# 1 Introduction

The National Performance Framework identifies the Scottish Government's purpose and values. It sets out National Outcomes which describe the kind of Scotland it aims to create.

To help deliver these outcomes, the National Transport Strategy sets out a vision for transport in Scotland. The aim is to have a safe and accessible transport system which will help make Scotland healthier and fairer for communities, businesses and visitors.

The Scottish Transport Appraisal Guidance (STAG) supports this by providing a framework to identify and appraise transport interventions. The process is designed to provide investment decision-makers with the information they need in a clear, structured format.

STAG is a key part of a transport related Business Case. Specifically, STAG aligns with a Strategic Business Case (SBC) for interventions. An appraisal using STAG will generate the Strategic Case and the Socio-Economic Case included in the 5-case model typically used in business case development.

## 1.1 What is STAG?

**STAG** stands for **S**cottish **T**ransport **A**ppraisal **G**uidance.

STAG represents best practice guidance for transport appraisals and follows a structure and methodology that is consistent with the UK Government's Green Book.

A Technical Database is also available which provides detailed advice on how to use STAG.

## 1.2 When Should STAG be Used?

An appraisal using STAG is required whenever Scottish Government funding, support or approval is needed to change the transport system. It may also offer a suitable framework for other funders.

STAG is **not** usually adopted when considering maintenance issues of an existing asset which will not significantly change or affect the operation of the transport system. However, it may be appropriate in some circumstances.

## 1.3 STAG and the Place Principle

The Place Principle is an approach to change based on a shared understanding of what a particular place is for and what it wants to become. It aims to ensure investment is people and community focussed.

The Place Framework is a consistent appraisal framework for all local capital investments. The Framework helps ensure that decision makers are provided with a good understanding of the place in which investment is being proposed.

STAG is aligned with the Place Framework and your appraisal should consider the Place Framework through all stages.

## 1.4 How does STAG Fit with Other Transport Assessment Guidance?

STAG is part of a suite of appraisal and assessment guidelines within the transport sector.

**Mode-specific Transport Guidance**

STAG is applicable to all transport interventions, regardless of the transport modes affected. Certain proposals which emerge from the STAG process may then require mode-specific transport guidance.

Examples include:

- Project Acceleration in a Controlled Environment (PACE) – for the rail industry
- Design Manual for Roads and Bridges (DMRB) – for roads schemes

Transport Scotland's Business Case Development Process shows how PACE and DMRB fit alongside STAG in the wider business case process.

STAG has been designed to be complementary to these other processes. Information derived during the STAG process can be used in the development of these mode-specific projects.

**Development Planning**

An appraisal using STAG should be completed before submitting a planning application. Any supporting Transport Assessments should be completed after the appraisal process, allowing all relevant transport issues to be considered.

Appraisals which cover development plans should refer specifically to Development Planning and Management Transport Appraisal Guidance (DPMTAG).

**Impact Assessments**

Undertaking an appraisal using STAG does not remove the need for other statutory obligations. All relevant and applicable Scottish and UK legislation must be adhered to.

There is some overlap between STAG and other impact assessments, including:

- Strategic Environmental Assessment (SEA)
- Equality Impact Assessment (EqIA)
- Island Communities
- Fairer Scotland Duty
- Child Rights and Wellbeing
- Habitats Regulations Appraisal

Duplication of effort can be avoided if the available guidance is reviewed prior to undertaking the appraisal. This will ensure that there is continuity in the methodology and approach adopted.

### 1.5 Help and Advice

Transport Scotland can provide advice on the use of STAG. Those undertaking appraisals may wish to discuss the scope with Transport Scotland prior to commencing.

Our website includes advice on commissioning STAG studies, including examples and other training resources.

For general enquiries contact: scot-tag@gov.scot

### 1.6 Business as Usual Updates

The communication of Business-as-Usual Updates to the Technical Database will be announced on our website.

# 2 The STAG Process

## 2.1 The Key Concepts in STAG

There are six key concepts which underpin the Guidance.

### Objective-led rather than solution-led

An objective-led process avoids pre-conceived solutions. Appraisals are expected to explore location-specific problems and opportunities, set objectives and demonstrate how options perform against them.

STAG embraces Scottish Government policy across a range of areas. As part of your options appraisal, you will need to assess how options perform against current Scottish Government policy objectives. The Policy Assessment Framework (PAF) tool should be used.

### Evidence-based

Clear links must be demonstrated between problems (or opportunities) and Transport Planning Objectives. Studies which do not demonstrate a case for change should not proceed beyond the Decision Point at the end of this stage.

### Collaborative

Participation and engagement are key elements of the appraisal. The interests of stakeholders and those affected by the change should be considered in an inclusive, open, transparent and appropriate manner. Effective engagement is an important element of all STAG stages.

### Proportionate

The level of detail required in your appraisal will be determined by the nature and scale of the impacts being addressed as well as any associated risks. It is recognised that more detailed information will be required should the appraisal progress through the later stages of the Business Case process.

### Does not prioritise between options

Appraisals are aids for decision-makers which allow them to make informed choices. STAG may provide an initial rationale for investment; however, it is important that the appraisal outcomes are revisited as the Business Case for an intervention develops.

### Recognises Uncertainty

Recognising and dealing with uncertainty is a critical aspect of appraisal, and scenario planning approaches have been applied for the development of both NTS2 and STPR2. Uncertainty analysis is built into STAG throughout the appraisal lifecycle and should provide a greater understanding of the potential impact of disruptors and uncertainties at each stage of the process.

## 2.2 Participation and Engagement

Participation and engagement are extremely important. Appraisals should ensure that the interests of all affected by the change are considered in a manner that is inclusive, open, transparent and appropriate.

All stages of appraisal will include participation and engagement with those affected by the change. Examples of how engagement can benefit each stage have been included below:

### Case for Change

Good engagement will assist in understanding how people use the transport system and will help identify problems and opportunities which will be sought and developing objectives.

### Preliminary Options Appraisal

Engagement will help develop the long list of possible solutions and may will help to identify the range of possible impacts.

### Detailed Options Appraisal

Engagement with those affected may assist in gathering evidence on the possible impacts of your proposed options.

### Post Appraisal

Engagement at this stage will assist in gathering evidence on the actual impacts that have occurred since the implementation of the solution.

Additional guidance on effective stakeholder and public engagement is in the Technical Database.

## 2.3 What Should be Reported as Part of a STAG Appraisal?

The appraisal reporting is formed of a Case for Change report; where appropriate, a Preliminary Options report; and a Detailed Options report.

# 3 Case for Change

## 3.1 Purpose of Case for Change

This stage can be viewed as the foundation of the business case and should clearly demonstrate a robust need for change at the Decision Point before moving to the next stage.

To support this process, you are encouraged to use the Theory of Change concept included in the UK Government's Guidance on Evaluation.

## 3.2 Problems and Opportunities

Location-specific problems or opportunities should be the rationale for any appraisal.

*Problems* are undesirable or harmful circumstances with the transport system.

*Opportunities* are where a change to the transport system may lead to a positive outcome.

Problems and opportunities can be actual or perceived. It is important to differentiate between perceived problems and opportunities which can be corroborated by independent evidence and those which are perceived but for which evidence is either not available or inconsistent.

As outlined in the Place Framework, the identification of problems and opportunities should focus on people and communities. Your appraisal should aim to answer the questions outlined within the Place Framework Narrative including:

- Why is change needed?
- Where do things need to change?
- What changes will make a difference?

Your appraisal should identify problems and opportunities for specific groups of people, such as those with disabilities, women, and young people. The nature and scale of any problems and opportunities should be demonstrated through clear evidence and you should avoid relying on contextual information alone.

Your supporting analysis should explore how and why the problems and opportunities are being experienced and the consequences for the study area. A logic map may be helpful in demonstrating the relationship between evidence and identified problems and opportunities. However, causal links can be complex and logic maps need to be accompanied by a written explanation.

## 3.3 Constraints

Constraints represent circumstances which may impact on the delivery of the potential interventions. These can include:

- The statutory powers of an authority to achieve change
- The funding levels that can realistically be obtained
- Scottish or UK legislation
- Scottish or UK fiscal policy

Constraints which could influence option identification and development should also be identified.

### 3.4 Risk and Uncertainty

A Risk and Uncertainty Log should be established as part of the Case for Change stage. This is a live document to be reviewed and updated throughout the business case cycle.

*Uncertainties* are circumstances for which there is limited knowledge about past, current or future events and the systems in which these events occur.

*Risks* are a low-level uncertainty where the potential outcome can usually be defined and therefore the risk more easily quantified.

At this stage, the Risk and Uncertainty log should identify how the case for change (as presented in the report) could be affected. This should include any uncertainties regarding the information used to evidence problems and opportunities and how this might change in the future.

The log should include details of how the risks and uncertainties will be either:

- Removed
- Mitigated
- Managed

The uncertainty analysis is expected to be proportionate to the nature of the study and the risks and uncertainties identified.

### 3.5 Participation and Engagement

Your appraisal will need effective participation and engagement to demonstrate to decision makers the impact of problems and opportunities on people and businesses in the study area.

Appraisals should demonstrate an understanding of how the transport system is used by the community. The impact of interventions on the community must also be established. To do this, the local community should be consulted alongside key stakeholders unless there is a specific reason why this is unnecessary. For example, if the appraisal were able to demonstrate that it could draw on evidence from other work.

You are expected to make every effort to ensure that consideration is given to identifying problems and opportunities for specific groups such as people with disabilities, women, and young people. This should be a key consideration when scoping participation and engagement.

### 3.6 Objective Setting

The Transport Planning Objectives form the basis of the options appraisal and, during Post-Appraisal, will be central to Monitoring and Evaluation. The analysis of problems and opportunities is crucial in setting robust Transport Planning Objectives.

#### Transport Planning Objectives

Transport Planning Objectives must express the change sought in the study area.

Objectives should describe how problems will be addressed and opportunities realised without indicating potential solutions.

In the context of objective setting, the Theory of Change concept can help demonstrate how problems and opportunities inform the Transport Planning Objectives and metrics used for monitoring and evaluation. You should also consider the STAG Criteria and Established Policy Objectives when identifying Transport Planning Objectives.

### STAG Criteria

The STAG Criteria reflect the Scottish Government's priorities and ensure all relevant impacts are considered. Consequently, you should not begin the process of formulating Transport Planning Objectives by considering only the national objectives. This could dilute the importance of local objectives.

The STAG Criteria are:

- Environment
- Climate Change
- Health, Safety and Wellbeing
- Economy
- Equality and Accessibility

### Established Policy Objectives

Relevant national policies and objectives should be identified and agreed as part of the Case for Change stage.

These will then be set out in the PAF Tool which will be used to assess options against established policy objectives in the Preliminary and Detailed Appraisal stages.

*SMART Transport Planning Objectives*

Transport Planning Objectives will be refined as the appraisal progresses and more information becomes available, but they should be set with SMART principles from the start.

In advance of the Detailed Options Appraisal, Transport Planning Objectives should be finalised and, where appropriate, include a target which captures the nature and scale of the change.

A SMART objective will be:

- **Specific**: will say in precise terms what is sought and where
- **Measurable**: will set out the metrics that will be used as an indicator of success
- **Achievable**: there is general agreement that the objective set can be reached
- **Realistic**: the objective is a sensible indicator or proxy for the change which is sought
- **Time bound**: the objective will be associated with an agreed timeframe

To help with the development of SMART objectives, you should identify data which will be used to measure the success of the proposed objective at the Initial Appraisal Case for Change stage. This will form the start of the Monitoring and Evaluation Plan.

### Participation and Engagement

Reaching a broad agreement on the Transport Planning Objectives with those who will be affected by the change is a critical part of demonstrating a case for change.

## 3.7 Decision-Maker Point

The promoter must review the appraisal and make a decision on whether or not there is sufficient justification to progress to the Preliminary Assessment stage.

Some government funding requires an appraisal to be undertaken. Under these circumstances, we may review the report to confirm if the case for change has been made.

### 3.8 Reporting

A report should be completed for this stage. It should outline the process and findings of the Case for Change stage and as a minimum should:

**Case for Change: Key Points**

- Demonstrate a thorough understanding of how the transport system is used by the community
- Explore how and why the problems and opportunities are being experienced within the study area.
- Demonstrate a clear link between the evidence and the problems and opportunities identified
- Clearly differentiate between perceived problems which can be corroborated through independent evidence and those for which evidence is not available or inconsistent
- Include a Risk and Uncertainties log
- Include location-specific Transport Planning Objectives which express the outcomes sought for the study, without indicating potential solutions.
- Clearly demonstrate the link between the evidenced problems and opportunities and the Transport Planning Objectives This can be through a logic map but must be accompanied by a written explanation
- Identify metrics which could be used to measure the success of the proposed Transport Planning Objectives.
- Identify the Established Policy Objectives to be included within the PAF tool
- A regular dialogue should take place between those conducting the appraisal and decision-makers throughout the Objective Setting phase (and throughout the appraisal as a whole)

# 4 Option Generation and Development

## 4.1 Option Generation

Option Generation should take place before you complete the Preliminary Options Appraisal – you may wish to include an 'early' Option Sifting process where there is general consensus that a particular option will not contribute to the Transport Planning Objectives.

Option Generation should be unconstrained and should fully reflect the range of options available. Sources for option generation may include:

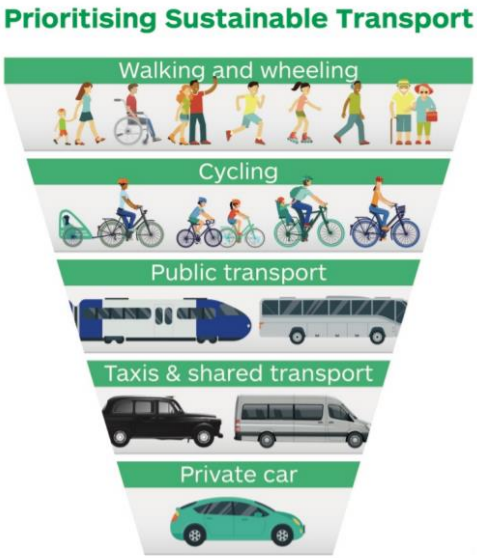
- Ideas from stakeholder and community engagement
- Proposals from previous studies
- Through the statutory planning and policy process, both for transport initiatives and land-use plans; and
- Outputs from the evidence-led process followed by the team undertaking the appraisal.

You may find it useful to consider concepts such as the Triple Access System. This model recognises that accessibility can be achieved through physical mobility (our transport system), spatial proximity (land use) and digital connectivity (telecommunications system). Identifying options in this way can avoid a singular focus on transport infrastructure options.

You will need to refer to both the Sustainable Travel Hierarchy and the Sustainable Investment Hierarchy when identifying options. Note that the NTS2 states that transport options focusing on reducing inequalities and the need to travel unsustainably will be prioritised.

*Sustainable Investment Hierarchy*


*Sustainable Travel Hierarchy*




You should investigate the possibility of packaging measures to achieve the desired outcomes. It is important to recognise cumulative impacts from the packaging of measures.

## 4.2 Early Option Sifting

You may wish to use this stage when a large number of options have been generated or where there is general consensus that a particular option will not contribute to the Transport Planning Objectives.

There are various ways in which options can be sifted. You must document why options have been taken forward to the Preliminary Options Appraisal or why they have been sifted out.

### 4.3 Option Development

Options may need to be developed into a reasonable number of broadly defined alternative options that can be subjected to appraisal. As part of option development, you should:

- Develop alternative options only where they are likely to perform significantly differently in Preliminary Options Appraisal
- Define each option so that it can be appraised independently from other options
- Develop costing and timescale information sufficient for the appraisal

Review and adjust options (or packages of options) as necessary – option development is an iterative process.

### 4.4 Reporting

At this point in your appraisal, you may only have a small number of options which you think are likely to be taken forward to Detailed Options Appraisal. You may therefore wish to skip Preliminary Options Appraisal and proceed directly to Detailed Options Appraisal.

Option Generation and Development should be included in a report alongside either Preliminary Options Appraisal or Detailed Options Appraisal; depending on which stage is progressed to next.

# 5 Preliminary Options Appraisal

## 5.1 Purpose of Preliminary Options Appraisal

The purpose of this stage is to determine which options merit a detailed appraisal.

In this respect, the Preliminary Options Appraisal is intended to focus appropriate effort and resources towards options which merit detailed quantitative appraisal and eliminate options which are unlikely to meet the Transport Planning Objectives, alleviate problems or realise opportunities identified during the Case for Change stage.

The Preliminary Options Appraisal stage includes the appraisal of options against:

- Transport Planning Objectives
- STAG Criteria
- Established Policy Objectives (PAF Tool)
- Feasibility, affordability and likely public acceptability of options

## 5.2 Preliminary Options Appraisal

### Transport Planning Objectives

A summary of the performance of each option against each Transport Planning Objective is required during Preliminary Options Appraisal. This will be mainly qualitative, but you can use quantitative information where available.

A qualitative assessment must be completed for each option against each Transport Planning Objective using a seven-point assessment scale. The assessment should consider the relative size and scale of impacts.

In some cases, it may be appropriate to include a range of scores – for example, if an option is likely to result in different impacts for different groups of people. A supporting narrative should be provided to explain any differences.

Stakeholder engagement may help in providing greater insight into the likely performance of options against Transport Planning Objectives.

### STAG Criteria

A qualitative assessment must be completed for each option against the STAG Criteria, using a seven-point assessment scale. The purpose of the assessment is to allow a comparison of alternative options, enabling those options which are unsuitable to be filtered out at an early stage.

Before completing this assessment, you should identify the likely requirements for impact assessments which may be undertaken as part of the future business case. This will help identify possible overlaps where data may be required, helping to ensure minimal duplication of future work.

See a list of potentially relevant impact assessments

A summary of the requirements for appraisal against the STAG Criteria is provided in the following sections.

*Environment*

The Environment criterion includes eight sub-criteria, although some may not be relevant to the study area or the options proposed.

The Environment sub-criteria are:

- Biodiversity and Habitats
- Geology and Soils
- Land Use (including Agriculture and Forestry)
- Water, Drainage and Flooding
- Air Quality
- Historic Environment
- Landscape
- Noise and Vibration

The main environmental attributes and characteristics of the study area should be summarised. The summary should include specially designated sites and known proposals for change. Environmental baseline data is important to allow an informed view of the vulnerability of the study area to likely changes. At this stage, the data will be generally limited to readily available existing information.

As part of the Preliminary Options Appraisal, it is important to:

- Identify the range of likely impacts on the environment
- Identify the extent to which these impacts need to be investigated
- Identify methodologies to be employed
- Define data availability and further data gathering requirements
- Set the indicative thresholds and significance criteria to be used in the Evaluation of impacts
- Identify broad mitigation measures
- Agree the above with statutory bodies

*Climate Change*

The Climate Change criterion comprises three sub-criteria:

- Greenhouse Gas Emissions
- Vulnerability to the Effects of Climate Change
- Potential to Adapt to the Effects of Climate Change

You should use available information to take account of the impact of each option on the sub-criteria using the seven-point assessment scale.

*Health, Safety and Wellbeing*

The Health, Safety and Wellbeing criterion comprises five sub-criteria:

- Accidents
- Security
- Health Outcomes
- Access to Health and Wellbeing Infrastructure
- Visual Amenity

A qualitative assessment should be completed using the seven-point-scale assessment.

*Economy*

The Economy criterion has two sub-criteria, which together should summarise the full extent of economic impacts.

- Transport Economic Efficiency (TEE) covers the benefits ordinarily captured by standard cost-benefit analysis – including traffic volumes, journey times, driver frustration or travel time reliability
- Wider Economic Impacts (WEIs) refer to any economic impacts which are additional to transport user benefits. How might the option help attract new jobs, help existing businesses, open up appropriate land for development?

Appraisals have traditionally focussed on the TEE assessment with less emphasis placed on WEIs. To ensure an effective economic assessment, both should be addressed.

As part of the Preliminary Assessment, only indicative information is required. What is important is to ensure that:

- Both positive and negative impacts are scoped and
- Areas and groups in society likely to be affected are identified, with indicative levels of impacts.

*Equality and Accessibility*

The Equality and Accessibility criterion includes five sub-criteria.

- Public Transport Network Coverage
- Active Travel Network Coverage
- Comparative Access by People Group
- Comparative Access by Geographic Location
- Affordability

At Preliminary Options Appraisal, a qualitative assessment should be completed for the overall appraisal against the Equality and Accessibility criterion using the seven-point-scale assessment, considering the relative size and scale of impacts.

**Equality Impact Assessment**

The Public Sector Equality Duties require public bodies to promote race, disability and gender equality. As part of this requirement public bodies should take due consideration of the impact of their policies and practices on race, disability and gender issues through the undertaking of an Equality Impact Assessment. It is also good practice for account to be taken of age, sexual orientation and faith.

Further information on the requirements of the Public Sector Equality Duties and Equality Impact Assessment process

**Established Policy Objectives**

Options should also be assessed against the established policy objectives identified in the Case for Change stage, using the PAF Tool.

### Feasibility, Affordability and Public Acceptability

The Preliminary Options Appraisal should also assess the feasibility, affordability and public acceptability of each option. You should consider:

- Feasibility – the feasibility of construction or implementation and operation (if relevant) of an option and the status of its technology (e.g. proven, prototype, in development, etc.) as well as any cost, timescale or deliverability risks associated with the construction or operation of the option, including consideration of the need for any departure from design standards that may be required;
- Affordability – the scale of the financing burden on the promoting authority and other possible funding organisations and the risks associated with these. The level of risk associated with an option's ongoing operating or maintenance costs and its likely operating revenues (if applicable); and
- Public Acceptability – the likely public response is of importance at this initial appraisal phase and reference to supporting evidence, for example results from a consultation exercise should be provided where appropriate.

### Hierarchies

You will have previously referred to the Sustainable Investment Hierarchy and Sustainable Travel Hierarchy as a means to guide your initial Option Generation and Development. As part of the Preliminary Options Appraisal, you should now clearly identify where your options sit within these two hierarchies and include a supporting narrative.

Where only options at the bottom of these hierarchies are identified, you should provide an explanation as to why more sustainable options are not being appraised.

### Risk and Uncertainty

The assessment of options should also include a qualitative assessment of how susceptible each option is to the uncertainties identified in the Risk and Uncertainties Log at the Case for Change stage.

## 5.3 Rationale for Selection or Rejection

The results of the Preliminary Options Appraisal should be presented clearly and concisely so that the decision maker can understand why options have been either taken forward to the more Detailed Options Appraisal or rejected.

Where there is insufficient information or data available to fully justify the rejection of a particular option then it should be taken forward to Detailed Options Appraisal.

## 5.4 Reporting

A separate report of the Option Generation and Preliminary Options Appraisal stage may be useful, particularly where popular options have been rejected. It should outline the process and findings and as a minimum should include:

### Preliminary Options Appraisal: Key Points

- A description of the option generation process and evidence that the full range of options were explored

- Evidence of how the Sustainable Travel and Sustainable Investment Hierarchy have been considered when generating options
- An explanation of why options have been taken forward for Appraisal or why they have been sifted out
- To allow alternative options to be considered, outline designs may be required, and an assessment made of capital and other costs, and implementation timescales
- An initial appraisal of the likely impacts of options against Transport Planning Objectives, using the seven-point scale
- An initial appraisal of the likely impacts of options against the STAG Criteria using the seven-point scale
- An initial appraisal of the fit of options with established policy objectives using the PAF tool
- An initial appraisal of the feasibility, affordability and likely public acceptability of options;
- At Preliminary Options Appraisal, reporting of qualitative information is all that is required but where available, quantitative information should also be provided
- The Preliminary Options Appraisal should be summarised using Preliminary Options ASTs.

**Preliminary Options Appraisal Summary Tables**

You must complete Appraisal Summary Tables (ASTs) for all options. These assist decision makers and reviewers by providing a summary of the outcome of the appraisal in a consistent format. The Preliminary Options ASTs should include:

- A brief description of the option;
- Summary background information on the geographic, social and economic context of the study area likely to be affected by the option;
- The Transport Planning Objectives set, as defined during Objective Setting, and a summary of the performance of the option against these objectives;
- A summary of the scoping appraisal of the impacts of the option against the STAG Criteria;
- Any relevant additional established policy objectives and a summary of the performance of the option against these objectives;
- A statement of the scope for implementation – i.e. feasibility, affordability and public acceptability; and
- A summary of the rationale for taking the option forward to Detailed Options Appraisal or a summary explanation of why the option is being rejected.

For each rejected option there should be discussion of its performance against the Transport Planning Objectives and any other reason for rejection. Full Preliminary Option ASTs do not need to be included for rejected options although you should keep partly completed ASTs as thy could be called upon for audit or inquiry purposes at a later date.

# 6 Detailed Options Appraisal

## 6.1 Purpose of Detailed Options Appraisal

The Detailed Options Appraisal provides a detailed analysis of an option's performance against:

- Transport Planning Objectives
- STAG Criteria
- Cost to Government
- Risk and Uncertainty

The Technical Database describes assessment techniques to support the Detailed Options Appraisal. The database may be subject to change as new techniques and methodologies emerge. We recognise that some appraisals may require different methodologies and techniques. If you are following an alternative methodology to that found in the Technical Database, you will need to consider what additional supporting evidence is required to support your approach.

If a Preliminary Options Appraisal has been undertaken it will be necessary to introduce quantitative measures to the appraisal to complement or even replace qualitative measures

## 6.2 Option Refinement

Option development is an iterative process – before starting the Detailed Options Appraisal, you can refine the options which have emerged from the earlier appraisal stage in light of new circumstances or supporting information. As you continue to develop your options, additional options may also emerge which you may wish to include.

## 6.3 Transport Planning Objectives

The Transport Planning Objectives must be finalised to ensure they are SMART. You will have identified data which will be used to measure the success of the objectives at the Initial Appraisal Case for Change stage. This data should be reviewed and clear targets which capture the nature and scale of the change be defined. The objectives should enable a quantitative appraisal and future monitoring and evaluation.

A description of how each option performs against each Transport Planning Objective should be provided.

## 6.4 STAG Criteria

The Detailed Options Appraisal against the STAG Criteria is outlined in the following sections – please note that the following sections contain the same information as per the overview of the STAG Criteria as part of the Preliminary Options Appraisal.

- Environment
- Climate Change
- Health, Safety and Wellbeing
- Economy
- Equality and Accessibility

### 6.5 Environment

The Environment sub-criteria include:

- Biodiversity and Habitats
- Geology and Soils
- Land Use (including Agriculture and Forestry)
- Water, Drainage and Flooding
- Air Quality
- Historic Environment
- Landscape
- Noise and Vibration

### 6.6 Climate Change

The Climate Change Criterion includes three sub-criteria:

- Greenhouse Gas Emissions
- Vulnerability to the Effects of Climate Change
- Potential to Adapt to the Effects of Climate Change

The Climate Change Scotland Act (2019) includes a target date of 2045 for achieving net zero carbon as well as a target of 75% reduction against 1990 emissions levels by 2030. The effect of each option on our ability to meet net zero targets should be assessed.

Your appraisal will also report the monetised value of Greenhouse Gas Emissions within the Detailed Option Appraisal Summary Tables.

It is also important to assess the vulnerability of each option as well as the potential of each option to adapt to the effects of climate change.

### 6.7 Health, Safety and Wellbeing

The Health, Safety and Wellbeing Criterion includes five sub-criteria:

- Accidents
- Security
- Health
- Access to Health and Wellbeing Infrastructure
- Visual Amenity

### 6.8 Economy

The Detailed Options Appraisal under the Economy Criterion has two sub-criteria which together should summarise the full extent of economic impacts. These are:

- Transport Economic Efficiency (TEE)
- Wider Economic Impacts (WEI)

### 6.9 Equality and Accessibility

Equality and Accessibility are broad concepts that defines the extent to which people and businesses to access goods, services, people and opportunities.

The Detailed Options Appraisal focuses on detailed qualitative and quantitative assessments of the following metrics:

- Public Transport Network Coverage
- Active Travel Network Coverage
- Comparative Access by People Group
- Comparative Access by Geographic Location
- Affordability

It should be noted there is also a further aspect to Accessibility – expressed or revealed accessibility i.e., the demand for travel.

This is captured through the Transport Economic Efficiency (TEE) analysis completed as part of the economic appraisal where a monetary value can be provided for observed and forecast travel demand.

### 6.10 Cost to Government

At Detailed Options Appraisal, you need to assess the net cost of an option from a public spending perspective. This cost can then be compared with the total benefits of the option in terms of the STAG Criteria. This allows an overall value for money assessment to be made.

Cost to Government refers to all costs incurred by the public sector as a whole, net of any revenues. The total net cost consists of:

- Investment costs – all infrastructure and other capital costs incurred by public sector operators
- Operating and maintenance costs - the annually recurring costs incurred by the public sector in running and maintaining the option considered
- Grant or subsidy payments required
- Revenues – for example user charges
- Taxation impacts

All investment costs presented should be adjusted for **Optimism Bias**. Other appropriate alternative processes – if available – may be used instead.

Costs and revenues to private sector should be separately identified.

### 6.11 Risk and Uncertainty

In line with the approaches taken in both the Case for Change and Preliminary Options Appraisal, the Risk and Uncertainty log should be used to document the steps to be taken to prevent and mitigate both risks and uncertainties.

It will be useful to engage with stakeholders, members of the public, and specialists during the early stages of a STAG study through to the STAG Detailed Options analysis in order to identify, control and mitigate risks identified.

#### Uncertainty Analysis

You will need to consider how future uncertainties could affect the performance of each option. This is key information and analysis should be focussed on uncertainties which have the potential to change the decision about which option(s) are taken forward to Outline Business Case.

The reporting must set out the dependency between the uncertainty and its optimal option.

### Sensitivity Analysis

It should be the norm, rather than the exception, to carry out sensitivity analysis on the key variables of each transport option considered during the Detailed Options Appraisal. These variables will usually have a significant impact on either the overall cost or benefit of the project.

### Risk Management

Risk management is a structured approach to identifying, assessing and controlling risks that emerge during the course of the option lifecycle. This supports better decision-making by developing a more thorough understanding of the risks inherent within an option and their likely impact. Risk management involves:

- Identifying possible risks in advance and putting mechanisms in place to minimise the likelihood of their materialising with adverse effects
- Having processes in place to monitor risks, and access to reliable, up-to-date information about risks
- The right balance of control in place to mitigate the adverse consequences of the risks, if they should materialise
- Decision-making processes supported by a framework of risk analysis and evaluation

At the level of individual transport projects, risk management strategies should be adopted in a way that is appropriate to their scale and impacts. The aim of risk management is not necessarily to completely eliminate risks, but to reduce risks wherever the cost of mitigation is less than the cost of the risk.

A Quantified Risk Assessment (QRA) should be presented for all transport options. As project design and development progresses, it will become possible to explicitly quantify and value risk factors. In general terms this is calculated by multiplying the probability of the risk occurring by the size of the outcome (as monetised) and summing the results for all the risks and outcomes.

## 6.12 Benefits Blueprint

For some projects, it may be appropriate to start considering a Benefits Blueprint. The Benefits Blueprint will be considered further as part of the Management Case of the SBC.

The purpose of a Benefits Blueprint is to maximise additional social and economic opportunities in the study area generated through implementing the proposed option. The workstream identifies and delivers additional interventions in the study area to realise these additional benefits. This will include a process to facilitate, manage and implement the additional interventions, including defined roles and responsibilities.

As part of the appraisal, an outline framework can be provided, with more details developed as part of the Management Case of the Business Case.

## 6.13 Reporting

A separate report should be completed for the Detailed Options Appraisal stage. It should outline the process and findings and as a minimum should include the following:

### Detailed Options Appraisal: Key Points

- A description of the option generation process and evidence that the full range of options were explored (if not already completed as part of a Preliminary Appraisal Stage)

- If completed, a summary of any refinement or changes to options following the Preliminary Options Appraisal
- Confirmation of the Transport Planning Objectives and how they will be measured
- A description of how each option performs against each Transport Planning Objective
- A description of how each option performs against each STAG Criteria
    - Environment
    - Climate Change
    - Health, Safety and Wellbeing
    - Economy
    - Equality and Accessibility
- A clear statement of the likely net cost of the options under consideration.
  Risk and uncertainty analysis.
- A clear demonstration of the steps taken to prevent and mitigate both risks and uncertainties identified. This should include also include a summary of the steps taken to assess uncertainty and should clearly identify key variables selected for sensitivity analysis, as well as the outcomes and implications for the proposed options. The Risk and Uncertainty log should be updated.
  An Options summary table
- The Detailed Options ASTs summarise the results of the Detailed Options Appraisal and are more detailed than the Preliminary Options Appraisal ASTs

### 6.14 Decision-Maker Point

The promoter should review the findings from the Detailed Options Appraisal Stage Report to make an informed decision about whether there is sufficient justification to progress the preferred option.

# 7 Monitoring and Evaluation

## 7.1 Purpose of Monitoring and Evaluation

The purpose of monitoring and evaluation is to determine the success of the implemented option in achieving the Transport Planning Objectives, performance against STAG Criteria and any impacts on established policy objectives.

Monitoring is the process of gathering and interpreting information on the performance of the implemented option.

Evaluation is a post implementation event designed to identify whether the implemented option is performing as originally intended.

## 7.2 Monitoring and Evaluation Plan

A Monitoring and Evaluation Plan must be developed as part of the appraisal. The Plan should outline how the outcomes of the implemented option will be monitored and evaluated.

The appraisal will have identified data to be used to measure the success of the Transport Planning Objectives. This data will help define the outcomes to be monitored. The Plan will set out how and when the indicators will be measured.

The Plan should also outline how the evaluation will be undertaken. The evaluation will likely include a:

- **Process Evaluation** – this is conducted at an early stage following implementation and is primarily concerned with how well the project has been implemented
- **Outcome Evaluation** – this is conducted once the project has been in existence for a sufficient period to enable an examination of actual performance against objectives.

People affected by the change should be consulted during the development of the Monitoring and Evaluation Plan.

The Plan will be reviewed at each stage of the Business Case process. The Plan may be modified depending on uncertainties identified in the Risk and Uncertainty Log and the extent to which the Plan is achieving reliable and cost-effective results.

## 7.3 Baseline Report

An outline Baseline Report, based on the information included in your Case for Change, must be prepared to accompany the Monitoring and Evaluation Plan. A completed Baseline Report will be prepared prior to the implementation of the option.

## 7.4 Monitoring

Monitoring performance allows a measurement of whether a project has been successfully implemented or not. Effective monitoring requires the regular analysis of information to continuously review the performance of the project against the Transport Planning Objectives, STAG Criteria and established policy objectives. As the results are assessed, the detailed performance indicators and targets may need to be re-defined.

Monitoring should identify any areas of under-performance and why. This will allow you to implement appropriate changes at an early stage.

The scope of the monitoring should depend on the level of resources available (both in terms of time and finances), the scale of the project and risks and uncertainties associated with project outcomes.

## 7.5 Evaluation

The evaluation will use information gathered for monitoring purposes but will also involve data gathering, analysis and detailed interpretation that is particular to the evaluation itself.

Evaluation is always undertaken against indicators and targets derived from the Transport Planning Objectives, STAG Criteria and relevant established policy objectives and involves comparisons of the 'do-minimum' with actual outcomes.

### Process Evaluation

A Process Evaluation is concerned with implementation, and it is therefore necessary to establish performance indicators and measures relevant to what is expected during implementation. These may be thought of as tests of good implementation practice.

Process Evaluation is useful in the early stages of implementation when there is scope for amending a project to make it more efficient or effective. Process Evaluation can highlight issues such as project selection and planning, the application and funding process, the way in which funds are allocated and the management of the project at national and local levels.

Process Evaluation should also highlight issues for the future Outcome Evaluation, including the extent to which the information being produced by the Monitoring process is likely to be adequate for subsequent Outcome Evaluation.

### Outcome Evaluation

Outcome Evaluation should look for clear and measurable outcomes from the project. The timing of an Outcome Evaluation needs to be carefully programmed. If undertaken too soon, final impacts may not have had time to 'work through', but if undertaken too late, resources will be wasted if the project is not efficient or effective.

Outcome Evaluations are intended to answer questions such as

- What is the extent of the identified outcomes?
- What were the costs of achieving this?
- Do these resources and outcomes together represent value for money?

The process used in an Outcome Evaluation may be set out as a series of sequential steps, as follows:

- Definition of scope and purpose;
- Project rationale;
- Aims and objectives;
- Measures and indicators;
- Base case for comparison;
- Analysis and interpretation; and
- Reporting and recommendations.

## 7.6 Reporting

Separate Monitoring and Evaluation Reports should be prepared based on the Monitoring and Evaluation Plan developed as part of the appraisal.

The Monitoring Report should provide a summary of key findings and trends. As part of the Monitoring Report the scope and timing of the Evaluation should be confirmed. Depending on the Monitoring results, it might be necessary to consider whether a detailed Evaluation is warranted before making any major changes to the project.

Evaluation Reports will be required to consider outputs from both the Process and Outcome Evaluations undertaken. The Reports should demonstrate whether a project represents a good use of resources, whether value for money could be improved, and, if so, how best to achieve this.

**Monitoring and Evaluation: Key Points**

- A Monitoring and Evaluation Plan will be developed as part of the appraisal. The Plan should outline how the outcomes of the implemented option will be monitored and evaluated.
- It may be appropriate to start considering a Benefits Blueprint or a Benefits Realisation Plan as part for your Monitoring and Evaluation Plan
- You will have identified data to be used to measure the success of the Transport Planning Objectives at the Initial Appraisal Case for Change stage. This data will help define Key Performance Indicators (KPIs) to be monitored.
- Evaluation is always undertaken against indicators and targets derived from the Transport Planning Objectives, STAG Criteria and relevant established policy objectives and involves comparisons of the 'do-minimum' with actual outcomes
- Process Evaluation. This is carried out early in the life of a project, before its full effects are known and concentrates on whether input (activity) and expected outcomes for a project are being/have been met; and
- Outcome Evaluation. This is carried out once sufficient time has elapsed for the project to have delivered its principal outcomes and assesses whether the Transport Planning Objectives have been achieved and the performance of the project against the STAG Criteria and the impacts of the project on established policy objectives and whether this has been done effectively and efficiently.