Guidance on Transport Assessment

Table of contents

Chapter 1: Introduction

Purpose of this guidance

1.1 *Planning Policy Guidance Note 13: Transport* (PPG13) states that, where a new development is likely to have significant transport implications, a Transport Assessment (TA) should be prepared and submitted with a planning application for the development. It will then be used to determine whether the impact of the development on transport is acceptable. TAs are normally produced by developers and are used by decision makers in the planning process.

1.2 A TA is a comprehensive and systematic process that sets out transport issues relating to a proposed development. It identifies what measures will be taken to deal with the anticipated transport impacts of the scheme and to improve accessibility and safety for all modes of travel, particularly for alternatives to the car such as walking, cycling and public transport.

1.3 In some cases, the transport issues arising out of development proposals may not require a full TA to inform the process adequately and identify suitable mitigation. In these instances, it has become common practice to produce a simplified report in the form of a Transport Statement (TS). There will also be situations where the transport issues relating to a development proposal are limited, and no formal assessment is necessary.

1.4 This document, *Guidance on Transport Assessment* (GTA), is intended to assist stakeholders in determining whether an assessment may be required and, if so, what the level and scope of that assessment should be. It provides guidance on the content and preparation of TAs and TSs.

1.5 However, it is not a statement of Government policy and therefore should be read in conjunction with, and in the context of, relevant Government policies, in particular those relating to transport and planning. It is also important to note that the decision to grant planning permission for a development proposal is based on several considerations. A TA focuses primarily on the transport implications of the development, and therefore the completion of a TA does not guarantee the granting of planning consent.

1.6 This guidance applies to England only, and not Scotland, Wales or Northern Ireland. Developers should also have regard to any more specific current guidance issued by local authorities. In particular, developers operating in the vicinity of London should note the guidance issued by Transport for London (TfL). Planning applications meeting the criteria for referral to the Mayor should follow TfL's Transport Assessment best practice guidance (May 2006) at www.tfl.gov.uk/transportassessment

Policy context

1.7 The previous guidance on the assessment of the transport implications of development proposals was the *Guidelines for Traffic Impact Assessment*, published by the Institution of Highways and Transportation (IHT) in 1994. Since the IHT guidelines were produced, there has been a significant change in Government policy and general guidance regarding improved sustainability in transport.

1.8 This document brings the guidance on transport assessment up to date with these changes in Government policy. It expands the scope of the guidance to cover the assessment of the potential implications of development proposals on the entire transport system, including the public transport system (buses, rail and trams), the Strategic Road Network (SRN), local highways and footways.

1.9 The Government first published its Sustainable Development Strategy in 1994, following the 1992 Earth Summit. The Strategy was revised in 1999 and again in 2005, with the publication of *Securing the Future*. The Strategy has set the context for the Government's transport and planning policies, with sustainable development and sustainable communities at their core.

1.10 *Planning Policy Statement 1: Delivering Sustainable Development* (PPS1) describes the Government's objectives for the planning system. Sustainable development is the main principle underpinning planning. Planning has a key role to play in the creation of sustainable communities: communities that will stand the test of time, where people want to live, and which will enable people to meet their aspirations and potential.

1.11 *Managing Our Roads* (DfT, 2003) and *The Future of Transport - a Network for 2030* (DfT White Paper, 2004) set out the Government's long-term strategy for transport. An underlying objective of the strategy set out in the White Paper is to deal with the pressures of increasing demand for travel by striking the right balance among our environmental, economic and social objectives, now and into the future. In terms of the road network, this means:

- new capacity, where it is needed and justified on environmental and social grounds;
- locking in the benefits of new capacity through measures such as high occupancy vehicle lanes and tolling, where appropriate;
- the Government leading the debate on road pricing and the opportunity this gives to motorists to make better choices;
- better management of the network; and
- using new technology, so the travelling public can make smarter journey choices.

In terms of enhancing local travel, this means:

- freer-flowing local roads delivered through measures such as congestion charging;
- more, and more reliable buses enjoying more road space;
- demand-responsive bus services that provide accessibility in areas that cannot support conventional services;
- looking at ways to make services more accessible, so that people have a real choice about when and how they travel;
- tackling the environmental impacts of travel by encouraging more sustainable travel choices through promoting the use of school travel plans, workplace travel plans and personalised journey planning,

and encouraging people to consider alternatives to using their cars; and

- creating a culture and improved quality of local environment, so that cycling and walking are seen as an attractive alternative to car travel for short journeys, particularly for children.

1.12 *The Future of Transport and Future of Rail* White Papers (DfT, 2004) set out the Government's approach to the rail industry, and for the use of rail in providing alternatives to road travel for people and freight. The railways are a vital part of the country's transport infrastructure, and the Government wants to see this continue and accelerate.

1.13 *PPG 13*: *Transport* describes the link between planning and transport policy. The objectives of this guidance are to integrate planning and transport at the national, regional, strategic and local level. This is in order to promote more sustainable transport choices both for people and moving freight; promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling; and reduce the need to travel, especially by car.

1.14 The Planning and Compulsory Purchase Act 2004 reformed the planning system to place a renewed emphasis on sustainable development and strengthen the role of regional planning, replacing Regional Planning Guidance (RPG) with statutory Regional Spatial Strategies (RSS). *Planning Policy Statement 11: Regional Spatial Strategies* describes the role of RSSs in setting out a spatial vision for each region across a 15-20-year period and a broad development strategy to achieve that vision. RSSs incorporate Regional Transport Strategies (RTSs) that outline the transport measures needed to support the spatial strategy and provide a long-term framework to integrate transport and spatial planning in the region. Together, they provide a spatial framework that informs the preparation of the Local Development Documents (LDDs) and Local Transport Plans (LTPs) that set out local planning authorities' policies and proposals for the development of their area.

1.15 The role of transport in securing sustainable development is also set out within PPS1. It identifies the role of planning in facilitating and promoting sustainable and inclusive patterns of urban and rural development. Key elements in achieving more sustainable patterns of development include: encouraging more efficient use of land; managing the pattern of development to reduce the need to travel; promoting accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling, in particular by focusing major trip generating development in existing centres and near to public transport interchanges.

1.16 The draft *Planning Policy Statement Planning and Climate* (which will act as a supplement to *Planning Policy Statement 1*) sets out how planning, in providing for the new homes, jobs and infrastructure needed by communities, should help shape places with lower carbon emissions and which are resilient to the climate change now accepted as inevitable. The PPS expects planning to be a positive force for change and help secure progress against the UK's emissions targets, both by direct influence on energy use and emissions, and in bringing together and encouraging action by others. It should also help deliver the Government's ambition of zero carbon development and give communities real opportunities to take action on climate change.

1.17 Finally, the Traffic Management Act 2004 places a network management duty on local traffic authorities in England. They have a duty to manage their road network with a view to securing the expeditious movement of traffic on the authority's road network, which implies a network that is working efficiently without unnecessary delay to those travelling on it, and facilitating it on road networks for which another authority is the traffic authority. The duty is not limited to the actions of the traffic

department within an authority. It extends to the authority exercising its powers as highway authority and street authority under the Highways Act 1980 and the New Roads and Street Works Act 1991, and indeed any power to regulate or co-ordinate the uses made of any road.

Principles of the assessment

1.18 A properly prepared TA will help LPAs assess the development's compatibility with the relevant planning policy framework (usually the Local Development Framework) and, in particular, the relevant transport strategy (usually the Local Transport Plan). It will allow the transport implications of proposed developments to be properly considered and, where appropriate, will help identify suitable measures to achieve a more sustainable and environmentally sound outcome. A TA can also address issues likely to be of concern to the local traffic authority (and the Highways Agency where relevant) in performing their network management duties.

1.19 In preparing a transport assessment the following considerations will therefore be relevant.

Encouraging environmental sustainability

- **Reducing the need to travel, especially by car** - reducing the need for travel, reducing the length of trips, and promoting multi-purpose or linked trips by promoting more sustainable patterns of development and more sustainable communities that reduce the physical separation of key land uses.
- **Tackling the environmental impact of travel** - by improving sustainable transport choices, and by making it safer and easier for people to access jobs, shopping, leisure facilities and services by public transport, walking, and cycling.
- **The accessibility of the location** - the extent to which a site is, or is capable of becoming, accessible by non car modes, particularly for large developments that involve major generators of travel demand.
- **Other measures which may assist in influencing travel behaviour (ITB)** - achieving reductions in car usage (particularly single occupancy vehicles), by measures such as car sharing/pooling, High Occupancy Vehicle (HOV) lanes and parking control.

Managing the existing network

- **Making best possible use of existing transport infrastructure** - for instance by low-cost improvements to the local public transport network and using advanced signal control systems, public transport priority measures (bus lanes), or other forms of Intelligent Transport Systems (ITS) to improve operations on the highway network. It should be noted that the capacity of the existing public transport infrastructure and footpaths is finite, and in some areas overcrowding already exists.
- **Managing access to the highway network** - taking steps to maximise the extent to which the development can be made to 'fit' within the available capacity by managing access from developments onto the highway network.

Mitigating residual impacts

- **Through demand management** - using traffic control measures across a wide network to regulate flows.
- **Through improvements to the local public transport network, and walking and cycling facilities** - for example, by extending bus routes and increasing bus frequencies, and designing sites to facilitate walking and cycling.
- **Through minor physical improvements to existing roads** - it may be possible in some circumstances to improve the capacity of existing roads by relatively minor physical adjustments such as improving the geometry of junctions etc. within the existing highway boundary.
- **Through provision of new or expanded roads** - it is considered good transport planning practice to demonstrate that the other opportunities above have been fully explored before considering the provision of additional road space such as new roads or major junction upgrades.

1.20 Consideration of these matters should take place at an early stage in the process of preparing a development proposal. Work on developing the transport assessment can then help inform, and be informed by, discussions about the location of the site and the scale and mix of uses proposed.

Structure of the guidance

1.21 The guidance is divided into four further sections:

1.22 **Section 2: Identifying the need for an assessment**: PPG13 states that it will not always be necessary for development proposals to be accompanied by a full and detailed Transport Assessment (TA). This section provides guidance on when assessments are likely to be needed and, if so, what level of assessment is likely to be required. For large-scale developments, pre-application discussions with the local authority are critical to establish clearly the scope of what is required.

1.23 **Section 3: Preparing a Transport Statement**: This form of assessment is suitable when the proposed development is expected to generate relatively low numbers of trips or traffic flows, with minor transport impacts. This section provides guidance on the type of information typically required in a TS.

1.24 **Section 4: Preparing a Transport Assessment**: A TA is required where a development is likely to have significant transport impacts. The precise scope and detail of a TA will vary depending on the site location, scale and nature of the development. Section 4 provides a step-by-step guide to the approach and sets out the key elements that should underpin the preparation of TAs. It also explains the role of a supporting travel plan in delivering sustainable outcomes and provides links to guidance on preparing a travel plan.

1.25 **Section 5: The link with the development-plan-making process**: Regional Spatial Strategies and Local Development Frameworks should be sound: their evidence base should be robust and credible. This section identifies how the plan-making process can inform, and be informed by, transport assessments.

Chapter 2: Identifying the need for an assessment

Pre-application discussions

2.1 PPS1 and PPG13 emphasise the value of early discussions in relation to transport assessments. This ensures that all parties have a better understanding of, and reach a consensus on, the key issues to be addressed in respect of a particular development proposal. The issues agreed in such pre-application discussions should indicate the level and scope of assessment that will be required. They will also provide an initial judgement on the need for and scope of a travel plan.

2.2 Pre-application discussions should be held with the Local Planning Authority (LPA), Local Transport Authority (LTA) or Local Highway Authority (LHA) regarding the local transport network. In addition, where there might be an impact on the SRN, discussions should be held with the Highways Agency (HA).

2.3 When an assessment is likely to be required, as a first step in the process, developers should ensure that a brief description of their proposals and information on the likely transport impacts is made available to the relevant authorities.

2.4 A pro-forma has been developed (see Appendix A) to inform LPAs/LHAs. This is intended to provide sufficient information to help them make objective judgements on the transport implications of development proposals and on the appropriate level of assessment.

2.5 Whilst there is no requirement on applicants to complete such a pre-application form, or for LPAs/LHAs to use a standard form, its use is recommended. It provides benefits to all parties involved and, even if a pre-application form is not completed, it would be helpful if the information in the suggested pro-forma is provided by other means.

2.6 Where a pre-application form has been prepared, the completed form should provide an indication of the nature and scale of the proposed development, together with estimates of the likely number of trips to be generated and the likely mode share. This structured approach will assist negotiations with the LPA and, more broadly, the LTA/LHA, rail and bus service operators and, where the SRN may be affected, the HA.

2.7 In assessing the need for a TA, regard should be had to relevant policies and development allocations in the development plan, particularly where these were informed by transport assessments. The development plan, under the reforms introduced by the Planning and Compulsory Purchase Act 2004, usually consists of a Regional Spatial Strategy (RSS) and Local Development Documents (LDDs), with the previous system of Structure Plans and Local Plans being phased out in some areas. Attention should also be paid to the RTS and LTP.

When an assessment is needed

2.8 The need for, and level of, formal transport assessment will be determined in consultation between the developer and the relevant authorities (LPA, LTA, LHA and HA).

2.9 If an assessment is required, there are two levels:

- Transport Statement (TS) (see Section 3): development that has relatively small transport implications.
- Transport Assessment (TA) (see Section 4): development that has significant transport implications

2.10 As will be set out later in this guidance, there may be a need to include specific assessment of environmental impacts of the development proposals. These could arise out of an incremental rise in transport-related noise, air quality or other pollutions. The aim will be to identify potential breaches of statutory thresholds and mitigation measures to address such impacts.

2.11 Appendix B provides suggested thresholds below which a formal assessment may not be needed, and above which the preparation of a TS or a TA would be appropriate. The thresholds in Appendix B are based upon scenarios which would typically generate 30 two way peak hour vehicle trips. Whilst there is no suggestion that 30 two-way peak hour vehicle trips would, in themselves, cause a detrimental impact, it is a useful point of reference from which to commence discussions.

2.12 A Person Trip is a one-way journey by one person by any mode of transport, including walking, cycling, privately operated vehicles, or any public transport modes. A Vehicle Trip is a one-way journey by a single privately operated vehicle regardless of the number of persons in the vehicle. For example, two or more people travelling together in a car would be counted as one vehicle trip. The criteria for determining the need for an assessment use two-way trips throughout as a standard for assessing travel. Traffic refers to motorised trips on the road network.

2.13 These thresholds are for guidance purposes and should not be read as absolutes. There are a range of qualitative factors that need to be taken into account that the thresholds do not necessarily capture. There will also be site-specific issues that assessments will need to take into account. In some circumstances, a TA may be appropriate for a smaller development than suggested by the thresholds in Appendix B. In others, a TS may be appropriate for a larger development than suggested by the thresholds in Appendix B - for example, where there is an extant permission for one form of development but an alternative development that involves a smaller projected transport impact is now proposed. Early pre-application discussions between a developer and the relevant authorities are strongly recommended. In these, it is important for highway authorities to combine the appropriate quantitative and qualitative thresholds in deciding the level of assessment that may be required.

Key issues

2.14 The key issues to be addressed during any pre-application consultations include the following:

- Planning policy context of development proposal
- Catchments or study area for the proposed development
- Assessment years - year of opening and horizon year(s)
- Assessment of public transport capacity, walking/cycling capacity and the road network capacity
- Person trip generation and trip distribution methodologies and/or assumptions
- Measures to promote sustainable travel
- Mitigation measures (where applicable) - scope and implementation strategy

2.15 The above list is not exhaustive and there may be additional issues that are site-specific and reflect local conditions, as well as other material considerations.

Chapter 3: Preparing a transport statement

3.1 A Transport Statement should set out the transport issues relating to a proposed development site (existing conditions) and details of the development proposals (proposed development).

Existing conditions

3.2 The developer should provide a full description of:

- existing site information - describing the current physical infrastructure and characteristics of the site and its surroundings;
- baseline transport data - background transport data and current transport infrastructure details.

3.3 This information should be accurately established to understand the context of the development proposal. The description should include as a minimum:

Existing site information

- a site location plan that shows the proposed development site in relation to the surrounding area and transport system;
- the permitted and existing use of the site;
- the existing land uses in the vicinity of the site, including development plan allocations, or potential future use in the case of undeveloped sites;
- existing site access arrangements including access constraints, where appropriate;
- whether the location of the site is within or near a designated Air Quality Management Area (AQMA);
- any abnormal load uses of the current site.

Baseline transport data

- a qualitative description of the travel characteristics of the existing site, including pedestrian and cyclist movements and facilities, where applicable;
- existing public transport provision, including provision/frequency of services, location of bus stops/train stations, park-and-ride facilities;
- a description and functional classification of the highway network in the vicinity of the site;
- an analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent three-year period, or five-year period if the proposed site has been identified as within a high accident area.

Proposed development

3.4 The developer should provide a full description within the TS including, as a minimum:

- plans and drawings showing the proposed site layout, particularly the proposed pedestrian and vehicular access points into the site;
- the proposed land use;
- the scale of development, such as numbers of residential units and/or gross floor area (GFA), subdivided by land use where appropriate;
- the main features (design layout and access points) of the development;
- the person-trip generation of the proposed development and distribution of trips across mode;
- a qualitative and quantitative description (based on recent site observations) of the travel characteristics of the proposed development, including pedestrian and cyclist facilities/movements, in the vicinity of the site;
- proposed improvements to site accessibility via sustainable modes of travel, such as provision/enhancement of footpath and cycle path linkages, public transport improvements, and servicing arrangements where appropriate;
- a proposed parking strategy [1] and internal vehicular circulation (including number of spaces, parking accumulation, parking layout in relation to other site elements, ratio of operational to non-operational spaces, method of car park operation, overspill parking considerations, disabled parking, motorcycle parking, cycle parking, taxi drop-off points);
- residual vehicular trip impact;
- the transport impacts of site construction, including the requirements of abnormal loads in the construction, use and decommissioning the present development;
- the transport impacts of freight or service operations; and
- if the site of the proposed development has a current use or an extant planning permission with trip patterns/volumes, the net level of change that might arise out of the new proposals should be set out.

3.5 The above requirements are not exhaustive and there may be a need for supplementary information that takes account of local conditions as well as other material considerations. However, not all proposed developments that are considered to require a TS would necessarily need all of the above matters to be considered. Therefore, it is important that the scope of the TS is agreed at the pre-application discussion stage between the developer and appropriate authorities.

1 In conjunction with the parking layout and provision, the car parking strategy will demonstrate how car parking will be managed and will deal with issues such as reserved areas for disabled and car sharing scheme members.

Chapter 4: Preparing a transport assessment

Introduction

4.1 A detailed TA will be required where a proposed development is likely to have significant transport and related environmental impacts. The study area for a proposed development should be determined in discussion between the developer and appropriate authorities. It will generally depend on the type and

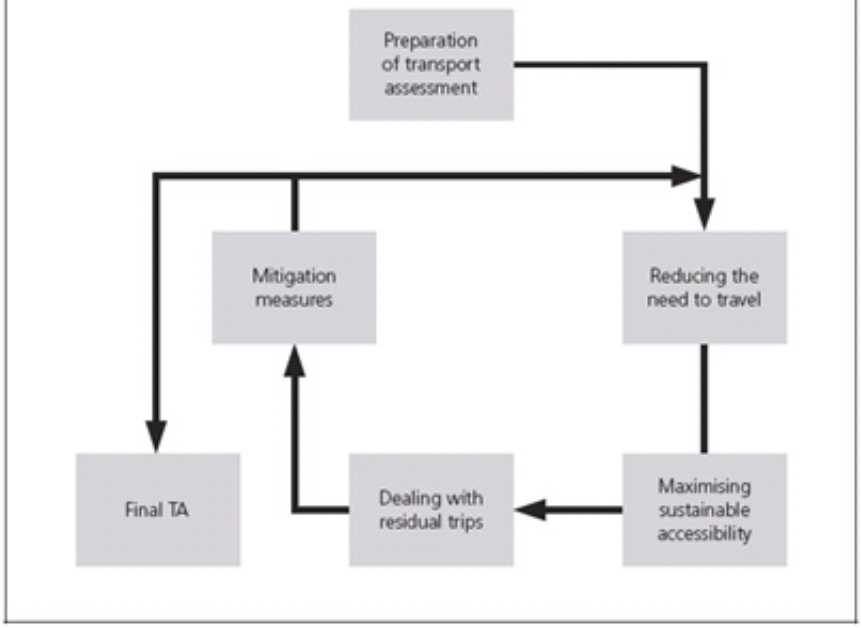
scale of the development, and early consultations with the appropriate authorities will assist in defining its extent. A description of the study area should include reference to the site location, the local transport network and relevant transport features. Guidelines on when a TA may be required are provided in the thresholds table in Appendix B.

4.2 Wherever pre-application consultation identifies a need for a TA, it is good practice to agree, as part of the pre-application consultation, the preparation of a scoping study before the TA is begun. A scoping study should identify the issues the TA will address, the methodologies to be adopted, additional supporting data required, and the limits of the assessment area. An agreed scoping study will help to reduce the potential for misunderstandings about the form of the TA and avoid abortive work. It does not preclude varying the TA to reflect the findings of survey results or more detailed analysis. However, it is recommended that any significant variations are agreed with the appropriate authorities during the development of the TA.

4.3 Figure 4.1 illustrates an iterative approach to transport assessments. A TA should address the following issues:

- Reducing the need to travel, especially by car - ensure, at the outset, that thought is given to reducing the need to travel; consider the types of uses (or mix of uses) and the scale of development in order to promote multipurpose or linked trips.
- Sustainable accessibility - promote accessibility by all modes of travel, in particular public transport, cycling and walking; assess the likely travel behaviour or travel pattern to and from the proposed site; and develop appropriate measures to influence travel behaviour.
- Dealing with residual trips - provide accurate quantitative and qualitative analyses of the predicted impacts of residual trips from the proposed development and ensure that suitable measures are proposed to manage these impacts.
- Mitigation measures - ensure as much as possible that the proposed mitigation measures avoid unnecessary physical improvements to highways and promote innovative and sustainable transport solutions.

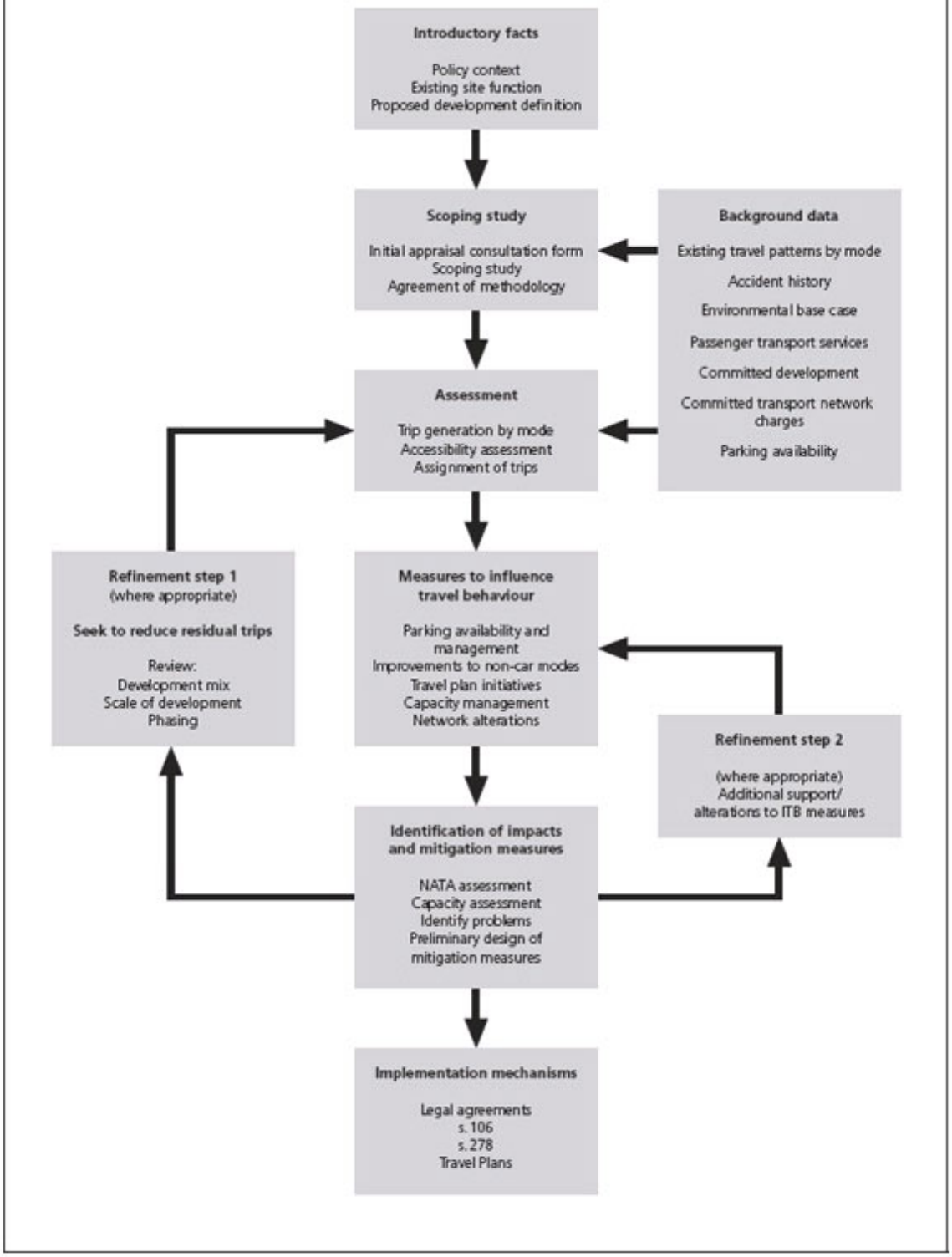
Figure 4.1: An iterative approach to transport assessment for a typical assessment process



4.4 An iterative approach may be necessary where initial work on a TA indicates that revisions may be necessary to the proposed development, or to the approach taken to the issues identified in paragraph 4.3. The iterative approach ensures that the stages of the TA are not viewed in isolation, but that the full implications of each stage are thought through and revisions made either to the development proposal or to measures considered at another stage. Where revisions are made, their implications are analysed across the whole proposal in turn. The final outcome is a TA that improves the development proposal to achieve the optimum level of sustainability.

4.5 The basic components in the process of producing a Transport Assessment or, at a lower level, a Transport Statement, are given in Figure 4.2.

Figure 4.2: Road map and contents of a transport assessment report



Development proposal and planning policy framework

4.6 A TA should be prepared with regard to the relevant planning policy framework for the development proposal, usually the RSS/LDF. It should also be consistent with the RTS/LTP. The TA should indicate the transport aspects of the proposal, how the proposal will help to deliver the aims and objectives of the development plan, and how it responds to relevant Government planning policy guidance and statements.

Existing conditions

4.7 In preparing a TA, a full description of existing site information should be provided by the developer. These baseline conditions need to be established accurately to understand fully the context of the development proposal. This description should include as a minimum:

Existing site information

- a site location plan that shows the proposed development site in relation to the surrounding area and transport system;
- the permitted and existing use of the site;
- a detailed description of the existing land uses in the vicinity of the site, including development plan allocations or potential future uses in the case of undeveloped sites;
- existing site access layout and access constraints, where appropriate;
- whether the location of the site is within or near a designated Air Quality Management Area (AQMA);
- any abnormal load uses of the current site;

Baseline transport data

- the quantification of the person trips generated from the existing site and their modal distribution, or, where the site is vacant or partially vacant, the person trips which might realistically be generated by any extant planning permission or permitted uses;
- existing public transport facilities (including provision/frequency of services, location of bus stops/train stations, park-and-ride facilities) in the study area; if available, the current level of patronage or usage on the public transport network in the vicinity of the site;
- parking facilities available in the vicinity of the site;
- existing pedestrian and cycle facilities in the vicinity of the site;
- pedestrian and cyclists movements in the vicinity of the site;
- a description and functional classification of the road network in the vicinity of the site;
- current traffic flows on links and at junctions within the study area;
- identification of the critical links and junctions on the highway network, with calibrated capacity tests to reflect existing conditions;
- for the study area, establish the current personal injury accident records for the most recent three-year period, or five years if this is considered to be more appropriate;
- a summary of planned transport improvements within the study area (including type of improvement, implementation schedule and sponsoring agency or highway authority);
- identify current peak periods on the adjacent road network and, as required, daily traffic flow data to

and from the development site or in the vicinity of the site;
- levels for air quality and noise for the highway network at the site entrance and any other locations where statutory limits might be breached by additional development traffic;
- baseline carbon emissions data for the site, broken down by mode.

4.8 The requirements above are not exhaustive and further supplementary information may be required to take account of local conditions and other material considerations. Equally, some developments requiring a TA may not need to cover all of the points above. Therefore, it is important that the scope of work at this stage is agreed during the preapplication consultation process.

Public transport assessment

4.9 A key issue in seeking the most sustainable solution for a particular development is the need to encourage the use of public transport. In addition to the basic data collection described in paragraph 4.7, an assessment should be made of the available capacity on the existing public transport infrastructure relevant to the development. The capacity of a public transport route or service is the maximum number of people that can be accommodated on the route within the licensing laws of that particular mode.

4.10 For major developments, it is important to identify the spare capacity on buses, trains and trams in order to establish the ability of the public transport network to accommodate any increase in demand associated with a proposed development. This is particularly important when considering rail network capacity, which is generally more problematic to expand than the bus network.

4.11 Such assessments will inform later stages in the TA process in respect of determining modal split, travel plan objectives and in appropriate cases, public transport infrastructure enhancement as part of an overall mitigation package.

4.12 A suggested methodology for assessing the capacity of the public transport network includes the following:

- Identify the analysis period, particularly the peak hours of the development and/or the entire transport system;
- Establish the total person trip generation from the proposed development for all travel modes;
- Estimate the likely modal split for the public transport network (buses, rail and tram);
- Identify the public transport services relevant to, and in the vicinity of, the proposed development;
- Estimate the existing capacity of the bus/train/tram service by multiplying the number of services by the maximum passenger capacity for each mode (bus, train carriages);
- Estimate the current level of patronage or usage on the public transport network, using the most comprehensive data publicly available;
- Estimate the spare capacity on the public transport network;
- Identify measures to address any shortfall in capacity, where applicable.

4.13 The methodology suggested above is intended to provide a general framework for assessing the capacity of the public transport network. It is important that further guidance is sought from the relevant authorities and public transport operators.

Walking/cycling assessment

4.14 Another key issue in assessing the sustainability of a development's location will be its accessibility for those walking and cycling. In addition to the basic data collection described in paragraph 4.7, an assessment should be made of the available capacity of the existing cycleway and footpath network in the area of the development. This assessment will help to inform the later stages of the TA process in respect of determining modal split, and travel plan objectives. It will also indicate what enhancements, if any, are required to the local cycleway and footpath network. These assessments should be undertaken using the appropriate analytical tools and methodologies, as agreed with the relevant authorities.

Road network assessment

4.15 In addition to assessing the public transport capacity and walking/cycling capacity, an assessment of the available vehicular capacity on the road network in the vicinity of the site should be undertaken in order to establish the potential impacts from the development, as well as the likely mitigation measures that may be required to sustain the development.

4.16 Consideration should be given to the available parking facilities in the vicinity of the site and the impact that development could have upon them. This assessment should be made in the context of the parking strategy set by the local planning authority.

4.17 These assessments should be undertaken using the appropriate analytical tools and methodologies, as agreed with the relevant highway authorities.

Traffic data and traffic forecast

4.18 The assessment should include recent counts (normally surveyed within the last three years) for peak period turning movements at critical junctions. In certain instances, for example, where there is known to be a significant level of heavy goods vehicles (HGV) traffic, a classified count should be provided. [2] Additional counts that may be required could include:

- manual turning counts (should be conducted at 15-minute intervals) to identify all relevant highway network peak periods;
- 12-hour/24-hour automatic traffic counts (ATC);
- queue length surveys at signal junctions to establish demand and actual traffic flows;
- journey time surveys;
- freight counts;
- abnormal load counts;
- pedestrian and cyclists counts.

4.19 The traffic data should reflect the normal traffic flow conditions on the transport network (e.g. non-school holiday periods, typical weather conditions etc.) in the vicinity of the site, and should be valid for the intended purposes. It should also take account of holiday periods in tourist areas, where peaks could occur in periods that might normally be considered non-neutral. The recommended periods for data collection are spring and autumn, which include the neutral months of April, May, June, September and October as described in DMRB Volume 13, Section 1, Part 4.

4.20 The criteria for the use of historical traffic data in a TA should be agreed by the LPA together with the appropriate highway authority at the pre-application stage.

4.21 Where there is a need to project existing or historical traffic data for future year assessments, the preferred option is the use of appropriate local traffic forecasts (such as TEMPRO), provided they offer a robust assessment. In some cases, National Road Traffic Forecast (NRTF) growth rates would be appropriate.

4.22 The use of any area-wide traffic models or background growth rates should be agreed with the LPA in conjunction with the relevant highway authority at the pre-application stage.

Safety considerations and accident analysis

4.23 The assessment should also identify any significant highway safety issues and provide an analysis of the recent accident history of the study area. The extent of the safety issue considerations and accident analysis will depend on the scale of the proposed development and its location. The need to minimise conflicts between vehicles and other road-user groups should be adequately addressed.

4.24 Critical locations on the road network with poor accident records should be identified. This is to determine if the proposed development will exacerbate existing problems or, if proposed, whether highway mitigation works or traffic management measures will help to alleviate the problems. The accident records at a particular location should be compared with local average accident rates. Where the SRN is involved, it is recommended that appropriate national statistics are also used as a comparison.

4.25 Site inspections should be conducted to determine if the proposed location and design of access roads (including visibility/sight distance restrictions) would create an increased potential for accidents. Local authorities should take account of the likely effect on road safety of any modification, and should require road safety audits where appropriate.

Proposed development

4.26 A detailed description of the proposed use or uses of the site should be provided. This should include as a minimum:

- site plan - provide plans and drawings showing site location and site layout and use;
- describe all the proposed land uses;
- scale of development - such as the number of residential units or gross floor area (GFA) of development - subdivided by land use where appropriate;
- site area in hectares;
- hours of operation - specify a weekly profile, including weekends where appropriate, over a 16 or 24 hour period. If the operation is seasonal, then this also needs to be specified;
- proposed access - describe arrangements, locations and method of linkage to existing transport infrastructure for all modes of travel (private cars, public transport, cycling, walking);
- servicing arrangements - describe routes and facilities for service vehicles;
- the traffic impacts of site construction works, including the requirements of abnormal loads in the construction, use and decommissioning of the present development;
- proposed parking strategy (number of spaces, parking accumulation, parking layout in relation to

other site elements, ratio of operational to non-operational spaces, method of car park operation, overspill parking considerations, establishment of/proximity to controlled parking zones, disabled parking, motorcycle parking, cycle parking);
- development phasing (where applicable) - provide years of first and full occupation, as well as intermediate years if appropriate.

4.27 The above requirements are not exhaustive and will require adaptation to reflect the type and scale of the proposed development.

Appraising the impact of the proposed development

4.28 PPG13 (Appendix C) states that LPAs should ensure that their approach to planning for local infrastructure is compatible with the New Approach to Appraisal (NATA). [3]

4.29 Throughout the NATA process, the Government's five objectives for transport as outlined in A New Deal for Transport and *A New Deal for Trunk Roads* White Papers are central:

- **Environmental** impact involves reducing the direct and indirect impacts of transport facilities on the environment of both users and non-users. There are ten sub-objectives, including reducing noise, atmospheric pollution (including that related to climate change and local air quality), impacts on countryside, wildlife, ancient monuments and historic buildings. See *The Environmental Objective* (TAG Unit 3.3);
- **Safety** is concerned with reducing the loss of life, injuries and damage to property resulting from transport incidents and crime. The two sub-objectives are to reduce accidents and improve security. See *The Safety Objective* (TAG Unit 3.4);
- **Economy** is concerned with improving the economic efficiency of transport. The five sub-objectives are to improve economic efficiency for consumers, business users and providers of transport, improve reliability and the wider economic impacts, and get good value for money in relation to impacts on public accounts. See *The Economy Objective* (TAG Unit 3.5);
- **Accessibility** is concerned with the ability with which people can reach different locations and facilities by different modes. See *The Accessibility Objective* (TAG Unit 3.6);
- **Integration** aims to ensure that all decisions are taken in the context of the Government's integrated transport policy. See *The Integration Objective* (TAG Unit 3.7).

4.30 Although this approach is typically applied when planning for local transport infrastructure, adopting this approach for TAs will ensure that a proposed development's impacts are considered in the context of two alternative scenarios - 'with development' and 'without development' - and will enable a comparative analysis of the transport effects of allowing the development to take place.

4.31 A TA should adopt the principles of NATA by assessing the potential impacts of a development proposal within the framework of the five NATA objectives. The following paragraphs summarise the issues that should be considered. For most TAs the full methodology recommended in NATA will not be appropriate. The Highways Agency's Project Appraisal Report System (see http://www.dft.gov.uk) may provide some useful guidance on methods more appropriate in these cases. TAs involving major new transport infrastructure should, however, employ the methods set out in NATA.

Accessibility

4.32 Developers or promoters of sites should undertake accessibility modelling to establish the level of accessibility of the site, and the results should be included within the TA.

4.33 The accessibility issues that should be assessed include:

- access to the transport system - locating access points and links for pedestrians and cyclists to the wider transport network;
- access to the local area - providing transport nodes or interchanges for the proposed development that will benefit other developments and the local community as a whole;
- community severance - ensuring that the development does not create barriers to access within the local community.

4.34 In order to determine the level of accessibility (in respect of public transport, cycling and walking) for a specific site, or relative levels of accessibility for multiple sites, the preferred methodology would be to undertake accessibility modelling. This can be achieved by using a standard assessment tool such as ACCESSION, [4] or any other appropriate tool.

Safety

4.35 The safety issues that should be assessed, including and in addition to the highway accident statistics described in paragraph 4.7, include:

- the potential for development-related or other transport accidents in the vicinity of the site; and
- perception of personal insecurity in and around the development site.

Economy

4.36 The economy issues that should be assessed include:;

- Government regeneration objectives (e.g. use of brownfield sites);
- non-motorised road users' journey time; [5]
- motorised road users' journey time reliability;
- user costs; [6]
- the construction, land, preparation, supervision and subsequent maintenance costs of development proposals (including mitigation works).

4.37 In addition to public transport and pedestrian/cycle accessibility, accessibility modelling tools may be used to calculate vehicle journey times as an extension to the work undertaken by developers to address accessibility issues in their TA.

Environment

4.38 The environment issues that should be assessed include:

- nuisance to people caused by transport-related noise and vibration generated by the development;
- the emission of greenhouse gases as a result of the transport implications of the development and the impact of changes in local air quality on people;
- the transport-related impacts of the development on areas of designated landscape importance;
- whether the site is in an air quality management zone or is likely to cause a breach of current legislation;
- the transport-related impact of the development on areas of nature conservation or biodiversity and Earth heritage interests (such as geology) where they interact with roads;
- heritage of historic resources where they interact with development-generated transport and/or proposed mitigation measures;
- the transport-related impact of the development on the townscape;
- appraisal of the transport-related impacts of the development on the water environment;
- the impact of the transport implications of the development on physical fitness;
- journey ambience.

4.39 The potential for environmental impacts that would breach a statutory limit should be addressed. LHAs and the HA have a statutory duty to prevent a breach of statutory limits (e.g. air quality) due to incremental change of volumes of vehicular traffic on their networks.

4.40 If a development is likely to generate significant vehicle trips on the local highway network or SRN, which in turn would be likely to cause a breach of statutory limits, the relevant authority could be held legally responsible if a breach were to occur. In these circumstances, the developer may be required to propose mitigation measures that will avoid such a breach. If a breach remains likely, this could be a material consideration in the assessment of the planning application and may result in the refusal of planning permission.

4.41 Therefore, where a development proposal is likely to generate significant traffic-related environmental impacts, the TA should address such matters. Alternatively, if the development requires a formal environmental impact assessment (EIA), which deals with these issues separately, this should be cross-referenced in the TA.

4.42 In any event, it is likely that the developer would be required to provide mitigation measures to address any adverse environmental impacts arising from the proposed development and not simply those where breaches of statutory limits may be likely to occur.

4.43 A summary of the key environmental issues relating to transport, including potential impacts and reference documents containing the relevant policies and statutes, is provided in Appendix C. Further clarification should be sought from the Environment Agency (EA).

Integration

4.44 The integration issues that should be assessed include:

- the potential for the development to influence interaction among all transport modes (motorised and non-motorised), either in isolation or in combination with other developments;
- interaction between the development proposal and wider issues of Government policy such as environmental sustainability and health;

- integration of the development proposals with local, regional and national land use policies;
- bringing communities together/social inclusion;
- separating communities as a result of cutting off existing movement paths - severance/social exclusion.

2 Classified Count - identifying all vehicles types separately

3 Further details on NATA are available online at www.webtag.org.uk

4 ACCESSION - Geographical Information System based accessibility computer analysis tool to measure journey distances and times for all modes of travel between points (see web-link www.accessionGIS.com)

5 The aim is to bring about an improvement (reduction) in non-motorised journey times between origins and destinations.

6 This aspect of comparative assessment is related to the identification of any potential incremental change in the costs of travel due to implementation of the development proposals.

Assessment years

4.45 The assessment year(s) in respect of capacity analysis for the transport network should be consistent with the size, scale and completion schedule of the proposed development, and that of other major developments in the vicinity of the site, as well as planned improvements to the transport system.

4.46 The appropriate horizon assessment year should be agreed with the relevant authorities during pre-application consultations.

4.47 In addition to the opening year, one or two further assessment years should be considered. For the local transport network, a development should be assessed with regard to the LDF, and for a period of no less than five years after the date of registration of a planning application. Should the development take place over a longer period, it would be appropriate to extend the length of the assessment period. The development proposal should be supported by an acceptable TA, carried out in accordance with the GTA. This will help to ensure that the transport impacts of the development are more accurately applied to a situation where all committed local transportation infrastructure improvements are in place.

4.48 For the SRN, the future assessment year should normally be ten years after the date of registration of a planning application for the development, in line with the forward horizon of the RTS. Should the development take place over a longer period than the horizon of the wider planning framework, a longer period of assessment will need to be agreed with the HA. The development proposal should be supported by an acceptable TA, carried out in accordance with the GTA, or on a basis otherwise agreed with the Agency. This timescale broadly reflects the Department for Transport’s current funding regimes, particularly for major improvement schemes such as the Targeted Programme of Improvements (TPI). The length of this assessment period, at the discretion of the Secretary of State for Transport, can be amended for individual cases, where there is a wider political and economic imperative or, for example, where proposals will take a long time to develop fully. For further details please refer to DfT Circular 02/2007, *Planning and the Strategic Road Network*.

4.49 The appropriate horizon assessment year should be agreed with the relevant authorities during pre-application consultations.

4.50 The assessment years should consider person trips from all committed developments that would impact significantly on the transport network, particularly where they substantially overlap, such as at the same junctions and/or on roads as the proposed development. The committed developments will typically include development sites that have extant planning permission as well as development plan allocations in an adopted or approved plan. Developments that have been completed but not fully occupied should be included in these assessments. The inclusion or exclusion of committed developments in the assessments should be agreed with the relevant authorities at the pre-application stage.

4.51 The key issue is the need to ensure that development proposals strive to achieve nil detriment ('no worse off') to the strategic network, for the opening year and appropriate horizon year.

4.52 Government policy on new junctions on the SRN sets out a progressive response to proposals as a result of a development. Whilst new junctions may be acceptable on an all purpose trunk road, they will be unlikely to be acceptable on a motorway. Where a junction has been deemed acceptable, the assessment horizons for capacity and design life would be in accordance with DfT Circular 02/07 *Planning and the Strategic Road Network* and the *Design Manual for Roads and Bridges* (DMRB) respectively. [7] For further details please refer to DfT Circular 02/2007, Planning and the Strategic Road Network.

Analysis period

4.53 The analysis period should reflect the person trip generation characteristics of the proposed development, as well as conditions on the adjacent transport system. It should be related to known and anticipated peak patterns of demand both for the transport system and development-generated trips.

4.54 A TA should normally consider the following analysis periods:

- weekday morning and evening peak period trips for the adjacent transport system, with particular focus on the peak period traffic flows on the road network;
- weekday morning and evening peak period trips for the proposed development;
- an off-peak period selected to assess level of greatest change resulting from the development;
- weekend peak period if the development is anticipated to generate significant levels of new trips at weekends or the adjacent transport system suffers from greater levels of congestion than during weekdays.

4.55 The analysis period should also include an assessment of the combination of development related and non-development-related trips.

4.56 The analysis period should be agreed with the relevant authorities at the pre-application stage, including the HA where there is a potential impact on the SRN.

Development trip generation

4.57 The first step in quantifying the impact of a proposed development on the transport system is to provide an estimate of the person trips (for all modes) that are likely to be generated by the development.

4.58 In preparing trip estimates, the travel characteristics of the proposed development should be established, and this should be based on a multi-modal assessment that identifies the number of person trips by mode and time period.

4.59 There is a range of trip rate database tools available that contain national, or in some cases more local, trip rates measured for typical land use sites. However, obtaining an accurate comparison is not always straightforward, especially for atypical developments. In these instances it is recommended that, unless there is a clear valid comparable situation, the assessment trips should be constructed from first principles based on a detailed analysis of the daily operation of the proposed development.

4.60 In all cases, analyses of development-related trips by using an appropriate database or an alternative methodology should be agreed with the relevant authorities, as this will form the major element of the TA.

4.61 Typically, trip generation assessments are based on the identification of suitable (person or vehicle) trip rates, having regard to industry standard databases such as TRICS, GENERATE and TRAVL. [8] These trip rates should be derived on the basis of site-specific details of the proposed development - for example, proposed gross floor area, number of dwelling units, number of hotel rooms, availability and accessibility of non-car modes of travel, provision and nature of travel plans.

4.62 If sites with comparable accessibility [9] as well as scale and location cannot be found when using a standard database system, 85th percentile trip generation rates should be considered as a starting point for assessment of the baseline trip generation. The reasons for this are:

(i) since the level of public transport and non-car mode travel for sites within such trip databases is often unknown, a true like-for-like comparison is unlikely to be achieved; and

(ii) it is considered that the use of average trip rates with deductions for sustainability measures could result in overly optimistic trip rates for the proposed development.

4.63 In cases where the degree of comparability of source data sites to the development proposals is difficult to determine, it may be appropriate (in consultation with the appropriate highway authorities) to undertake a sensitivity analysis using both 85th percentile and average (50th percentile) trip rates to inform the process of the differences between these two assumptions.

Calculating vehicular trip generation

4.64 As certain types of development, particularly retail, can have a significant effect on vehicular traffic, consideration may be given to the different types of vehicular trips that are likely to be generated, such as:

- **New trips** - these are trips that do not appear anywhere on the road network prior to the opening of the development. For many types of development, this element of generated trips can be relatively small; however, it is customary to consider all trips from residential developments as being new to the network.

- **Pass-by trips** - these are trips that are already present on the road network directly adjacent to the point(s) of access to the site, which will turn into the site. This type of trip is likely to be relevant only where the site is located on a major arterial route within an urban area. If it can be clearly demonstrated that there will be a proportion of true 'pass-by' trips that were already on the network, then these can be deducted from the calculated generation for the development.
- **Linked trips** - these are trips that will have multiple destinations either within the proposed development site. Examples include trips to food and non-food retail, between both the development site and existing adjacent sites or between the development site and an established town centre. Where there is a high probability that there will be a proportion of linked trips between two uses on a development, it is customary only to 'count' those trips once for the development as a whole, and not effectively double-count them by attributing two visits and departures affecting the sections of highway network being assessed.
- **Diverted trips** - these are trips that are already present on the local road network but not the road(s) from which site access is taken and will divert from their existing route to access the site. These are similar to pass-by trips, but they have to deviate to make use of the development under consideration. It is important to identify the potential for such diversion to occur so as to ensure that the correct flows are assessed at specific junctions on the highway network. Diverted trips will tend to return to their original route after visiting the development under consideration.
- **Transferred trips** - these are trips that are already present on the local road network, accessing similar existing sites in close proximity to the proposed development and will have the potential to transfer their destination to the proposed development. Slightly different from diverted trips, these wholly transfer from using an existing development to a new one, e.g. shoppers switching to a new supermarket that is more conveniently located for them.

4.65 The level of reduction in vehicular trip generation based on the mix of trips, as set out above, will be to a degree subjective and dependent on the specific characteristics and location of the proposed development. The methodology for deriving the development's vehicular trips and appropriate level of trip reduction, if any, should be agreed among the developer, the LHA and/or the HA during the pre-application consultations.

4.66 For large developments, the impact of construction traffic will require separate consideration. The assessment of construction traffic should identify the time period(s) during which construction activities will take place, the numbers of trips likely to be generated, the vehicle type and, for heavy construction traffic, an appropriate diversion route or a traffic management plan to minimise local impacts.

Adjustment of development vehicular trips

4.67 In some circumstances, the extent of access by non-car modes of transport may suggest an adjustment of development-generated vehicle trips. This is likely to be the case where new sustainable transport infrastructure, such as cycleway or bus services, is proposed by the developer. It may also be appropriate when a proposed development is located where there is a particularly high-quality and accessible existing public transport system.

4.68 The work undertaken to analyse public transport network capacity will be important at this stage, to ensure that assumptions are not erroneously made regarding the ability of existing services to cope with development trips. At this stage the TA should identify whether the intended level of public transport trips from the development can be met by existing services, or whether the development mitigation package

should enhance the level of service.

4.69 Where a development proposal includes significant improvements to non-car infrastructure, it is more likely that the LTA/LHA will accept reductions in car-related trip estimates.

4.70 The element of development trips that is likely to be the least sustainable is single occupancy private car. Hence it would be beneficial to place significant emphasis on reduction of this category of trips throughout development proposals and the TA preparation.

4.71 It is important that the appropriate level of reduction, if any, should be agreed among the developer, the LHA and/or the HA preferably at the pre-application consultation stage.

Trip distribution and assignment

4.72 Prior to the distribution and assignment of development-related person trips, it is important to establish a development catchment area and identify the main population zones within it. This catchment area should be discussed and agreed with the relevant authorities from the outset. It is important to note that proximity to the highway network and, in particular, the SRN or other higher standard routes may have a significant impact on the extent of the catchment area to be considered.

4.73 It is recommended that the distribution of development-related person trips be based on an appropriate methodology. These include, but are not limited to, the use of Geographical Information Systems (GIS) based census data analysis, a gravity model, [10] existing traffic flow patterns, area-wide traffic models (if available) and, by analogy, travel patterns for similar developments in the vicinity of the site.

4.74 For some large retail developments, it is commonplace to undertake a series of key assessments in the context of *Planning Policy Statement 6: Planning for Town Centres* (PPS) 16 which will have analyses of customer catchment area and home locations. Where these are available, the findings of such assessments should be used to validate the trip distribution assumptions.

4.75 The agreed trip distribution should then be used to assign development trips to the transport network, taking due account of the impact of the various trip types, as noted earlier.

Environmental impact issues

4.76 As discussed earlier in sections 4.26-4.44, the environmental impacts of any significant development need to be addressed. This might be covered by a separate Environmental Statement (ES), which involves an assessment of a development’s potential environmental implications, including those that are transport-related. This will help ensure that the significance of the predicted impacts and the scope for mitigating them are properly addressed at the outset.

4.77 As part of the scoping exercise for the ES, it may be decided that an assessment of air quality and noise impact is required. Such an assessment should identify, in particular, traffic data such as peak hour traffic flows, 18-hour traffic flows, Annual Average Daily Traffic (AADT) flows, percentage of HGVs, traffic speeds for the surrounding highway network and daily traffic generation forecasts for the development proposal. Where appropriate, daily traffic generations of the extant or historic site use may also be required.

4.78 The LHA and/or the HA would require assessment of the environmental impact from any increase of traffic on the highway network where statutory limits might be breached. The same is true if any highway mitigation measures were to be proposed as a result of the development. Further details on environmental assessments can be found in Circular 02/99 published by the Department of the Environment, Transport and the Regions (DETR) in 1999 and available from the Communities and Local Government website.

Promoting smarter choices via travel plans

4.79 Smarter Choices are techniques for influencing people's travel behaviour towards more sustainable options, such as encouraging school, workplace and individualised travel planning. They also include measures such as individualised marketing, personalised journey plans, public transport information and marketing initiatives, car sharing schemes and car clubs, plus measures that reduce the need to travel, such as video conferencing and teleworking.

4.80 A travel plan (TP) is a package of site-specific initiatives aimed at improving the availability and choice of travel modes to and from a development. It may also promote practices or policies that reduce the need for travel. TPs are becoming an increasingly important tool in the delivery of sustainable outcomes. They provide, together with transport assessments, the mechanism for assessing and managing access to sites. In addition, they can help improve accessibility, both to and from the site, and to local amenities and services.

4.81 PPG13 states the Government considers that a travel plan should be submitted alongside planning applications that are likely to have significant transport implications. Local authorities can help facilitate the development of effective travel plans by ensuring that measures in support of them are incorporated in local planning policies, including the LDF and LTP, and clarified through supplementary planning advice. A requirement for a TP should be established at the pre-application stage. The TP should be tailored to address the site-specific issues relating to the proposed development.

4.82 During the pre-application consultations the use of an area travel plan and co-ordination with travel plans from adjacent developments should also be considered. The use of area and site-specific travel plans is an important mechanism in the underlying aim to manage vehicle trips at source. Whenever a site-specific TP is proposed, the developer should ascertain the existence of an area-wide TP. Where one exists, the site-specific TP should integrate with the area-wide TP.

4.83 Detailed guidance on securing travel plans through the planning system is available on the DfT's web site at www.dft.gov.uk. TfL has also produced more detailed guidance for the London area, available at www.tfl.gov.uk.

4.84 Detailed guidance on other Smarter Choices techniques, and the promotion of sustainable transport modes more generally, is provided in the section of the DfT web site.

Transport impacts and mitigation measures

4.85 Government transport policy is, wherever possible, to seek alternative solutions to building new roads, by reducing the impact of road users on each other and the environment, improving road performance through improved network management and facilitating smarter journey choices. The presumption should be to give preference where possible to solutions other than the construction of new

roads.

4.86 The information provided at the pre-application stage and in the TA should be reviewed by the LHA and/or the HA, as appropriate, with the aim of determining the type and scope of mitigation measures to be provided. This process will be undertaken in conjunction with the LPA.

4.87 In doing so, they should have regard to the Traffic Management Act 2004, which places a network management duty on local traffic authorities in England. Planning authorities in two-tier areas and developers could usefully liaise with local traffic authorities where their development or works affect the movement of traffic on the road network. Traffic authorities should work closely with such planning authorities, as well as developers, utility companies and others, so that they are aware of the duty. In this way joint consideration may be given to the impacts that both developments and their associated works may have on the movement of traffic. Further information on the duty and good practice advice on techniques and approaches can be found in *Traffic Management Act 2004: Network Management Duty Guidance* November 2004 on the Department's website

4.88 The TA, along with other supporting documents, will form the basis for the LPA's, LTA's, LHA's and/or HA's response to a proposed development and, in particular, the type or level of mitigation that will be required. Typically, mitigation could be required where the proposed development is likely to impact adversely upon the transport system and/or result in breaches of statutory environmental limits.

4.89 Where mitigation is proposed, following agreement on the scope of mitigation to be provided, the relevant authorities will require or recommend that appropriate conditions be attached to any planning permission granted. The conditions or obligations should specify the improvements that will be required to accommodate the proposed development's trips by all modes. They should also ensure the safety of all road users, including non-motorised users or vulnerable users. Conditions or obligations may require that necessary mitigation measures be completed before first occupation of units on the site, or before work on the development site itself commences if construction traffic is a major issue.

4.90 In all cases, the transport mitigation plan or package of measures should focus on maximising sustainable accessibility to the development. At the outset, the mitigation plan should consider measures such as: improvements to development site layout to facilitate walking and cycling as well as accessibility to the local public transport infrastructure; improvements to walking and cycling provisions in the vicinity of the development site; and improvements to the local public transport network.

4.91 The scope and implementation strategy for the improvements suggested above should be agreed with the relevant authorities.

4.92 If the TA confirms that a development will have material impact on the highway network, the level of impact at all critical locations on the network should be established. A particular example of material impact would be a worsening of congestion. In congested areas, the percentage traffic impact that is considered significant or detrimental to the network may be relatively low (possibly below the average daily variation in flow), and should have been determined in discussions with the relevant highway authorities. For the avoidance of doubt, the 1994 guidance regarding the assessment thresholds of 10 per cent and 5 per cent levels of development traffic relative to background traffic is no longer deemed an acceptable mechanism, since it creates an incentive in favour of locating development where high levels of background traffic already exist.

4.93 If the mitigation measures require physical improvements to the highway network, the developer should ensure that, in any design of mitigation works, appropriate design guides and parameters are used. Road Safety Audits may be required for any development-related highway works and, when produced, should be conducted in compliance with the relevant standards.

4.94 In respect of the SRN, proposed mitigation measures should provide capacity that is comparable to the general capacity of that part of the network and not, for example, seek to produce a junction with significantly more capacity than the surrounding SRN.

7 The latest DMRB guidance is available at www.highways.gov.uk

8 These are examples of trip-rate database systems which are used in England to predict trip rates for proposed land uses

9 Sites with similar levels of public transport, cycling and pedestrian accessibility should be found before a sufficiently comparable trip-rate prediction can be made from the industry available database systems.

10 A Gravity model is a simple assessment technique that uses population within geographic zones as a proportion of the total population within a catchment area to give a likely proportion of trips arriving at and departing from a development site by highway route.

Chapter 5: The link with the development plan making process

5.1 National planning policy as set out in PPS1, PPS11 and PPS12 emphasises the requirement for development plans to be founded on 'a robust and credible evidence base'. [11]

5.2 Development plans will only be credible, authoritative and deliverable if transport considerations are fully factored into their development from the outset.

5.3 Within this context it is clearly important that the transport impacts of alternative spatial development patterns are properly assessed at an early stage and throughout the planmaking process as an integral part of the sustainability appraisal of emerging plans. Appropriate policy responses must be developed to reduce the need to travel and promote sustainable transport choices.

5.4 The assessment methodologies and assumptions applied in assessing the transport implications of a major development at the planning application stage can also be employed in testing development plan options, although the level of detail underpinning the analysis may be lower, particularly at a regional level.

5.5 It will be beneficial for the planning body/authority to ensure full engagement of all stakeholders throughout the development plan process.

Regional and local planning framework

5.6 PPS11 Regional Spatial Strategies and PPS12 Local Development Frameworks set out policy advice on how integration between transport and spatial planning can be achieved at regional and local levels respectively. Guidance on undertaking sustainability appraisal is set out in *Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents*.

5.7 RPBs may wish to consider the commissioning and development of region-wide transport models to evaluate the transport impacts of alternative spatial development patterns and regionally significant developments. As part of the process it is beneficial to test for what is sustainable and deliverable.

5.8 LPAs may seek to use existing regional, sub-regional, or local transport models where available and/or to undertake their own separate assessments of the transport impacts of alternative strategies in emerging core strategy DPDs. They may also seek to do this for any alternative sites that are proposed in site allocation documents or action area plans.

5.9 There is a wide variety of modelling and forecasting tools available to authorities, and there is no requirement to follow any particular process. Whilst it is recognised that the development and use of transport models can require significant resources, the benefits cannot be underestimated. It will be for authorities to decide whether transport modelling is most appropriate and useful in their area and, if so, at what level, having regard to the requirement for a robust and credible evidence base.

5.10 In assessing the transport impacts of alternative spatial scenarios it is important to make full use of existing information that is relevant. Many transport and land-use models and/or studies carried out by the HA and PTAs, as well as any other studies, may represent a substantial source of information. This includes transport assessments undertaken for recent development in the area. LTPs may also provide a valuable resource for local transport analysis.

5.11 It may be beneficial for RPBs, LPAs and other stakeholders to work jointly to develop regional and local models in order to undertake these assessments.

5.12 At both levels, but more particularly at the LDF stage where more detail is available, it is important that the cumulative effects of multiple potential developments should be assessed, so as to ensure that interaction effects of different combinations of sites on the highway network are fully understood.

5.13 This approach would also assist the early identification of potential environmental difficulties on the highway network, which can then be considered in greater detail through the development plan process.

5.14 The NATA may provide a useful framework for assessing the overall transport impact of a major development. The NATA recommends the assessment of a wide range of environmental, social and economic impacts to enable sustainable decisions to be made. The NATA also gives advice on how more detailed assessments can be summarised in a consistent way, so that different options can be easily compared with one another in a consistent manner.

5.15 When assessing the development of individual sites (as proposed in the relevant allocations/action area documents), trip generation estimates should, where possible, be derived using similar methodologies and assumptions as are applied in the planning application stage. The fundamental issue is the need to establish the amount of trips and/or residual traffic that would be generated by the development proposals.

5.16 Models or reports should provide an indication of the operational capabilities and deficiencies of the transport system, particularly on the highway network, and help establish a benchmark or baseline for assessing the potential impacts of development aspirations on the transport system.

5.17 Transport models or network reports should be regularly updated to reflect programmed improvements to the transport system, as well as the emergence of development aspirations and proposals in neighbouring areas. This will allow for the assessment of cross-boundary impacts.

Strategic road network

5.18 The HA will work with developers to secure delivery of their proposals in such a way that they minimise any additional burden on other users of the strategic road network. Development should normally be in line with policies and proposals already set out in the development plan. Where development proposals are fully consistent with the adopted development plan, the HA would not expect to have to engage in the full assessment process, provided there had been no material changes after LDD adoption. In such circumstances, consideration would normally be limited to the agreement of detailed access arrangements (including mitigation measures) rather than the principle of the development itself.

11 PPS 11 (para. 2.49); PPS12 (para. 4.24)

List of abbreviations

AADT	Annual average daily traffic
AQMA	Air quality management area
ATC	Automatic traffic count
CLG	Communities and Local Government
DETR	Department of the Environment, Transport and the Regions
DfT	Department for Transport
DLTR	Department for Local Government and The Regions
DMRB	*Design Manual for Roads and Bridges*
EA	Environment Agency
EIA	Environmental impact assessment
ES	Environmental Statement
GFA	Gross floor area
GIS	Geographical Information System
GTA	*Guidance on Transport Assessment*
HA	Highways Agency
HGV	Heavy goods vehicle
HOV	High occupancy vehicle

IHT	Institution of Highways and Transportation
ITB	Influencing travel behaviour
ITS	Intelligent transport systems
LA	Local authority
LDD	Local development document
LDF	Local development framework
LHA	Local highway authority
LPA	Local planning authority
LTA	Local transport authority
LTP	Local transport plan
NATA	New approach to appraisal
NRTF	National Road Traffic Forecast
ODPM	Office of the Deputy Prime Minister
PPG	Planning Policy Guidance Note
PPS	Planning Policy Statement
RPB	Regional planning body
RSS	Regional spatial strategy
RTS	Regional transport strategy
SRN	Strategic road network
TA	Transport assessment
TAG	Transport analysis guidance
TP	Travel plan
TS	Transport Statement

List of annexes

Appendix A

Initial appraisal consultation form

Appendix B

Indicative thresholds for transport assessments

Appendix C

Environmental impacts

Appendix D

Role of key stakeholders

Appendix E

Delivery mechanisms: legal agreements