First Interim Evaluation of the Impacts of HS1

Final Report

Volume 2 – Appendices

ATKINS

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Appendix

Appendix A. Evaluation Scoping Report

Evaluation of the Impacts of High Speed 1

Evaluation Scoping Report

27th March 2014

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Glossary: Terms and abbreviations used in this report

Additionality	An impact arising from an intervention is additional if it would not have occurred in the absence of the intervention.
BCR	Benefit Cost Ratio
Cost Benefit Analysis	Analysis which quantifies in monetary terms as many of the costs and benefits of a proposal as feasible, including items for which the market does not provide a satisfactory measure of economic value.
Deadweight	Expenditure to promote a desired activity that would in fact have occurred without the expenditure.
Discounting	A method used to convert future costs or benefits to present values using a discount rate.
Discount rate	The annual percentage rate at which the present value of a future pound, or other unit of account, is assumed to fall away through time.
Displacement	The degree to which an increase in productive capacity promoted by government policy is offset by reductions in productive capacity elsewhere.
DfT	Department for Transport
Evaluation	Retrospective analysis of a project, programme, or policy to assess how successful or otherwise it has been, and what lessons can be learnt for the future. The terms 'policy evaluation' and 'post-project evaluation' are often used to describe evaluation in those two areas.
External costs or benefits	The non-market impacts of an intervention or activities which are not borne by those who generate them.
Green Book	Official guidance on appraisal and evaluation of spending proposals produced by the Treasury
Hedonic pricing	Deriving values by decomposing market prices into their constituent characteristics.
HS1	High Speed 1, high speed rail link between London and the Channel Tunnel
ITT	Invitation to Tender
Magenta Book	Official guidance on policy evaluation produced by the Treasury
Market value	The price at which a commodity can be bought or sold, determined through the interaction of buyers and sellers in a market.
Marginal utility	The increase in satisfaction gained by a consumer from a small increase in the consumption of a good or service.
NPV	Net Present Value
Sensitivity analysis.	Analysis of the effects on an appraisal of varying the projected values of important variables
Social Benefit	The total increase in the welfare of society from an economic action - the sum of the benefit to the agent performing the action plus the benefit accruing to society as a result of the action.
Social Cost	The total cost to society of an economic activity - the sum of the opportunity costs of the resources used by the agent carrying out the activity, plus any additional costs imposed on society from the activity.
TfL	Transport for London
WebTAG	Web Transport Appraisal Guidance. Guidance on the appraisal of transport projects produced by DfT
WEI	Wider Economic Impacts

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2. The Overall Study Approach

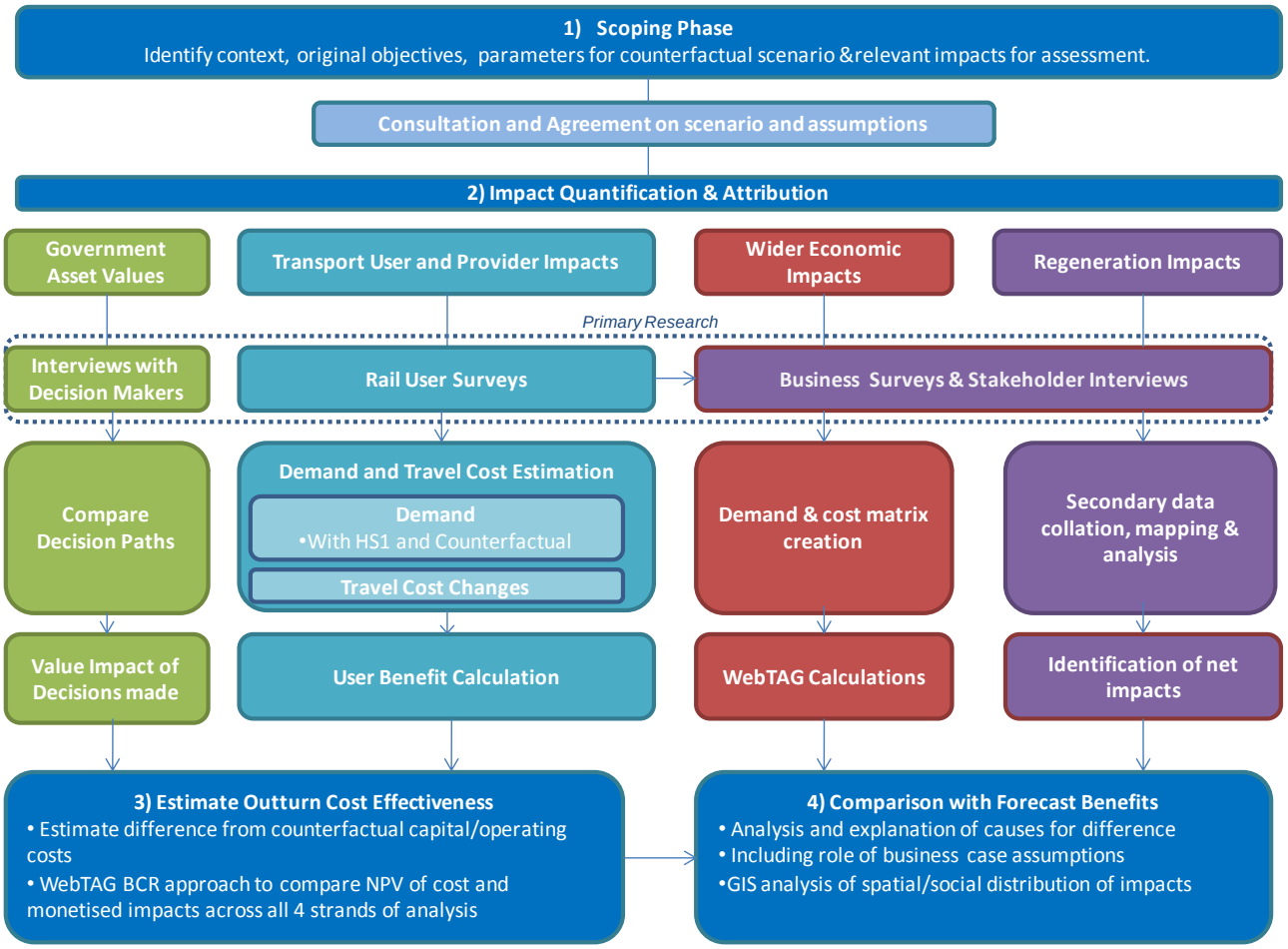
The overall approach we are adopting to evaluating the impacts of HS1 is one that recognises the need for compliance with WebTAG[1], Green Book and Magenta Book guidance. It is designed to estimate the outturn cost-effectiveness of HS1 on the basis of evidence of the impacts attributable to it in four categories, as specified in the ITT provided by the DfT (**Appendix A**):

- Government asset values;
- Transport user and provider impacts;
- Wider economic impacts; and
- Regeneration impacts.

The overall approach, summarised in **Figure 1** below, has four key phases:

- A review of the scope and approach to be adopted for the evaluation including logic mapping and scenario definition – the output of which is this report;
- An analysis phase that will establish the tools and data necessary to evaluate the impact of HS1 and derive the impacts either quantitatively or qualitatively;
- An estimation of the outturn cost-effectiveness and value for money performance of HSI including the estimation of costs and the calculation of an NPV and BCR for HS1; and
- A comparison with forecast impacts covering impacts in all categories.

Figure 1. Summary of Approach to the Evaluation of HS1 Impacts



[1] http://www.dft.gov.uk/webtag/

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3. Scenario Definition and Logic Mapping

3.1. Scenario Definition

3.1.1. Introduction

To evaluate the impact of HS1 we need to define what we mean by HS1 (the 'with scheme' scenario) and what we are comparing against as a counterfactual (the 'without scheme' scenario). This allows the evaluation to identify the outcomes that are observed with HS1, and how they would have differed had the scheme not been built.

The scenarios are defined by:

- The socio-economic drivers of transport demand and other impacts which are being measured (e.g. Regeneration); and,
- The policy context – the decisions taken by local and national government on investment in HS1, service patterns that might be procured through franchises, fares policy, planning policy and so on.

The definition of the HS1 and counterfactual scenarios are critical to the evaluation. However the definition of these scenarios also creates challenges on both a technical and conceptual level. This section first considers the challenges of defining socio-economic assumptions and handling feedbacks between outcomes and inputs. It then looks at how the policy context should be defined before summarising the implications for the evaluation of HS1.

3.1.2. The HS1 Scheme

The evaluation of HS1 will consider the impacts of the scheme as a whole, and not the individual elements or sections which were constructed separately. The 'HS1 Scheme' is considered to comprise:

- A new 109km high speed line connecting St Pancras International in London to the Channel Tunnel at Ashford in Kent (Section 1 opened Sep 2003; Section 2 opened Nov 2007).
- New / improved high quality station environments at St Pancras, Stratford, Ebbsfleet, and Ashford, with additional parking and retail provision.
- Re-routing of Eurostar services to the continent via the new high speed line, instead of utilising existing routes from Waterloo to the Channel Tunnel. This includes an additional stop at Ebbsfleet; and relocation of the international London Eurostar terminus from Waterloo to St Pancras.
- Domestic high speed trains (Class 395) and high speed services to north and east Kent, with associated premium fares.
- A major revision of the Southeastern timetable (Dec 2009) relating to the classic network (Mainline and Metro Services), and increased fares across the Southeastern network.
- New high speed rail freight capacity between London and north and south Kent.

3.1.3. Feedback Loops and Socio-economic Drivers

Given the complexity and uncertainty surrounding capture and evaluation of feedbacks within the scenario definition, the approach to be adopted will be one that is consistent with evaluations undertaken for other schemes. Assumptions on socio-economic drivers will be drawn from established methods (e.g. WebTAG) for quantitative assessment of impacts. Where significant feedbacks are identified, a supplementary consideration of the implications of these will be included in the evaluation. The reasons for this approach are elaborated on below.

Defining socio-economic drivers of transport demand and other impacts is often viewed as a simple set of assumptions. There are numerous sources for these variables, and many data sets are provided by WebTAG. Most scheme appraisal and evaluations take the observed and forecast values of each driver and treat them as exogenous – in other words that the scheme itself will not have affected any of these data.

However such an assumption needs careful consideration with a scheme the size of HS1. Feedbacks between outcomes of the scheme and socio-economic drivers could be significant. For example, one objective of HS1 was to generate employment and economic growth. This in turn would have driven higher transport demand, potentially increasing patronage on HS1 and so affecting the assessment of benefits. It may also be that some of this growth represents a redistribution of economic activity, so while this feedback may increase demand on HS1, it may be a more negative impact in other areas.

Attempting to take account of these feedbacks presents many challenges:

- The technical tools required to assess such changes (e.g. Land Use Transport Interaction (LUTI) models) are complex and time consuming to develop; creation of such models, or augmenting existing models to meet the needs of this evaluation is outside the scope of this study (The LonLUTI model developed for TfL may contain useful planning information and contact has been made with TfL to explore the use of this data:. See **Appendix C** for more information);
- The theoretical approach to assessing these impacts is not well developed: WebTAG approaches may not be appropriate and there is a significant risk of double counting and missing costs and benefits; and
- The greater degree of uncertainty around outputs from the study in this respect could distract and detract from the presentation of the overall evaluation of impacts of HS1.

For these reasons the evaluation will not explicitly include feedback loops within the overall assessment of impacts. However, during discussions with DfT during the scoping phase, interest has been expressed in these impacts being considered as an overlay element of the overall evaluation study. As a result, a possible qualitative approach to identifying the significance of these feedbacks is outlined in **Section 8**.

3.1.4. Considerations in defining the counterfactual scenario

The HS1 scenario is well defined. Current investment decisions and other policies are observed following the delivery of HS1. However what this should be compared against as a counterfactual (without HS1) scenario is harder to define.

The definition is influenced by what the evaluation is trying to measure:

1. Was HS1 the best way to deliver the objectives of the scheme? This implies a comparison against alternative ways of delivering the objectives HS1 sought to meet;
2. What is the Value for Money (VfM) of the investment in HS1? This implies an evaluation against HS1 not being built and no alternative being put in place.

In many ways a definition based on 1. above could be considered the more realistic approach to adopt. Had HS1 not been built, alternative policies may well have been implemented to deliver some or all of the objectives of HS1 – and such policies may not have been limited to transport interventions. However it is not the objective of this study to assess whether HS1 was the best use of funds, but to evaluate the impact HS1 has had. Consequently, approach 2, assuming no HS1 alternative investment is to be adopted in defining the counterfactual scenario.

This is consistent with other transport evaluation (e.g. Post Opening Project Evaluation by the Highways Agency), and has a number of advantages:

- The evaluation of HS1 impacts will inform the understanding of the potential impacts of HS2. Adopting approach 2 is more consistent with the approach to appraisal and scenario definition used by HS2, which will help aid identification of any relevant 'lessons learned';
- It provides greater clarity and reduces the need for judgements, which may be subjective and face numerous alternative perspectives;
- It is more consistent with survey data, which will necessarily compare against people's experience or understanding of a scenario without HS1 (rather than an alternative to HS1); and
- It reduces the need for multiple scenarios and is a more practical approach within the resource and time constraints set by the DfT.

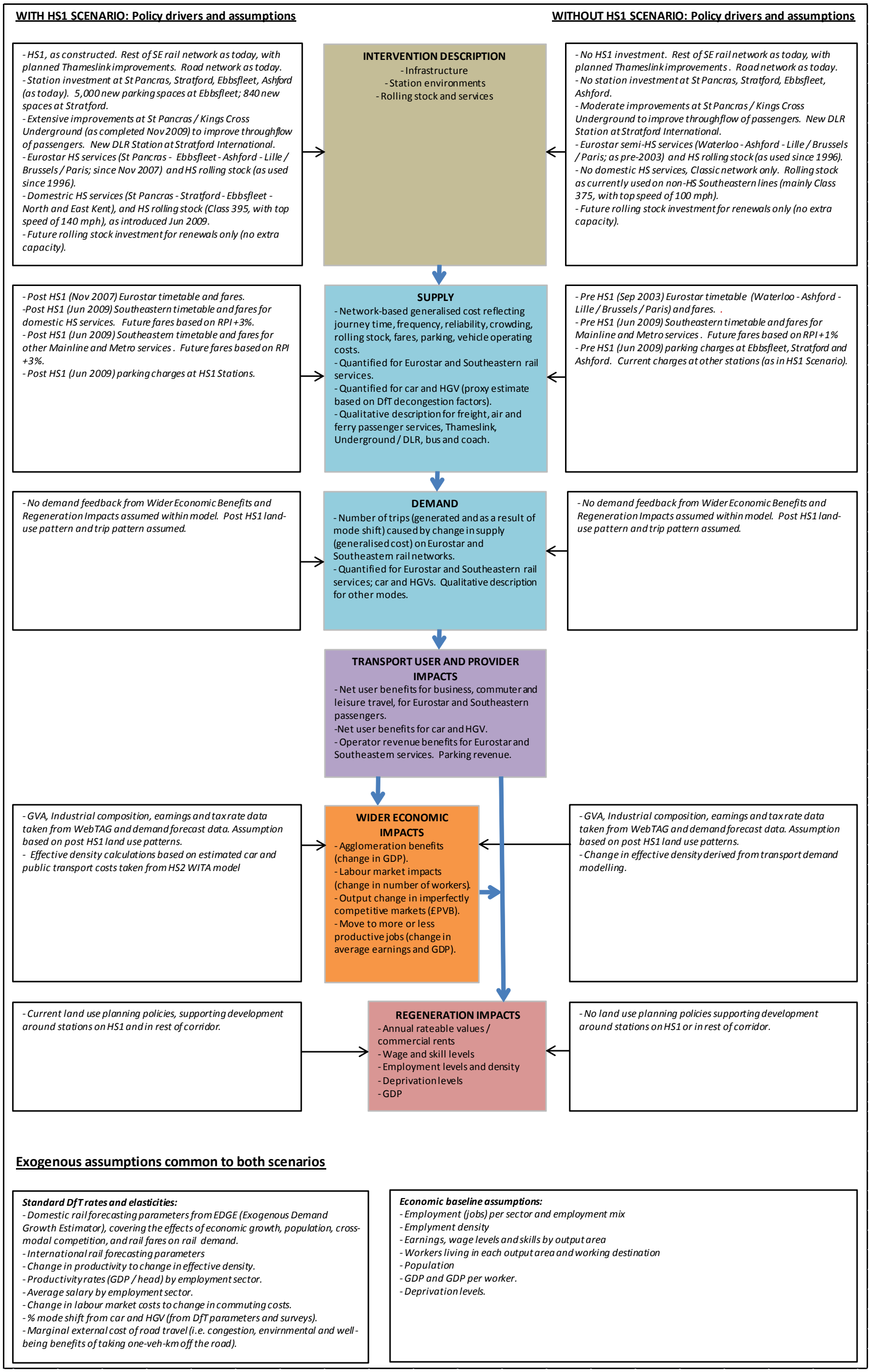
It is important to recognise that a scenario of no alternative investment does not equate to a no investment scenario – rather only schemes which would have been built regardless of whether HS1 was implemented will be included in the without scheme scenario. This includes Thameslink and investment in St Pancras Underground station which is likely to have been upgraded even if HS1 had not been built. These investments should therefore appear in both the with and without scheme case.

3.1.5. Implications for the Evaluation of HS1

Figure 2 provides a summary of the HS1 and counterfactual scenarios being used for the evaluation of HS1. The principles around this have been set out above and include:

- Socio-economic drivers taken from existing data sources, and so not including the impact of feedback loops. Transport forecasts will be produced using the EDGE toolkit;

Figure 2. Scenarios and high level Logic Map for HS1 evaluation



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- Key input assumptions (e.g. parameters for Wider Economic Impacts) being drawn from standard guidance including WebTAG; and
- The counterfactual scenario being based on the principle of no alternative investment – and therefore draws heavily on the networks, timetables and fares policy in place prior to the opening of HS1.

Figure 2 also presents how the scenarios fit within the overall project and with the logic maps produced as part of the scoping phase, which are discussed in section 3.2. The logic maps describe how differences between the HS1 and counterfactual scenarios feed through as outputs which then deliver outcomes (benefits and impacts) which are captured in the evaluation. **Figure 2** excludes the capture of HS1 impacts on Government asset values which is covered subsequently in section 3.2.2.

3.2. Logic Mapping

3.2.1. Introduction

The logic maps set out our 'theory of change' for High Speed 1

- Our understanding of the changes which have arisen as a result of the HS1 scheme such as changes in train service provision – the **outputs**
- The type of **outcomes** (a variety of benefits and impacts) which have resulted from the outputs; and
- The processes (intermediate steps) by which these have occurred.

The maps represent the starting hypothesis for the evaluation, and provide the framework for undertaking the evaluation.

The evaluation of HS1 Government asset values is to a significant degree a discrete area of evaluation within the overall study, and a logic map has been prepared to reflect the impact and causal chain with respect to changes Government asset values generated by the HS1.

Three further and more detailed and interrelated logic maps have been prepared, relating to each of the other key areas of change: transport user benefit impacts; wider economic benefits, and regeneration impacts. Transport user benefit impacts represent the more immediate changes associated with the implementation of HS1; and in turn drive wider economic benefits and regeneration impacts.

These Logic Maps do not aim to capture every potential effect of HS1, but rather to identify the theory of change, and hence the appropriate evaluation approach, for any impacts material to this study. For instance, the Logic Map for transport user benefit impacts relates the Transport Economic Efficiency (TEE) aspects of WebTAG[2] appraisal methodology to the specific features of HS1.

The logic maps have been prepared in a format which is consistent with WebTAG appraisal methodology, which forms the basis for the evaluation methodology. All potential changes identified in the logic maps will be considered in the evaluation, in either a quantitative or qualitative manner.

3.2.2. Government Departmental Shareholdings and Asset Values: Logic Map

Figure 3 presents the logic map associated with the impact of HS1 on Government asset values.

The logic map describes how the creation and sale of specific assets as a consequence of HS1 subsequently led to specific structural actions generating some specific outcomes. These outcomes will be reflected in a value of a variety of Government shareholdings and assets.

[2] The WebTAG approach to assessing user benefits assumes that the economy behaves in a theoretically 'perfect' manner and that passengers make 'economically rational' choices i.e. have sufficient knowledge of all transport options to be able to adopt the lowest cost option (including monetary and perceived time costs). Wider Impacts are included in WebTAG because they are not captured under the perfect competition assumptions of TEE.

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Figure 3. Government Departmental Shareholdings and Asset Value Impact Logic Map

Departmental shareholdings and asset values logic chain mapping			
Policy objectives	***Actions (inputs)***	***Outputs***	***Outcomes - impacts on the value of***
1. **Completion of HS1**: Build a high speed railway between London and the Channel Tunnel for international and domestic rail services. 2. **Sale of HS1**: Reduce taxpayer's long-term risk exposure and realise best value from LCR's businesses and assets.	1. Award of HS1 contract to LCR (December 1996) 2. First restructuring (June 1998) 3. Second restructuring (June 2002) 4. Taking LCR into public ownership 5. Sale of HS1 Ltd (November 2010)	1. Public assets transferred to LCR 2. Provision of direct grants 3. Provision of taxpayer guarantees on bonds and low interest loan facilities 4. Government *de facto* purchase of LCR debt and (some) LCR debt write off 5. Government acquisition of 40% stake in Eurostar International Ltd. 6. HS1 sales revenues	1. Government debt 2. Government contingent liabilities 3. Government property development assets 4. Government shareholdings

3.3.3. Transport User and Provider Impacts, Wider Economic Impacts and Regeneration Impacts: Logic Maps

Figures 4, 5 and 6 present the logic maps relating to the evaluation of transport user impacts, wider economic impacts and regeneration impacts respectively.

The immediate **outputs** associated with the HS1 scheme, as described previously in 3.1.2, include a **change in supply** (i.e. journey time, frequency of service, reliability and crowding performance, and cost of travel), resulting in an overall change (increase or decrease) in generalised cost for different groups of transport users (Eurostar, Southeastern, and Thameslink passengers, and freight).

This results in a **change in demand** across the rail network, as a result of trip generation suppression and transfer between modes or types of rail services; and a change in **transport outcomes** in the form of a variety of **transport user and provider impacts** comprising aggregate user benefits for business, commuter and leisure travel by rail and road, operator revenue, parking revenue, and associated environmental and well-being externalities (e.g. air quality, carbon emissions, safety, accessibility, etc); see **Figure 4.**

The change in transport outcomes (specifically the net change in generalised cost for business and commuter travellers by rail and road, weighted by demand) in turn drives a **change in the wider economy** (or **wider economic impacts**) resulting from a change in agglomeration (the proximity of existing businesses to each other and to potential employees), a change in the number of people in the labour market, and a change in the type and productivity of jobs which people are employed in, adjusted to reflect the imperfect nature of competitive markets; see **Figure 5**.

The change in transport outcomes (specifically the net change in generalised cost for business and commuter travellers by rail and road, weighted by demand) also has the potential to deliver **regeneration impacts**. These might include a change in property values and rents, creation of new jobs, and a change in business performance (due to a change in levels and density of employment, turnover and profit, skills base, etc); see **Figure 6**.

In addition, the change in land-use and employment opportunities associated with **wider economic impacts** and **regeneration impacts**, will generate additional demand for commuter and business travel above that derived purely from the **changes in transport supply**. The additional **change in demand** in turn will feed through the logic chain resulting in a second order **change in transport user and provider impacts, wider economic benefits impacts and regeneration impacts**. These feedback mechanisms need to be recognised and will be considered as part of the evaluation study as discussed in Section 8.

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Figure 4. Transport User and Provider Impacts Logic Map

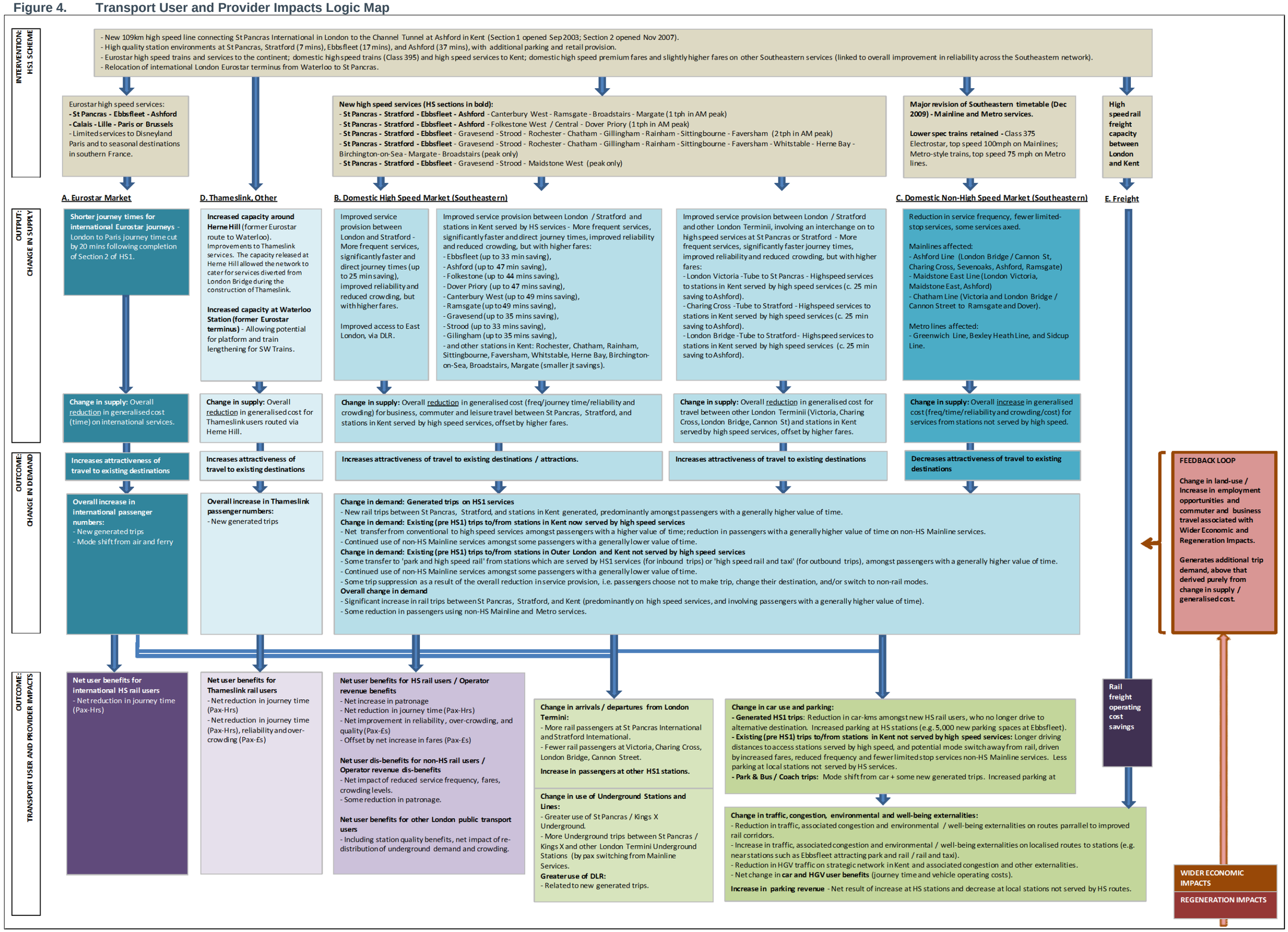

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Figure 5. Wider Economic Impacts Logic Map

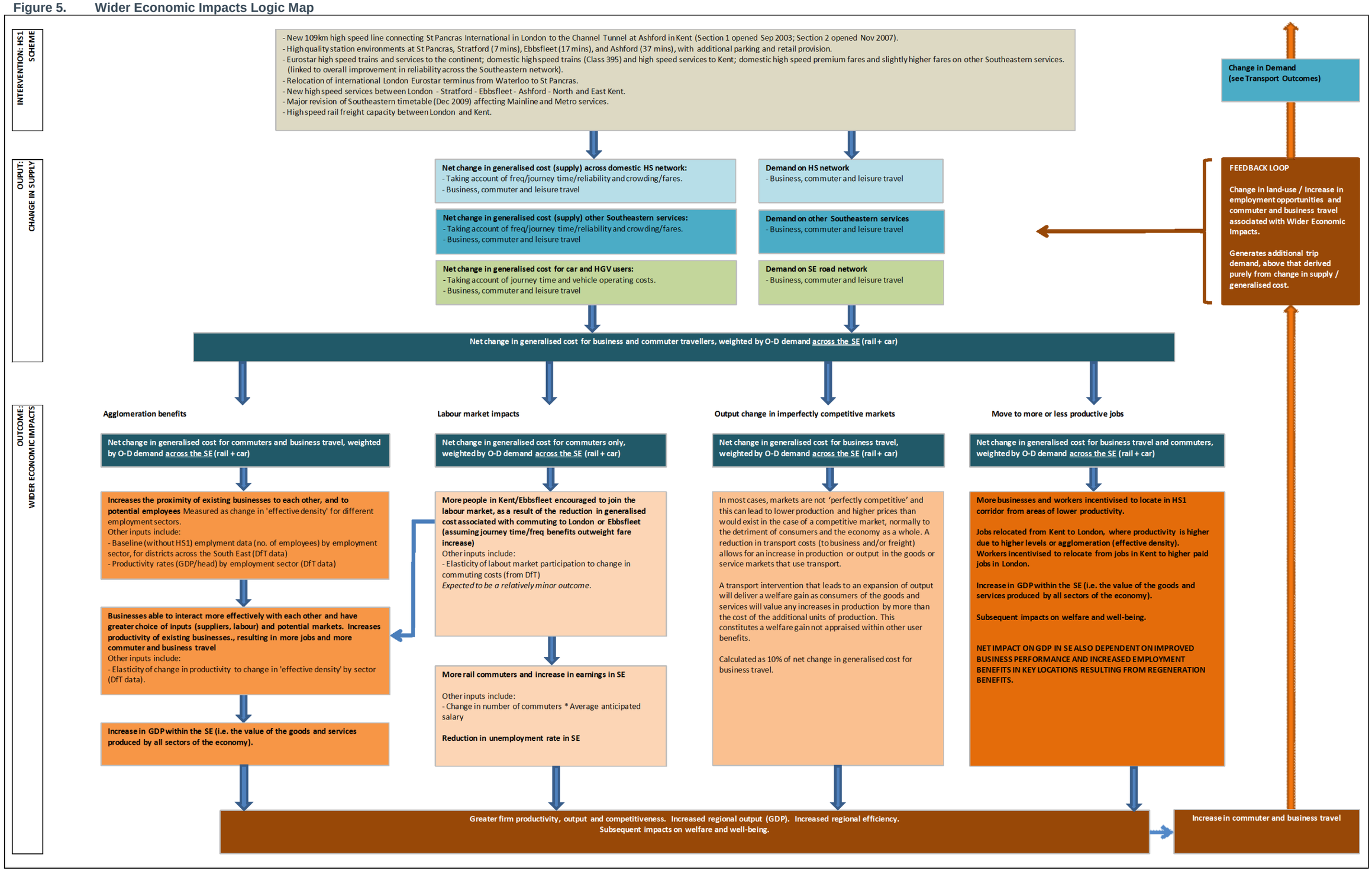

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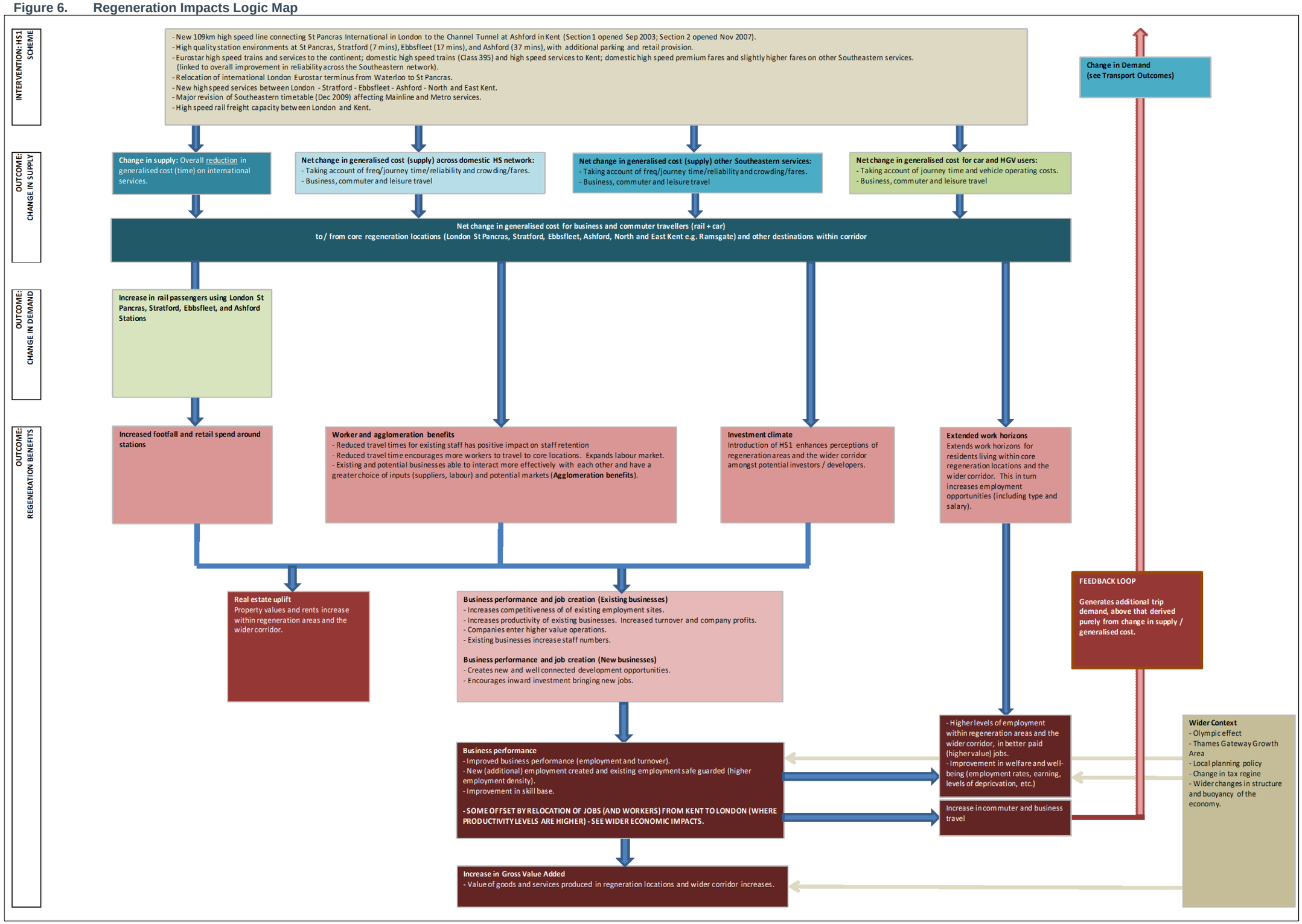
Figure 6. Regeneration Impacts Logic Map



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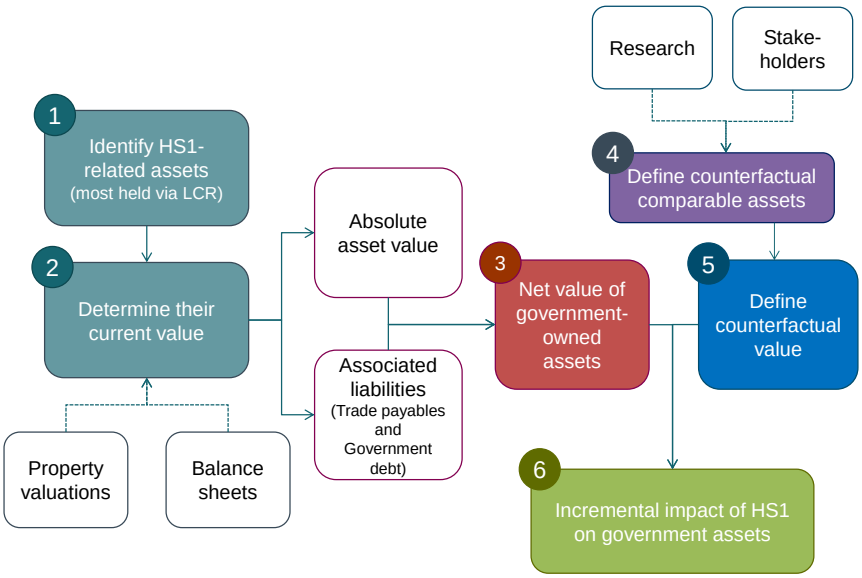
4. Evaluation Methodology: Government Departmental Shareholdings and Asset Values

4.1. Detailed Methodology

This workstream focuses on determining the value (both absolute and incremental) of Government-owned assets related to HS1. In addition, we take into account the value of any relevant, associated liabilities. Therefore, in effect, we will actually assessing the net value of any assets owned by the Government as a result of the HS1 project.

The figure below summarises our approach in diagrammatic form.

Figure 1. Overview of our approach



The first step will involve identifying the existing asset portfolio (and the associated liabilities). That is, all assets and liabilities that are HS1-related and that the Government owns or owes now. Most of the relevant assets are currently held via the company LCR (London Continental Railways), though the Government also owns the freehold of the HS1 line.

The second step will involve determining the current value of all the assets and liabilities, as they are now. To do this, we will review the recent financial statements of the relevant entities and also any appropriate property valuations undertaken by chartered surveyors.

This will allow us to reach step 3, which will involve calculating the absolute net value (i.e. after offsetting any relevant liabilities) of the Government-owned assets.

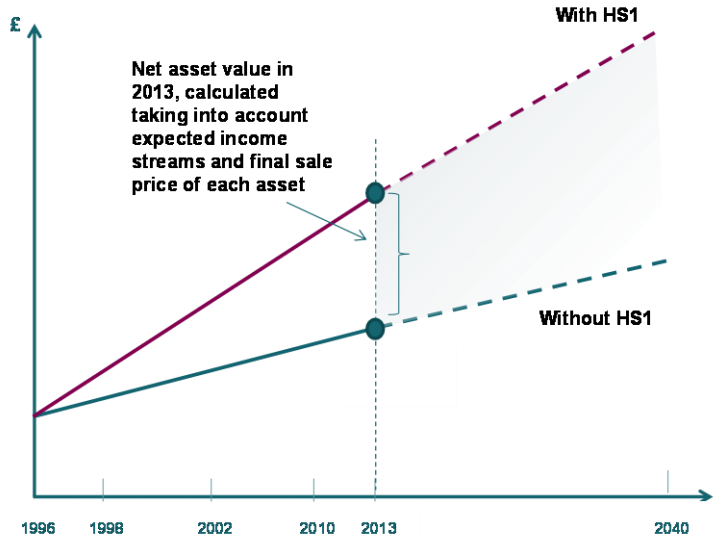
To calculate the incremental impact of HS1, however, we will need to define a counterfactual scenario where HS1 had not happened. We will do this in Step 4, where we will define the counterfactual scenario by considering the following criteria.

- Firstly, we will consider whether each asset or liability would have still existed, in the absence of the HS1 project.
- Secondly, for the assets which would have existed, we will consider whether the Government would still have owned them in the absence of HS1.

Only the assets fulfilling both criteria should be included in the counterfactual scenario.

In Step 5, we will then consider the approximate value those remaining assets would have had if the HS1 project had not been pursued.

Finally, this will allow us to express the current value of assets in incremental terms, which we will do in Step 6. As shown in the figure below, the incremental net asset value as at the end of the 2013 financial year will be calculated as the differential between the current actual net asset value and the net asset value under the counterfactual scenario without HS1.



Our valuations will reflect the present value of the relevant assets and liabilities. Consequently, for example, any forecast future income streams relating to property assets will be taken into account only until their expected sale date, at which point the expected sale price is also incorporated.

Finally, we will also attempt to consider how the key restructuring events in 1998 and 2002, when the Government had to intervene in LCR's financing and operations, might have affected the Government asset portfolio. This is both in terms of the portfolio's composition and its value. In other words, we will look at what could have happened absent the financial restructuring which occurred in 1998 or 2002.

4.2. Stakeholder engagement

To achieve the objective of this workstream, we will rely on engaging with several stakeholder of the HS1 project. Specifically, engaging with stakeholders will help us with define the asset portfolio currently held by the Government. It will also help us define the counterfactual scenario, especially with regards to understanding the contribution that HS1 played in the development of the assets considered.

Specifically, we expect to consult the following stakeholders:

- LCR, for information on current assets, their valuation and plans relative to their future development and sale;
- DfT for the valuation of the HS1 infrastructure;
- HS1's financial statements from inception;
- Public stakeholders, including local authorities which directly benefited from the developments (Camden, Islington and Newham) and the London Legacy Development Corporation.
- Private stakeholders, such as property development and businesses operating in the areas affected by HS1.

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5. Evaluation Methodology: Transport User and Provider Impacts

5.1. Logic Map and Overall Approach

The logic map underpinning the evaluation of Transport User and Provider Impacts is presented in Section 3.2.3, **Figure 4**.

The Transport User and Provider Impacts workstream will estimate the impacts of HS1 and associated Southeastern timetable changes on users and providers of the transport system. Users are defined as all those people (whether UK based or foreign) making journeys on elements of the UK transport network that are materially affected by the introduction of HS1. This specifically includes users of the High Speed network itself (including Eurostar passengers) and users of other public transport services and the road network (local and strategic) in the Kent area.

HS1 has had a range of impacts, some positive and some negative, distributed across a range of categories of transport users and providers. The evaluation will capture these impacts, quantify them as far as is feasible, avoiding double counting, and aggregate them to estimate the net benefit/disbenefit of the scheme on each category of interest.

The assessment will follow the approach set out for appraising proposed transport schemes in the DfT's WebTAG appraisal guidance which has been specified to capture the full range of potential impacts of transport schemes (either quantitatively or qualitatively) without double counting, with monetised user benefits estimated on the basis of a set of underlying assumptions about the theoretical behaviour of the economy and of passengers when making travel choices.[4]

In line with WebTAG, user benefits will be calculated using the 'rule-of-half' methodology (see **Figure 10)** with those who are estimated to use rail in both the counterfactual and with HS1 scenario attributed the full benefits of rail generalised cost savings and those using rail in the with HS1 scenario who would not use rail in the counterfactual attributed half of the benefits on average[5]. The impacts of HS1 on the 'generalised cost of travel' will be considered for three trip purposes (business, commuting and leisure) as set out in WebTAG. 'Generalised cost' accounts for both the time and monetary components of the cost of a journey from its origin to destination, including components such as access and waiting times and penalties for necessary interchanges between services. For non-business trips, it also includes weightings to account for the relative value of time spent on different activities as perceived by passengers (for instance a minute spent walking to access a train is perceived to be equivalent to 2 minutes spent travelling on board a train).

In line with WebTAG, the calculations will also account for impacts of HS1 which, although not experienced by transport users themselves, directly relate to the amount of demand for HS services, in particular, the amounts of revenue received by operators in the corridor.

For passengers who would use rail in the counterfactual and choose to pay the premium fare for services using HS1, the extra revenue to the rail operator will be directly offset by the change in user costs to the passenger. For new rail users, however, whose benefits are estimated by the 'rule of a half' (see **Figure 8**), the new revenue results from fares which form part of the net generalised cost change leading to their perceived benefit and will be treated as such.

Figure 7 shows the range of relevant potential user and demand related benefits and disbenefits of HS1 and associated externalities, identified in line with the impacts set out in WebTAG. As the focus of the study is on attempting to quantify the effects of HS1, the impacts considered are focussed on those with the most scope for quantification and/or monetisation. The selection is based on current best practice as set out in WebTAG. Other potential impacts identified in WebTAG which cannot currently be quantified are more minor and will be addressed qualitatively in the reporting.

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[4] The WebTAG approach to assessing user benefits assumes that the economy behaves in a theoretically 'perfect' manner and that passengers make 'economically rational' choices i.e. have sufficient knowledge of all transport options to be able to adopt the lowest cost option (including monetary and perceived time costs)

[5] This approach is based on the presumption that High Speed travel is seen a variation on the existing rail mode rather than a new mode.

Figure 7 captures all significant benefits and disbenefits of HS1 when compared with the counterfactual scenario. However, given the finite resources available for the study, in practice, the quantitative work will concentrate on those impacts expected to make the biggest contribution (whether positive or negative) to the total measured effect of HS1. Other impacts will be assessed qualitatively. This approach recognises that the resources required to estimate the scale of some of the more minor impacts are likely to be disproportionate to their contribution to the net effect of HS1, particularly in the context of likely high levels of uncertainty around the identification of the extent to which small impacts are attributable to HS1.

Figure 7 highlights those impacts considered most likely to be significant (positive or negative), as darker blue; those expected to have a moderate impact (lighter blue), those with a minor impact (grey) and those that are not relevant (dark grey). The impacts identified as 'minor' will be assessed qualitatively, in the context of their limited significance for the study and the issues outlined above. Further detail on the impacts assessed qualitatively and quantitatively is provided in Section 5.2 below.

Figure 7. Potential Transport User and Provider Demand Related Benefits and Disbenefits and Externalities related to HS1

Potential User and Demand Related Impacts of HS1		Impact Groups									
		A	B	C	D	E	F	G	H	I	J
Benefit Groups		Eurostar Passengers	Southeastern High Speed Rail Users	Southeastern Non High Speed Rail Users	Other PT users*	*Rail Freight*	*Air Passengers*	*Ferry Passengers*	Strategic & Local Road Users HGV	LGV	Car
1) User Benefits ***(by journey purpose: business, commuting & other)***											
A) Journey time	*In vehicle time*										
	Wait time/frequency										
	Access/egress time — *Central London*										
	Access/egress time — *Local end*										
	Interchange										
B) Reliability											
C) Crowding											
D) Journey Quality	*On vehicle*										
	Station (esp. St Pancras, also Ebbsfleet/Ashford)										
E) User Charges	*Fares*										
	Parking charges										
F) Safety (Transport accidents)											
2) Operator Incomes											
A) Revenue	*Fares*										
	Parking charges										
	Rents										
3) Externalities of Transport Use and Operation											
A) Carbon											
B) Noise											
C) Air quality											

(e.g. Northern line, E Mid Trains, Thameslink & SWT Waterloo passengers, Kent Fasttrack coach services)

Key	
	Likely to be significant impact (positive or negative)
	Moderate/uncertain impact
	Minor impact, assessed qualitatively
	Not applicable

5.2. Impacts Considered

5.2.1. Quantitative Assessment

As shown in **Figure 7**, the most significant transport user and provider impacts of HS1 will be caused by:

- The direct travel time savings experienced on the HS1 routes;
- The premium fares payable on high speed routes;
- Changes in access and egress travel times, rail fares and parking charges (and associated revenue received) caused by changes in routing adopted to make use of the high speed services (for instance driving further to a station with a high speed service and then arriving in London at St Pancras rather than Waterloo);
- The effects on wait and travel times caused by the change in timetable for users of non-high speed Southeastern services;
- Crowding, reliability, punctuality and quality impacts on Southeastern services (high speed and non high speed); and
- Decongestion impacts (including time, accident and carbon savings) on the road network caused by mode-switch from road to rail as a result of HS1.

The detailed methodology in Section 5.3 sets out the proposed approach to quantifying these impacts.

5.2.2. Qualitative Assessment

As described above, quantitative assessment will focus on those impacts expected to make the biggest contribution (whether positive or negative) to the total measured effects of HS1. Minor impacts, will be

assessed qualitatively, recognising the fact that they would generally be disproportionately resource intensive to quantify and that it would be very challenging to distinguish the minor role of HS1 in causing change through time from other, potentially more significant influences. **Table 1** below provides more information on each impact.

Table 1. Minor Impacts Assessed Qualitatively

Impact	Reason for Qualitative Assessment
Eurostar passengers – access/egress and interchange impacts	The completion of HS1 involved the relocation of the London terminal of Eurostar from Waterloo to St Pancras with associated impacts for onward travel times and costs for passengers travelling elsewhere in London and the country. The net impact is considered to be small as some passengers will have benefited from the relocation whilst others experienced disbenefits, depending on their ultimate destination. Identifying the scale of these impacts would not be practical given the elapsed time since the change and the lack of suitable survey data.
Non high speed public transport user – access/egress and interchange	Those continuing to use non-high speed services are assumed to use the same route as before the introduction of HS1, therefore experiencing no change in access, egress or interchange costs.
Other public transport impacts –(e.g. Thameslink Herne Hill and underground)	Impacts are small, uncertain and impractical to distinguish from much larger influences and changes over the same time period.
Air passenger impacts	The benefits experienced by HS1 passengers who would use air in the counterfactual and will be captured through the quantification of the rail passenger benefits (in line with WebTAG, benefits are allocated on the basis of the mode used in the 'with HS1' scenario).The additional impacts of HS1 on flight patterns and therefore journey costs for remaining air passengers are likely to be small and impractical to distinguish from the much larger impacts of the growth of the low cost air market over the same time period. However, additional research into the impacts on the air market will be undertaken to inform the qualitative assessment and a quantitative assessment made if evidence of a significant impact is found.
Ferry passenger impacts	The benefits experienced by HS1 passengers who would travel by ferry in the counterfactual will be captured through the quantification of the rail passenger benefits Additional impacts of HS1 on travel costs of remaining ferry passengers are considered to be minor relative to the initial introduction of Eurostar and Eurotunnel and likely to be small and impractical to distinguish from the much larger impacts of the growth of the low cost air market over the same time period. However, additional research into the impacts on the ferry market will be undertaken to inform the qualitative assessment and a quantitative assessment made if evidence of a significant impact is found.
Freight impacts	Freight use of HS1 is very limited and the lack of an appropriate approach for the quantification of the benefits of freight schemes is a recognised shortcoming of current transport appraisal guidance (WebTAG), reflecting the fact that benefits cannot be directly linked to time savings.
Noise/Air Quality	Estimation of the full noise and air quality impacts of changes in rail service provision require detailed calculations based on details such as the location of affected households and other receptors and are therefore beyond the scope of this study.

5.2.3. Embedded Carbon

The proposed evaluation approach does not include an estimate of the 'embedded' carbon emissions associated with the construction of HS1 and the associated infrastructure and rolling stock. This approach is in line with WebTAG guidance which suggests that the scale of effort involved in the detailed task of calculating embedded carbon for major transport schemes is usually disproportionate (WebTAG unit 3.5.3 February 2013 and November 2011 versions).

However, it is recognised that the carbon implications of major infrastructure schemes generates interest, leading, for instance, to a recent assessment of the issue for HS2. If an assessment is required for HS1 it would be possible to take one of two approaches:

- A detailed assessment, following current good practice to build up a detailed estimate of the emissions involved in the production, transport and use of construction materials (for instance for tunnels, stations and platforms and rolling stock). This would be similar to the approach adopted for the HS2 study.
- A simpler approximation, using the broad details of the scale and characteristics of the scheme and assumptions based on the HS2 embedded carbon analysis to identify the likely order of magnitude of the embedded emissions associated with the scheme.

We would be happy to discuss these approaches and their resource implications further with the Department if required.

5.3. Detailed Methodology

The estimation of transport user related benefits will involve the following key stages:

- Primary research to support the identification of potential counterfactual demand by user type;
- Derivation of current and future year demand matrices for the HS1 and counterfactual scenarios;
- Derivation of cost change matrices between the HS1 and counterfactual scenarios; and
- Application of appropriate revenue calculations and 'rule of half' calculations to estimate user benefits.

5.3.1. Primary Research – HS1 Domestic Services on-train passenger surveys

The research will focus on HS1 domestic train service users as estimation of benefits for this category of user requires an understanding of how passengers respond to a complex choice-set (of travel modes and options). In contrast, the routing and mode options and issues for international Eurostar passengers are more straightforward in this context. Consequently, counterfactual demand will be derived from secondary evidence and it is judged that the primary research effort would be most valuable if focussed on the domestic market.

Further detail on the research is given below under the following headings:

- Purpose of the surveys;
- Data collection; and
- Data analysis.

Purpose of the surveys

The purpose of the on-train surveys is to:

- Provide evidence on the travel choices that different categories of passenger would make in the absence of HS1 (e.g. use an alternative rail route; mode or destination; or not travel); and
- Complement quantitative demand data on the types of journeys made using HS1 and their origins and destinations.

The aim is to provide additional data to that available from existing counts, surveys and demand data to help identify those users who would have used domestic train services in the counterfactual case and the routes they would have used (identifying, for instance, whether they choose to drive further to access HS1 than they would to access conventional rail in the counter factual scenario).This information will feed into the identification of the scale of user benefits generated by HS1 using the WebTAG 'rule of half' methodology (see **Figure 8**). Equivalent information would not be available from secondary data sources which will largely provide information on the volume and changes in the number of passengers on rail services and at stations.

The surveys will focus entirely on domestic services using the HS1 route as it is judged that the research will be most useful in providing additional information on the changes in domestic travel behaviour (change in rail route, mode etc) that have occurred in different segments of the market (e.g. the difference in responses from those travelling for different purposes, between different origins and destinations or at different times).

The survey results will provide a basis for estimating levels of change in demand caused by HS1 through trip generation, mode shift or destination shift.

Data collection

The proposed method of data collection is to hand out questionnaires on-trains on the domestic HS1 routes for self completion and then to collect them before respondents alight.

We would select the trains to be surveyed carefully to ensure that respondents boarding at a range of stations are surveyed and that surveys take place at different times of day and day of week to ensure people travelling for a range of journey purposes are captured.

We recommend that survey staff work on-train, offering a self completion questionnaire to rail passengers and collecting them back before the passengers leave the train where this is possible. The alternative of returning the questionnaire by post using reply paid envelopes will also be offered.

Using a self completion post-back/collect-on-train methodology will enable us to collect data cost-effectively using industry standard methods. Each surveyor will be allocated a route to cover in their shift and will travel up and down this route for the duration of their shift. Services are frequent enough in both directions to allow fairly rapid change over at route end. Shifts will start at both ends of each route at various times of day to ensure a range of passengers in both directions are included; commuters, business travellers and leisure travellers will be captured on each route.

Self completion questionnaires will be handed out to passengers along with a thank you leaflet which explains that AECOM abides by the Market Research Society Code of Conduct and adheres to the Data Protection Act. It also provides contact details should passengers wish to authenticate the survey; we find this reassures respondents. The surveyor will move around respondents encouraging them to complete the questionnaire and will aim wherever possible to collect the completed questionnaire from them before they leave the train.

If a respondent wishes to complete the survey at a later date or does not have time to complete the survey whist on the train, for example if the surveyor doesn't reach them until they are about to depart or they are standing, then a pre-paid envelope will be given out to allow respondents to return their questionnaire directly.

A one day pilot will be carried out in advance of the main fieldwork. During the pilot we will assess the following risks:

- Impact of congested routes: can the surveyor adequately get through the train to hand out and collect?
- What is the level of response? This will allow us to assess if there is any issue with response rates.
- Is there any response bias? We will observe if there are any particular types/groups of people that are not completing the questionnaire. If there are, we can seek to address this before the main survey commences.
- Is there a language barrier that is preventing people completing the questionnaire?

The pilot will be attended by the Primary Research Workstream Manager and a representative of the DfT. They will observe the pilot and record/assess any of the risks described above. The Primary Research Workstream Manager will also carry out some cognitive interviews with respondents to ensure the questionnaire is 'fit for purpose' and respondents understand the questions as they are intended and are able to respond in a way they would like to.

The Primary Research Workstream Manager will also interview those who do not complete the questionnaire in order to ascertain why they did not wish to and establish if any measures can be taken to encourage participation. We will also explore the possibility of an incentive (such as sweets) and test during the pilot whether this has any effect on response rates.

Completed questionnaires will be returned to AECOM for data processing

Data analysis

It is proposed that a sample size of 2000 will be secured from the survey. This size has been judged to be a reasonable compromise between the time and budgetary constraints of the study and the level of detailed disaggregation that could potentially be used in analysing the data. However, it is important to note that limiting the sample to this size will place limitations on the analysis possible with the survey results and the statistical confidence associated with the findings at a detailed level.

The survey results could potentially be disaggregated to identify the response to HS1 of a number of sub groups of passengers, differentiated by characteristics such as:

- Journey Purpose (Business, Commuting, Other)
- Group size
- Time of day (Weekday Peak, Weekday off-peak, Weekend)

A number of geographies will also be relevant, defining the origins and destinations of passengers' journeys. These will be refined through further analysis of data on HS1 demand but are likely to include the following:

- Kent – areas served by
  - Dover/Folkestone and nearby stations
  - Ashford and nearby stations
  - Ramsgate and nearby stations
  - Canterbury West and nearby stations
  - Gillingham and nearby stations
  - Ebbsfleet
- London and beyond
  - St Pancras and immediate area and destinations within London and beyond London served directly by interchange at St Pancras;
  - Stratford and destinations within London reached from Stratford;
  - Destinations beyond London (i.e. reached by interchange at Stratford or St Pancras and travel to another London terminus.

For the geographies, relevant subcategories for analysis of survey responses will include particularly dominant combinations of origin and destination areas, potentially amounting to10 or more geographical sub-categories

Considering the statistical significance of the results, at the full sample size of 2000, the 95% confidence interval associated with an either/or option response to a question (e.g. identifying respondents who would continue to travel without HS1 and those who would not continue to travel) would be +/- 2.2%. The range of confidence interval would increase with decreased sample size, for instance for a subsample of 200 it would be +/- 6.9%[6] and for a sub-sample of 100, the equivalent range would be +/-9.8%.

Consequently, the statistical confidence associated with survey findings for smaller subcategories of passengers, identified from combinations of the characteristics set out above (e.g. business travellers between Ashford and St Pancras) would be limited, as they would involve sample sizes of less than 100 and therefore would have large 95% confidence intervals around the observed value.

Nonetheless, the information obtained is likely to form the best available evidence on the impact of HS1 on mode choice and routing and therefore will necessarily form a key input into the derivation of the counterfactual demand and cost matrices from the HS1 scenario matrices. This is considered a proportionate approach as the survey size required to produce larger sample sizes (and smaller confidence intervals) for each of the relevant sub-categories would be very large; likely to be in the order of 50,000 responses.

The risk associated with over or underestimating user benefits as a result of the limited sample size will be mitigated during the matrix construction process by ensuring that once the elements of the disaggregate matrices are aggregated, they match against controls produced from survey results for sub-categories with larger sample sizes i.e. with reasonably small 95% confidence intervals. For instance, aggregate results for business users into London will be matched against the survey results for that sub-category. Results will also be cross referenced against other sources where possible. For instance, if available in a suitable form, parking data at individual train stations could be compared to overall forecasts of demand.

Nonetheless there will inevitably be some uncertainty associated with matrices produced through this approach. To address this, a number of sensitivity tests will be undertaken to identify the impact of alternative assumptions on responses by different sub-categories (e.g. different levels of mode-switch from car assumed for certain sub-categories of passenger) and results will be presented as a range, with the sources of uncertainty clearly identified.

[6] i.e. if 15% of the total sample of 2000 responded that they would not make their current journey without HS1 (and 85% said they would), we could be 95% confident that the actual proportion who wouldn't travel would be between 12.8% and 17.2%. If the response was 15% of a sub-sample of 200 (e.g. those travelling between Ashford and St Pancras), the range of the 95% confidence interval would be much larger so we could only be 95% confident that the actual proportion who wouldn't travel would be between 8.1% and 21.9%.

5.3.2. Potential requirement for additional secondary research and passenger counts

We have assumed in our current approach and project scope that the DfT will source and provide international demand data from Eurostar. Should this not be possible, additional secondary data collection would be required as described in **Table 3** below, potentially supplemented by new passenger counts at UK terminals (assuming HS1 Ltd would provide access). We could undertake counts to obtain total passenger numbers departing at each of the key stations (St Pancras, Ebbsfleet International and Ashford), on a week day and weekend day.

These counts and the potential additional secondary research currently fall outside of the anticipated scope of the study. Should they become necessary we will advise the DfT to discuss and agree the additional scope for inclusion in the study.

Table 2. Scope of Potential Additional Secondary Data Collection

Potential Additional Secondary International Data Collection
As described, the scope of our study assumes that international demand data will be available from Eurostar. Should this not be forthcoming, additional secondary data collection will be required, potentially supplemented by new passenger counts as discussed in 5.3.2 above. If this situation arises, we will agree the most suitable way forward with the DfT on the basis of available routes for securing relevant data, which include: **Request data:** There are a wide variety of possible sources that we could potentially make contact with and request data from, to piece together an overall picture of demand, applying growth where appropriate. Assurances of commercial confidentiality may need to be provided. We could make the following contacts: • Eurostar to request raw data broken down in further detail than is shown in DfT's published Transport Statistics for Channel Tunnel (Eurostar / Le Shuttle passengers are shown) • Other relevant passenger operators who may hold data: SNCB, SNCF or DB and Airfrance who have been considering operating services • Eurotunnel • London & Continental Railways to request the data underlying Buchanan's 2009 study • ONS to request the underlying data from the ONS International Passenger Survey, which are undertaken and up rated to total traffic levels using data provided by Eurostar • Civil Aviation Authority to request demand matrices which could be used to help to infer rail market share to key HS1 destinations • HS1 may be able to provide station counts • We would seek DfT's permission to interrogate the data room used for HS1 due diligence that Atkins had access to as DfT's agents for the sale of HS1 • The following international rail bodies may also hold relevant data: UIC --International Union of Railways, CER – The Community of European Railway and Infrastructure Companies and European Commission (DG MOVE- Rail) **Interrogate existing demand models, extract data and adjust:** we would request copies of existing aviation models from DfT to obtain either rail market share, if it is contained, or use aviation data to infer rail market share from. This data would be adjusted to current published total international rail levels and to take account of any significant changes since the base data of the models was collected. All of the above currently fall outside of the anticipated scope of the study. Should an additional programme of data collection drawing on the above activities become necessary we will advise the DfT to discuss and agree the additional scope for inclusion in the study

5.3.3. Derivation of Demand Matrices

'Current' Year Matrices

National demand 'with HS1' by origin and destination station and ticket type will be derived from the 2010/2011, 2011/12 and 2012/13 MOIRA ticketing data[7].. International 'with HS1' demand will be derived from the latest available Eurostar data. We have assumed in our current approach and project scope that the DfT will be able to source and provide the Eurostar data. Should this not be possible, additional secondary data collection would be required, potentially supplemented by new passenger counts, as previously discussed in Section 5.3.2.

This current and recent year 'with HS1' patronage data will provide good quality information on the number of passengers using HS1 as domestic HS passengers (who can largely be identified through the purchase of a premium HS fare and/or through the stations used) or Eurostar passengers. The counterfactual demand matrices will then be derived by allocating those passengers identified as using HS1 to an appropriate alternative travel choice in the absence of HS1. For domestic passengers, options would be the use of existing classic rail services, the use of an alternative mode (such as car or coach) or not making the trip in the absence of HS1. For Eurostar passengers, the options would be assumed to be travelling on the slower previous Eurostar service (prior to HS1) or not travelling in the absence of HS1.

The domestic passenger on-train surveys described in section 5.3.1 will form the key input to the estimate of the counterfactual for domestic passengers as they will include questions to ascertain what passengers would do in the counterfactual scenario (i.e. use an alternative rail route, mode or destination or not travel), or the choices they did make if they made the same journey before the introduction of HS1. Details of other passenger characteristics will also be obtained[8], including origin, destination, journey purpose and whether the respondent travelled before implementation of HS1 and used the identified alternative.

The questions on spatial and journey characteristics are required as the 'source' of demand for HS services is expected to vary with these characteristics. These details will allow survey results to be aggregated for application to the trips to be reallocated for the counter factual. Responses will be allocated to categories based on combinations of these characteristics that are judged likely to influence passengers' response to domestic HS services. The counterfactual scenario will then be derived from the 'with HS1' matrix by allocating those passengers using HS1 between each identified station pair in MOIRA to appropriate 'without HS1' or counterfactual travel options on the basis of survey responses made in the appropriate categories.

If the survey responses do not provide sufficient evidence to derive the counterfactual matrices, additional sources will be drawn on to provide further supporting evidence including:

- Any further surveys and count data made available by HS1 and/or Southeastern e.g. surveys potentially undertaken to inform the sale of HS1 assets;
- Demand changes in response to the cost changes implied by PDFH forecast approaches
- Demand identified in previous estimates of demand impacts [9] [10];
- Evidence available from the changes in commuting patterns available from the 2011Census journey to work data (if available in time)
- Background research on transport users and the categories of people who are likely to use HS1 or not (from sources such as the National Travel Survey and Climate Change and Transport Choices study).

For Eurostar passengers the number of generated trips will be estimated on the basis of the forecast proportions of longer distance domestic trips generated (as implied by the survey responses) and the demand growth evident after the implementation of the two phases of HS1.

The approach described above is considered the most transparent and controllable way of deriving counterfactual demand. However, a potential alternative approach to deriving a counterfactual demand matrix to provide a potential cross check will also be tested, based on applying Passenger Demand Forecasting Handbook (PDFH) background growth factors to the 2008/2009 MOIRA data (i.e. the last year before the changes in service pattern caused by HS1[11]). The factors will be derived using a bespoke

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[7] Assuming DfT provide permission to use the data

[8] The research will be carried out under the Market Research Society Code of Conduct, guaranteeing that any information provided is treated in strict confidence

[9] Economic Impact of HS1, Buchanans and Volterra for London and Continental Railway, 2009

[10] The completion and sale of HS1, National Audit Office, December 2012

[11] Checks will be made that no timetable alterations were made in response to the original 2002 opening of phase 1 of HS1 before adopting this approach

spreadsheet to apply the PDFH approach to estimating growth in rail demand on the basis of changes of key drivers, as used in the DfT's EDGE[12] forecasting tool (i.e. GDP per capita, population, employment, rail fares, car ownership, fuel price, car journey times and travel costs by alternative modes including air, bus and underground).

To identify whether the approach will be useful, the approach will initially be applied to forecast background growth over the same period for two reference 'coast to London' commuting rail corridors that have not experienced any significant change in rail provision over the time period in question (using the same corridors as selected for the Regeneration workstream). The 2012/13 estimated demand forecast for the reference corridors using the 2008/09 MOIRA base data and PDFH forecasting approach will be compared with the observed 2012/13 MOIRA data and differences analysed. If the approach appears to produce results which are comparable at a detailed level to the observed data, the equivalent approach will be applied using the 2008/09 MOIRA data for the Southeastern/HS1 corridor to provide a 'counterfactual' demand matrix for comparison with the matrix to be produced using the survey responses as described above.

Future Year Matrices

Estimates of future rail demand growth will be based on an extension of the demand driver based spreadsheets used to estimate background rail growth in the derivation of the current year 'without HS1' matrices in the cross check approach described above. The forecast trends in the demand drivers (such as GDP and population growth) used in the DfT's EDGE tool will be input to the forecast spreadsheets to estimate a future growth rate for demand by market segment which will be applied to both HS1 and counterfactual demand scenarios as appropriate. The forecasts produced will also be cross-referenced against any other forecasts that are available such as those used in the HS1 Ltd Strategic Business Plan (2010) (as used by the NAO[2]). In line with WebTAG, growth will be capped in 2033 (with 2023 and 2043 caps estimated as sensitivities).

For international passengers, where no guidance-based approach to forecasting growth is apparent, we will apply the most recent growth forecasts set out by the NAO in their 2012 report (which have proved accurate to date) and research alternative approaches to provide a potential cross reference if available.

5.3.4. Derivation of Cost Change Matrices

The second key input to the estimation of user benefits is the details on the change in travel cost for each origin/destination pair caused by HS1, including all elements of the journey from ultimate origin, via the origin station and destination stations and then on to ultimate destination.

For given station to station origin/destination pairs, changes in most elements of generalised cost (including wait time, interchange penalties, in vehicle time, journey quality/mode preference and fare) will be identified through a comparison of timetabling and fares information in the HS1 scenario (using current timetables, available through MOIRA) and the counterfactual scenario (based on the 2008/09 timetable for domestic services and the 2002 and then 2008 timetable for Eurostar for Phase 1 and 2).

The final step of the matrix based cost change calculation will involve identifying the change in access and egress costs and reflecting the fact that those choosing HS services to London will be changing their destination station in London to St Pancras (affecting their ongoing travel costs to their ultimate destination) and may change their station choice outside London, particularly in situations where they choose to travel further to access stations on the HS route rather than more local stations that are not served. In these situations the 'with HS1' travel costs for the HS route will need to be compared with counterfactual costs for the appropriate non-HS route, taking account of access/egress times (which will be derived from appropriate public transport costs and distances and average highway costs, extracted from the Transport Direct journey planner). Information on access/egress choices will be derived from the user surveys, potentially supplemented with data from the National Passenger Survey and any other operator surveys undertaken in the area, if relevant and available.

5.3.5. User and Demand Related Impact Estimation

The monetary value of estimated rail user impacts (including higher fares where applicable) will be identified for each of the years of the appraisal[13] (from the 2003 opening year) on the basis of the difference between demand and costs in the 'with HS1' and counterfactual scenarios. Calculations will use DfT's WebTAG parameters where available (including values of time by journey purpose and crowding parameters) and, if not, will draw on the rail industry's Passenger Demand Forecasting Handbook (PDFH) as a secondary

[12] The DfT's Exogenous Demand Growth Estimation forecasting tool

[13] As noted above, demand will be capped, with no further growth assumed from 2033, in line with WebTAG advice

source, where WebTAG recommends its use or does not provide values. In line with WebTAG, calculations apply the 'rule of half' methodology (see **Figure 8**) where appropriate[14] i.e. for calculating user journey time and charge impacts. Daily benefits will be annualised using relative demand levels identified from rail ticketing data.

The focus of the analysis will be on those user groups experiencing the largest impacts (i.e. Eurostar and Southeastern HS and non-HS passengers). Impacts for other public transport users (such as Thameslink users benefiting from the ability to route via Herne Hill during the reconstruction of London Bridge station as a result of capacity provided by HS1) will be referred to in a qualitative manner, given their relatively low significance and the uncertainty surrounding their scale.

Changes in reliability, punctuality, quality and crowding levels will be estimated at the service level rather than individual journey level, reflecting data availability and the relevant calculation approach.

For domestic reliability, current performance data for HS services (based on the data underlying the Network Rail Public Performance Measure) will be compared with assumed counterfactual data (assumed to equate to the equivalent figures for the Southeastern mainline services) to identify the change in minutes of delay experienced by passengers using HS services. PDFH factors will be applied to attribute a monetary value to the reliability impacts.

Rolling stock quality benefits experienced by passengers using HS services will be estimated on the basis of PDFH estimates of the value of incremental improvements in certain aspects of rolling stock quality, with the indicative scale of benefit accrued estimated on the basis of the differences in satisfaction levels between HS and Southeastern Mainline passengers (with Mainline satisfaction levels assumed to equate to the counterfactual) as identified in the National Passenger Survey

Similarly, crowding levels on key services into and out of London will be estimated using DfT's current PIXC (Passengers in Excess of Capacity) count data which identifies loading and standing levels at key points on services, including the terminus, by time of day. This will be compared against indicative equivalent counterfactual data (again derived from equivalent data for Southeastern Mainline services) to provide an indication of the scale of change in crowding levels on Southeastern services caused by the presence of HS services. Again PDFH factors will be applied to attribute a monetary value to the estimated change

Highway decongestion benefits will be assessed using estimated changes in vehicle kilometres due to mode switch and marginal external congestion costs (MECCS) provided in WebTAG Unit 13.3.1 (i.e. estimated monetary values of external benefits generated through the removal of one road vehicle kilometre at the margin).

Demand related impacts affecting non-users will also be estimated using WebTAG compliant approaches i.e. revenue the impacts of increased purchase of fares (which do not incur VAT) on government indirect tax receipts and externalities (e.g. carbon).

For each component of user benefit (such as time savings and fares impacts) a separate value will be provided for the impact on national and international journeys.

[14] As set out in WebTAG i.e. assuming that new to rail trips accrue half the average benefit

Figure 8. Explanation of the Rule of the Half Approach to Calculating User Benefits

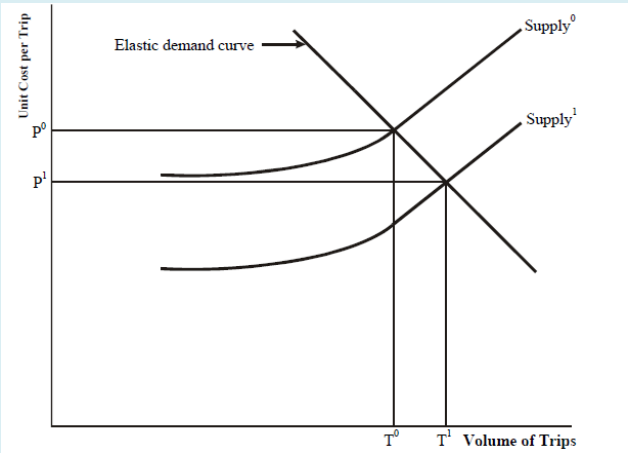
The Rule of Half Approach to Calculating User Benefits

In line with WebTAG, user benefits will be calculated on the basis of the 'willingness to pay' methodology. This assesses the difference between what the individual is willing to 'pay' (including for non-monetised journey elements, based on results from preference surveys) for a given journey and what that journey actually costs them (including non monetary costs). The difference between these two values is called consumer surplus- effectively the benefit enjoyed by the individual as a result of making a journey, net of the cost of making it.

For any journey, the price different individuals are willing to pay will vary, so that some users are willing to pay a much higher price, so receiving a large consumer surplus, others are willing to pay only the actual 'cost' and receive no consumer surplus, while those only willing to pay a lower cost will not use the service at all.

A demand curve can be used to estimate the average level of user demand for a journey at a specified generalised cost. The same demand curve can be considered to be applicable in both the 'without' and 'with HS1' scenarios. The variation in cost due to the introduction of HS1 causes the supply/demand relationship to change as the revised transport supply and associate cost represents a different point on the demand curve as shown below:

Figure a – Supply and Demand

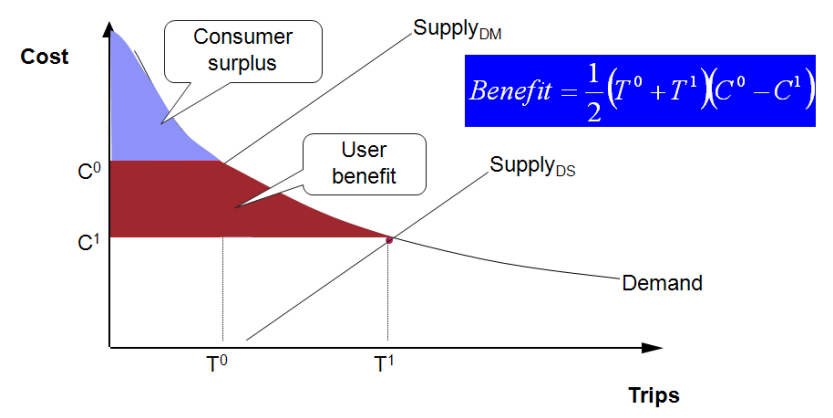


P^0 = 'without HS1' cost
P^1 = 'with HS1' cost
T^0 = 'without HS1' trips
T^1 = 'with HS1' trips

Source: WebTAG Unit 3.5.3

Using this relationship between supply and demand, consumer surplus is defined as the total of the difference between the generalised cost of travel and the price the users were willing to pay to make the journey. In simplified form, the figure below represents consumer surplus by the blue area for the 'without HS1' scenario and the sum of the red and blue areas for the 'with HS1' scenario. The user benefit resulting from HS1 is therefore the difference between the 'without' and 'with HS1' consumer surplus, represented by the red area

Figure b – Consumer Surplus and User Benefits



To calculate the value represented by this red area, a technique called the 'rule of a half' is adopted. The short section of demand curve between the 'with' and 'without HS1' scenario is assumed to approximate to a straight line. The red area representing user benefits is therefore measured as the area of a rectangle and triangle, calculated as:

$$\text{Benefit} = \tfrac{1}{2} (T^0 + T^1)*(C^0 - C^1)$$

This benefit calculation is performed separately for different categories of user (differentiated by characteristics such as journey purpose, origin and destination and forecast year).

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6. Evaluation Methodology: Wider Economic Impacts (WEI)

6.1. Logic Map and Overall Approach

The logic map underpinning the evaluation of Wider Economic Impacts (WEI) was presented earlier in Section 3.2.3, **Figure 5**.

The Wider Economic Impacts (WEI) workstream will estimate the wider economic impacts of HS1 and associated timetable changes on the South East Region. Guidance for the calculation of Wider Economic Benefits is set out in WebTAG 3.5.14; the guidance focuses on the effects which occur as a result of imperfections in transport using markets and are not captured in conventional transport appraisals. Alternative approaches to Wider Economic Impacts and Regeneration Impacts were considered at the scooping stage of this study. These are discussed in Section 7.1.2 below.

6.2. Detailed Methodology

6.2.1. Definition and Approach

The WEI calculation is aimed at establishing the impacts of HS1 on the South East Region. The impacts are the increase in economic output and economic efficiency of the Region. The HS1 investment will lead to increases in rail service levels and speeds. These improvements will yield benefits to personal travellers in the form of a change in consumer's surplus and business travel in the form of a change in producer's surplus. These represent short term benefits to both these entities. In the longer term, these changes have consequent impacts on effective density and through that on agglomeration benefits, competition benefits and labour market improvements. These latter effects, will in turn lead to greater firm productivity, output and competitiveness.

The methodological approach is two-fold:

- Undertake primary research through interview surveys to support the wider economic measurements; and
- Calculation of the wider economic impacts through the calculation of effective densities.

6.2.2. Primary Research - Qualitative Business Interviews

Central to the assessment of attribution in any evaluation is the ability to link directly observed variance in outcome/impact indicators with the scheme being assessed. The use of qualitative primary research has been highlighted as imperative for the creation of a robust counterfactual. In-depth interviews with a sample of representative businesses along the HS1 corridor will enable us to understand the nature, scale, location and timing of impacts and importantly assist in linking impacts with the HS1 scheme. Areas of questioning would cover business profile, performance and prospects but with more detail provided through the use of more open questions and inclusion of anecdotal as well as factual evidence. The interviews would establish the profile of businesses and include questions relating to strengths and weaknesses of the location, changes in the number of staff (including reasons for any change), the impact of HS1 on their decision to location or remain at the site, and the impact of HS1 on business performance (e.g staff numbers and turnover). These interviews will contribute to the identification of WEIs and, as described in Section 7, to the work on regeneration benefits.

An additional benefit of this type of interview is that it enables a senior interviewer to explore the depth and range of impacts including unexpected or negative impacts. We have found this particularly effective in the past at informing assumptions on attribution but also on underpinning the gross to net impact assessment. For example qualitative surveys are able to indicate whether specific identified employment opportunities attributed to HS1 are being taken by people inside or outside the corridor area, indicating levels of leakage.

In order to maximise the evidence obtained from these interviews it will be important to ensure that interviews are undertaken with senior managerial staff or someone responsible/ heavily involved in location choice/ premises etc. It might be that the most appropriate person is in another office - also more than one person might need to be involved in the interview. We will ensure that these interviews are high quality and undertaken with appropriate level of staff.

We propose to conduct qualitative interviews with 70 businesses in total which would be would be broadly split between the five core areas (minimum of 14 interviews per area). We expect that interviewing larger businesses or those more likely to be impacted upon by transport would be a useful component of the overall total. We will ensure that our sample profile includes a range of sectors representative of each corridor in order to identify any external impacts for different sectors. A discussion guide will be prepared to facilitate the interviews.

We would use the National Business Database from Experian to obtain our sample of business contacts. This provides the most accurate business records at site level, currently available and would enable us to establish the profiles of businesses in each of the study areas. Previous work in developing the DfT Business Toolkit was to evaluate different sampling sources and Experian was shown to be the most suitable database currently available for sampling businesses at the local/regional level.

Our original proposal for the study included quantitative telephone interviews with businesses – these are no longer proposed following discussions with the DfT in relation to sampling requirements and in view of the difficulties in undertaking this type of survey. It is therefore proposed to focus resource on the qualitative interviews.

This data will be used in conjunction with the other data sources to inform the Wider Economic Benefit calculations and to validate findings.

6.2.3. Calculation of Wider Economic Impacts

Agglomeration Benefits: Effective Density Measurement

The key element in calculating the WEIs is to develop a measure of effective density of the Region for both the with HS1 and counterfactual scenarios. Effective density measurement requires measurement of the zone to zone average generalised cost for both rail and road in the HS1 and counterfactual scenarios. Starting from the counterfactual, the HS1 scenario will reflect the addition of HS1 services and other service changes.

Average generalised cost estimates in the counterfactual scenario would normally be an output from the user benefit modelling approach. As the approach adopted for user benefits for this study as described in Section 5, falls short of building a zonally-based demand model and thus will not yield changes in average generalised cost for the two scenarios, the approach to estimating WEIs, and in particular the use of the DfT's WITA package, will rely on acquiring suitable generalised cost estimates from elsewhere.

The potential for using the model developed for HS2, suitably adjusted, has been investigated and there appears a reasonable probability of availability of data from the model in support of this study, though assistance on the part of the DfT in securing data expediently may be necessary. The approach proposed is to adapt the HS2 model to supply the HS1 scenario and adjust this to establish the counterfactual scenario. The steps are outlined below;

- Assess suitability of zonal structure of the HS2 transport model which is based on the Planet Long Distance (PLD) EMME model supplemented with skims from the regional PLANET models to give a synthesised short distance highway trip matrix. Our understanding is that the zone structure along the HS1 corridor may be sufficiently disaggregated to allow an evaluation of the WEI's.
    - In the event where the PLD zone structure is not sufficiently disaggregated along the HS1 corridor the potential for using the PLANET South model will be investigated however there are inherent issues in its use as the model only contains rail trips.
- Manually adjust these outputs from the HS2 model for the transport effects identified in the Transport User benefits workstream to arrive at a without HS1 scenario for travel behaviour;
- The HS1 and counterfactual scenarios will be fed into TUBA/WITA to provide monetised impacts of the WEI's. These skims, travel times, distances, charges and demand volumes, will be converted into WITA Local Authority zones. This information, together with WITA input files on industry mix, GDP, populations and agglomeration elasticities, will be used to allow an assessment of the effective density benefits to be undertaken.

Estimating Output Change in Imperfectly Competitive Markets

The first step in the process of establishing the output change from perfectly competitive markets is to estimate the benefits to business users. This will be done by partitioning the net user benefits as identified by the User Benefit estimation methodology to provide an estimate of the impact on business journeys for both

the current year and forecast years. This data will be validated by outputs from the TUBA models. The imperfect competition up-rate factor of 10% will then be applied.

Labour Markets Impact

The calculation of labour market impacts will consist of:

- Calculating how commuter costs change as a result of the HS1 investment;
- Calculating how the change in benefit from working will impact on the overall amount of labour supplied; and
- Calculating the additional output from the new labour supplied.

The impact of HS1 on labour markets will be derived utilising the PLD/WITA models outlined above. Information on the elasticity of labour supply with respect to the net return from working, the number of workers living in each zone and their working destination zone, the earnings for each zone, workers GDP for each zone, total transport demand by zone pairs and zonal tax take is all contained within the PLD/WITA models and is used in the calculation of the labour market impact.

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7. Evaluation Methodology: Regeneration Impacts

7.1. Logic Map and Overall Approach

The logic map underpinning the evaluation of Regeneration Benefits is presented in Section 3.2.3, **Figure 6**.

7.1.1. Hypotheses

Following consideration of the brief, we have identified the following first and second order hypotheses that we propose to test.

First Order Regeneration benefits (FO 1-2)

1. **Employment:** Implementation of HS1 has created new (additional) employment and safeguarded existing employment in the corridor as a whole and around the key locations.
2. **Output:** Implementation of HS1 has brought about an increase in GVA at the level of the overall corridor and at the level of key locations.

Second Order Regeneration benefits (SO1-4)

1. **Real estate uplift:** Property values and rents at the key locations specified in the brief are higher as a result of the implementation of HS1.
2. **Business performance:** Implementation of HS1 has improved business performance (employment and turnover) in the corridor as a whole and around the key locations.
3. **Investment climate:** Implementation of HS1 has enhanced perceptions of the key locations specified in the brief.
4. **Economic development:** Implementation of HS1 has contributed positively towards objectives for economic development and regeneration.

We have identified a programme of primary and secondary research that will enable the hypotheses identified above to be tested. These are described in more detail in Section 7.2 below.

7.1.2. Alternative approaches

The expert panel assembled for this study advised on the latest approaches to measuring the benefits of major transport investments, in particular on innovative approaches to measuring the Wider Economic Impacts and Regeneration benefits of investments such as HS1.

Econometric modelling might be used to measure the WEI and regeneration impacts of HS1. This approach consists of using econometric techniques to analyse spatial data on employment, population etc and identify the specific effects of an investment by, in very simple terms, comparing areas affected by the investment with areas not affected.

Hedonic price analysis could also be used as an approach to measuring WEI and regeneration type effects. The effect of HS1 on property prices could be isolated using statistical techniques and this is could be used as a measure of the effects of the investment.

Appendix C to this report sets out some more background detail on these potential approaches. These approaches were discussed with the expert panel and the DfT Steering Group for this study. These discussions noted that these approaches would require a longer period to complete the study, and that the results would not necessarily be comparable with evaluations of other projects as these are not currently standard techniques. The conclusion of these discussions was that approaches set out in this report would be followed due to the programme and budget constraints on this study and the need for its results to be in line with standard techniques and comparable with evaluations of other investment projects

7.2. Detailed Methodology

7.2.1. Primary Research – Qualitative Business Surveys and Key Stakeholder Interviews

The qualitative business surveys described previously in Section 6.2.2 will also provide data to inform the analysis of regeneration impacts and provide an understanding of the counterfactual position – for example, these interviews in conjunction with analysis of control areas would help us to understand the extent that HS1 has impacted upon employment levels in the corridor in the absence of HS1. This can be explored through questions relating to the extent to which HS1 has influenced decisions to locate in the corridor or contributed towards decision to expand operations in the corridor. These findings will be supplemented, and further tested, by a series of key stakeholder interviews that will be central to the Regeneration Impacts analysis. Consideration of the effects of recession, over the study period on economic development and business location and investment decisions will also be explored in the qualitative business surveys and stakeholder interviews.

This final element of qualitative research will consider the wider, non-business specific changes in the economic characteristics of the HS1 corridor/area, including discussions on how HS1 has contributed to meeting regeneration objectives. This will also include a consideration of Strategic Added Value – this aims to capture the wider co-ordinating, catalytic and influencing role of investment which is not captured in the measurement of outputs of direct project support. The assessment reflects on the 'whole' contribution of the project and assesses the impact of the investment on strategy-making, awareness raising, influencing and promotion of best practice.

Stakeholders are selected on the basis of their relevance and involvement in regeneration throughout the High Speed Rail corridor and around the stations. As well as meeting regeneration practitioners and local authority officers we would seek to use our experience and knowledge of working in the area to identify a number of property market agents covering a range of sectors. This will be useful in exploring the hypothesis that property values and rents at the key locations specified in the brief are higher as a result of the implementation of HS1. The DfT provided an initial list of stakeholders, some of which are relevant in terms of regeneration impacts. This has been reviewed and a list of 24 stakeholders has been drawn up and agreed with the DfT. Table 4 below identifies the list of stakeholders to be interviewed.

Table 3. Stakeholder List (Regeneration)

Kent Stakeholders Public and Private	Property Stakeholders and London
1. Kent Invicta Chamber of Commerce	1. London and Continental Railways
2. Locate in Kent (Inward Investment Agency)	2. London Borough of Camden,
3. Kent County Council	3. London Borough Newham
4. Thurrock Council	4. London Legacy Development Corporation
5. Dartford Borough Council	5. Property Agent A
6. Gravesham Borough Council	6. Deloitte Real Estate
7. Medway Council	7. Argent LLP (Developers Kings Cross)
8. Swale Borough Council	
9. Maidstone Borough Council	
10. Ashford Borough Council	
11. Canterbury City Council	
12. Thanet District Council	
13. Dover District Council	
14. Shepway District Council	
15. Atrium Surveyors	
16. Paramount Park	
17. Martine Waghorn (Developers)	

7.2.2. Secondary Data Research and Analysis

We propose to undertake secondary data analysis to assist with the profiling of the study area and to provide quantitative data that can be used, in conjunction with the primary research, to identify and test connections between the intervention and the anticipated outcomes and impacts. Maximum use will be made of Census Data and other large scale nationally available secondary data sets to ensure that our findings are based on the most robust and statistically valid data available.

Area of Analysis and Control Area

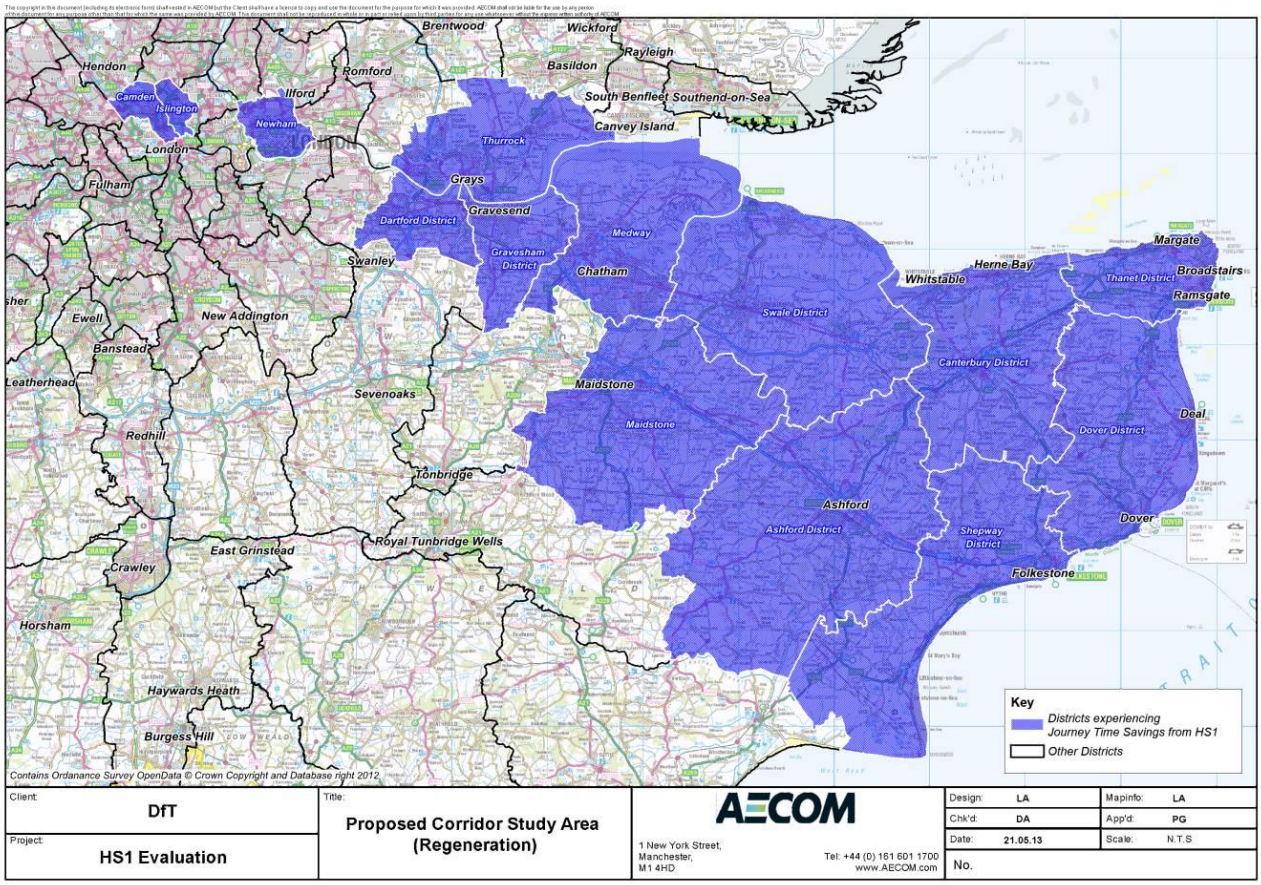
We have identified a proposed study area for the HS1 corridor based on a review of changes in journey times at stations on the wider rail network. The proposed corridor, presented in **Figure 11** follows District boundaries in order to aid the collation of secondary data at a consistent level. In identifying the study area, consideration has also been given to the location of key regeneration areas within these Districts.

We propose that the data is analysed at the overall corridor level and, where available, in 2km buffer zones around the five core locations identified in the brief (Kings Cross & St Pancras; Stratford; Ebbsfleet; Ashford; and Ramsgate). Business Rate data will also be presented for 500m Station Buffer Zones to determine whether there are any highly localised impacts on the number and value of commercial premises close to the HS1 stations.

We propose to identify three control corridors against which changes in the HS1 corridor can be compared and measured – we suggest that the first should be based on the M1 towards Milton Keynes and the second based on the M11 corridor towards Cambridge. The third corridor should be based on the A12 towards Chelmsford and Colchester. These corridors would be defined for a similar sized area to the primary HS1 study corridor, once this has been agreed with the DfT. Whilst the business surveys and stakeholder interviews will provide the primary data source for understanding the counterfactual position for the corridor, comparative data for the control areas. Background information has been gathered on these three comparator areas and is presented in **Appendix D.**

Consideration was given to identifying a control station (e.g. Paddington) – this option has not been included in our proposed approach as indicators observed at this level are likely to be influenced by particular local circumstances.

Figure 9. Proposed HS1 Corridor Study Area



Scope of Analysis

The analysis will review the changes over time and identify (where possible) changes from the position prior to the opening of the new line. We will make use of available data to measure and map changes that have occurred over time in the study area, including prior to opening. Key sources would include the following:

- Business rates and the number of commercial premises based upon VOA data;
- DCLG data on average house prices and total housing stock;
- Workplace employment (BRES & ABI data) and associated GVA based upon GVA per employee; and
- Resident employment from the Annual Population Survey and wages from the Annual Survey of Hours and Earnings (Office for National Statistics).

A profile of employment in the corridor will be developed by identifying the percentage of jobs by sector, including any changes to the profile of employment. The data will be presented using GIS mapping. Employment profile will also be presented in more detail for the five core buffer locations. Through discussions with local authorities, we will look to relate and profile the analysis to information relating to where and when investment has occurred in areas around the stations.

Key outputs at the corridor and core location level will include:

- Mapping of employment and measurement of change over time;
- Estimated change in GVA for each corridor including changes over time;
- Assessment of wage levels (including change over time); and
- Assessment of rateable values, property rents and prices.

In addition to this secondary research and analysis the primary research (consisting of in-depth qualitative interviews) described in 7.2.1 above will be carried out. The secondary research and qualitative interviews together will enable an understanding of the scope and scale of regeneration impacts evident across the HS1 corridor and around the key stations. Some of the key research questions that will be considered are shown in **Figure 12** below.

The qualitative interviews will assist with understanding attribution i.e. the extent to which change highlighted by the secondary data analysis in the areas under observation is attributable to HS1. The approach will not produce a definitive estimate of the impact of HS1 on indicators such as employment, but the primary research will provide indications regarding attribution.

Figure 10. Development of understanding underpinning the evaluation of Regeneration Impacts

Development of understanding

Together the primary and secondary research will enable an understanding of the following to be developed:

- The direct and indirect, tangible and intangible and intended and unintended outcomes and impacts of HS1
    a. What are the observed levels of change in the first and second order impact identified above?
    b. What is the direction of each observed change (positive or negative)?
    c. What were the key mechanisms for generating the observed change?
    d. What are the alternative explanations for the level of observed change?
- How are the outcomes and impacts geographically and socially distributed?
    a. How did the observed outcomes and impacts of HS1 vary between the five stations on the HS1 route, and why?
    b. Which types of businesses and areas were impacted by HS1, how and to what extent?
    c. What were the secondary social and economic benefits/impacts of HS1 and how did such impacts vary by station/corridor location?
- Timeframes for the realisation of impacts?
    a. How did the observed changes materialise (i.e. the timescales for appearance) by business sector and location?
- The causal logic behind how the impacts have been generated by HS1 and what lessons can be applied to future similar projects?
    a. Which scheme elements and locations generated the greatest observed changes in key indicators?
    b. Which business types, sizes and locations were impacted by HS1, how and to what extent?
    c. What lessons can be identified in terms of the scale, timing, spread and duration/longevity of observed scheme outcomes/impacts?

7.2.3. Attribution and wider context

The research methodology has been designed to understand the attribution of impacts through the use of logic mapping. As part of this framework, the qualitative interviews would include questions intended to gauge the scale of influence that HS1 has had on outcomes within the corridor. This exercise will include consideration of wider factors that have shaped outcomes – this approach will ensure it is possible to understand a counterfactual position and qualitatively identify 'net' impacts. Qualitative interviews with businesses will explore counterfactual decision making whilst the catalytic impact of regeneration will be explored in interviews with stakeholders and agents.

7.2.4. Testing the Hypotheses

Table 5 below identifies how the hypotheses identified in the outcomes and impacts section of the logic model are to be tested through the proposed secondary data analysis and primary research.

Table 4. First and Second Order Regeneration Benefits

First Order Regeneration Benefits

Hypothesis	Data Sources/Approach
1. **Employment**: Implementation of HS1 has created new (additional) employment and safeguarded existing employment in the corridor as a whole and around the key locations.	– Secondary data on changes in employment levels from the Business Register and Employment Survey and the Annual Business Inquiry (ABI). – Resident employment from the Annual Population Survey – Interviews with businesses including any identification of attribution. – Wider impacts and consideration of causal pathways has been informed by in-depth stakeholder interviews.
2. Economic Output: Implementation of HS1 has brought about an increase in GVA at the level of the overall corridor and at the level of key locations.	− GVA impacts will be measured using data relating to the employment impacts and GVA per worker values (by sector). GVA values per worker are reported by area and sector by the Office for National Statistics. GVA estimates will reflect the range provided for employment impacts.

Second Order Regeneration Benefits

Hypothesis	Data Sources/Approach
3. **Real estate uplift:** Property values and rents at the key locations specified in the brief are higher as a result of the implementation of HS1.	– Rateable values and commercial rents data has been obtained from the Valuation Office. The analysis will identify changes in values and compared against the control areas. – Average House price data has been collated using DCLG and land Registry data. – The qualitative interview programme has explored the extent to which any changes could be attributed to HS1.
4. **Business performance:** Implementation of HS1 has improved business performance (employment and turnover) in the corridor as a whole and around the key locations.	− In-depth qualitative interviews with a range of businesses. The interviews will include questions relating to business performance and the extent to which any change can be attributed to HS1.
5. **Investment climate:** Implementation of HS1 has enhanced perceptions of the key locations specified in the brief.	− The assessment of the attractiveness of the area as a place to invest will be discussed through the stakeholder discussions which have included property market agents and developers.
6. **Economic development:** Implementation of HS1 has contributed positively towards objectives for economic development and regeneration.	− This hypothesis has primarily been assessed through discussions with stakeholders working in economic development and property market agents.

8. Evaluation Methodology: Consideration of Feedback Loop Impacts

As discussed previously in sections 3.1.3 and 3.2.3, it is recognized that the introduction of HS1 will have a number of second and third order impacts through feedback loops. It is not within the scope of the study to attempt a detailed quantitative assessment of these impacts for reasons outlined in section 3.1.3. Nevertheless, during discussions with DfT during the scoping phase, interest has been expressed in these impacts being considered as an overlay element of the overall evaluation study.

The approach proposed is highly dependent on the research, analysis and evaluation of impacts in relation to transport user and provider impacts, WEIs and regeneration impacts, reflecting the drivers of the feedback impacts in question. The approach will encompass the following key tasks:

- We will review and identify the scope for potential feedback related impacts, building on the logic maps already prepared.
- Liaising with the evaluation workstreams presented previously we will consider the potential feedback implications HS1 driven impacts on:
  - Employment;
  - Population; and
  - GDP.
- We will then consider the potential scale of the above changes on travel demand, using PDFH 5 elasticities, to provide an order of magnitude estimate of the likely scale of feedback impacts. The analysis will be limited to a few key areas identified as significantly impacted on by HS1, rather than the entire study area. It should be noted that this assessment will not reflect an equilibrium position on impacts as that would require running multiple iterations via an appropriately developed strategic demand forecasting tool, which is beyond the practical scope of the study.
- Evidence and survey analysis from the key evaluation workstreams will also be reviewed to see if this highlights any qualitative feedbacks.

The findings of the above analysis will then be reported as a supplementary area of analysis of HS1 benefit / impact and cost implications in the final Evaluation Report.

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9. Evaluation Methodology: Outturn Cost Effectiveness

The total monetised impacts quantified for all four categories of impact described above (asset values, transport user benefits, wider economic impacts and regeneration) will be summed and combined with estimated net scheme costs to estimate the outturn cost effectiveness of HS1. The cost estimates will be derived by from the details of capital and operating costs of HS1 and the difference from costs that would have been incurred to implement and operate the counterfactual.

Costs will reflect those previously identified and confirmed as accurate in previous reports, most notably the completion and sale of HS1, National Audit Office, December 2012. Where supplementary cost information is required, most notably in relation to the counterfactual scenario, research and contact will be made with the relevant organizations such as London Underground (Kings Cross St Pancras CTRL Underground Works) and where necessary cost modeling and estimation will be undertaken using standard industry unit rates and assumptions. We anticipate the DfT's assistance in securing cost information where necessary.

All costs will be subject to the necessary adjustments for the purposes of evaluation in keeping with WebTAG guidance – Unit 3.5.9 The Estimation and Treatment of Scheme Costs with appropriate. Cost effectiveness will be estimated using the WebTAG definition of a benefit cost ratio (BCR), based on the discounted net present value of impacts and costs over a 60 year appraisal period (from opening year). It should be noted that the BCR calculation will exclude feedback loop impacts discussed in Section 8.

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10. Evaluation Methodology: Comparison with Forecast Benefits

The evaluated patronage levels and impacts in all four strands will be compared against those originally forecast for the business case to identify the scale and nature of differences. The benefits originally forecast can be identified from contemporary documents, or derived from subsequent studies such as those carried out by the National Audit Office. A series of sensitivity tests will be undertaken to help understand the reasons for the differences seen for each element. These will include consideration of the impact of changes in economic growth patterns (and associated changes in appraisal parameters such as values of time), population growth and travel costs. The process will provide the basis for analysis of the impact of key modelling and appraisal assumptions used in the original business case; allowing an assessment of their suitability.

The outputs will provide further evidence on the nature of HSR impacts and their variation from those predicted, along with lessons about the suitability of appraisal assumptions and their influence on business case outcomes, providing potential input to future decision making and development of the appraisal process.

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11. Study approach to Quality Assurance

11.1. Overall Quality Assurance Principles Adopted

At the heart of our approach to assuring quality is an emphasis on effective integration and adoption of quality assurance procedures embedded within the study at all levels. Activities to ensure full integration include:

- A defined approach to output verification;
- Primary and secondary data collection controls embedded into all activities;
- Adoption of an assumptions register and clear and consistent scenario definition;
- Risk management encompassing clear ownership and a mitigation plan at project and Workstream levels;
- Project delivery management controls;
- An independent expert panel to advise and review at key stages;
- Quality controls embedded into all activities; and
- An independent Market Research Society accredited reviewer on board to undertake review and verification of the primary data collection components.

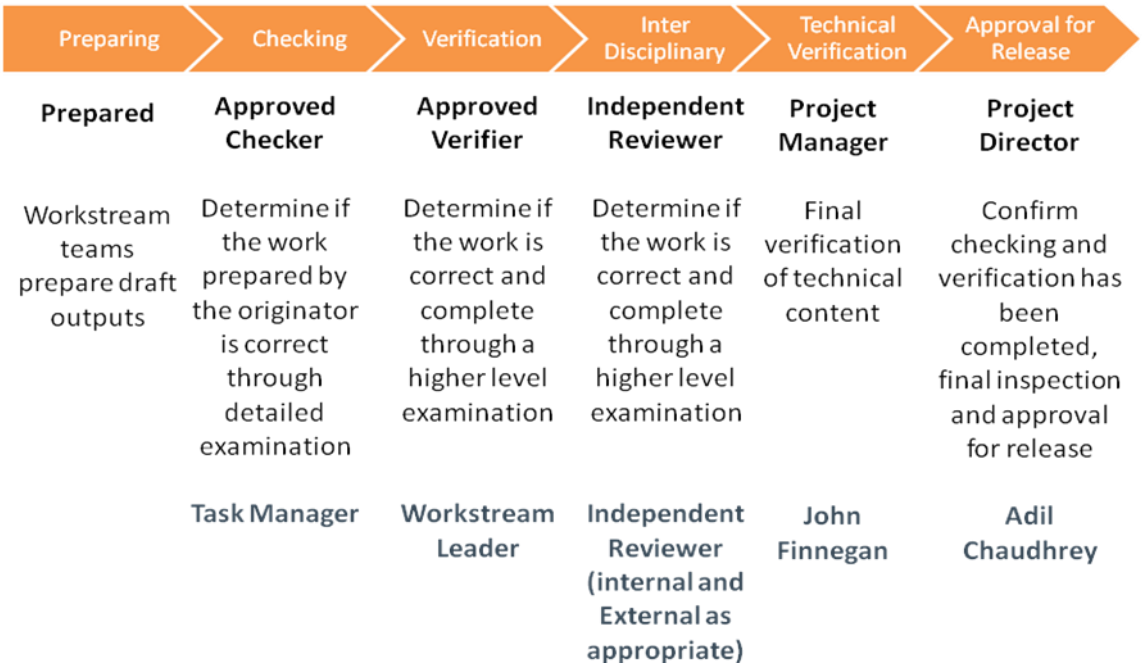
11.2. Quality Assurance Approach – Verification

We have established a bespoke approach to checking, verifying and approving project work/deliverables that features:

- Triple point gateway approach;
- Independent technical verification embedded into delivery; and
- Management system project audits scheduled into programme.

The Project Director and Manager reviews will include the work of all sub-consultants, and the verification process will occur for development of research tools (questionnaires, discussion guides etc) and reporting. Staff nominated as competent to undertake these activities will be clearly identified and briefed accordingly. The approach to verification through the stages of task output delivery on the study is presented in **Figure 13**:

Figure 11. Quality Assurance Integration – Verification



11.3. Quality Assurance Integration – Data Collection

Enhanced quality control procedures have been established to manage the design, delivery and analysis of primary and secondary data collection. The approach to QA with respect to primary research is is discussed in detail in **Appendix B**. The overall approach to QA with respect to data collection has the following aspects:

- Survey specifications reviewed and verified both internally and by the DfT;
- Fieldwork controls established for passenger self completion surveys;
- Trained interviewers used with fieldwork supported by full briefings and fieldwork managers;
- Data return monitoring, recording and verification;
- Data coding, entry and cleaning verification in association with the DfT; and
- Integration and utilisation of a fully independent MRS accredited reviewer throughout the data collection process.

11.4. Quality Assurance Integration – Risk Management

A risk register has been established as a live risk management tool for use throughout commission. The risk register captures:

- Risk identification, likelihood and potential impact;
- Risk mitigation actions and their timescale;
- Risk ownership identification and communication requirements; and
- Risk escalation procedures.

The risk register is managed by the project management team with risks identified within each Workstream and at the project level. The use of the risk tool and management of risk is integrated into the management process for overall study delivery

11.5. Quality Assurance Integration – Study Delivery Management

Progress reviews will feed into two ongoing delivery monitoring systems.

- RAG Report – reporting on risks against programme as shown in **Figure 14**:
  - Red Amber Green classification of milestones and deliverables; and
  - Progress and ownership reported.

Figure 12. Example RAG Report output

#	Deliverable	% Complete	Due Date	RAG Status	Forecast Date	Comments
1	*Scoping Report*	*95%*	*01/04/13*	*Amber*	10/4/13	*Draft awaiting comment*
1a.	*Stakeholder Consultation*	*100%*	*31/3/13*	*Green*		*Completed and fed into scoping report*
2	*Project Review 2*	*100%*	28/3/12	*Green*		Complete and issued

- Highlights Report – providing the DfT with a clear and concise summary of the study status:
  - Two page overview of commission progress to date; and
  - Emphasis on identification of any key issues and proposed actions.

Reports are not a substitute for regular in person and phone communication which is recognised as fundamental good quality management of the study. Rather they aim to inform and provide communication with a good structure and facilitate early warning and scope of efficient implementation of appropriate action.

11.6. Quality Assurance Integration – Independent Reviews

Independent review is an integral part of the study approach and will take place at two levels.

- Use of the Study Independent Technical Reviewer:
  - Atkins as lead consultant will ensure there is independent technical review at all key stages by the appointed Study Technical Reviewer, Tony Meehan;

    - Release of final key stage outputs only subject to Study Technical Reviewer approval.
- Use of Independent Expert Panel:
    - A panel of industry recognised technical experts has been established;
    - The panel will review and provide critical friend role to assure “fitness for purpose” of technical approach and founding assumptions (scoping and scenario specification); and
    - Provide Review, challenge and validation of study findings (reporting).

Internal and external reviewers will be identified and briefed to ensure clarity of roles, jurisdiction and expected outputs, recognising that inputs need to be carefully managed in the interests of cost and programme control.

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12. Evaluation of HS1 Impacts – Key Study Deliverables

The key Study Deliverables associated with the Evaluation of HS1 Impacts Study will be:

- Scoping Phase:
  - Evaluation Scoping Report – this document; and
  - Agreed detailed Project Plan.

- Phase Two:
  - Economic Data Report; and
  - Presentation of Interim Findings.

- Phases Three and Four:
  - Draft Final Report; and
  - Final Report.

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Appendix A. Extracts from DfT ITT: Sections 1 and 2

Department for Transport

Evaluation of the Impacts of High Speed 1

Invitation to tender (Ref PPRO 04/92/31)

SECTION 1: INTRODUCTION AND BACKGROUND

Background to HS1

1. High Speed 1 (HS1) is a 109km railway between St Pancras in London through Kent to the Channel Tunnel. It connects with the international high speed routes between London and Paris, and London and Brussels. The line carries international passenger traffic from the UK to Europe, and it carries domestic passenger traffic to and from stations in Kent. There are intermediate stations at Stratford International, Ebbsfleet International and Ashford International. International passenger services are provided by Eurostar, and domestic passenger services are provided by Southeastern. Freight services also use HS1. Section 1 opened in September 2003 and Section 2 opened in November 2007. Domestic high speed services started in 2009. The original case for HS1 was built not only on journey time savings but also on significant amounts of regeneration which would accompany the transport intervention.

Rationale for an evaluation and its overall purpose

2. 'Appraisal and Evaluation in Central Government'[15] (the 'Green Book') says that "When any policy, programme or project is completed or has advanced to a pre-determined degree, it should undergo a comprehensive evaluation." The 'Magenta Book'[16] is HM Treasury guidance on evaluation for central government. It sets out the key issues to consider when designing and managing evaluations, and the presentation and interpretation of evaluation results. The evaluation of HS1 needs, therefore, to be compliant with the Green Book and the Magenta Book.

3. In the same vein, in March 2012 the National Audit Office (NAO) published its report 'The Completion and Sale of High Speed 1'[17]. It said:

   - "The Department is developing a plan to evaluate whether the project costs and benefits have been delivered in line with expectations. In its evaluation plan, the Department should set a clear timescale for the evaluation and a clear framework and data collection processes to assess the impact of the high speed line on travel patterns and behaviour. It should ensure that its evaluation framework will give a robust counterfactual, if the high speed line had not been built, and evidence on the source of benefits. In particular, the Department should understand how the project contributes towards regeneration goals which were one of the scheme objectives.

   - The Department should follow the Magenta Book evaluation guidance published by HM Treasury in its evaluation of the project and critically assess the

[15] http://www.hm-treasury.gov.uk/data_greenbook_index.htm
[16] http://www.hm-treasury.gov.uk/data_magentabook_index.htm
[17] http://www.nao.org.uk/publications/1012/high_speed_1.aspx

assumptions included within the project appraisal. The business case for transport infrastructure includes assumptions and other inputs to the modelling and appraisal processes. As part of its evaluation plan the Department should seek to understand whether these were appropriate, and learn lessons where necessary for the appraisal of future schemes. This will allow more confidence over the costs and benefits in future business cases and improved analysis of alternative options."

4. In addition, the Department will want to use the outputs of the evaluation of HS1 to inform decision making for future interventions.

5. The Department for Transport is the commissioning agency for this evaluation.

6. Contractors with significant relevant experience, analytical expertise and evaluation capabilities are therefore invited to provide services and skills which will comprehensively, robustly and objectively evaluate the impacts of HS1 within the agreed timescale.

How the evaluation will be used

7. The study will be used in a variety of ways:

   - To give the Department for Transport evidence on what has been delivered for the public funds invested in HS1.
   - To provide accountability to key stakeholders.
   - To inform and advance the wider evidence base on the impacts of major rail schemes.
   - To provide experience of major rail scheme evaluation, which can be used for other interventions, for example HS2.

8. The key audiences for the study therefore include HM Treasury, government ministers, senior government officials, Parliament, the NAO, the taxpayer, other transport providers and promoters such as Transport for London and HS2 Ltd, and the academic community.

SECTION 2: FRAMEWORK, SCOPE AND RESEARCH QUESTIONS

The scope of the evaluation

9. This section outlines the scope of the evaluation, which will be discussed and explained further with the contractor upon appointment.

10. The broad objectives of the evaluation contract are to:

    - Design a robust impact evaluation approach which builds on the existing evidence base and is compliant with the Green Book and the Magenta Book and other Department for Transport guidance for evaluation;
    - Analyse and evaluate the impacts of HS1 and assess the outturn cost effectiveness; and
    - Generate lessons which can be transferred to other similar programmes.

11. The specific research questions to be answered through the evaluation contract are:

- What is the most suitable and proportionate evaluation approach for robustly assessing and attributing the impacts observed to HS1?
- What are the direct and indirect, tangible and intangible and intended and unintended outcomes and impacts of HS1? Tendering organisations are required to develop a logic map as part of the scoping phase which articulates the underlying causal relationships between the scheme and the outcomes and impacts.
- How are the outcomes and impacts geographically and socially distributed?
- What are the timeframes for the realisation of impacts and their decay rates?
- What is the causal logic behind how the impacts have been generated by HS1 and what lessons can be applied to future similar projects?
- What are the outturn costs and benefits for the project and how do these compare to what was originally anticipated and what are the reasons for any variation from forecasts?
- Did the project deliver value for money?

12. It is recognised that not all of the outcomes and impacts will be observable at this time but tendering organisations are invited to consider what intermediate metrics would need to be measured now, in order to assess the impacts that may be delivered in the future.

13. The evaluation should consider impacts of HS1 from the time of the opening of Section 1, taking into account the change in impacts when Section 2 opened, and the subsequent recast of the Southeastern timetable, with the introduction of domestic high speed services.

14. The Department for Transport's guidance WebTAG[18], which implements Green Book and Magenta Book guidance, will be relevant for designing the evaluation, including for the time periods over which the evaluation should consider impacts (WebTAG is the Department for Transport's guidance on the appraisal of impacts of transport schemes). The Department for Transport also has guidance for transport evaluations which may be relevant.[19]

15. The evaluation must separate impacts of HS1 between the UK and overseas (for example, for international passengers).

Impacts to be included in the evaluation

Departmental shareholdings and asset values

16. As a result of the restructuring process, the Department has acquired a number of shareholdings and assets. These have a value and should be counted as a benefit to the Department. This is an area where the counterfactual is difficult to set out, given the various interventions by government and restructurings in 1998 and 2002. One

[18] http://www.dft.gov.uk/webtag/

[19] http://webarchive.nationalarchives.gov.uk/20111005180457/http://www.dft.gov.uk/publications/guidance-for-transport-impact-evaluations; A framework for evaluating productivity impacts http://webarchive.nationalarchives.gov.uk/20111005180457/http:/www.dft.gov.uk/publications/evaluating-productivity-impacts-of-transport; and a guide to logic mapping https://www.gov.uk/government/publications/logic-mapping-hints-and-tips-guide

approach might be to consider the decision point or points which led to the Department holding the shares and assets that is currently holds, and to consider an alternative outcome that was feasible at that point or points.

Transport user benefits

17. The transport user benefits delivered by HS1 include:

    - Shorter journey times for international passengers
    - More reliable journey times for international passengers
    - Shorter journey times for domestic passengers
    - More reliable journey times for domestic passengers
    - Reduced crowding for domestic passengers
    - Highway benefits from mode shift
    - Indirect taxation impacts from mode shift

18. Benefits for domestic passengers will accrue for those both on domestic high speed services, and those on the classic network. In the latter case, Southeastern used the introduction of domestic high speed services to recast the timetable.

Wider Economic Impacts

19. Wider Economic Impacts (WEIs) have a particular meaning in transport appraisal and evaluation. They refer to:

    - Agglomeration impacts: Agglomeration impacts arise because firms derive productivity benefits from being close to one another and from being located in large labour markets. If transport investment results in an increase in effective density, by reducing the generalised costs of travel, this may give rise to an increase in productivity.
    - Labour market impacts: Move to more/less productive jobs: transport can affect the incentives for firms and workers to locate and work in different locations. Employment growth or decline in different areas is likely to have implications for productivity, as workers are often more or less productive in different locations. Labour supply: a change in transport costs alters the net financial return to individuals from employment, and is therefore likely to affect the incentives of individuals to work and hence the overall level of labour supplied in the economy.
    - Imperfect competition impacts: A reduction in transport costs allows firms to increase profitably output in the goods or services that require use of transport in their production.

Regeneration benefits

20. Previous appraisals have placed significant values on the regeneration benefits delivered by HS1. These benefits are therefore deserving of a thorough evaluation. The timing and scope of the benefits will vary according to the locations, which will include:

    - King’s Cross & St Pancras

- Stratford
- Ebbsfleet
- Ashford
- North and East Kent

21. The impacts that regeneration would deliver include:
    - Employment
    - Rent
    - Property values
    - Economic output

22. Data on gross employment, rent and property impacts, and economic output, for specific areas, may be available from published statistics. However, the evaluation should assess the net impacts of HS1. That is, it should consider the extent to which HS1 is responsible for observed outcomes, adjusting for:
    - The counterfactual: Where would those who would have located in the regeneration areas, located in the absence of HS1? What would they have done? How would their activities differ? What would have happened in each location in the absence of HS1? What was the influence of confounding factors in generating observed impact?
    - Leakage: What is the spatial scale being studied? HS1 may have regeneration impacts outside (say) the King's Cross & St Pancras area.
    - Displacement: What are the economic disbenefits on firms which are disadvantaged, because some firms are advantaged by HS1?
    - Substitution: What economic activities is a firm doing, at the expense of activities that a firm is no longer doing, because of HS1?
    - Multipliers: What is the level of induced and indirect employment resulting from the regeneration?

23. The Homes & Communities Agency's 'Additionality Guide'[20] sets out this approach in detail.

[20] http://www.hm-treasury.gov.uk/green_book_guidance_regeneration.htm

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Appendix B. Quality Assurance of Primary Research

B.1. Internal Quality Assurance of Primary Research

Primary research will be undertaken by AECOM, subcontracted to Atkins. As part of the scoping process staff from the Social Research and Evaluation Division of the DfT met the AECOM market research staff who will carry out this primary research. The management and quality assurance processes that will be in place were explained at this meeting. Set out below is a summary of the quality assurance measures explained at that meeting covering:

- Maintenance of fieldwork quality;
- Training and supervision of interviewers;
- Data Capture Tools;
- Processes for Data Input;
- Adherence to Professional Standards/Codes of Conduct; and,
- Analysing Qualitative Data.

B.1.1. Maintenance of fieldwork quality

A risk assessment will be conducted for all work and contingency plans put in place to overcome any issues identified. We have allowed sufficient time in our fieldwork schedule to allow for mop-up shifts to be conducted if necessary. We provide interviewers both with a written and verbal briefing prior to starting work. This focuses on ensuring that they understand the following:

- How to administer the questionnaire correctly;
- The interview locations and shift timings (where they should be and when);
- Which train service to travel on/who to interview;
- Deadlines and procedures for return of work to our office;
- Any safety requirements for working on train and who to contact in such locations prior to starting the shift; and,
- The type of ticket they should ask for if the survey requires them to travel on-mode.

Our supervisors and office staff monitor fieldwork on a daily basis to ensure that each interviewer is achieving the required number of interviews in their shift and identify any issues such as non-response that could bias the sample. Our interviewers are diligent and conscientious and report any issues which they may be experiencing during their shifts. All work is returned by recorded delivery or hand delivered to the appropriate office to minimise the risk of work getting lost in the post. It also ensures that data confidentiality is maintained

We have a well-established computerised system of survey management that enables us to monitor the progress of each interviewer from sample assignment through survey monitoring, to reporting. At any time, it is possible to interrogate the system to check on the progress of each interviewer's assignment and of the survey as a whole. Since information is immediately to hand, it is possible for survey management staff to deal with problems as soon as they arise, to chase slow progress and to re-assign work should that be necessary. Our monitoring system is tried and tested and it allows any quality, response or timescale difficulties to be addressed promptly. We allow sufficient time in our fieldwork period for mop-up shifts to be conducted if required. This ensures that we achieve the target number of interviews and adhere to survey timescales. Our rigorous fieldwork controls ensure that the final data set withstands scrutiny.

B.1.2. Training and Supervision of interviewers

AECOM has an in-house team of field staff. All our interviewers are experienced, fully trained and subject to rigorous checks on quality. Our team includes an MRS accredited interviewer trainer and fellow of the MRS. We always apply very high standards of field management and quality control by applying a continuous programme of in-field supervision. These processes allow us to demonstrate that the data provided are authentic. Every interviewer will be accompanied in the field twice yearly. Their work is formally reviewed in order to inform feedback to encourage and enhance good working practices and to highlight any weaker areas where improvement is necessary. The review encompasses the interviewer's response rates, outcomes of recall checks, outcomes from conversions and re-issues, feedback from respondents', comments about return of work, questionnaire checks such as percentage completion and detail of probed

responses (all questionnaires returned to the office are checked manually and any issues recorded), the standard of the work and the previous supervision report. Key quality control checks include the following:

- Attendance at and assistance in delivery of interviewer briefing sessions;
- Preparation, inspection and approval of all survey materials (briefing instructions, sample lists etc);
- On-site survey supervision. Interviewer accompaniments and spot checks undertaken by members of our project team;
- Interview back checking;
- Quality of questionnaire completion (percentage complete, legibility and adherence to routing); and,
- Ability to achieve quotas.

Any new interviewer receives two days of basic training covering the principles of sampling, interviewing, respondent interaction and questionnaire completion. Training also includes CAPI/CATI (Computer Aided Personal Interviewing/Computer Aided Telephone Interviewing) training if required and a further, two to three days supervision in the field when interviewers first start work with the opportunity to 'shadow' an experienced interviewer. Returned questionnaires from new interviewers are scrutinised closely to ensure accuracy and any issues are reported to the supervisor immediately so that errors are not repeated. A minimum of 10% of completed questionnaires will be back-checked. Additional checks would follow if any doubts arose about the quality of any interviewer's work. If a problem is found with an interviewer's work, we check 100% of their work. Any issues which arise during back checking are recorded and reported to the area supervisor.

B.1.3. Data Capture Tools

The business surveys will be carried out via CATI thus negating the need for data entry. The on train surveys however will need to undergo data entry.

All data collection and entry is conducted using the SNAP21 data entry software. Stringent quality control checks apply to ensure we deliver clean data and these processes for data input are summarised below.

B.1.4. Processes for Data Input

Data preparation is a meticulous process. All data processing and analysis are undertaken by trained and experienced staff and every step of the data input, processing and analysis is carefully supervised by the Project Manager and Fieldwork Manager. We have an experienced team of data input staff who will each receive a personal briefing prior to data input.

All questionnaires are logged when first arriving in the office before being sent for data entry. Following 100% manual checks of all questionnaires, data are entered into the SNAP data entry programme.

For any 'other' answers and open ended questions we develop and add codes at the coding stage where necessary. We will draw up a code frame for any open ended questions based on a sample of questionnaires. These codes will then be discussed with the client to finalise the coding frame, with further codes being added during the coding process if necessary. For open questions we record both the verbatim answer and the code so that the client team has both the raw and coded data.

To ensure the production of a clean dataset at the data input stage the Primary Research Workstream Manager specifies the appropriate quality control checks which can include any or all of the following:

1. The coding supervisor inspects a proportion of the work to ensure staff have understood their instructions
2. Range checks are applied to all variables at the time of data entry. These checks ensure that the data supplied fall within predetermined limits
3. Logic checks are applied at the time of data entry to ensure that the answers are sensible and consistent with each other

Incorporating these steps in the data entry process means that data cannot be input that are logically inconsistent, outside a valid range or not consistent with the questionnaire routing.

[21] http://www.snapsurveys.com/

For any 'other' answers and open ended questions we develop and add codes at the coding stage where necessary. We will draw up a code frame for any open ended questions based on a sample of questionnaires. These codes will then be discussed with the client to finalise the coding frame, with further codes being added during the coding process if necessary. For open questions we record both the verbatim answer and the code so that the client team has both the raw and coded data.

Once data entry is complete the data set is checked against the log to make sure all questionnaires have been entered and check for any duplicates.

Hard copy questionnaires are then selected at random and the data checked against these for accuracy. If there are any errors these are investigated further to establish of the error was a 'typo' or a systematic error and action taken accordingly.

B.1.5. Adherence to Professional Standards/Codes of Conduct

AECOM is a member of the Market Research Society (MRS) and is an MRS Company Partner and so supports the core MRS values of professionalism, research excellence and business effectiveness. We uphold the MRS code of conduct on best practice and ensure all activities are conducted by staff with appropriate training, qualifications and experience. Many of our Market Research staff are full members of the MRS; all others are Associate members or working towards accreditation. Interviewing is carried out in accordance with the Code of Conduct of the Market Research Society. This sets out requirements in respect of confidentiality of data, a respondent's right to withdraw from a project and the responsibilities of the research agency to respondents and clients. We implement stringent fieldwork quality control procedures on all research projects, details of which are given below.

All interviewers carry identity cards and will be required to show them when approaching a respondent for interview. Interviewers state that the survey will be carried out in accordance with the MRS Code of Conduct, and always explain the purpose and likely length of the interview. At the end of each interview, the interviewer will give respondents a printed explanation of the survey covering some of the common questions that respondents ask and giving them our telephone number so that they may contact us if they require any further information. This leaflet provides details on how the information will be kept secure and their anonymity preserved.

B.1.6. Analysing Qualitative Data

All interviews will be Transcribed and then checked by the moderator for accuracy; correct recording of any technical terms that may have been used during the interview that will be unfamiliar to the transcriber.

In order to ensure there is a clear audit trail from the fieldwork, through the analysis process and to the final report. We will use nVivo, a specialist qualitative research analysis package, to help analyse the data. Tamsin Stuart with the help of Andrew Mellor (our nVivo expert) will set up a coding frame based on study objectives/topics within the discussion guide. Each moderator would then be responsible for coding and entering their own interviews into nVivo ready for analysis. As the company details would also be recorded, findings will also ordered and labelled according to the sample variables making it easy to identify and report any similarities or differences in response across the different groups. However, even though this process orders the qualitative findings, the creative and flexible analysis mentioned above is still required to ensure that the findings meet the needs of the project.

If necessary, we are therefore able to demonstrate a clear link between the fieldwork, analysis and reporting stages to show that the latter clearly represents views expressed by respondents. This is achieved by mapping the transcripts, analysis and report in a relational database to allow for quality control checks to ensure that reporting is based on research findings.

The analysis will then be completed by the executives that conducted the fieldwork who will then write the report together.

B.2. Independent Quality Assurance of Primary Research

In addition to the internal management and quality assurance tasks described in Section B.1 an independent MRS accredited quality assurance professional has been engaged to provide a further level of assurance on

the primary research components of the project. Details of the work that this independent expert will carry out are set out below;

B.2.1. Ethics and Survey Design

The independent reviewer will confirm that the:

- Research design and quality of the design meets the specification of the client;
- The research preserves the rights of respondents to remain anonymous. Where this may not be possible for example, in the Business Surveys, the respondents will be adequately informed of what their data will be used for and who will see their data;
- Where follow-up interviewers are likely the respondent clearly gives their consent for re-contact and are fully informed who will be contacting them;
- Data collection process for the on-train surveys and telephone business surveys is 'fit for purpose';
- Design and collection process for the on-train surveys and telephone business surveys is appropriate for the audience;
- Personal data collected is relevant and not excessive;
- Prize Draw for the on train surveys follows the prize draw rules as detailed in the MRS Regulations for Administering Incentives and Free prize Draws; and
- Procedures for deleting any responses given by Respondents, if requested (within reason).

Output: Reviewer to write a short statement confirming that we have met the above criteria and signs it.

B.2.2. Sampling

The independent reviewer will confirm that the:

- The sampling frame has been clearly identified;
- That within the sample frame, and any strata, respondents have an known probability of being selected;
- The sampling procedure is 'fit for purpose'; and
- The final sample does not exclude or over-represent a particular group unless by design (for example large businesses may be intentionally over sampled).

B.2.3. Questionnaire design & Fieldwork procedures

The independent reviewer will confirm that:

- The questions asked meet the requirements of the survey;
- Respondents are able to provide information in a way that reflects the view they want to express including don't know/ prefer not to say where appropriate;
- The questions to not lead respondents towards a particular point of view;
- The responses are not capable of being interpreted in an unambiguous way;
- The questionnaire is 'fit for purpose'.
- The briefing materials fit for purpose and provide the interviewer all the information needed to complete the survey and ensure (as far as possible) all interviewers will complete the survey in the same manor and reduce interviewer bias;
- The instructions adequately cover H&S issues (particularly for on-train surveys); and
- Consideration been given to interviewer selection being based on experience of similar surveys?

Output: Reviewer to write a short statement confirming that we have met the above criteria and signs it.

B.2.4. Data collection

The independent reviewer will establish and confirm through liaison with the Market Research team that:

- Respondents are not being misled when being asked for cooperation to participate;
- A respondents right to withdraw at anytime is respected;

- Respondents are not unduly pressurised to participate;
- Respondent are able to check without difficultly the identity and bona fides of any individual are/or their employer conducting the project;
- The following is clearly communicated to the respondent:
  - the name of the Interviewer (an Interviewer's identity card must be shown if face-to-face);
  - an assurance that the Interview will be carried out according to the MRS Code of Conduct;
  - the general subject of the Interview;
  - the purpose of the Interview; and
  - the likely length of the Interview.

Output: Reviewer to write a short statement confirming that we have met the above criteria and signs it.

B.2.5. Verification of Data

AECOM, as part of their usual procedures, will backcheck 10% of all surveys. The backchecks for both the business and on train surveys will verify that the interview took place and confirm the accuracy of data recorded. The reviewer will undertake a minimum of 20 on train surveys and 20 business surveys. It should be noted that the on train surveys are self complete and so the quality of the contact details are out of our control.

Output: Reviewer to keep a log of the number of backchecks made and the outcome of these backchecks.

The independent reviewer will confirm that:

- Where possible the data entry program restricts the possibility of mistakes for example only allow one response to be entered for single coded questions and only allow responses within the range specified to be entered for example if only codes 1 to 4 on questionnaire DE program does not allow code 5 etc;
- Procedures to monitor DE outputs from all data entry staff;
- Cleaning methods logical and sequential (check SPSS syntax);
- Cleaning process will highlight any anomalies to be noted to allow further investigation rather than just 'overwriting' data;
- The number of 'missings' at an acceptable level and within reason ie not due to interviewer or programme error; and
- Version control is well maintained.

Output: Reviewer to keep a record of checks made and sign to say they agree with them and that they are appropriate and robust.

The reviewer will also check for data accuracy by:

- Checking the number of records in the log against the dataset;
- Randomly selecting 20 questionnaires and checking data matches the questionnaire (apart from where DE edits have been made and recorded); and
- Examine the data for any patterns that require further investigation ie are there typing errors or is there a consistent problem caused by an error in data entry programme/ cleaning programme etc.

Output: Reviewer to keep a record of checks made and sign to say that data is robust.

B.2.6. Analysis and Reporting of Primary Research Findings

The independent reviewer will confirm the following regarding references in reports relating to findings of the primary research:

- Conclusions disseminated are clearly and adequately supported by the data;
- Technical information necessary to assess the validity of any published findings is available;
- Data tables include sufficient technical information to enable reasonable interpretation of the validity of the results;
- Reports include sufficient information to enable reasonable interpretation of the validity of the results;
- Reports and presentations clearly distinguish between facts and interpretation; and
- Reasonable steps have been made to ensure that findings from a project, published by themselves or in their employer's name, are not incorrectly or misleadingly presented.

Output: Reviewer to write a short statement confirming that we have met the above criteria and signs it.

B.2.7. Data protection

The independent reviewer will confirm that:

- All hard copy and electronic lists containing personal data are held, transferred and processed securely in accordance with the relevant data retention policies and/or contractual obligations;
- All parties involved in the project are aware of their obligations regarding security of data;
- Reasonable steps are taken to ensure that the destruction of data is adequate for the confidentiality of the data being destroyed. For example, any personal data must be destroyed in a manner which safeguards confidentiality; and
- Confirm personal data is not being used illegally.

Output: Reviewer to write a short statement confirming that we have met the above criteria and signs it.

B.2.8. Outcome of the Independent Review

The independent reviewer will submit a short report to DfT confirming that the above criteria have been met and that the data collecting and resulting primary research findings are robust and accurate.

Appendix C. Formal Analysis / Modelling of HS1 Impacts

INTRODUCTION

This note provides the input promised in the 14 June teleconference, regarding the possibilities for more formal analysis/modelling of HS1 impacts.

References in {curly brackets} are to the Scoping Report as circulated for comment.

ECONOMETRIC ANALYSIS

One of the issues that probably ought to be considered in the scoping study is whether the evaluation should be primarily a reapplication of existing knowledge or an attempt to generate new knowledge in forms that can be reused in future impact studies and appraisals (such as those for HS2). Since every scheme is different, the latter means estimating measures of responses to change in forms that can be used in future modelling exercises. There are at least two such possibilities that ought to be considered in the present case, even though the timescale set by DfT precludes following up these possibilities within the project.

The first possibility would be to apply hedonic price models to the corridor for a period of years covering the opening of the domestic high speed schemes, and to try to estimate coefficients on service or accessibility measures which changed with their opening. The obvious application of this technique would be to residential dwelling prices, to identify the impact of HS1 on prices in the areas served – though it could also be attempted for office rents. A hedonic price model for dwellings estimates the prices of individual dwellings as a function of a bundle of characteristics usually including

- characteristics of the dwelling itself (type (eg detached/semi-detached /terrace/flat), numbers of reception/bed/bath-rooms, date of construction, etc)
- characteristics of its immediate neighbourhood (eg density, mix of land-uses, socio-economic mix)
- accessibility to opportunities for work, shopping, etc
- time trends.

Accessibility can be measured in various ways

- in the simplest case, as distance from a central point;
- as distances from railway stations and main roads;
- as distance from railway stations and main roads combined with measures of transport service and distance to destinations;
- by using calculated accessibility measures which take account both of location relative to opportunities for work etc and of the levels of service (by all relevant modes) for reaching those opportunities.

For transport-related analysis, the first two of these methods are of very little use, and the last (as applied for example by Ismail, 2005) is most helpful.

Some hedonic analysis of the impacts of HS1 was carried out by Pagliara et al (2011) but is not in our view at all satisfactory. A good example of using hedonic price analysis in relation to a transport scheme (DLR extension to Lewisham) is provided by Gibbon and Machin (2003).

Hedonic price analysis itself does not involve defining a counterfactual case; it relies entirely on analysis of the observed factual case, and should isolate the impacts of the scheme by the combination of including data for other, unaffected locations, including data for a range of time points before and after the opening of the scheme, and including independent variables allowing for other effects that may have changed over time and space within the region and time-period of interest. A simple estimate of the impact of the scheme can then be calculated by taking the coefficient on the relevant transport or accessibility variables and multiplying

them by the change in those variables due to the scheme. More sophisticated estimates can be produced by using the hedonic price results to calibrate or validate a LUTI model, as discussed below.

Hedonic price or rent variables look only at the impacts on property markets; as such they indirectly rather than directly reflect the impacts of changing accessibility on occupiers. Other econometric modelling methods can be used to look at the impacts of changing accessibility on employment, wages and value added. Recent examples of such methods are

- Gibbons et al (2012) – using data on employment and accessibility by ward for the whole of Great Britain, 1998-2008, to estimate the employment impacts of changes in accessibility due to road improvements over that period;
- Sanchis-Guarner (2012) – a related piece of work looking at wage impacts;
- Graham (2012) - looking at the impact of the Madrid-Barcelona high-speed rail link on the economic output of the provinces served.

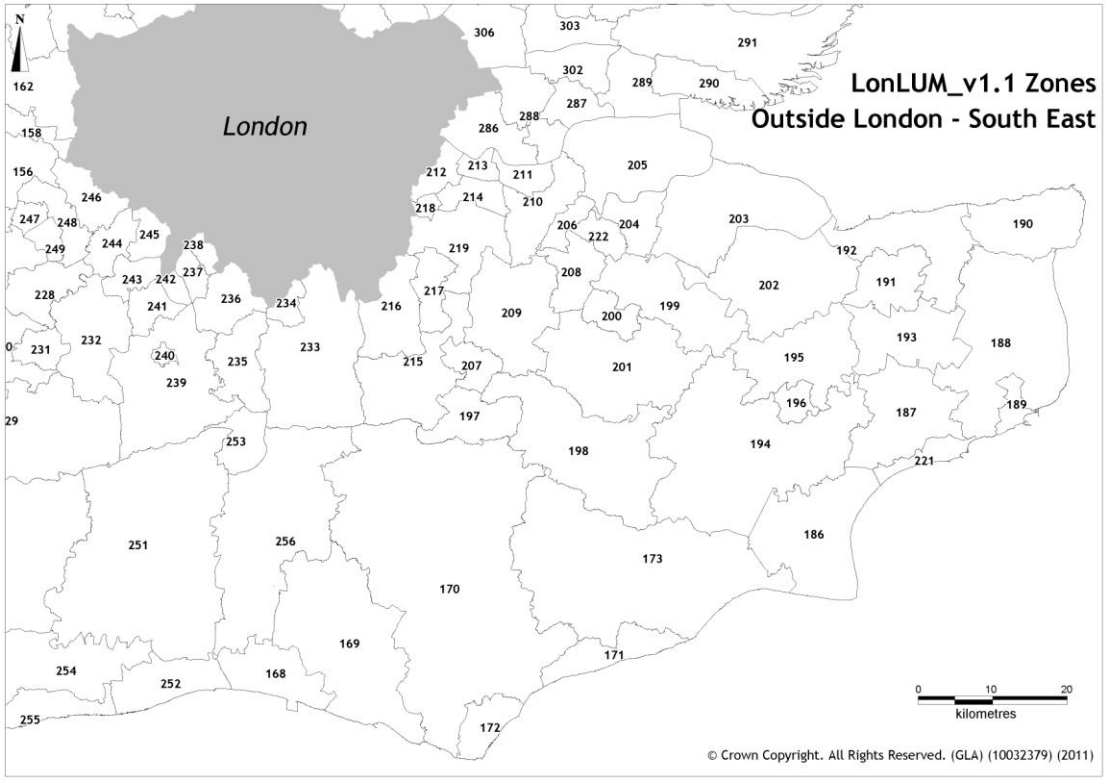
The methods applied in the first two could certainly be reapplied to the HS1 case. Comparable approaches have also been used in housing market analysis to look at household moves as well as house prices; the methods used by Bramley and Leishman (2005) could for example be adapted to take account of transport or accessibility variables. Given that one might expect the HS1 domestic services to have more impact on commuting and residence, the latter might be more relevant than the employment-related analyses.

LUTI modelling

The Scoping Report {3.1.3} refers to the possibility of "feedbacks from the outcomes of the scheme to the socio-economic drivers of transport", ie land-use impacts, and says that these "could be significant". It goes on to say that "The technical tools required to assess such changes (eg Land Use Transport Interaction (LUTI) models) are complex and time consuming to develop; creation of such models is outside the scope of this study".

This assumes that it would be necessary to develop such a model in order to use it for this study. The report should consider the possibility of using a pre-existing model, "as is" or with some adaptation. One candidate would be the LonLUTI model which DSC have developed for TfL; this has at least 20 or 30 zones in the corridor of interest for HS1 (see map below22). Use of this model if considered for a possible follow-on project would of course require permission from TfL, and at least a certain amount of adaptation to take in the changes in accessibility resulting from the opening of HS1 domestic services in 2009 (the current version of LonLUTI expects transport inputs in 2007, 2011 and a series of later years).

[22] The caption on the map refers to LonLUM: that is the land-use model part of the LonLUTI system. .



Applying an existing LUTI model to estimate the differences between the factual and counter-factual situation would of course still amount to reapplying existing knowledge rather than generating new knowledge that would lead to different forecasts and appraisals of future schemes. The use of a LUTI model could be extended to generate new knowledge by

- undertaking additional calibration and validation to refine its ability to reproduce the factual situation (this is particularly relevant to models such as LonLUTI, which forecast change over time), and/or
- adjusting the model in the light of results from econometric analysis of the kinds mentioned in the previous section23.

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Bramley, G and C Leishman (2005): Modelling local housing market adjustment in England. In Adams, D, C Watkins and M White: Planning, public policy and property markets. Blackwell, Oxford.

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Graham, D J, R Brage-Ardao, P C Melo (2012): Measuring the impact of high-speed rail on economic performance: evidence for the Madrid-Barcelona corridor. Working paper, Imperial College, London. Downloaded 17 June 2013 from http://www.esrc.ac.uk/my-esrc/grants/ES.J007382.1/read/outputs/Date/25/1

[23] LonLUTI (and other DELTA-based models) have for example already been adjusted using results both from Ismail (2005) and from Bramley and Leishman (2005). LonLUTI outputs have also been compared with the Gibbons et al (2003) results, though the latter are more difficult to use directly for adjustment.

Ismail, S (2005): Hedonic Modelling of Housing Markets using Geographical Information System (GIS) and Spatial Statistics: A Case Study of Glasgow, Scotland. Unpublished PhD dissertation, University of Aberdeen Department of Land Economy.

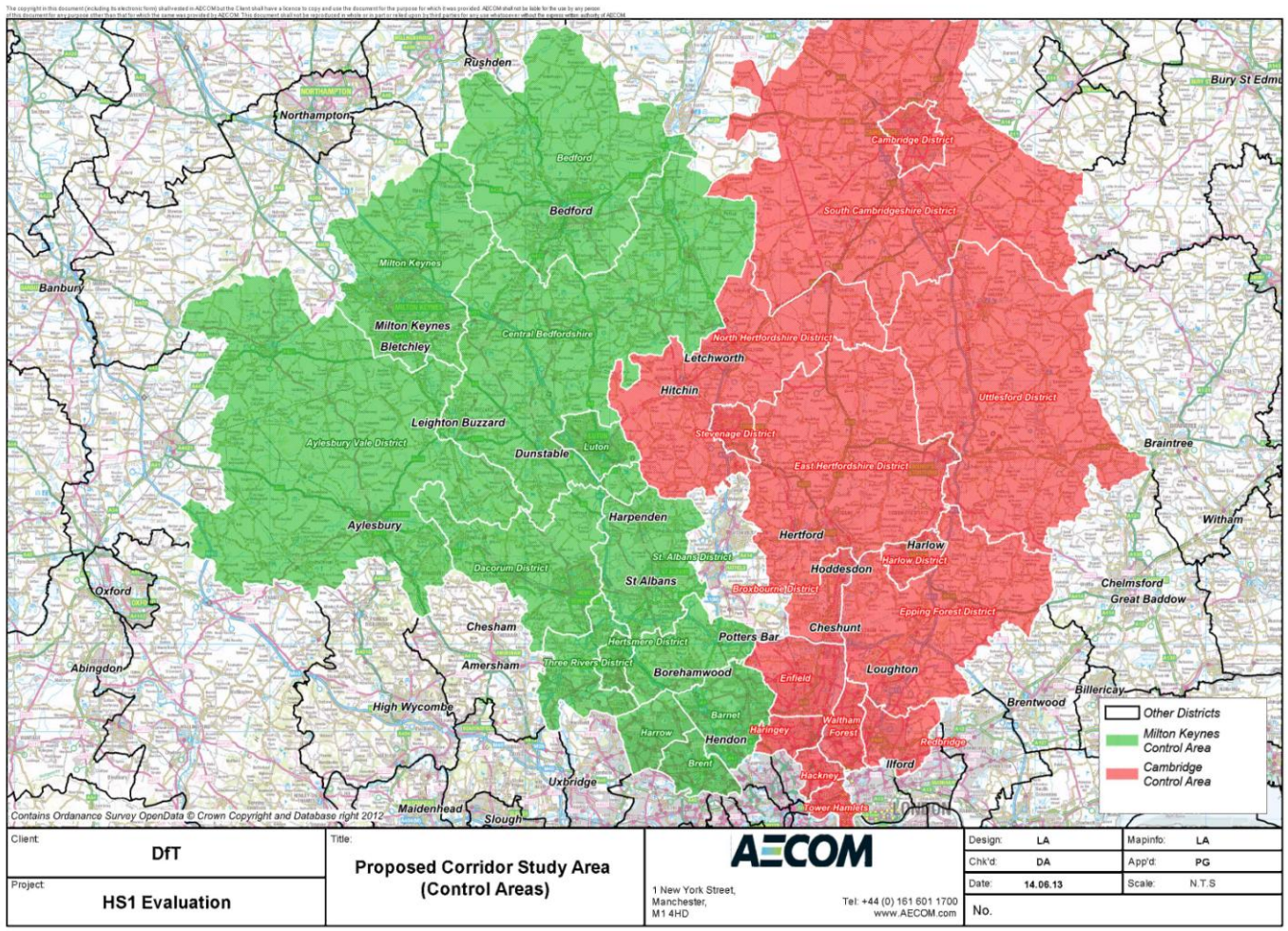
Pagliara, F, P Rietveld and J Preston (2011): A macro and micro analysis of the effects of High Speed Rail accessibility on residential property prices: evidence from UK. Paper presented to CUPUM, Lake Louise, Canada.

Sanchis-Guarner, R (2012): Driving up Wages: The Effects of Road Construction in Great Britain. SERC Discussion Paper 120, Spatial Economics Research Centre, LSE, London.

Appendix D. Regeneration Comparator Areas

Three comparator areas for analysis of regeneration have been identified:

- Milton Keynes rail corridor (green in the map below)
- Cambridge rail corridor (red in the map below)
- Colchester rail corridor (yellow in the map overleaf)



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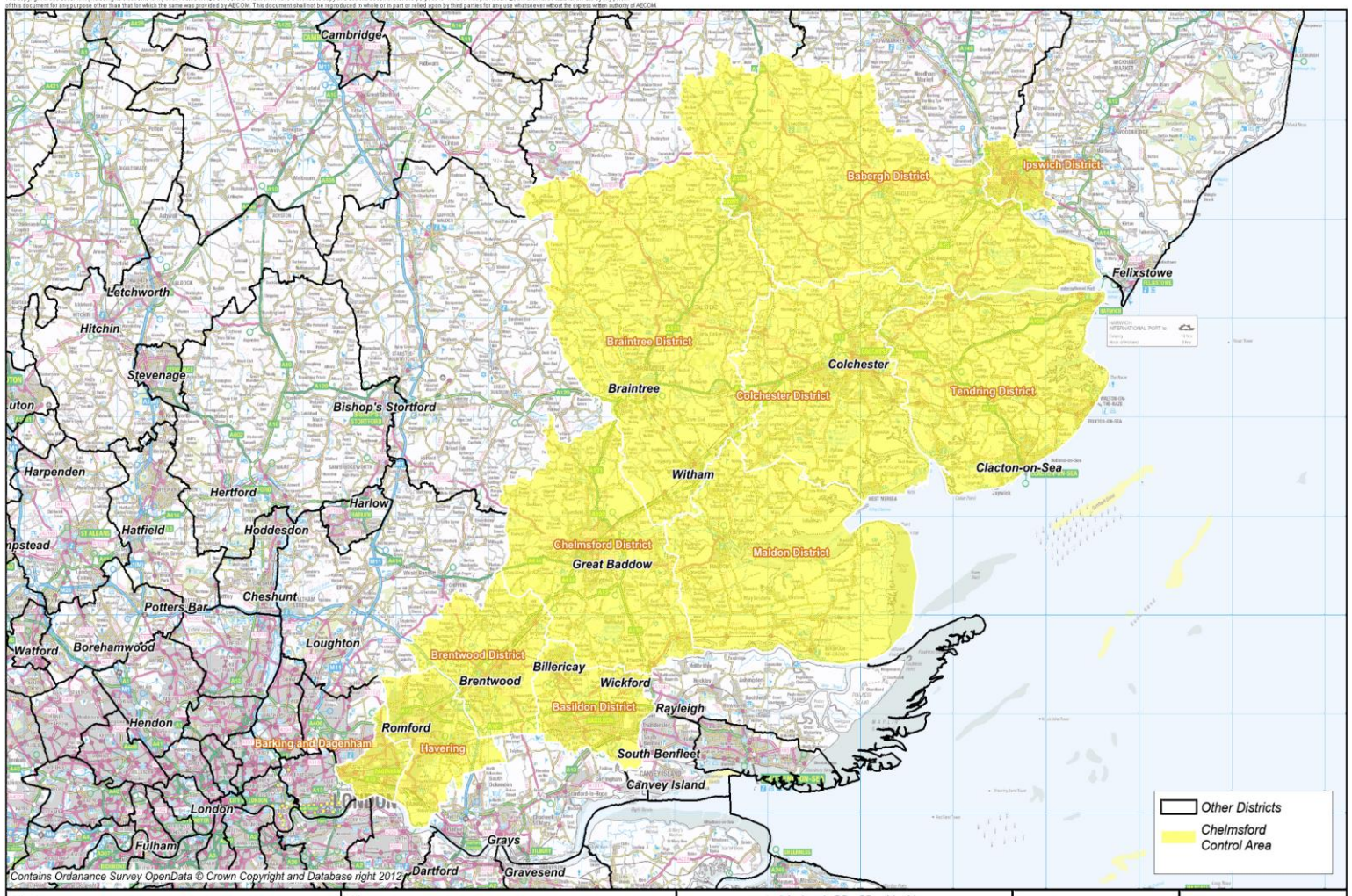

Client: DfT	Title: Proposed Corridor Study Area (Chelmsford Control Area)	AECOM 1 New York Street, Manchester, M1 4HD Tel: +44 (0) 161 601 1700 www.AECOM.com	Design: LA	Mapinfo: LA	
Project: HS1 Evaluation			Chk'd: DA	App'd: PG	
			Date: 14.06.13	Scale: N.T.S	
			No.		

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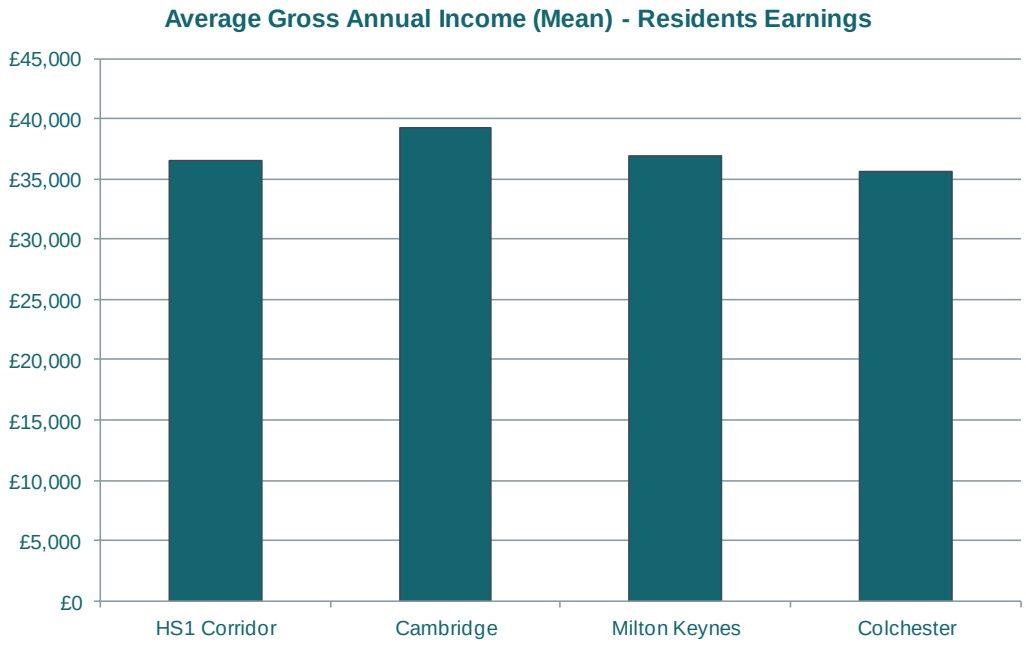
These three regeneration areas are broadly comparable to the HS1 corridor across a number of features as outlined in the Tables below, which are drawn from a range of official statistics. The specific sources were as follows:

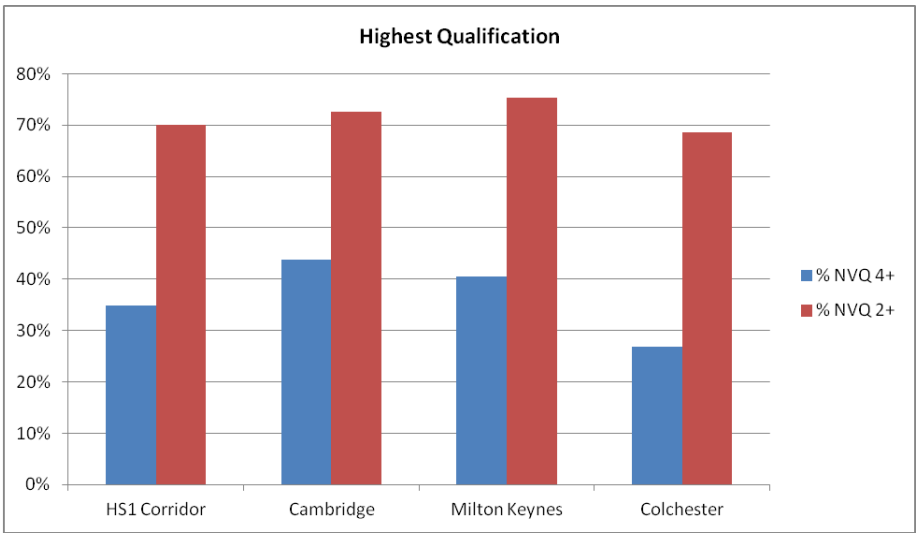
- Population: Census, Office of National Statistics (2001 and 2011)
- Job vacancies: NOMIS (2012)
- Unemployment: Census Office of National Statistics (2011)
- Earnings of Residents: Annual Survey of Hours and Earnings, Office of National Statistics (2012)

Area	Size (sq KM)	Total Population	Total Employment (aged 16+)	Working Age Employment Rate
HS1 Corridor	3,213	2,269,000	1,017,000	71%
Milton Keynes	3,202	2,508,000	1,186,000	74%
Cambridge	3,119	2,606,000	1,200,000	72%
Colchester	3,150	1,580,000	755,000	74%

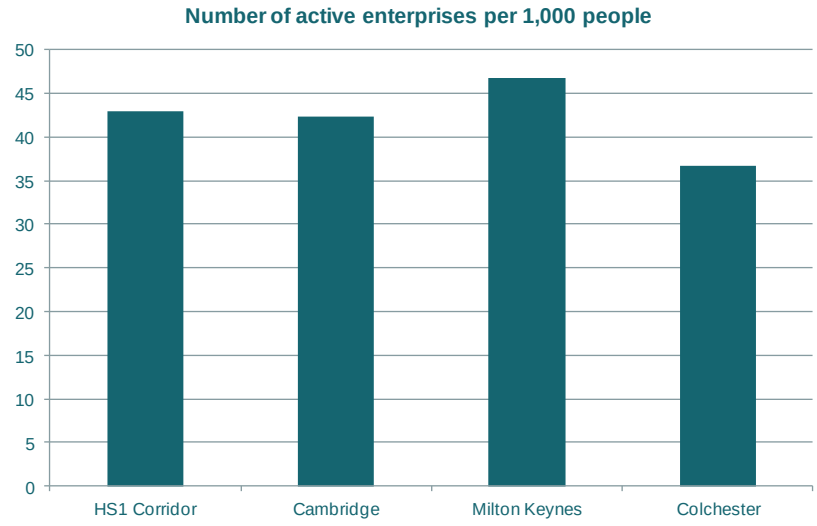
Earnings of residents



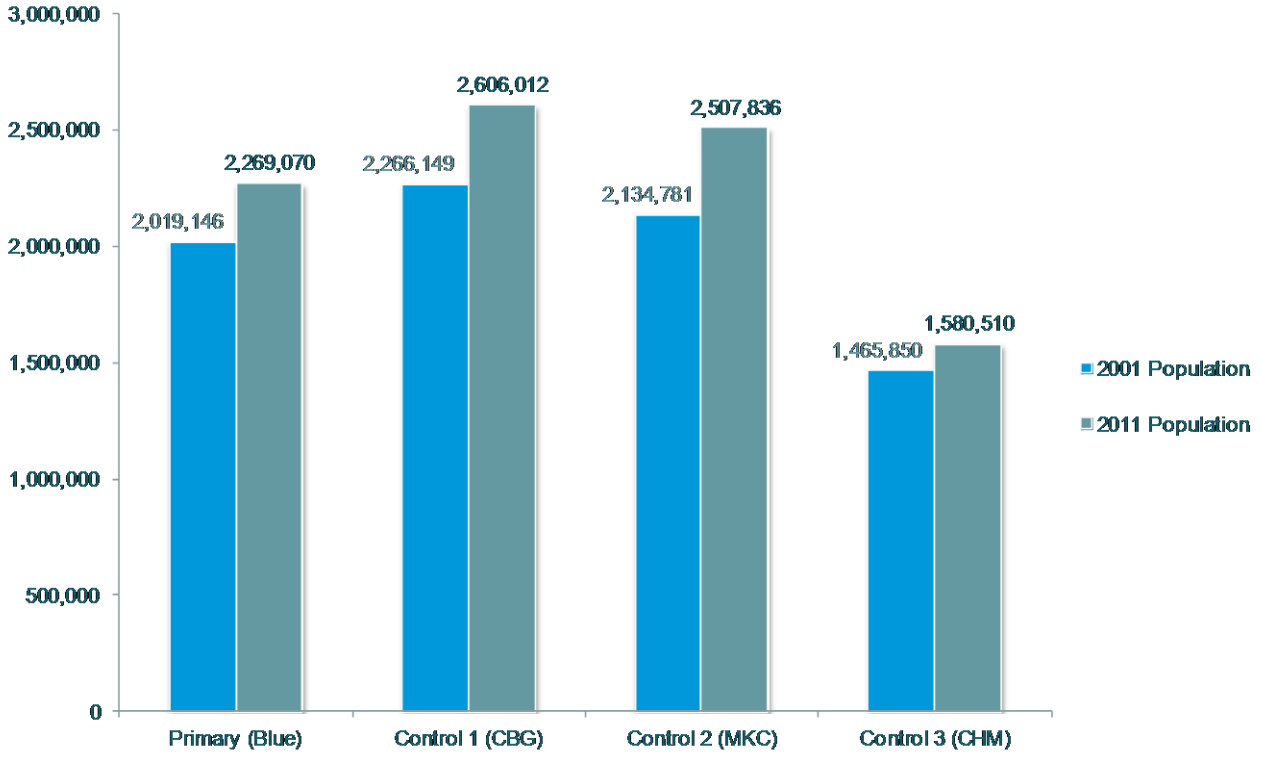
Workforce Skills



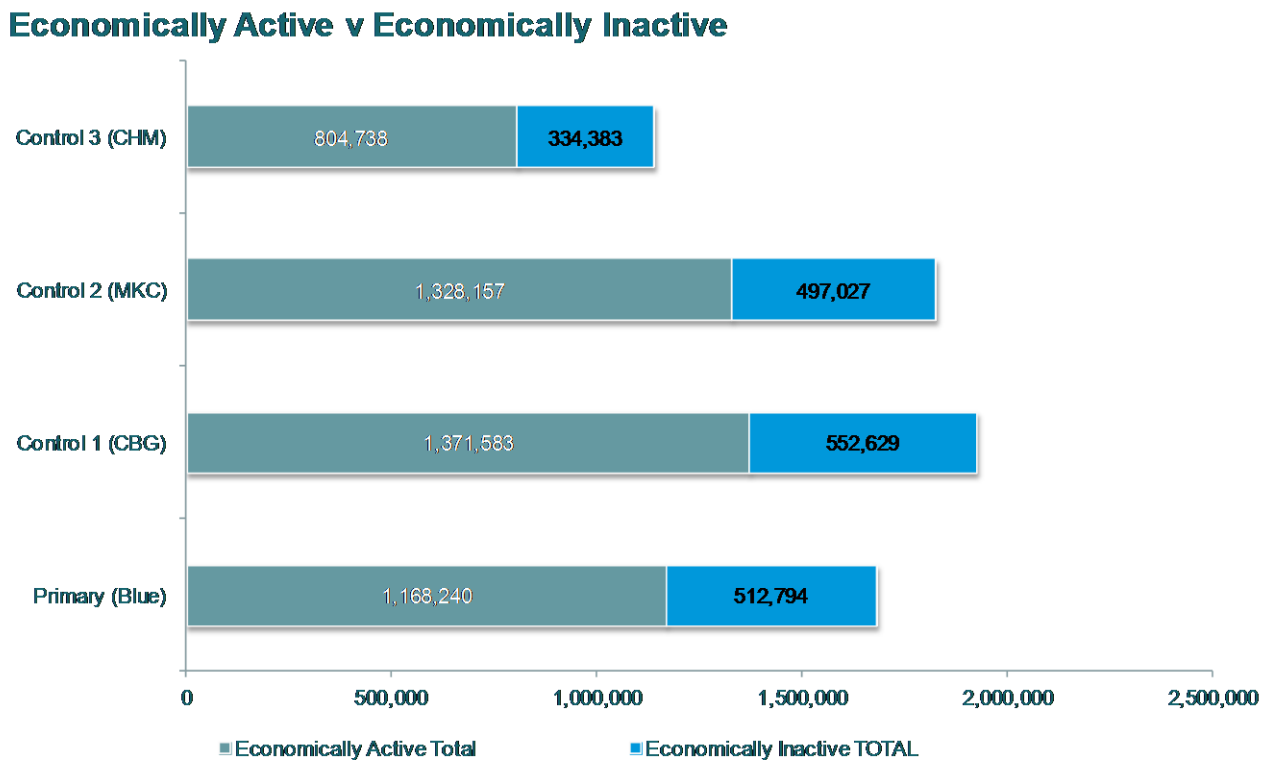
Business Density



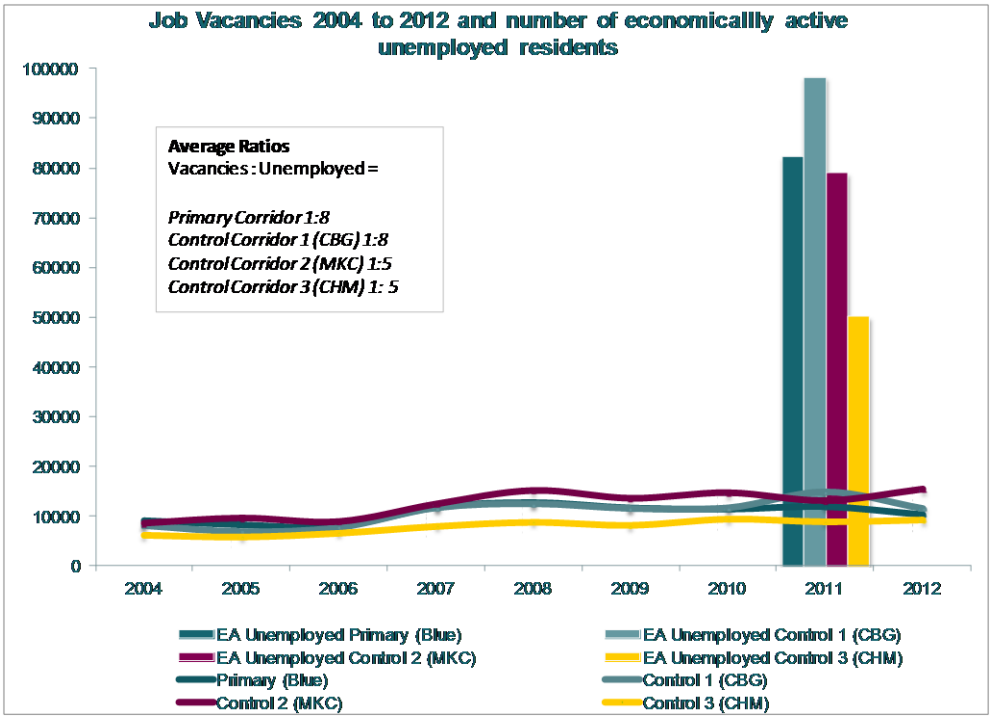
Control Areas – Population Growth



Control Areas – Unemployment



Control Areas – Job Vacancies



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Appendix B. Methodology Report: On Train Surveys

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Evaluation of the Impacts of High Speed 1

Methodology Report for On Train Surveys

14th October 2013

ATKINS

AECOM

frontier economics

Plan Design Enable

Notice

This document and its contents have been prepared and are intended solely for the Department for Transport 's information and use in relation to the Evaluation of HS1

Atkins, AECOM and Frontier Economics assume no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 16 pages including the cover.

Document history

Job number:			**Document ref:**			
Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 1.0	Detail Methodology used for On Train Surveys	TS	CJ	JF	AJC	14/10/13

Client signoff

Client	Department for Transport
Project	Evaluation of the impacts of HS1
Document title	Economic Assumption and Data Report
Job no.	5118033
Copy no.	
Document reference	

Table of Contents

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1. Introduction

This technical report provides a summary of the background to the HS1 user (on train) survey and details on the survey method and response rates.

Atkins, AECOM and Frontier Economics have been commissioned by the Department for Transport (DfT) to carry out an Evaluation of the Impacts of High Speed 1. Both primary and secondary source data is being used as part of this evaluation. As part of the primary data collection exercise interviews were carried with current HS1 users. The purpose of the on-train surveys were to:

- Provide evidence on the travel choices that different categories of passenger would make in the absence of HS1 (e.g. use an alternative rail route; mode or destination; or not travel); and
- Complement quantitative demand data on the types of journeys made using HS1 and their origins and destinations.

The aim was to provide additional data to that available from published sources to help identify those users who would have used domestic train services in the counterfactual case and the routes they would have used (identifying, for instance, whether they choose to drive further to access HS1 than they would to access conventional rail in the counter-factual scenario).

The surveys focused entirely on domestic services using the HS1 route as it is judged that responses of domestic passengers will be most useful in providing additional information on the changes in travel behaviour (change in rail route, mode etc) that have occurred in different segments of the market (e.g. the difference in responses from those travelling for different purposes, between different origins and destinations or at different times).

The survey results have provided a basis for estimated levels of change in demand caused by HS1 through trip generation, mode shift or destination shift.

In the following Sections we describe the approach to the on-train surveys.

2. Survey Approach

2.1. User Survey Method

The user surveys were carried out on board HS1 services. Surveys were carried out on a sample of trains covering all routes served by HS1 at different times of day and day of week. Surveyors were allocated to trains and distributed self-completion questionnaires to all adults aboard at the time. Respondents either returned their completed questionnaires to the surveyor or posted back to AECOM using a Freepost facility.

2.2. Survey Timing

A pilot survey took place on the 19th June and the main survey took place between the 8th and 21st July 2013. The survey period did not include any school holidays to best represent typical or neutral travel patterns.

2.3. Sample Size

The aim was to achieve 2000 interviews as this would give a large enough sample to allow the data to be disaggregated. Because patronage levels were unknown when scheduling the surveys, assumptions were made about the total number of passengers and the likely response rate in order to ensure enough surveyor time was allowed to collect a minimum of 2000 interviews.

In total 2976 interviews were collected during the main fieldwork period. As there was no material change in the questionnaire between the pilot and main survey, the 464 pilot interviews and the main survey data have been combined to create a more robust data set containing 3440 interviews.

2.4. Sample Design

Trains were sampled to ensure all services at all times of day and day of week were included in the survey. Table 2.1 below shows the services where interviews took place. In total 18 surveyor shifts covered 68 trains.

Table 2.1 Number of Trains where Interviews took place

Route	Monday - Friday AM	Monday to Friday PM	Saturday	Sunday	Total
St Pancras to Faversham/ Broadstairs	8	8	4	4	24
St Pancras to Maidstone	2*	2*	0**	0**	4
St Pancras to Margate	8	4	4	4	20
St Pancras to Sandwich	8	4	4	4	20
Total	26	18	12	12	68

*There are only four services between St Pancras and Maidstone in the morning and evening peak.

** There are no trains between St Pancras and Maidstone at Weekends.

Surveyors were issued with schedules specifying which services they were to board, and which carriages to commence working in. All adults on board were eligible to take part and the surveyor moved along the train distributing questionnaires and then returned to collect completed questionnaires where possible? At peak times in particular trains were very busy and therefore there was potential that the surveyor would not be able get through the whole train before it reached its destination. Additionally, users of the service could board and alight at intermediate stations thus potentially be missed by the surveyor. Therefore to try and reduce any bias the carriage in which surveyors started their distribution of questionnaires was randomly selected, prior to the survey, and specified on the survey schedule.

Where surveyors encountered groups travelling together for the same journey purpose they asked just one person in the group to complete the questionnaire, using the 'next birthday' selection process (i.e. the person to complete the questionnaire was the person whose birthday was next).

2.5. Survey Questionnaire

In this section there is a description of the questionnaire was used in the survey. The questionnaire was subject to cognitive testing and piloting in July 2013.

The questionnaire was designed to be completed by respondents themselves and was kept short in order to allow respondents to complete the survey whilst making their journey.

The questionnaire was designed to:

a) Capture details of the journey respondents were making at the time of interview from start to finish (eg home address to work address), the station they boarded and alighted the HS1 service and how they got/ were intending to get to and from the stations;
b) Understand what respondents would have done in the absence of HS1 for the journey they were making; and
c) Identify the influence the existence of HS1 had had in decisions to move house and/or change jobs.

It was not intended to capture respondents' levels of satisfaction with the service.

A copy of the questionnaire can be found in Appendix A.

2.6. On Train Survey Process

All surveyors working on the study received a personal briefing from the fieldwork manager and written instructions before starting work.

All surveyors were issued a schedule of which services they were to interview on including the station where they should board the train and what time and where they should alight. The schedule also told them which carriage they should start work and if the train was formed of two coupled together, which train they should start in.

A questionnaire distribution record form was used as the basis for recording details of each train where surveys took place. This recorded details of the train surveyed, the number of passengers on board, the number of questionnaires distributed and returned. The form also had a section for the train manager to sign to confirm that the survey had been conducted to the specification.

The processes followed were:

- Enter the carriage as specified on the interviewer schedule.
- Complete Section A on the Distribution Record Form with details about the train they were on.
- Wait until everyone is settled.
- Walk down the carriage and count all adult passengers. Record in Section B of the Distribution Record Form.
- Hand out questionnaires completing header information on the questionnaire as appropriate.
- Record how many questionnaires were handed on the Distribution Record Form.
- Move to the next carriage heading towards the front of the train (in the direction the train is moving) and repeat stages above.
- Collect the completed questionnaires in and offer respondents a thank you leaflet.
- Record how many questionnaires were collected in.
- Repeat.
- Bundle completed questionnaires and questionnaire Distribution Record Form for each train surveyed.
- Return questionnaires to office as soon as possible.

The questionnaire included a freepost address by which respondents who were unable to complete the questionnaire before alighting could post their questionnaire directly to the office.

3. Response Rates

In this section we describe the survey response rates. Due to the fact that train users board and alight at all stages of the train's journey it is very difficult to accurately identify the number on board at a given time, and hence calculate response rates.

To try and get a robust measure of the penetration rate and response rate we have based our calculation on counts made when a surveyor first entered a carriage (the 'First Sweep'). As there was enough time when travelling between stations to do an accurate count and hand out questionnaires to one carriage the surveyor was able to provide passenger counts for that moment in time.

The surveyors did record counts for subsequent visits to a carriage but it was not possible to tell how many people had alighted and how many new passengers had boarded between counts.

Table 3.1 shows that overall 88% of passengers who took a questionnaire returned it and overall 34% of all passengers returned a questionnaire. Please note that only one person per group was offered a questionnaire but all members of the group have been counted in the passenger count.

Table 3.1 Passenger counts for First Sweep of Train.

Route	Number of Passengers First sweep	Number of Questionnaires handed out First Sweep	Number of Questionnaires Returned First Sweep	Response Rate	Penetration
St Pancras to Faversham/ Broadstairs	1874	831	674	81%	36%
St Pancras to Maidstone	285	162	111	69%	39%
St Pancras to Margate	2066	604	589	98%	29%
St Pancras to Sandwich	1856	741	690	93%	37%
Total	6081	2338	2064	88%	34%

Table 3.2 shows the total number of questionnaires handed out and returned during the survey period. In total 91% of those taking a questionnaire returned it.

Table 9.2 Total Number of Questionnaires Distributed and Returned

	Total Number of Questionnaires Handed out	Total Number of Questionnaires Returned	Response Rate
St Pancras to Faversham/ Broadstairs	1152	958	83%
St Pancras to Maidstone	184	160	87%
St Pancras to Margate	986	962	98%
St Pancras to Sandwich	915	868	95%
Total	3237	2948	91%

4. Data Processing

Completed questionnaires collected by the surveyor were returned to the office the next working day and logged. All data was entered.

After data entry, range, routing and logic checks were undertaken. Any anomalies were highlighted for an individual inspection of the questionnaire by the data manager. This ensured the correct interpretation was made of the responses.

The origin and destination data has had coordinates appended, where possible, to allow journeys to be plotted on a map. As this data could be used to identify where a respondent lives it has been kept securely and has been separated from the main dataset that will be supplied to the Department for Transport for publication. Only the survey team and those undertaking the benefit analysis have access to this data.

Data has been checked and verified by an independent reviewer.

Appendix A: Questionnaire

Dear Passenger

Thank you for taking part in this important research. AECOM, an independent research agency, is carrying out this research on behalf of the Department for Transport in order to get an understanding of your journey today and use of this train service. The information will be used for future railway planning. The questionnaire should only take five minutes to complete.

Please complete this questionnaire and return to the interviewer who gave it to you. If you are unable to complete it before leaving the train please pop it in an envelope and return FREEPOST RTCU-LLTT-UHJA, AECOM LTD, 179 Moss Lane, Altrincham, WA15 8FH by 31st July 2013.

This research is being carried out under the Market Research Society Code of Conduct which guarantees any information you provide will be treated in the strictest of confidence and will **NOT** be used for any marketing activities.

If you have any queries please contact our survey helpline free on: 0800 652 8646. Thank you very much for your help.

SECTION 1 – YOUR JOURNEY TODAY

Q1 **At which station did you board THIS train?** (Please write in station name)

_____

Q2 **Approximately what time did you board THIS train?**

Write in time: _____ hours _____ mins am/pm (delete as appropriate**)**

Q3 **How did you get to the station where you boarded this train?** (Please tick all modes used)

On foot	☐1	Tube/ Underground	☐7
Car/van as driver	☐2	DLR	☐8
Car/van as passenger	☐3	Air	☐9
Taxi	☐4	Cycle	☐10
Bus	☐5	Other (please write in)	☐11
Other train	☐6	.....	

Q4a **Where did you start the journey that you are currently making?** (*eg home/work/shopping location)* (Please write in as much detail as possible)

Street _____

Area/ Town _____

Postcode

eg	*K*	*T*	*1*	*8*	*5*	*B*	*W*

Q4b **Was this home, or other location?** (Please tick one only)

Home ☐1

Other ☐2

Q5 **At which station will you leave THIS train?** (Please write in station name)

_____

Q6 **How will you get to your final destination from that train station?** (Please tick all modes used)

On foot	☐1	Tube/ Underground	☐7
Car/van as driver	☐2	DLR	☐8
Car/van as passenger	☐3	Air	☐9
Taxi	☐4	Cycle	☐10
Bus	☐5	Other (please write in)	☐11

Q7a **Where will you end the journey that you are currently making?** (*eg home/work/shopping location)* (Please write in as much detail as possible)

Street _____

Area/ Town _____

Postcode

eg	*S*	*E*	*1*		*9*	*N*	*Z*

Q7b **Was this home, or other location?** (Please tick one only)

Home ☐1

Other ☐2

Q8 **Approximately how long is your whole journey, from start to your final destination, expected to take** (*including travelling to and from the train stations as well as the train journey*)**?**

Write in time: _____ hours _____ mins

Q9 **What is the main purpose of your journey today** (Please tick one only)

Commuting to/from work	☐1	Travel to/from holiday	☐7
Commuting for education (to/from Uni/college/school)	☐2	Social/Leisure	☐8
On personal business (e.g. dentist, haircut)	☐3	Tourism	☐9
Visiting friends or relatives	☐4	Other (please specify)	☐10
Business/In connection with work	☐5		
Shopping	☐6	.....	

Q10 **How often do you make this journey?** (Please tick one only)

5 or more times a week	☐1	Once to three times a month	☐4
3 or 4 times a week	☐2	Less than once a month	☐5
Once or twice a week	☐3	First time	☐6

Q11 **Thinking about where you started, and will end this journey today, which of the following statements best describes your journey.** (Please tick one only)

I would not have this journey from the same start and end location before the introduction of this High Speed service	☐1
I used to make this journey from the same start and end location before this High Speed service was introduced but used a different train	☐2
I used to make this journey from the same start and end location before this High Speed service was introduced but used a different mode of transport such as car or bus	☐3
None of the above apply to me	☐4

Q12 **How many OTHER people are travelling with you (in your party) today?**

None	☐ (tick if travelling alone)
Adults	Write in number _____
Children under 5	Write in number _____
Children aged 5 to 15	Write in number _____

Q13 **What type of ticket did you use for your train journey today?** (Please tick one only)

NB the name will be on your ticket

Anytime day single *(travel any time of day, no return)*	☐1	Anytime Travelcard *(travel anytime of day return same day)*	☐6
Off peak single *(travel off-peak, no return)*	☐2	Off peak Travelcard *(travel off-peak, return same day)*	☐7
Anytime day return *(travel anytime of day return same day)*	☐3	Season ticket – 7 day	☐9
Off peak day return *(travel off-peak, return same day)*	☐4	Season ticket – longer than 7 days	☐10
Anytime return/ off peak return *(travel anytime of day return within one month)*	☐5	Other (please write in) _____	☐11

Q14 **Did you use a railcard to buy your ticket today**.... (Please tick one only)

No	☐1	Yes, Forces railcard	☐5
Yes, 16-25 railcard	☐2	Yes, Friends and Family railcard	☐6
Yes, Senior railcard	☐3	Yes, Network railcard	☐7
Yes, Disabled railcard	☐4	Yes, other (please write in) _____	☐8

SECTION 2 – ALTERNATIVE TRAVEL

Q15 **If this High Speed Service did not exist. How would you have made this journey today without using this High Speed Service?** (Please tick one only)

Used a non High Speed train	☐1	**Go to Q16**
Travel by car/ van/ motorbike (as driver or passenger)	☐2	**Go to Q17**
Travel by bus/coach	☐3	**Go to Q17**
Other (please write in)	☐4	**Go to Q17**
Would not have been making this journey	☐5	**Go to Q17**

Q16 **If you would use a non High Speed service at which station would you:**

a)

b) **board the train?** (Please write in station name) _____

get off the train? (Please write in station name) _____

Q17 **Do you currently live in the UK?**

(Please tick one only)

Yes	☐1	**Go to Q18**
No	☐2	**Go to Q24**

Q18 **Have you changed jobs or moved work locations since December 2009?**

(Please tick one only)

Yes	☐1	**Go to Q19**
No	☐2	**Go to Q21**

Q19 **If you have changed jobs or moved work location since December 2009, please state the area you used to work and where you now work** (if you have changed jobs more than once please give the location of where you worked five years ago and where you work now).

Original work location (area) .....

Current work location (area) .....

Q20a **Did the existence of the High Speed Service influence your decision in any way to move / take up a new job?**

(Please tick one only)

Yes	☐1	**Go to Q20b**
No	☐2	**Go to Q21**

Q20b **If yes, in what way did it influence you?** (please write in)

.....

.....

.....

.....

Q21 **Have you moved house since December 2009?**

(Please tick one only)

Yes	☐1	**Go to Q22**
No	☐2	**Go to Q24**

Q22 **If you have moved house since December 2009, please state the area you used to live and where you now live.** (if you have moved house more than once please give the location of where you lived five years ago and where you live now).

Original home location (area).....

Current home location (area) .....

Q23a **Did the existence of the High Speed service influence your decision to move home/ the area you moved to?**

(Please tick one only)

Yes	☐1	**Go to Q23b**
No	☐2	**Go to Q24**

Q23b **If yes, in what way did it influence you?** (please write in)

.....

.....

.....

.....

SECTION 3 - ABOUT YOURSELF

Q24 **Are you:**

Male ☐1 Female ☐2

Q25 **What is your age?** (Please tick one only)

16-25	☐1	35-44	☐3	55-59	☐5	65-69	☐7
26-34	☐2	45-54	☐4	60-64	☐6	70+	☐8

Q26 **Which of these best describes your occupation?** (Please tick one only)

Professional/Senior Managerial	☐1	Full- time student	☐6
Middle Managerial	☐2	Retired	☐7
Junior Managerial/Clerical/ Supervisory	☐3	Unemployed/between jobs	☐8
Skilled Manual *(with professional qualifications/ served an apprenticeship)*	☐4	Housewife/ Househusband	☐9
Unskilled Manual *(no professional qualifications/not served an apprenticeship)*	☐5	Other (Please write in)	☐10

Thank you for your help in completing this questionnaire. Now please return this questionnaire to the interviewer who gave it to you, leave it on your seat/table for collection or return it as soon as possible and by 31st July FREEPOST RTCU-LLTT-UHJA, AECOM LTD, 179 Moss Lane, Altrincham, WA15 8FH.

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Appendix C. Assumptions and Economic Data Report

Evaluation of the Impacts of High Speed 1

PPRO/04/92/31

ASSUMPTIONS AND ECONOMIC DATA REPORT

28th March 2013

Plan Design Enable

Notice

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1. Introduction

A detailed approach to this evaluation of the impacts of High Speed 1 ("HS1") has now been agreed with the Department for Transport. This is described in full in the Evaluation Scoping Report for this study. The primary research for this study is underway.

This report presents the economic assumptions, data sources and parameters that are to underpin the evaluation approach presented in the Evaluation Scoping Report. This report covers each of the areas of evaluation to be considered in the study, specifically:

- Section 2 outlines the economic assumptions and data used in the evaluation of the impacts of HS1 with respect to Government shareholdings and asset values;
- Section 3 outlines the economic assumptions and data used in the evaluation of the impacts of HS1 with respect to transport users and providers;
- Section 4 outlines the economic assumptions and data used in the evaluation of the impacts of HS1 on the wider economy; and,
- Section 5 outlines the economic assumptions and data used in the evaluation of the impacts of HS1 on regeneration.

The information contained within this report will be reviewed and updated as necessary over the course of the study and the final details of the economic assumptions and data under-pinning the evaluation will be included in the study Final Report. The assumptions and data in this document have been reviewed to ensure they are consistent as far as possible across different elements of the project. Several key linkages and overarching assumptions have already been identified, including:

- Ensuring consistency in the impact of HS1 on property values and assets held by government; and assumptions developed for more general property price impacts within the regeneration work stream;
- Ensuring consistency across economic and demographic data (e.g. GVA, population and employment) within the Transport User, Wider Economic Impact and Regeneration work streams, and
- A requirement to use CPI based measures of prices and the GDP deflator where possible in assessing values of impacts.

As far as possible, these data will be consistent across all of the elements of the evaluation, although it is noted that in some cases this may not be possible (e.g. historic data may be on a different basis to forecasts). A comparison of datasets will be undertaken across these areas to identify any issues across work streams.

This report describes the economic assumptions and data that will be used to describe the "with HS1" situation and the counterfactual. The rationale and approach taken to defining the counterfactual for this evaluation has been described in detail in Section 3 of the Evaluation Scoping Report. The approach adopted includes assuming "No land use planning policies supporting development around stations on HS1 or on rest of corridor" (see Logic Map at Figure 2 of the Scoping Report). In line with this approach the evaluation of Regeneration Effects and Government Departmental Asset effects will:

- Identify the total amount of development on the HS1 corridor by comparing the observed with HS1 situation with this theoretical counterfactual where no action was taken to promote development in the corridor; and then,
- Carry out the research and analysis described in the Scoping Report to identify how much of this development is attributable to HS1.

As a result the counterfactual referred to in this report initially assumes only minimal development around Kings Cross and St. Pancras stations.

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2. Government Shareholdings and Asset Values

2.1. Evaluation scope

In this workstream, we will seek to determine the current and future value of government shareholdings and assets acquired during the course of the Channel Tunnel Rail Link project. The analysis will cover the period from 1996 to 2040

This Section provides details of the assumptions and data to be adopted in our approach, setting out:

- the asset portfolio that we will consider;
- the assumptions underpinning the analysis, particularly with regards to the counterfactual; and
- the data and information we will use for evaluation.

We discuss each of the points in turn.

2.2. Assets and shareholding definition

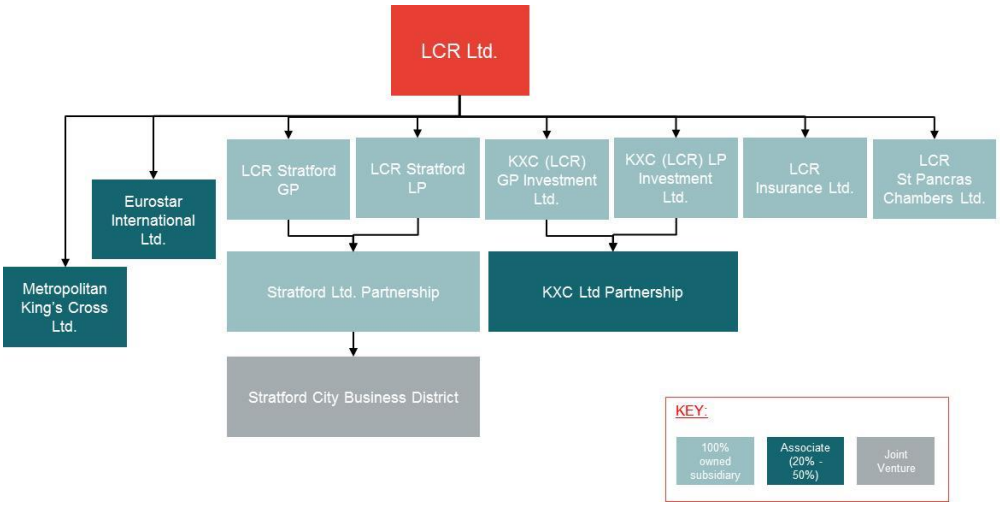
As a result of its direct involvement with the Channel Tunnel Rail Link project, the Government has acquired full ownership of London & Continental Railways Limited (LCR). The company, which was originally set up for the development and construction of the rail infrastructure project, has since shifted its focus to property holding and development.

It is our understanding that most government asset holdings are through LCR. These include:

- Land and property developments in the King's Cross and Stratford areas;
- A 40% share in Eurostar International, the train operating company that provides services connecting London to Brussels and Paris

Figure 2–1 shows LCR's holding structure, as reconstructed using information from financial statements.

Figure 2–1. LCR's holding structure



In addition to the ownership of LCR, the Government also has ultimate ownership of the HS1 infrastructure, currently under service concession to HS1 Limited until 2040. In line with government accounting practices, the HS1 infrastructure is included in the Department for Transport's balance sheet. For this reason, we will include this asset in the valuation exercise.

Our valuation will focus on these assets, estimating their current value as well as their evolution during the period covered by this study.

2.3. Assumptions

The key assumptions for this workstream are related to the counterfactual scenario regarding land and property developments. Specifically, we will adopt the following assumptions:

- In the absence of HS1, only minimal land and property development might have taken place in the area surrounding King's Cross and St. Pancras stations, due to moderate investment in the transport infrastructure in the area. As the study progresses, and more information is collected from stakeholders, we will firm up the assumptions regarding the most likely development of the King's Cross and St. Pancras area under a 'without HS1 scenario'.

- The Stratford area would have been developed to host the Olympic Games, but no development related to Stratford International station would have taken place. The remaining transport infrastructure investments (Docklands Light Railway and Jubilee Line Extension) would have still been developed.

- The value of land and property in King's Cross and Stratford would have followed the general trend of their surrounding areas.

We note that these assumptions may evolve as the study progresses. Specifically, we expect to be able to fine-tune them as we collect information and discuss with stakeholders.

As stated in the ITT, and in the NAO 2012 report, the counterfactual for this workstream is difficult to set out, given the various interventions by government and restructurings that have taken place. However, we will seek to provide an assessment of the impact of the key restructuring events in 1998 and 2002. However, we note that that the speculative nature of this exercise implies that only a qualitative assessment of these events may be possible.

2.4. Data requirements and sources

To complete this workstream, we expect to rely on a combination of published information and meetings with stakeholders. The necessary meetings with stakeholders will overlap significantly with those needed for the regeneration workstream, and the planning of visits is being carried out jointly.

- To value the Government's property portfolio we will require information on LCR's net assets, expected future income streams, and expert opinions on the evolution of the property market in the areas considered. We will also need to collect expert opinions as to what the potential development of each area could have been in the counterfactual scenario. We expect to collect this information from:

    - LCR's financial statements: 1996-2012;

    - LCR's subsidiaries & associates financial statements: 1996 – 2012;

    - LCR's independent property valuation reports used to fair value their investment property

    - LCR's internal management accounts

    - Internal business plans or financial models for investments produced by LCR

  - Discussions with LCR (and DfT) about decisions made at the time of the restructurings
  - HS1's financial statements from inception;
  - meetings with LCR's independent property valuers (Jones Lang Lasalle & GL Hearn)
  - meetings with private stakeholders such as LCR's partners, property statistics providers, property equity funds and commercial property appraisers;
  - meetings with public stakeholders, including local authorities which directly benefited from the developments (Camden, Islington and Newham).

- With regards to LCR's other shareholdings, we will evaluate them considering their book value as well as the expected future revenue streams. We will collect this information primarily from LCR's and Eurostar International's published accounts. If necessary, we would integrate it with information directly provided by the companies.
- With regards to the current value of the HS1 infrastructure, we will refer to the valuation provided by the Department for Transport's financial accounts.
- The definition of the counterfactual for this workstream will need to rely on the expert opinion of private stakeholders operating in the sector, as well as that of local authorities. As noted above, part of this information is likely to be of a qualitative nature.

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3. Transport User and Provider Impacts

3.1. Evaluation scope

The Transport User and Provider Impacts workstream will focus on estimating the impacts of HS1 and associated Southeastern timetable changes on users and providers of the transport system. .

3.2. Definitions and approach

Transport users are defined as all those people (whether UK based or foreign) making journeys on elements of the UK transport network that are materially affected by the introduction of HS1. This specifically includes users of the High Speed network itself (including Eurostar passengers) and users of other public transport services and the road network (local and strategic) in the Kent area.

The assessment will follow the approach set out for appraising proposed transport schemes in the DfT's WebTAG appraisal guidance which has been specified to capture the full range of potential impacts of transport schemes (either quantitatively or qualitatively) without double counting, with monetised user benefits estimated on the basis of a set of underlying assumptions about the theoretical behaviour of the economy and of passengers when making travel choices.[1]

In line with WebTAG, user benefits will be calculated using the 'rule-of-half' methodology with those who are estimated to use rail in both the counterfactual and with HS1 scenario attributed the full benefits of rail generalised cost savings and those using rail in the with HS1 scenario who would not use rail in the counterfactual attributed half of the benefits on average[2].

One aim of the evaluation is to provide an estimate of the cost effectiveness of HS1, resulting in the calculation of a BCR. In line with WebTAG requirements, calculation of a BCR requires consideration of the costs and benefits over a 60 year appraisal period. As the different elements of the scheme have been in operation for between four and eleven years, the calculation of cost-effectiveness requires an element of forecasting to estimate the scale of impact over the remainder of the appraisal period. It is important to note that this differs from the standard definition and approach to evaluation which focuses on considering effects that have already occurred

3.3. Assumptions

3.3.1. Impacts considered

The most significant transport user and provider impacts of HS1 are assumed to be caused by:

- The direct travel time savings experienced on the HS1 routes;
- The premium fares payable on high speed routes;
- Changes in access and egress travel times, rail fares and parking charges (and associated revenue received) caused by changes in routing adopted to make use of the high speed services (for instance driving further to a station with a high speed service and then arriving in London at St Pancras rather than Waterloo);

[1] The WebTAG approach to assessing user benefits assumes that the economy behaves in a theoretically 'perfect' manner and that passengers make 'economically rational' choices i.e. have sufficient knowledge of all transport options to be able to adopt the lowest cost option (including monetary and perceived time costs)

[2] This approach is based on the presumption that High Speed 1 travel is seen as part of the existing mode share.

- The effects on wait and travel times caused by the change in timetable for users of non-high speed Southeastern services;
- Crowding and reliability impacts on Southeastern services (high speed and non high speed);
- Decongestion impacts (including time, accident and carbon savings) on the road network caused by mode-switch from road to rail as a result of HS1; and
- Carbon impacts of increased rail service provision.

The following impacts are assumed to be more minor, uncertain and/or beyond the scope of this study (and will be addressed qualitatively in the absence of evidence to the contrary):

- Eurostar passengers' access/egress and interchange impacts - net impact is considered to be small as some passengers will have benefited from the relocation from Waterloo to St Pancras whilst others experienced disbenefits, depending on their ultimate destination
- Non high speed public transport user – access/egress and interchange - those continuing to use non-high speed services are assumed to use the same route as before the introduction of HS1, therefore experiencing no change in access, egress or interchange costs;
- Other public transport impacts (e.g. Thameslink, Herne Hill and underground) - impacts are small, uncertain and impractical to distinguish from much larger influences and changes over the same time period;
- Rail safety impacts – rail accident rates are very low and the differential between rates on different route types uncertain, due to the limited sample size. It is therefore more appropriate to cover safety impacts through qualitative comments.;
- Air/ferry passenger impacts - the benefits experienced by HS1 passengers who would use air/ferry in the counterfactual and will be captured through the quantification of the rail passenger benefits (in line with WebTAG, benefits are allocated on the basis of the mode used in the 'with HS1' scenario).The additional impacts of HS1 on flight patterns and therefore journey costs for remaining air passengers are likely to be small and impractical to distinguish from the much larger impacts of the growth of the low cost air market over the same time period. However, additional research into the impacts will be undertaken to inform the qualitative assessment and a quantitative assessment made if evidence of a significant impact is found;
- Freight impacts - freight use of HS1 is very limited and the lack of an appropriate approach for the quantification of the benefits of freight schemes is a recognised shortcoming of current transport appraisal guidance (WebTAG), reflecting the fact that benefits cannot be directly linked to time savings; and
- Noise/Air Quality - estimation of the full noise and air quality impacts of changes in rail service provision would require detailed calculations based on details such as the location of affected households and other receptors and are therefore beyond the scope of this study.
- Disruption during construction – the impact of construction on transport users was limited by the fact that HS1 was developed a new rail line with limited interaction with the existing transport network. The environmental impacts will be summarised in the report.

The proposed evaluation approach does not include an estimate of the 'embedded' carbon emissions associated with the construction of HS1 and the associated infrastructure and rolling stock. This approach is in line with WebTAG guidance which suggests that the scale of effort involved in the detailed task of calculating embedded carbon for major transport schemes is usually disproportionate (WebTAG unit 3.5.3 February 2013 and November 2011 versions).

We note that these assumptions may evolve as the study progresses.

3.3.2. Economic parameters

The calculations will draw on a number of economic parameters, primarily from the DfT's WebTAG units. Tables 3-1 and 3-2 below present the assumptions to be adopted.

Table 3–1 Generalised Journey Cost assumptions

Generalised Journey Cost Assumptions	
Purpose types	Business, commute, leisure-in line with WebTAG 3.5.6 (October 2012)
Values of Time (pence per minute)	WebTAG Unit 3.5.6 (October 2012) Tables 1 and 2
Value of Time growth rate	Calculations consistent with WebTAG Unit 3.5.6 (October 2012) Table 3b: but updated to use latest GDP and household growth forecasts as quoted for demand growth assumptions in section 3.3 below
Weightings of journey time components	WebTAG Unit 3.5.6 (October 2012) Non business walk time saving valued at 2*in vehicle time saving and wait time saving valued at 2.5*in vehicle time saving. All other time components valued at 1*in vehicle time saving
Crowding	In line with PDFHv5.0, Table B6.2 as recommended in WebTAG Unit 3.13.1 (August 2012)
Interchange Penalty	In line with PDFHv5.0, Table B4.7 as recommended in WebTAG Unit 3.13.1 (August 2012)

Table 3–2 Discounted monetary appraisal assumptions

Discounted monetary appraisal assumptions	
Discount base year	2010 in line with WebTAG Unit 3.5.4 (August 2012) para 4.1.5.
Price base year	2010
Appraisal period	2003 to 2069 finishing 60 years after opening of domestic services (Dec 2009) (in line with 60 year period set out in WebTAG Unit 3.5.4 (August 2012) para .5.2.3)
Discount rate	3.5% from 2013 to 2042, 3% from 2043 onwards in line with WebTAG Unit 3.5.4 (August 2012) Table 1.
Price base conversion	HM Treasury GDP Deflator, in line with WebTAG Unit 13.3.1. All calculations will follow current guidance and use the GDP Deflator calculated using the CPI to deflate the consumer components of GDP in calculating real GDP growth (rather than the RPI used for the same purpose prior to 2012). The only exception (also in line with WebTAG – Unit 3.5.6) is that the real GDP growth used as an 'EDGE' input to forecast demand growth is calculated using the old RPI based GDP deflator (reflecting the fact that the PDFH elasticities used to forecast growth were derived from datasets calculated using the previous approach).
Indirect tax impact valuation	Calculated from change in rail revenue and vehicle operating costs, using the approach set out in WebTAG 3.13.1

3.4. Data requirements and sources

The calculations will draw on a wide range of data from a number of sources as summarised in Tables 3-3 to 3-5 below

Table 3–3 Generalised Journey Cost data sources

Generalised Journey Cost Components	
Domestic fares 2007/08 to 2012/13	*With HS1*: MOIRA vOR36 *Counterfactual:* MOIRA vOR36 for non HS routes
International fares 2003/04 to 2012/13	*With HS1:* Eurostar records *Counterfactual:* Assumption based on previous trends
Future real fares growth	*With HS1:* 2012/2013 to demand cap year RPI+1% *Counterfactual*: 2012/2013 to demand cap year RPI+1% (rate of growth in line with current practice, use of cap year, in line with HS2 approach) Beyond demand cap year – no further real fares growth
Demand cap year	2033 i.e. 30 years from appraisal year with 2023 and 2043 as sensitivity tests (in line with WebTAG Unit 13.3.1)
Parking charges 2007/08 to 2012/13	*With HS1:* HS1 and Southeastern records *Counterfactual:* Assumption based on trends at other stations
Parking charge 2013 onwards	*With HS1 and Counterfactual*: Assumed no real increase from 2013
Timetable journey time and frequency 2009 (2008 for international)	*Domestic:* *With HS1* - MOIRA version OR36. December 2009 *Counterfactual* - MOIRA version OR36. March 2009(subject to discussions with Southeastern to confirm the impact of HS1 on non HS timetables) *International:* *With HS1 Phase 2* – 2008 timetable *With HS1 Phase 1* - 2008 timetable adjusted to reverse recorded changes associated with HS1 Phase 2 *Counterfactual* – 2008 timetable adjusted to reverse recorded changes associated with HS1 Phase 1 and Phase 2
Change in timetable journey time and frequency between counterfactual and 'with HS1' from 2009 onwards (2008 for international)	*With HS1 and Counterfactual*: Assumed as 2009 (for domestic services and 2008 for international services)
Travel modes and costs for access/egress to/from station	*With HS1 and Counterfactual*: Information on travel patterns from Study survey (potentially supported by information from National Passenger Survey, LATS 2001 and surveys undertaken by Southeastern, parking data and TfL RODs survey – availability to be confirmed) Information on travel costs from sources such as Google maps directions and journey planners
Levels of crowding	*With HS1:* Based on PIXC and other weight counts from DfT and Southeastern and PDFH v5 guidance *Counterfactual:* Assumption based on trends in previous years and on comparable routes and counterfactual :
Reliability measures	*With HS1:* Based on Network Rail Reliability Measure (form yet to be specified) and PDFH v5 guidance *Counterfactual:* Assumption based on trends in previous years and on comparable routes and counterfactual :

Table 3–4 Demand growth related data sources

Sources of data to inform demand growth assumptions			
Pre 2011	**Based on RUDD (details to be provided by DfT at the end of July)**		
2011 onwards	**Based on EDGE** (based on note from DfT 2013 Apr Exogenous Assumption - for circulation)		
Variable	**Year**	**Source**	**Notes**
Population	2010/11 - 2025/26	National Trip End Model (NTEM) constrained to regional CEBR constrained to National ONS low migration forecasts	CEBR forecasts from February 2013.
	2026/27 - 2040/41	NTEM constrained to National ONS low migration forecasts	ONS data from 26 October 2011.
	2041/42 - 2049/50	ONS low migration forecasts (no disaggregation)	NTEM version 6.2.
GDP Per Capita	2011/12 - 2017/18	Regional CEBR constrained to National Office of Budget Responsibility (OBR) Economic and Fiscal Outlook (the regional and national population levels above are used as the denominator)	CEBR forecasts from February 2013.
	2018/19 - 2025/26	Regional CEBR constrained to OBR Fiscal Sustainability forecast	OBR Economic and Fiscal Outlook from March 2013 and OBR Fiscal Sustainability from July 2012 (see NOTE 1 below on GDP growth rate adjustment).
	2026/27 - 2049/50	National OBR (National low migration ONS Population is Denominator) (no disaggregation)	ONS population data from 26 October 2011.
Employment	2011/12 - 2017/18	NTEM constrained to regional CEBR constrained to National OBR Economic and Fiscal Outlook forecasts	CEBR forecasts from February 2013.
	2018/19- 2025/26	NTEM constrained to regional CEBR constrained to National OBR Fiscal Sustainability forecasts	OBR Economic and Fiscal Outlook forecasts from March 2013 and OBR Fiscal Sustainability forecasts from July 2012.
	2026/27 - 2040/41	NTEM constrained to National OBR Fiscal Sustainability forecasts	OBR growth rate smoothed between years 2017/18-2060/61 (see NOTE 2 below on growth rate adjustment).
	2041/42 - 2049/50	OBR Fiscal Sustainability forecasts (no disaggregation)	NTEM version 6.2.

National Rail Fares and **London Underground Fares**	2011/12 - 2018/19	RPI+1% for all years (deflated by RPI)	RPI assumptions from OBR Fiscal Outlook from March 2013. OBR Fiscal Sustainability RPI forecasts from July 2012. After 2020/21assume RPI growth rate of 3.4%
	2019/20 - 2050/51	RPI+1% for all years (deflated by RPI)	
Air Passengers, Air Headway and Air Cost	Air model		
Fuel Cost	2011/12 - 2040/41	DfT's fuel price forecasts which are based upon DECC's Energy price forecasts and assumed Treasury Taxation policy	Using DECC oil price forecasts and March budget indirect tax assumptions.
	2041/42- 2049/50	Assume same level as 2040/41	N/A
Car Ownership	2010/11- 2040/41	National Trip End Model (NTEM)	N/A
	2041/42- 2049/50	Assume levels as in 2041	N/A
Car Time and Bus Time	2010/11 - 2034/35	From National Transport Model (NTM) runs	N/A
	2035/36 - 2049/50	Assume same times as in 2035	
Bus Fares and Bus Service	2010/11- 2034/35	Assumes same growth of fares as last 16 years (Local Economics Assumption)	N/A
	2035/36- 2049/50	Assumes same level as 2035	N/A

Note 1 Adjustments to GDP growth rates

The OBR real GDP forecasts use a GDP deflator which is based on the CPI methodology. However, the PDFH elasticities were estimated using real GDP growth rates which were based on a different GDP deflator methodology (more akin to the RPI methodology). The OBR has estimated that the new deflator increases real GDP growth by approximately 0.2% per annum; we have therefore reduced the real GDP growth forecasts by 0.2% per annum to ensure the growth rates are consistent with the elasticities that are applied to them. This is in line with WebTAG 3.5.6.

Note 2 Adjustments to Employment growth rates

Due to the most recent short-term OBR forecasts (Economic and Fiscal Outlook, published March 2013) predicting faster-rising short-term employment levels than the previously published long-term OBR forecasts (Fiscal Sustainability Report, published July 2012), a break has been created in the resulting employment growth rate series. The higher levels of employment in the last year of the new forecast (2017/18) would lead to a negative employment growth rate in the transition year (2018/19) to the long term forecast, after which the growth rate would return to previously-forecasted levels.

In order to address this break, it is assumed that the employment will continue growing at a constant rate (i.e. the growth rate is smoothed) after the last year of the short term forecast (2017/18) until it reaches the level previously forecasted for the last year of the long-term forecast (2060/61). Growth rate smoothing results in lower employment growth rate between years 2017/18 – 2060/61 than previously forecasted, as the newly calculated growth rate starts from higher level of employment in 2017/18 and reaches the same level of employment (as previously forecasted) in 2060/61. In other words, due to higher growth in employment in years 2011/12 – 2017/18, employment has to then subsequently grow at a slower rate to reach the same long-term forecast level (in year 2060/61) from a higher base (in year 2017/18).

Table 3–5 Observed travel data sources

Sources of data to inform derivation of counterfactual from observed travel patterns	
Characteristics of passengers (purpose, origin/destination)	Study survey results Potentially earlier surveys by Southeastern Potentially National Passenger Survey
Mode and route of access to rail	Study survey results Potentially earlier surveys by Southeastern Potentially National Passenger Survey Potentially LATS
Stated alternative mode/route	Study survey results
Parking volumes	Southeastern parking data HS1 parking data
Passenger demand levels 2003(for Eurostar) 2008/09 (for domestic) to 2012/13	MOIRA vs O36 data PIXC and other weight count data (from DfT Rail and Southeastern) Eurostar patronage data (form to be confirmed)

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4. Wider Economic Impacts

4.1. Evaluation scope

The Wider Economic Impact (WEI) work stream will seek to determine the wider economic benefits or disbenefits associated with the introduction of the HS1 service. As described in the Scoping Report the approach adopted is based on the method for predicting Wider Economic Impacts set out in WebTAG. The analysis will cover the period from 2009 to 2069 based on a 60 year appraisal period as set out in WebTAG.

This Section provides an initial overview of the assumptions and data in our approach, setting out:

- the transport user outputs we will use to ascertain the WEI's;
- the assumptions underpinning the analysis, particularly with regards to the counterfactual; and
- the data and information we will need and potential sources of same.

An overview of the approach is provided in Section 4.2 below.

4.2. Definitions and approach

The Wider Economic Impacts calculation is aimed at establishing the full impacts of HS1 on the South East Region. The most obvious benefits of HS1 are increases in rail service levels and speeds. These Transport User and Provider Benefits are the subject of a separate workstream. In addition these improvements in transport services will reduce the effective distance between firms and their customers, suppliers, competitors and labour force. This will lead to increases in productivity and output. These are referred to as the Wider Economic Impacts of the transport investment in question.

- Agglomeration effects;
- Effects of improved transport on markets with imperfect competition; and,
- Labour market effects

Agglomeration benefits arise from the reduction in the effective distance between firms and suppliers which leads to greater specialisation and productivity. These benefits are estimated by measuring the effective density of the area affected by the transport investment before and after the investment and applying standard elasticities to these measures of effective density. Measuring this effective density requires information on zone to zone travel in the study area and the location of businesses analysed by sector. The approach adopted to the measurement of Transport User Benefits will not provide this level of detail by itself. However, the models developed for the appraisal of HS2 provide this type of detail. The "without HS2 model" developed for the appraisal of HS2 provides a detailed picture of effective density with HS1 in place. Adjusting this model to remove the effect of HS1 will allow measurement of effective density without HS1. This adjustment will be carried out based on the results of the work to determine Transport User Benefits.

The reduction in the effective distance between businesses will also have positive effects on product and service markets where there is imperfect competition. The majority of goods and services are produced in markets which are not perfectly competitive. Firms in such markets will respond to a reduction in costs by increasing their output. The transport benefits of HS1 will be equivalent to a reduction in cost for the businesses affected. These businesses will respond to the reduction in their costs by increasing their output. This extra output will have a greater value to consumers, in terms of willingness to pay, than the cost of producing it. The increased output from businesses in imperfectly competitive markets as a result of HS1 will therefore represent a net benefit to the economy.

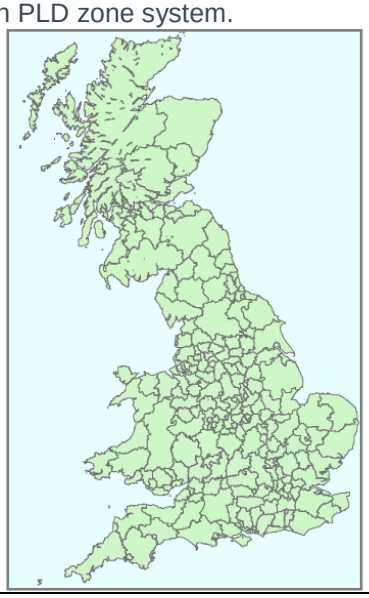
The reduction in the effective distance between firms and individuals will also lead to wider and deeper labour markets, which will have further positive economic effects. Members of the labour force will have greater net incentives to enter the labour market or to move to more productive jobs as the effective distance to potential employers is reduced. The net additional tax revenue as a result of these effects on the labour market will be a Wider Economic Impact of HS1.

The data sources that will be used to implement this approach and the key assumptions that have to be made are outlined below.

4.3. Data requirements and sources

To complete this work stream, we expect to rely on a combination of published information, the outputs of other workstreams and data from the HS2 appraisal team. Table 4-1 below details the data sources to be used.

Table 4–1 Wider Economic Impacts data sources

Data Requirement	Source
Effective density - This measurement requires measurement of the zone to zone average generalised cost for both rail and road in the 'with' and counterfactual scenarios.	HS2 Model Outputs in the form of skims for travel time, distance, charges and demand based on PLD zone system. 
In order to estimate the Output Change in Imperfectly Competitive Markets the Business User Benefits are required.	Transport User Benefit Stream
The elasticity of labour supply with respect to the net return from working	Sourced from the DfT Wider Impacts data set, supporting the WITA model
Number of workers living in each zone and their working destination zone	Sourced from the DfT Wider Impacts data set, supporting the WITA model
Tax take and GDP per worker parameters.	Sourced from the DfT Wider Impacts data set, supporting the WITA model
Earnings in each zone will be obtained from the Economic Data set.	Sourced from the DfT Wider Impacts data set, supporting the WITA model

4.4. Assumptions

The key assumptions for this workstream are related to the counterfactual scenario regarding transport infrastructure and growth in demand. Specifically, we will make the following assumptions:

- Data outputs from the HS2 model will be based on outputs from 2010, the earliest year available. 2009 values will be estimated based on these outputs;
- Growth rates will be based on HS2 future forecasts and/or WebTAG growth rates;
- Travel time, distance, charges and demand volumes will be available from the HS2 modelling team, these skims will be converted into WITA Local Authority zones; and
- Data on industry mix, GDP, populations, earnings, tax take and agglomeration elasticities will be based on data contained within the DfT WITA model and its supporting data set.

This approach uses unadjusted data from WebTAG and the DfT Wider Impacts data set. Specifically, values for growth, industry mix, GDP, population, earnings and tax take will be derived directly from WebTAG or the DfT Wider Impacts data set. For the calculation of Transport User Benefits the equivalent values will be adjusted by the study team, as described in Section 3 of this report. This is not expected to have a material effect on the valuation of WEIs. However, the effect of the use of unadjusted WebTAG and WITA parameters will be assessed as the valuation is carried out.

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5. Regeneration Impacts

5.1. Evaluation Scope

The regeneration impacts will be assessed for the Growth Corridor and, where appropriate, for the 2km Buffer Zones around the five core locations identified in the brief[3].

The purpose of this element of the evaluation is to assess the extent to which HS1 has led to regenerative improvements for the impact area, rather than for specific groups. This will include benefits to new residents as well as benefits to existing residents, and consequently the assessment of regenerative impacts will not be limited to specific target groups.

The regenerative impacts that will be assessed as part of the evaluation are:

- Impact on real estate values
- Impact on average house prices
- Number of jobs within the impact area
- Impact on business activity and business performance
- Resident employment within the impact area
- Changes to Average Wages

An assessment of deprivation within the Growth Corridor and 2km Buffer Zones will also be undertaken to provide context for assessing the impacts identified above. However the study will not estimate the impacts of HS1 on local deprivation levels. The latest Index of Multiple Deprivation was published in 2010, however much of the data included in the Index was captured in earlier years, before the introduction of HS1 passenger services. In addition, the IMD is used to measure relative deprivation and is not necessarily a robust measure of deprivation change over time.

5.2. Definitions and Approach

The net regenerative impacts will be assessed using the following standard methodology[4]:

$$\textit{Net Impact} = [\textit{Gross Impact} \times (1\text{-}\textit{Leakage}) \times (1\text{-}\textit{Displacement}) \times \textit{Multiplier}] - [\textit{Gross Impact}^* \times (1\text{-}\textit{Leakage}^*) \times (1\text{-}\textit{Displacement}^*) \times \textit{Multiplier}^*]$$

Where a * denotes the values under the counterfactual scenario (or reference case). This is the most likely scenario we would expect to have occurred in the absence of the HS1 and will differ from a pre-investment baseline.

The counterfactual scenario will be estimated through a triangulation approach, based on:

- Primary research in the Growth Corridor, including business and stakeholder interviews
- Secondary research in the Growth Corridor, including a review of socio-economic conditions

[3] Buffer Zones will be identified for Kings Cross & St Pancras, Stratford, Ebbsfleet, Ashford, and Ramsgate (for North and East Kent). The precise boundaries of the Buffer Zones may be reviewed in light of local circumstances. For example, a smaller boundary might more appropriate in Central London given the density of employment.

[4] This is consistent with the method set out in the Additionality Guide 3rd Edition, English Partnerships (2008)

- Secondary Research of the relative performance of the Growth Corridor against three control areas

5.3. Assumptions

These assumptions will be applied to all regeneration impacts, unless otherwise stated.

5.3.1. Leakage

Leakage is the proportion of outputs that benefit those outside the intervention's target area or target group.

As no target groups have been identified, opportunities for leakage will be limited. For example, if a new job has been created in the impact area it should be counted as a net impact regardless of whether the employee (i) is an existing resident of the impact area, (ii) is a new resident of the impact area, or (iii) commutes into the impact area from elsewhere. Under each of these examples, the job is still an additional job within the impact area.

Consequently, we assume zero leakage.

5.3.2. Displacement

Displacement is the reduction of intervention impacts elsewhere in the target area that are associated with the intervention activity.

There will almost certainly be some displacement of regeneration benefits within the impact area. For example, new employment space may attract businesses currently located within the impact area or new business activity for one firm may reduce the market share of others.

However, as the impacts will be monitored using secondary data sources capturing the whole target area, these affects will be captured through net changes in the secondary variables. For example an observed increase of 80 new jobs in an impact area, may include 100 new jobs associated with new employment space and the loss / displacement of 20 jobs elsewhere in the impact location.

Consequently, it is not necessary to adjust the observed impact to account for the displacement of existing activity.

5.4. Assumptions and parameters

Specific details on the study approach to the measurement of regeneration impacts are summarised in Tables 5-1 to 5-7 below:

Table 5–1 Real Estate assumptions and parameters

Impact on Real Estate Values	
Coverage	Measured for Growth Corridor and Buffer Zones
Impact	Change in commercial property values and rents within the impact area
Measure	Average rateable values within the impact area (Source: VOA)
Counterfactual	The level of rateable values in the counterfactual scenario. Estimated using: - General increase in rateable values across the control areas - Interviews with local agents re: the attribution of HS1 to observed variances

Economic Multiplier	Not relevant to rateable values / commercial rents

Table 5–2 House Price assumptions and parameters

Impact on Average House Prices	
Coverage	Measured for Growth Corridor only (data availability is limited below this level and we would expect the impact on residential house prices to be more dispersed than on commercial rent).
Impact	Change in residential property values in the growth corridor (Source: DCLG / Land Registry)
Measure	Average house prices in growth corridor
Counterfactual	The level of residential house prices in the counterfactual scenario. Estimated using: - General increase in house prices nationally and within the control areas. - Assessment of employment and commuting impacts - Interviews with relevant stakeholders to consider the attribution of HS1 to observed variances
Economic Multiplier	Not relevant to residential property prices

Table 5–3 Employment size assumptions and parameters

Number of jobs within Impact Area	
Coverage	Measured for Growth Corridor and Buffer Zones
Impact	Number of people employed by local businesses
Measure	Total workplace employment (disaggregated by sector) (Source: BRES, Census 2001 & 2011)
Counterfactual	Total workplace employment, by sector, in the counterfactual scenario. Estimated by: - Sector level employment trends in the other growth corridors - Interviews with local stakeholders, including Local Authority reps to understand attribution associated with HS1 – including of the employment profile of major regeneration schemes within the impact area - Results from the business survey
Economic Multiplier	Standard employment multipliers will be applied to the estimated net direct employment impacts to estimate the total net (direct and indirect) impact of HS1 on employment levels within the impact area, as part of the triangulation approach described above

Table 5–4 Business Activity assumptions and parameters

Impact on Business Activity and Business Performance	
Coverage	Measured for Growth Corridor and Buffer Zones
Impact	Increase in Gross Value Added generated by businesses in the impact area
Measure	GVA generated within the impact area, estimated by: $$\sum Regional\ GVA\ per\ employee_i \times total\ employment_i$$ Where i refers to each of the broad employment sectors.

	Source: ONS & BRES
Counterfactual	Estimated GVA in the counterfactual scenario. This will be based on the counterfactual employment profile estimated for the Employment impact measure.
Economic Multiplier	Standard output multipliers will be applied to the estimated net direct GCA impacts to estimate the total net (direct and indirect) impact of HS1 on GVA generated within the impact area, as part of the triangulation approach described above.

Table 5–5 Resident employment profile assumptions and parameters

Resident employment within Impact Area	
Coverage	Measured for Growth Corridor only (Data availability is limited below the local authority level).
Impact	Increase of the number of people living in the impact area in employment
Measure	Level of residents employment (Source: APS, Census 2001 & 2011)
Counterfactual	Level of resident employment in the counterfactual scenario. Estimated using: - Trends in residents employment patterns (inc. employment rates and commuting patterns). - Comparison of commuting patterns against the control areas
Economic Multiplier	While there are likely to be some indirect employment impacts, as residents in work spend their incomes locally, this will be captured in the *Number of jobs within Impact Area* measure.

Table 5–6 Wages assumptions and parameters

Changes to Average Wages	
Coverage	Measured for Growth Corridor only
Impact	Increase in average wages of resident employees
Measure	Average Residents' Wages (Source: ASHE)
Counterfactual	Level of residents' wages in the counterfactual scenario. Estimated using: - Trends in wage growth within the growth corridor and control areas - Assumptions from above re: impact of HS1 on resident employment trends.
Economic Multiplier	Not relevant to average wage level

5.5. Data sources

The specific data sources identified to implement this approach are set out in the Table 5.7 overleaf:

Table 5–7 Data sources supporting the evaluation of Regeneration Impacts

Indicator	Time Period	Spatial Level	Source	Associated Regeneration Benefit	Note
Workplace employment by broad industrial sector	2001/09-11 (time series)*	Growth Corridor Local Authority 2km Buffer Zone**	Business Register and Employment Survey / Annual Business Inquiry (ONS)	- Business Performance & Job Creation - Higher Levels of Employment in Regeneration Area	* BRES data available from 2009. AECOM will assess consistency of BRES and ABI data. ** Data may be unreliable for 2km Buffer Zone due to sample size
Resident employment by broad industrial sector	2001-11 (time series)	Growth Corridor Local Authority	Annual Population Survey / Labour Force Survey (ONS)	- Higher Levels of Employment in Regeneration Area - Increase in commuter patterns	
Resident employment by broad industrial sector	2001 & 2011	2km Buffer Zone	Census (ONS)	- Higher Levels of Employment in Regeneration Area - Increase in commuter patterns	
Annual Rateable Value	2005 & 2010	Growth Corridor Local Authority 2km Buffer Zone*	Valuation Office Agency	- Real Estate Uplift	* Data published available at LA level. However AECOM may be able to purchase lower level data from the VOA
Commercial Rents	Tbc	Growth Corridor Local Authority 2km Buffer Zone	Focus (tbc)	- Real Estate Uplift	AECOM to consider appropriateness of using commercial rent datasets
Business Density	2009-2011 (time series)*	Growth Corridor Local Authority	Business Demography Statistics (ONS)	- Investment Climate - Business Performance and Job Creation	* VAT Registrations Data Available from 2004-08 and reported alongside the Business Demography Stats. We will confirm whether these two datasets are comparable.
Average & LQ House Prices	2001-2011 (time series)	Growth Corridor Local Authority	House Price Indices (DCLG / Land Registry)	- Real Estate Uplift	

Number of Households	2001 & 2011	Growth Corridor Local Authority 2km Buffer Zone	Census	- Increase in Commuter and Business Travel - Investment Climate	
Employment Rate	2001-2011 (time series)	Growth Corridor Local Authority	Annual Population Survey / Labour Force Survey	- Improvement in Welfare and Wellbeing	
Average Wage of Residents	2002-12 (time series)	Growth Corridor Local Authority	Annual Survey of Hours and Earnings – Resident Analysis (ONS)	- Improvement in Welfare and Wellbeing	
Average Workplace Wage	2001-12 (time series)	Growth Corridor Local Authority	Annual Survey of Hours and Earnings – Workplace Analysis (ONS)	- Higher levels of employment in better paid jobs within Regeneration Area	
Proportion of Residents without NVQ 2+	2001-2011 (time series)	Growth Corridor Local Authority	Annual Population Survey / Labour Force Survey (ONS)	- Business Performance (Improvement in Skills Base)	
Proportion of Residents with NVQ 4+	2001-2011 (time series)	Growth Corridor Local Authority	Annual Population Survey / Labour Force Survey (ONS)	- Business Performance (Improvement in Skills Base)	
Proportion of neighbourhoods (LSOAs) in 10% and 20% most deprived	2004, 2007 & 2010	Growth Corridor Local Authority 2km Buffer Zone	Index of Multiple Deprivation (ONS)	- Improvements in Welfare and Wellbeing	

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Appendix D. Business Interviews Report

Evaluation of the Impacts of High Speed 1

Business Interviews Report

Draft Final

9th December 2013

ATKINS

AECOM

frontier economics

Plan Design Enable

Notice

This document and its contents have been prepared and are intended solely for the Department for Transport 's information and use in relation to the Evaluation of HS1

Atkins, AECOM and Frontier Economics assume no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

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Client signoff

Client	Department for Transport
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Table of contents

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1. Introduction

1.1. Introduction

Atkins, AECOM and Frontier Economics have been commissioned by the Department for Transport (DfT) to carry out an Evaluation of the Impacts of High Speed 1. Both primary and secondary source data is being used as part of this evaluation. As part of the primary data collection exercise depth interviews were carried out with businesses in close proximity to HS1 stations. The purpose of the business interviews was to identify the impact of HS1, if any, on:

- Location;
- Recruitment and retention of staff; and
- Business performance.

The research findings have provided anecdotal evidence about the impact of HS1 and the effect it has on businesses in the South East.

Following this introduction:

- Chapter 2: Location; describes the strengths and weakness of sites and examines if HS1 has had an impact on the site.
- Chapter 3: Recruitment and Retention; examines the changes in the number of staff over time and the modes they use to commute to and from work.
- Chapter 4: Business Performance; describes any changes in turnover and the reasons for these. It also discusses the mode of transportation used for business travel.
- Chapter 5: HS1; describes businesses views on HS1 and the impact it has had.
- Chapter 6: Summary; summarises the key findings of the depth interviews with businesses.

The remainder of this chapter describes the approach to the in-depth business interviews.

1.2. Methodology

1.2.1. Recruitment

A list of businesses based within a 2km (or 4km radius for medium and large companies) was purchased from the Experian National Business Database. Trained and experienced recruiters were then used to book appointments with a sample of businesses. Quotas were set for size and sector and every effort was made to secure interviews with a wide range of businesses from micro to large companies and in a range of industry sectors. Further details on the recruitment process can be found in the Appendix and our final sample is listed below in section 1.2.4.

1.2.2. In-depth Interviews

Each interview lasted between 20 and 90 minutes depending on the business and how many issues they had experienced. Respondents needed to have in-depth knowledge of their businesses performance and be involved in location decisions and therefore respondents tended to have a senior role in the company. In small companies this was usually the owner but in medium and large companies respondents had a range of job titles including:

- Owner, MD or CEO;
- Facilities manager;
- Finance manager;
- Office manager; and
- Operations manager.

The basis of the discussion was a topic guide, a copy of which can be found in the Appendix. Areas of discussion included:

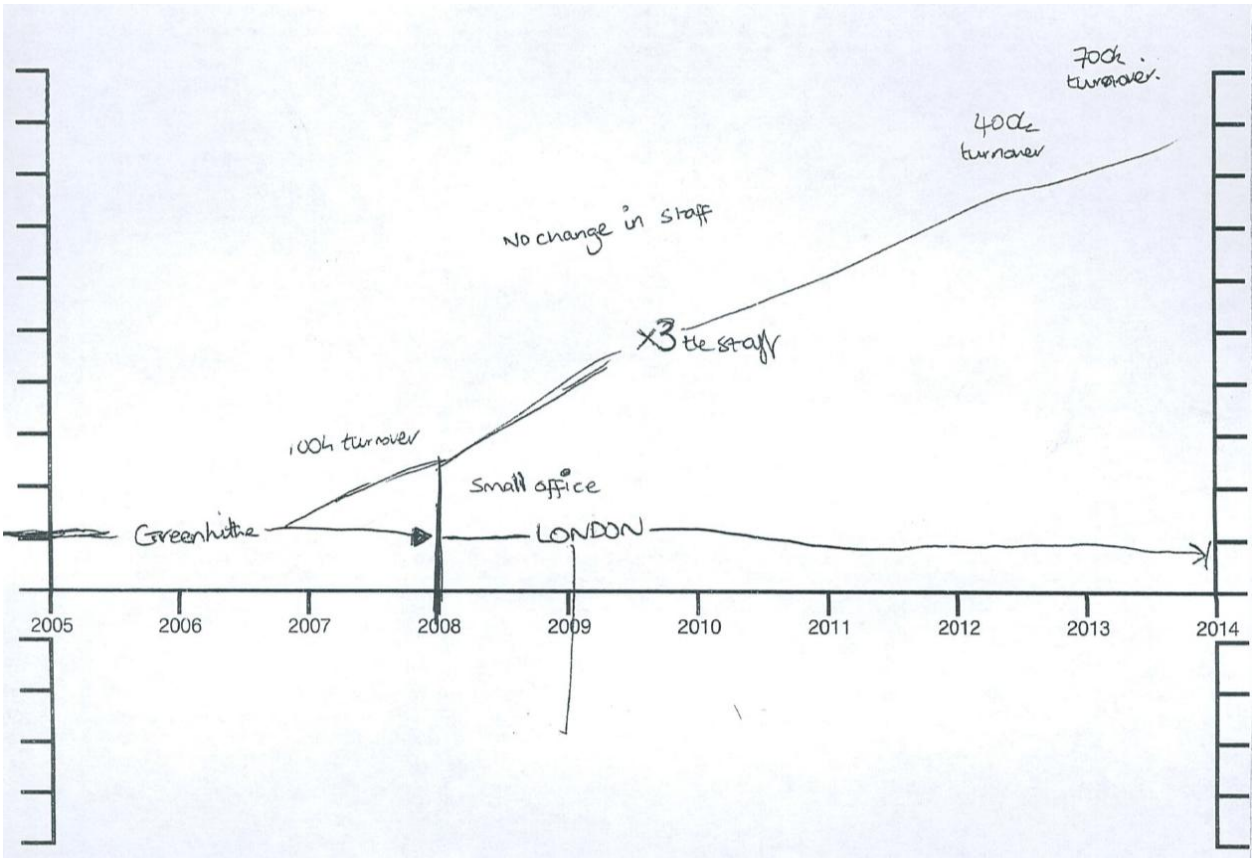
- Background company information;
- Location factors;
- Access for staff or modes used to commute;
- Business travel;
- Client and supplier visits;
- Company turnover; and
- HS1.

In order to gauge the impact of HS1 and its relative importance in relation to other factors that affect businesses respondents were not asked directly about HS1 until the end of the interview. However, if respondents did mention HS1 and its impact on their business they were then probed for further details.

A timeline was used to assist respondents in thinking through changes that had occurred in the company over the last 8 years (or since inception for newer companies). Any changes in staff or financial turnover were then identified and the reasons for these discussed to establish if there was any correlation with the introduction of HS1.

An example of a completed timeline is given below.

Figure 1: Example timeline



1.2.3. Analysing Qualitative Data

All interviews were recorded and transcribed. In order to ensure there is a clear audit trail from the fieldwork, through the analysis process and to the final report nVivo, a specialist qualitative research analysis package, was used to help analyse the data. A coding frame based on study objectives or topics within the discussion guide was set up and then each moderator was responsible for coding and entering their own interviews into nVivo ready for analysis. The company details were also recorded allowing any similarities or differences in response across the different types of company or location to be identified.

The analysis was completed by the moderators that conducted the fieldwork.

1.2.4. Sample

The 70 interviews were divided equally between the five locations. Table 1 below shows the size of companies at that site who were included in the research.

Table 1: Size of Company at Site by Location

	Kings Cross	Ramsgate	Ebbsfleet	Stratford	Ashford	Total
Micro (1-9)	3	6	1	0	2	12
Small (10-49)	1	2	5	3	4	15
Medium (50-199)	6	4	5	8	7	30
Large (200+)	4	2	2	3	2	13
Total	14	14	13	14	15	70

Interviews were secured with companies covering a wide variety of industry sectors including:

- Law firms;
- Large supermarket chains;
- Distribution companies;
- Retail; and
- Leisure providers.

Table 2 below shows the industry sector by location.

Table 2: Industry Sector by location

	Kings Cross	Ramsgate	Ebbsfleet	Stratford	Ashford	Total
Section C Manufacturing	0	4	1	0	3	8
Section E Water Supply; Sewerage, Waste Management and Remediation Activities	0	0	0	1	0	0
Section F Construction	0	0	0	3	0	3
Section G Wholesale and Retail Trade; Repair Of Motor Vehicles and Motorcycles	2	3	2	3	8	18
Section H Transportation and Storage	1	2	6	3	0	12
Section I Accommodation and Food Service Activities	0	2	1	0	1	4
Section J Information and Communication	1	1	0	0	1	3
Section K Financial and Insurance Activities	0	0	0	0	0	0
Section L Real Estate Activities	0	2	1	0	0	3
Section M Professional, Scientific and Technical Activities	6	0	1	0	1	8
Section N Administrative and Support Service Activities	1	0	0	1	0	2
Section R Arts, Entertainment and Recreation	2	0	1	3	1	7
Section S Other Service Activities	0	0	0	0	0	0
Section U Activities of extraterritorial organizations and bodies	1	0	0	0	0	0
Total	14	14	13	14	15	70

The figures below show the location of companies' interview in proximity to the HS1 train stations:

Figure 2: Stratford

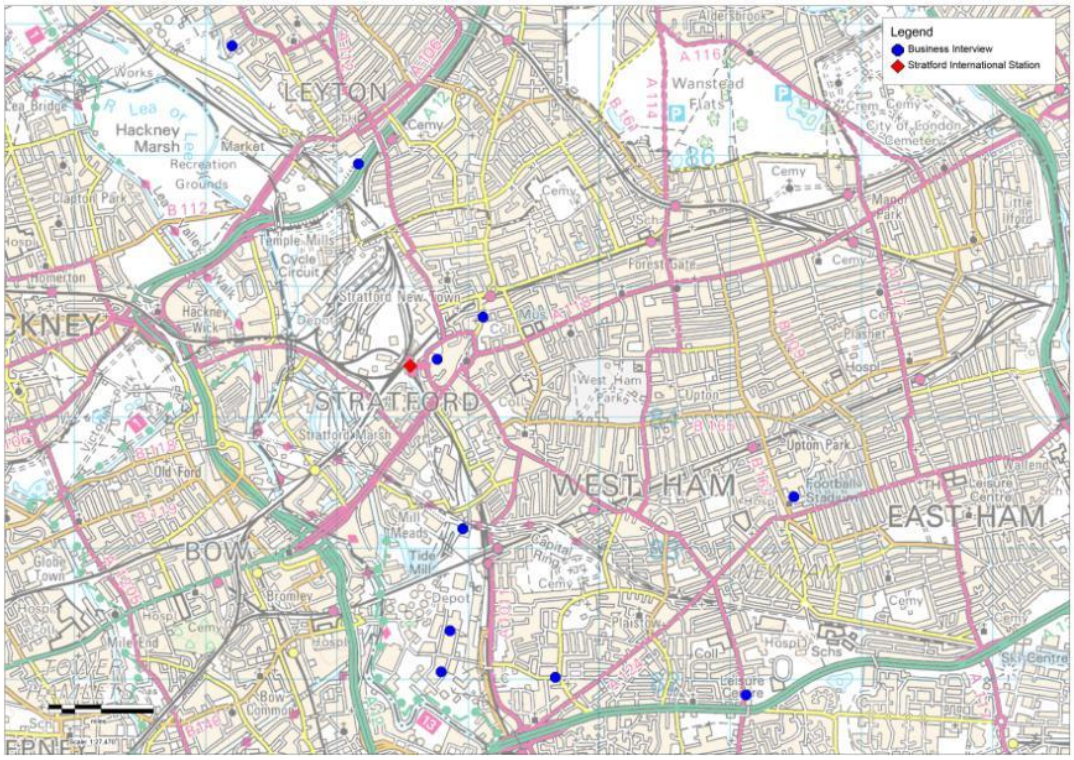


Figure 3: Ebbsfleet

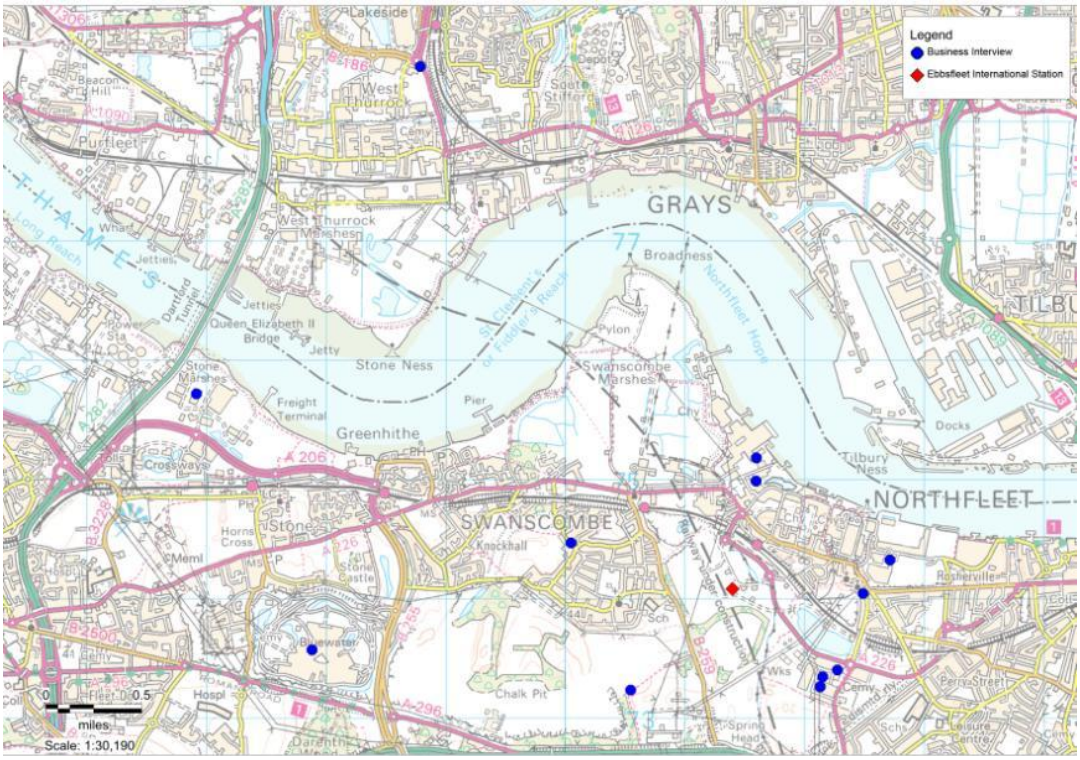


Figure 4: Ashford

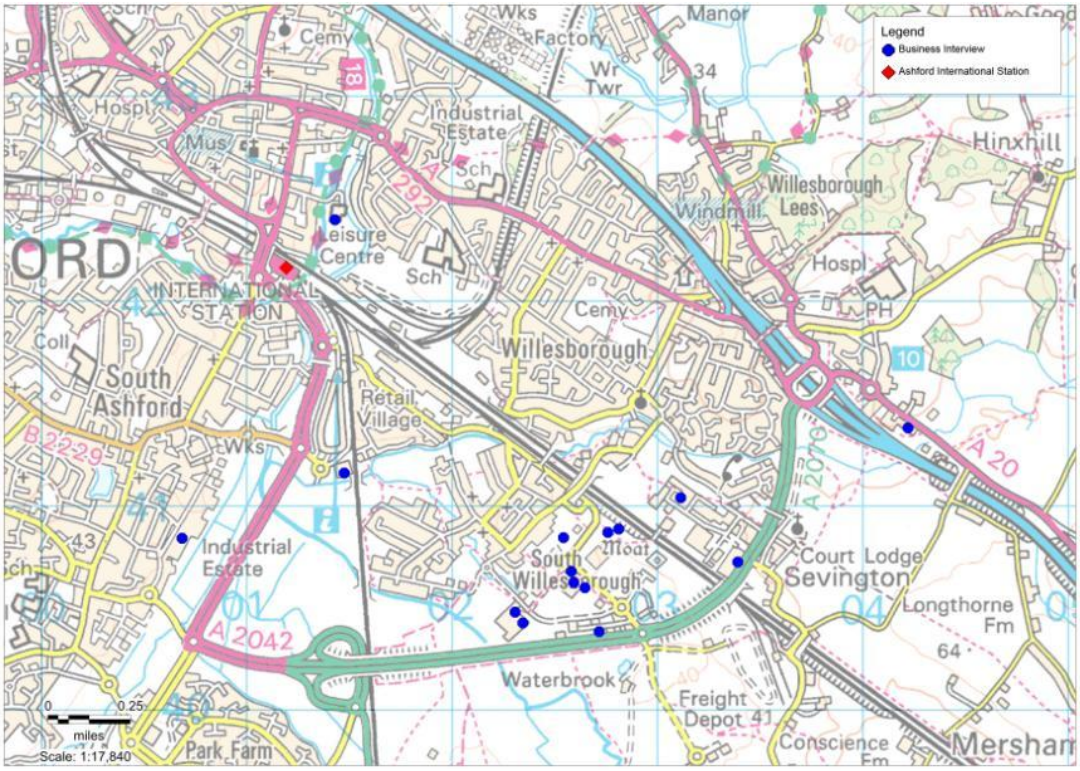


Figure 5: Kings Cross

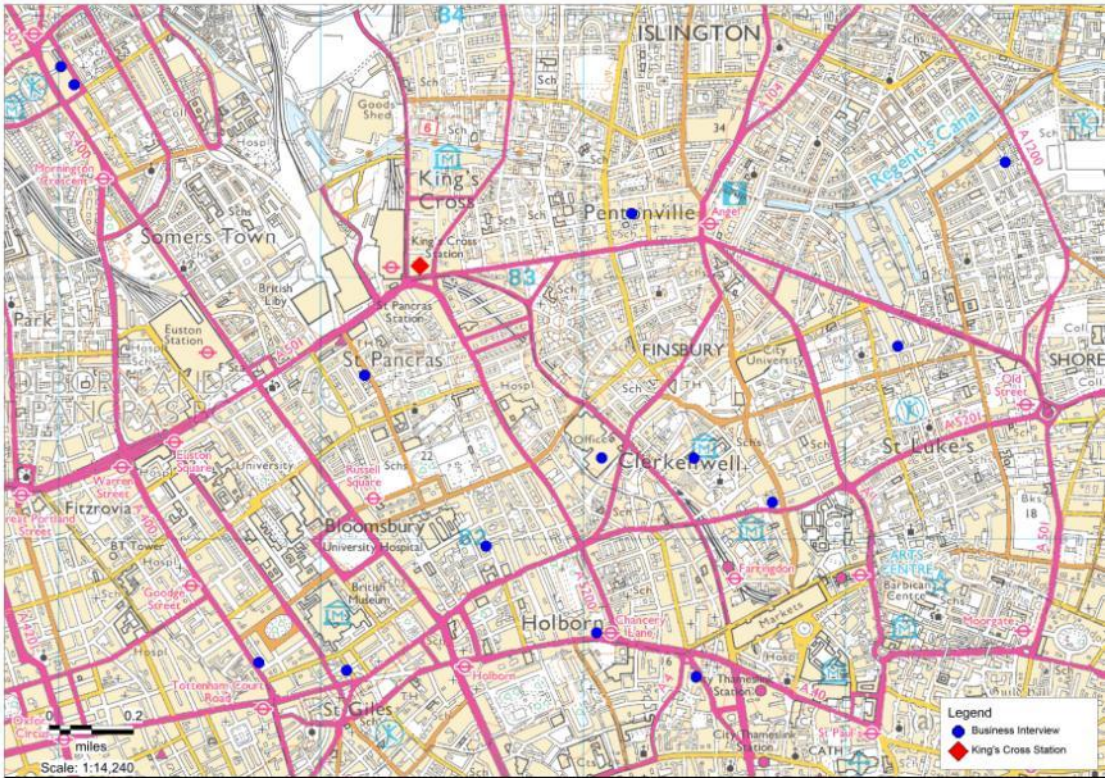


Figure 6: Ramsgate

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2. Location

2.1. Introduction

In this section we describe:

- Location benefits;
- Location weaknesses; and
- Site access issues.

When discussing the strengths and weaknesses of their location respondents were given a broad remit and were not directed to think specifically about transportation or HS1. This has enabled us to identify the relative importance of transportation compared to other factors.

Transportation links were the most frequently mentioned strength and weakness of a location

2.2. Location Benefits

Two thirds of the companies interviewed have been based at their current location for 10 years or more. The main benefits of their site included:

- **Good road access:** Over half of respondents mentioned road access as one of the main reasons for their business location. The M20, M25, M11, A13 and the A12 were all cited as providing excellent links for staff commuting, customers visiting and business travel.

  Associated with road access, many respondents also mentioned good parking nearby or on the site. Companies operating in the following sectors stated good road access as an essential element to their location choice; Construction, Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles, Transportation and Storage, Accommodation and Food Service Activities and Information and Communication.

- **Good public transport links**: Just under half of all respondents cited good public transport links as a key benefit of their location. Companies based in Kings Cross and Stratford in particular mentioned the good public transport links nearby.

  "the transport is fairly good around here, like you have West Ham station that brings you in on the Jubilee Line, brings you in on the C2C line from Essex, you have Stratford, which is only up the road and we're all connected with the DLR anyway, so it's pretty good, yeah." (169 Stratford)

  "I think in terms of being in London I can't think that you'd get many better spots, because you've got people commuting, you've got Euston, Kings Cross, St. Pancras, a couple of stops on the train, the tube, you can walk it within twenty minutes, bus links, like I said you've got Camden over ground, Camden underground." (631 Kings Cross)

- **Large local/ established customer base**: Almost a third of all businesses stated that their company had based their location on current or potential customers.

- **Purpose-built site or modern site business park**: Businesses based in Ebbsfleet and Ashford in particular mentioned they had chosen purpose built business parks to base their company.

- **Cheaper property:** The price of property was an influential factor for many respondents.

- **Specialism hub:** Many companies based themselves in the same location as their competitors or people operating in a similar industry.

- **Close to where owner lives:** Many micro companies simply based themselves close to where the owner lived.

HS1: One company based in each Ashford, Ebbsfleet and Ramsgate cited HS1 as a location benefit unprompted. The company in Ebbsfleet state HS1 was an influencing factor in their decision to relocate there.

> *"Well, we're not very far away from the international train line, it's probably about five minutes drive from us" (956, Ashford)*
>
> *"Moderator: and what was the reason for relocating?*
> *Respondent: Greater accessibility to the North Thames Gateway, greater accessibility to Essex, greater accessibility to the M25 and increased speed accessibility to London via High Speed 1" (790, Ebbsfleet)*
>
> *"As I say, the road network's improved, so access up to London is considerably improved, you know, the fast train connection where you get, especially if you think about more the passengers and people coming in or accessing the harbour, there's not a huge number of passengers on the previous ferries, but they're, you've got the fast connections who are in London in an hour and twenty minutes and obviously we're looking to improve that as well anyway through pushing the network rail". (340, Ramsgate)*

2.3. Location Weaknesses

The main location weakness mentioned by businesses was congestion.

Businesses in Ebbsfleet in particular mentioned congestion as a problem for their business:

> *"...there's one road that goes to Bluewater that way and goes back up to the M25 that way. If you get any problem in and around the tunnel, which unfortunately seems to be a very common occurrence. It very quickly backs up and because we're so close to that junction it takes nearly no time before the traffic ....it spirals at the junction, so of course the traffic builds back up and of course close at the top, at the roundabout at the head of this estate and you can't get on or off". (1228 Ebbsfleet)"*

Roads that were considered particularly problematic for the business interviewed included:

- M20;
- A13;
- A12;
- M25;
- M11; and
- Dartford Tunnel.

Ad hoc catastrophic failure was also mentioned by companies as being particularly costly through lost staff time. J10 on the M20 and the Dartford Tunnel were mentioned most often.

> *"It's proximity to the Dartford Tunnel and the M25. It's an issue we have to deal with, I mean we can never guarantee the road conditions; it has an impact on our fuel economy with the vehicles. Quite often we sit down and we regularly have meetings, monthly meetings with the depots, we sit down and analyse our fuel consumption to the depots and you know, we find that we're probably the worst (compared to other depots in the county), it's simply because the links" (1228 Ebbsfleet)*
>
> *"Well, today I've got two people who haven't come into work yet, so the accident has restricted two people coming into work today". (194 Stratford)*

Other weakness of site location included:

- **Limited Parking**; parking in Stratford was thought to be a particular problem and this was linked to the introduction of HS1 as parking restrictions had been implemented around the station.
- **Crime in the local area**;
- **Isolated or lack of footfall**; and
- **Poor public transport links**: In more remote areas the issue was the lack or limited availability of public transport and so it restricted those people who could not drive.

> *"There might be, we have no bus service, the train station is the other side of town, so we have staff coming in from Folkestone, Dover, Maidstone, people down on the coast in the New Romney, Dimchurch area. The infrastructure for someone that doesn't drive round here means that they don't work or they can't work in this location." (937 Ashford)*

Nine companies said there were no weaknesses with the site on which they were currently based.

Out of the seventy companies 11 stated that they had plans to relocate in the next few years and this was mainly because their lease was about to expire. The majority planned to stay in the local area.

Apart from parking around Stratford International no one mentioned HS1 as a weakness.

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3. Recruitment and Retention

3.1. Introduction

The ability to recruit and retain staff with appropriate skill sets is crucial to business performance. Businesses were asked about their:

- Current staff numbers and any significant change in staff numbers;
- Staff commuting; and
- Any issues that affect recruitment and retention.

3.2. Staff Numbers

Businesses were asked about their current staff numbers and how they had changed over the past eight years. Any peaks or troughs outside the general trend were explored in more detail with a view to identifying if the introduction of HS1 had had any direct impact on a companies' ability to recruit and retain staff.

About a third of business reported a decrease in staff numbers over recent years, almost all of which were related to the recession and the economic climate generally.

Equally about a third of companies reported a general increase in staff numbers; particularly recently. These increases in staff numbers were owing to company growth, company mergers and companies expanding into new areas.

Just one company mentioned the Olympics and the negative impact it had had on their business.

No one mentioned HS1 or any transportation related issues or events as a reason for any change in staff numbers unprompted.

3.3. Commuting

Just under half of businesses interviewed operated 'normal office hours'; 8am to 6pm or thereabouts. A third of companies operated some early and late shifts and a fifth ran round the clock operations.

Small companies knew exactly how their staff travelled to work as staff were generally well known to respondents. Several large companies also knew exactly how their employees travelled to work as they carried out staff travel surveys however, many companies knew roughly the proportion of staff using each mode but were 'guessing' where a significant proportion of their staff were travelling from.

Location had the largest impact on the mode of transport used. Businesses based in Kings Cross and Stratford stated that their staff used all modes to commute to and from work but public transport, and in particular the underground and train, were the modes of transport used most.

> *"I think accessibility, I think there's a recognition that public transport has improved. I think the regularity; specifically things such as buses I think have really improved. I think a lot of them use, you know the apps and things on Smart phones with regards to when's their bus going to turn up at their stop. How the youth, you know, the younger ones to help with their safety and security will use those to know that the bus is coming, they literally walk out to the bus stop there. So I think it's both. I think the buses have got better, but I think that the information has got better well" (198 Stratford)*

> *"we've got the DLR, buses and we've got the tube. In that respect we are very well blessed, all within like a couple of hundred yards" (1059 Stratford)*

All companies in Kings Cross and Stratford reported that it was mainly very senior staff who would be most likely to drive to work. Whereas those business based in Ramsgate, Ebbsfleet, and Ashford reported that the majority of staff travelled by car.

> *"Moderator: How do the sixty five people that you've got working here get here?*
> *Respondent:* ***By car****.*
> *Moderator:* All of them?
> *Respondent:* ***All of them"*** (808 Ebbsfleet)

The main reasons for travelling by car was convenience and for those that worked shifts or antisocial hours public transport would not get people to work on time or finished before they were able to leave work.

> *"public transport just wouldn't get them here on time" (956 Ashford)*

> *"think there is a fast one going into London from here, but once you get into London it's the stressful bit about London back to where I am. You know, so it's easier, quicker just to drive" (222 Ramsgate)*

Many companies also reported a number of employees cycling to work and this was thought to have increased recently [NB the interviews were carried during the summer months].

> *"people ride bikes too; they have Boris Bikes, like my boss" (575, Kings Cross)*

> *"some people cycle from the train station on the Boris Bikes" (658 Kings Cross)*

3.4. Recruitment and Retention

Owing to the recession, many companies reported having less of a problem with recruitment and retention than they have historically as there have been "no jobs for people to go to" however, the economy is now changing and some companies reported that people were starting to move around again.

Smaller companies appeared to have fewer issues with recruitment and retention, with many small companies reporting that once someone is employed by them they tend to stay and only leave due to retirement or other personal factors.

The main reasons businesses thought employees moved on were for improved opportunities such as increased salary and personal development.

> *"they reach a point where they can't progress within the company and it is time to move on" (963, Ashford)*

Around a quarter of companies interviewed felt that transportation and access to sites did affect their ability to recruit and retain staff.

> *"as I said, I don't consider an application. I do get CVs and applicants from people who are prepared to commute, but I do know that for most people it's not very long before they can't hack it and I'm very sceptical of a supervisory or management position where the applicant says he's going to commute in from south London or the M25 that reaches into Hertfordshire or Essex or Kent, because I know that unless you're very determined and self disciplined it's too much for people." (1055, Stratford)*

Particularly for lower paid jobs, respondents reported that people were unwilling to travel long distances and could not afford to:

> *"You know, working here, it's all right, but I think these days people are very conscious of how much it costs to get to somewhere, you know the mobility thing, it's probably a more difficult question that people have to ask themselves when considering whether they want to go and do a job" (354 Ramsgate)*

> **"***Convenience in terms of location to where they live, because obviously the cost of travel has gone up, so they'd have to consider those things" (956 Ashford)*

> *"I suppose if you lived in a place that had a two hour travel time to here it might affect how you might feel about it and that would depend again at what level, you know, if you were a catering assistant you might think no, I can't afford to travel that far or take that long to get there. If you were a senior partner it probably wouldn't make a blind bit of difference" (687, Kings Cross)*

Congestion was also thought to have a negative effect on those companies who have particular skills they need to recruit as the following quote illustrates:

> *"Well, supervisory and management staff commute in. It's difficult now to recruit staff who live beyond the boundaries of the M25, because they do not want the Redbridge roundabout torment. In fact I have had, I've opened a new warehouse three months ago, that location was Harlow in Essex and I had six people who were commuting from that region to East London for three years and they all transferred to Harlow. I did not open my new facility in this locality because trying to recruit supervisory and management level is very difficult. I have to offer flexible hours, most people are starting now at 7 o'clock and are asking to leave at 4-4.30, sometimes it works, sometimes it doesn't. Anybody commuting into this part of East London who thinks they can start at 8 or 8.30 and leave at 5 is in for two hour journeys, because the Redbridge roundabout stops you going north and the Blackwall Tunnel, north and south, basically." (1059 – Stratford)*

A few businesses also felt their site was inaccessible to employees without access to a car or that they operated shift times, which meant there was no public transport option:

> *"Yes, so you wouldn't get everybody, because not everybody could drive and again if they haven't got access to a car, you know if some people only had one car, somebody else might be using it and that's difficult for them." (951 Ashford)*

> *"I would suggest that people further than about a ten or fifteen mile radius wouldn't really be encouraged to come and work for us because the roads are just so busy…you know, that's not including managers who would earn a better salary, but the guy from the shop floor, the workhouse operatives that it would mean trying to do more than 10-15 miles per day each way to come to work because of the road network." (815 Ebbsfleet)*

One company based in Kings Cross stated that they could now easily recruit people from some distance from London as long as that person lived on a main transport corridor and HS1 is included here.

> *"I'd say that in terms of recruitment and retention travel is not fundamentally a barrier to recruitment in London. The cost clearly is a factor, because the cost will often outweigh the extra money that we pay for London employment. I think that's probably the key thing, actually, the cost. Clearly we've got, I guess it would be the transport corridors that feed in, so we would struggle to recruit somebody from perhaps sort of 15-20 miles out if they weren't on a main corridor, we'd be quite willing to recruit and we'd have no trouble recruiting somebody who might be 50-60 miles out if they are on the main corridor." (654 Kings Cross)*

Conversely, one company in Ashford thought it would help them attract people away from the London firms.

> *"Certainly in my department, being able to recruit financial people from London and so forth it should open up more doors." (1273, Ashford)*

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4. Business Performance

4.1. Introduction

In this section we discuss:

- Financial Turnover;
- Business Travel; and
- Client and Supplier visits.

4.2. Financial Turnover

Respondents were asked to bring details about their company's turnover with them to the interview. Many refused to provide this information however they were able to complete the timeline with a percentage of how much their turnover had increased or decreased year on year allowing us to identify any changes that could be related to the introduction of HS1 and explore these in more detail with respondents.

4.2.1. Increase in Turnover

Any increase in turnover was attributed to general company growth and coming out of the recession.

> *"No, since 2010 to presently, you know, I think we're officially out of recession now, but for us, because we're in the development industry, we went off a cliff financially in 2008, because that's what town planning does, the planning process normally takes about two years, we work for all the national house builders, if they want to have a product to sell, they need to be getting the planning permission two years before that, so therefore for the last eighteen months we've been increasingly busy, because the market is now ripe and getting riper, so therefore we've been phenomenally busy for the last eighteen months, well, as I say getting increasingly busy, busier still." (790 Ebbsfleet)*

When prompted about the impact of transportation on their turnover most did not consider it to be a key factor in terms of actual business performance:

> *"No, not transport related, again that would be one of the least significant factors in terms of the fortunes of the organisation, but clearly the cost of the business trips and things have been looked at because of sort of general austerity efficiency, we're holding our position in terms of turnover, but when you think that fundamentally our income comes from contracts, services, that we provide to local authorities around the country and fundamentally fundraising, so the core is not around trading, it's fundraising and things, so approaches around income have not been shaped by transport." (654 Kings Cross)*

One company stated that HS1 had had a direct (but unquantifiable) impact on their growth.

> *"Has it [HS1] affected our economic growth since we moved here, I think we've secured more instructions from being here and because of our proximity to Essex and the wider geographic market, yes, I think it has made a difference. Can I quantify that in pounds, shillings and pence, no, probably not. In terms of our income, as an office, last year we've probably gone from about 1.5 million in 2010 to 2.5 million, 2.75 million last year." (790, Ebbsfleet)*

4.2.2. Decrease in Turnover

The main reasons for any decrease in turnover were primarily due to the recession and/or a loss of clients or customers.

> *"Just recession, basically." (163, Stratford)*

> *"That hasn't grown so much, that's been fairly flat the last three years, before that it was growing at 10-20%, but that's where we've seen the impact of the downturn globally." (554 Kings Cross)*

Unprompted no one mentioned HS1 or any transportation issue as a reason for any decrease in turnover

4.3. Business Travel

A couple of companies made no business trips at all and half of small and medium enterprises stated they made very few (less than 10) business trips in an average week. A fifth of the sample, mainly medium and large companies, were making a significant number of business trips in an average week.

Many of the trips reported were to other offices of the same company but also a lot of companies had sales staff who were predominately travelling:

> *"I'd say about a hundred; I mean ins and outs and things, like our sales people will be jetting around here, there and everywhere." (163 Stratford)*

Some companies only travelled locally for business whereas others travelled nationally and internationally.

> *"Yeah, yeah, there are business trips all over the country and internationally. We have offices in the States as well, so there's been lots of trips to and from the States and from there to here. I suspect the number in Europe will grow, the number in Canada will grow, there's plenty of trips to the Middle East, all of the Emirates in the Middle East, because we have an office in each one, so they're regular occurrences. We do have video conferencing as well, which is used……around central London they would go by car or taxi." (687 Kings Cross)*

The majority of respondents did not think that the number of business trips had changed dramatically over recent years. Of those that had changed, there were almost equal amounts that had increased and decreased. The main reasons for the number of trips decreasing was a greater awareness of the cost of travel and the cost of a person's time taken up in travelling as well as environmental concerns.

> *"Oh, without a doubt, yeah. Like all clients and like a business we're looking to manage our costs and historically when everybody's earning lots of money they don't tend to worry about whether a taxi bill has been recharged or a business class flight to Huston has been passed on. Now they are more conscious, so whereas there might have been say five business trips to the US for a client it may only now be two or even one, so there's a lot more consideration given to travel, the cost of travel, certainly clients are paying a very close attention to it and then of course you start looking at things like environmental management, carbon footprint, etc, where more reports are being produced and there is greater understanding that technology can in some instances replace a trip." (687 Kings Cross)*

> *"Well, it's cost and time issues and when unfortunately you do shed staff everybody seems to be more busy on their operation. My travelling, for example, ten years ago I was probably doing twenty, twenty five trips abroad, now I do two trips a year abroad and it's the same with the UK customers, the same sort of percentage, you only seem to see customers and clients these days if you're doing a presentation for new business or you've got a problem with old business. In the old days it used to be, oh, we're going out for lunch, just for nicety, but these days it's new biz, old biz, problems and that's the only reasons." (808, Ebbsfleet)*

The main reason the number of business trips had increased was simply an increase in business.

Car was the mode of choice for most companies for business travel with at least half of all companies saying the main mode used was car. The main reasons being convenience and not having to get from stations or stops to their final destination.

> *"Just for convenience, like from where I am from home. It'd be different if I lived in town, like I live virtually out next to the M25, I'm on the M25 and I can be wherever. I have considered going places by train, to be fair, but I haven't really sort of gone over and people have said it's quite good, but it's more that convenience when I'm there, I could get called to go somewhere else and so if I only need to go there to there and back, that's fine, but I've had occasions where I've had to sort of be diverted." (163 Stratford)*

However, mode choice depended on the location of the meetings; when meetings were in London respondents generally used public transport.

> *"Business trips in the city are mainly made by public transport, because the city is well served by stations, you can get in or out anywhere, really, you just have to plan your route, but generally speaking everything is done by public transport." (169 Stratford)*

Three companies based in Kings Cross stated they mainly used taxi to get in and around London.

Train was the next most frequently used mode of transport for business trips with two fifths stating they used the train for some of their business trips. Those that did liked the fact they could work on the train and therefore there was less time wasted on travelling.

> *"plus the fact that you're working on the trains, you're working on the underground, I think you've got to try and use the underground then, because otherwise you're defeating the object, you're travelling by car, but really you should be using the train." (175 Stratford)*

Several companies mentioned HS1 (unprompted) and how they used it for business trips. Some stated they were now using the train more for business trips (and less car) and some stated how it had improved their efficiency (due to less time lost in travelling)

> *"Obviously before, Ashford to London on old rolling stock was painful and took time, high speed, 38 minutes, modern rolling stock, so we tend to use the train more and also it means that we're more accessible to our clients, so I think it's giving a better impression of the business part of the modern business community and it's made us more accessible to our clients by train." (971 Ashford)*

> *"Yes, more journeys are now undertaken by trains, because of the speed into London and across London." (790 Ebbsfleet)*

> *"There's quite a lot of us that would drive down to Stratford station, park up and jump on the train and then if we are going into London and we know that first thing in the morning perhaps we'll drive to our local station and then jump on the train." (1039 Stratford)*

> *"Great, I think it's (HS1) great, yes, 37 minutes, I can go to London, do two meetings and still be back in the office in the afternoon." (863 Ashford)*

> *"Well, time is money, so if I can get back potentially two or three hours of my time by going on the fast train and I go out of hours, so to speak, so it's not expensive, it's only £2-£3 to go on the slow train" (863 Ashford)*

> *"Yes, more journeys are now undertaken by trains, because of the speed into London and across London." (790, Ebbsfleet)*

> *"Yes, HS1 has increased the amount of train travel we make, because it used to be two hours, ten minutes from here to London, now you're there in an hour and twelve minutes. I'm trying to think, I mean the last half a dozen times I've gone out either to site or to meet engineers or customers, half of them I've taken the train and taken HS1 and I think there's an increasing amount of that from the office staff or the contracts management's guys, they're using it a lot more, the fitters obviously can't, so I think our use of the train has increased, at least doubled I'd say in the last two years, it's doubled at least and I can only see that increasing, because HS1 gives us access into central London and from there onto the high speed network across the country, much easier. It's just easier rather than two and a half hours or two and a quarter hours on the old slam door train, an hour and ten, hour and twelve and you're in the middle of London, so yeah, much easier." (303, Ramsgate)*

However, for trips to Europe Eurostar may not be competitive against the airlines:

> *"It's had a minor impact, because we have an office in Paris, so to go to Paris and back in a day, but we could do that by plane anyway. So, has it added value where that value didn't previously exist, not in my opinion and it costs ridiculous amounts in the summer when HS1 ramp the prices up to sting the tourists, so as a business traveller you get stung." (687 Kings Cross)*

[Please note this last quote was provided after the respondent had been prompted about HS1. It is placed here for ease of reporting]

Although businesses did not state HS1 had affected their turnover, some were using it to make cost savings through time saved travelling and the ability to work whilst travelling. Therefore, indirectly, HS1 had improved some businesses' financial performance.

A few companies used other modes such as the underground, bus, walked or cycled.

4.3.1. Customers and Suppliers

The mode choice for customers reflected the mode used by businesses for their outward travel. The most frequently mentioned mode was car but it depended on where they were based. Trips within London tended to be by public transport but outside car was considered more convenient.

> *Well, if they're in central London we'd use the DLR or the tube, the presentation, most customers, potential customers, 75% of potential customer visits to this site are by car. (1059 Stratford)*

Unprompted, a few companies mentioned HS1 and how it helped them attract business or customers nationally and internationally.

> *"we've got a French distributor, they came over on Eurostar, again because Eurostar stops at Ashford, it's quite handy that they can jump on at France or in Brussels, come over on the Eurostar and then be picked up or bring a taxi down" (1273 Ashford)*

> *"Varies, car, train, it depends where they're coming from, I'd say about a third come by train, I would say. [before HS1] Either they wouldn't come or they'd come by car, some would come by train. It was a bit embarrassing for us, to say the least." (971 Ashford)*

Suppliers tended to travel by road as they generally had goods to deliver.

5. HS1

5.1. Introduction

In order to gauge the relative importance of transportation, HS1 respondents were not prompted to think about HS1 when talking about location, recruitment and retention, and business performance. Therefore, when designing the interview, it was possible that HS1 would not be mentioned at all as businesses have other things they consider of higher importance. To address this, at the end of the interview respondents were specifically asked about the impact HS1 had had:

- Locally;
- On the company; and
- The South East.

5.2. The impact of HS1 Locally

When asked directly, two thirds of respondents believed HS1 had had a positive impact locally. Respondents living in Ashford, and Ramsgate in particular, reported the positive benefits of HS1.

The main benefits of HS1 for the local area included improved:

- **Land and property values:** just over a quarter of companies based across all areas thought HS1 and the wider developments had had a positive impact on land and property price.

  "They're both different, I mean the whole area, certainly the international train station and all the links that have been created as a result of that, I think certainly Stratford is seen as a developing, growing area that people, certainly landlords and that, they try to have houses in Stratford, because the potential of the whole area, there's just huge demand to live here at the moment, certainly for people who've just moved to the country. We are the capital of migration, really, for people coming into this country, they seem to end up in Stratford first" (194, Stratford).

  "I think it's driven up land property and the town seems to be growing, so it seems to be a policy thing that investment must be on the increase. The perception is that it's having a positive impact." (963 Ashford)

- **Local economy:** again just over a quarter of companies thought HS1 had improved the local economy, mainly through attracting more people to either live in the area or in terms of footfall through the area.

  "I think it's good for Stratford because obviously if they're walking, if they're coming in and they're coming into Stratford to go shopping in places like Westfield, if they come out, they will see the mall, they will know there's a shopping centre there, they may come in, so it can only be good for the business" (167, Stratford)

  "I think it's brought more people to live in Ashford, certainly there's houses popping up all over the place, I live in a brand new estate that's only been there four years and that's expanding, I think there's another 10-20,000 homes going up in Ashford. Now there must be a need for them and I would say it's because of the high speed line, you know it's a lot cheaper to live in Ashford and work in London and you know, London is now thirty seven minutes away, so it has definitely increased the number of people living in Ashford, but in terms of people spending money locally I don't think it's had an effect." (1273, Ashford)

- **Perception of area:** Ashford, Stratford and Kings Cross in particular were thought to have benefited from a more positive general perception of the area.

  "I mean the whole area, certainly the international train station and all the links that have been created as a result of that, I think certainly Stratford is seen as a developing, growing area that people, certainly landlords and that, they try to have houses in Stratford, because the potential of the whole area, there's just huge demand to live here at the moment" (194, Stratford)

5.3. The impact of HS1 on the Company

Respondents were asked what impact they thought HS1 had had on their company. Just over half of the seventy businesses interviewed did not think the introduction of HS1 had affected their company at all and five thought HS1 had had a negative impact.

When asked directly, just over a third of companies interviewed thought HS1 had had a positive impact on their business. Those based in Ashford in particular reported seeing a benefit from the introduction of HS1.

The key ways in which HS1 had positively affected the businesses interviewed included:

- **Improved business travel:** a fifth of companies interviewed stated the introduction of HS1 had improved their business travel within the South East:

  "It's had a small enough impact, yes, but it probably gave people more working time when they're on the train, rather than just taking calls or whatever in the car." (169 – Stratford)

  "Yes, HS1 has increased the amount of train travel we make, because it used to be two hours, ten minutes from here to London, now you're there in an hour and twelve minutes. I'm trying to think, I mean the last half a dozen times I've gone out either to site or to meet engineers or customers, half of them I've taken the train and taken HS1 and I think there's an increasing amount of that from the office staff or the contracts management's guys, they're using it a lot more, the fitters obviously can't, so I think our use of the train has increased, at least doubled I'd say in the last two years, it's doubled at least and I can only see that increasing, because HS1 gives us access into central London and from there onto the high speed network across the country, much easier. It's just easier rather than two and a half hours or two and a quarter hours on the old slam door train, an hour and ten, hour and twelve and you're in the middle of London, so yeah, much easier". (303 – Ramsgate)

  "I think it's a fantastic service, is it slightly more expensive, yes, but then when you factor in that it used to take us an hour and a quarter, an hour to get from our old office into London, you know, we can now do London in seventeen minutes, you'd quantify that in terms of staff hourly rates, the cost to clients and so on, it becomes cost neutral, if not cost beneficial. So, yes, it does cost more, but those costs are outweighed I think by the economic gain. The saving to us in terms of time, savings to client in terms of costs to them and yeah, it just enables us to do other stuff during the day in that time saved." (790, Ebbsfleet)

  And internationally:

  "We have a business thing in Brussels and it's perfect for that. Paris is excellent, because you go into Paris rather than miles away in the airports." (554 - Kings Cross)

  "Positive for us, because as a business it's far easier for people coming from Europe, particularly Paris to the UK office here, it's on the doorstep, whereas before it was Waterloo." (631 - Kings Cross)

- **Improved access for customers or suppliers:** a similar proportion of businesses also stated the HS1 had made it easier for clients to visit them:

"No, I think it's a soft perception thing, we're working, we're growing a lot in the charity sector, we're easy to reach, people like people who are easy to reach, would you say that that was the deciding factor on getting contracts, no, but it's one of the soft plus points." (971 Ashford)

"In percentage terms I'd say about 15%, it makes it easier for certainly customers in Western Europe to come over by train, they can come here and back in a day quite easily now, because obviously the Eurostar stops in Ashford. Without the high speed link they would be less likely to come over, because it wouldn't be as easy, they'd have to fly and then sort of get connecting transport." (1273, Ashford)

"As I say it's difficult to quantify that, as I say I think it's increased our attractiveness here and the offer that we can provide, it's raised our profile being here than on some anonymous business park down at Kings Hill and the reason we are here is because of the accessibility of High Speed 1." (790 Ebbsfleet)

- **Improved access for staff and recruitment and retention:** businesses in Kings Cross, Ashford and Ebbsfleet in particular reported that HS1 had improved the daily commute for their staff.

"I think a lot of my staff do live in east London and I do think it's easier for them to get in definitely. Stratford as a terminal, you know, was not one that was on our radar particularly. Now we use it it's within five minutes, we've chosen an office very recently within five minutes walk of it, because staff solicitors travelling up from here can get there very quickly, can get there in the mornings. Persuading solicitors to be based in offices that aren't this one, because they've been here for so long has always traditionally been very difficult, but we find it very easy to place two solicitors and two advisors out there recently and getting members of the public to come to that office because it's so close to Stratford, it's kind of a bit of a hub now and that wasn't the case before." (610 Kings Cross)

HS1 also made some businesses more accessible and or attractive locations to work at:

"Now, as far as businesses are concerned, for us as a business I would say it's not had any impact at all, because our staff turnovers are so low we've not had to worry about recruiting that many people, so we haven't been able to say, well, the high speed link has been able to bring employees in from London or Stratford and places like that because we've not had the necessity to employ new people, but I like to think that it would open doors. Certainly in my department, being able to recruit financial people from London and so forth it should open up more doors." (1273 Ashford)

"Yeah, I think so, but I think it's brought people to the area that may not have originally come to the area and so it's changing the dynamics slightly." (348 Ramsgate)

- **Increased investment in area:** just less than 10% of companies felt a positive impact of HS1 was the wider investment it had brought to the area. The majority of these companies were based in Ashford.

"investment in the surrounding areas, has a ripple effect, so parts of Kings Cross has been cleaned up and that was also around the time when crime, I would say was improved as they were gradually pushed up on from Kings Cross, we suffered an initial low point and then working with the BID community policing, local policing, now that's been resolved". (631 Kings Cross)

"Indirectly it's resulting in the town growing as a population which has then had those knock-on benefits to us." (1273 Ashford)

"I think indirectly, I think if you improve the communication links in any town it's going to be a reason for it to grow. I mean that goes back centuries in terms of any rail introduction to, if you look at the wild west, if you introduce the rail line to somewhere, a town grew up around it and I think that that's going to be the same situation with Ashford and you've only got to drive around Ashford to see the different projects that are ongoing to see that and it's never one project it's a combination of several factors, but the High Speed 1 is going to be a major factor". (956 Ashford)

- **Increased Business:** a few companies felt HS1 had or would result in an increased amount of business. However, they could not put a figure on the value of the work.

"I'll tell you what it did have an impact on, now that I think of it is that while they were doing the work at Stratford station, obviously we got a lot of business out of that, again I was doing a lot of work on the DLR extension to Stratford, which obviously had part of that, and we were doing station refurbishment on Stratford as well, the station itself". (1015 – Stratford)

"Well, yes, I'd say it has, I repeat, I can't actually quantify that with any science behind it, but because I know of the growth of the town and the reasons why people are coming to the town and because I look at what my turnover is and my patronage is, my usage, that's gone up as well, I put two and two together, without making five, I assume therefore that it has had an impact positively". (964 Ashford)

"It hasn't adversely affected it, has it positively affected it, in a soft way it probably has. As I said, a client who was where everything's on balance, supplier A or supplier B, are we easier to get to than supplier B, yes, okay, they'll use us. So probably." (971 Ashford)

"Possibly, possibly, again it's pure speculation whether it has……probably about 5% (increase in turnover attributable to HS1) possibly." (1082 Ramsgate)

- **Influenced Decision to Stay:** four of the businesses interviewed stated that HS1 was an influencing factor in their location decision and one stated it was an influencing factor in their decision to move to that site.

"Yes, well, I think that's another reason why we've situated ourselves here as well, because we're only five minutes from the station, so my thinking is if people come on the train they'll travel for at least an hour for a day's training course, so again it opens up London to us as well, so they can come down on the train." (863 Ashford)

"I think it's really important. We moved here in March 2010, HS1 opened in December '09, it was the contributing factor in us moving here, because it's not, it's not the, it was one of them, I mentioned the M25 before, but yeah, the accessibility, being able to leave here and be in our London office in under an hour, be in meetings with clients in under an hour, it's fantastic." (790 Ebbsfleet)

5.4. The effect of HS1 on the South East

Just under two thirds of companies interviewed thought HS1 had had a positive impact on the South East even if it had not directly benefitted their company. Those companies based in Ashford, Ramsgate and Kings Cross in particular felt HS1 would have a positive impact for the South East.

The main reason respondents felt HS1 had benefited the South East was because it allowed people to **move out of London and commute to London**. Almost a third of respondents felt that this was the real benefit of HS1:

"it's made it easier for people commuting from those areas where the previous slower trains, so it makes it more attractive to people who live in there to commute into London or to move from London to live in a slightly, what we'd think is a nicer area." (631 Kings Cross)

Other benefits included:

- **Improved links to continental Europe:** a few companies mentioned the benefit of HS1 for business trips to Europe but a couple of companies also mentioned Eurostar has opened up the ability for people to commute across countries:

"Yeah, I think for the railway in general, even from Eurostar, because you get a lot of people who live in France and commute to England to work, yeah, it's only half an hour or so from the train from Calais onto Ashford on the Eurostar. There's a lot of businesses this side of the station and the other side of the station that involve a lot of French people, because they can do the commute". (871 Ashford)

- **Modern transport link which gives positive image in general:** around 10% of respondents felt that a modern transport link gave a good impression generally.

  "I think the international element, the perception that we are actually quite modern in terms of the transport links and the ease of access to get there. That's why once they do do HS2, between Birmingham and Manchester it will have an effect, they can't quite see it at the moment, but it will definitely have an effect." (971, Ashford)

- **Attracting new companies to South East:** although the numbers are small, four respondents had deliberately based themselves close to HS1 and one respondent felt that, in her experience, businesses were choosing to relocate along the route because of HS1.

  "businesses that I work with have relocated here, because of the high speed rail link, as being one of the factors that they have relocated here…… They are all actually creative businesses, all of whom have moved out of London, so it's a combination of space, affordability, value for money, but actually their ability to access some of their markets which still remain in London" (348 Ramsgate)

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6. Summary

6.1. Introduction

Seventy businesses were interviewed across five locations along the HS1 route. A range of size of business and industry sector were included in the research. Respondents were initially asked about the issues that affect their business in terms of site location, recruitment and retention and business performance. They were not prompted to include HS1 in their thoughts. Chapters two – four include the findings of these discussions and show that HS1 wasn't at the forefront of respondents minds. However, transportation and site access did have a major impact on operations.

In Chapter 5 we described respondents' comments on HS1 once they had been prompted to consider HS1 and the impact it has had. In this summary chapter we draw together respondents prompted and unprompted comments under the following headings:

- Location factors;
- Employment opportunities; and
- Business performance.

6.2. Location factors

Unprompted, the main strengths of the site location for businesses were good road access and good public transport links. Three companies mentioned HS1, unprompted, as a site benefit. The main weakness of the sites was road access; congestion had the largest negative impact on businesses, with many respondents highlighting it as an issue. However a few companies did feel HS1 would have a positive impact on congestion as more people would opt to use it rather than travelling by car. Only a few companies mentioned poor public transport and no one mentioned HS1 as a weakness.

When prompted about HS1, two thirds of respondents felt that it had improved the local area through improving land and property values and the local economy. They also thought it had improved general perceptions of the area.

Once prompted, four of the seventy companies interviewed stated that HS1 was an influencing factor when deciding where to base their company.

> *"Absolutely, if High Speed 1 wasn't here we probably wouldn't have come here in the first place."* (790 Ebbsfleet)

6.3. Recruitment and Retention

The main issue affecting recruitment and retention was personal development and salary. It was felt that the main reason people left was for better prospects. About a quarter of companies felt that transportation affected their ability to recruit and retain staff particularly in lower paid jobs.

Many companies interviewed had been established before the introduction of HS1and so perhaps did not see the benefits in terms of current staff travel. The reason for this is that staff that were in place before the introduction of HS1 and so already had their travel in place.

A few companies did recognise it had widened their recruitment pool, particularly in niche sectors or with regard to highly skilled employees, as it made travel time less off a barrier.

> *"Certainly in my department, being able to recruit financial people from London and so forth it should open up more doors." (1273, Ashford)*

Although many respondents saw HS1 benefiting those people who commute to London, no one mentioned that this would take staff away from them as people seek new opportunities further afield. Rather more people were moving out of London and therefore bringing more money into the area.

6.4. Business Performance

Most companies interviewed reported some change in turnover. Most of the increase in turnover was owing to company growth and/or coming out of recession and most of the decreases in turnover were because of recession and general loss of business. HS1 was not thought to have had a direct impact on company turnover. However, it was perceived to have had softer benefits. The biggest impact of HS1 on businesses was on business travel in and out of the sites. A fifth of companies interviewed said that the introduction of HS1 had improved their business travel by reducing the amount of time they spent travelling by train. A few companies also reported changing the mode of travel used for business trips from car to HS1. The switch from car to HS1 also allowed people to work on the train and therefore less productive time was lost while travelling.

> *"more journeys are now undertaken by trains, because of the speed into London and across London." (790 Ebbsfleet)*

The introduction of HS1 was thought to have improved the perception of businesses close to the route and provided a 'selling point' when attracting new customers. However, the actual impact of this was difficult for respondents to disentangle.

Most businesses did not attribute an actual increase in turnover or profit to HS1 although improved business travel was likely to have helped them to reduce costs.

There is very little evidence of the direct impact of HS1 on businesses':

- Location decisions;
- Financial turnover; and
- Staff recruitment and retention.

However, HS1 is perceived to have had a positive effect on:

- Perception of the area;
- Traffic congestion;
- Business travel;
- Access for customers and suppliers; and
- Property values.

Appendix: Discussion Guide

HS1 Business Surveys

Discussion Guide

*This topic guide has been designed to provide structure to the interviews – **it is NOT intended to be used as a script**. To help interviewers, prompts have been included (throughout the guide see 'PROBE'); these are suggestions of questions that can be asked if appropriate to probe deeper into the respondents views.*

Introduction

- Self/ AECOM/Atkins independent consultancy
- Conducting research on behalf of Department for Transport.
  - Purpose of research to understand and determine effect access to the site has on:
    - Location benefits (decision to stay, move)
    - Employment opportunities
    - Business performance (turnover)

- Emphasise there are no right or wrong answers

- Emphasise confidentiality – recording interview for accuracy of reporting. Recording will not be passed on to anyone outside the research team. Once transcribed recordings are deleted. Findings are aggregated for reporting. Stress anonymity in reporting of findings
- Interview should take 50 minutes

Timeline

Interviewers will have an A3 sheet of paper with a timeline marked on from 2005 – 2013. This will be used to record when changes have occurred to the business and to act as an aid memoir to respondents to help them order their thoughts of when changes have occurred and their relationship to HS1

Warm-up/ background information

5 mins

- Nature of business?
- What is respondents' role in the business?
- How long have they been here?

Business Location

10 mins

- Is this site a single independent workplace or one of multiple locations?
  Probe: where else is the business located and what is the relationship to other sites e.g. head office?
- What is the status of site; leased or owned?
- How long have you been based at this particular site?
- Where (if anywhere) were you located previously?

- Probe: when did you move?

Timeline: Mark on timeline inception of company and when company moved to that site

- What has influenced your decision to be at this specific site (as opposed to other locations)
  - Probe: the extent these reasons have influenced their decisions; was it the primary reason.
  - Probe: what are the key strengths of this site?
  - Probe: what are the key weaknesses of this site?
- *If proximity to rail station mentioned:* Probe: how much of an influence? Any impact of High Speed service? Is it a bonus but not really a major factor in their decision or is it a key influence?
- What's it like to work at this location? Positives? Negatives?
  - Probe: how have things changed over time?
  - Probe: Reasons for change? What has improved? What had deteriorated?
  - Probe: Implications of change for business? For employees? For customers? For suppliers?
- Does your organisation have any plans/ desire to relocate?
  - If yes; What are the reason for this?
    What are the likely timescales?

Access for staff

10 mins

NB Respondents will be asked to come armed with these figures

- What are your current staff numbers at this site?/ across business?
- Roughly, what are the staff numbers over the last 8 years? 2005-2013
  Record for each year. If respondent doesn't know record current staff

  Numbers and probe for percentage change over past 5/ 10 years.

- How have staff numbers changed?

Timeline:

Mark on timeline staff numbers
Discuss any variation; what is the reason for the change?
If HS1 mentioned – probe: any correlation and impact of the introduction of HS1?

- What is your staff turnover?
  - Probe: has this changed over the last 8 years? 2005-2013?

  Record for each year If respondent doesn't know record current Turnover and probe for how changed over past 5/ 10 years.

- What are the main reasons staff leave?

- What are the main issues that affect recruitment and retention?
- Are you aware of any transport/ access issues which impact upon staff recruitment/retention?
  - If HS1 mentioned – has the introduction of HS1 affected staff retention?

Timeline:

Mark on timeline staff turnover
Discuss any variation; what is the reason for the change?
If HS1 mentioned – probe: any correlation and impact of the introduction of HS1?

Staff Travel

5 mins

- What are the operating hours of the business and the hours worked by staff? DO staff members work in shifts and if so what are the shift patterns at this site including the proportion of staff that operate each shift?
- What proportion/ how many staff travel to work by car/ public transport – in particular the train.
- In your opinion how accessible if your current site for staff.
    - Probe: any particular access issues that cause difficulties for staff on their journey to/from work?
    - Probe: Do access issues impact upon staff productivity?
    - Probe: has access to the site changed over recent years? How has this affected staff? The business?
    - If HS1 mentioned probe: has HS1 had an impact on accessibility of your site?

- Are you aware of any transport/ access issues which impact upon recruitment (positive or negative)
    - Probe: Does this cause any particular difficulty/ *benefit)* in recruiting certain types of staff or skill sets eg unskilled or professional staff?
    - If HS1 mentioned probe: has HS1 affected your recruitment? How many/ what proportion of staff?

Timeline:

Mark on timeline any change in staff mode of transport
Mark on timeline any change in where staff are travelling from
Mark on timeline any change in staff retention

Discuss any variation; what is the reason for the change?
If HS1 mentioned probe: any correlation and impact of the introduction of HS1?

Existing business trips

5 mins

- On an average day, how many business trips are made *(by company staff)* and where are they to?
    - Probe: have the amount of business trips being made changes? How? Why?
- By which modes of transport are business trips usually undertaken?
    - Probe: estimate most popular mode
    - Probe: extent each mode is used
        - Any change in mode? How? Why?
    - If HS1 mentioned probe: has HS1 affected your business trips? How many trips are made on the HS1 network?/ proportion of staff?
- How does current access to the site affect staff business trips?
    - Probe: what about deliveries
    - Probe: are there any particular issues that cause difficulties for staff carrying out work based trips?
- How does the current accessibility of your business affect productivity?
- Does your company have a green travel policy? Does this affect business travel eg mode choice/ reduction in travel?

Access to customers / suppliers

5 mins

- On an average day, how many trips are made by customers to these premises?
  - Probe: where are customers based?
  - Probe: has number of customer visits increased/ decreased? Why?
- How do customers travel to your site?
- How accessible is your site for customers?
  - Probe: any difficulties?
  - Probe: do any access issues impact on your ability to attract new or retain existing customers?
  - If HS1 mentioned probe: has the introduction of HS1 impacted on your ability to attract new or retain existing customers? By how much?

- On an average day, how many trips are made by suppliers to these premises?
  - Probe: where are suppliers based?
- How do suppliers travel to your site?
- How accessible is your site for suppliers?
  - Probe: any difficulties?
  - Probe: do any access issues impact on your ability to attract new or retain existing suppliers?
  - If HS1 mentioned probe: has the introduction of HS1 impacted on your ability to attract new or retain existing suppliers? By how much?

Company Turnover

5 mins

- Size of business (turnover)
  - At that site?
  - Across UK?
  - Globally?
    - Has this figure changed over the last five years?
    - Probe: reasons for change?
- What is your company turnover (record last 10 years)? 2005-2013
  Record for each year if respondent doesn't know record current

  Turnover and probe for percentage change over past 5/ 10 years.

    - If figures provided ask if can take away. Confirm confidentiality.

NB Respondents will be asked to come armed with these figures

Timeline:

Mark on timeline turnover
Discuss any variation; what is the reason for the change?
If HS1 mentioned any correlation with the introduction of HS1?

Introduction of HS1

10 mins

- Do they remember the introduction of HS1/ HS1 domestic services?

To clarify: High Speed 1 (HS1), officially known as the Channel Tunnel Rail Link (CTRL) is a high-speed railway between London and the United Kingdom end of the Channel Tunnel, through Kent.

The line was built to carry international passenger traffic between the United Kingdom and Continental Europe and opened in 2007. In December 2009 a domestic high-speed commuter service was started on the line serving the intermediate stations such as at Stratford International, Ebbsfleet International and Ashford International.

Timeline: Mark on timeline introduction of HS1

- What impact do they think the introduction of the HS1 has had in general?
    - Probe: any positive and negative impacts on each of the following
        - The local economy, jobs, business trade, different employment sectors
        - Perceptions of the area as a place to live, work and invest
        - Traffic congestion and accessibility in the area
        - Quality of local environment
        - Quality of life for residents
        - Impact of the investment and land and property values
        - You personally
        - Any other?

- Has the introduction of HS1 affected your business at all?
    - Probe: Decision to move to/ stay at that site?
    - Probe: Access for staff, customers, suppliers?
    - Probe: Recruitment and retention of staff?
    - Probe: Company Turnover

- Probe magnitude of impact.

Wrap up

- Recap main points of discussion
- Overall do they think the introduction of HS1 has been positive or negative
    - For your company…
    - For the South East?
    - For the UK?
- Probe: key reason for positive/ negative impact for each.

Appendix: Method Report

Introduction

In this this section we describe the recruitment methodology in more detail under the following headings:

- Sample Frame; and
- Sample Composition.

Sample Frame

As specified in the brief the surveys were undertaken at five locations along the HS1 route namely:

- Ashford
- Ebbsfleet
- Kings Cross
- Ramsgate
- Stratford

A total of 70 interviews were carried out and these were spread across the above locations;

The Experian Database was used to identify companies of interest. Initially all companies based within a 2km radius of the stations were of interest to us. However, on examination of the date it was apparent there are very few medium and large companies in the survey areas (with the exception of Kings Cross) within a 2 km radius and therefore, after discussions within the project team and the independent reviewer, we widen the survey area for medium and large companies to 4km in all areas except Kings Cross. This gives the following sample frame:

Table A1: Final Sample Frame

	Micro <10	Small (11-49)	Medium (50-199)	Large (200+)	Total
Ashford	160	79	60	18	317
Ebbsfleet	176	53	145	41	415
Kings Cross	4312	2225	517	199	7253
Ramsgate	389	89	21	3	502
Stratford	1004	234	109	23	1262
Total	6041	2680	936	308	9749

The Experian Database showed there are companies that operate in the following business areas. However, we did not wish to include public sector companies and therefore excluded some sectors from our sample. These are highlighted in red in the list below.

Only private sector companies were included and we represented most of the industries listed below. There are very low numbers of companies in the sectors highlighted green:

- Section A Agriculture, Forestry and Fishing
- Section B Mining and Quarrying
- Section C Manufacturing
- Section D Electricity, Gas, Steam and Air Conditioning Supply
- Section E Water Supply; Sewerage, Waste Management and Remediation Activities
- Section F Construction
- Section G Wholesale and Retail Trade; Repair Of Motor Vehicles and Motorcycles
- Section H Transportation and Storage
- Section I Accommodation and Food Service Activities
- Section J Information and Communication
- Section K Financial and Insurance Activities
- Section L Real Estate Activities
- Section M Professional, Scientific and Technical Activities
- Section N Administrative and Support Service Activities
- Section O Public Administration and Defence; Compulsory Social Security
- Section P Education
- Section Q Human Health and Social Work Activities
- Section R Arts, Entertainment and Recreation
- Section S Other Service Activities
- Section T Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use
- Section U Activities of extraterritorial organizations and bodies

Sample Composition

The table below shows the size of companies at that site who were included in the research.

Table A2: Size of Company at Site by Location

	Kings Cross	Ramsgate	Ebbsfleet	Stratford	Ashford	Total
Micro (1-9)	3	6	1	0	2	12
Small (10-49)	1	2	5	3	4	15
Medium (50-199)	6	4	5	8	7	30
Large (200+)	4	2	2	3	2	13
Total	14	14	13	14	15	70

Table A3: Industry Sector by Location

	Kings Cross	Ramsgate	Ebbsfleet	Stratford	Ashford	Total
Section C Manufacturing	0	4	1	0	3	8
Section E Water Supply; Sewerage, Waste Management and Remediation Activities	0	0	0	1	0	0
Section F Construction	0	0	0	3	0	3
Section G Wholesale and Retail Trade; Repair Of Motor Vehicles and Motorcycles	2	3	2	3	8	18
Section H Transportation and Storage	1	2	6	3	0	12
Section I Accommodation and Food Service Activities	0	2	1	0	1	4
Section J Information and Communication	1	1	0	0	1	3
Section K Financial and Insurance Activities	0	0	0	0	0	0
Section L Real Estate Activities	0	2	1	0	0	3
Section M Professional, Scientific and Technical Activities	6	0	1	0	1	8
Section N Administrative and Support Service Activities	1	0	0	1	0	2
Section R Arts, Entertainment and Recreation	2	0	1	3	1	7
Section S Other Service Activities	0	0	0	0	0	0
Section U Activities of extraterritorial organizations and bodies	1	0	0	0	0	0
Total	14	14	13	14	15	70

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Appendix E. Stakeholder Interviews Report

Evaluation of the Impacts of High Speed 1

Stakeholder Interviews Report

ATKINS

AECOM

frontier economics

11th December 2013

Plan Design Enable

Notice

This document and its contents have been prepared and are intended solely for the Department for Transport 's information and use in relation to the Evaluation of HS1

Atkins, AECOM and Frontier Economics assume no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

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1. Introduction

1.1. Introduction

Atkins, AECOM and Frontier Economics have been commissioned by the Department for Transport (DfT) to carry out an Evaluation of the Impacts of High Speed 1. As part of the evaluation of regeneration impacts qualitative interviews with public and private sector stakeholders from within the HS1 Study corridor have been carried out. The stakeholder interviews represent one of three components that make up the regeneration evaluation – the other strands of this element of the study are 'Qualitative interviews with 70 businesses' and 'Secondary data collection' looking at socio-economic analysis of the HS1 Corridor and 3 specified Control Areas**.**

The stakeholder interviews are a critical part of the overall evaluation because they add value and depth to the quantitative analysis. Specifically the qualitative interviews provide the following aspects:

- An understanding of the critical path to impact – the sequence of events and timing of impacts on the ground, including causalities and dependencies.
- They help in the assessment of attribution of the secondary data and to isolate any developments or changes in conditions in the Corridor that might be a consequence of HS1.
- They provide a commentary on the impact on an area where no quantitative impact has yet been picked up in the data.
- They provide a view on the prospects and developer sentiment in an area and help us to attribute this non-quantifiable yet important factor to HS1.
- They help us understand what would have happened in the absence of HS1 – i.e. the counterfactual.
- They identify unexpected or wider impacts outside our initial hypotheses.

1.2. Methodology

1.2.1. Stakeholder selection

Stakeholders that had been involved in regeneration activity throughout the High Speed Rail corridor and around the high speed stations (Kings Cross-St Pancras; Stratford; Ebbsfleet; and Ashford) were selected. Regeneration practitioners, local authority officers, developers and commercial property agents were identified on the basis of their direct experience and knowledge of working in the area. The aim was to explore and test the regeneration impact hypothesis set out in the original Scoping Report.

The DfT provided an list of suggested stakeholders which was used to develop an initial list of 20 stakeholders. Following a further review of the list, and based upon referrals from interviews in the initial list, a total of 24 stakeholders were selected and interviewed as set out in the **Table 1.1**.

In developing our sample frame it was our intention to cover all the local authorities in the corridor area where significant journey time savings were likely. In addition, we sought to engage with private sector developers and commercial agents with direct involvement in the major regeneration and development schemes across the HS1 corridor specifically: Ebbsfleet International Station, Ashford International, Kings Cross and St Pancras Redevelopment (and associated regeneration/development), Regeneration of Stratford (and associated regeneration/development).

Table 1.1 Stakeholder List (Regeneration)

Kent Stakeholders Public and Private	Property Stakeholders and London
1. Kent Invicta Chamber of Commerce 2. Locate in Kent (Inward Investment Agency) 3. Kent County Council 4. Thurrock Council 5. Dartford Borough Council 6. Gravesham Borough Council 7. Medway Council 8. Swale Borough Council 9. Maidstone Borough Council 10. Ashford Borough Council 11. Canterbury City Council 12. Thanet District Council 13. Dover District Council 14. Shepway District Council 15. Atrium Surveyors 16. Paramount Park 17. Martine Waghorn (Developers)	1. London and Continental Railways 2. London Borough of Camden, 3. London Borough Newham 4. London Legacy Development Corporation 5. Property Agent A 6. Deloitte Real Estate 7. Argent LLP (Developers Kings Cross)

1.2.2. Interview structure

The stakeholder interviews were structured around the Topic Guide appended to this report (**Appendix 1**) and lasted between 30 and 80 minutes depending on the stakeholder and significance of HS1 to the geography they covered. The Topic Guide was based on the original hypotheses contained in the Scoping Report and designed to identify and test the regeneration impacts contained in the original logic mapping set out in the Scoping Report Section 3.2.3, Figure 6. The following topic areas have been considered:

- Impact on travel and activity around stations;
- Worker and agglomeration benefits;
- Extended work horizons;
- Impact on Land Use Planning;
- Investment Climate;
- Business performance and job creation; and
- Strategic Added Value (including strategy and policy).

The interviews considered the impact of HS1, including domestic services using the infrastructure, on economic development, business location and investment decisions before during and following opening whilst also taking into consideration the effects of the recession. Discussions sought to identify the impact against a counterfactual position, taking into account the changes in impact resulting from the opening of Section 1 and Section 2 and the revision of the Southeastern timetable.

The interviews included questions relating to wider, non-business specific changes in the economic characteristics of the HS1 corridor/area, including how HS1 has contributed to meeting regeneration objectives. This covered consideration of Strategic Added Value – this aims to capture the wider coordinating, catalytic and influencing role of investment which is not captured in the measurement of outputs of direct project support.

1.3. Analysis of the Stakeholder Interviews

The findings from the individual interviews were written up against the topic areas that structured the interviews. Responses were then brought together by thematic area to enable a cross comparison of issues and identification of themes. The themes were then cross referenced against their geographical coverage and by stakeholder group.

The key themes identified in the analysis of the stakeholder are discussed in the subsequent chapters which cover the following topic areas:

- Chapter 2: Land Use Planning
- Chapter 3: Investment Decisions and Job Creation
- Chapter 4: Location Decisions and Business Performance
- Chapter 5: Worker and Agglomeration Impacts
- Chapter 6: Strategic Added Value
- Chapter 7: Neutral and Adverse Impacts
- Chapter 8: Conclusions

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2. Land Use Planning

2.1. Introduction

Stakeholders were asked to identify how HS1 had shaped or aligned with local land use planning in the Corridor Study Area with a particular focus on how the infrastructure had influenced strategic aspirations around HS1 stations.

In this section we describe:

- How HS1 has influenced long term strategic plans for locations adjacent to HS1 stations;
- The types of development that are desired adjacent to stations; and
- Any wider influencing effect that HS1 has had on land use planning throughout the study corridor.

HS1 has played a major role in land use planning decisions although wider factors have also been significant.

The focus of major strategic land use planning has been in locations around stations on the High Speed line itself in London and in Kent. Alongside the implementation of HS1 there has been long term planning for major regeneration initiatives in sites accessible from the stations.

2.2. Kings Cross and Stratford

> *"There had been no proposals for development of the lands around Stratford prior to the arrival of HS1 and the acquisition of the lands by LCR. The entire site had been occupied by rail freight facilities. Newham authority identified Stratford as a development area on the basis that the station was coming, and had argued for a station being placed at Stratford".*
>
> London and Continental Railways

The implementation of HS1 was thought to have had a catalytic role in bringing forward regeneration around Kings Cross and Stratford. The scale of regeneration is thought to have been accelerated by HS1 and associated with this impact has been the scale and scope of land use priorities identified through strategic planning and partnership.

The importance of forward planning and partnership between LCR, Camden Council and developers was considered to have supported growth around Kings Cross and St Pancras. Although previous masterplans had been identified for the local area, HS1 has provided an impetus for delivering change.

Stakeholders acknowledged that HS1 had helped to bring forward plans around Stratford Station. However, as discussed in Section 3.2, disaggregating the investment in the rail line from other factors and the opportunities associated with bringing the Olympics to East London is difficult.

2.3. Kent

Stakeholders referred to HS1 as having a significant impact on land use planning along the HS1 corridor in Kent although the greatest focus of planned activity has been around Ebbsfleet and Ashford International Stations – land around these stations has been central to growth aspirations for both Dartford and Ashford Councils.

Although there has only been a limited amount of development around Ebbsfleet International Station the aspiration of Dartford Council remains to establish a new commercial centre around the station with an agglomeration of higher value occupiers in growth sectors on land that was previously undeveloped.

> *"Ebbsfleet was part of the Green Belt before the arrival of HS1. The change in planning status and the possibility of any development on these lands was entirely conditional on HS1."*
>
> London and Continental Railways

On land between Ashford International Station and the town centre, stakeholders referred to emerging proposals to establish a commercial quarter. Links to the station will play a key role in supporting the development and attracting investment.

Stakeholders also identified wider growth aspirations and strategic masterplans along the HS1 route. The largest forecast increases in housing stock in Kent over the next decade are proposed for Dartford and Ashford. HS1 is considered central to supporting key developments such as Eastern Quarry near Ebbsfleet (up to 6,500 new homes) and Chilmington Green near Ashford. Historic designations for Growth Status (Ashford and Thames Gateway) are also thought to have been supported by the level of growth enabled by HS1 and the national significance of the infrastructure provision.

For locations that are served by High Speed rail, but not served by the new infrastructure, the influence on land use planning was considered by some stakeholders to be less significant or negligible for some areas. Stakeholders did however identify the following proposals for employment related sites that would be connected to HS1:

- Proposals for a Parkway station at Manston serving adjacent business parks, Manston International Airport and the Enterprise Zone at Sandwich.
- Aspirations for commercial development adjacent to Canterbury West station.

Property market stakeholders suggested that where there had been impact around stations in Kent effective partnership working and forward planning had been key and had resulted in beneficial impacts in the surrounding areas.

> *"In some areas there is good evidence – particularly through Kent of impact around some stations, particularly in those areas where there has been station re-development, effective partnership working and forward planning. This has been a key lesson from HS1 - the importance of forward planning, and partnership to drive change at station using HS1 as a catalyst"*
>
> *Property Agent A*

3. Investment Decisions

3.1. Introduction

In the previous Chapter we referred to the role of HS1in shaping land use planning decisions within the study area. Alongside these discussions stakeholders were asked to identify the extent that HS1 had influenced investment decisions and attracted development.

3.2. Development around HS1 stations

The introduction of a new high speed line has been used as a stimulus to plan and attract development around the new high speed stations (international stations on the high speed section of the route).

The stakeholder interviews discussed the scale and pace of change that had actually taken place. Within the study corridor there has been a clear differential between the level of development in London (adjacent to Kings Cross-St Pancras and Stratford) and around the HS1 stations in Kent (Ebbsfleet and Ashford). Whilst HS1 was acknowledged to be a factor in supporting development opportunities stakeholders emphasised that HS1 was only one of a number of factors.

The following case studies explore the investment conditions around the high speed stations and the external factors that have influenced development.

Kings Cross - St Pancras

Stakeholders suggested that HS1 was the major catalyst which created the conditions for regeneration at Kings Cross through the following:

- catalysed Land Assembly;
- provided the impetus for redevelopment of St Pancras station specifically; and
- unlocked other transport improvements (including Kings Cross redevelopment).

Delivering HS1 was the key step as it removed the blight around Kings Cross which had restricted development for over 40 years. It was suggested that the regeneration of the local area would not have happened on the scale and at the same pace without HS1. The Argent development (Regents Quarter) represents a further £2bn investment and this was predicated on £2bn in transport improvements which were unlocked by HS1.

The development of land around Kings Cross was thought to have had a catalytic effect on the area and resulted in a highly competitive environment offering "*one of the best retail, business and residential locations in Europe*". There is huge potential for retail and leisure in this area but the area is also a key location for ICT, digital, life science and creative sectors. Camden Borough Council stated that HS1 has had a large impact on property prices (following an initial lag).

Although faster journey times and connectivity to Europe are beneficial to the area, the interviewees stressed that these factors were much less important economically to the area and to the London economy than the fact that HS1 was key in unlocking billions of pounds worth of development in a key strategic yet underutilised and underdeveloped part of London.

The success of the scheme was also predicated on a number of enabling factors which ensured the scheme was successful:

- Two existing London mainline stations;
- Available brownfield land;
- Good forward planning and positive partnership between LCR, council and developers; and
- Good access through station at ground level, making St. Pancras a connector not a barrier.

The impact of the scheme in the local area was thought to have been contained to the core development with some local benefits proving more difficult to secure. HS1 has not had a catalytic impact on the regeneration of nearby Somerstown and the types of retailers now occupying the development are not accessible for local residents.

Stratford International

Interviewees acknowledged that HS1 had resulted in some catalytic impact in bringing forward the Westfield development and the successful Olympic Bid. London and Continental Railways were particularly positive about the role of HS1 in enabling investment as a result of the removal of the freight lines which facilitated the Olympic Bid – the Olympic bid was also supported by the improved capacity facilitated by the Javelin services.

As for Kings Cross-St Pancras, stakeholders emphasised that there were other factors that had shaped development in the area and that it was difficult **to** disaggregate the influence of HS1 from other factors. In Stratford the catalytic effect was thought to be less clear because of the following:

- The Stratford site was inherently attractive as an Olympic Games location;
- The area was already well-connected with underground and mainline rail services, has seen wider package of transportation improvements not directly connected to HS1 including Jubilee Line, DLR, forthcoming Crossrail;
- LB Newham referred to the Jubilee Line as being key to sending the 'signal' that Stratford was connected to Canary Wharf and Central London; and
- Although Westfield benefits from the accessibility to Kent afforded by HS1, it was considered that its 'out of London' catchment lies primarily in Essex.

The location of development thus far was thought to be significant in gauging impact from HS1 as currently development has been focused around Stratford station rather than the International station – this station offers better interchange opportunities and is more extensively used.

Ebbsfleet International and Ashford International

Stakeholders acknowledged that the progression of development around the High Speed stations had been limited and that HS1 had not facilitated large scale development.

Ashford
Atrium Surveyors identified that HS1 has not yet had an impact in actually bringing forward new commercial sites in Ashford. Although plans are emerging for a new commercial quarter between the station and the town centre these are considered to be a long term proposition.

Ebbsfleet
Dartford Borough Council (DBC) acknowledged that allocated sites around Ebbsfleet station remained largely undeveloped and limited to 200 residential units to date – DBC has maintained its planning status for the site and this is predicated on high value growth - alternative development options that may have been brought forward have therefore not been explored.

3.3. Wider impacts on investment within the study area

Stakeholders referred to increased demand for housing in Kent and it was thought that improved access to London was influential in this trend. Ashford Borough Council suggested that house prices in the Borough are outstripping those elsewhere in Kent, the south east and nationally. Towns that have become feasible commuter settlements have also seen gentrification in properties that are near to the station, for example in Folkestone, where the Business Advisory Board has estimated that 40-50% of house sales are being made to people in West Kent and London.

Large scale development that is being brought forward at present is primarily residential with a number of long term sites in Ashford now nearing completion and major residential extensions planned for Chilmington Green (Ashford) and a major urban expansion of 6,500 homes planned for Whitfield (Dover).

Where stakeholders referred to commercial development being brought forward along the HS1 route in Kent, it has not generally been adjacent to HS1 stations. Although HS1 was thought to support commercial development at these sites, other factors are thought to be more significant. Eureka Park, near Ashford, has seen speculative office development, however the proximity to the motorway network is thought to be of greater significance. The Crossways and The Bridge developments in Dartford have been successful in attracting occupiers, but Dartford Council emphasised that their connections lie with existing settlements rather than HS1.

Medway Council did suggest that HS1 had helped bring forward long-established waterfront regeneration areas in central Medway Towns: Rochester Riverside, Chatham Centre and Waterfront, Chatham Maritime, Strood Town Centre and Riverside, Gillingham Waterfront and Temple Waterfront. Property market stakeholders referred to beneficial impacts around stations in Kent in areas where there had been station redevelopment (including Medway) with HS1 being used as a catalyst by local stakeholders.

3.4. Impact of recession

Almost all local authority and property market stakeholders, across geographies, referred to the significance of the economic downturn and an extended period of recession which coincided with the opening of HS1. The economic climate was considered to be a key factor in investor confidence and the rate at which development has been progressed.

The two locations within the study area that had seen large scale development (around Kings Cross and St Pancras and Stratford) were both in London. However, as discussed above, there were a wide range of factors that had led to activity at these locations which enabled them to depart from wider trends. Throughout Kent there was a consensus amongst stakeholders that the recession had slowed the take up of development sites with the greatest impact being felt on employment sites.

> *"it takes 3 years for an initial investment decision to have an impact on the ground. As the HS1 services only really started in 2009 and was launched in the teeth of a recession it is almost certain that we are only just starting to see the impacts now, and only in those places where the recession had least impact i.e. those places that managed to weather the storm most effectively"*
>
> *Property Agent A*

Locate in Kent (the County's inward investment agency) also referred to the withdrawal of financial support from government agencies and disbanding of investment, associated with the recession, as having significant impact upon regeneration activity in the County.

3.5. Improving opportunities

As a result of the recession, a number of stakeholders suggested that the impact of HS1 has been delayed and that it was too soon to fully understand the impacts of the investment. As highlighted by Property Agent

A (see above quote), the likely lag between decision making and implementation, alongside the effects of the recession has meant that in some cases the impacts along the HS1 route are only beginning to emerge.

The weak property market in particular has limited development, but sites located close to HS1 stations are well placed to benefit following upturn. Proposals for a Parkway station at Manston, serving the International Airport, adjacent business parks and the Enterprise Zone at Sandwich, is reflective of interest in sites accessible form HS1. Stakeholders also referred to a widespread promotion of accessibility via HS1 in marketing material:

- Dover Council encourage potential investors to travel from London by HS1;
- Inclusion of HS1 in Chobham Manor marketing (Olympic Park);
- Inclusion of HS1 in marketing material for Westfield;
- Promotion of International links to Ashford in marketing the area;
- International links are considered to be the differentiating factor for Kings Cross (gateway to Europe); and
- Canary Wharf marketing material refers to the international station.

Perhaps the most significant emerging proposals along the HS1 corridor relate to the Paramount Park proposals. Investors are seeking to develop a new theme park and have selected a location near to Ebbsfleet Station as their preferred site. Upon completion the development would see thousands of jobs created and is anticipated to attract complementary development around the HS1 Station. No other locations were considered to have the necessary levels of accessibility to London and internationally.

> "Longer term benefits to the UK are enormous – 27,000 jobs and an estimated $1billion in exported for products and services. We would not be implementing the scheme without HS1"
>
> Paramount Park representative.

4. Location Decisions and Business Performance

4.1. Introduction

Stakeholders were asked to consider their awareness of the impact of HS1 on employers within the corridor and their location decisions. Discussions also sought to identify whether stakeholders were able to identify the extent that HS1 had impacted on business performance and job creation.

4.2. Location decisions

Improved connectivity has the potential to shape the location decisions of employers within the study area. In addition, stakeholders were asked to consider whether there has been any evidence of new businesses moving into the study area to take advantage of improved connectivity or new development opportunities.

For businesses and residents moving into Argent LLP's development adjacent to Kings Cross-St Pancras the developers have undertaken their own research into the extent that HS1 has influenced decision making. Although HS1 was identified as a factor in some cases, these instances only made up a small proportion of occupiers.

> *"Only 5% of commercial and residential occupiers so far in the Argent LLP scheme have referenced HS1 has a factor in their location decision".*
>
> *"Of all the residential sales at KX so far only 5% mentioned the Euro link as in any way being part of their decision and of the big corporate occupiers only BNP Paribas mentioned it as a factor (Google, LB Camden, themselves, other businesses didn't rate HS1 as a factor)".*
>
> *Argent LLP*

At the same time, the representative from Argent LLP also acknowledged that the catalytic role that HS1 had played in bringing forward regeneration in the area had been pivotal in creating the right conditions for attracting world class academic institutions and institutes (e.g. the Crick Institute and the Wellcome Foundation) which are integrated into the wider Creative Quarter initiative.

Within Kent, stakeholders were able to refer to anecdotal evidence of HS1 influencing location decisions. It was usually emphasised that HS1 had been a contributory factor rather than the definitive reason. When undertaking discussions with businesses across Kent, Locate in Kent have made enquiries into whether their location decisions had been influenced by HS1 - in general businesses did not consider this to be the most significant factor in their decisions although for some businesses it was considered to be *a* factor.

Through their discussions with businesses, public sector stakeholders in Kent had identified that there was some evidence of relocation along the HS1 route although the impacts have not been quantified. The shorter journey times had enabled businesses to maintain or enhance interaction with customers and services in central London whilst opening or consolidating a presence in Kent. This included evidence of businesses re-locating from London to Kent, but maintaining a 'customer facing' office in central London, and also businesses relocating out of London completely. A key factor in these decisions was maintaining easy access to the centre of London as journey times prior to the opening of HS1 were considered to be restrictive. Stakeholders also referred to businesses setting up offices further north in Kent along the HS1 route to take advantage of HS1 and a wider catchment (Locate in Kent referred to the example of two accountancy firms opening additional offices in Chatham).

Stakeholders in Kent also provided to the following examples of location decisions that have been influenced by the introduction of HS1:

- Employers in the Life Sciences sector have demonstrated interest in locating at Discovery Park (Sandwich) – enhanced connectivity to London is considered to be a key factor.

- French electronics firm SBE identified HS1 as the principal attraction in their move to Ashford – SBE has now grown from 5 members of staff in 1997 to 900 members of staff in 2011 and is now Ashford's biggest employer. SBE's headquarters are in Lille therefore international services are as significant as HS1 and links to London.
- Recent increases in enquiries from companies in the digital sector interested in moving to Ashford (Ashford Council emphasised opportunities have arisen as a result of accessibility to the Kings Cross area where Google are currently constructing a new headquarters).
- Benefits for the tourism, retail and leisure sector as destinations in Kent are more accessible from London for day and trips and short stays (e.g. Folkestone, Margate, Ashford Designer Outlet)
- Paramount Park (theme park) proposal close to Ebbsfleet station – location chosen owing to HS1 station as no other locations offer the same level of accessibility to London and internationally. The developer estimates potential for up to 27,000 jobs.

In Ashford property experts suggested a limiting factor on business relocation has been a shortage of high-quality office space in the town centre. Investment in new office space has been suppressed by the recession and the effects of HS1 have not been able to counteract this. In contrast, new office space has come forward at Eureka Park on the Motorway where HS1 is a less significant factor.

4.3. Business Performance and Job Creation

In general stakeholders referred to the overall positive impact of HS1 on business performance and job creation, with opportunities more limited in areas not on the route - identifying direct evidence was seen to be more challenging and evidence of attribution is limited.

Construction Phase

The construction phase had clearly benefitted employment in the construction sector throughout the corridor and the establishment of a Hitachi depot for the HS trains at Ashford has created 70 jobs. Kent Invicta Chamber of Commerce highlighted that the local benefits from the construction phase would have been enhanced had skill shortages been addressed as staff needed to be recruited from Europe.

Kings Cross-St Pancras

Development around Kings Cross has created highly competitive environment with huge potential for employment and HS1 has helped to create the right conditions to attract large organisations including BNP Paribas and the Crick Institute. Although local stakeholders considered that public facing businesses had benefitted from increased activity they were not able to conclusively state that it had enhanced the performance of non-public-facing businesses in the area (e.g. professional services businesses). Benefits for smaller businesses and local businesses that were not located in the vicinity of the station were thought to be negligible.

Kent

A number of stakeholders referred to HS1 as having a positive impact on employment (including maintaining existing employment) and that, despite the recession, employment in Kent had remained relatively stable relative to other areas – in Medway there has been a 20% decrease in youth unemployment with Medway council suggesting they are "sure HS1 has had a significant effect" (Medway Council) though this attribution could not be backed up with specific evidence.

Evidence of the benefits of HS1 in relation to business performance was identified less frequently by stakeholders and wider factors were thought to be more significant. Dartford Council referred to strongly performing business in the Borough, however, historic proximity to London was considered to be more significant. In Dartford, logistics was identified as being a strong sector and this is reliant on the motorway links rather than HS1. Similarly, new jobs have been created at Eureka Park in Ashford, however, this business park is more focused on the motorway network than HS1.

Locations where the journey time savings were less significant were more likely to suggest that HS1 had provided no significant impacts on business performance or job creation (Maidstone, Canterbury and Thanet).

Tourism and Leisure

Locations where culture, tourism and leisure are significant aspects of the local economy are seen to have gained from the accessibility benefits resulting from HS1 which has made day and short stay trips more feasible. The following evidence was raised by Stakeholders in Kent and London:

- Visit Kent has suggested that Margate has seen an increase in visitor numbers following the opening of HS1 – opening of new attractions such as Turner Contemporary has also played a role (more accessible from London).
- HS1 has supported growth and investment in the cultural offer of Folkestone (as a result of improved accessibility from London).
- Canterbury City Council referred to the city becoming more accessible from London for day trips and conferences.
- HS1 has helped to widen the catchment for Westfield Shopping Centre in Stratford and Ashford Designer outlet mall (although Newham BC emphasised that Westfield customers were likely to be form Essex than Kent)
- HS1 has provided additional capacity for Olympic events and post Olympic events in the Olympic park.

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5. Worker and Agglomeration Impacts

5.1. Introduction

Stakeholders were asked to discuss the extent that HS1 had influenced the interaction of businesses and supported greater access to labour and markets. Consideration was also given to how HS1 had affected access to employment and travel to work from within the Corridor.

5.2. Agglomeration

Overall agglomeration impacts from HS1 were not identified as being large in either Kent or London.

Around Kings Cross and St Pancras, although the potential for worker and agglomeration benefits was acknowledged, the extent of investment in the area (over and above the construction of HS1) and the critical mass and dynamism that already exists in the area limits the extent that effects can be disaggregated. Similarly, although HS1 would have provided access to additional employees, the labour market for central London is so large that the difference would be negligible.

Stakeholders did not consider that HS1 had significantly improved integration with Central London. London Boroughs did not consider that the improved accessibility to labour markets (e.g. in Kent) was a significant impact resulting from HS1 although property market stakeholders were of the opinion that increasing the labour market was beneficial and '*makes London more competitive*'.

Although the extent that HS1 had impacted on agglomeration was not seen to be large, stakeholders did refer to evidence of agglomeration factors in two areas:

Knowledge and life sciences sectors

- Kings Cross (Creative Quarter) – influx of occupiers from life sciences, technical and scientific sectors including the Crick Institution and the Wellcome Foundation;
- The life sciences sector has demonstrated greater interest in locating in Kent at Discovery Park. Businesses in this sector have suggested that this interest is driven by the connectivity to and within London rather than ease of commuting. Being within an hour of central London provides a similar level of connectivity as Oxford and Cambridge.
- In Medway, HS1 has provided the "final seal of approval" for attracting several University branch campuses.
- Concentrations of businesses in knowledge sectors around Canterbury although the impact of HS1 is less significant as the accessibility benefits have not been as great for Canterbury - a lot of the knowledge sector links are historic.
- '*Locate In Kent*' is currently working with the life sciences and medical sectors – improved accessibility to London has improved links to Universities and graduates.

Cultural and Creative sectors

- Establishment of creative quarter adjacent to Kings Cross-St Pancras;
- Burgeoning cultural scenes in Margate and Folkestone (in part supported by people moving to the area and also as a result of increases in visitor numbers); and
- In Ashford, there has been an increase in enquiries from businesses in the creative and digital sectors looking to have a base outside the capital (for cost reasons) but with easy access to Google's new headquarters which will be located adjacent to St Pancras.

5.3. Travel to work

London

The impact on travel to work within central London was considered to be less significant. The strength of existing transport links means HS1 does not present a significant improvement to internal connectivity. From Stratford the main station was described as having better interchange opportunities whilst the expense of Javelin services, compared to other services, and the lack of integration with the Oyster card system (currently) limits the attractiveness of the service.

Kent

In Kent, there was a perception amongst stakeholders that HS1 had supported an increase in trips to London. Stakeholders believed that HS1 was having an effect on making residential areas along the corridor more viable commuter areas. As well as improved perceptions of the area stakeholders referred to plans for residential housing growth (in particular in Ashford and Dartford) in locations served by HS1 and house price increases as being linked to improved access to employment opportunities (primarily in London).

> *"HS1 supports access to higher value job opportunities in the financial and business services, historically not areas where the commuting population of Kent were as well represented as locations to the south and west of London. Employment is now more accessible as a result of the new routing and over the long term this has the potential to change the skills profile of the county"*
>
> *Kent County Council*

Kent County Council and a number of other stakeholders in Kent also stressed that the location of the terminus was as significant as journey time savings. Terminating at Kings Cross has opened up new opportunities for businesses/commuters which include the potential for accessing high value job opportunities (e.g. London Docklands).

Disadvantages have also resulted from the change in terminus and service pattern. For businesses and commuters who have historically travelled through London Bridge and on to Victoria and West London, access to Kings Cross is less convenient. There is also a perception amongst some users of the preexisting line that they have been disadvantaged by reduced frequency of services and investment in the routes (highlighted by Maidstone and Canterbury Councils).

6. Strategic Added Value

6.1. Introduction

Strategic Added Value (SAV) relates to the wider coordinating, catalytic and influencing impacts of the investment which are not captured in the measurement of the direct outputs of the intervention. To enable a greater appreciation of the broader impacts of the investment stakeholders were asked to identify whether HS1 had influenced the following:

- Decision making and co-ordination of stakeholders;
- Co-ordination of partners; and
- Leverage of partner and stakeholder resources and funding.

HS1 has supported partnership building and leverage of investment.

6.2. Decision making and co-ordination of stakeholders and partners

When asked to identify whether HS1 had played a role in bringing partners together and co-ordinating activities in support of regeneration, the most frequent observation was that extensive lobbying had taken place between public and private partners to promote accessibility via HS1 within the study area. The greatest focus of the lobbying activities was thought to have taken place prior to opening and has been focused locations in Kent (in the study area) where there was greater potential for variation of route and service patterns.

There is evidence from stakeholders that HS1 has supported longer term partnerships within the corridor. Dartford Borough Council referred to the Thames Gateway Kent Partnership, which is a Public and Private Partnership primarily focused on transport and economic development. The Partnership has broadly agreed that Ebbsfleet and the surrounding area should be the key focus for development in this area - without the introduction of HS1 and the opportunities associated with Ebbsfleet it was not considered that the argument for wider economic coherence would have been possible. Partners have acknowledged that the potential development around the station has the potential for significant employment opportunities and economic benefits within their own administrative areas.

One further area of influence raised by stakeholders has been establishing locations along the corridor as Growth Areas. HS1 was considered an important factor in supporting the designation of Ashford and Thames Gateway as Growth Areas (under the previous administration) and in supporting aspirations for future growth. The arrival of HS1 was thought to demonstrate capacity to support High Value growth.

Kent Invicta Chamber of Commerce suggested that an additional legacy of HS1 had resulted from skills shortages in the development of the infrastructure. As a result of this issue, it is considered that there is greater co-ordination of training activities across Kent to support local employment.

6.3. Leverage of resources and funding

The catalytic role of HS1 in leveraging wider investment was identified as a benefit by a number of stakeholders. The national significance of the investment along the corridor has supported local authorities in attracting complementary investment in the local environment and for improving access to HS1. Stakeholders cited the following examples of positive outcomes associated with the introduction of HS1:

- HS1 was **one** catalyst for the wider £2bn investment in transport in London including at St Pancras and Kings Cross Stations, London Underground, and at Thameslink stops (Camden Borough Council);
- Development in Regents Quarter (£2billion investment) predicated on £2bn in transport improvements which were unlocked by HS1;
- Additional investment secured for the existing rail line between Ashford and Ramsgate (Kent County Council);

- Environmental improvements to land adjacent to HS1 stations (Dartford and Medway Councils);
- Network Rail investment of £39mn in station improvements at all five key stations in Medway following increases in passenger numbers (Medway Council);
- Bus link between HS1 and Eureka Park (Ashford) through S106 Agreement; and
- Proposals for a Parkway station at Manston (Thanet District Council).

7. Neutral and Adverse Impacts

7.1. Introduction

Although Stakeholders presented HS1 as having a positive impact overall, a number of stakeholders also referred to impact as being neutral or in some cases adverse. This chapter seeks to identify where these have taken place:

Adverse or Neutral impacts were more likely to have been in Kent and in locations not directly on the High Speed line.

7.2. Neutral impacts

Little impact on more deprived and underperforming towns

Local Authority stakeholders referred to HS1 as having a reinforcing role in relation to existing economic profiles - underperforming towns are seen to be less able to capture benefits from HS1. For the full benefits of HS1 to be realised, it was emphasised that HS1 would need to support access to local jobs as well as providing access to employment elsewhere.

> *"We are only just beginning to see the impacts of HS1 and poorer underperforming places have not been assisted by HS1 but successful places have been further helped - this is often the case with new transport infrastructure especially in the early years."*
>
> Property Agent A

HS1 is less likely to benefit lower income groups and unemployed

Although HS1 has promoted outward migration for work (e.g. from Thanet), these opportunities are only beneficial for highly skilled residents as the cost of the service precludes other groups. In addition, the success of HS1 to smaller towns served by HS1 (e.g. Margate) will only be fully realised if it supports local job creation.

HS1 has had less impact on land use planning and development round existing "classic" stations

Stations that are served by HS1 but have not gained a new station have generally not seen significant regeneration activity planned or implemented in the immediate station surrounds - in part this is as a result of physical constraints associated with existing stations.

Less impact in locations where the journey time savings were less significant

Stakeholders representing Maidstone, Canterbury and Thanet were more likely to suggest that HS1 had provided no significant impacts on business performance or job creation.

Less impact for neighbouring areas and businesses that are not public facing

The area around Kings Cross has seen large scale investment and job creation with significant benefits for businesses that are reliant on passing trade or which have not seen increased traffic. The regeneration benefits have generally not spread beyond the immediate area surrounding the station and it has not proved to be a catalyst for neighbouring areas such as Somerstown and Camley St.

7.3. Adverse impacts

Local businesses exposed to competition for staff

Property market stakeholders referred to some negative impacts for local businesses in Kent as locations served by HS1 area now more exposed to competition for staff from outside.

Adverse impacts resulting from a change in terminus

The introduction of HS1 services along the classic line has also seen a change in the terminus of services from parts of north and east Kent. A number of stakeholders referred to this factor as being as significant as any journey time savings. Although it has provided benefits through providing access to new markets and jobs (e.g. around Kings Cross and Canary Wharf) stakeholders also referred to some disbenefits where access to other locations in London (London Bridge and Victoria) is now less direct.

8. Conclusions

8.1. Introduction

As part of the evaluation of regeneration impacts, 24 stakeholder interviews were held with regeneration practitioners, local authority officers, developers and commercial property agents. Stakeholders were asked to identify the extent that HS1, disaggregated from wider factors, had played a role in shaping strategic and investment focused decision making, as well as impacts on the businesses and the population within the study area. These topics are discussed in the previous chapters along with consideration of the extent that the investment had also contributed to creating Strategic Added Value.

This conclusion brings together the key themes that have emerged from the stakeholder analysis identifying commonality amongst stakeholder groups and geographies whilst also highlighting findings that are location specific.

8.2. HS1 Corridor Themes

A number of core themes that have emerged following the analysis of the stakeholder interviews. The core themes represent stakeholder responses that were common to stakeholder type and geography although were not necessarily referenced by all stakeholders.

- HS1 has **impacted upon land use planning** and **played a catalytic role in enabling regeneration around the High Speed stations –** the implementation of infrastructure associated with the HS1 line and stations has helped to create the right conditions for investment around the High Speed Stations (Kings Cross-St Pancras, Stratford, Ebbsfleet and Ashford).

- **HS1 is only one factor that has shaped regeneration in the corridor –** stakeholders emphasised that although HS1 has played a significant role in terms of supporting regeneration it is only one of a number of factors that have influenced investment and business performance and it is difficult to disaggregate HS1 from the wider context. Public sector and property market stakeholders stressed the **significance of the recession** and its impact on investment decisions and businesses whilst existing economic and spatial profiles, and wider investment (e.g. transport and in the Olympics) have also contributed to socio-economic conditions.

- **Existing transport links and transport investment** were referenced as being as significant as HS1 in supporting businesses:
    - Mainline rail stains at Kings Cross and St Pancras and wider investment in public transport;
    - Clustering of development in Stratford has focused on the main station rather than HS1; and
    - Development in Ashford and Dartford has been focused on existing sites and sites that have come forward owing to their access to the motorway network.

- **Strategic Added Value –** Across the study area, HS1 has led to co-ordination of regeneration activities and supported partnership building. HS1 has also supported leverage of wider supporting investment (in particular in relation to transport infrastructure).

- **Future impacts –** Given the impact of the recession and the inherent time lags between investment decisions and impacts on the ground the full impacts of the investment have not been fully realised – emerging developments are focused along HS1 route (Paramount Park, Ashford Commercial Quarter, and Manston Parkway).

8.3. Kings Cross-St Pancras

The area around Kings Cross-St Pancras has undergone a massive physical transformation alongside and following the construction of HS1. Inward investment has resulted in the regeneration of a key site in London and attracted high value businesses. Stakeholders suggested that HS1 had the following contribution to these activities:

- HS1 was the major catalyst which created the conditions for regeneration at Kings Cross (including removal of blight);
- Regeneration at Kings Cross would not have happened to the same scale and level of impact without HS1;
- The Argent LLP development in Regents Quarter represents a further £2billion investment and this was predicated on £2bn in transport improvements which were unlocked by HS1; and
- HS1 has supported the creation of one of Europe's best retail, business and residential locations although the actual impact of enhanced accessibility delivered by HS1 has been limited (of greater importance is the physical renewal). The importance of HS1 for businesses in their location decisions were thought to be less significant:
    - Only 5% of commercial and residential occupiers in the Argent LLP scheme have referenced HS1 as a factor in their location decision;
    - The significance of expanded labour markets was downplayed due to the extensive labour market that is already accessible to the area;
    - Of the big corporate occupiers in the development only BNP Paribas mentioned HS1 as a factor in their location decision (Google, LB Camden, other businesses did not rate HS1 as a factor).

Stakeholders also stressed that the success of the scheme was dependent on a number of other key factors namely:

- Two existing mainline stations;
- Available brownfield land;
- Good forward planning and positive partnership between LCR, the Camden Borough Council and developers;
- Permeability through the station at ground level ensuring Kings Cross was not a barrier.

8.4. Stratford

Like Kings Cross-St Pancras, land adjacent to Ashford International station has undergone wholesale regeneration that has transformed the area, however, stakeholders considered the **impact of HS1 on the area around Stratford International to be less obvious.**

HS1 was thought to have had **a catalytic role in bringing forward the Westfield development and Olympic (and Olympic Legacy) site** as a result of the investment in removing the freight railway lines form the site of the Olympic Park. However, the complexities of the site and the wider activities associated with bringing the Olympics to Stratford makes **difficult to disaggregate the impacts.** As well as the inherent attractiveness of the site as a location for the main Olympic site, stakeholders also emphasised that the site was already a significant transport hub and the interchange options available at the Stratford station were of greater significance than HS1.

8.5. Kent

Discussions with stakeholders in Kent highlighted variance in the level of impact and opportunities resulting from investment. The strongest focus on growth in Kent is in the local authority areas served by the High Speed stations (Ashford and Dartford), which also **have large scale development aspirations for land adjacent to the stations.** Stakeholders stressed that despite the impact on land use planning take-up of development in land adjacent to the stations had been limited. Elsewhere, HS1 was seen to support economic development but on a smaller scale.

Other key outcomes identified by stakeholders covering Kent were as follows:

- Stakeholders were able to identify examples of HS1 influencing location decisions of businesses, although HS1 was not considered to be the most significant factor in these decisions;
- HS1 was seen to support residential growth along the HS1 corridor with positive impacts on perceptions of Kent as a place to live (and commute to London). There is more evidence of impacts on residential than commercial development.
- HS1 had supported access to employment in central London, including higher value jobs.

Stakeholders referred to there being fewer benefits for locations where the journey time savings were less significant and some negative impacts were also noted e.g. outmigration resulting in local businesses being more exposed to competition for labour.

A further impact identified by stakeholders in Kent only was the relevance of the change in terminus – this was thought to have had divergent impacts for residents and businesses depending on whether they had historic links to employment and customers.

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Appendix 1: Discussion Guide

The following topic guide was designed to provide structure to the interviews although it was not used as a script. To assist interviewers, prompts have been included ('PROBE'); these are suggestions of questions that can be asked if appropriate to probe deeper into the respondents views.

Introduction

Objectives of this section: Ensure respondent understands the aims of the research.

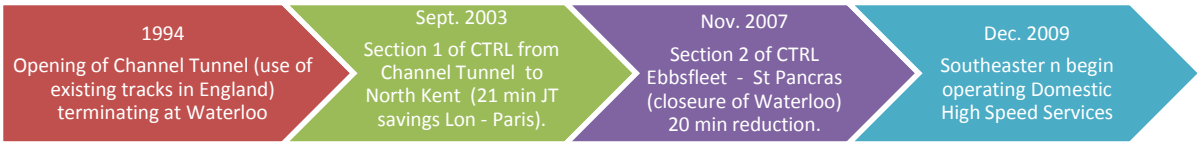
Introduce self and AECOM – highlight independent. Explain research for Department for Transport and the aims/objectives of the research/interview:

The overall study is designed to estimate the outturn cost-effectiveness of HS1 on the basis of evidence of the impacts attributable to it in four categories:

- Government asset values;
- Transport user and provider impacts;
- Wider economic impacts; and
- Regeneration impacts.

Stakeholder interviews are being undertaken as part of the analysis of Regeneration Impacts on the Primary Corridor Study Area. The study area has been defined by the Districts which experienced journey time savings from HS1 (refer to accompanying plan – Proposed Corridor Study Area). The interviews will consider the impact of HS1, including domestic services using the infrastructure, on economic development, business location and investment decisions before during and following opening whilst also taking into consideration the effects of the recession.

Discussions should seek to identify impact against a counterfactual position (what would have happened anyway) taking into account the changes in impact resulting from the opening of Section 1 Section 2 and the revision of the Southeastern timetable. A timeline representing the phases of implementation is provided below.



The discussions will also explore the wider, non-business specific changes in the economic characteristics of the HS1 corridor/area, including how HS1 has contributed to meeting regeneration objectives. This includes consideration of Strategic Added Value – this aims to capture the wider coordinating, catalytic and influencing role of investment which is not captured in the measurement of outputs of direct project support.

No right / wrong answer.

Please ask the respondent whether they give consent for the interview to be recorded. Recording will enable us to collect as much information as possible. State that any information provided would be treated in strict confidence and will not be passed on to a third party beyond the Department for Transport and its study team. Once it has been transcribed the recording will be deleted.

Depth - should take approximately 45-60 minutes.

Impact on travel and activity around stations

- Discuss awareness of changes in travel behaviour that have occurred following the opening of HS1 and whether there has been an increase in the use of stations where accessibility improvements have occurred (including incrementally following the opening of Phase 2 and the revision of the Southeastern timetables). Has there been an increase in business related travel by rail?

- Have the changes in accessibility resulted in an increase in activity/footfall around the stations and has there been any evidence of increased spend in the immediate area around the stations?

Worker and agglomeration benefits

- Discuss what impact reduced travel times resulting from HS1 have had on staff travel including any potential impacts on staff retention and travel to core (employment) locations.

- Identify whether there is any evidence of existing and potential businesses benefitting from more effective interaction and a greater choice of inputs (suppliers, labour) and potential markets – agglomeration benefits.

PROBE: This should be considered against baseline conditions and the likely counterfactual position.

Extended work horizons

- Identify whether the investment has impacted on work horizons for residents living within core regeneration locations and the wider corridor and whether it is considered this has increased employment opportunities (including type and salary) and overall resident employment in the impact area. Discuss whether there have been particular locations where changes have been focused.

PROBE: Consideration should be given to the extent that changes have occurred against baseline and counterfactual positions and also the effects of the economic downturn.

Impact on Land Use Planning

- Identify the extent that the scheme has influenced or aligned with local land use planning in the Corridor Study Area in particular in the areas surrounding stations served by HS1

PROBE: Ask stakeholders whether they are able to attribute a proportion of influence to identify the extent that HS1 has shaped land use planning.

Investment Climate

- How is it considered that the introduction of HS1 has enhanced perceptions of regeneration areas and the wider corridor amongst potential investors / developers?

- Discuss any changes that have occurred in land use and land/real estate values, against the baseline, in regeneration areas and locations served by HS1/other stations benefitting from accessibility improvements. Identify whether there has been any evidence of sector based spatial trends and clustering following the opening of the new stations/commencement of the new Southeastern timetable.

PROBE: Has there been any evidence of displacement of investment activity from within the study area.

Business performance and job creation

Existing Businesses

- Discussions should consider whether there has been any impact on the competiveness of existing employment sites following the opening of HS1/commencement of the revised timetable.

- Discussions relating to existing businesses should include the following (taking into consideration baseline and counterfactual positions and the effects of the economic downturn):
    - To what extent is it considered/ businesses have identified that they have experienced increases in productivity, turnover and profile in the study area and the impact of HS1 on performance;
    - The extent that HS1 has enabled businesses to enter higher value operations;
    - Have businesses increased staff numbers and has there been an overall increase in employment in the study area; and
    - To what extent have existing businesses chosen or been required to relocate as a result of HS1? This can be both positive and negative impacts on the local area including any elements of displacement within the corridor.
    - In terms of changes in employment within the study area/regeneration areas, to what extent do you perceive HS1 has had a positive overall impact on employment?

New Businesses

- In relation to new businesses interviews should identify whether there has been any evidence of new businesses/investment in the study area taking advantage of improved connectivity or new development opportunities.

Strategic Added Value (including strategy and policy)

Strategic Added Value (SAV) relates to the wider coordinating, catalytic and influencing impacts of the investment which are not captured in the measurement of the direct outputs of the intervention.

Interviews should cover the extent that the project has influenced the decision making and co-ordination of stakeholders, co-ordination of partners and leverage of partner and stakeholder resources and funding.

- Discussions relating to SAV should include the following:
    - To what extent has the HS1 shaped wider policy, strategic thinking or investment in the study area? In particular consider in relation to land use planning and economic development (promoting development and leveraging investment in areas that have been affected changes in accessibility).
    - Discuss any partnerships/synergies that have developed in relation to HS1 including with local authorities, organisations and business. What work has been done to co-ordinate existing/new partners and businesses with policy and strategy in relation to HS1?
    - The schemes impact on awareness raising (of strategic goals/investment opportunities), influencing and promotion of good practice?
    - The overall extent that HS1 has contributed to strategic objectives for economic development, regeneration and transport?

PROBE: Please identify specific sites, partners, policies, documents, strategic goals where applicable.

Any other impacts

- Identify any other socio-economic impacts not discussed previously within the corridor (e.g. levels of deprivation, environmental benefits, access to services, residential property market).

- What is the overall contribution of the investment to the study area and your Local Authority/ area of influence? Please consider the overall impact on inward investment in and perceptions of the study area as a place to invest.

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Appendix F. Secondary Data Analysis Report

Evaluation of the Impacts of High Speed 1

Regeneration Impacts: Assessment of Secondary Data

27th January 2014

ATKINS

AECOM

frontier economics

Plan Design Enable

Notice

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Document history

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Table of contents

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1. Introduction

This technical appendix sets out the available secondary evidence for assessing the regeneration impacts of HS1 passenger service launched in December 2009. It is consistent with the approach set out in the Assumptions and Economic Data Report (July 2013) and draws on the available secondary evidence covering (i) the HS1 Corridor and (ii) the 2km Buffer Zones around the following five stations: Kings Cross & St Pancras, Stratford, Ebbsfleet, Ashford, and Ramsgate. Findings are presented in the context of the Regeneration Logic Map set out in the HS1 Evaluation Scoping Report (June 2013) and provided at the end of this appendix.

The results for the Buffer Zones and HS1 Corridor are compared to results for the three Control Corridors. The Control Corridors together provide a baseline case against which the observed changes in economic and regeneration performance can be measured. From this data it is possible to identify those areas where Buffer Zones and / or the HS1 Corridors are under or over performing relative to the Control Corridors. It is not possible to use the secondary data to determine the level of attribution of HS1 to the observed changes however the Key Stakeholder Interviews and Qualitative Business Surveys both provide evidence on the extent to which HS1 has affected business and investment decisions within the HS1 Corridor.

2. Study Area

The HS1 Corridors, Buffer Zones and Control Corridors are presented in Figure 1, Figure 2 and Figure 3. The HS1 Corridor has been identified following a review of changes in journey times at stations on the wider rail network and follows district boundaries in order to aid the collation of secondary data at a consistent geographic level.

The three control corridors against which changes in the HS1 Corridor can be compared and measured are:

- The West Coast Mainline / M1 Corridor towards Milton Keynes
- The M11 Corridor towards Cambridge
- The A12 Corridor towards Chelmsford and Colchester

These corridors each follow major radial rail routes from London and are broadly comparable to the HS1 Corridor in terms of the size of their population and employment base.

Figure 1. The HS1 Study Corridor

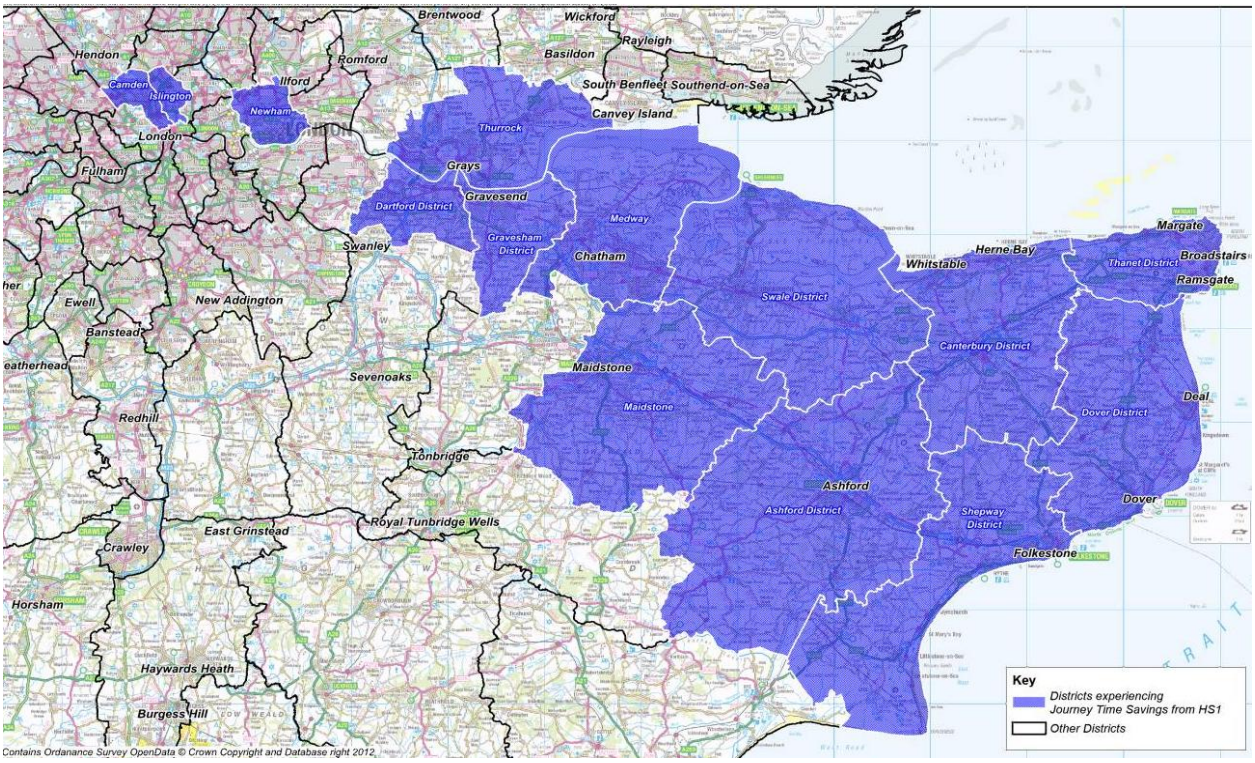


Figure 2. Control Corridors 1 (Cambridge) and 2 (Milton Keynes)

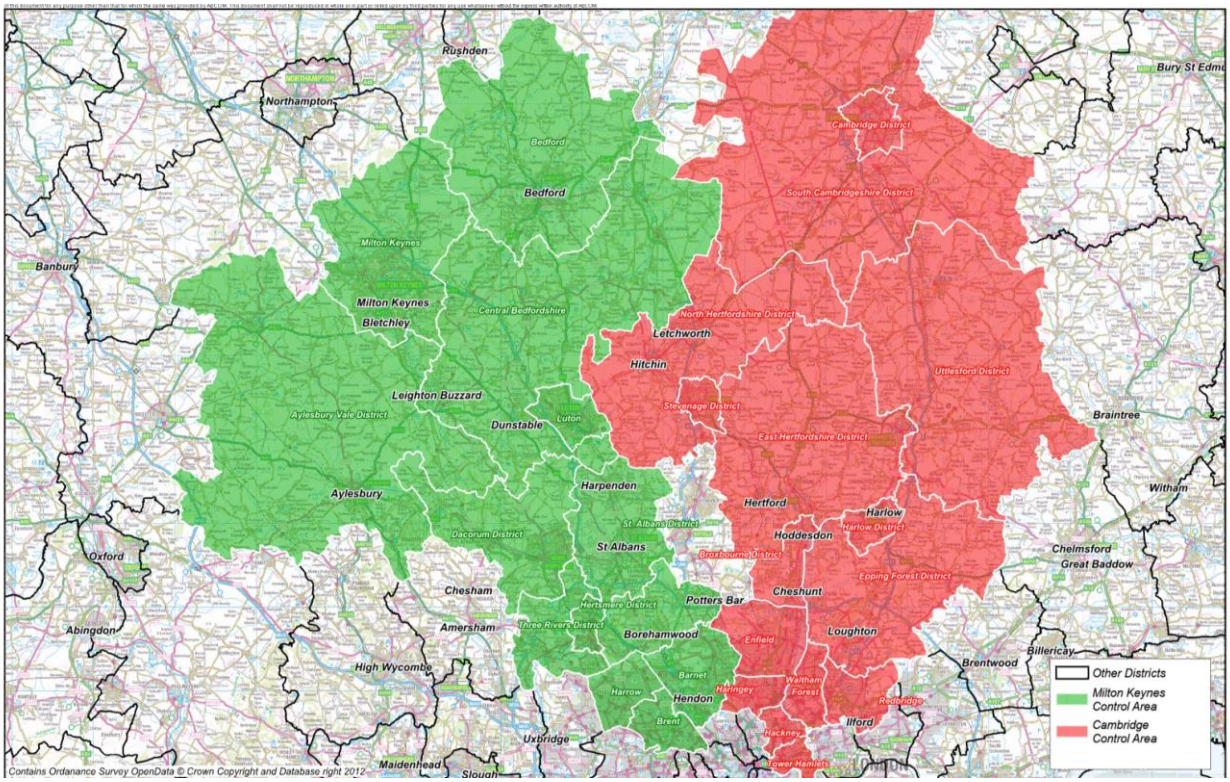
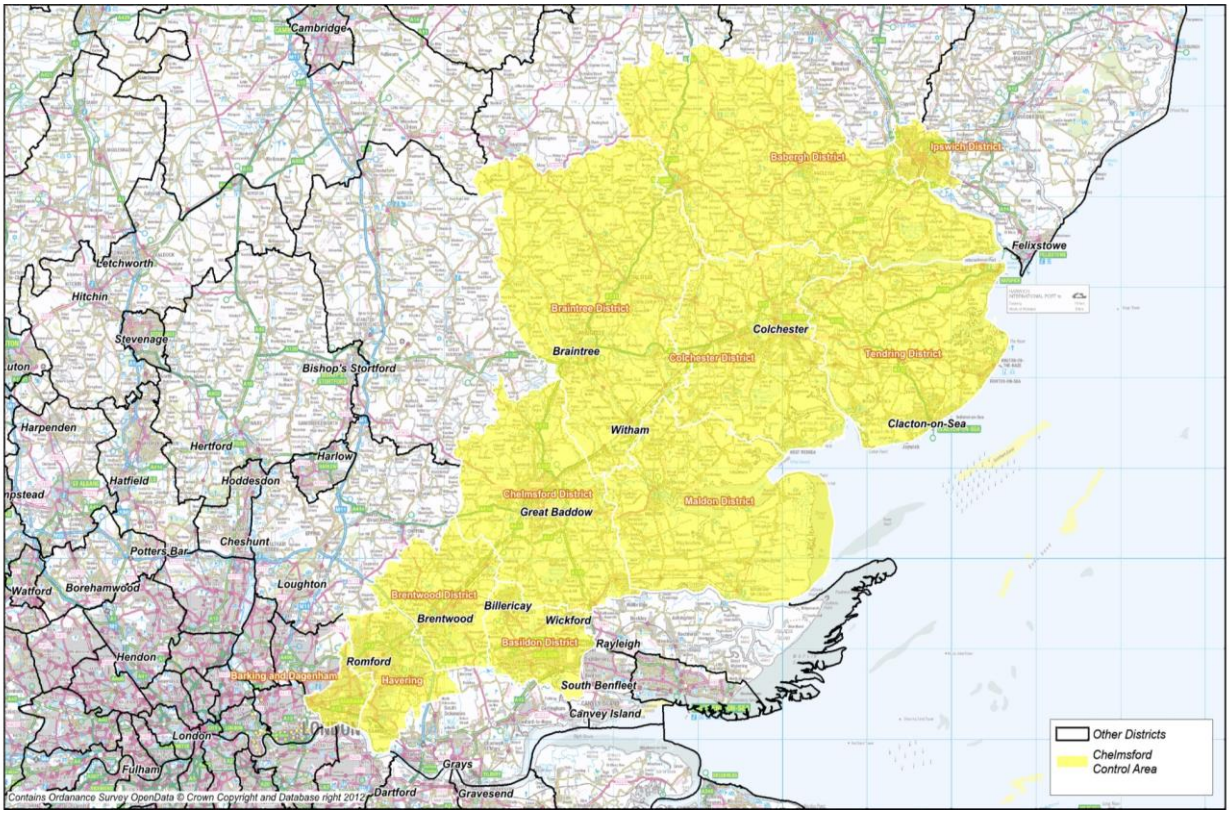


Figure 3. Control Corridor 3 (Chelmsford)



3. Secondary Data Analysis

3.1. Introduction

In this section, secondary data is presented for:

- Business rates and the number of commercial premises
- Average house prices and total housing stock
- Workplace employment and associated GVA
- Resident employment and wages

Data is presented, where available, for the HS1 Corridor, Control Corridors, and the five station 2km Buffer Zones. The Business Rate data is also presented for 500m Station Buffer Zones to determine whether there are any highly localised impacts on the number and value of commercial premises close to the HS1 stations. The indicators listed above have been selected as they provide a direct or proxy measure for the outcomes identified in the Regeneration Impacts Logic Map.

3.2. Business Rates and Commercial Property

Business Rates are based on the estimated rateable value of business premises, which is in turn determined through a VOA estimate of likely rents paid per square meter of commercial premises given the physical characteristics and location. The VOA undertake valuations of business premises every five years, most recently in 2010, and it is possible to use this data to review the change in average rateable values of businesses in small areas. Data is also available on the number of non-domestic properties identified by the VOA in the course of completing its valuations[1].

An increase in rateable values between 2005 and 2010 (the two most recent data points) would suggest that demand for commercial space has increased in that location and / or higher quality commercial space has been made available. It may also indicate that demand from higher value commercial uses is increasing in the local area, pushing up the achievable rent level.

There is a direct link between the Business Rate data and the 'Real Estate Uplift' outcome identified in the Regeneration Impacts Logic Map[2]. There are further indirect links between the Business Rate data and the 'Business Performance and Job Creation' outcome as: (i) a greater number of business premises may be indicative of new businesses and employment opportunities locating within the HS1 Corridor; and (ii) higher business rates may suggest that existing premises are being used for higher value purposes. This may include higher value (or more profitable) operations within the same business and / or sector.

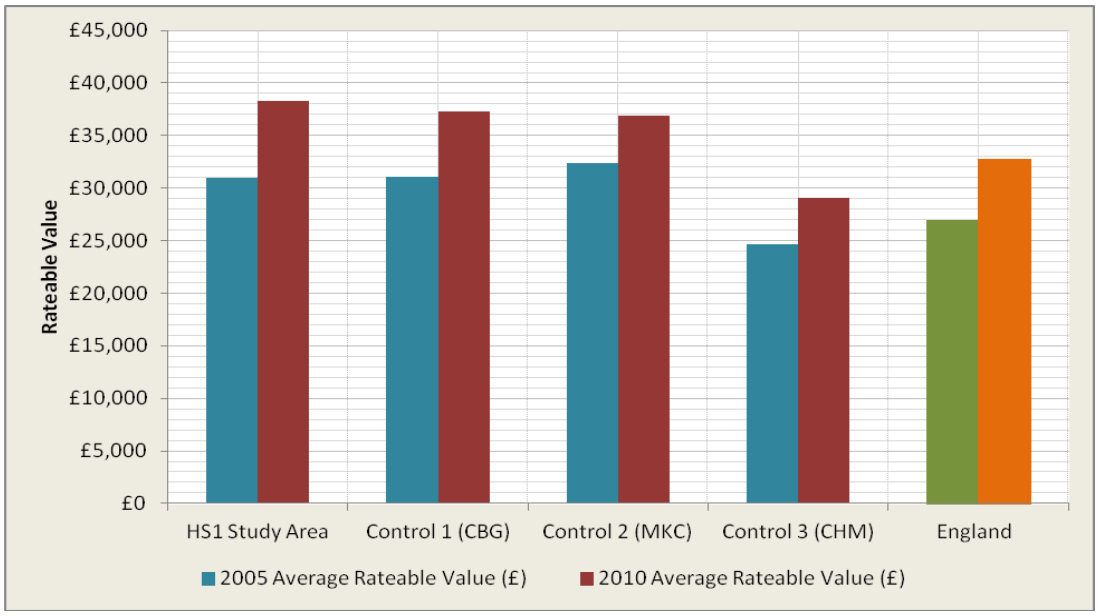
3.2.1. Business Rates

Between 2005 and 2010, the average rateable value of a business property located in the HS1 Corridor increased by 24% from £31,000 to £38,300. This increase was greater than the average increase across England and for each of the Control Corridors where over the same period the average rateable value increased by between 14% (Control Corridor 2, Milton Keynes) and 20% (Control Corridor 1, Cambridge). In 2010 the HS1 Corridor had the highest average rateable value of the four corridors, up from the third highest in 2005.

[1] Referred to as 'Hereditaments' this is the legal name for the unit of non-domestic property that is, or may become, liable to national non-domestic rates, and thus appears on the rating lists.

[2] Included at the end of this Appendix.

Figure 4. Comparison of Average Rateable Value of business properties



Source: Valuation Office Agency, 2013

The performance of average business rates at the 2km Buffer Zones was more variable and full details are presented in Table 1. In Ramsgate and Ebbsfleet the average rateable value within the 2km Buffer Zone increased by more than the surrounding district average – the uplift in average business rates in these areas was 29% and 21% respectively. However, in the St Pancras, Stratford, and Ashford Buffer Zones, the increase in rateable values between 2005 and 2010 was lower than the district-wide level, although in the case of St Pancras / Kings Cross the variation was marginal.

It is possible that the impact of HS1 on average rateable values is more localised around each station and so the change in average business rates within 500 metres of each station have also been considered where data is available[3]. At this smaller geographic level, businesses rates increased faster within 500m of the stations at St Pancras and Ramsgate than for the wider district. However, the change in average rateable values within 500 metres of Ashford station, while positive, was less than half that of Ashford District.

Table 1. Percentage Increase in Average Rateable Values (2005-10)

	500m Buffer Zone	2km Buffer Zone	District
Ashford International	8.71%	16.01%	17.21%
St Pancras (London)	53.08%	46.00%	47.28%
Ebbsfleet	*	28.70%	11.32%
Ramsgate	25.90%	21.13%	20.65%
Stratford International	*	25.67%	28.23%

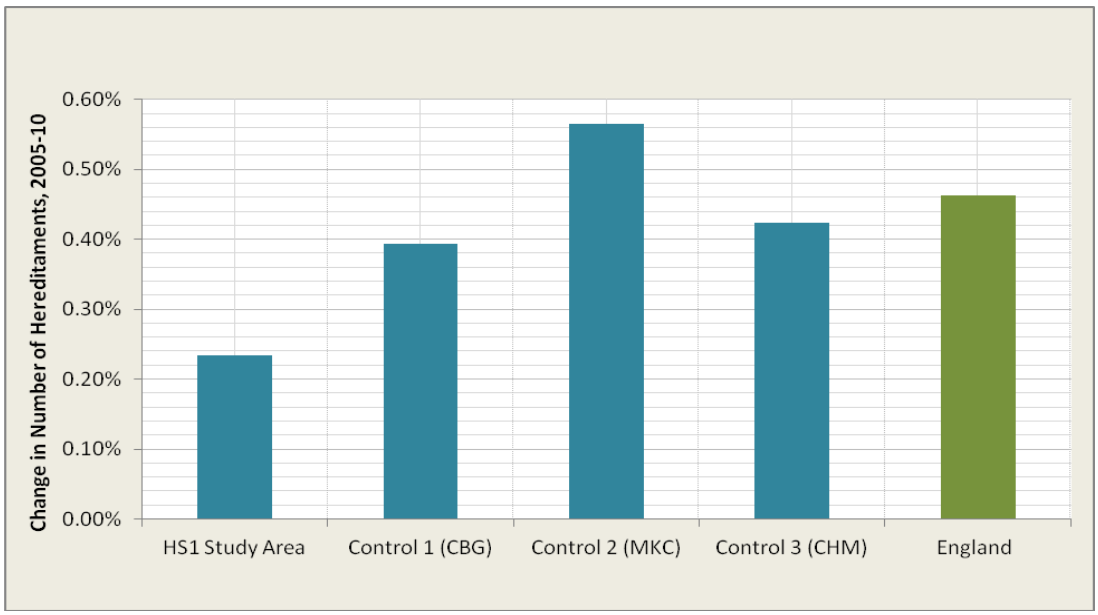
Source: Valuation Office Agency (2013); *Insufficient businesses based in this location in 2005.

[3] It is not possible to measure the change in rateable values within this proximity of Stratford or Ebbsfleet between 2005 and 2010 as there was only a small number of business located within 500 metres of each station in 2005.

3.2.2. Commercial Property

In 2010 the VOA identified 77,070 non-commercial premises in 2010, which was up marginally from 76,890 in 2005. This represents growth of 0.23% over five years and is below the rate of growth that occurred nationally and within the three Control Corridors.

Figure 5. Change in number of Commercial Premises (2005-10)



Source: Valuation Office Agency (2013)

However there is evidence that the number of business premises has increased faster in the areas surrounding the HS1 stations than at the district or HS1 Corridor level. Table 2 presents the percentage growth rate for the 500m and 2km buffer zones plus their surrounding district. It can be seen that between 2005 and 2010 the number of business premises grew faster around the stations than for the surrounding districts.

The most significant growth occurred around Ashford station, where the number of businesses increased by 4.8% within 500m of the station and by 6.1% within 2km, compared to an increase of 0.77% across Ashford district. Weaker growth occurred within the Stratford International 2km buffer zone, however this is compares to zero growth for Newham Borough over this period.

Table 2. Table 1: Percentage Increase in number of Commercial Premises (2005-10)

	500m Buffer Zone	2km Buffer Zone	District
Ashford International	4.80%	6.11%	0.77%
St Pancras (London)	5.10%	2.89%	0.06%
Ebbsfleet	*	4.73%	0.71%
Ramsgate	1.96%	3.49%	0.66%
Stratford International	*	0.61%	0.00%

Source: Valuation Office Agency (2013); *Insufficient businesses based in this location in 2005.

3.2.3. Key Issues

The Regeneration Impacts Logic map identifies Real Estate Uplift as one of the outcomes expected to be associated with the HS1 passenger service. The evidence suggests that average rateable values (used here

as a proxy for real estate values) have increased faster within the HS1 Corridor than the control Corridors. There is also some evidence that this increase has been faster within some of the station buffer zones.

The more sluggish increase in the number of commercial premises in the HS1 Corridor suggests that supply constraints for commercial property may be putting upward pressure on real estate values. However, in combination these factors still suggest that demand for real estate has increased within the HS1 Corridor and particularly within the station buffer zones.

Ashford is the main anomaly in terms of average rateable values, as the increase within Ashford 500m Buffer Zone is significantly lower than Ashford district. However, the number of commercial premises increased significantly within the Ashford Buffer Zone between 2005 and 2010, by 4.8% within 500m of the station and 6.1% within 2km of the station. This suggests that any increase in demand for commercial space in Ashford over this period was likely to have been off-set by the growth in commercial supply.

Overall the results for real estate values in the HS1 Corridor and Station Buffer Zones are promising, however it is important to recognise that:

- Around St Pancras, it will be difficult to identify the extent to which HS1 or some other London-wide effect is responsible for the observed uplift.
- Only the immediate impacts of HS1 will have taken effect by 2010 and the next round of VOA valuations may capture further business impacts associated with HS1[4].

[4] The Government has introduced a Growth and Infrastructure Bill into the House of Commons which included measures to postpone the next business rates revaluation in England from 2015 to 2017. (http://www.voa.gov.uk/corporate/News/2012/newsRelease_November_2012.html)

3.3. Average House Prices and Housing Stock

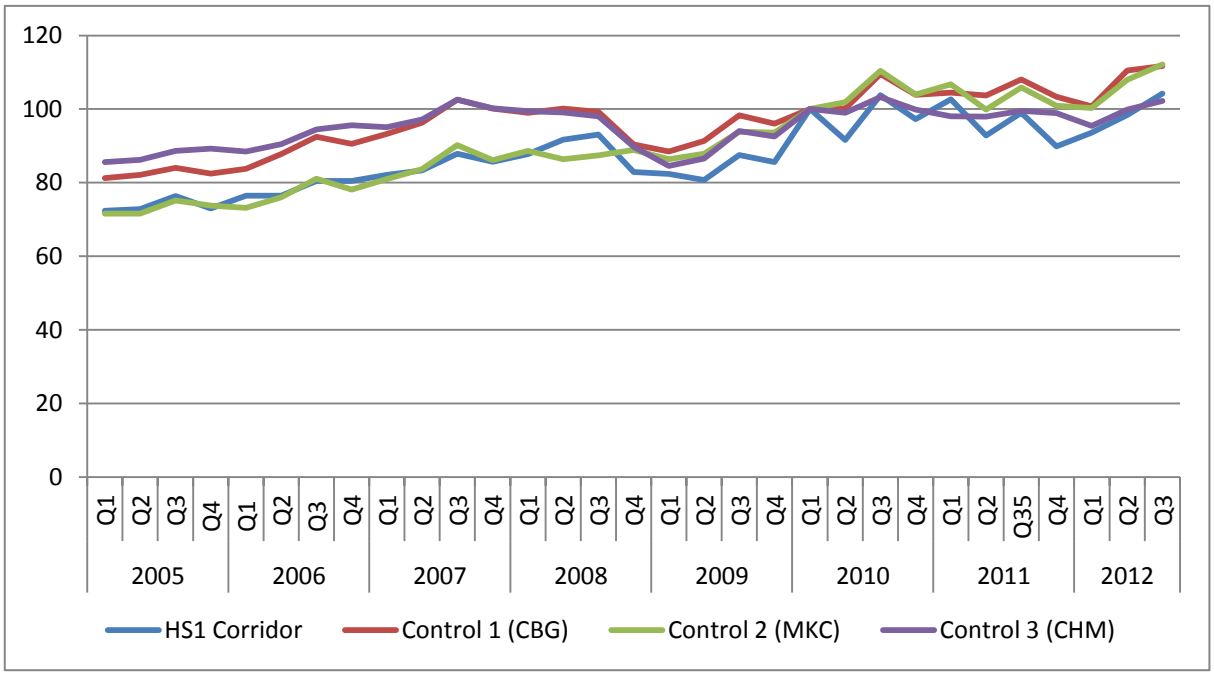
Time series average house price and housing stock data is published by DCLG down to the local authority level. This data allows us to compare the performance of the HS1 corridor, plus individual boroughs, to the Control Corridors. Additional data on all dwelling purchases within England are published by the Land Registry and allow for changes in average house prices to be measured for the five Buffer Zones.

Average houses prices provide a direct measure of the domestic 'Real Estate Uplift' outcome identified in the Regeneration Impacts Logic Map. The net change in the size of the housing stock over time will provide an indication of the number of housing completions over the same period and help to identify whether changes to housing supply have affected average house prices – for example higher levels of housing completions within the corridor will off-set some of the increase in house prices associated with higher level of demand[5].

3.3.1. Average House Prices in the HS1 and Control Corridors

Average house prices in the HS1 corridor have experienced relatively robust levels of growth since 2005, increasing by 37% in the HS1 Corridor and outpacing house price growth in Control Corridors 1 and 3 (Cambridge and Chelmsford). However, since the end of 2009 average house prices have failed to keep pace with either their longer term trend or the levels of growth occurring in the Control Corridors. Since 2010, average house price growth was only 2 percentage points higher than growth in Control Corridor 3 and eight percentage points below the level of growth in Control Corridors 1 and 2.

Figure 6. Average House Price Index (2010 Q1 = 100)



Source: DCLG

[5] Housing completions data is available from DCLG however this dataset is incomplete for many LAs within the four corridors. The housing stock datasets is complete for all LAs and also takes account of deductions from the housing stock (e.g. demolitions or conversions to other uses).

Table 3. Percentage Change in Average House Prices

	% Change 2005Q3-2012Q3	% Change 2010Q1-2012Q3
HS1 Corridor	36.5%	4.2%
Control 1 (CBG)	33.0%	11.7%
Control 2 (MKC)	49.2%	12.1%
Control 3 (CHM)	15.3%	2.2%

Source DCLG

3.3.2. Housing Stock in the HS1 and Control Corridor

In 2012 there were almost 970,000 homes within the HS1 Corridor, 10% fewer than Control Corridor 1 and 40% greater than Control Corridor 3. Between 2009 and 2012 the housing stock in the HS1 Corridor increased by 23,000 permanent dwellings.

As a proportion of total housing, the net increase in permanent dwellings was marginally above the level of housing growth in Control Corridor 3 and marginally below the level of housing growth in Control Corridors 1 and 2.

This suggests that, at the corridor level, difference in house price changes are unlikely to be explained by differences in the level of housing completions. However, housing supply effects are likely to be relevant to some of the smaller housing market areas within each corridor.

Table 4. Growth of the Housing Stock Average

	2009	2010	2011	2012		*Change 2009-12*	
						#	*%*
HS1 Corridor	944,400	952,500	959,960	967,420		*23,020*	*2.4%*
Control 1 (CBG)	1,034,830	1,046,220	1,054,700	1,064,700		*29,870*	*2.9%*
Control 2 (MKC)	982,160	990,100	998,250	1,008,280		*26,120*	*2.7%*
Control 3 (CHM)	670,370	673,850	677,310	680,930		*10,560*	*1.6%*

Source: DCLG

3.3.3. Average House Prices in the Station Buffer Zones

Average house price data is available for the five Buffer Zones from 2009, however as the data is taken from a different source from the data presented above the results are not directly comparable. Over the period 2010 to 2013, average house prices increased by 17% across England and Wales, which was broadly in line with the average level of house price across the HS1 Corridor (16%).

At the Buffer Zone level the highest house price growth occurred within the two London Buffer Zones (St Pancras and Stratford International). The three Buffer Zones in Kent all underperformed the HS1 Corridor average over the period 2010-13 – average house prices grew at less than half the HS1 Corridor rate in the Ashford Buffer Zone and in Ebbsfleet house prices remained unchanged over the period 2010-13.

Table 5. Average House Prices, by 2km Buffer Zones

	2009	2010	2011	2012	2013*	% Change 2010-13
St Pancras	£555,000	£641,000	£726,000	£732,000	£832,000	50%
Stratford International	£204,000	£223,000	£221,000	£247,000	£246,000	21%
England & Wales	**£210,000**	**£233,000**	**£234,000**	**£235,000**	**£237,000**	**17%**
HS1 Study Area	**£247,000**	**£286,000**	**£285,000**	**£281,000**	**£286,000**	**16%**
Ramsgate	£155,000	£163,000	£156,000	£162,000	£169,000	9%
Ashford International	£144,000	£157,000	£159,000	£161,000	£154,000	7%
Ebbsfleet	£162,000	£164,000	£162,000	£161,000	£162,000	0%

Source: Land Registry; *Based on Jan-June 2013 only

3.3.4. Key Issues

As with commercial property, an uplift of residential real estate values is identified as an expected outcome of the HS1 passenger service in the Regeneration Impacts Logic Map. This is expected to occur as a result of reduced travels times which will increase the number of people that choose to live in the HS1 Corridor and commute to other labour markets (e.g. London); through increased demand from employees of businesses choosing to locate in the HS1 Corridor; and through general improvements in the local investment climate.

There is no evidence that HS1 has coincided with a significant uplift in house prices within the corridor, either in anticipation of the service being introduced or since its introduction. House prices have increased inline with the national average and below the rate of growth in two of the three Control Corridors. Furthermore, the housing stock data suggests that this lower rate of growth cannot be explained by higher rates of housing completions as both corridors experiencing a higher rate of house price growth have had also experienced a faster rate of growth of their permanent housing stock. In relation to the Buffer Zones, the three zones located in Kent have experienced lower levels of house price growth than the HS1 Corridor average.

However, the period being assessed is one of severe housing market weakness and this may have delayed the potential uplift of house prices following the introduction of HS1 passenger service. In addition, below corridor average levels of house price growth within the Buffer Zones may indicate that any impact on house prices may occur across a larger spatial area, particularly for stations that attract commuters from a wide area and / or operate as a Parkway Station (e.g. Ebbsfleet).

The VOA data presented in the previous section suggests that while there may be evidence of increasing demand for commercial property within the Station Buffer Zones, outside of Ashford this had not translated into greater supply by 2010. Similarly while, in a more buoyant housing market, we may have expected commuters to London to place an upward pressure on house prices by 2013, the impacts may be delayed by sluggish housing market conditions outside of London since 2008.

3.4. Workplace Employment and Associated GVA

The Regeneration Impacts Logic Map identifies improved business performance and job creation among new and existing businesses as a potential outcome of the HS1passenger service. This in turn would be associated with an increase in Gross Value Added (GVA) across the corridor and higher levels of employment.

Total workplace employment provides a direct measure of the extent to which net job creation has occurred in the HS1 corridor and five station Buffer Zones since 2009. By assessing the sector profile of workplace employment it is also possible to assess the extent to which employment is being generated in higher or lower value sectors. It is not possible to assess from the short term secondary data the extent to which companies are engaging in more productive and / or higher value activities within the same employment sectors, however these issues are addressed by the business survey and stakeholder interviews.

GVA is not measured at a sufficiently local level to measure changes to HS1 Corridor GVA over time however it is possible to estimate changes to GVA based on the sector employment data using data for average GVA per employee, disaggregated by sector and locality.

3.4.1. Total Employment

Total employment in the HS1 Corridor remains below its 2008 peak, however total employment has slowly recovered since 2009. Since 2009, total employment in the HS1 Corridor has increased by 0.7%, which is in line with employment growth in Control Corridor 2 and is stronger than the performance of Control Corridor 3, where employment continued to decline in 2011. In contrast, Control Corridor 1 has achieved a faster rate of recovery, with total employment, increasing by 3.6% or 37,000 jobs since 2009.

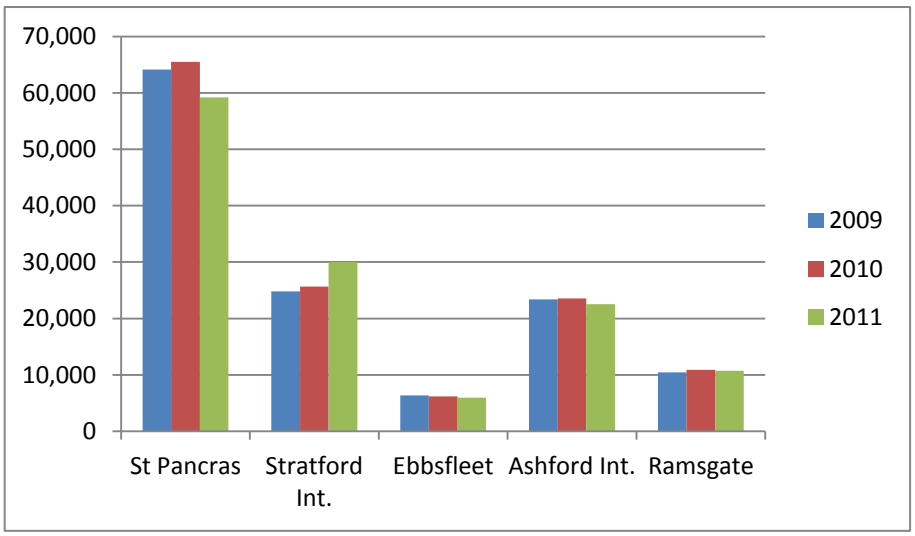
Table 6. Total Workplace Employment

							% Change	
	2007	2008	2009	2010	2011		2007-11	2009-11
HS1 Corridor	1,121,000	1,132,000	1,087,000	1,093,000	1,095,000		-2.3%	0.7%
Control 1 (CBG)	1,037,000	1,048,000	1,015,000	1,020,000	1,051,000		1.4%	3.6%
Control 2 (MKC)	1,002,000	1,026,000	974,000	979,000	980,000		-2.2%	0.6%
Control 3 (CHM)	585,000	598,000	582,000	577,000	577,000		-1.4%	-0.8%

Source: BRES & ABI (ABI figures adjusted for consistency with BRES in line with ONS guidance)

At the Buffer Zone level, the picture is less positive. Total employment data is available from 2009 (the year HS1 passenger services commenced), since when total employment has declined around St Pancras, Ebbsfleet and Ashford International Stations. Employment around Ramsgate station is unchanged (the observed increase of 300 jobs within 2km of the Station is unlikely to be statistically significant given the sample size) and Stratford International is the only Buffer Zone where total employment increased significantly between 2009 and 2011.

Figure 7. Total Employment by HS1 Station Buffer Zones



Source: BRES

3.4.2. Employment by Sector

Table 7 sets out the change in employment between 2009 and 2011 for the HS1 Corridors and the three Control Corridors. Bold formatting in the table denotes higher value sectors – i.e. those sectors where national GVA per employee is above the average level. The result for each Control Corridor is highlighted in green when its employment growth is lower than the corresponding growth in the HS1 Corridor.

Table 7. Percentage Employment Change 2009-11

	HS1 Corridor	Control 1 (CBG)	Control 2 (MKC)	Control 3 (CHM)
Total	1%	3%	1%	-1%
1 : Agriculture, forestry & fishing (A)	-61%	-3%	4%	21%
2 : Mining, quarrying & utilities (B,D and E)	**6%**	**-11%**	**7%**	**16%**
3 : Manufacturing (C)	**-11%**	**-7%**	**-1%**	**3%**
4 : Construction (F)	**-24%**	**-12%**	**-13%**	**-8%**
5 : Motor trades (Part G)	5%	2%	5%	1%
6 : Wholesale (Part G)	10%	1%	10%	16%
7 : Retail (Part G)	0%	1%	-4%	-2%
8 : Transport & storage (inc postal) (H)	**-19%**	**6%**	**-7%**	**-6%**
9 : Accommodation & food services (I)	13%	7%	3%	-1%
10 : Information & communication (J)	**6%**	**15%**	**3%**	**13%**
11 : Financial & insurance (K)	**4%**	**13%**	**-10%**	**-23%**
12 : Property (L)	**-5%**	**-2%**	**-1%**	**-18%**
13 : Professional, scientific & technical (M)	**0%**	**2%**	**2%**	**-7%**
14 : Business administration & support services (N)	12%	10%	4%	-2%
15 : Public administration & defence (O)	-5%	-11%	-5%	-7%
16 : Education (P)	2%	3%	4%	3%
17 : Health (Q)	0%	2%	3%	-1%

18 : Arts, entertainment, recreation & other services (R,S,T and U)	4%	7%	3%	6%

Source: BRES (Sectors with above average GVA per employee are denoted in bold. Shaded cells denote sectors where the control corridor performs less well than the HS1 Corridor)

Within the HS1 Corridor, the strongest growing sectors between 2009 and 2011 were Accommodation & Food Services (13%) and Business Administration (12%), where employment growth in the HS1 Corridor outpaced employment growth in the three Control Corridors. Strong employment growth was also observed in the Wholesale sector, but this sector also grew strongly in Control Corridors 2 and 3.

While employment growth in these sectors is significant, they are all 'lower value' sectors, in terms of the national measure of GVA per employee. Employment growth within higher value sectors has been less strong and total employment has declined or remained constant in five of the eight sectors identified as having an above average level of GVA per employee. Of the growing higher value sectors:

- Employment growth in the Information and Communications sector within the HS1 Corridor is above the rate of growth in Control Corridor 2, but less than half the growth rate of Control Corridors 1 and 3.
- Employment in Financial Services has increased modestly since 2009 (+4%) compared to a significant reduction in Control Corridors 2 and 3. However, the rate of growth is lower than that experienced in Control Corridor 1.
- The HS1 Corridor has also experienced growth of the Mining, Quarrying, and Utilities sector however this is a less significant sector in employment terms, accounting for 1% of the total employment base.

3.4.3. Employment by Sector, Buffer Zones

Table 8 sets out the employment change by sector between 2009 and 2011 for the five station Buffer Zones. Red shading denotes sectors and locations where employment has declined by 10% or more between 2009 and 2011; blue shading denotes sectors where employment has increased by 10% or more. As with the previous table, bold formatting denotes that the sector's GVA per employee (measured nationally) is above average.

Table 8. **Percentage Employment Change by Station Buffer Zone, 2009-11**

	St Pancras	Stratford Int.	Ebbsfleet	Ashford Int.	Ramsgate
1 : Agriculture, forestry & fishing (A)		-100.0%		-66.7%	
2 : Mining, quarrying & utilities (B,D,E)	**332.0%**	**0.0%**	**163.9%**	**-5.5%**	**-79.2%**
3 : Manufacturing (C)	**-35.7%**	**-52.0%**	**-24.2%**	**-1.3%**	**18.5%**
4 : Construction (F)	**-37.9%**	**48.0%**	**-9.5%**	**-42.3%**	**-7.9%**
5 : Motor trades (Part G)	1.9%	-30.7%	0.4%	-11.1%	34.8%
6 : Wholesale (Part G)	9.0%	32.6%	-1.6%	10.4%	-7.9%
7 : Retail (Part G)	29.9%	15.9%	4.0%	0.5%	12.6%
8 : Transport & storage (H)	**-60.8%**	**44.3%**	**-19.6%**	**9.1%**	**3.5%**
9 : Accommodation & food services (I)	22.1%	26.8%	7.3%	5.2%	1.5%
10 : Information & communication (J)	**-20.3%**	**90.7%**	**-48.7%**	**-25.4%**	**25.4%**
11 : Finance & insurance (K)	**-42.7%**	**3.1%**	**-73.0%**	**-44.2%**	**5.7%**
12 : Property (L)	**-25.8%**	**1.6%**	**-13.8%**	**-35.0%**	**-15.2%**
13 : Professional, scientific & technical (M)	**9.4%**	**63.3%**	**-10.4%**	**64.8%**	**-5.3%**
14 : Business administration & support	40.9%	83.3%	-8.9%	-10.7%	-44.8%

services (N)					
15 : Education (P)	14.3%	13.5%	-10.3%	-15.7%	13.7%
16 : Health (Q)	15.3%	-5.1%	35.4%	1.5%	11.2%
17 : Public admin & other (O,R-U)	8.4%	15.4%	9.0%	-8.1%	-13.1%

Source: BRES (Sectors with above average GVA per employee are denoted in bold. Cells shaded in red denote sectors that have contracted by 10% or more, cells donated in blue denote sectors that have growth by 10% or more)

At the Buffer Zone level, the estimated level of employment fluctuates more significantly, which reflects (i) the higher level of sampling variability at this level, and (ii) the greater proportionate impact of the business and investment decisions of single employers (i.e. the recruitment of 50 additional staff will have a greater proportionate impact at the Buffer Zone level compared to the HS1 Corridor).

In line with the results for the HS1 Corridor, employment has predominantly declined in higher value sectors within the Buffer Zones. The main exception is Stratford International, where employment growth has generally been positive across all sectors. The other areas of higher value employment growth include the growth of employment in Professional, Scientific & Technical Services in Ashford and the growth of employment in Information & Communications and Manufacturing in Ramsgate. The significant increase in Mining, Quarrying, and Utilities employment around St Pancras and Ebbsfleet is from a very low base in each case (circa 100-200 jobs).

There is clearly not any evidence of a general improvement of employment in specific sectors however the variable performance suggests that observed areas of employment growth in the Buffer Zones could be building on existing local strengths.

3.4.4. Estimated Change in GVA

It is not possible to measure changes to GVA across the four growth corridor since the introduction of HS1 due to publication lags for local level GVA data and limitations in local coverage for GVA data. However, using GVA per employee data, by sector for local areas, it is possible to estimate as the likely change in GVA associated with the changing employment patterns at the corridor level (as described in Section 3.4.2)[6].

The most recent local GVA data is for 2010 and consequently the estimate of GVA change will not take account of general productivity improvements over time or within sectors. However, it does provide an indication of the likely impact of the changing employment profile on GVA in each of the corridors.

Employment change is measured by the ten employment sectors at the local authority level[7]. This is then multiplied by the relevant GVA per employee figure for the corresponding sector and relevant local area (defined as a NUTs level 3 area) for which GVA data is available. The results for each local authority are then aggregated to provide GVA change estimates for the HS1 and three control corridors. The results are presented in Table 9 below.

Table 9. Estimates GVA Change associated with changing employment profile

	Estimated Change in GVA (2009-11), 2010 prices *(rounded to nearest million)*
Primary (Blue)	£187,000,000
Control 1 (CBG)	£3,108,000,000
Control 2 (MKC)	-£259,000,000

[6] GVA per employee data is available for ten employment sectors down to NUTs level 3 geographies. The allocation of local authorities to NUTs 3 geographies is provided at the end of this Appendix.

[7] The ten sectors are Agriculture, forestry and fishing, Production, Construction, Distribution; transport, Accommodation and food, Information and communication, Financial and insurance activities, Real estate activities, Business service activities, Public administration, Education, Health , Other services and household activities

Control 3 (CHM)	-£630,000,000

Source: AECOM Analysis based on BRES and ONS GVA data.

It must be re-emphasised that the data presented in Table 9 is a high level estimate and excludes general productivity and within sector productivity improvements. It is also an estimate based on the allocation of employment change at the local authority level to a broader local (NUTS3) geography. However it does provide a guide as to the likely GVA impacts associated with the changing employment profile between 2009 and 2011.

Overall the changing employment profile is expected to be associated with an increase in GVA in the order of £190 million. This is considerably smaller than the increases associated with employment change in Control Corridor 1 (Cambridge). However, the employment change in Control Corridors 2 and 3 is associated with a drop in GVA over the same period – a consequence of employment moving from higher to lower value sectors.

In earlier sections it was noted that employment growth in the HS1 corridor has been strongest in lower value sectors, which seems to run counter to the fact that GVA is expected to increase between 2009 and 2011. However, much of the improvement in GVA is associated with employment growth in the Information and Communications, Real Estate Activities, and Business Services Activities sectors – where GVA per employee is higher in the HS1 corridor than the national average, particularly within the Central London authorities.

3.4.5. Key Issues

The Regeneration Impacts Logic Map identifies higher employment in better paid and higher value jobs as a potential outcome of HS1, due to an improved business investment climate and due to reduced journey times and agglomeration effects. (Extended work horizons would affect out-commuters and would not be identified in the assessment or workplace employment, unless those jobs are located in Newham, Camden, or Islington). However, the employment data for the HS1 Corridor highlights poor performance, even when taking into account the challenging business environment of the past five years – although the strength of professional services, notably within Central London does mean that GVA of the HS1 Corridor is likely to have increased between 2009 and 2011.

At the headline level, employment increased marginally over the two year period 2009-11. This is a relatively strong performance compared to some Control Corridor areas however there is limited evidence that employment is increasing at a faster rate around the HS1 stations. It may be possible that employment is increasing in business parks and industrial estates further out of town, however some employment growth would be expected within city centre locations to take advantage of better rail connectivity.

Perhaps the most striking finding is that employment growth, where it is occurring, is happening in lower value sectors, which is inconsistent with the theory of change presented in the Logic Map. It may be the case that productivity is increasing within sectors rather than employment shifting to higher value sectors (e.g. business operating more efficiently due to improved connectivity), that other factors are more strongly influencing the employment profile of theHS1 Corridor, or HS1 has had no observable difference to date. However it will be necessary to check this through the stakeholder and business interviews.

These findings are consistent with the results for business premises which suggest that there has been no significant increase in office supply to date which can accommodate new or growing businesses. However, evidence of increasing demand for commercial space may be a leading indicator, suggesting that employment may be expected to grow more strongly in the future.

The interviews mentioned above will also provide evidence on whether the employment growth occurring within specific buffer zones is based on sustainable local specialisms that provide employment growth opportunities in the future. Specifically in relation to Stratford, the results are extremely positive however a key issue is the extent of attribution that can be applied to HS1, given the vast amount of investment that has occurred in that part of London.

3.5. Resident Employment and Wages

The previous section focused on workplace employment impacts – i.e. those people that work within the HS1 Corridor and including those who travel within the corridor to access those jobs or commute from outside the HS1 Corridor. This considers the impact on the resident employment base, which captures people who live within the corridor and commute elsewhere, in addition to those that live and work in the corridor.

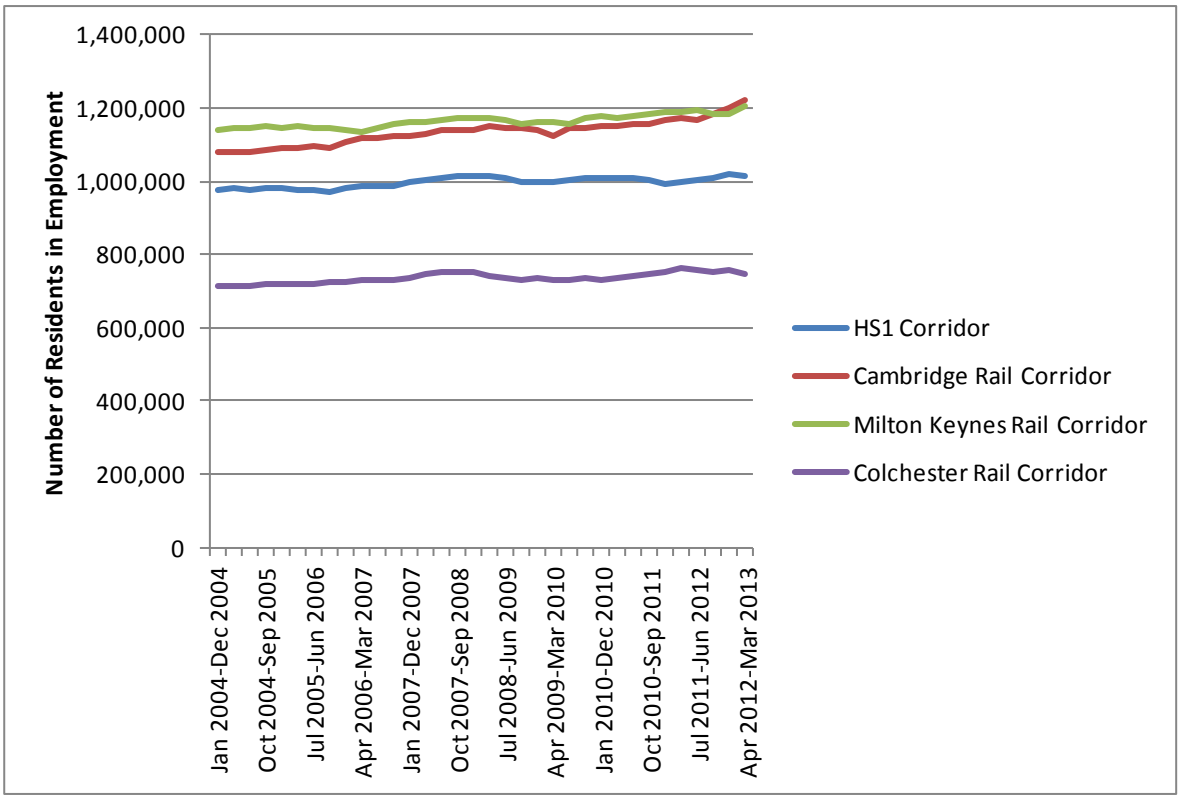
The Regeneration Impacts Logic Map identifies 'Extended Work Horizons' as a potential positive outcomes of HS1 as improved transport connections allows people to access employment opportunities from a wider area, leading to improvements in the level and quality of employment held by HS1 Corridor residents.

In this section, resident employment provides a direct measure of the level of employment where as average resident wages provides a proxy for the quality of employment held by HS1 Corridor residents.

3.5.1. Resident Employment

In 2013 there were 1.02 million people employed in the HS1 Corridor, around 200,000 fewer than Control Corridors 1 and 2 and 250,000 more than the resident employment in Control Corridor 3. Since 2009 the total number of HS1 Corridor residents in employment has increased by 2%, which is considerably lower than the rate of resident employment growth in Control Corridor 1 (+7%) and half the rate of growth that occurred in Control Corridor 2 (+4%). However the level of growth was marginally higher than the rate of growth of resident employment in Control Corridor 3 over this period (+1%).

Figure 8. Total Employment (Residents Analysis)



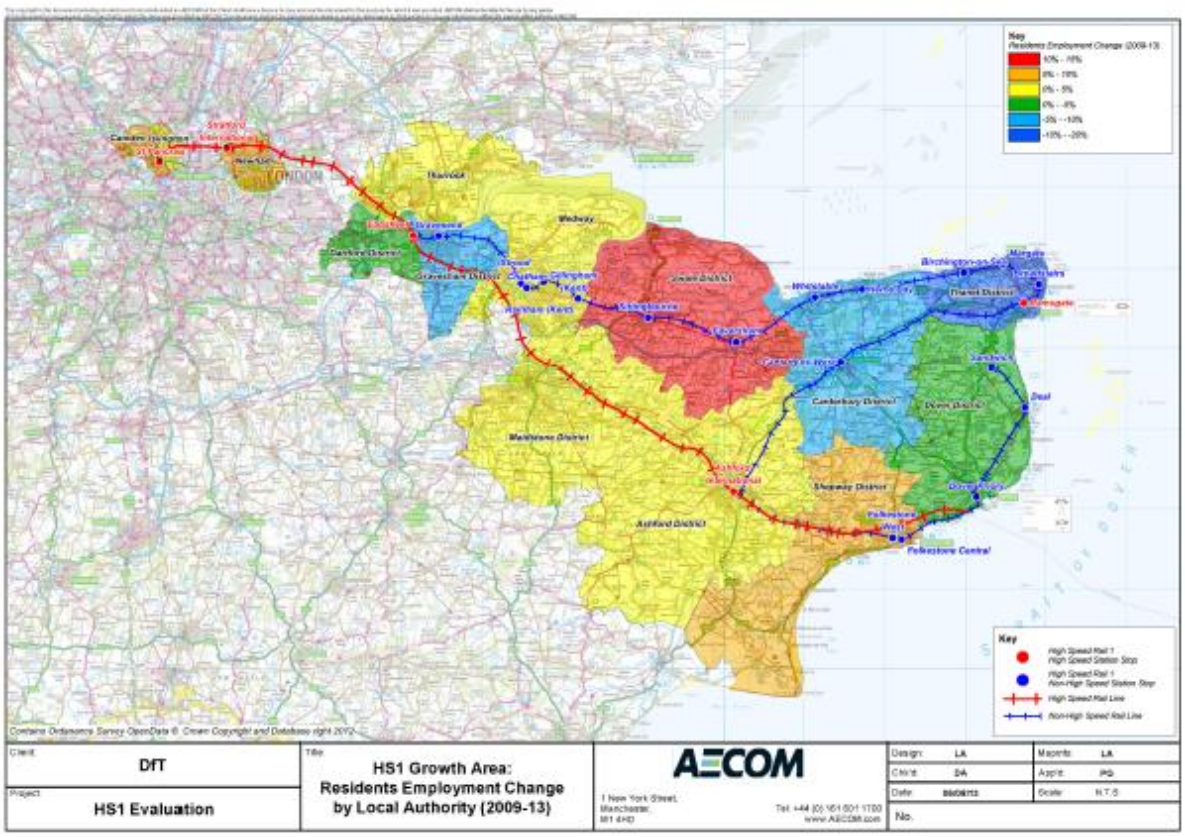
Source: Annual Population Survey

Within the HS1 Corridor, the strongest resident employment growth between 2009 and 2013 occurred in Swale, where the number of residents in employment increased by 13%, followed by Shepway with 7%. Within London, Resident employment increased by 6% in Newham and Camden. Lower levels of growth of resident employment (of less than 5%) occurred in Islington, Thurrock, Medway, Maidstone, and Ashford.

Employment decreased in other parts of the Corridor, including Dartford (-1%), Dover (-1%), Canterbury (-7%), and Gravesham (-8%). The most significant decline in resident employment occurred in Thanet, where Resident Employment declined by -15% between 2009 and 2013.

It is also important to note that while the strongest rate of resident employment growth occurred in Swale, this was still outpaced by some of the strongest performing LAs in the Control Corridors. For example resident employment in Cambridge increased by 19% and resident employment in Watford increased by 22% over the same period.

Figure 9. Resident Employment Change in the HS1 Corridor (2009-13)



Source: Annual Population Survey

3.5.2. Resident Wages

Table 10 presents the average weekly wages since 2002 of full time employee residents of the HS1 Corridor and Control Corridors. Data is unavailable for the five Buffer Zones.

Since 2002 the growth of average weekly wages of residents of the HS1 Corridor has been lower than the increase in Control Corridors 1 and 3, but higher than the rate of growth in Control Corridor 2. This pattern has continued since 2009 and there is no evidence that the HS1 Corridor is under or over performing against the Control Corridors since 2009.

Table 10. Average Weekly Wages of Full-Time Employees

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	% Change 2002-12	% Change 2009-12
HS1 Corridor	£522	£535	£548	£562	£581	£610	£630	£641	£653	£667	£657	26%	3%
Control 1 (CBG)	£540	£581	£587	£609	£626	£643	£672	£689	£703	£703	£715	32%	4%
Control 2 (MKC)	£550	£568	£582	£593	£607	£636	£653	£666	£678	£678	£675	23%	2%
Control 3 (CHM)	£500	£530	£528	£555	£553	£577	£599	£608	£627	£637	£647	29%	7%

Source: Annual Survey of Hours and Earnings (Residents Analysis)

3.5.3. Key Issues

The Logic Map suggests that the extended work horizons of current and future HS1 Corridor residents will lead to higher levels of employment in better paid and higher value jobs. However, as with the other indicators, the findings vary across the HS1 Corridor.

Within the growth corridor there is some evidence of this occurring. For example, the significant resident employment growth in Swale (of 13%), alongside strong workplace employment growth (of 10%) suggests that some there is a net increase in out-commuting. Promisingly for this part of the Corridor this is occurring in addition to the generation of local employment opportunities.

While some areas are experiencing positive resident employment growth, there is a worrying trend of declining employment in some parts of the corridor. Clearly, this reflects the current economic climate, but is important in demonstrating that the introduction of the HS1 passenger service has not been associated with an observable increase in resident employment across much of the corridor.

Concerning resident wages, the rate of wage growth in the HS1 Corridor has declined since 2008 and declined in an absolute sense between 2011 and 2012. However this reflects a broader trend of stagnant wage earnings that has occurred nationally since 2008. This is also consistent with the growth of employment in lower value sectors identified earlier in this section.

4. Overview

Overall the results for Business Rates / Average Rateable Values are broadly positive and suggest that demand for employment space has increased across the HS1 Corridor and specifically within the Station Buffer Zones. However, many of the other results from the secondary evidence are, at best, mixed. There are some positive results specific to particular growth locations (e.g. the increase of resident employment in Swale and the growth of Information and Communications employment at Stratford and Ramsgate), but these variable results do not provide a strong evidence for the realisation of more general regeneration impacts of HS1.

However, this is not the same as suggesting that HS1 has had a negative impact as alternative, local factors may be the dominant drivers behind the observed variable performance. It is also important to put the observed results in context, specifically that:

- The length of time between the introduction of the HS1 passenger service and the collection of data presented in this Appendix is unlikely to have been sufficient to significantly affect the investment and operational decisions of businesses – however it may still have a longer term effect.
- Businesses are also unlikely to respond immediately to any opportunities provided by HS1, and the process of deciding to act (through expanding or relocating) may take months or years. This delay is likely to have been compounded by the recession.

From the evidence gathered, it is only possible to state that there has been no early impact associated with the anticipation of future benefits. For example, there is little evidence that property prices increased prior to December 2009 due to homeowners moving to Kent in anticipation of future house price growth.

It is also important to note that the Cambridge and Milton Keynes Corridors may have been more resilient to recent economic events than the HS1 Corridor, due to the higher value nature of their economies and this may explain their stronger performance since 2009. The recession and period of stagnation may have stalled the HS1 corridor from exploiting any competitive advantage over this period, but that may still be possible in the future.

Finally, when assessing the overall regeneration impacts of HS1, the secondary data will be considered alongside the results from the business survey and stakeholder interviews to identify areas where the results are consistent and support each other.

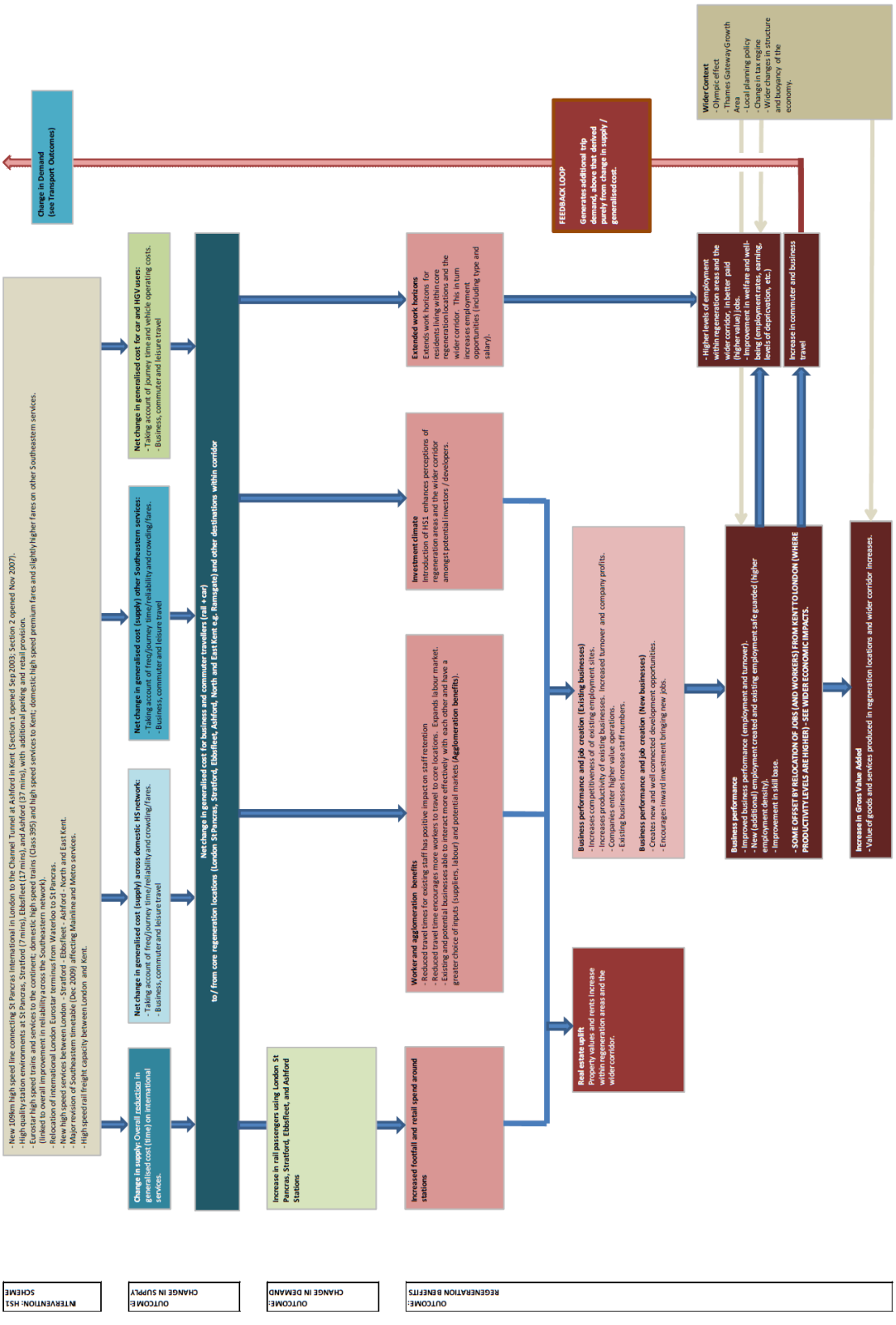
GVA Calculation – Relevant Local Areas

The following table present the relevant NUTs 3 geographies for each local authority in the HS1 and 3 Control Corridors used when estimating GVA change at the corridor level.

Corridor	Nuts 3 Region	LA
Primary (Blue)	Inner London - East	Islington
		Newham
	Inner London - West	Camden
	Kent CC	Ashford District
		Canterbury District
		Dartford District
		Dover District
		Gravesham District
		Maidstone District
		Shepway District
		Swale District
		Thanet District
	Medway	Medway
	Thurrock	Thurrock
Control 1 (CBG)	Cambridgeshire CC	Cambridge District
		South Cambridgeshire District
	Essex CC	Epping Forest District
		Harlow District
		Uttlesford District
	Hertfordshire	Broxbourne District
		East Hertfordshire District
		North Hertfordshire District
		Stevenage District
	Inner London - East	Hackney
		Haringey
		Tower Hamlets
	Outer London - East and North East	Enfield
		Redbridge
		Waltham Forest
Control 2 (MKC)	Bedford	Bedford
	Buckinghamshire CC	Aylesbury Vale District
	Central Bedfordshire	Central Bedfordshire
	Hertfordshire	Dacorum District
		Hertsmere District
		St. Albans District
		Three Rivers District
		Watford District

	Luton	Luton
	Milton Keynes	Milton Keynes
	Outer London - West and North West	Barnet
		Brent
		Harrow
Control 3 (CHM)	Essex CC	Basildon District
		Braintree District
		Brentwood District
		Chelmsford District
		Colchester District
		Maldon District
		Tendring District
	Outer London - East and North East	Barking and Dagenham
		Havering
	Suffolk	Babergh District
		Ipswich District

Regeneration Impacts Logic Map



Source: Evaluation of the Impacts of HS1: Evaluation Scoping Report (June 2013)

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