

CONTENTS

1.	PURPOSE.....	2
2.	BACKGROUND TO THE CONTRACTING AUTHORITY.....	2
3.	BACKGROUND TO REQUIREMENT/OVERVIEW OF REQUIREMENT	2
4.	DEFINITIONS.....	3
5.	SCOPE OF REQUIREMENT	3
6.	THE REQUIREMENT	3
7.	KEY MILESTONES	4
8.	AUTHORITY’S RESPONSIBILITIES	5
9.	SKILLS/EXPERIENCE	5
10.	REPORTING	5
11.	VOLUMES.....	5
12.	CONTINUOUS IMPROVEMENT	5
13.	SUSTAINABILITY	5
14.	QUALITY	5
15.	PRICE	6
16.	STAFF AND CUSTOMER SERVICE.....	6
17.	SERVICE LEVELS AND PERFORMANCE	6
18.	SECURITY REQUIREMENTS.....	6
19.	INTELLECTUAL PROPERTY RIGHTS (IPR)	6
20.	PAYMENT.....	6
21.	ADDITIONAL INFORMATION	6
22.	LOCATION.....	6

1. PURPOSE

- 1.1 The purpose of this research will be to:
- a) Investigate the economic theory underlying move to more/less productive jobs, particularly where jobs are relocating to less productive regions. In particular it will investigate under what economic conditions move to more/less productive jobs would take place and the likelihood of its occurring;
 - b) Review the existing methods set out in WebTAG Unit A2.2 of assessing move to more/less productive jobs, assess whether it remains fit-for-purpose and if judged not, outline any potential improvements that may be needed.

2. BACKGROUND TO THE CONTRACTING AUTHORITY

- 2.1 REME is an analyst division providing economic advice and transport modelling support to the Strategic Roads, Economics and Statistics (SRES) Directorate. SRES delivers (through Highways England) the Roads Investment Strategies, a series of major roads investment programmes for the UK Strategic Roads Network.

3. BACKGROUND TO REQUIREMENT/OVERVIEW OF REQUIREMENT

- 3.1 The first Road investment strategy (RIS 1) covered investment in England's motorways and major roads (the 'strategic road network') during the 2015 to 2020 road period. This was the initial step in a long-term programme to improve England's motorways and major roads. RIS 1 was announced by the government in December 2014. It outlined a multi-year investment plan including over 100 major schemes funded by £15.2 billion of public money.
- 3.2 The process is repeatable and work is now underway to develop the second RIS — known as RIS 2 — covering the second road period post 2020. RIS 2 needs to be developed over the coming years so that work on delivering long-term improvements to our roads can continue seamlessly beyond 2020. There are a number of steps that need to be completed leading up to 2020, which can be summarised in 3 phases: research, decision and mobilisation. Analysis will be key to inform the development of all the key Roads Investment Strategy 2 (RIS2) products and it will help identify opportunities and problems, creating solutions, and understanding how they perform against objectives.
- 3.3 The aim is for analysis that is:
- Relevant - answering questions that inform RIS2 decisions,
 - Robust – with a firm basis for data, assumptions and methods
 - Trusted - understood and accepted by stakeholders
- 3.4 DfT has built the evidence base for transport modelling/appraisal over a long time, drawing on world class methods and world leading advice. This work will support the analysis of the RIS 2 by further developing the approach set out in the WebTAG guidance.
- 3.5 DfT WebTAG guidance says that improved access from transport may affect productivity by affecting the spatial distribution of employment – referred to as 'move

to more/less productive jobs'. WebTAG Unit A2.3 'Employment Effects' provides guidance to estimate these impacts and the associated change in welfare.

3.6 It is possible under certain conditions for changes in accessibility to result in firms moving production to regions with lower levels of output per head. In this case the existing approach to Move to More/Less Productive Jobs potentially faces two theoretical problems:

- We have limited understanding of the drivers for workers of move to less/more productive jobs e.g. there is no clear understanding of the situations under which workers would move to areas with lower wages and productivity and the drivers for the movement;
- Although existing firms which relocate production are producing outputs valued at the same market price wherever production occurs, the current method attributes lower productivity to the area with lower GDP per head.

3.7 In addition, there is a need to review the current method to estimate move to more/less productive jobs set out in WebTAG. First the method in WebTAG relies on results from a study by ITS Leeds¹ to estimate spatial differences in productivity which are explained by place-based effects, controlling for differences in peoples' skills and experience. This study is now 10 years old and therefore potentially needs updating. Second, a more recent study has been conducted by the LSE² which concluded that spatial differences in productivity are largely due to sorting effects rather than place-based effects. There is therefore a need to compare the ITS Leeds study with other empirical evidence (including the LSE study) to assess whether the method recommended in WebTAG still remains fit-for-purpose.

4. DEFINITIONS

Expression or Acronym	Definition
WebTAG	Refers to Web based Transport Analysis Guidance
RIS	Stands for Roads Investment Strategy
ITS Leeds	Stands for Institute for Transport Studies, University of Leeds

5. SCOPE OF REQUIREMENT

- 5.1 Review of Economic Theory
- 5.2 Reviewing Existing Methods

6. THE REQUIREMENT

- 6.1 The study will be divided into two parts:
 - 6.1.1 Review of Economic Theory

¹ Dargay et al (2008), 'Real Regional Productivity Differentials, A Report to the Department for Transport'

² Gibbons, Stephen and Overman, Henry G. and Pelkonen, Panu (2010) *Wage disparities in Britain: people or place?* SERC Discussion Papers, SERCDP0060. Spatial Economics Research Centre (SERC), London School of Economics and Political Science, London, UK.

- i. A rapid literature review will be carried out of the relevant literature on regional output/job relocation of firms and workers in response to changes in transport cost, identifying what the economic mechanisms are determining worker relocation;
- ii. The factors that would drive worker relocation across regions and the likelihood of movements taking place.

This would be used to form an a priori assessment of the likelihood of move to more/less productive jobs taking place.

6.1.2 Reviewing Existing Methods

The second part is to review the method and data for estimating move to more/less productive jobs in WebTAG and assess whether it is fit-for-purpose. This will include reviewing empirical evidence for spatial differences in productivity explained by place-based factors (including the ITS Leeds and LSE studies) and would seek to understand:

- i. The theoretical strengths and weaknesses of the approaches – in particular how closely they align with the economic theory set out in (a).
- ii. The analytical robustness of the techniques – are they based on good practice. For example, it should include a review of the robustness with which different studies control for sorting effects (e.g. spatial differences in people’s education, skills and experience).
- iii. What the key uncertainties are in these approaches;
- iv. Their fitness for use under expansion of output in both higher and lower productivity areas;
- v. If judged necessary, provide recommendations how the data and method to estimate move to more/less productive jobs could be improved and updated in the future.

This might inform future commissions to re-estimate the spatial differences in productivity explained by place-based effects.

7. KEY MILESTONES

7.1 The Potential Provider should note the following project milestones that the Authority will measure the progress of delivery against:

Milestone	Description	Timeframe
1	Rapid literature review	Within week 8 of Contract Award

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Appendix A – Statement of Requirements
TSTR0005
Research on Move to More/Less Productive Jobs

2	Review of existing methods	Within week 25 of Contract Award
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8. AUTHORITY'S RESPONSIBILITIES

- 8.1 The Authority will measure the quality of the Supplier's delivery through meetings between the supplier and the project manager as well as through meetings of the steering group.
- 8.2 The project will be governed by a steering group consisting of analysts from the Department for Transport and Highways England. The group will meet once on inception and then on a monthly basis to review key outputs.
- 8.3 The project will be managed by Tim Blackman. It is expected that there will be fortnightly meetings between the successful bidder and Tim to discuss progress of the project.

9. SKILLS/EXPERIENCE

The following skills and experience are required including weights.

- Experience of carrying out rapid literature reviews (10%);
- A proven academic track record of research relating to transport or regional economics (25%);
- Understanding of WebTAG – particularly guidance around wider economic analysis and move to more productive jobs (25%);
- Strong econometric skills – in particular the ability to review existing econometric methods on estimating the impacts from move to less/more productive jobs and suggest areas for improvement (25%);
- Good project delivery skills (15%).

10. REPORTING

10.1 As detailed above in section 8.

11. VOLUMES

11.1 N/A

12. CONTINUOUS IMPROVEMENT

12.1 N/A

13. SUSTAINABILITY

13.1 N/A

14. QUALITY

14.1 As detailed above in section 9.

OFFICIAL

15. PRICE

15.1 Prices are to be submitted on the Pricing Schedule provided via the AWARD e-portal, excluding VAT.

16. STAFF AND CUSTOMER SERVICE

16.1 N/A

17. SERVICE LEVELS AND PERFORMANCE

17.1 N/A

18. SECURITY REQUIREMENTS

18.1 N/A

19. INTELLECTUAL PROPERTY RIGHTS (IPR)

19.1 N/A

20. PAYMENT

20.1 Payment can only be made following satisfactory delivery of pre-agreed certified products and deliverables.

20.2 Only following satisfactory delivery of the review of economic theory can 40% of payment be made. Remaining 60% of payment can only be made following satisfactory delivery of the review of existing methods.

20.3 Before payment can be considered, each invoice must include a detailed elemental breakdown of work completed and the associated costs.

21. ADDITIONAL INFORMATION

21.1 N/A

22. LOCATION

22.1 Steering group and progress meetings will be held in DfT offices in Westminster, conference call can be made available if appropriate.