	0.4	0.0	1.1	0.0	1.7	0.0	1.5	1.1	1.7	1.3
	0.4	0.0	0.0	0.2	0.0	0.7	0.0	0.7	0.4	1.1	Rye
	2.6	1.7	0.0	0.7	0.0	2.6	1.3	0.9	0.6	Hastings	-6
	2.6	2.2	0.0	0.9	0.0	2.8	1.7	1.3	St.Leonards	-3	-2
	2.0	1.7	0.0	0.4	0.0	2.2	0.9	Bexhill	-7	-5	-4
	0.7	0.2	0.0	0.0	0.0	0.4	Pevensey	-5	-9	-7	+26
	1.3	1.5	0.0	0.0	0.0	0.0	Eastbourne	-2	-15	-14	-4
	0.0	0.0	0.0	0.0	0.0	Hailsham	+7	+13	+10	+11	+20
	1.1	1.5	0.0	0.0	0.0	Polegate	-5	-2	-5	-4	-1
	0.0	0.6	0.0	+21	Seafood	+32	+32	+4	+0	+2	+11
	0.0	1.1	Newhaven	+8	+0	+15	-1	-9	-12	-9	+1
	1.5	Lewes	-6	-8	-3	-8	-4	-12	-15	-14	-2
Brighton	-8	+2	+5	-6	+3	-7	-4	-11	-14	-13	-3
											Ashford
											-7

Rail is also helped in its competitive position for the off-peak travel market along this corridor, as shown by the table opposite. It is now a more credible option from Lewes and Brighton to major urban areas. The local time advantages remain in the proposed East Sussex Metro zone, between Eastbourne and Hastings.

The tables also highlight the per-passenger journey time benefits of shorter rail journey times, using a 2013 value of time (£11.11 per non-working hour). Including rail's initial advantages at peak time, an accelerated Lewes-Bexhill rail journey would be worth £4.40 more in time value compared to a peak car journey, and Hastings to Brighton £5.70 per passenger journey.

Off peak journey time comparisons, East Coastway, with selected rail improvements

Marshlink Corridor, and Hastings - Tunbridge Wells Direct Line

These two corridors are discussed together, as their futures may become inter-twined.

Current service pattern and infrastructure

Marshlink

Marshlink is the continuation of East Coastway beyond Hastings/Ore via local stations to Rye and Ashford International. Once this was an isolated diesel shuttle just linking those urban areas with the Romney Marsh communities. Recent years have seen the service extended back along Coastway to Eastbourne, and now to Brighton.

The hourly service provides the main fast corridor service from Brighton, Lewes, Polegate and Eastbourne to Bexhill, Hastings, Rye and Ashford. It is only a 2-car diesel and can get crowded. There is a top-up local service at peak times between Ashford and Rye, calling at local stations, to give 2 trains per hour (tph). One peak train is extended to Hastings (AM) and starts from Hastings (PM). There is no late evening service. Stopping patterns vary between Hastings and Rye. Ore is scarcely served, although it has a large students' college. The next three stations are rural, of which two (Three Oaks and Winchelsea) now benefit from alternate trains calling off-peak. Doleham has only 3 eastbound and 4 westbound trains on weekdays, mostly at times of operational rather than passengers' convenience.

Passenger demand has doubled at intermediate stations between Ashford and Hastings/Ore in the past decade, and Rye is the principal intermediate stop (375,000 passenger entries and exits in 2011-12). Season ticket use at local stations has tripled, showing that it is fulfilling an important function for this relatively remote area.

The railway's infrastructure costs have been pared. It is a largely direct and straight line between Ashford and Winchelsea, but speeds are slow, a basic 60 mph on most of the route, with slower speeds west of Doleham (40 mph) and at some bridges and crossovers. The line has been singled west of Appledore, with a passing loop at Rye.

Hastings – Tunbridge Wells Direct Line

This is the main line from Hastings and St. Leonards to London. The next major towns are Tunbridge Wells, then Tonbridge and Sevenoaks. The basic service is hourly fast, and an hourly stopping train, integrated from Tunbridge Wells within a ¼-hourly service.

In peak times there are three trains per hour towards London in the AM and returning PM (some trains run in sections to Tunbridge Wells with variable stopping patterns). However there is nearly an hour's gap towards Hastings in the AM peak (0738-0830 arrival at Hastings). This will inhibit the railway's ability to carry local workers and schoolchildren, and also those seeking to connect into East Coastway trains to reach other work and educational destinations. Apart from a few AM London trains and several return trips, no trains continue to Ore although that part of Hastings is growing in importance with the recent educational campuses.

Looking at the neighbouring town of Bexhill, which historically had a direct branch line joining at Crowhurst, there is little incentive to try to use Coastway to join Tunbridge Wells and London trains at St. Leonards. The interchange, via a footbridge and circuitous walking route, and rail travel times mean there is a penalty in doing so, generally 12-15 minutes in the AM peak. Typically, 25 minutes after starting from Bexhill by train, one is still no further than Battle – an 8 mile, 18 minute peak-time drive which can be more dependable than a rail connection.

Times to London from the Hastings area in peaks are exquisitely slow, and mirror the scale of local deprivation which is a regrettable characteristic of the Hastings and St. Leonards area, and is partly a consequence of the area's relative isolation in journey times by both car and rail. Typical AM peak train speeds to London from Hastings average 35-37 mph, slower over the steeply graded line between Hastings and Tunbridge Wells, but no better than 40 mph towards London from that point.

Omitting stops can save 10-15 minutes on the Hastings-Tunbridge Wells section, as the different off-peak service structure shows. However omitting peak time stops also reduces the catchments unless more trains were run with separate local services. The present service is a compromise between coastal and hinterland catchments, and serves neither to best advantage.

It doesn't help that the 'Hastings Direct' was built with difficulty in Victorian times south of Tonbridge, including steep gradients and tight curvature. Later its tunnels were found to be sub-standard, and with electrification in the 1980s three single-track sections were created to allow full-width rolling stock. While line speeds occasionally permit 80 or 90 mph, more common values are in the 40-70 mph range. It would not be easy to get journey times down significantly, and it is further hampered by capacity limitations on the double-track line onwards via Tonbridge to Sevenoaks, which no-one expects to be quadrupled.

Observed passenger volumes at intermediate stations are overall little better than a decade ago, though some stations' passenger numbers only fell back several years ago. Season ticket usage has declined at most intermediate stations, excepting Frant which is a railhead south of Tunbridge Wells, avoiding the need to enter Tunbridge Wells itself. Overall this railway faces difficulties with passenger volumes and service structure, and this is returned to below.

Corridor journey times

Marshlink journey times are set out in the East Coastway section. The directness of the rail journey across Romney Marsh, combined with the poor road network, results in rail being faster than car for all main destinations between Ashford and Eastbourne, slightly in off peak and strongly so in peak periods. Rye to Bexhill stations is about 30 minutes by train and 34-44 minutes by car. However rail is less effective for longer inter-urban journeys along the Sussex Coast, from Ashford or Rye.

Comparative peak journey times by car and rail for the Hastings Direct corridor are shown below. Rail should be in a good position to provide attractive public transport,

via railheading, with the exception of Sussex Coast connections as exemplified by Bexhill. However the evidence is that rail has lost business at some intermediate stations, particularly in relation to peak time travel in the period for 2006-07 to 2011-12. A review of railway timetables over this period shows that services on the line have improved overall, not worsened, though the AM timetable gap towards Hastings is now wider, at 52 minutes on arrival at Hastings compared to 43 minutes in 2006-07.

Hastings Line connectivity	Semi-urban taken for various A21 and other cross-country journeys where significant extent of countryside encountered											Rural	
												Semi-Urban	
												Urban	
												Tonbridge	
CAR PEAK journey times (minutes, blue) and mph (green, quickest road distance between O&D)	31.0	30.6	31.3	35.1	33.2	37.0	36.5	40.2	35.1	34.3	32.3	16.9	17
	29.1	28.4	29.7	33.2	30.6	33.6	33.7	35.6	28.8	28.7	23.1	TunbridgeW	20
	34.5	29.1	30.6	35.1	32.0	36.3	35.5	40.5	28.5	27.8	Frant	7	
	29.1	26.5	27.8	31.3	29.0	32.5	30.3	32.2	27.1	Wadhurst	12		
	29.8	25.6	27.8	31.2	29.0	29.3	31.3	25.6	Stonegate	17			
	29.9	25.1	27.0	30.1	28.9	31.0	20.9	Etchingham	13				
	28.1	23.1	24.9	27.8	23.9	27.0	13	Robertssbdge	20				
	23.1	14.0	16.6	18.2	19.0	Battle	13	18	26	31	24	30	32
	16.0	12.9	12.1	13.6	Crowhurst	24	24	30	33	43	44	51	52
	15.2	11.0	8.3	West St Leo	20	20	24	30	39	43	49	49	52
	13.9	9.7	St Leonards	10	22	26	33	43	47	48	55	57	57
	14.6	Hastings	9	13	26	30	36	48	51	52	59	60	60
Bexhill	22	20	13	22	22	21	30	33	37	48	62	65	65

Hastings Line connectivity												Tonbridge	
RAIL journey times (blue) and mph (green, compared using quickest road distance between O&D)	27.6	31.0	31.9	34.3	36.5	34.6	32.7	34.7	40.4	37.5	39.4	32.7	9
	29.3	34.6	36.0	39.1	43.0	41.1	40.3	44.9	42.0	36.7	30.0	TunbridgeW	16
	29.3	35.2	36.8	40.4	45.1	43.3	42.9	49.5	49.2	48.0	Frant	20	
	26.5	34.5	36.2	40.4	45.8	43.8	43.5	52.5	52.0	Wadhurst	4		
	23.4	37.3	39.8	45.1	46.0	45.5	61.2	54.0	Stonegate	6			
	24.3	33.8	36.5	42.9	57.6	51.8	48.0	Etchingham	6				
	22.7	30.0	32.4	39.5	52.4	48.9	Robertssbdge	10	16	20	25	36	36
	16.0	22.9	24.9	35.4	60.0	Battle	7	11	17	23	27	32	43
	13.4	28.0	29.3	46.0	Crowhurst	4	11	15	21	27	31	36	47
	9.9	24.0	28.0	West St Leo	6	10	17	21	27	33	37	42	53
	40.3	St Leonards	3	6	12	16	23	27	33	39	43	45	56
	31.8	Hastings	3	6	12	16	23	27	33	39	43	48	59
Bexhill	10	7	20	26	37	41	47	53	57	62	73	73	73

Hastings Line connectivity												Tonbridge	
JOURNEY TIME DIFFERENCES	0.0	0.1	0.2	0.0	0.9	0.0	0.0	0.0	0.7	0.3	0.6	1.6	8
CAR-RAIL difference in jny time, RAIL FASTER = BLUE, CAR FASTER = RED. GREEN = Value of time savings per faster rail jny @ £11.11 (2013 value of time)	0.1	1.9	1.8	1.4	2.7	1.3	0.9	1.0	1.3	0.5	0.3	TunbridgeW	-8
	0.0	1.7	1.5	1.0	2.4	1.0	0.8	0.7	1.3	0.5	Frant	-4	
	0.0	2.2	2.0	1.8	2.9	1.5	1.3	1.4	1.0	Wadhurst	-3		
	0.0	2.8	2.4	2.2	2.3	1.8	1.8	1.2	Stonegate	-7			
	0.0	1.7	1.6	1.6	2.8	1.4	1.0	Etchingham	-4				
	0.0	1.3	1.1	1.3	2.4	1.0	Robertssbdge	-5	-4	-4	-5	+4	
	0.0	1.9	1.2	1.8	1.6	Battle	-6	-7	-9	-5	-7	+3	
	0.0	2.6	2.4	2.6	Crowhurst	-9	-13	-15	-12	-16	-13	-5	
	0.0	1.3	1.3	West St Leo	-14	-10	-7	-9	-12	-10	-6	-7	+1
	2.5	1.1	St Leonards	-7	-13	-7	-6	-9	-13	-11	-8	-10	-1
	2.2	Hastings	-6	-7	-14	-10	-7	-9	-15	-12	-9	-11	-1
Bexhill	-12	-13	+7	+4	+9	+7	+8	+8	+10	+5	+9	-0	+8

Peak journey time comparisons, Hastings Direct, with present rail infrastructure

A similar off-peak comparison with reduced car times still shows rail with some time advantage. So a case is made for a more detailed study on what is occurring locally, which is beyond the scope of this report.

Gaps in the public transport offer

There are poor public transport travel to work percentages at Battle (11.8%) and Rye (7.8%). However the catchment is also characterised by a number of 'railheading parishes' with better-than-average public transport use to work: examples include Frant, Etchingham, Robertsbridge and Wadhurst.

The South East LEP has proposed a possible new station on the Hastings Direct Line at **Wilting**, just north-west of St. Leonards. This would serve new and recent housing estates.

The gaps in the railway's own offer are structural and impede the local economy:

- The slow journey times to London, and the corresponding inaccessibility from London and other major centres, which reduces the economic visibility of this part of the Sussex Coast, particularly Bexhill, St. Leonards and Hastings.
- The infrequent and unfortunately slow rail service via Ashford, which however has a high level of connectivity to other major economic centres in Kent.
- The lack of electrification on the Marshlink route, which would allow through trains to more destinations via Ashford.

Options to solve the slow journey times will not be simple if relying on the existing railway proposition, which is to serve London mainly via Tunbridge Wells. As noted above, it would be difficult to raise speeds or reduce journey times in other ways, without the changes inconveniencing other flows, including local railheads.

We therefore propose a different approach, to address all the gaps and shortcomings, by adopting Kent's approach to such problems: a mix of high speed service and modified local service. This is discussed below, under conditional outputs.

Conditional outputs for Marshlink Corridor and Hastings Direct

MH1 Output: Reduce Hastings area to London journey times to equivalents seen at East Kent and Thanet

The key specification is an effective journey time, to achieve that economic connectivity which has been eluding this part of East Sussex.

The starting point is that there is already a high speed service which connects Ashford International with Central London in 36-38 minutes, using the SE High Speed 'Javelin' trains and the HS1 railway to St Pancras. It is 28-31 minutes to Stratford International.

The Javelin service is turning around the economic problems (similar to the Hastings area), in East Kent and Thanet, because of the substantial reduction in journey times and the consequential ability to attract new families and their

economic pull, and new businesses, to the railheads served by high speed trains. The incremental build-up of peak high speed services for Deal and 'post-Pfizer' Sandwich is also notable, and might be replicated beyond Bexhill towards Eastbourne. It is these outcomes which are feasible for East Sussex.

MH1 Technical Factors

Through trains from Hastings to London via Ashford are not specified in **MH1**, but that is an inevitable consequence if the output is adopted. The existing timings via Ashford show that investment would be required. Just taking the present Hastings-Ashford service, 42-43 minutes to Ashford, and changing there (say 10 minutes) onto Javelin, creates a journey time which is no slower, but no faster, than the existing Hastings-London service via Tunbridge Wells, albeit to different parts of Central London and Docklands. Some Bexhill-London journeys are already faster via Ashford and HS1, despite the slow Marshlink.

So the output cannot be achieved without significant investment. What would this amount to, to achieve a sufficient change?

- Certainly through trains – these would need to be Javelins or the next version.
- Electrification of Ashford-Ore, where Sussex Coast 3rd rail electrification begins
- Service specification to define what amounts of loops or double-tracking would be needed on Ashford-Ore.
- Similarly, what line speeds would be desirable, to achieve the required journey times. Above some speeds, it would be necessary to have a programme of replacing the many level crossings by bridges.

Canterbury and Folkestone via Ashford to St Pancras are both 70 miles, in 55-59 minutes (Stratford is 7 minutes faster). Dover is 77 miles in 66-68 minutes, Ramsgate 85 miles, best time 75 minutes, Sandwich 91 miles in ca. 90 minutes.

To be equivalent just in terms of rail miles, Hastings at 82½ miles via Ashford should aim for around 70 minutes. That is 30 minutes faster than most trains via Tunbridge Wells, so if that target is achieved, the route is able to compete on journey time even if destinations are not the same and a change were needed at London or Stratford. It is faster than a small gain via Tunbridge Wells.

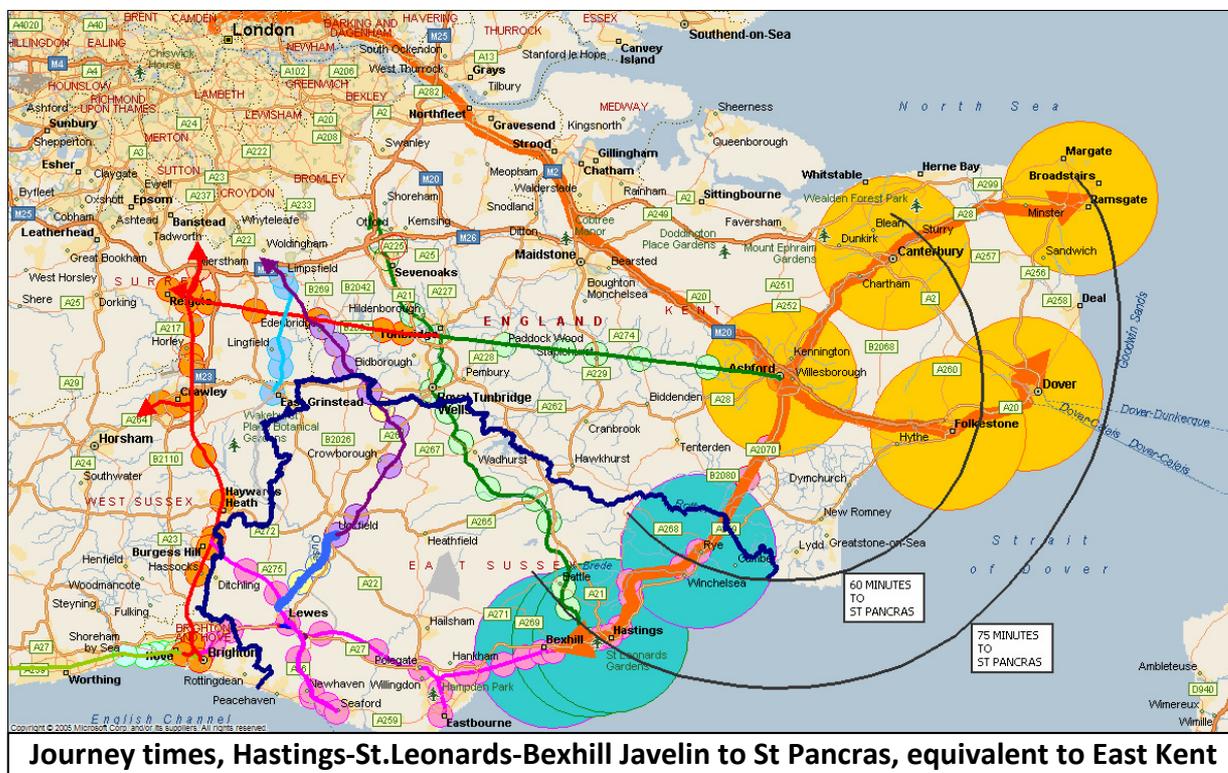
Further benefits are that it is an easy extension to serve St. Leonards and Bexhill (with much faster times to Bexhill than changing at St. Leonards). Javelins could start at Eastbourne if there were sufficient case; new equivalent extensions in Kent, to Deal and Sandwich, show an extension might be merited.

JRC has modelled timings for through trains over Ashford-Hastings-Bexhill-Eastbourne tracks, including over a slow speed crossover there to the high speed tracks, and a minimum 4 minute wait at Ashford for pathing etc. Line speeds are varied only on the Ashford-Ore section, assessing the current limits (60 mph and lower), then assessing 75-80 mph as far as Winchelsea but slower beyond to Ore, to as high as 125 mph on Ashford-Winchelsea. Faster than that gains nothing in time savings, if trains are also to call at Rye.

The table below shows the different outputs in terms of journey times to Stratford and St Pancras, at different speed levels between Ashford and Ore (with capping of line speeds in the Doleham-Ore section to 60 mph). Javelin train acceleration and braking rates are adopted:

HASTINGS JAVELIN TIMING TESTS	Current limits	75-80 mph	90 mph	100 mph	125 mph
Local stops: Rye, Hastings, St. Leonards, Bexhill, Eastbourne					
incl 4 mins Ashford, 38 to St Pancras					
RYE to STRATFORD INTERNATIONAL	56.5	52	51	51	49.5
RYE to ST PANCRAS INTERNATIONAL	63.5	59	58	58	56.5
HASTINGS to STRATFORD INTERNATIONAL	74.5	67	66	66	64.5
HASTINGS to ST PANCRAS INTERNATIONAL	81.5	74	73	73	71.5
ST LEONARDS to STRATFORD INTERNATIONAL	77.5	70	69	69	67.5
ST LEONARDS to ST PANCRAS INTERNATIONAL	84.5	77	76	76	74.5
BEXHILL to STRATFORD INTERNATIONAL	85.5	78	77	77	75.5
BEXHILL to ST PANCRAS INTERNATIONAL	92.5	85	84	84	82.5
EASTBOURNE to STRATFORD INTERNATIONAL	100	92.5	91.5	91.5	90
EASTBOURNE to ST PANCRAS INTERNATIONAL	107	99.5	98.5	98.5	97

It can be observed that the incremental time savings diminish as speeds rises, because of reduced time to get benefit from the top speed, so 80-90 mph look likely outputs. No changes to the speed limit between Bexhill and Eastbourne (mainly 70 mph) are modelled, though this might improve times further. Consequently, it appears possible to achieve journey times of about 73 minutes from Hastings to St Pancras, and 66 minutes to Stratford.



Generally Hastings, St. Leonards and Bexhill would save up to 30 minutes journey time to Central London, depending on the preferred destination.

This shows that a simple output proposition – which amounts to “do as well as equivalent parts of Kent for economic linkage by rail” – can lead to the necessary specification and clarity on likely route investment options.¹⁰

MH2 Output: Improve connectivity via Ashford and Coastway, to improve East Sussex’s accessibility

While MH1 may enforce electrification to secure a through Javelin service for Hastings, MH2 is written from an East Sussex and Coastway perspective, to continue to get the most from improved inter-urban journey times and better connectivity if trains could be quicker, more frequent and able to run through to other destinations in Kent, via Ashford.

Ashford International itself is the ‘Crewe’ of Kent, with connections to Tonbridge, Sevenoaks, Maidstone, Canterbury and Thanet, and Folkestone, Dover and Deal, and via high speed Javelin trains to Ebbsfleet, Stratford and London St Pancras. In turn the latter stations create connections to Anglia and the Midlands and North. So attention is required to get journey times down on the Ashford – Hastings sector, to expand rail’s inter-urban potential in both directions, west along the Sussex Coast, within Kent, and to enable easier links to major destinations beyond London.

The primary opportunity for improving Marshlink is by putting better infrastructure back into the Ashford-Ore section, by speeding up the line rather than re-doubling it – that should only be undertaken if eventual service frequencies justify that. There may be a halfway house – keeping single track and having lengthy passing ‘dynamic’ loops several miles long so that trains can pass at speed.

The other railway issue is whether, or when, to electrify. An isolated diesel operation may not be sustained for many more years, particularly when more rolling stock capacity is likely to be required – there are no more diesel trains currently being built for Britain because of the national priority given to rail electrification. So better connectivity is unlikely to be achieved unless the line is electrified.

Then the question is whether to electrify with overhead line or third rail. It is generally cheaper to electrify with overhead because fewer substations and Grid supply points are needed. Many modern trains are also built with passive provision for dual-voltage to be installed later, if it is not built in from the start,

¹⁰ This conclusion about focusing on raising minimum line speed – not necessarily aiming for the fastest top speed – is similar to JRC work on Lea Valley Rail outputs, where higher maximum line speeds achieved nothing, once beyond the most effective speed/time profile for the specified train service. A similar assessment informed the final choice of speed limits on the modernised West Coast Main Line.

When Network Rail put in the ‘Ore tunnel blockade’ in December 2011-March 2012, the track and other bridges were also altered so that Ore-Rye can now be 60 mph, and Rye-Ashford 75 mph (though speeds have not yet been raised). The JRC modelling recommends a little higher from Doleham to Ashford (80/90 mph) but results are similar. The Office of Rail Regulation (ORR) is supporting Network Rail to fund a bridge to replace Winchelsea level crossing.

so that trains can use each system without wholesale power supply changes. To achieve Javelin top speeds would require overhead electrification between Ashford and Ore, though 80-90 mph could be viable with 3rd rail.

It will be for Network Rail and rail operators to identify what through running might be most benefit – it could be to/from Canterbury or Maidstone, for example. Significant elements could be an increase in service frequencies, or separation of local Ashford-Hastings trains as a distinct service, and 2 tph fast trains provided via various routes. A mix of Brighton-Ashford-Canterbury, St. Pancras to Hastings/Bexhill, and a local service eg Eastbourne-Ashford as an extension of some 'Metro' trains, would be another example.

Connectivity should also address hours of operation. There are currently no late evening services on Ashford-Hastings, which inhibits the modern use of public transport for evenings out and back, as well as shift working hours.

MH3 Output: Reduce fast rail times between Ashford and Hastings to under 30 minutes

This is possible with 90/60 mph speed limits and one stop at Rye. Combined with the East Coastway outputs, it would secure an under-80 minute timing Brighton-Ashford and under-60 between Lewes and Rye. It builds again on the philosophy of getting rail to do its best on major inter-urban flows.

MH4 Output: Study the reasons for recent Hastings Direct Line passenger losses, and review actions to address this

If through Sussex Coast – London travel can be attracted to Javelin via an improved Ashford-Hastings, then it will be easier to focus on giving good service to the local railheads between Hastings and Tunbridge Wells, for travel to the Sussex Coast as well as towards Tunbridge Wells and London, and to address reasons for passenger losses in the recent years. The scope for a station at Wilting, on the outskirts of Hastings, could be included here.

MH5 Output: Consider as part of MH4, to what extent through running (or reversing) at Hastings, or better interchange, would benefit East Sussex passenger use and access and connectivity for East Sussex coastal towns.

Passengers in Hastings Direct Line catchments are required to change, even to reach Ore with its educational campus. Access to Bexhill and Eastbourne, both educational centres, is also inhibited and made harder because of the potential waits for trains. There is currently only one fast train per hour between Hastings and Eastbourne. One candidate to improve that frequency is to back-project a Hastings Direct service from Eastbourne. This might be relevant at times convenient for student lessons, or more frequently for general economic access and connectivity. Alternatively a back-projection could help to resource the potential East Sussex Metro ([EC5](#)).

Consequences of implementing conditional outputs

The primary outcome is a fundamental change in the accessibility of this relatively remote area of East Sussex. Hastings is only 54 miles in a straight line from Charing Cross, but the journey time by rail is 1¾ hour or more. Access to locations north or north west of London is longer still, whether by rail or road.

Bringing the journey times benefits of Javelin to East Sussex will require commitment to electrify Ashford-Ore, but this is foreseeable in any event. The crux is to electrify, and to upgrade the track(s) for faster running. With this infrastructure, and new crossovers at Ashford, Javelin operation will be feasible via Rye, Hastings, St. Leonards and Bexhill.

Such an output enables the other opportunities to fall into place:

- Faster, through, and potentially more frequent trains via East Coastway and Marshlink, to strengthen this inter-urban corridor and achieve greater connectivity or through services via Ashford.
- A review of the Hastings Direct Line services to create a better match with local railhead requirements.
- Assessment of new outputs to integrate the Hastings Direct Line with the East Coastway Corridor, to East Sussex's economic advantage.

Wealden Line Corridor

This line was severed in 1969 from the county town, Lewes, and other Sussex Coast towns and cities. It was the culmination of line closures throughout the Weald, and terminating at Uckfield has been regretted constantly since then. Its recent history has included several studies to rejoin the line to the East Coastway Corridor. There are current campaigns to achieve this link-up, with different plans and priorities. The existing line to London is still unelectrified.

The Secretary of State for Transport, Patrick McLoughlin, announced on 9th May 2013 that the Department for Transport would commission a study of reopening Uckfield to Lewes. It could be significant in policy and presentation, that the announcement was close to the 50th Anniversary of the Beeching Report.

Current service pattern and infrastructure

We start where we are, with a Croydon and Central London-facing railway whose future was still uncertain a decade ago. In 2001 the basic off peak service was an hourly 'branch line' diesel shuttle, from Oxted to Uckfield. This increased the area's remoteness; the main positive elements were a 2 trains per hour (tph) peak service and 3 AM peak trains through to London, 2 returning in the evening. There was no late evening service.

The line is a long way from that specification now. While it is still a 2 tph peak, 1 tph off-peak service, almost all trains now run through to Croydon and Central London throughout the day, peaks trains are now up to 8-cars long with 10-cars planned, there are earlier first and final trains, and passenger traffic has boomed through local developments and railheading, and to seek jobs along the rail corridor. It is now seen as a realistic alternative for travel to and from London.

Railheading is an important feature. Dependence on the Brighton Main Line stations had been driven by the previous poor service and the historic slam-door trains on the 'branch'. Turn round the service quality with a new comfortable fleet and a punctual through service, and passengers have responded. The growth in local rail use is restated below.

GROWTH IN LOCAL RAIL USE				
Wealden Line:				
<i>Uckfield>Buxted>Crowborough>Eridge></i>				
<i>Ashurst>Edenbridge>(Oxted>Croydon>London)</i>				
Million passengers entry/exit p.a.	2001-02	2006-07	2011-12	10yr +/-
Uckfield	0.11	0.26	0.45	+303%
Buxted	0.06	0.13	0.17	+160%
Crowborough	0.14	0.32	0.40	+192%
Eridge	0.03	0.07	0.14	+413%
Ashurst	0.00	0.01	0.02	+429%
Cowden	0.01	0.03	0.05	+473%
Hever	0.01	0.02	0.03	+429%
Edenbridge Town	0.09	0.31	0.33	+275%
Total	0.45	1.17	1.59	+255%

This has been achieved on a single track and passing loop infrastructure (more accurately dynamic loops, where each double track section is a fair length and trains can pass at speed). The maximum speed allowed is now 70 mph with occasional slower sections. 1960s operating rules had allowed trains (including loco-hauled) to run up to 85 mph when track and signals permitted, throughout the Wealden Line. 50 mph was the former maximum on the Tunbridge Wells – Eridge railway.

Corridor journey times

Most modelling on this corridor has been undertaken to test the outcome of railway restoration between Uckfield and Lewes, with services possibly continuing beyond. However the baseline, below, is the current peak time car vs. rail times. These show that the Wealden Line while not fast is generally competitive in its own catchment.

Wealden Line connectivity		Semi-urban taken for various A26 and other cross-country journeys where significant extent of countryside encountered													Rural		
CAR PEAK journey times (minutes, blue) and mph (green, quickest road distance between O&D)															Semi-Urban		
31.8	33.5	33.0	34.1	36.7	35.6	35.8	35.7	34.7	39.0	35.0	24.9	29.2	24.0	28.6	27.5	30.7	61
35.5	37.3	36.7	35.6	35.8	35.7	35.1	35.1	37.2	36.8	36.8	30.6	32.7	29.5	23.5	23.4	E.Croydon	42
40.3	42.8	40.6	32.7	35.7	37.8	37.9	40.2	40.7	40.2	40.7	34.2	34.7	34.8	Edenbridge	17	Oxted	33
32.6	33.7	32.1	34.2	34.2	34.0	37.7	29.0	10.6	Buxted	16	16	16	22	28	41	72	25
33.0	34.3	33.3	34.8	38.6	39.0	29.9	42.8	23.1	Ashurst	14	28	59	13				
31.6	33.0	31.2	34.3	36.7	34.2	21.5	40.2	20.2	Eridge	10	23	36	68	8			
29.6	30.5	29.8	30.5	29.4	22.3	13.0	23.1	10	Crowboro'	10	23	31	45	17			
31.8	33.8	31.2	34.0	37.7	29.0	10.6	Buxted	16	16	22	28	41	72	25			
30.2	30.5	29.6	32.0	34.4	33.5	Healthfield	10	18	21	32	38	52	83				
28.5	29.4	27.4	31.4	26.8	Uckfield	14	9	25	24	30	44	75					
21.7	21.4	22.6	27.0	Lewes	20	25	20	32	37	43	56	81					
26.8	27.8	21.2	Eastbourne	36	35	42	49	53	61	68	83	107					
28.6	29.2	Newhaven	35	22	35	44	38	52	56	64	77	91					
19.2	Falmer	26	45	16	29	39	31	47	51	57	70	84					
Brighton	16	33	54	25	36	46	39	55	53	65	80	94					

Wealden Line connectivity		Heathfield connecting bus via Uckfield (20 minutes, type U), or Buxted (15 minutes, type B). Default is U.													TunWellsW		
Rail journey times (blue) and mph (green, compared using quickest road distance between O&D). Pink data is for modelled bus connection between Heathfield and Uckfield		Rail comparative timings via Uckfield (not via Brighton Main Line) shown in tan zone															
35.4	31.4	36.4	31.4	36.4	42.4	42.4	42.4	46.7	45.1	60.0	E.Croydon	13					
34.1	29.6	37.2	40.4	40.1	36.8	42.0	Oxted	10	23								
32.4	27.7	36.2	44.3	42.0	34.3	Edenbridge	14	24	37								
44.9	20.6	55.1	54.0	66.0	Ashurst	5	19	29	42								
44.3	14.8	54.0	42.0	Eridge	5	10	24	34	47								
50.2	8.9	51.4	Crowboro'	7	12	17	31	41	54								
66.0	7.3	Buxted	24	31	36	41	55	65	79								
23.1	Healthfield	20	4	11	16	21	35	45	59								
Uckfield																	
41.1	57.0	54.7	49.2	Lewes	20												
45.0	46.2	18.9	Eastbourne	20													
35.3	44.8	Newhaven	39	9													
43.7	Falmer	17	27	6													
Brighton	7	27	32	13													

Wealden Line connectivity		JOURNEY TIME DIFFERENCES													TunWells W		
CAR-RAIL difference in jny time, RAIL FASTER = BLUE, CAR FASTER = RED. GREEN = Value of time savings per faster rail jny @ £11.11 (2013 value of time)																	
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+61
0.0	0.0	0.0	0.0	0.0	0.0	0.8	3.2	5.7	4.7	4.0	3.9	3.8	E.Croydon	-20			
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+27
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+13
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+8
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+17
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+25
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+22
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+26
2.2	1.8	2.4	3.0	Lewes	+20	+25	+20	+38	+32	+37	+43	+56	+81				+38
4.0	3.3	0.0	West St Leo	-16	+39	+42	+49	+53	+61	+68	+83	+107	+55				+55
1.2	1.7	Newhaven	+4	-13	+35	+44	+38	+52	+56	+64	+77	+91	+59				+49
1.7	Falmer	-9	-18	-10	+29	+39	+31	+47	+46	+51	+57	+70	+74				+60
Brighton	-9	-6	-22	-12	+36	+46	+39	+55	+53	+65	+80	+94	+60				+60

Peak journey time comparisons, Wealden Line, no Uckfield-Lewes line, Heathfield-Uckfield bus

The modelled trial of a 20 minute connecting bus from Heathfield to Uckfield does not show up favourably, except to East Croydon (and by inference, Central London), in the absence of a railway continuing to Lewes and Brighton. A separate modelled trial, for a Heathfield-Buxted bus (the bus might continue to Uckfield for local passenger travel), has been reviewed below as a 15 minute connection, and this is more favourable for present railway destinations, with bus + rail journey times which are closer to car.

Wealden Line connectivity										
JOURNEY TIME DIFFERENCES										
CAR-RAIL difference in jny time, RAIL FASTER = BLUE, CAR FASTER = RED. GREEN = Value of time savings per faster rail jny @ £11.11 (2013 value of time)										
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TunWells W
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	E.Croydon
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Oxted
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Edenbridge
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Ashurst
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Eridge
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Crowboro'
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Buxted
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Heathfield
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Uckfield
2.2	1.8	2.4	3.0	0.0	0.0	0.0	0.0	0.0	0.0	Lewes
4.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	West St Leo
1.2	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Newhaven
1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Falmer
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Brighton

The travel times to Lewes, Falmer and Brighton are lengthy in peaks. It is nearly a half-hour by car from Uckfield to Falmer, and 36 minutes (more on a bad day) to central Brighton. From Heathfield, Brighton is three-quarters of an hour, from Crowborough it is 55 minutes, with nearly 40 minutes to Lewes. These are journey times which from the Wealden heartland get close to the limits of a 60 minute catchment (if that limit is itself acceptable).

Gaps in the public transport offer

Clearly there is an infrastructure gap – the railway itself. There are various sub-options on how a railway might be re-created or built anew, and those are discussed later. The strategic issue is whether there are economic growth and transport cases which merit the topic of line reopening being taken forward at county and district level, by stakeholders and partnerships such as the LEPs, and by the transport industry (initially by Network Rail and Department for Transport - DfT). The fact that the DfT is initiating a study is itself a positive indicator.

The analysis of local travel to work statistics shows that a large volume of Wealden communities along the line's catchment, including its high population towns, have low use of public transport for journeys to work. These include Buxted, Crowborough, Heathfield, Maresfield, Mayfield & Five Ashes, Rotherfield and Uckfield. Their combined employed population is over 30,600. The strategic need is to strengthen their economic accessibility, and also to open up connectivity for existing businesses and incoming firms. Good railway links and attractive journey times would be key ingredients for this strategy.

This is powerful evidence, and can also be set against the job volumes available both within

Peak journey time comparisons, Wealden Line, no Uckfield-Lewes, Heathfield-Buxted bus

Sussex Coast towns and in Brighton & Hove. As noted earlier, Brighton & Hove is No.2 for jobs volume in the whole of the South East (131,800 in 2008). Jobs in Lewes and Eastbourne Districts, which encompass Newhaven, Seaford and other centres, were 76,000 in 2008 on one measure, and 79,000 in 2011 on a different measure. There is also Polegate and the outlying parts of Eastbourne, which are part of Wealden District though geographically Sussex Coast territory and, by rail, accessible via Lewes.

The earlier discussion on educational campuses, and their critical importance for the East Sussex economy and its future working generations, also shows that there is an intense concentration of campuses along the Brighton-Moulsecoomb-Falmer-Lewes corridor and at Eastbourne. These are all locations which are directly served by the East Coastway, and could be accessed directly from the Wealden Line if it were re-opened via Lewes.

Further evidence is the strategy for regenerating Newhaven, of securing direct access to hinterland catchments and to London.

Overall, we therefore consider that there are both economic growth and transport cases to be answered, and that a railway link between Uckfield and Lewes, with capability to extend services beyond Lewes to Falmer and Brighton, and to Newhaven/Seaford and Eastbourne, should be studied.

We first look at defining the simplest proposition, a stand-alone extension to Lewes, although this does not necessarily address the question of how onwards services or connections might be achieved.

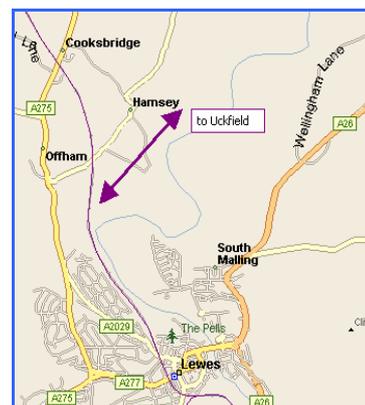
Modelling an Uckfield-Lewes railway

Previous studies such as the Central Rail Corridor report of 2008 have presumed that the former railway trackbed is largely intact and available for re-occupation. Railfuture and JRC believe that this remains the case. Indeed the trackbed is being safeguarded informally if not formally, for example with East Sussex County Council now designing the Uckfield inner relief road to include a precautionary bridge over the alignment close to Uckfield.

It should be possible to move the 'Lavender Line' historic railway based at Isfield, if required, though at present only a single running track might be required for main line re-opening so might need only small displacement. This is a specific matter which should be addressed in more detail at a later stage of route development. An alternative could be to assist the Lavender Line to start re-opening of the southern Bluebell Railway section from Barcombe towards Sheffield Park – with the potential for through running and preserved railway/tourism opportunities which that offers.

It is recognised that the 1969-closure alignment is NOT available on the local approaches to Lewes station, where there has been extensive property development and road construction. However the original railway alignment via Hamsey is still available, or a new alignment close to that, which would join the Haywards Heath-Lewes line just north of a large bend in the River Ouse (see diagram overleaf).

Network Rail in the 2008 report took the view that a proportion of bridges would require replacement, but that otherwise the track bed appeared to be in good condition. Clearly a detailed re-survey would be required, but at this stage of route planning there is a reasonable expectation that the previous line speed, 85 mph, could be achieved again as far as the junction with the Haywards Heath-Lewes line, though the junction itself and the approaches to Lewes would be slower, as no change is proposed for those.



Modelled times for Uckfield non-stop to Lewes, 8.8 miles, are estimated at 8½ minutes, plus a minute's pathing time allowance at the new junction, so overall about 10 minutes. Inclusion of any local stations at Barcombe Mills and/or Isfield would add about 2 minutes per stop. The case for such local stations should be considered as part of route studies.

There are benefits to local communities by being better connected to centres such as Lewes and Brighton, and there is some potential for railheading from nearby villages. However there might also be concerns about a new local station stimulating new housing development. From the railway perspective, the journey time benefits achieved in support of East Sussex and Wealden economic growth might be reduced in value if point to point times were up to 4 minutes slower.

Other modelling options for Uckfield-Lewes

While re-opening the bulk of the previous railway appears to be the simplest proposition, and potentially the lowest cost as well, there are some broader issues to be addressed at this stage. These are:

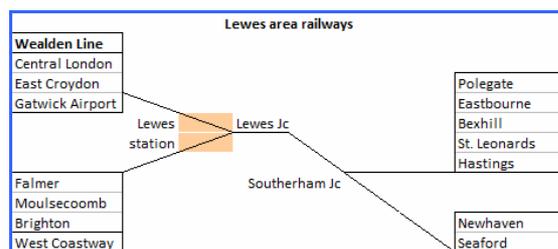
- Is the purpose of any railway extension just to link the Weald to the county town, Lewes, with only connections beyond to the Sussex Coast towns and Brighton & Hove, or to offer direct services, and if so, where?
- The railway geography at Lewes causes trains approaching from London (or Uckfield if the alignment above were adopted) only to be able to proceed towards Newhaven/Seaford or Eastbourne. Direct access to Brighton was lost from Uckfield with the line's 1969 closure. Should there be a new route created to enable direct access to Brighton, or a reversing arrangement, what options are there, and what would be the consequences for journey time and stopping arrangements?

The preceding discussion on the economic growth and transport case suggests strongly that the presumption should be to assess options for through running, to Brighton via Falmer, and to Newhaven/Seaford and Eastbourne. Not all options may prove worthwhile, but the alternative of no service extension beyond Lewes would impose journey time and marketing blocks on the utility of line re-opening. Essentially, why would you want to recreate a railway branch just to Lewes which was the context which justified closure to Uckfield in the first place? That was the unfortunate basis of the 2008 assessment, which also looked just at railway benefits not the wider economy.

If the simplest scheme also allows through running from Lewes on to Newhaven/Seaford, then the key additional element to define is how to create a link to/from Brighton, which is indicated as a major destination (plus the potential of Moulsecoomb and Falmer educational campuses along the way).

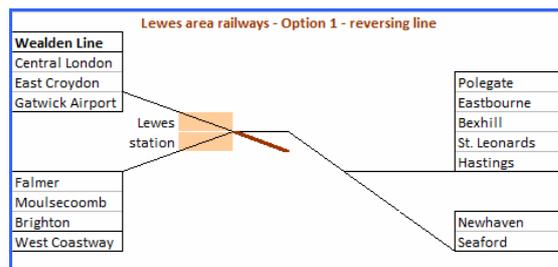
JRC has developed concepts for 4 schemes, while the BML2 campaign has also proposed a direct tunnel (Ashcombe Tunnel) which bypasses Lewes from the Uckfield direction towards Falmer. From the context of East Sussex's economy, the high costs of a tunnel option would need to be compared against other schemes which maximised local and regional access and connectivity. Another option would avoid Lewes, and head via Plumpton before joining the Brighton Main Line north of Hassocks. Refilling the BML while avoiding access to the county town and the Sussex Coast is not supported.

JRC's options take account of Lewes's rail geography, which is basically a double-ended Y. The platforms are along the Brighton and London lines. Further east, trains diverge towards Eastbourne or Seaford, at Southerham junction. Lewes junction is at the east end of the platforms.



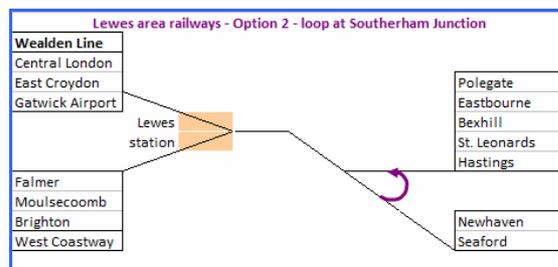
Lewes option 1: Reversing line, east of Lewes junction

Trains come from any platform, into siding, crew changes end, train heads back to other line. If Wealden Line above 2 trains per hour, might require more than 1 siding, as 2 tph = 4 siding occupations each hour. Each move requires a pathing margin and siding occupation time. Time from arriving at Lewes to heading past Lewes in opposite direction could be 7 minutes minimum, more likely 8 or more. (Say 1 minute at platform, 1 minute to siding, 4 minutes minimum in siding as crew change ends (more if long train), 1 minute from siding to other line). Only short track to lay, but complex for signalling. Layout may incur risk of operational delays, for example Wealden trains running outside their planned slot could be delayed if the siding was being occupied by other train. Also timetabling of best slots could be a challenge. However could be within operational railway land so not requiring National Park planning approval.



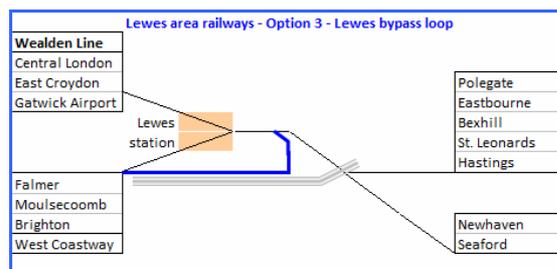
Lewes option 2: Loop at Southerham junction

Appears simple and low budget, just two points and perhaps four signals, 0.6 mile single track loop. Trains head on from Lewes, pass Southerham, turn left from the Newhaven line to loop and rejoin the line from Eastbourne to Lewes, and proceed to the correct line onwards past Lewes. Land is flat so easy construction with low embankment, culverts and drainage being the main requirement, also possibly quick to build. Within South Downs National Park so their planning approval would be required, possibly part of Uckfield-Lewes Transport & Works Order process. The extra journey time would be about 8 minutes including pathing.



Lewes option 3: Lewes Bypass loop

East of Kingston tunnel, follows the urban break alongside the Lewes bypass – an existing transport corridor - and the ‘Cockshut’ watercourse, then curves behind the sports area to join the main line east of Lewes and heading west towards the main junction and station. About 1.7 miles, might be single or double track depending on planned service frequency, double would ensure flexible timetabling. Within South Downs National Park so their planning approval would be required, possibly part of Uckfield-Lewes Transport & Works Order process. The extra journey time is the shortest of the options via Lewes, about 3 minutes including pathing.



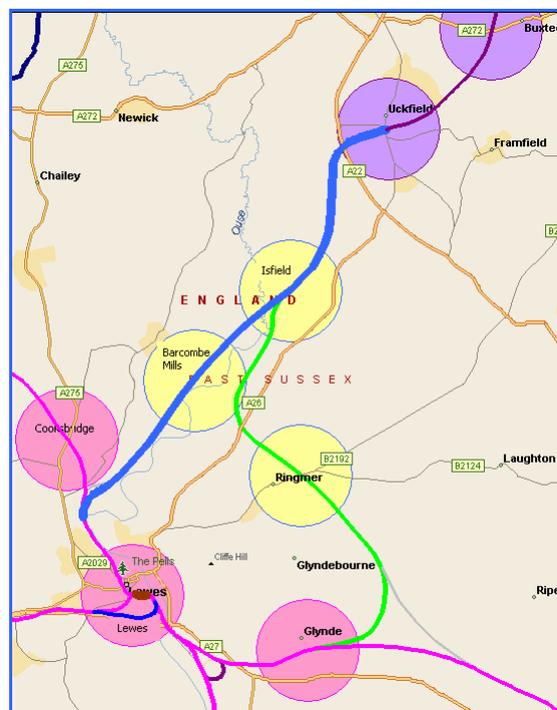
Lewes option 4 is a larger-scale scheme, intended to test if there is a reasonable route that avoids the South Downs National Park. (Under National Park planning rules, it will be mandatory to show that reasonable alternatives to running through the Park have been explored.)

Lewes option 4: Uckfield via Ringmer to Glynde and Lewes

This would be a longer route to re-open Uckfield-Lewes. It uses 3 miles of the former Uckfield-Lewes line to Isfield, before diverging on a 7 mile route with a potential station east of Ringmer, then avoiding Glyndebourne to rejoin the Lewes main line at Glynde. In total, Uckfield to Lewes would be about 13.2 miles with a journey time of 17-18 minutes, if including a Ringmer stop (about 9 minutes from Lewes) but no Isfield stop.

The line could be engineered through gently graded terrain. It would incur more route challenges as 7 miles would be new railway through good countryside, but avoids the South Downs National Park. The overall time from Uckfield to Lewes would be comparable to the former line via Barcombe plus use of options 1 or 2 to continue to Brighton. Overall the Lewes Bypass loop would still be a quicker option by about 5 minutes.

The option merits consideration as Ringmer is an expanding village with lower than average proportion of public transport travel to work (11.4%). Concerns about the railway stimulating more local housing at Ringmer would need to be addressed. At further cost, a direct spur towards Eastbourne could be built east of Glynde, otherwise Uckfield trains could not serve Eastbourne directly. Lewes could be served by Brighton trains.



Lewes area railways – option 4 – via Ringmer

Remodelling corridor journey times with infrastructure options

We are now able to review peak car and rail journey times between the Wealden Line, Uckfield, Lewes, Falmer, Brighton, and Sussex Coast towns (where Newhaven and Eastbourne have been chosen as examples). Options are maintained for a Heathfield connecting bus, to either Uckfield or Buxted, this time with travel available also towards Lewes and the Sussex Coast.

A link to Tunbridge Wells?

Tunbridge Wells is an important population and work destination in the national Travel to Work modelling, so we have tested a further option. This models a Wealden Line service between Brighton and Tunbridge Wells West via Lewes, along the preserved Spa Valley Railway (SVR) from Birchden junction near Eridge. It requires a commercial agreement with SVR, with agreed periods of service. 50 mph may be feasible over SVR with tracks maintained to main line standards but 25 mph is modelled.

Wealden Line connectivity		Semi-urban taken for various A26 and other cross-country journeys where significant extent of countryside encountered												Rural		
														Semi-Urban		
														Urban		
														TunWellsW		
CAR PEAK journey times (minutes, blue) and mph (green, quickest road distance between O&D)		31.8	33.5	33.0	34.1	36.7	34.7	39.0	35.0	24.9	29.2	24.0	28.6	27.5	30.7	61
		35.5	37.3	36.7	35.6	35.8	27.7	29.8	29.0	25.5	26.4	29.5	23.5	23.4	E.Croydon	42
		40.3	42.8	40.6	32.7	35.7	35.1	37.2	36.8	32.7	32.0	24.9	Edenbridge	17	Oxted	47
		32.6	33.7	32.1	34.2	37.8	37.9	40.2	40.7	34.2	31.9	34.8	Ashurst	14	Edenbridge	13
		33.0	34.3	33.3	34.8	38.6	39.0	29.9	42.8	23.1	31.9	34.8	Ashurst	14	Edenbridge	59
		31.6	33.0	31.2	34.3	36.7	34.2	21.5	40.2	20.2	10	23	Eridge	10	Edenbridge	8
		29.6	30.5	29.8	30.5	29.4	22.3	13.0	23.1	Crowboro'	10	23	Eridge	10	Edenbridge	17
		31.8	33.8	31.2	34.0	37.7	29.0	10.6	Buxted	16	16	22	28	41	72	25
		30.2	30.5	29.6	32.0	34.4	33.5	Heathfield	10	18	21	32	38	52	83	22
		28.5	29.4	27.4	31.4	26.8	Uckfield	14	9	25	21	24	30	44	75	26
		21.7	21.4	22.6	27.0	Lewes	20	25	20	38	32	37	43	56	81	38
		26.8	27.8	21.2	Eastbourne	36	39	35	42	49	53	61	68	83	107	55
		28.6	29.2	Newhaven	35	22	35	44	38	52	56	64	77	91	107	55
		19.2	Falmer	26	45	16	29	39	31	47	46	51	57	70	91	49
Brighton		16	33	54	25	36	46	39	55	53	59	65	60	74	74	60

Wealden Line connectivity		Timings include all trains serving Falmer. Heathfield connecting bus via Uckfield (20 minutes, type U), or Buxted (15 minutes, type B). Default is U.												TunWellsW		
		Time for through trains via Uckfield based on Lewes loop option.														
		Rail comparative timings via Uckfield (not via Brighton Main Line) shown in tan zone														
		Rail comparative timings via connection between Heathfield and Uckfield														
RAIL journey times (blue) and mph (green, compared using quickest road distance between O&D). Pink data is for modelled bus connection between Heathfield and Uckfield		34.0	33.8	36.7	31.0	35.7	31.7	17.8	23.4	22.1	16.3	13.0	20.5	23.9	30.8	61
		30.6	33.1	42.2	42.1	41.8	35.4	35.9	38.4	42.4	42.4	46.7	45.1	60.0	E.Croydon	48
		34.2	35.0	37.2	35.0	35.7	32.4	33.1	36.2	44.3	42.0	34.3	Edenbridge	10	Oxted	38
		40.3	42.7	45.4	40.8	45.9	44.9	24.7	55.1	54.0	66.0	Ashurst	14	24	23	37
		39.2	41.7	45.0	38.9	45.5	44.3	17.7	54.0	42.0	5	19	29	29	42	14
		42.5	46.1	49.9	35.9	52.9	50.2	10.7	51.4	Crowboro'	5	10	24	34	47	19
		29.9	30.5	33.5	22.4	30.0	24.3	Heathfield	7	12	17	31	41	54	37	48
		38.4	42.0	48.0	39.5	52.2	Uckfield	19	4	11	16	21	35	45	59	29
		33.4	38.0	54.7	49.2	Lewes	10	29	14	21	26	31	45	55	69	39
		45.0	46.2	18.9	Eastbourne	20	31	35	42	47	52	66	76	90	60	60
		35.3	44.8	Newhaven	39	9	20	39	24	31	36	41	55	65	79	49
		43.7	Falmer	17	27	9	20	39	24	31	36	41	55	65	79	49
Brighton		7	27	32	16	27	46	31	38	43	48	62	72	86	86	56

Wealden Line connectivity		JOURNEY TIME DIFFERENCES												TunWellsW		
		CAR-RAIL difference in jny time. RAIL FASTER = BLUE, CAR FASTER = RED. GREEN = Value of time savings per faster rail jny @ £11.11 (2013 value of time)														
		0.7	0.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0
		0.0	0.0	2.2	3.1	2.1	3.0	2.6	3.2	5.7	4.7	4.0	3.9	3.8	E.Croydon	+6
		0.0	0.0	0.0	2.2	1.3	0.3	0.0	0.1	2.0	1.2	0.7	1.3	Oxted	-20	+11
		0.6	0.4	1.6	0.3	0.0	0.0	0.0	0.0	1.3	0.7	0.0	Edenbridge	-7	-21	+6
		1.9	1.8	2.8	1.7	1.1	0.6	0.0	0.9	2.5	1.0	Ashurst	+0	-4	-22	+11
		1.9	1.8	3.0	1.2	1.1	0.9	0.0	0.8	1.0	Eridge	-5	-4	-7	-26	+6
		3.1	2.9	3.9	1.4	3.1	2.5	0.0	0.0	Crowboro'	-9	-5	-7	-11	-31	+2
		1.5	1.3	2.5	1.2	1.0	0.9	0.0	Buxted	+5	+4	-5	+3	-0	-18	+12
		0.0	0.0	1.0	0.0	0.0	0.0	0.0	Heathfield	+5	+6	+4	+8	+4	-14	+26
		1.7	1.6	2.8	1.5	1.8	Uckfield	-5	-5	14	5	-3	+5	+1	-16	+3
		1.6	1.3	2.4	3.0	Lewes	-10	+4	-6	-17	-6	-6	+2	-1	-12	+1
		4.0	3.3	0.0	West St Leo	-16	-8	+15	-7	-7	-6	-9	-2	-7	-17	+5
		1.2	1.7	Newhaven	+18	-13	-15	-14	-14	-16	-15	-9	-9	-12	-12	-6
		1.7	Falmer	-9	-4	-7	-9	+0	-7	-16	-10	-10	-2	+9	+9	-0
Brighton		-9	-6	-22	-9	-9	-9	+1	-8	-17	-10	-11	-3	+12	+12	-4

Peak journey time comparisons, Wealden Line & Lewes option 3, Heathfield-Buxted bus

There is a strong overall outcome from rail being reconnected from Uckfield, not just to Lewes but to Falmer and the Sussex Coast (Newhaven and Eastbourne are examples). For local journeys, rail from Uckfield to Lewes station can be 10 minutes faster than the modelled car peak time, 9 minutes faster to Falmer and Brighton, 8 to Eastbourne, and 15 to Newhaven. The time savings are better from stations further within the Weald.

These times are modelled on the basis of using a Lewes Bypass loop (Option 3), and trains calling at Uckfield and all stations northwards. The time savings would be about 5 minutes less with other options of linking via Lewes direct to Brighton. Also the savings would be less if trains called at other intermediate stations, eg Barcombe Mills or Isfield between Lewes and Uckfield, or at Moulsecomb between Brighton and Lewes. Journey time would be unaffected if trains called at Uckfield, Lewes and then direct to Newhaven or Eastbourne. It is assumed that infrastructure will be the minimum required – ie, selective doubling, or single and loops on the Wealden Line, if there were two London trains and one Tunbridge Wells train per hour. A third London train (4 tph in total) would probably require double track south of Birchden junction.

Use of the Ringmer route would offer fastest times between Eastbourne and Uckfield and north, if a spur were built towards Berwick (modelled as 25 minutes if trains called at Ringmer, Polegate, Hampden Park). This is 6 minutes faster than via Lewes.

Overall, the peak journey time advantages of rail on the Wealden Line are sensitive to the stopping pattern of the train services. This should be taken into account in setting conditional outputs for the Wealden Line corridor.

The Tunbridge Wells service option shows a peak time advantage, so supporting the concept of Brighton-Tunbridge Wells journey to work services in both directions. It is also useful for peak travel to East Croydon, changing at Eridge, though we would expect peak-time passengers with cars to drive to Ashurst or Eridge instead.

However separate off-peak modelling (overleaf) shows that rail is then slower than car for Brighton-Tunbridge Wells West. This hints at the potential for through main line peak services, and a co-operative off-peak or weekday/weekend commercial arrangement between the rail franchise and the Spa Valley Railway.

There are other journey time savings to be achieved for a Tunbridge Wells service:

- 4 minute time saving if converted from 25mph to 50 mph operation between Birchden junction and Tunbridge Wells West, with a 52 minute overall time.
- Semi-fast train operation, not calling at all stations, eg omitting Eridge but still calling at Falmer, in combination with higher speeds on the SVR, can achieve a 51 minute time. This would forego a connection towards Croydon.
- A potential benefit of this acceleration could be an hourly Brighton-Tunbridge Wells service requiring only 2 trains in operation.

A Heathfield bus connection, shown here via Buxted, has selective benefits towards Croydon (and by implication Central London), and holds its own on times vs. car, as a combined bus + rail service towards Falmer and Brighton, and Newhaven if direct train.

prioritise the Ashford-Hastings line as strategically the earlier to be electrified, if there had to be a choice, to stimulate the Hastings area economy. In that event, release of diesel units from Ashford-Brighton could allow short-term strengthening on the Wealden Line. Consideration could be given to splitting or joining diesel trains somewhere on the Wealden Line, to minimise unnecessary capacity and under-use of scarce diesels south of the splitting point, though there would be a journey time penalty.

However it will be necessary to identify Wealden Line electrification needs and options, urgently. For example, if there were insufficient diesel units available to keep pace with Wealden Line capacity and service requirements (with an extension to Lewes and Sussex Coast centres), then electrification would be essential to facilitate through services beyond any preliminary phase to Lewes. The recent evidence is that the Department for Transport and HM Treasury are willing to consider cases for 'infill' electrification if the outcomes are positive.

This in turn suggests a phased approach for the Wealden Line:

- Study the best initial and medium term cases for investment, to address economic growth and transport gaps in East Sussex and the Weald.
- Implement connections with Lewes and beyond to major destinations.
- Plan for further upgrading, including Brighton to Tunbridge Wells, and better off-peak and peak services towards Croydon and London.

A relief of Brighton Main Line (BML)?

We see the debate about whether the Wealden Line could eventually be a second Brighton express line as a separate layer of discussion, which is not relevant for the underlying short and medium term requirements of East Sussex and the Weald.

Connex when it proposed upgrading and electrification of the Wealden Line in its 2020 Vision document, published in 2000, advocated Brighton Main Line relief by:

- Selective capacity improvements along the existing BML.
- Arundel North chord allowing Worthing services to run direct via Horsham.
- East-side flyover at Windmill Bridge junction to permit Victoria to Wealden Line trains to avoid conflict with trains from London Bridge.

It saw the latter as sufficient to allow 2 stopping and 2 fast trains per hour via the Wealden Line, which were all that it considered justified, running at 'classic' timings ie not High Speed. The fast trains would have headed to Eastbourne and/or Newhaven/Seaford. In combination this was adequate for foreseeable needs. This output may remain true for the traffic generated by the Wealden Line towards Croydon and London.

Network Rail's new Long Term Planning Process now looks to 2043 for its planning capacity targets. There are at least 4 options for BML relief now available. These are:

- Completion of Thameslink works and other upgrading by 2019, in Control Period 5.
- Network Rail's emerging upgrade plans for the BML.
- WSP Consultancy proposals also focused on the existing BML, which also propose an Arundel North chord.
- BML2 scheme.

We note that demand changes are generally incremental, so that solutions will generally be better aligned and more affordable if they too are incremental. From an East Sussex perspective, access to Crawley/Gatwick, the Redhill/Reigate area and East Croydon all remain important destinations for journeys to work and business accessibility, for which the first three options are more relevant than the fourth. Accelerating the East Coastway line is also relevant to this objective.

Within the Wealden Line catchment, the primary focus should address local and regional access to more than just Brighton. It should embrace the county town, Sussex Coast educational campuses and Sussex Coast town economies, especially at Falmer, Newhaven and Eastbourne.

Access to London could be improved by the East-side flyover at Windmill Bridge junction which was planned previously. This would allow Wealden Line services to serve Victoria as well as London Bridge. This could be important for future train capacity planning, because London Bridge terminal platforms will in future be limited in total train volume, as they are being reduced from 9 to 6 platforms.

Conditional outputs for Wealden Line Corridor

WL1 Output: Assess the merits and feasibility of different rail links between Uckfield and Lewes

This should be measured on a transport basis and on a whole economy basis. The output should be taken in conjunction with **WL2** and **WL3** below, so although a link just to Lewes should be tested as a 'do minimum', the primary objective should be to review the scope for through services to key Sussex Coast destinations. The Ringmer option (Lewes option 4) might be considered here in terms of infrastructure issues.

WL2 Output: Assess the merits and feasibility of different rail infrastructure options to permit services beyond Lewes to Sussex Coast destinations

Again this should be measured on a transport basis and on a whole economy basis. The different infrastructure options in the Lewes area should be covered.

WL3 Output: Identify a range of Wealden Line service options, and define phases for their provision, assuming here that rolling stock is not an issue

Approach to include:

- Merits of through services to Brighton and/or other Sussex Coast centres.
- The foreseeable timing of requirements for additional capacity and frequency on Croydon and London trains, taking Network Rail's LTPP forecasting and other data into account.
- Definition of a phased approach to service development.

WL4 Output: Study of electrification options, merits and phasing, and the scope for using additional diesel units in the short or medium term and their sourcing

Here, rolling stock availability is an issue. Although we consider the first East Sussex electrification priority should be Ashford-Ore, to support Hastings regeneration, if there were insufficient diesel units available to keep pace with

Wealden Line capacity and service requirements (with an extension to Lewes and Sussex Coast centres), then electrification would be essential to facilitate through services. The output from **WL3**, understanding the scope of services and train requirements, is therefore an essential point of information for work on **WL4**.

WL5 Output: Assess the merits and feasibility of a main line rail service between Tunbridge Wells and Brighton, and the service pattern that would be most value

The preserved Spa Valley Railway now ends at Tunbridge Wells West, just south of The Pantiles. This output would also allow a review of linkage from the West station over the former route to Tunbridge Wells main station (which is partly built on), and/or calling at Groombridge SVR station.

It is worth noting that the journey time from Brighton to Tunbridge Wells West may permit efficient use of trains (perhaps only 2 diesel units for an hourly service, discussed earlier). However continuation to Tunbridge Wells 'main' would not be feasible with just 2, so at least 3 trains, and would it then be value to continue to Tonbridge to link with other lines? Or could South-eastern trains terminating at Tunbridge Wells, extend to Tunbridge Wells West to connect? Or should it be a bus connector via The Pantiles?

WL6 Output: Assess the case for additional Wealden Line local stations including Groombridge (on Wealden Line, existing station is on Spa Valley railway), Isfield, Barcombe Mills and (Lewes option 4) Ringmer.

WL7 Output: Assess the case for new or improved connecting bus services including Heathfield, and Ringmer if Lewes option 4 did not proceed. Improved bus links from Hailsham via Uckfield station might also merit assessment.

WL8 Output: Assess the best options for East Sussex and the Weald among the various Brighton Main Line capacity proposals

There are at least 4 options, as discussed above.

Consequences of implementing conditional outputs

The previous 2008 report was developed from the prevailing railway context as a limited extension to Lewes, not from an economic activity context nor with the new philosophy for long term railway planning to align with area growth needs which has emerged in 2013.

A new study for Uckfield-Lewes is emphatically not a 2008 re-write. It should start from the context that there is a serious job of work for an extended railway to do:

- the journey to work in Lewes, Falmer, Newhaven and the Brighton and Eastbourne urban areas
- the journey to learn in Lewes, Falmer, Brighton and Eastbourne
- the journey to regenerate at Newhaven
- the journey to leisure via Sussex Coast towns.

So the studies required are extensive. The least difficult element is possibly the former route between Uckfield and Lewes. Optioneering links in and around Lewes, or an alternative route via Ringmer, creates the real economic opportunities to access Falmer and Brighton, and for those places to access the Weald. Similarly Newhaven and Eastbourne can be advantaged.

There are many options for service structure and achieving better access and connectivity, including the potential of reconnecting with Tunbridge Wells. A key task will be to define phasing of any specified project, so that there is a clear route map from now to reopening to full service development.

These studies can also feed into the DfT-sponsored study of Uckfield-Lewes. The proposed conditional outputs may also provide a model for the DfT and Network Rail to adopt. Can the regional economic benefits which are the core of Railfuture's approach, combined with network capacity benefits that the Department for Transport and others may desire, be what is required to generate a positive business case?

Conclusions and next steps

Summary of report's analyses and its proposals

This report has taken a close look at the state of the East Sussex economy and the potential for rail to support its economy better, with improved access to jobs and education, and business connectivity.

- **We have particularly focused on the access and connectivity issues** among existing and new generations of residents, communities and businesses. Comparisons are made with neighbouring districts. The importance of addressing the travel needs of young working age residents and for educational purposes are set out, so that current and future generations can contribute fully to a strong county economy.
- **Travel to work patterns and the use of individual transport modes are set out** at the statistical scale of county, districts, towns, and parishes and super output areas. There are surprises in how public transport succeeds or under-achieves in various catchments. A number of towns with high numbers of working age population have poor use of buses and rail for the journey to work. This is not sustainable. More predictable is the importance of railheading from catchment hinterlands.
- **Comparative journey time modelling by car and rail has been undertaken** extensively, including car peak time and rail improvement options. The rail improvements are also underpinned by timetable modelling to show the scale of realistic improvements – we have endeavoured to anticipate what optioneering is plausible and what may be over-optimistic.
- **The report addresses the role of rail now and going forwards, to support economic growth through better access and connectivity.** East Sussex may not have a large rail network these days, but the railways are accessible, and are possibly the busiest they have ever been for daily passenger journeys and the journey to work or education - and they could be used still more.
- **There are plenty of opportunities for marketing, service and infrastructure improvements – and a major missing link, Uckfield-Lewes.** These opportunities have been reviewed critically from an economic growth perspective. The existence of new Local Enterprise Partnerships as a source of stimulus and possible funding has been recognised, as well as the importance of partnerships and collaborative work to take initiatives forward.
- **Conditional outputs have been proposed for each rail corridor – East Coastway, Marshlink, Hastings Direct, and Wealden Line, and are listed in Annex 2.** The rationale for those outputs has been justified by a perspective of connectivity to achieve economic growth. The proposed outputs require extensive study and assessment to drill down to the solutions for the next stage of transport and route planning. It will be the task of others, East Sussex, districts, local stakeholders, LEPs, the transport industry, and planners, to agree and prioritise: firstly the studies, secondly specific recommendations, and thirdly funding of investments.

- While we began our work with consideration of Uckfield-Lewes as a missing link, it rapidly became clear that any ideas for that needed to be embedded in a better understanding of East Sussex and its economy, and the general and particular roles of rail within the county and districts. **In practice, this report therefore sets out some significant thinking towards a rail strategy for East Sussex** which is primarily informed by its economy and supporting transport requirements.
- Some of the main outcomes which have emerged as a result of this logical and evidence-based process are set out below:
 - **A High Speed Javelin service from Hastings to London via an electrified Ashford-Hastings line and the HS1 line** would bring Hastings, St Leonards and Bexhill half an hour closer to London. If the economic growth results of Javelin for the East Kent and Thanet centres can be replicated in East Sussex, that would be a highly worthwhile outcome for high deprivation areas, as a result of railway investment.
 - This would also enable **the Hastings Direct line to focus on serving its intermediate communities better**, in Rother and Wealden Districts.
 - **The East Coastway corridor is the most important for East Sussex, and merits more and faster services to speed inter-urban links** – Brighton-Hastings in under 50 minutes, Lewes-Bexhill in under 30 are entirely feasible with a new direct line north of Eastbourne, and will better connect the Sussex Coast economies and the county town.
 - **Eastbourne merits not just faster links** as part of the speeding-up inter-urban priority, **but also the potential exists for an East Sussex Metro with walk-on frequencies to Bexhill and Hastings. Additional local stations are discussed** for the Eastbourne, Hastings and neighbouring areas, and some are already under review following LEP proposals.
 - **Investment in Uckfield-Lewes is more worthwhile for the East Sussex economy if it includes through trains** to Falmer (education) and Brighton (jobs, education and 24/7 lifestyles) and to Sussex Coast centres such as Newhaven/Seaford and Eastbourne. **Our research also points to the case for a Brighton-Tunbridge Wells peak service**, which would pioneer an agreement for main line operation over a preserved railway line, into Tunbridge Wells.
 - **A generally inclusive approach to bus-rail links, marketing, smartcard e-ticketing and travel information is also supported, along with more investment in railheading facilities.**

We commend the report to all partners in East Sussex and neighbouring communities, as a starting point for a new approach to access and connectivity for the county and its residents and businesses. We look forward to constructive discussions on the analyses and how the proposals can be taken forwards.

Next steps

This section is about the opportunities and timescales to influence. Typically rail projects can take years to come to fruition, while political imperatives can be shorter term. If private capital is involved, a funder might be patient but certainty that a project will emerge is still vital.

Opportunities to influence

The first stages of investment around the Docklands Light Railway show some relevant elements. It was a new concept, and people then didn't know if the idea of a railway focused on supporting economic development would work.

The chemistry emerged as a commitment by the local planning authority (the LDDC) to engage seriously on economic growth, helped by creation of an enterprise zone, and a funding commitment by a Government minister (Michael Heseltine) to pay for the (capped) capital costs of a growth-focused railway. Go-ahead was in 1983, the DLR didn't open until 1987, but within one year investor commitments had soared – including the unexpected Canary Wharf scheme.

The lesson is that clarity and commitment are the key ingredients, and the marketplace can do much of the rest.

It is also vital, for East Sussex and its communities and businesses, that the normative railway 5-year planning cycle for major investments – currently 2014-19 is being finalised, then it will be the turn of 2019-24 and so on – is capable of being paralleled by growth projects. The LEPs (Lewes District is in two, South East LEP and Coast to Capital) are one funding route which are currently prioritised by Government. The Treasury is vitally interested in new growth-driven opportunities, as is the Business Innovation & Skills Department. The Department for Transport is underpinning HS2 for national economic gains. The desire for growth will probably be true beyond May 2015, whichever colour of Government is in power.

Railfuture therefore considers that the key action for East Sussex, the LEPs and all partners is to bring to a state of readiness a range of schemes – not all will be rail-based – that are explicitly targeted at raising the county's economic growth horizons and other aspects. Collectively these can achieve a new scale of sustainable, positive wins for its communities and businesses. This work should be underpinned by a county-led sense of direction and purpose, to seize the opportunities.

Timescales to influence

There are rail planning processes which can't be bypassed, even if you are on a fast-track with growth outputs in mind and wider public policy backing. At a standard pace these amount to the 5-year cycle for the next railway investment control period, which is overseen by the Government and the Office of Rail Regulation (ORR). This is a highly formalised process which seems slow but is also meant to weed out non-viable and non-fundable ideas.

Railway planning calendar

The numbers started with Railtrack as Control Period 1 (1994-1999). We are currently in CP4, and are shortly to enter Control Period 5 (April 2014-March 2019). Much of the preparatory work for that has been underway for some years. The main elements are summarised below. The commentary below works backwards through this process to the originating ideas, as it is easier to describe that way.

- **Overall regulatory process, called Periodic Review.** Currently it is PR13 because ORR will issue a **determination** later in 2013 on what investment and operational expenditure and borrowing limits will be allowed for Network Rail in CP5, and which projects will be financed. PR13 will actually conclude in 2015, and PR18 will then begin. In practice, a preliminary determination has already been issued for CP5, and only a few projects have been eliminated; the priority now is on getting Network Rail's unit costs down for day to day maintenance and project management.
- **Government statements on priorities for national railway investment** are also issued at 5-yearly intervals, and generally slot in among the periodic review work one year before determination. There are two elements, both announced in July 2012. The first is a High Level Output Specification (HLOS) saying what the Government wants the rail industry to focus on and deliver, the second is a Statement of Funding Available (SOFA). In HLOS the Government won't necessarily specify all details, it is more a set of desired outputs which the rail industry needs to develop in more detail, to define best value, workable, affordable schemes across the country. The next HLOS/SOFA will be in 2017.
- Preceding the Government input – but actually the Department for Transport is involved continuously – is the **preliminary shopping list for projects prepared and bid for** by transport authorities such as rail operators, integrated transport authorities, Transport for London, Network Rail and (not yet but possibly shortly) Local Transport Boards/LEPs.
- For the 5-year slot bidding, these are worked into a **Initial Industry Plan** (published the autumn before HLOS), preceded itself by rail planning analyses such as the previous **Route Utilisation Strategies** published by Network Rail– what are the reasonable options to address gaps and capacity constraints in the rail network?
- **It is possible for projects to sit outside the 5-year Control Periods**, and this could be important for growth-related schemes. However if the investment is eventually to be counted in Network Rail's Regulated Asset Base (RAB, which has to earn a rate of return to pay for the funding on loan), then the project will still need to be scrutinised by ORR to see that there is a positive financial rate of return, or alternatively that other funding sources will cover some or all of the costs.

In broad terms, the new **Long Term Planning Process** introduced by Network Rail essentially bolts on to **Route Studies** (a variation of the former Route Utilisation

Strategies) a preceding **Market Study**, with different reviews for different sectors of national rail. East Sussex is in the London & South East market sector.

The draft Network Rail reports on this and other sectors are already published and out for consultation, and indicate strategic areas of priority for the railways to focus on and improve for the benefit of the London & South East communities and businesses. Questioning is along the lines of: what do people want railways do? what are railways good at? where are the opportunities for making a major impact in various timescales? There is outline demand forecasting to 2043, in various scenarios of UK economic and social trends over the next thirty years.

The importance of the LTPP process has been discussed earlier in this report. Get the answers right for East Sussex, and the energies of the rail industry can start to work towards helpful, convergent investment priorities. **The Conditional Outputs formulated in this report are intended to initiate a discussion among all stakeholders and within the rail industry about what can be important policies and priorities for rail to assist East Sussex in the next years and decades.**

They can be early building blocks for CP6 (2019-24) and CP7 (2024-29), under-pinned by PR18 and PR23, and by preceding HLOS and SOFA announcements in 2017 and 2022. So rail projects that East Sussex might want as a priority have to:

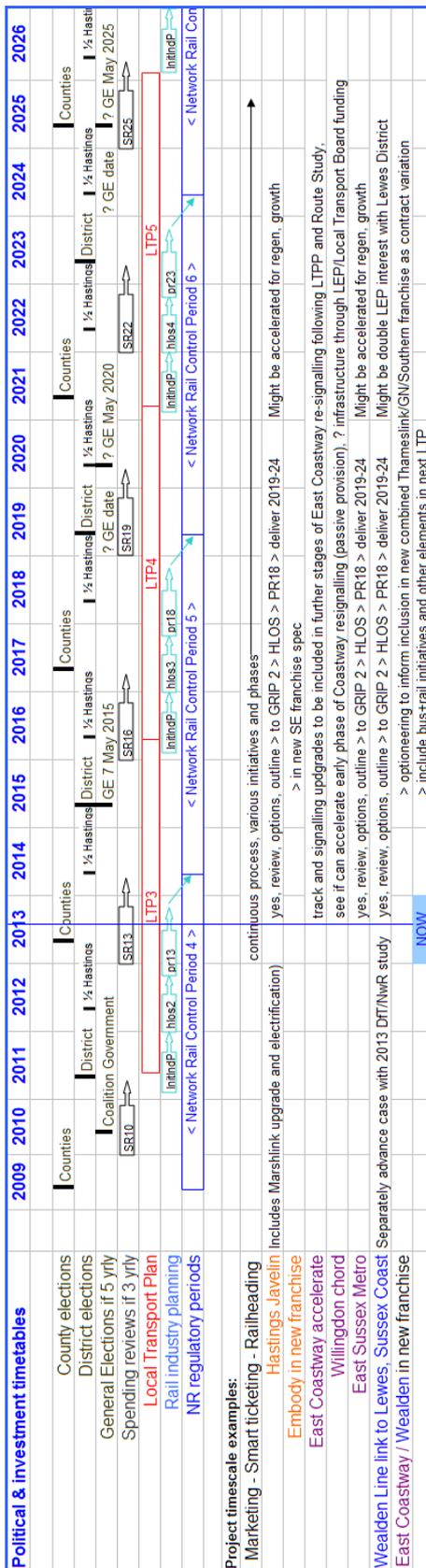
- Either show a strong business case in their own right, for example as growth initiatives with some separate funding, and pass a stand-alone ORR assessment
- Or need to be slotted into the next conveyor belt of 5-year rail planning, which is beginning now and leads via LTPP and Route Studies to development of initial project specification, by 2015/16 at the latest, in order to be ready to enter the next Initial Industry Plan.

[Network Rail Governance of Rail Investment Projects \(GRIP\)](#)

Also relevant are the standard project development sequences applied by Network Rail to assess specification and project costs, called **GRIP**. There are 8 stages, and a diagram is attached at the end of this chapter, to describe the stages and also contrast with the RIBA codes for building costs and specification (which more people may be familiar with). The overall headline is of a meticulous and sometimes frustratingly slow process, where checking and sign off of each stage can take as long as the basic development work within each stage. This is a further reason for East Sussex and partners to make early moves on any preferred schemes among those listed in this report, and any others that may be relevant, so that the start of a GRIP analysis can begin with Route Studies and an adequate level of detail undertaken before 2016/17. The more that schemes which show merit are 'oven-ready', the more results that should be delivered.

Political and financial timelines

Railway planning timelines are ultimately subservient to overall political and financial priorities, which themselves have their own calendar. For example, in 2013 we have



just seen a triennial Comprehensive Spending Review, so the next will be a creature of the next Government in 2016, if the cycle is normative.

The cycle of political elections is also fairly consistent, the more so since the coalition government confirmed the next General Election date as May 2015. This 5-year GE cycle might be continued by the next administration, instead of the date being a political lottery.

The diagram alongside shows the combined forward sequence of key dates for the next decade. The synchronisation of major sequences of elections and funding decisions and railway key milestones is most visible around 2015-17, and 2019-2020. So getting the economic growth priorities and any supporting rail schemes into some form of order is essential over the next two years, which will include necessary studies and initial project validation.

Part of that assessment and debate will inevitably be, 'what can the railway deliver by when?' Are there railway phases that can deliver early economic growth and transport gains? A further important question is to what extent the new overarching LEP and Local Transport Board process, proposed by Government, should allow acceleration of specific projects which have wide stakeholder backing – and in turn how does that backing get secured? For example, standard questions these days for a rail project, from Government and Network Rail, are 'does the County support this? Does the LEP support this? Is it a priority?' Only the County and LEPs and other stakeholders can answer this.

The DfT is the biggest contributor to the new £2bn Single Local Growth Fund (SLGF), and Transport Minister Norman Baker has said "We will be expecting the strategic economic plans put forward by LEPs to reflect a balanced package of measures – including appropriate transport

projects for their particular circumstances”. He also said DfT would be fully involved in the assessment of the LEP’s strategic economic plans and decisions on growth deals and how the competitive element of the SLGF is allocated to LEP areas.

So it is important that East Sussex and its partners say what they want for their economic and transport priorities, and in turn work in concert with transport authorities and supporters to commit to and then achieve relevant service changes and infrastructure investment.

We hope that this report will assist all, to take a view on how railway investment can be aligned with the economic growth requirements of East Sussex.

Railfuture’s commitment to East Sussex

Railfuture is a long-established, nationally and locally-organised, independent and voluntary, third-sector pro-rail development campaign. We salute the role of rail over more than a century and a half in expanding transport opportunities for communities and businesses, thereby enriching their economic prospects, a role being rediscovered and redefined in the twenty-first century.

Our declared aim is “to be the number one advocate for the railway and rail users”. We commit to continuing and developing that advocacy role in East Sussex, supporting the development of propositions for rail to make a relevant contribution to the realisation of identified economic, social and environmental needs and aspirations.

We stand ready to play a supportive role as a partner with public, private and other stakeholders at all levels in helping shape East Sussex fortunes. Our independence may enable us to play an ‘honest broker’ role. Our particular resources, such as experienced and well-connected Vice-Presidents, should enable us to bring some added value.

We trust that this report provides the basis for East Sussex to seize opportunities presenting themselves in the near future, and to develop a county-wide strategic basis for championing a programme of rail transport developments to underpin county growth. To that end we look forward to a collaboration in which the County Council develops support into active promotion, exercising its leadership role to the full.

As we lobby for a successful railway, we also wish to lobby for it to play a stronger role in a successful county.

Annex 1: Project Management stages – Network Rail and RIBA

Network Rail GRIP Governance for Rail Investment Projects	RIBA Stages of Work
<p>1: Output definition To define the output for the project: Defining the needs and requirements – the problem or opportunity through stakeholder consultation</p>	<p>A: Inception Develop the brief in consultation with the client, report feasibility, including budget, give advice on how to proceed, visit the site and give initial appraisal, advice on the need for other consultants and the scope of their services, advise on the need for any specialist work</p>
<p>2: Feasibility Define the scope of investment, identify constraints: Confirm that the outputs can be economically delivered, are aligned with organisational strategy, and identify solutions in response to the requirements</p>	<p>B: Feasibility Carry out any studies which may be needed to establish feasibility, review alternative design and construction approaches and cost implications, advise on statutory approvals needed, including health & safety, outline a timetable for the project.</p>
<p>3 & 4: Option selection & single option development Develops options for addressing constraints: Assesses and selects the most appropriate option that delivers the stakeholders requirements, together with confirmation that the outputs can be economically delivered, single option determined, stakeholder sign-off to option secured through Approval in Principle (AIP). Initiation of the development of the chosen single option: Reference/Outline Design</p>	<p>C & D: Outline Proposals and scheme design Prepare outline (sketch) proposals for preliminary approval.</p> <p>Develop a scheme design following discussions around stage C, liaise with any other consultants and advise where their work affects programme & budget, make a cost estimate, enable agreements over spatial arrangement, materials and appearance, prepare and submit a planning application (note no guarantees can be given that this can be obtained)</p>
<p>5: Detailed design Produces a complete, robust engineering design that underpins definitive cost/time/resource/risk estimates: Full design to which the project will be built</p>	<p>E: Detail Design Finalise detail design including co-ordination with other consultants and suppliers and integration of materials & sub-contracted work, cost checks where appropriate, advise where appropriate on the CDM regulations, prepare and submit Building Regulations Application and any other statutory requirements, negotiate as necessary on the latter</p>
	<p>F & G: prepare production information & bills of quantities Drawings, schedules & specification, provide information to the Quantity Surveyor (if used) for bills of quantities, complete information to enable contractors to tender</p>
<p>6: Construction, test and commission (overlaps also with RIBA Stage L) Delivery to the specification and testing to confirm operation in accordance with design: Project built, tested and commissioned into use</p>	<p>H & J: Tender Action & Project Planning Advise on a list of tenderers, issue tender documents to agreed list of contractors, receive tenders (with client presence if required), advise on results and contractor appointment (or arrange a price to be negotiated with one contractor), prepare the building contract and arrange signatures</p>
	<p>K: Operations on site Administer the terms of the building contract during work on site, visit site at intervals to inspect work progress and quality, make periodic financial reports to client including any cost variations</p>
<p>7 & 8: Scheme hand back and project close out Transfer asset responsibility from project team, project handed over to operator and maintainer. Contractual accounts settled, any contingencies and warranties put into place. Assessment of benefits carried out Close out in orderly manner: Project formally closed out and project support systems formally closed.</p>	<p>L: Operations on site Administer the terms of the contract related to completion of the work, give general guidance on maintenance, provide record drawings as required.</p>

Annex 2: List of proposed Conditional Outputs for rail in East Sussex

Generic outputs to improve public transport

- G1** Marketing and integrated ticketing.
- G2** Car parking and station railheads.
- G3** Bus interchange and foot and cycle access.
- G4** Travel planning advice.

East Coastway Corridor

- EC1** Reduce main inter-urban Coastway times by 10-15 minutes.
- EC2** Reduce main inter-urban Coastway times by a further 1-5 minutes.
- EC3** Fast journey times achieved at least every ½-hour on main inter-urban sectors.
- EC4** Introduce new local stations between Eastbourne and Hastings.
- EC5** Create 'East Sussex Metro' services between Eastbourne and Hastings.
- EC6** Stronger bus links: Polegate-Hailsham and Eastbourne, Bexhill, Hastings.
- EC7** Study case for a Polegate Parkway station.

Marshlink Corridor, and Hastings – Tunbridge Wells Direct Line

- MH1** Reduce Hastings area to London journey times to equivalents seen at East Kent and Thanet.
- MH2** Improve connectivity via Ashford and Coastway, to improve East Sussex's accessibility.
- MH3** Reduce fast rail times between Ashford and Hastings to under 30 minutes.
- MH4** Study the reasons for recent Hastings Direct Line passenger losses, and review actions to address this.
- MH5** Consider as part of **MH4**, to what extent through running (or reversing) at Hastings, or better interchange, would benefit East Sussex.

Wealden Line Corridor

- WL1** Assess the merits and feasibility of different rail links between Uckfield and Lewes.
- WL2** Assess the merits and feasibility of different rail infrastructure options to permit services beyond Lewes to Sussex coast destinations.
- WL3** Identify a range of Wealden Line service options, and define phases for their provision.
- WL4** Study of electrification options, merits and phasing, and the scope for using additional diesel units in the short or medium term and their sourcing.
- WL5** Assess the merits and feasibility of a main line rail service between Tunbridge Wells and Brighton, and the service pattern that would be most value.
- WL6** Assess the case for additional Wealden Line local stations.
- WL7** Assess the case for new or improved connecting bus services.
- WL8** Assess the best options for East Sussex and the Weald among the various Brighton Main Line capacity proposals.