TAG Unit 2.8: Wider Economic Impacts

August 2003

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1 Wider Economic Impacts

1.1 Appraisal of the Wider Economic Impacts

1.1.1 The Economy Objective has the following five sub-objectives:

- to get good value for money in relation to impacts on public accounts;
- to improve transport economic efficiency for business users and transport providers;
- to improve transport economic efficiency for consumer users;
- to improve reliability, and
- to provide beneficial wider economic impacts.

1.1.2 This TAG Unit provides an introduction to the appraisal of the last of these five sub-objectives – the wider economic impacts. For information on the appraisal of the other four sub-objectives, reference should be made to The Public Accounts Sub-Objective (TAG Unit 3.5.1), The Transport Economic Efficiency Sub-Objective (TAG Unit 3.5.2, which deals with the second and third sub-objectives together), and The Reliability Sub-Objective (TAG Unit 3.5.7).

1.1.3 It is generally accepted that, under conditions of perfect competition for both the transport and the transport-using sectors, a properly specified Cost/Benefit Analysis (CBA) of a transport scheme would capture all impacts and measure them correctly. In other words, at the national level, the conventional CBA would capture all the economic benefits. This assumes we are excluding any divergences which might the national economy.

1.1.4 The conventional CBA compares the economic benefits to users and providers of the transport system (as captured under the second and third economy sub-objectives) with the costs of implementation, maintenance, operation and enforcement (as captured by the first economy sub-objective). Thus, under the assumption of conditions of perfect
competition, it may be assumed that the appraisal under the second and third sub-objectives will have captured the impacts of the transport intervention on the wider economy.

1.1.5 The Government takes the view that the economic impacts in a regeneration area are more valuable than identical impacts occurring elsewhere. It is the purpose of the appraisal of the wider economic impacts, not to duplicate the transport economic efficiency appraisal, but to assess this additional value of impacts which accrue in regeneration areas.

1.1.6 In many cases, the economic impacts of a transport proposal may not occur in a regeneration area, in which case no appraisal of the wider economic impacts is required and no entry is required against the wider economic impacts sub-objective in the Appraisal Summary Table. In some instances, however, a proposed transport intervention may impact on the economic activity in a regeneration area, and this TAG Unit provides an introduction to the appraisal of the wider economic impacts in these cases.

1.2 The Need for an Economic Impact Report

1.2.1 An Economic Impact Report (EIR) should be prepared by the promoters of a transport scheme seeking funding from the Department for Transport (DfT) in all cases where the proposal may impact on the economic activity in a regeneration area.

1.2.2 The EIR has been designed so as to be consistent with the revised EGARP guidance on regeneration assessment, now referred to as "The 3R Assessment Guidance: Regeneration, Renewal and Regional Development – Guidance on the Assessment of Intervention with Spatial Impacts". It provides guidance on how to measure the economic impact, in the form of employment effects, of transport schemes on regeneration areas.

1.2.3 The Government attaches considerable importance to regional economic development. A transport scheme can support the aims of the Government’s Public Service Agreement, namely to make sustainable improvements in the economic performance of all the English regions and, over the longer term, reduce the persistent gap in growth rates between regions. The regeneration of under-performing areas is potentially important to promoting regional economic growth because measures which improve the performance of such areas might encourage development at the regional level. Areas which are identified as regeneration areas are characterised by their failure to function as well as other areas. They are likely to be more prevalent in under-performing regions which often exhibit many different sub-regional problems which add up to a below average performance.

1.2.4 While the Guidance on the Preparation of an EIR introduced in this TAG Unit is mostly concerned with appraising defined schemes, in practice it is often necessary to begin by identifying potential schemes to solve problems in a particular location. It is intended that the Guidance can also be used to guide the design of potential schemes, by describing the ways in which transport schemes may be able to help stimulate economic activity.

1.3 The SACTRA Report: Transport and the Economy

1.3.1 In its 1999 Report, SACTRA noted that there could be two circumstances where the CBA might not fully describe the complete situation.

1.3.2 First, with market failures the CBA might over or under-estimate the economic benefits.

1.3.3 Secondly, benefits might not be evenly distributed across the population, and some people might gain while others might lose. Even if there were no effect at the national level, benefits such as increased employment might be gained in some areas while an equivalent reduction might occur elsewhere across the country.

1.3.4 This latter point is especially relevant in regeneration areas (RAs). As noted
earlier, RAs will usually have a policy objective of increasing local economic activity and employment, and in such cases it may be desirable to introduce measures that bring local benefits even if this leads to costs rising elsewhere.

1.3.5 SACTRA recommended that an Economic Impact Report (EIR) should be prepared by the promoters of all schemes. This recommendation has been accepted by DfT but only for schemes which may impact on regeneration areas. The main intention of preparing an EIR, therefore, is to investigate the distribution of the impacts captured by the transport economic efficiency appraisal and the potential manifestation of those impacts in terms of changes in employment levels.

1.4 Guidance on Preparing an Economic Impact Report

1.4.1 This TAG Unit introduces guidance which provides practical advice on the preparation of Economic Impact Reports. It is a restricted version of the Guidance envisaged by SACTRA, in the following respects.

- It applies only to identifiable RAs. This restriction has been made on the grounds that RAs are, by definition, places where reductions in unemployment would be given priority by policy makers. However, it also permits some methodological simplifications, as in the following point.
- The Department’s chosen measure of contribution to regeneration objectives is the change in the number of RA residents in employment. An additional measure which may also be useful is the change in the number of jobs in the RA.
- It is not concerned with the economic impact at a national level, but only within the RA and the surrounding region. In particular, it is not necessary to demonstrate whether any new jobs generated by a transport scheme would otherwise have gone somewhere else in the country.
- It provides an indirect measure of regional impacts by focusing on under-performing areas that are themselves more likely to be part of under-performing regions.

1.4.2 This focus on economic activity (as measured through employment levels) is deliberate: the guidance is concerned with the economic impact of transport. There are other dimensions under which regeneration objectives might be set, such as quality of the built environment, but they are covered under other NATA headings, as necessary, by the 8Rs Guidance.

1.4.3 SACTRA recognised the difficulty of attempting to quantify, with confidence, the number of jobs that a proposed transport scheme will generate. However, analysis of the scale of the transport impacts, particularly patterns of accessibility, can be used to indicate feasible ranges for any associated increases in employment. The EIR achieves this through analysis of how a RA's economy operates, why it is stagnant or in decline, and how the proposed transport improvements may contribute to reversing the decline, such as by improving access to existing employment opportunities, or reduced transport costs for businesses that allow them to expand their activities.

1.4.4 It should be noted that an EIR need not always be prepared: The Wider Economic Impacts Sub-Objective (TAG Unit 3.5.8) discusses how to decide if an EIR is necessary. Furthermore, the impacts may not always be positive, and the EIR will have to consider whether, by exposing an RA to increased competition, the scheme might lead to a reduction in employment. The Wider Economic Impacts Sub-Objective (TAG Unit 3.5.8) discusses this more.

1.5 Regeneration Areas

1.5.1 There is no national designation of regeneration areas. However, in the majority of cases the notion of an identifiable RA can be equated with the designation as an area with a specific regeneration priority in achieving the objectives of the relevant Regional Economic Strategy. This is what is primarily meant in the rest of the guidance by the term “Regeneration Area”. Other possible definitions (e.g., “Assisted Areas”) are much cruder and should not form the definition of a regeneration area.

1.5.2 Spatial priorities in terms of regeneration and economic development take a number of forms. An overview of the spatial framework for these priorities can be found
in the Revised Technical Note on Tier 2 – Regional Outcomes (available at www.ofwat.info).

1.5.3 These spatial priorities may take the form of:

- Regeneration Zones, where the aim is to reduce deprivation by 10% in those wards in the region that are currently in the bottom 20% of the Indices of Multiple Deprivation;
- Urban Priority Areas, where the aim is to contribute to the renaissance of towns and cities; and
- Rural Priority Areas, market towns and their hinterlands, where the aim is to improve productivity and accessibility to services.

1.5.4 These areas are defined in the relevant RDA Corporate Plan.

1.5.5 Where regeneration benefits are considered to accrue to areas not designated in this way, it will be necessary to examine a full range of indicators and build a case for the area to be regarded as an identified RA. Areas which do not currently conform to an identified RA but are felt to be in need of assistance in order to improve their economic position should not be considered in the EIR.

1.6 Regional Development

1.6.1 As noted earlier, the regeneration of under-performing areas can assist in the promotion of regional economic growth. However, there are limits on the extent to which the EIR can assist in identifying schemes which promote regional development. Regeneration areas and under-performing regions are subject to all types of market failures and not all of these will be addressed by transport measures. Transport investment needs to be complemented by other measures if they are to succeed in contributing to regional growth targets. In addition, regeneration is not the only objective of transport investment. The assessment of transport schemes within NRA is based on several criteria as well as regeneration. While meeting such criteria as the various environmental or road safety objectives can help to contribute to regeneration and hence regional growth targets, the EIR focuses on the employment effects of transport schemes.

1.7 Models and Methodology

1.7.1 SACTRA took the view that, for individual schemes whose impacts are likely to be limited, land-use/transport interaction models might not be the best tools for estimating new jobs and/or reduced unemployment. The Wider Economic Impacts Sub-Objective (TAG Unit 3.5.8) does not require such models.

1.7.2 However, for very large schemes with an area-wide impact, SACTRA considered that such models might be able to help. Use of these models should not replace the analysis set out in The Wider Economic Impacts Sub-Objective (TAG Unit 3.5.8), but supplement and support it. The underlying rationale for change should still be explained as described here. Information about commercially available land-use models is provided in Modelling (TAG Unit 3.1).

1.8 Structure of an Economic Impact Report

1.8.1 Much of The Wider Economic Impacts Sub-Objective (TAG Unit 3.5.8) is concerned with the question of how transport interacts with the RA’s economy, and the questions that should be asked when preparing an EIR. However, the overall structure of the EIR is set out in The Wider Economic Impacts Sub-Objective (TAG Unit 3.5.8), and a worksheet that can be used to summarise the key steps and conclusions is given in Worksheets for the Appraisal of Wider Economic Impacts (TAG Unit 3.5.10).

1.9 Preparing Entries to the Wider Economic Impacts Sub-Objective in the Appraisal Summary Table

1.9.1 Advice on the preparation of entries to the wider economic impacts sub-objective
in the Appraisal Summary Table can be found in *The Wider Economic Impacts Sub-Objective* (TAG Unit 3.5.8).

2. **Further Information**

The following documents provide further background on the New Approach to Appraisal.

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3. **References**

SACTRA (1999) *Transport and the Economy*


4. **Document Provenance**

This Transport Analysis Guidance (TAG) Unit is based on *Guidance on Preparing an Economic Impact Report* prepared for the Department for Transport in July 2003.

Technical queries and comments on this TAG Unit should be referred to:

**Integrated Transport Economics and Appraisal (ITEA) Division**
Department for Transport
Zone 3/08 Great Minster House
76 Marsham Street
London
SW1P 4DR
itea@dft.gsi.gov.uk
Tel 020 7944 6176
Fax 020 7944 2198
The Wider Economic Impacts Sub-Objective

TAG Unit 3.5.8

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Transport Analysis Guidance (TAG)
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1 The Wider Economic Impacts Sub-objective

1.1 Introduction

1.1.1 Wider Economic Impacts (TAG Unit 2.8) explains, in general terms, the form of the appraisal required for the Wider Economic Impacts Sub-Objective. As explained in that TAG Unit, an essential part of the appraisal of the wider economic impacts of a scheme designed to stimulate economic activity in a regeneration area is an Economic Impact Report (EIR). This current TAG Unit provides guidance on how to prepare such a report.

1.1.2 There are four further related TAG Units as follows:

- Worksheets for the Appraisal of Wider Economic Impacts (TAG Unit 3.5.10) contains the worksheets required for the preparation of an EIR;

- Measuring Accessibility for the Appraisal of Wider Economic Impacts (TAG Unit 3.5.11) provides advice on the measurement of changes in accessibility that would arise from a transport scheme;

- Questionnaires for Business Interviews for the Appraisal of Wider Economic Impacts (TAG Unit 3.5.12) provides an indication of the headings that might be covered in interviews with business in order to assess the wider economic impacts of a transport scheme; and

- Data Sources for the Appraisal of Wider Economic Impacts (TAG Unit 3.5.13) provides some advice on potential sources of data which may be useful in preparing an EIR.

2 Transport and Jobs

2.1 Transport, jobs and the EIR

2.1.1 The function of the EIR is to demonstrate how the proposed scheme will impact on the RA’s economy. It should show the processes that link transport to economic vitality, and explain how the proposed scheme can be expected to reduce unemployment, either by generating new jobs or by improving access to existing jobs. It will also have to consider whether the same processes are likely to reduce employment by, for example, exposing the economy of the RA to competition it cannot withstand.

2.1.2 The methodology is concerned with the measurable effects of transport schemes on the local economy. The emphasis is on specific effects which result from the transport scheme, based on reductions in travel times and/or congestion at peak times and working through the effects of these on jobs. This would normally exclude factors such as confidence boosting effects on the local economy unless such effects can be shown to be unusually responsive to travel time changes for a particular scheme. Such effects should not be the predominant source of expected job change within the EIR.

2.1.3 The focus of the EIR on impacts of travel time changes does not eliminate the need for sound judgement in undertaking the EIR. Proposers should explain where they have made judgements about the application of the guidance and build in as many checks on the process as possible including reference to the results of the EIRs for similar schemes if these are available.

2.1.4 This section provides a discussion of the linkages between transport and economic activity that are believed to operate. The EIR should explore each of these as appropriate in each case.
2.2 The linkages between transport and jobs

2.2.1 Transport improvements might contribute to the regeneration of a local economy and the creation of new jobs or increased employment in the following ways:

- Jobs associated with construction of the scheme;
- Jobs associated with operating and maintaining the scheme;
- Jobs arising as a result of the improved travel conditions the scheme delivers; and
- Increased employment by giving residents of the RA access to jobs that were previously inaccessible.

2.2.2 The first of these should not be included. Construction jobs are temporary, often using outside labour, and are therefore unlikely to contribute to local employment in the longer term.

2.2.3 Jobs which may be filled primarily by residents of the RA associated with operating or maintaining the scheme may be included as a regeneration benefit.

2.2.4 The third and the fourth categories are likely to be the ones of greatest interest and relevance in an EIR, and where much of the focus of effort in the analysis will lie.

2.2.5 Improved travel conditions may be achieved via reduced journey times, reduced journey costs, improved journey quality, or improved journey reliability. The net effect is a change in patterns of accessibility, extending the distances people will be prepared to travel, reducing the costs of existing travel, and easing the movement of goods.

2.2.6 There are several types of accessibility, and they may impact on the local economy in different ways.

2.2.7 From the point of view of employers, what matters are the accessibility attributes of a given location, and how the proposed scheme makes that location more or less attractive for the expansion of an existing business or the establishment of a new one. There are several aspects to this, and their importance in any instance will vary with economic sector:

- Access to a suitable workforce. This is the number of suitable potential employees living within acceptable travel times and costs;
- Access to or by customers. For retail businesses this will include the number of potential customers living within an acceptable distance. However for many sectors this will be viewed as the time and cost associated with moving goods between locations and in or out of sites. An aspect of this might be access to the national transport networks, airports and seaports;
- Access to or by suppliers. Again, the interest will be in the times and costs of moving goods between locations and in or out of sites, possibly including access to the national transport networks, airports and seaports.

2.2.8 Improvements to any of these might make the RA more attractive as a business location, thereby encouraging new businesses to locate there or existing businesses to expand, sustainably. The question for the EIR is to identify whether the cost and time savings resulting from the investment are sufficient to impact on businesses, and to show that there is good reason to believe the savings will be translated into new jobs.
2.2.9 None of this will apply if access is not in fact a constraint. Improved access to a workforce from an area that already has surplus labour, for example, is unlikely to have a beneficial effect unless, perhaps, it improves access to people with scarce skills (who may be living outside the RA). There may be other constraints on job creation in a RA that will not be relieved by new transport schemes. For instance, in an area with a legacy of outdated non-transport infrastructure (such as business premises or utility services) there may be no room for significant expansion of employment unless measures are taken to rebuild or refurbish that infrastructure.

2.2.10 For people living in the RA the type of accessibility that most affects how attractive a location is, from the point of view of the EIR, is access to suitable employment. A new transport scheme may give residents access to existing employment opportunities, possibly outside the RA. In this way unemployment in the RA may be reduced even though creation of new jobs is not involved. However, to reduce unemployment these must be jobs the residents are suited for, or could become suited for via training, and for which competition from elsewhere is not already too severe.

2.2.11 Finally, it should be remembered that the effects of changes in transport may not always be wholly positive. Scarce jobs in the RA may become more accessible to a competing workforce living elsewhere, increasing competition for them; workers in the RA may gain access to better paid jobs elsewhere, forcing up wage costs for employers in the RA; retail business may be lost as customers switch to alternative and newly accessible destinations.

3 An Outline of the Process

3.1 When is an EIR required?

3.1.1 The need for an EIR must be considered for all major schemes, that is, those with a capital cost of £5m or more. This requirement is to ensure that the full range of regeneration benefits and disbenefits of such schemes is taken into account in the appraisal. The depth and quality of analysis contained within the EIR should be reasonably proportioned to the case. For example, a large or expensive scheme with extensive or controversial net regeneration benefits for a regeneration area would merit a relatively thorough analysis; a smaller or lower cost scheme where the net regeneration benefits are very clear or of limited magnitude would warrant a more limited analysis. It is possible to prepare an EIR even where scheme benefits are not in a RA but these should not be included in the AST.

3.1.2 An EIR is only required for schemes that affect travel to, from, or within one or more RAs. Guidance on how to decide whether a scheme will affect an RA is given in the following Chapter. Schemes need not penetrate the RA to have an effect.

3.1.3 If a scheme does not affect any RA, then a statement to that effect should be made in the Appraisal Summary Table. An EIR is not required.

3.1.4 For schemes costing less than £5m, an EIR is optional but reasonably tailored as set out in §3.2. An EIR must be prepared if regeneration benefits (that is, increased employment in an RA) are being claimed.

3.2 The tasks

3.2.1 An EIR should provide a description of how the RA’s economy operates, the role transport plays in it, why improved transport will contribute to regeneration by leading to new jobs and/or reduced unemployment, and what the risks are that the employment effects will not arise or may even turn out to be damaging.
3.2.2 Although the full process involves quantitative analysis, the process begins with a qualitative assessment of the scheme and its expected role in the local economy. This stage is essential, both to help make the case in the EIR submission, but also to help structure and direct the subsequent stages of data collection and analysis.

3.2.3 Figure 1 sets out the stages involved in preparation of an EIR. Each stage is discussed in the chapters that follow.

3.2.4 A worksheet is provided in TAG Unit 3.5.10 to help structure the presentation of the EIR. This is discussed further in Section 8.
FIGURE 1.1: PREPARING AN EIR
4 The Area to be Covered by the EIR

4.1 Identifying the regeneration areas

4.1.1 As discussed in *Wider Economic Impacts* (TAG Unit 2.8), in many cases RAs will have been designated as such within the Regional Economic Strategy. Others may be nominated as RAs if a case can be built in the manner as described in Section 1.5 of *Wider Economic Impacts* (TAG Unit 2.8). In such cases, advice should be sought from DfT before further work is undertaken.

4.1.2 In some cases, designated RAs may be very large, with only parts of them being affected by the scheme. In these cases, it would not be efficient to carry out the analysis for the whole of the RA, and an area should be identified where the need for regeneration is greatest. Again, the indicators listed in Section 1.5 of *Wider Economic Impacts* (TAG Unit 2.8) should be used, and advice should be sought from the DfT before proceeding.

4.1.3 While in many cases there will only be one RA involved, large schemes may influence more than one. In such cases, the EIR should describe the impacts of the scheme on each RA so affected.

4.1.4 The following guidelines should be used to decide whether an RA will be affected by a scheme. For an EIR to be required, the scheme must:

- lie entirely within the RA; or
- pass through the RA; or
- begin or end within the RA while extending beyond it; or
- be located sufficiently closely so as to affect travel to, from, or within the RA.

4.1.5 In the fourth case, the term “sufficiently close” is, necessarily, somewhat judgemental. The main thing is to decide whether the scheme is likely to affect:

- The access of residents in the RA to existing but previously inaccessible job opportunities to a degree that increased employment in the RA is likely to result; and/or
- The times and costs of travel between the RA and elsewhere to the extent that levels of business activity within the RA will be affected positively OR negatively.

4.1.6 If none of the identified RAs meet these criteria, then a statement should be included in the Appraisal Summary Table to the effect that the scheme does not affect any RAs, and no more need be done.

4.2 Hinterlands

4.2.1 Each RA will of course interact with the areas surrounding it: its hinterlands. The definition of hinterland is linked to the idea of access, and there may be several hinterlands for a single RA corresponding to accessible employees, customers, suppliers, markets etc. For some sectors, such as freight carriers, the hinterland, in this sense may be a long way off. The limits of the hinterland will need to be established but for major schemes it will be necessary to consider whether there are any regional implications.
4.2.2 Text and maps should be provided identifying the hinterlands for each RA that will be affected by the scheme. Isochrone plots are useful here and an effective way to illustrate:

- Populations that lie within commuting range of the RA, and those that will come in range if the scheme opens
- Employment locations (existing and potential) that lie within commuting range of the RA, and those that will come within range if the scheme opens;
- Business locations that are important for employers in the RA and those that will come within range if the scheme opens.

4.3 The proposed scheme and the regeneration area(s)

4.3.1 The scheme itself and the RA(s) affected should be illustrated using maps. Supporting text should be provided, describing the nature of the scheme, and its location in respect of the RA(s).

4.4 Zones

4.4.1 In all but the smallest exercises, it will be necessary to divide the RA and its various hinterlands into zones. This aids the calculations relating to employment, populations etc, and, most crucially, the analysis of accessibility. If a transport model is already being used to support appraisal of the scheme, a zone structure will already have been designed. Otherwise this needs to be devised. Measuring Accessibility for the Appraisal of Wider Economic Impacts (TAG Unit 3.5.11) gives advice on how to proceed.

4.5 If no schemes have yet been identified

4.5.1 The potential for regeneration impacts must be considered from the outset of the transport appraisal process. In some cases, the need for transport to contribute to the regeneration of one or more locations may be a key local objective for a study. In others, regeneration will often be a key issue, affecting the choice between alternatives and the design and layout of schemes. This means that the identification of RAs and their hinterlands will usually take place before a specific scheme has been identified and worked up in detail. Thus, although the description of this step has been based on the existence of a specific scheme, analysts should recognise that it will often need to be carried out before that stage has been reached. Where that is the case, the approach should be based on the key transport corridors being considered in the study and/or those corridors serving known RAs in or around the study area.

5 Audit of Existing Position: Constraints and Market Weaknesses in the RA

5.1 The need for an audit

5.1.1 The EIR should demonstrate the role transport plays in the RA’s economy, and how the proposed scheme is expected to affect job creation and/or employment levels in the RA.

5.1.2 New jobs may arise either from expansion of existing activities, or by the attraction of new employers to the RA. SACTRA commented that while much emphasis is typically given to the attraction of new employers, in practice it might be expected that most gain will come from expansion of existing activity. In either case, the EIR requires an analysis of existing economic activity in the RA, showing what factors have led to its current position, what future
expectations are if no action is taken, the extent to which transport is holding back expansion, and how the proposed scheme will correct this.

5.2 **Sector based audit of existing employers**

5.2.1 The analysis of the current economic position should be built up from an assessment of individual economic sectors, with emphasis on those sectors of most importance to the RA at present, or those that it is hoped to expand in future.

5.2.2 This sector-based analysis would be expected to address some or all of:

- Manufacturing;
- Commerce and finance;
- Retail;
- Tourism;
- Services;
- Public sector; etc

with varying emphasis, depending on their significance to the RA and the scale of the EIR.

5.2.3 The objective is to build up a picture of the local economy: its current and recent performance, the factors leading to its present position, future expectations and constraints on expansion. The research for this should include an assessment, for each sector, of:

- Prospects for the businesses. Have they been growing or declining? Are they operating in sound markets, or are they in decline due to product obsolescence or irresistible foreign competition?
- Numbers of jobs, skills required and any skills shortages among employers. Are those shortages a constraint on business activity in the RA?
- The transport costs faced by businesses in the RA, particularly those relating to the cost of moving goods or people between themselves and customers or suppliers, and the significance of those costs, as they relate to total costs and to profit margins;
- Ease of movement within the RA and between it and other economically important locations;
- The availability of suitable premises and their condition. This would include property vacancies, prices and the suitability of premises for new uses;
- The availability of accessible land for expansion and/or construction of new premises; and
- Any other constraints holding back the development of the economy.

5.2.4 Some of this information will be available from existing sources of information including the ONS, local authorities, the RDA, business directories, the DTI etc, and in documents such as the Regional Economic Strategy. However, these sources will usually have been assembled for other purposes and there may still be a need for supplementary collection of information.
One effective way of doing this is to carry out surveys with employers in the RA using structured or semi-structured questionnaires. This should normally be done in liaison with local authorities or local development agencies to minimise risks of interview overload. Questionnaires for Business Interviews for the Appraisal of Wider Economic Impacts (TAG Unit 3.5.12) provides more information about how this might be done, and an illustrative questionnaire that can be adapted to local circumstances.

5.3 **Total employment in the RA and its hinterland**

5.3.1 The EIR should provide estimates of the current number of jobs in each zone in the RA. Because of the need to demonstrate a match between jobs and the skills of the available workforce, these numbers should be split, so far as possible, by skill levels required.

5.3.2 If recruitment problems in the RA are believed to be a constraint on economic activity, then this analysis should also provide estimates of vacancy rates among RA employers in each zone, also split, so far as possible, by skill levels.

5.3.3 Similarly the EIR should provide an analysis of employment opportunities lying outside the RA but within commuting range of it. Numbers of jobs in each zone, split so far as possible by skills, should be provided. If it is expected that residents of the RA are likely to gain increased access to those jobs, then estimates of vacancy levels in those zones should also be provided.

5.3.4 *Data Sources for the Appraisal of Wider Economic Impacts* (TAG Unit 3.5.13) discusses some data sources that may be used to do this.

5.4 **The workforce**

5.4.1 The EIR should provide estimates of the size of the workforce in each zone in the RA. The minimum would be the totals, split by the same skills categories as the job estimates, plus estimates of the unemployment rates, also, so far as possible, split by the same skill categories.

5.4.2 The same analysis should be provided for the hinterland zones outside the RA. Section 6 and *Measuring Accessibility for the Appraisal of Wider Economic Impacts* (TAG Unit 3.5.11) provide a fuller discussion of the accessibility of jobs.

5.5 **Other Constraints**

5.5.1 Other constraints on the local economy, especially those that dominate the need for improved transport, or would constrain the expected benefits of improved transport, should be described and assessed. This section suggests some: others may apply, depending on local circumstances.

5.6 **Local policy constraints**

5.6.1 These may include policy on land use, environment, mode shares, travel reduction etc. While these will have been introduced to meet local circumstances, it is possible that they could limit the impact of the proposed transport scheme in terms of jobs or employment because they restrict land-use, change of use of premises, or explicitly oppose increases in transport activity of the type the proposed scheme is designed to enable.

5.7 **Business premises**

5.7.1 Given that the focus is on RAs, the existing built infrastructure may be a constraint on the scope to expand employment: there must be somewhere for the new jobs to go. For business units therefore, the question is whether the
availability of suitable premises is a constraint. If it is, then there may be further tasks relating to the state of the property development market in the area:

- Investigate the willingness of developers to invest in refurbishment or new construction; and
- Investigate the availability of accessible land for construction.

5.7.2 The EIR should therefore include commentary on the extent to which the availability of suitable premises for new jobs is a constraint, and evidence that either it is not a constraint, or, if it is, what measures will be taken to correct it.

5.8 Local workforce skills

5.8.1 The local workforce may not have skills to attract new employers or to support expansion of existing activities. Training may indeed be part of a broader regeneration package of measures in the RA. This may be reflected in the EIR analysis by adjusting the numbers of the local workforce in each of the skills categories in future years.

5.9 Housing

5.9.1 Within the transport EIR, this is only an issue if the claimed generated jobs depend on new residents being attracted, for example to supply necessary skills. In such cases the EIR should demonstrate that adequate housing is available or that measures are in place to provide it.

6 The Transport Scheme

6.1 Accessibility

6.1.1 The case for the impact of the scheme on economic activity will rest on how it affects patterns of accessibility. A central task therefore in preparing an EIR will be to demonstrate how patterns of accessibility will be changed, and then to understand how those changes will affect patterns of economic activity, leading to reductions in unemployment. Analysis of changes in patterns of accessibility caused by the proposed scheme is a required task.

6.1.2 This section describes the types of accessibility change that will have to be analysed. In each case the comparison will be between the situations with and without the proposed scheme. The ‘without’ situation may still include other transport changes that are sure to happen and which will have been included in the ‘do minimum’ case in the rest of the NATA process. The ‘do-minimum’ scenario may also include the effect of other regeneration initiatives (such as training) that might be implemented as part of a wider package. Note that this also implies the selection of future years for comparison: this is discussed further in Section 8.

6.1.3 Measuring Accessibility for the Appraisal of Wider Economic Impacts (TAG Unit 3.5.11) provides more technical information on how accessibility can be measured.

6.2 Access to a suitable workforce

6.2.1 For employers in a given location, the accessible workforce is the number of people willing to travel there to work, given that a job is available and the travel costs they would have to bear. Note the reference to a ‘suitable’ workforce: there needs to be a match between the job requirements of employers and the skills of the workforce.
6.2.2 Increases in the accessible workforce may help expansion of businesses in a RA, but the effect may be constrained by the competing demand for that workforce, so where possible it is desirable to work with changes to accessible job-seekers as well.

6.2.3 The EIR should provide estimates of the change in accessible workforce that will result from the scheme, and, if available, job-seekers, split by skill level, that would be experienced by employers in each zone of the RA.

6.3 Access to customers and suppliers

6.3.1 For business-to-business customers the main concern is the cost of moving materials, goods or people between one location and another. The EIR should demonstrate in the first place how those costs are reduced by the scheme, and in the second, how significant those reductions are for the businesses concerned.

6.3.2 Given the multiplicity of employers and possible origins and destinations that might be considered, the EIR will have to be selective. It may be possible for example to identify significant large employers and their major customers for whom transport linkages can be assessed. This might apply to some large manufacturers, possibly categorising such businesses according to whether they have high or low transport costs. The EIR should provide estimates of the changes in travel times and travel costs that these businesses will receive as a result of the scheme. However, any attempt to gross the results up to represent all businesses in the area must be shown to have been done in a balanced and unbiased manner, as with business surveys Questionnaires for Business Interviews for the Appraisal of Wider Economic Impacts (TAG Unit 3.5.12).

6.3.3 In some cases it may be appropriate to describe how accessibility to key transport infrastructure has changed, such as access times to the national road and rail networks, airports and sea-ports. Again, estimates of absolute and proportional changes in times and costs should be given.

6.3.4 In the retail sector, customers are primarily residents. In this case the measure of accessible customers is the number of people willing to travel to a given location in order to shop there. If the accessible customer base is increased by the scheme, this may lead to expansion of retail activity and therefore employment.

6.4 Access to suitable employment

6.4.1 For someone living at a given location, this is the number of suitable jobs that are within acceptable range. As for employers’ access to a workforce, there needs to be a match between the skills of the workforce and the requirements of the jobs.

6.4.2 It can also be instructive, where possible, to provide information about numbers of accessible job vacancies, in order to reflect competition for those jobs. An increase in the number of accessible jobs for which there is already a plentiful supply of applicants may not be a great gain to the RA residents.

6.4.3 As a minimum, the EIR should provide estimates of the increase in accessible jobs for residents of each zone in the RA, split by skill level. If information about vacancies is available, then the changes in the number of accessible vacancies should also be provided.
7 Identifying the Impact of the Scheme

7.1 Description of the economy in the RA(s) and the role of transport

7.1.1 The first step is to write a summary of the work done to this point, in order to set the context for all that follows. This should consider each of the RAs affected by the scheme, setting out a description of:

- The key activities and problems in the economy in the RA and the reasons it qualifies as a RA;
- The role of transport in the RA and why the proposed scheme can be expected to help improve matters such that unemployment will be reduced;
- Any other significant constraints on the economy of the RA.

7.1.2 The analysis that follows will build on this by providing quantified estimates of the magnitude of each of the identified transport impacts. This will be compared with a base ‘Do Minimum’ case, without the transport scheme.

7.2 Estimation of impacts and consistency checks

7.2.1 The next stages are to:

- Produce estimates of the reduction in unemployment in the RA(s);
- Demonstrate that these estimates are plausible and consistent with the evidence;
- Carry out a risk assessment of the estimates.

7.2.2 This guidance does not propose a formalised method for estimating new jobs: there is no formula, or generalised ‘jobs elasticity’. Instead the method is an iterative one of developing a case and reviewing it in terms of what is feasible given the analysis of the changes in accessibility patterns, the role of other constraints in the RA, and other available evidence. It is quite possible that this process will have to be undertaken more than once until a convincing balance is struck: the strength of the EIR will then lie in how convincingly and logically the case for this claim is put.

7.2.3 Reductions in unemployment can be provided in two ways:

- By giving residents of the RA(s) better access to existing jobs elsewhere that they are suited to;
- By increasing the number of jobs within the RA(s) for which local residents are suited.

7.2.4 The following paragraphs discuss how these can be estimated and ‘sense-checked’.

7.3 Improved access to jobs for the local workforce

7.3.1 The argument here is not one of job creation, but of reduced local unemployment by providing access to employment opportunities. If the pool of accessible jobs, or job vacancies, available to residents of the RA(s) increases then this could be expected to produce a reduction in unemployment, so long as there is a match between the skills of the job seekers and the employers' requirements.
7.3.2 The previous chapter has already discussed how estimates should be made of the number of accessible jobs and/or vacancies available to residents of each zone in the RA, with and without the scheme.

7.3.3 It will be necessary to estimate how many residents of the RA will gain employment as a result of the increase in accessible jobs. It cannot be assumed that if X more jobs become accessible then X people will find work, because those jobs are also being sought by people living elsewhere. As a rough guide, it might be assumed that the penetration rate of residents in the job market remains constant. So if there are n people in work, and N accessible jobs without the scheme, the penetration rate is n/N. If the number of accessible jobs changes to M, then an upper limit on the new number of people in work would be (n/N).M.

7.4 Local employers: access to workforce

7.4.1 From the point of view of existing or potential employers in the RA, the question is whether the labour supply is a constraint on expansion or on the establishment of new businesses, and whether the improved accessibility is sufficient to have any impact. If labour supply is not a constraint, then improved access to labour is unlikely to add to the number of jobs, and this need be considered no further.

7.4.2 If it can be shown that supply of labour is a constraint, then it is necessary to ask whether the increase in the accessible workforce resulting from the scheme is large enough to enable employers to create new jobs. If the unemployment rate of these newly accessible people is already low, they may not in fact be available to the RA, and for this reason it is preferable that the calculation should be based on accessible job seekers. Where this is not possible commentary should be provided on the employment rates among the newly accessible people and the extent to which they will be available.

7.4.3 If vacancies in the RA are high, then the main effect may be to meet shortages in the local job market. This may not lead to the creation of new jobs, and the immediate benefits may go primarily to residents living outside the area. Similarly, if new jobs do arrive, then many of them may go to people from outside the RA. Commentary on this should be provided; it may be possible to argue, for example, that the improved recruitment position strengthens the position of local employers, and this will help to keep them in the area and thus reduce the loss of local jobs.

7.4.4 As an approximation, it could be argued that the proportional increase in jobs in the RA that could be supported by increased access to the workforce is the same as the proportional increase in the accessible workforce. This is only a rough upper limit to the number of new jobs that might appear – there is no guarantee they will appear, and any claim will need justification beyond a simple calculation of proportionality. Any claims of job creation rates higher than this would need special explanation.

7.5 Business logistic impact

7.5.1 The EIR should provide an analysis of the significance of the changes in transport costs to the affected businesses. The cost savings will be used by those companies in one way or another, but not necessarily to create new jobs. The EIR should explain why it might be expected that the savings will be converted into new jobs rather than, say, increased profits or reduced prices, drawing for example on information collected in interviews with relevant businesses.

7.5.2 If expansion of the retail sector is claimed, an analysis of the increase in accessible potential customers should be carried out. The EIR should comment
on whether this increase is large enough to make a plausible case for new jobs in the sector, commenting specifically on:

- The extent of existing retail competition, and the degree to which that will constrain growth in the RA; and
- The risk that improved access of residents of the RA to retail opportunities elsewhere will actually damage local shops.

7.6 Evidence from the audit

7.6.1 The interviews from employers and others in the RA should be used to illustrate the extent to which there is an underlying economic vitality within the RA that will allow employers to take advantage of the new opportunities once the new transport infrastructure is in place. Given that this is a RA, this may be weak or absent. The EIR will have to demonstrate how it will be stimulated by the proposed scheme; is the scheme itself claimed to be sufficient?

7.6.2 Evidence should be provided to support claims. Assertions made in interviews would carry less weight, for example, than would planning applications rejected on the grounds of poor transport provision. This is taken up again later under the heading of risk.

7.7 The existing economic base

7.7.1 In many RAs a cause of stagnation or decline will be the failure of the economic base, due, for example, to falling demand for outdated products, increased competition from abroad, exhaustion of local natural resources etc.

7.7.2 The EIR should comment on the extent to which the local economy is dependent on sectors that are growing, static, or in decline due to overarching external factors. It is unlikely that a case can be put supporting creation of new jobs in a declining sector, and only a very strong scheme, offering substantial changes in accessibility, is likely to be convincing where a sector is static.

7.8 Inward investment

7.8.1 Where expansion of jobs is expected to come from inward investment, it is necessary to show how the RA is made more attractive than other areas competing for that investment. Such cases are likely to involve a package of measures, of which transport is only one, and it would be necessary to show the extent to which the proposed scheme is essential to the success of the package. Transport's contribution however will be of the same nature as for existing businesses: the changes to accessibility the scheme brings.

7.9 Shortage of business premises

7.9.1 Where the case is being made for an expansion of jobs, it should be shown either that suitable premises exist to accommodate them, or that there is good reason to believe the local economy is able to deliver them via new build, refurbishment or conversion of use. Where the increase in jobs is proportionally small it may be assumed that it can be absorbed in the existing provision.

7.10 Shortage of housing

7.10.1 Housing might be addressed in a wider regeneration strategy, intended, for example, to stimulate inward migration. However, since the focus of the transport EIR is on how the proposed scheme will increase employment among existing residents of the RA, housing need not be commented on.
7.11 Tourism

7.11.1 In some areas tourism may be important. This is a special case, for here the ‘customers’ are visitors who come to spend time in the area. Furthermore, employment in the tourism industry is driven by the number of visitors an area can attract, and for this reason the EIR must focus primarily on the ways in which transport investment could affect visitor numbers, and what visitors do once they arrive.

7.11.2 It may be helpful to consider this under three headings: new visitors, repeat visitors and characteristics of visit.

7.12 New visitors

7.12.1 A transport improvement could affect the number of new visitors to the area by:

- Changing the number of visitors from within the existing catchment; or
- Generating new visitors from an expanded catchment (e.g. residents within a new 1 ½ hour travel time who have not visited before making a day trip).

7.13 Repeat visitors

7.13.1 A transport improvement might also affect the frequency of visits by easing access and/or increasing the amount of time available at the destination.

7.14 Characteristics of visit

7.14.1 The nature of the visits made might be changed by the transport scheme. For instance:

- The length of stay might change. Visitors might decide to stay an extra day or, conversely, decide to make a day trip rather than an overnight one;
- If mobility within the area is increased by the scheme then the number of attractions visited during the stay may increase;
- The time available to them during their visit might increase – since less is spent on travelling to the area – and the number of tourist attractions visited consequently increase;
- Different types of visit might grow or decline, such as companies running more business conferences.

7.14.2 The relationship between visitor numbers and jobs is one that can be quantified to some degree, and estimates can be made of the increase in jobs that might result from an increase in visitor number. Data Sources for the Appraisal of Wider Economic Impacts (TAG Unit 3.5.13) suggests some sources.

7.14.3 Finally it should be remembered that providing good access into an area usually implies good access out again. Residents or visitors to a RA may visit a dispersed variety of attractions, so that their expenditure is spread beyond the targeted RA. Similarly, as with other sectors, competition for existing jobs may be increased as other people gain improved access to them. The EIR should comment on the extent to which these effects apply.

7.15 Baseline and time horizon

7.15.1 The EIR sets out to provide estimates of the changes in the employment situation in the RA as a result of the proposed transport scheme. This requires
a statement about the baseline conditions, against which the ‘with scheme’ situation is compared.

7.15.2 The NATA appraisal process already requires a ‘do minimum’ position to be defined. This includes all the future changes to infrastructure and land-use that are known to be happening, but not the proposed scheme. The same do-minimum would be used as a reference point in the EIR against which the employment position with the scheme should be compared.

7.15.3 In some cases transport investment may be part of a wider package of regeneration measures (such as training) and the question arises as to how to handle this situation. The principle is exactly the same: a reference position would be created including all the measures that might be implemented except the scheme. This would be compared to the same position with the scheme, to estimate the marginal impact of the transport scheme on the performance of the whole package.

7.15.4 A full CBA might be calculated over 25 or 30 years. Forecasts of what are likely to be relatively small changes in numbers of jobs or of employment over 30 years will lack credibility, and the requirement therefore is to estimate the numbers of ‘sustainable’ jobs that will arise, and the time it is expected to take before they appear, but not necessarily to make claims about jobs over 25 years or more.

7.15.5 The year in which the scheme is proposed to open should be identified, and used as a base. The current employment and workforce figures should be adjusted as necessary to reflect any expected changes up to that date. These changes might include the effects of accompanying measures, such as training. Changes in accessibility etc should be estimated using the do-minimum transport network information, with and without the proposed scheme, and estimates of the new jobs and/or increases in RA employment produced. These should then be adjusted to indicate the build-up period over, say, two years (or other period as judged necessary), as employers expand and/or people are recruited into new jobs.

7.15.6 The result will be estimates of jobs and/or employment in two future years.

7.16 Uncertainty

7.16.1 There will clearly be uncertainty about any proposed number of new jobs and/or increase in employment. Three types of uncertainty are identified here that the EIR should comment on.

7.17 Uncertainty about the current situation

7.17.1 One source of uncertainty is the quality of information and data available when the EIR is prepared. The change in the accessible workforce, for example, will always be an approximate figure, reliant upon population and transport data that is also subject to imprecision. That data may be out of date, inaccurately measured, or be no more than a rough estimate.

7.17.2 The EIR should comment on the reliability of the data, and, where possible, provide ranges, rather than single values, for numeric outputs. Attempts at spurious accuracy should be avoided.

7.18 Uncertainty about real decisions

7.18.1 At best a transport scheme can only provide opportunities for new economic activity that others may then choose to exploit or not. There is no guarantee attached to the outcomes.
For this reason, where new jobs are being claimed the EIR should classify them according to the quantity of supporting evidence available, in three bands. Table 1 sets them out.

### TABLE 1: BANDS FOR NEW JOBS CLAIMED

<table>
<thead>
<tr>
<th>Band</th>
<th>Quantity of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hypothetical, based on changes in accessibility etc, but with no corroborative evidence, such as enquiries from employers.</td>
</tr>
<tr>
<td>2</td>
<td>Cases where a reasonably high level of serious interest from employers can be demonstrated, but not necessarily firm commitments. Documentary evidence should be supplied.</td>
</tr>
<tr>
<td>3</td>
<td>Cases of high probability where firm commitments have been made that jobs will appear if the scheme is implemented. Documentary evidence should be provided.</td>
</tr>
</tbody>
</table>

#### 7.19 Uncertainty about adverse impacts

7.19.1 It is conceivable that the proposed transport scheme will in fact reduce employment in the RA economy by exposing it to competition from outside that it cannot withstand. This is the ‘two-way road effect’. The EIR should therefore consider the following questions:

7.19.2 Does the scheme increase the access of an external labour force to scarce jobs in the RA?

7.19.3 The risk is that this could increase competition for those jobs and increase unemployment in the RA. The increase in the accessible workforce for employers in the RA will have been estimated in the analysis already: the question is the extent to which that increase is likely to increase competition for local jobs.

#### 7.20 Will improved access to better paid jobs elsewhere increase local wage costs?

7.20.1 If the local population gains increased access to better paid jobs outside the RA, this may lead to increased local wage costs to an extent that local business cannot meet. The EIR might, for example, compare wages for comparable jobs within the RA and outside it, and estimate the increase in jobs that are both accessible and higher paid that the scheme provides.

#### 7.21 Will improved access to retail facilities outside the RA lead to closure of local shops?

7.21.1 This is another example of external competition. If the scheme is likely to reduce the level of retail business in the RA, this may lead to loss of jobs. Any such loss should be offset against the gains claimed.

#### 7.22 Can any other businesses be identified that are vulnerable to increased external competition?

7.22.1 More generally, if external suppliers gain increased access to markets in the RA then they may have the strength to put local employers out of business. The extent to which this is a risk might be gauged from the audit based profiling of the local economy: employers should be asked about the extent of such competition.

7.22.2 Again, the lost jobs should be offset against any claimed gains.
7.22.3 In none of these can high precision be expected, and ranges might be offered for the magnitude of changes in jobs. Where no impact is expected, the EIR should say so.

7.22.4 Questionnaires for Business Interviews for the Appraisal of Wider Economic Impacts (TAG Unit 3.5.12) includes some questions that might be adapted for local use to explore these issues during interviews with businesses.

8 EIR: The Report

8.1 The EIR

8.1.1 The EIR will consist of a written report supported by quantified analysis. A worksheet is provided in Worksheets for Appraisal of Wider Economic Impacts (TAG Unit 3.5.10) to guide the structure and presentation of the argument, but additional information can be provided if required. The worksheet is there to help guide how a case may be constructed, but not all sections may be applicable in any case, and only those sections that are relevant to the case being made need be completed.

8.1.2 In all cases the EIR will be judged on the quality of the argument put, the underlying analysis, and the supporting evidence provided. The steps are, in summary:

- Provide a description of the scheme, with maps;
- Provide a discussion of the RA’s economy as it is now and is expected to be without intervention;
- Provide a quantified analysis of the employment situation for residents of the RA;
- Provide a quantified description of the proposed scheme, particularly how it will impact on travel conditions;
- Estimate how many residents will gain employment from newly accessible existing jobs;
- Estimate numbers of new jobs expected due to expansion of existing businesses, and how many of those jobs will go to residents of the RA;
- Estimate numbers of new jobs expected due to inward investment, and how many of those jobs will go to residents of the RA;
- Calculate net gain in employment for RA residents;
- Estimate any losses in employment among RA residents due to increased competition for existing jobs etc;
- Calculate the net position.

8.1.3 The remainder of this chapter provides commentary on completing the worksheets. References to relevant sections of the guidance are given in italics.

8.2 Target years

8.2.1 It is not necessary to produce forecasts of additional employment for each of 30 years. It is suggested that forecasts be provided for a year sufficiently long after opening for the changes to have worked through. For schemes that are
expected to take long periods for their effects to work through, forecasts for additional years should be provided. See Section 7.

8.3 **Overview: the scheme and its location**

8.3.1 This will provide a description of the scheme, and identify the RA or RAs that are affected, with their hinterlands. Maps should be provided. If no RAs are affected, then a statement should be made to this effect, and no further work is required. See Section 4.

8.4 **Transport and the economy in the regeneration area(s)**

8.4.1 This should describe the local economy in each of the RA(s), the role transport plays, and why improvements to transport are expected to lead to increased employment in the RA. This section need not include detailed quantitative analysis – that comes later – but it may draw on the results of that analysis. See Sections 5 and 7.

8.5 **Jobs and people in the regeneration area**

8.5.1 This section provides numeric information about the number of jobs in the RA, and the workforce living there. (See Section 5) In this and the subsequent sections, the tables ask for totals for the RA, but usually these would be calculated for each zone in the RA and then added together. In some cases only part of the RA will be considered: this will have been commented on already in the ‘Overview’.

8.5.2 Because of the need to consider the match between job types and the skills of the available workforce, the existing jobs should be split, so far as possible, by skill levels. A fine segmentation is not required; the only purpose of this is to allow for matching of skill levels, and in some cases this may not be necessary at all. Groupings should be defined in terms of standard codes available in published data sets. The worksheet provides a suggested classification, but this may be modified as necessary.

8.5.3 The worksheet asks for information about vacancies. Space is provided for both numbers and the percentage rates. Information about vacancy rates helps support arguments about labour recruitment and the likelihood of people finding new work. However it is acknowledged that they may be hard to obtain, so additional commentary may be provided on how, if at all, they have been estimated. If no information is available, a statement to this effect should be made.

8.5.4 The breakdown of the workforce (people either in employment or available for work) should be by the same skills as the jobs. Unemployment numbers and rates are also asked for. A breakdown by skill is highly desirable, in order to help support any argument about matching new opportunities with people seeking work, but given that this may be difficult to obtain, commentary should be provided on how, if at all, such estimates have been made.

8.6 **Jobs and people in the RA hinterlands**

8.6.1 This provides an opportunity to describe jobs and the workforce in the RA’s hinterlands. (See Sections 5 and 6) Where hinterlands are clearly divided geographically, it would be useful to provide a table for each of them.

8.6.2 Note that the number of accessible jobs or people would be calculated for one particular location in the RA. If the RA is large, these numbers may vary from one place to another within it. For this reason the location (or zone) for which these figures have been calculated should be stated, and it may be useful, especially for large RAs, to provide figures for more than one location.
8.7 Total accessible jobs and vacancies

8.7.1 This is a summary of the above, indicating how many jobs and vacancies are accessible to residents of the RA. If the RA is large then the number of accessible jobs in the RA (the first column) may not equal the number of jobs within it, as indicated in the table, because not all of them are equally accessible. In such cases the calculations should be carried out separately for specific zones in the RA. The same applies to accessible vacancies. (Section 6)

8.8 Quantified impacts of the scheme

8.8.1 This section should describe the quantified impacts of the scheme in terms of the transport benefits likely to affect economic activity and employment. Reductions in time and costs, improvements in reliability, quality or capacity may all be relevant. Additional information such as isochrone plots may also be provided. (Sections 2, 4 and 6)

8.9 Access to existing jobs outside the RA

8.9.1 Estimates should be provided of the number of extra existing jobs outside the RA that the scheme brings into commuting range for residents of the RA. These will be estimated using accessibility calculations, described in *Measuring Accessibility for the Appraisal of Wider Economic Impacts* (TAG Unit 3.5.11). These jobs will not automatically go to RA residents, and an estimate should be provided of how many residents can be expected to find employment in this way. Where vacancy rates among these jobs are low then it may be expected that this number may not be great. As a guide, it might be argued that the penetration rate of residents among accessible jobs will remain the same, so that an estimate of the increased employment rate can be made. (Sections 6 and 7)

8.10 Changes to the accessible workforce for employers in the RA

8.10.1 Changes in the workforce catchment for existing employers in the RA may be described. (Sections 6 and 7) There are three cases to consider:

- The scheme increases access to the workforce living within the RA. In this case employment among RA residents may increase as vacancies are filled, or even as they displace residents who commute from outside;
- The scheme increases access to the workforce living outside the RA. This is unlikely to generate additional employment among RA residents, and may even displace them;
- Some combination of the above.

8.10.2 The worksheet asks for estimates of any net gain in employment among RA residents that is expected. Commentary should be provided to explain and justify the estimates given.

8.10.3 It might be argued that increases in the accessible workforce are sufficient to lead to expansion of jobs in the RA. If so, then the proportional increase in jobs is unlikely to be greater than the proportional increase in accessible workforce. However the new jobs may not go to residents of the RA. Estimates of the number that will may be provided, but they should be supported by an analysis of where the newly accessible workforce lives: if they live substantially outside the RA then it is likely the new jobs will not go to residents of the RA.
8.11 Access to markets and suppliers

8.11.1 Examples should be provided of how the scheme will improve access between businesses in the RA and their markets and/or suppliers. (Sections 5, 6 and 7) Additional commentary should be provided explaining the significance of these changes and why they are likely to be sufficient to have an impact on the numbers of jobs in the RA, either through expansion of existing capacity or by attracting inward investment. Tourism is a special case, and may merit separate consideration (Section 7).

8.11.2 Estimates of the additional numbers of jobs expected may be provided. Since not all of them will necessarily go to residents of the RA, estimates may also be supplied of the numbers of RA residents likely to find work as a result.

8.12 Summary of gains in employment

8.12.1 This table provides a summary of the expected gains in employment among residents of the RA arising from the scheme, as calculated in previous tables. The table lists all possible sources, but not all of them need apply in any case. A simple consistency check can be made that the total increase in employment among RA residents does not exceed the number of unemployed residents.

8.13 Risks

8.13.1 This section addresses the possible negative impacts of the scheme. They follow the questions posed in Section 7.

8.14 Jobs lost due to increased competition from the external workforce

8.14.1 A method for determining the accessible workforce for employers in the RA has already been provided. If this has increased substantially from sources outside the RA then there may be some displacement of locally based employees. The table sets out a way of scoping this, on the assumption that among people employed in the RA, the fraction who live in the RA will vary in a similar way as the fraction of the accessible workforce that is based in the RA. The argument is that for employers in the RA the ratio:

\[
\text{ratio }_1 = \frac{\text{accessible workforce living outside RA}}{\text{total accessible workforce}}
\]

will vary in the same way as the ratio:

\[
\text{ratio }_2 = \frac{\text{workforce employed in RA but resident outside it}}{\text{Total workforce employed in RA}}
\]

8.14.2 The first of these can be estimated, with and without the scheme. The second can be estimated without the scheme, and the total workforce employed in the RA with the scheme can be estimated. The assumption then is that (ratio \(1/\text{ratio }_2\)) is the same with and without the scheme, allowing the number of people employed in the RA with the scheme, but resident outside, it to be estimated. The net change in the number of RA residents employed can then be estimated.

8.15 Will improved access to better paid jobs elsewhere increase local wage costs?

8.15.1 This will become relevant if the scheme has been shown to increase access to jobs outside the RA. The question is whether this makes competition for labour
for employers in the RA more difficult, forcing up wage costs and leading to a reduction in local jobs.

8.15.2 Evidence that might be provided could include information about wage rates for comparable jobs in the RA and in the hinterlands, and the recruitment situation in the RA now (e.g. the vacancy figures). Estimates of the scale of the impact are invited, although it is acknowledged that they will only be very approximate.

8.16 **Will improved access to retail facilities outside the RA lead to closure of local shops?**

8.16.1 This will be largely a matter of judgement, but some minimal analysis and information should be provided. First, identify any large retail centres outside the RA for which access for RA residents is improved such that shopping trips can be expected to be diverted there. If there are none, make a statement to this effect.

8.16.2 If such sites exist, provide an estimate of the number of retail jobs in the RA, and those of them that might be at risk. Provide commentary on the extent of the risk, and, so far as possible, an estimate of the number of jobs that might be lost.

8.17 **Can any other businesses be identified that are vulnerable to external competition?**

8.17.1 This section asks only for commentary. Look for businesses that are essentially locally based, selling their produce locally, but which may be undercut by external competition if improved access from outside is provided. Comment on the extent to which this is a likely to be a risk to employment in the RA.

8.18 **Summary of changes in employment**

8.18.1 This table draws together the gains and losses of employment among residents of the RA, to produce a net change.

8.18.2 Finally, table 2 allows all the results to be summarised in order to produce the estimate of the total change in employment. These may then be summarised still further.

**TABLE 2: SUMMARY OF IMPACT ON EMPLOYMENT IN THE RA**

<table>
<thead>
<tr>
<th></th>
<th>Base year</th>
<th>Future Year No Scheme</th>
<th>Future Year With Scheme</th>
<th>Change in Future Year as a Result of Scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jobs in the RA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RA residents in employment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9 **Appraisal Summary Table**

9.1 **Preparing entries**

9.1.1 This chapter provides advice on the entries that should be made to the Appraisal Summary Table (AST), which can be found in *Appraisal Summary Table* (TAG Unit 2.7.2).

9.1.2 If the transport scheme being appraised does not affect a Regeneration Area, then a statement to that effect should be made in the Qualitative Impacts
column of the AST and the score in the Assessment column should be shown as ‘neutral’.

9.1.3 In the Qualitative Impacts column, brief note should be made of:
- the way in which the proposed scheme is expected to affect job creation and/or employment levels in the RA; and
- the strength of any claims of new jobs in the RA (as suggested in Table 1 in paragraph 7.18.2).

9.1.4 In the Quantitative Assessment column, the following numbers should be provided:
- changes in the number of jobs in the RA as a result of the scheme in the forecast year (from Table 2); and
- changes in the number of RA residents in employment as a result of the scheme in the forecast year (from Table 2).

9.1.5 In the Assessment column, the following single indicator should be presented:
- changes in the number of RA residents in employment as a result of the scheme in the forecast year (from Table 2).

9.1.6 In many circumstances, this single indicator is likely to give a correct impression with regard to the RA at the heart of the appraisal (the target RA). In some circumstances, however, where the target RA lies near to other RAs, it may not reflect adequately the potential impacts on near-by RAs. For example, improving accessibility may enable residents of the target RA to access work outside their area, thereby increasing their overall employment levels. However, as a result, the residents of adjacent RAs may be subjected to increased competition for the jobs in their areas, with the consequence that their overall employment levels would decline.

9.1.7 In many cases, where the RA under consideration is an isolated area of deprivation, the source of any increase in employment in the target RA is not material. However, where the target RA lies near to other RAs, the potential for increases in employment in the target RA to arise at the expense of other RAs may be a matter for concern.

9.1.8 Where effects of this nature are of concern and some appreciation of them can be made, note should be made in the AST under the qualitative impacts column.

9.1.9 It should be remembered that the changes in employment shown in the Assessment column would come about as a result of the user benefits captured under the transport economic efficiency sub-objective. In weighing the wider economic impacts, as indicated by the change in RA residents in employment, with all the other impacts recorded in the AST, it is the fact that the increased employment levels would occur in a Regeneration Area that is important and should be valued.
10 Further Information

The following documents provide information that follows on directly from the key topics covered in this TAG Unit.

<table>
<thead>
<tr>
<th>For information on:</th>
<th>See:</th>
<th>TAG Unit number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appraisal Summary Table</td>
<td>Transport Appraisal and the New Green Book</td>
<td>TAG Unit 2.7</td>
</tr>
<tr>
<td>Economic Impacts</td>
<td>Wider Economic Impacts</td>
<td>TAG Unit 2.8</td>
</tr>
</tbody>
</table>

11 Document Provenance

This Transport Analysis Guidance (TAG) Unit is based on Chapters 2 to 8 of Guidance on Preparing an Economic Impact Report (DfT, 2003).

Technical queries and comments on this TAG Unit should be referred to:

Integrated Transport Economics and Appraisal (ITEA) Division
Department for Transport
Zone 3/08 Great Minster House
76 Marsham Street
London
SW1P 4DR
itea@dft.gsi.gov.uk
Tel 020 7944 6176
Fax 020 7944 2198
Measuring Accessibility for the Appraisal of Wider Economic Impacts

TAG Unit 3.5.11

April 2004

Department for Transport

Transport Analysis Guidance (TAG)

This Unit is part of a family which can be accessed at www.webtag.org.uk
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1 Measuring Accessibility

1.1 Introduction

1.1.1 This section provides more details about how accessibility calculations can be made, particularly those relating people to jobs, and employers to the workforce. It deals with the outputs required and how to calculate them, while Data Sources for the Appraisal of Wider Economic Impacts (TAG Unit 3.5.13) suggests some data sources that can be used.

1.2 Accessibility and mode choice

1.2.1 While it might be thought that accessibility calculations are only needed for the mode affected by the proposed scheme (eg for private car, if this is a road scheme) in general this is not true, and it may be necessary to calculate accessibility figures for all modes. The reason is that the impact of changes to one mode must depend on the level of service provided by others and on levels of car ownership. For instance, an improved bus service might have a much greater effect in an area with low car ownership than in one where travel is predominantly by private car, since private car would probably provide good accessibility already.

1.2.2 Calculating accessibility measures taking into account mode preferences is technically complex, and what is offered here is a simple but practical method. The first distinction lies in the availability of car. For those with a car available for travel to work, the choices are between car, public transport, walk and cycle. Improvements to public transport, walk or cycle may increase the number of jobs accessible by those modes, but not the total number of accessible jobs since the car, usually, will dominate, providing access to the same jobs and more. (The exception will be in places like London where car is not the predominant mode for commuting, at least not into the centre.)

1.2.3 On the other hand, those without a car available may not benefit, in terms of accessibility, from improvements to roads, but will from improvements in public transport. Improvements to walk and cycle, once again, may increase the number of jobs accessible by those modes, and indeed may increase the total number of accessible jobs if they lie in areas not served by the public transport network.

1.2.4 The approach adopted here is to calculate changes in accessibility for each mode and then to weight according to current typical mode shares.

1.3 Divide the RA and hinterland into zones

1.3.1 In most cases it will be necessary to divide the RA and its hinterland into zones. In cases where a transport model has already been developed, then the zone structure may already be given. Otherwise, zones may be determined by administrative boundaries and/or the zone structures of population and employment databases.

1.3.2 Where zones are being devised just for the EIR, the following ideas will provide some guidance:

- The purpose of the zones is to group together populations and jobs to simplify the calculation process;
- The zone boundaries should be chosen to be consistent with data sources available describing populations and employment;
- The zones should be of a size such that the decisions about travel from them to the RA, or to them from the RA would not be expected to vary
much across the one. In particular, if the scheme has a big effect on one part of a zone, but very little on another, the zone should be re-divided;

- Similarly, the RA itself may have to be divided into zones if the scheme’s impact on travel conditions in one part of the RA differs from that in another. This will often be the case when the RA is large;
- By and large one would expect the zones to be smaller close to the scheme and larger further from it.

1.4 **Estimate the workforce in each zone**

1.4.1 The information for this will usually be drawn from a population database. The need is to estimate the workforce, not merely the population. These are people who are either in employment or who are actively seeking employment.

1.4.2 It is preferable, especially with large schemes, to divide the workforce by level of skill. These need not be too finely divided, but just enough to allow consideration of matches between the skills offered by job seekers and those required by employers. In this way it is possible to take account of the effect of training schemes if, in future projections, changes to the mix of workforce skills are hypothesised. A possible divisions would be:

- Professional and managerial;
- Other white collar work;
- Skilled manual;
- Unskilled manual.

1.4.3 Ideally, the number of job-seekers in each zone should also be estimated, but is must be in the RA itself, because this is a measure of the problem being addressed. These are people who are not in work, but are actively seeking employment. *Data Sources for the Appraisal of Wider Economic Impacts* (TAG Unit 3.5.13) provides more information about data sources that can be used for both of these.

1.5 **Estimate the number of existing jobs in each zone**

1.5.1 *Data Sources for the Appraisal of Wider Economic Impacts* (TAG Unit 3.5.13) suggests data sources for this. As with the workforce, it is preferable to divide the jobs by level of skill required; this division should match that used for the workforce.

1.5.2 Ideally, estimates should also be provided of the number of vacancies in each zone, split by skill level.

1.6 **Calculate travel times and costs between zones, with and without the scheme**

1.6.1 These will be different depending on the modes involved, but, as explained above, it is necessary to calculate the times and costs for car, public transport and possibly walk/cycle, even if only one mode is being changed. The times and costs need to be calculated for travel between zones within the RA, and between the RA and its hinterland. It is not necessary to provide them for travel between zones lying outside the RA.

1.6.2 For car, the measure is the drive time from one zone to another, including allowance for access and egress time (ie door to door access cannot be assumed). Where a transport network model is available these should be available fairly readily. Otherwise there are drive time software packages widely available that can provide the information.
1.6.3 For travel to and from work, car running costs can be ignored. However car parking costs should be recorded for zones where they apply.

1.6.4 For public transport, journeys are made up of several components: walk to the stop, or station; waiting; travel on the vehicle; walk to the destination. On more complex journeys there may also be intermediate interchanges and waits.

1.6.5 Where a public transport network model is being used, this information should be available fairly readily. Otherwise it will have to be assembled by inspection of timetables and, where available, electronic information services.

1.6.6 In both cases, the measure to be used is the generalised time. For car, this is relatively simple:

\[
\text{Generalised time} = \text{drive time in minutes} + \frac{(\text{parking cost \times fraction who pay})}{\text{VoT}}
\]

1.6.7 Where there are no parking costs, this is just the drive time. Where parking costs are involved they are converted to a time ‘equivalent’ by dividing by the value of time, VoT, but weighted to reflect the proportion of people who actually pay.

1.6.8 Suitable values of time should be used as given in *Values of Time and Operating Costs* (TAG Unit 3.5.6). Where other modelling work has been done, the same values should be used as there. Where access to and from work is being assessed, commuting values of time should be used, otherwise values suited to the journey purpose should be selected. For example, for travel to a zone to which the drive time is 25 minutes, the cost of commuter parking is, on average, £5 per day, for those that pay, an estimated 20% pay, and the value of time is 10p per minute, the generalised time is:

\[
\text{Generalised time} = 25 + \frac{(500 \times 0.2)}{10} = 35 \text{ minutes.}
\]

1.6.9 Note that care should be taken to keep the units of measurement correct: times are in minutes, costs are in pence.

1.6.10 For public transport the calculation is a little longer:

\[
\text{Generalised time} = 2 \times \text{walk time} + 2 \times \left(\frac{\text{average headway}}{2}\right) + \text{in-vehicle time} + \frac{\text{Fare}}{\text{VoT}}
\]

1.6.11 B1.23 This follows a few conventions. It gives walk time twice the weight given to travel time in a vehicle, and treats weighting time as, on average, half the service headway. A bus route, for example, between two zones, running every 20 minutes, taking 15 minutes travel time, and costing £1.00 single fare, and for which the average walk time to/from the bus stops at each end is five minutes would have a generalised time of:

\[
\text{Generalised time} = 2 \times (5 + 5) + 2 \times \left(\frac{20}{2}\right) + 15 + \frac{100}{10}
\]

\[
= 65 \text{ minutes}
\]

assuming, once again, a value of time of 10 pence per minute.

1.6.12 This is relatively simple, and public transport can become much more complex. First, park and ride may be relevant. If so, then it will be necessary to add an additional component to represent drive times to the park and ride sites. Second, public transport networks may become complex, with parallel running, or more complex journeys available via interchanges. These can, in principle, be handled in the above way, but the calculations become ever more complex, and eventually a model will be required to generate the necessary information.
1.6.13 Walk and cycle ‘costs’ will be the travel times involved in the journey. For cycle these might be taken from a transport model, as for car, at least for longer journeys. For walk, distance bands might be used.

1.7 **Select an access time weighting method**

1.7.1 Imagine two zones where one of them, zone A, is residential, and the other, zone B contains jobs. The proportion of the workforce in A who are willing to travel to zone B in order to work will depend, among other things, upon:

- The transport cost and time between the two zones;
- The wage levels available in zone B;
- The availability of suitable work elsewhere.

1.7.2 If the transport costs or times are reduced, then this proportion will increase, giving residents of zone A better access to work, and employers in zone B better access to a workforce. The aim of the accessibility analysis is to demonstrate how significant changes of this type are likely to be.

1.7.3 There are three methods available. The first is to use travel time cut-offs, or isochrones. To do this, choose a travel time or cost that is of significance in the context (for instance, fifteen, thirty and sixty minutes might be used in the context of commuting to work) and, for each zone, calculate how many people lie within that time/cost, or how many jobs are available within that time/cost. For example, suppose we assume a limit to commuting drive times of 60 minutes. Ignoring for now the effect of parking charges, then we might calculate each zone’s accessible workforce by counting up how many people live within 60 minutes drive time of the zone.

1.7.4 The second method is to assign probability weights to cost or time bands. For instance, if it is believed that people in the RA are fairly resistant to travel long distances to work, then weights of the following type might be used:

<table>
<thead>
<tr>
<th>Drive time</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 15 minutes</td>
<td>0.95</td>
</tr>
<tr>
<td>16 – 30 minutes</td>
<td>0.50</td>
</tr>
<tr>
<td>31 -45 minutes</td>
<td>0.05</td>
</tr>
<tr>
<td>More than 45 minutes</td>
<td>zero</td>
</tr>
</tbody>
</table>

**Table 1 Assigning weights to travel times**

1.7.5 This states that nearly everyone with a car would be willing to travel up to 15 minutes, around half would be willing to travel between a quarter and half an hour, about 5% between 30 and 45 minutes, and no one wants to travel more than 45 minutes. This is more useful than the isochrone method, because it recognises that willingness to travel falls with rising travel cost. Although only three bands are shown here, more could be used if it was felt to be useful.

1.7.6 There is a third, even more general method, which is to use a curve on a graph (a deterrence curve) to relate the travel cost to the proportion willing to travel. This provides the maximum generality, avoiding awkward step changes like we see in Table B1. The accessible workforce then would be:

\[
\text{accessible workforce}_{zono} = \sum \text{workforce}_j \cdot F(d_{i,j})
\]

1.7.7 where \(\text{workforce}_j\) is the workforce resident in zone \(j\), \(d_{i,j}\) is the measure of distance (or generalised cost) between zones \(i\) and \(j\), and \(F(d_{i,j})\) is a function returning the proportion of people willing to accept that cost.
1.7.8 The accessibility analysis may be carried out using any of these methods. The isochrone method is the crudest, but is computationally the easiest, and will usually be sufficient for small schemes of less than £5m capital cost.

1.7.9 Tabulated weights such as those in Table B1 are computationally more difficult, but allow a more realistic representation of the reaction to travel times and costs. EIRs for schemes over £5m capital cost will be based either on such tables, or, where sufficient information is available, full deterrence curves.

1.7.10 A fully generalised deterrence function might be chosen in cases where the technology is available for implementing it. The curve may be an analytic or empirical.

1.7.11 The EIR should state clearly:
- Which method was used;
- The modes it was used on;
- The cost measures that it was applied to (ie drive generalised cost, bus generalised cost etc);
- The isochrone chosen, the weights used, or the deterrence curve, and the evidence supporting these values.

1.7.12 The weights need to be chosen with care because the quicker they decline to zero (ie the greater the resistance to travel) the greater will be the apparent effect of the scheme. If however they are too steep, the accessible workforce and jobs will be too small for each zone, and the starting position will be implausible. As a test therefore, it will be necessary to show that without the scheme:
- The number of jobs calculated as being accessible from each zone in the RA is consistent with the employment rate for people living in that zone; and
- The workforce calculated as being accessible from each zone is consistent with the number of jobs in that zone.

1.7.13 Figure 1 may be used as a starting point. It plots a deterrence curve that was calibrated during one of the case studies carried out during the preparation of this guidance. It applies to travel to work in an urban area, and relates the generalised cost to the proportion of people willing to travel.
1.8 **Calculation of accessibility measures**

1.8.1 The calculations may be handled on a spreadsheet. A suggested organisation of the spreadsheet is as follows:

1.9 **First sheet(s): zone to zone costs and times**

1.9.1 Prepare a worksheet for each type of travel cost or time being considered. The format of each sheet is a zone to zone matrix with costs etc entered in each cell. There may, for example, be two sheets for private car, the first giving zone to zone times, and the second giving zone to zone parking costs. For public transport there may be several sheets for each element of the public transport journey.

1.9.2 Note that this information will include average times for travel within each zone, as well as between zones.

1.9.3 For each mode there will also be a sheet bringing all the elements together within a generalised cost calculation. These costs will be used in the accessibility calculations.

1.10 **Second Sheets: Population and Jobs**

1.10.1 There will be a worksheet with a tabulation of the workforce in each zone, split down so far as possible among levels of skill.

1.10.2 Ideally there will be a further table showing the numbers on unemployed in each zone, also, so far as possible, split by skill level.

1.10.3 Both these tables should be accompanied by estimates of the proportion of people with a car available for travel to work, because this affects the accessibility patterns for private car.

1.10.4 Similar worksheets will be prepared tabulating current jobs in each zone (by skills level) and, so far as possible, vacancies, split by skill level.

1.11 **Third sheets: Outputs**

1.11.1 The third category of worksheet will provide numbers of accessible workforce and jobs in each zone.

1.11.2 The accessible workforce in each zone might be tabulated with zones in the rows, and columns for each type of work skill level. For zone $i$, the accessible workforce is given by:

\[
\text{Accessible workforce from zone } i = \sum (\text{workforce in zone } j) \times \text{(weight for travel from zone } j \text{ to zone } i) + \text{(workforce in zone } k \text{ to zone } i) + \text{(workforce in zone } l \text{ to zone } i) + \text{ etc}
\]

1.11.3 The calculation adds up the workforce in each zone weighted to reflect the cost of travel from that zone to zone $i$. This can of course be done for each workforce skill level, if this division is available. If can also be done for work-seekers in each zone, rather than the workforce. Note that for private car, the workforce figures should be weighted down to reflect car availability.
1.11.4 The number of jobs accessible from each zone is calculated in a similar way. For people living in zone I, the number of accessible jobs is:

\[
\text{Jobs accessible from zone } i = (\text{jobs in zone 1}) \times (\text{weight for travel from zone i to zone 1}) + (\text{jobs in zone 2}) \times (\text{weight for travel from zone i to zone 2}) + (\text{jobs in zone 3}) \times (\text{weight for travel from zone i to zone 3}) + (\text{jobs in zone 4}) \times (\text{weight for travel from zone i to zone 4}) + \ldots
\]

1.11.5 These figures should be calculated for each mode separately, with and without the scheme. The calculations are made for each zone, but the results for the RA can be summarised in tables of the following form, one for each type of accessibility, by adding across the RA zones. Note that the table rows cannot be added, to give total accessibility figures, because this would entail double counting. However by weighting the figures by current mode choice proportions an estimate of the totals can be made. The final column can then be summed to give an estimate of the increase in accessible jobs.

1.11.6 It would be helpful to provide two versions of the table, one for those with car available and one for those without.

1.11.7 Finally, similar tables should be prepared from the point of view of employers in the RA, showing the increase in accessible workforce they gain from the scheme.

<table>
<thead>
<tr>
<th></th>
<th>Without scheme</th>
<th>With scheme</th>
<th>Change</th>
<th>Mode %</th>
<th>Weighted changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>By car</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>By public transport</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cycle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3 Example summary table for accessibility analysis

2 Document Provenance

This Transport Analysis Guidance (TAG) Unit is based on Appendix B of Guidance on Preparing an Economic Impact Report (DfT, 2003).

Technical queries and comments on this TAG Unit should be referred to:

Integrated Transport Economics and Appraisal (ITEA) Division
Department for Transport
Zone 3/08 Great Minster House
76 Marsham Street
London
SW1P 4DR
itea@dfi.gsi.gov.uk
Tel 020 7944 6176
Fax 020 7944 2198