



Bonneagar Iompair Éireann
Transport Infrastructure Ireland

TII Publications



Project Appraisal Guidelines Unit 1.0 - Introduction

PE-PAG-02009

November 2024

PE

Planning & Evaluation

Technical

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Transport Infrastructure Ireland (TII) is responsible for managing and improving the country's national road and light rail networks.

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1. Context

This Unit is an introduction to the Transport Infrastructure Ireland (TII) Project Appraisal Guidelines (PAG). The document introduces key concepts in the appraisal process prior to individual PAG Units providing detailed guidance on how to conduct each phase of the appraisal process.

The TII PAG incorporate the requirements of project appraisal in the transport sector, which are set out in the following publications:

- “*Transport Appraisal Framework*”¹, Department of Transport
- “*National Investment Framework for Transport in Ireland*,” Department of Transport.

1.1 Transport Appraisal Framework

The Department of Transport (DoT) publication the Transport Appraisal Framework (TAF) provides Government guidelines regarding the appraisal of transport projects and programmes. TAF is published on a modular basis, with individual modules providing specific guidance on areas of appraisal and the appraisal process.

The Department of Public Expenditure, National Development Plan Delivery and Reform (DPENDR) publication Infrastructure Guidelines (IG) sets out the rules and procedures that apply to capital expenditure across the Irish public service. This includes guidance on appraisal practice and methods and parameters that should be used to ensure consistency across all sectors. TAF provides guidance on how the rules and procedures of the IG apply to projects and programmes in the transport sector.

The Project Appraisal Guidelines translate the requirements of TAF in relation to TII projects and programmes.

1.2 National Investment Framework for Transport in Ireland

The National Investment Framework for Transport in Ireland (NIFTI) is the DoT framework to guide and evaluate future investment in Irish land transport and contribute to achieving the goals of the Government's Project Ireland 2040 strategy. NIFTI provides a common approach to assess transport investment across Ireland and establishes the priorities which should be taken on board when making the case for further transport investment.

NIFTI contains modal and intervention hierarchies of investment, which establish Ireland's priorities for transport investment. The NIFTI modal hierarchy of investment ranks transport modes with active travel first, followed by public transport and finally road transport. This means that TII projects have had to evolve from being primarily road projects, to being multi-modal projects that encompass active travel and public transport elements. PAG has been updated to reflect this change.

The NIFTI intervention hierarchy is ranked as follows; (1) maintain, (2) optimise, (3) Improve, and (4) new infrastructure. These hierarchies aim to ensure that the use of existing assets is maximised as much as possible before new construction takes place.

¹ The TAF replaces the Common Appraisal Framework (CAF) for Transport Projects and Programmes. TAF is published on a modular basis (initially published in 2023) with changes incorporated into modules on an ad-hoc basis. Please refer to gov - Transport Appraisal Framework (TAF) (www.gov.ie) for the latest version of all TAF modules.

PAG takes account of the NIFTI priorities and hierarchies, integrating them into the appraisal process for TII projects.

1.3 National Roads 2040

National Roads 2040 (NR2040) is TII's strategy to deliver Project Ireland 2040 in respect to national roads and achieve the NIFTI investment priorities. NR2040 outlines TII's vision for the future of the national road network, which provides for the needs of transport users, responds to the environmental, safety and accessibility challenges that lie ahead. NR2040 includes thirty commitments in this regard, which have been integrated into PAG and are referenced, where relevant, in individual PAG units.

1.4 Relationship Between Project Appraisal Guidelines (PAG) and Project Management Guidelines (PMG)

The Project Appraisal Guidelines are focused on the appraisal elements of project development, such as building a successful business case, achieving net benefits for society and monitoring the project after delivery. The Project Management Guidelines (PMG) is different from PAG and provides guidance on managing and delivering TII projects. Communication will be required between the appraisal team and the project team in relation to the PAG and PMG processes to ensure all PAG and PMG deliverables meet the requirements of both sets of guidance.

1.5 PAG Relationship with Environmental Impact Assessment (EIA)

PAG aims to assess options to identify the outcome with the greatest net benefit for the state and society across a wide range of indicators. The PAG assessment may draw upon the analysis produced as part of the Environmental Impact Assessment (EIA) process e.g. to inform the assessment of environmental criteria in Multi Criteria Analysis. But it should be noted that PAG and EIA are separate forms of assessment that will reach separate conclusions.

The PAG assessment will be focused on a wide range of potential impacts across economy, climate, accessibility, inclusion and other indicators, while EIA will be focused solely on environmental impacts. It is important to realise that PAG and EIA are parallel, but independent forms of assessment. EIA guidance is not provided in PAG, other than mentioning the need to align with EIA requirements in some cases.

1.6 Objective of the PAG Process

The PAG appraisal methodology is a structured process, used to develop business cases for transport projects and schemes that align with policy goals. The PAG units are a guide to completing this process, providing a comprehensive appraisal methodology that can be applied to projects of all sizes via different appraisal pathways.

2. Purpose of Appraisal

The PAG appraisal process is designed to achieve the following aims:

- Provide a holistic assessment process which can assess the societal impacts of projects, in addition to considering the monetised benefits and financial return
- Help to deliver transport planning policy on the ground by integrating policy goals into project designs and business cases, particularly in respect to sustainable travel and climate change
- Respond to the climate change crisis by documenting the impact of transport projects in relation to the production of emissions, modal shift and maximising the use of existing assets in design
- Ensure that scarce public funds are allocated in an efficient manner by establishing the merits of a proposal using a consistent, transparent and comprehensive framework
- Support decision-makers in identifying the projects which can produce the most benefit to Irish society and prioritise investment in transport infrastructure to support vulnerable communities
- Understand whether planned projects achieved their set objectives and learn from experiences to further improve transport appraisal methods in the future

Individual PAG Units provide detailed guidance on how these aims will be achieved in appraisal, with each unit focusing on the methods and expectations at each Phase of project development.

3. Key Principles of Appraisal

This section outlines the key principles of the TII appraisal process, highlighting the approach that practitioners should take when applying PAG guidance in projects.

3.1 Proportionality

It is crucial that the level of detail used in conducting appraisal, and the resources used, are proportionate to the scale and complexity of the proposal under study. Every proposal should be subject to comprehensive and robust appraisal, but the detail of the appraisal process should be tailored to match the scale of decision being made.

The concept of proportionality in TII Projects and programmes will mean that a detailed appraisal may not be appropriate in every case and that a more simplified, or a light touch approach, may be more appropriate.

To cater for different scales of projects, the PAG process allows for different ‘appraisal pathways,’ which are defined early in the PAG process and can be updated as the project evolves. PAG has also introduced new PAG units specifically for active travel and greenway projects, allowing for less onerous appraisal guidance when assessing non-road projects.

3.2 Strong Rationale for Intervention

There must be a strong rationale for any proposed project or programme, which can be justified on the basis of analytical evidence, economic gain, environmental benefit and societal need. As part of forming the rationale for intervention, the existing transport deficiencies or challenges will be outlined, to frame the case for intervention in response to the issues identified.

The rationale for intervention needs to make the case for investment across a range of transport appraisal criteria and integrate multiple transport modes in line with the NIFTI hierarchies of investment.

3.3 Robust Objectives and Unbiased Appraisal

The issue of poor-quality objectives can be one of several shortcomings that commonly arise in public investment projects and programmes. Scheme objectives should not be tailored to suit a particular intervention by ‘case-making’ or engaging in ‘confirmation bias.’ There must be consideration of genuine, discrete options, and avoidance of the assessment of a previously selected option against clearly inferior options. If the appraisal process or objectives are viewed as biased or insufficient by TII, then changes and resubmission will be required. PAG Unit 3.0 provides detailed guidance on the expectations when developing objectives to ensure they are unbiased and fit for purpose.

The PAG process seeks to avoid common pitfalls by conducting an objective, open-minded, assessment where the analysis can meaningfully influence the appraisal outcome. In this respect, strong objectives play an important part in the assessment process, particularly in Phase 1 where they form the basis of strategic option assessment.

3.4 Multi-Modal Solutions

The PAG process intends to normalise the concept of ‘multi-modal’ solutions in Irish transport projects. To align with the NIFTI modal hierarchy and maximise benefits, it may be necessary to provide solutions across a range of transport modes. This can take the form of a road project, which integrates walking, cycling and bus lanes or an urban bypass on a strategic national road, which incorporates an HGV ban and traffic calming in the bypassed town to boost active travel. The shift towards multi-modal transport solutions is combined with a move away from corridor study areas, to consider the impact on entire study areas and regions, so that TII Projects will benefit everyone in the study area.

3.5 Evidence-Based Appraisal

PAG seeks to strengthen the evidence used to justify decisions in transport planning appraisal by integrating the latest tools and technology into each revision of the guidance. TII is continuously researching new ways of estimating the benefits and impact of transport schemes, with new tools developed each year. Examples of this include:

- The National Transport Model (NTpM) was developed by TII to standardise transport modelling for TII Projects and allow for detailed guidance to be integrated into PAG. The NTpM can be used to estimate the potential demand generated by projects across road, rail and bus at a strategic level
- TII’s Road Emissions Model (REM) takes outputs from transport models to produce operational emission estimates to assess the climate change and local environmental impacts of proposals
- TII’s ‘Tool for Economic appraisal of Active Modes’ (TEAM) assists with the Cost Benefit Analysis (CBA) of active travel schemes. TEAM can estimate the benefits associated with improved walking and cycling infrastructure. This allows for greenway projects, or other similar active travel schemes, to be assessed with quantitative tools but without the need for transport modelling
- TII’s Cycle Route Uptake and Scenario Estimation (CRUSE) tool generates a ‘cycle friendliness’ score and calculates the potential daily uptake for a cycle route based on factors such as distance, terrain, and attractiveness. This information can be used to inform decisions on whether to invest in cycle infrastructure as part of the Preliminary Options

TII continues to develop new appraisal tools to strengthen the evidence-based approach used in PAG.

3.6 Net Return for State Investment

A key principle of the PAG process is to ensure a net return for the state. This does not apply solely to economic benefits, such as ensuring a net return in revenue or monetised benefits, but instead regards a net benefit to the state across a wide range of indicators. Transport infrastructure is expensive, but it can generate economic, social, accessibility and environmental benefits which will produce a net gain for the state and the local population, if delivered correctly.

A robust appraisal process is essential to develop a strong business case, which can accurately estimate the impact of projects and help to achieve this principle. In this regard, PAG aims to eliminate project options that cannot be justified on financial, social or environmental grounds, and would not produce a net benefit for the exchequer. It is important that capital infrastructure investment is targeted at the areas where it is needed most, or where it will produce the most benefit.

3.7 Anticipate and Manage Risk

Every transport project is vulnerable to risks that can affect the budget, programme, achievement of goals or expected outcomes. PAG integrates risk management into the process, requiring the practitioner to anticipate and document risks throughout the process. This structured process aims to identify risks early in the project lifecycle and implement mitigation measures to reduce risk. Risk cannot be completely eliminated from projects; it is something that has to be managed and minimised by careful project appraisal and project management.

4. Appraisal Process

Figure 1.0.1 provides an overview of the PAG process across PMG Phases 0-7, showing the deliverable required at each phase and the focus of appraisal. It should be noted that this diagram shows the detailed appraisal process that applies to project over €30m. This figure also references DPENDR Decision gates.

Individual PAG Units are used to explain the guidance at each phase in greater detail, such as the content and methods expected in each of the deliverables. For example, in projects estimated to be over €30m, the PAG Units for each phase would be as follows:

- PAG Unit 2.1 for the Phase 0 - Project/Programme Outline Document
- PAG Unit 3.0 for the Phase 1 - Feasibility Report
- PAG Unit 4.0 for the Phase 2 - Options Report
- PAG Unit 8.0 for the Phase 3 - Preliminary Business Case
- PAG Unit 8.0 for the Phase 5 - Detailed & Final Business Case
- PAG Unit 9.0 for the Phase 7 - Ex-Post Evaluation

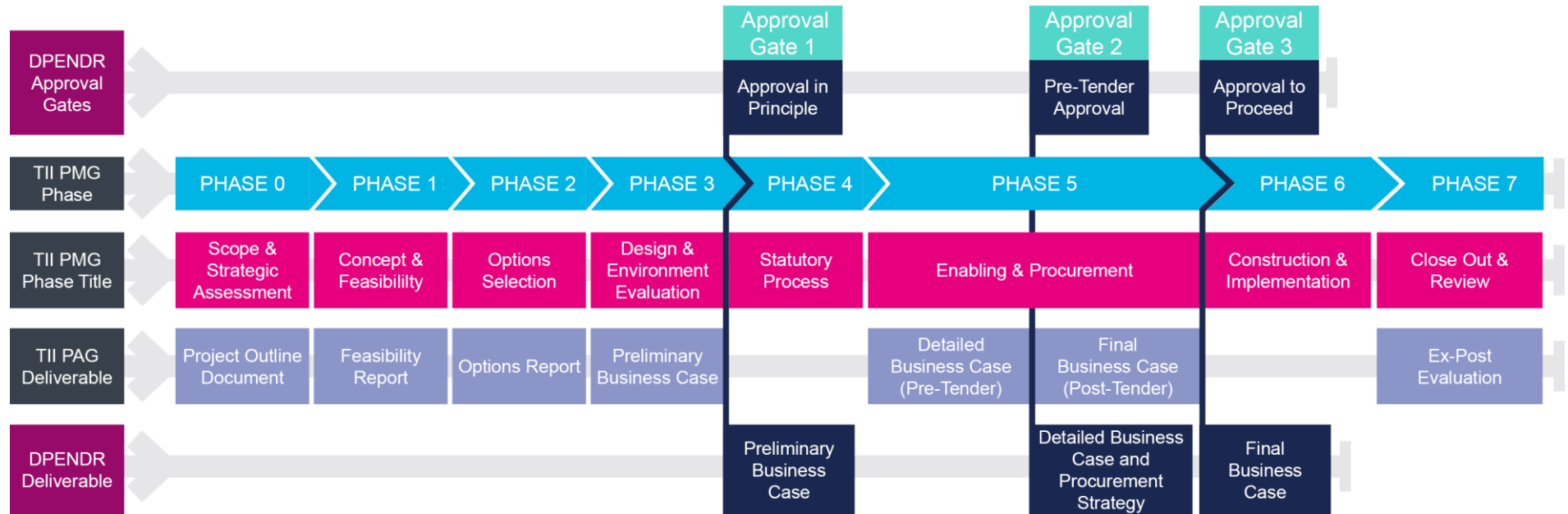


Figure 1.0.1 – TII PMG Project Phases & Main DPENDR Decision Gates/Deliverables

5. Appraisal Criteria

Each project must be assessed against the Government's appraisal criteria set out in the DoT TAF. There are seven criteria, as follows:

- Transport User Benefits and Other Economic Impacts
- Accessibility Impacts
- Social Impacts
- Land Use Impacts
- Safety Impacts
- Climate Change Impacts
- Local Environmental Impacts

The definition of each criteria is provided in TAF Module 7: Detailed Guidance on Appraisal Techniques. In the PAG appraisal process, individual PAG Units provide detailed advice on how to interpret the TAF appraisal criteria when assessing TII projects in Phases 1, 2 and 3. It is regarded as good practice to create project objectives under each appraisal criteria theme to aid in their assessment, but this should only be done if the criteria are relevant to the project, not for the sake of having objectives under every theme.

6. Appraisal of TII Projects

This section provides a definition of TII Projects, outlines the different Appraisal Pathways and provides an overview of the structure of PAG Units.

6.1 Definition of TII Projects

The concept of a TII Project has evolved to reflect the wider remit of TII and the ongoing policy shift towards sustainable travel and climate action. The concept of a 'TII Project' has broadened significantly to cover any project which is managed, supported, or funded by TII and appraised according to PAG requirements.

In respect to transport modes, TII has responsibility for the following infrastructure:

- National Roads Network – including active travel and public transport on national roads
- Light Rail Network – this involves both operation and development of new lines
- National Cycle Network – cycle infrastructure being developed between urban areas, but not within towns and cities, which is the remit of the NTA
- Greenways – delivery of new greenways

However, the concept of a TII project is not limited to these types of transport infrastructure and a project can involve proposals for modes of transport which are the responsibility of Local Authorities or the National Transport Authority. In these cases, liaison with the relevant authority will be crucial in project development, but it should not be seen as a barrier to integrating these modes into the design. TII is in favour of projects that produce the best transport solution, regardless of the transport authority involved. However, when other authorities are involved, cooperation and awareness of their guidance requirements will be important to ensure success.

TII Projects are expected to integrate the following concepts into their development:

- **Multi-Modal Projects:** A TII Project may be multi-modal. This could be a project proposing a road bypass around a town, which has a HGV ban and 30kph zones in the town centre. Another example would be a new off-line road project which incorporates bus lanes along sections with peak time congestion. It is important that this principle is incorporated into projects to ensure they meet the requirements of the NIFTI modal hierarchy
- **Reusing existing assets:** The NIFTI intervention hierarchy requires TII projects to maximise the use of existing assets as much as possible before constructing new infrastructure. An example of this would be constructing a new off-line road and downgrading the 'old' road to facilitate walking/cycling as part of the same project
- **Wider scope of intervention:** TII Project solutions should not be restricted to a narrow corridor, instead considering the need for intervention across a range of modes in the study area. Considering a wider study area will facilitate multi-modal projects and the reimagining of existing assets for new sustainable travel uses.

6.2 Appraisal Pathways

TII Projects² are classified into four categories in the TII Project Appraisal Guidelines (PAG), with each requiring a different appraisal pathway where the level of detail is scaled to the size of the project. The four budget categories are as follows:

- Greater than or equal to €200m
- Greater than €30m but less than €200m
- Greater than €5m but less than €30m
- Greater than €0.5m but less than €5m

Each budget category has a different appraisal pathway, which are explained in more detail in PAG Unit 2.0 - Project Appraisal Deliverables. The appraisal pathways are not rigid, and the requirements can be adjusted if there is a strong project rationale for changing them. For instance, a relatively minor change to a National Road to improve safety could have a large budget which brings it into the threshold for detailed appraisal, but it may not require transport modelling if a strong Business Case is possible without it.

² For the categorisation of projects capital expenditure costs are inclusive of VAT.

7. Programme Appraisal

A programme is a collection of related projects which are managed in a manner to realise benefits and controls that cannot be achieved by delivering the projects on an individual basis.

PAG will provide guidance for investment programmes in due course, following the direction of the Department of Transport and the Transport Appraisal Framework.

8. Structure of the Project Appraisal Guidelines

A full list of the PAG Unit series is shown in Table 1.0.1, which provides an overview of the range of resources which are available to guide project teams when conducting transport appraisal.

Table 1.0.1 – Structure of the Project Appraisal Guidelines

Unit	TII Publication	Title
1.0	PE-PAG-02009	Introduction
2.0	PE-PAG-02010	Project Appraisal Deliverables
2.1	PE-PAG-02011	Project / Programme Outline Documents
2.2	PE-PAG-02041	Project / Programme Outline Documents for Active Modes and Greenways
2.3	PE-PAG-02045	Logic Path Modelling
3.0	PE-PAG-02012	Feasibility Report
4.0	PE-PAG-02013	Options Report
5.0	PE-PAG-02014	Scoping of Transport Modelling
5.1	PE-PAG-02015	Construction of Transport Models
5.2	PE-PAG-02016	Data Collection
5.3	PE-PAG-02017	Travel Demand Projections
5.4	PE-PAG-02018	Transport Modelling Report
6.0	PE-PAG-02019	Cost Benefit Analysis Overview
6.1	PE-PAG-02020	Guidance on Conducting CBA
6.2	PE-PAG-02021	Preparation of Scheme Costs
6.3	PE-PAG-02022	Guidance on using TUBA
6.4	PE-PAG-02023	Guidance on using COBALT
6.5	PE-PAG-02024	TUBA & COBALT Sample Input Files
6.6	PE-PAG-02025	CBA Audit Checklist
6.7	PE-PAG-02026	CBA Report
6.8	PE-PAG-02027	Appraisal of Motorway Service Areas
6.9	PE-PAG-02028	Wider Impacts
6.10	PE-PAG-02029	Reliability and Quality

Unit	TII Publication	Title
6.11	PE-PAG-02030	National Parameters Values Sheet
7.0	PE-PAG-02031	Multi Criteria Analysis
8.0	PE-PAG-02033	Business Case
9.0	PE-PAG-02034	Ex-Post Evaluation
10.0		Not Used
11.0	PE-PAG-02044	Financial Appraisal
12.0	PE-PAG-02035	Projects (€5m to €30m)
13.0	PE-PAG-02036	Appraisal of Active Modes
14.0	PE-PAG-02037	Projects (€0.5m to €5m)
15.0		Not Used
16.0	PE-PAG-02038	Estimating AADT on National Roads
16.1	PE-PAG-02039	Expansion Factors for Short Period Traffic Counts

8.1 Project Appraisal Guidelines Associated Downloads

Additional files associated with the Project Appraisal Guidelines are available for download as zipped files from the Downloads page accessible from the TII Publications website homepage. Table 1.0.2 lists the files that are available for each unit of the Project Appraisal Guidelines.

Table 1.0.2 – Project Appraisal Associated Downloads

Unit	TII Publication	Title
5.3	PE-PAG-02017	NTpM Zone-Based Growth Rates.xlsx
		NTpM Zones Shapefile
		Metropolitan Area Shapefile
5.4	PE-PAG-02018	PAG Unit 5.4 - Sample TMR_v1.pdf
6.2	PE-PAG-02021	PAG Unit 6.2 Input Cost Spreadsheet - Phase 2_v3.xlsm
		PAG Unit 6.2 Input Cost Spreadsheet - Phases 3,4,5_v13.xlsm
		PAG Unit 6.2 Input Cost Spreadsheet - Phase 7_v3.xlsm
6.3	PE-PAG-02022	Economic_Input_TUBAv1.9.7(May2024).txt
		Economic_Input_TUBAv1.9.8(May2024).txt

Unit	TII Publication	Title
		Scheme_Input_Sample_TUBAv1.9.7(May2024).txt
		Scheme_Input_Sample_TUBAv1.9.8(May2024).txt
6.4	PE-PAG-02023	COBALT_Ireland_Input_Sample_v2.cbi
		COBALT_Ireland_Parameters_v4.cbp
		Cobalt_run_files_v2.txt
		COBALT-Ireland_PF_2023.12.01_v2.xls
		COBALT-Ireland_UF_2023.12.01_v2.xls
6.7	PE-PAG-02026	PAG Unit 6.7 - Sample CBA Report_v1.pdf
6.8	PE-PAG-02027	PAG Unit 6.8 - Business Case Template_v1.docx
9.0	PE-PAG-02034	PAG Unit 9.0 – Ex-Post Evaluation Template_v1.docx
12.0	PE-PAG-02035	TII Simple Appraisal Tool (Version 5).xlsm
14.0	PE-PAG-02037	PAG Unit 14 Projects (€0.5m to €5m) AST_v1.xlsx



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