

# Project Appraisal Guidelines

## Unit 7.0 Project Appraisal Balance Sheet

August 2011

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Version	Date	Comments
1.0	August 2011	New Guidance

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Attachments to this PAG Unit:

- PABS.xls
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## **1 Overview**

- 1.1. The Project Appraisal Balance Sheet (PABS) is a summary appraisal of project impacts based on the outputs of various forms of assessment carried out during the planning and design stages of project development. The PABS acts as a tool in summarising the expected impacts of proposed investment and provides a mechanism for prioritising schemes for investment.
- 1.2. A recent review of the PABS has resulted in a number of amendments to its content as well as its application within the NRA Project Appraisal Framework. The key changes are:
  - the format of the PABS has been updated to form a more robust assessment of project impacts;
  - the PABS should be completed during Route Selection of the preferred project option and updated through later stages of project development; and
  - The Environmental sub-elements now fully reflect requirements of the NRA Environmental Assessment and Construction Guidelines (EACG).
- 1.3. In addition to the above amendments, a revised structure for completion of the PABS has been developed which allows for. The following report provides a guide to completing the PABS using the automated spreadsheet, provided as an attachment to this PAG Unit.

## **2 Structure of the Project Appraisal Balance Sheet**

- 2.1. The PABS is based on a qualitative and quantitative evaluation of a range of criteria and elements as outlined in the Department of Transport Common Appraisal Framework and highlighted below.

Table 1: Criteria and elements for appraisal of road projects

Criteria	Elements
<b>Environment</b>	Air Quality and Climate Noise and Vibration Landscape and Visual (including light) Biodiversity – Flora and Fauna Waste Soils and Geology Hydrology Hydrogeology Architectural Heritage Archaeological and Cultural Heritage Non-agricultural properties Agriculture
<b>Safety</b>	Accident reduction Security
<b>Economy</b>	Efficiency and effectiveness Wider economic impacts Funding impacts
<b>Accessibility</b>	Deprived geographical areas Vulnerable groups
<b>Integration</b>	Transport integration Land use integration Geographical integration Other Government policy integration

2.2. The PABS automated spreadsheet specifies a number of questions to quantify the impact of the proposed road project on each of these elements. There is also a facility for recording non-quantifiable elements. The PABS is made up of four sections as follows:

- **Part A:** This section requests some general background on the project being assessed such as a brief project description, funding possibilities, project cost and project management information;
- **Part B:** This section deals only with the environmental impacts of the project. The assessment is broken down into 12 categories, reflecting the *NRA Environmental Assessment and Construction Guidelines* (NRA EACG). The environmental assessment for the project should be used to assist in quantifying the required environmental impacts. A summary rating of the scale of impact on each of the environment elements should be proposed by the AT/environment expert. This rating needs to be supported by the AT in the Business Case and be closely aligned to the information used to populate the spreadsheet. At the end of the spreadsheet, a summary ranking for the Environment section is automatically generated based on the individual scales presented for each element. The AT is invited to add additional comments on the appraisal, these comments as well as the ranking are then automatically carried through to the PABS in Part D;

- **Part C:** Includes an assessment of each of the remaining four appraisal criteria. A range of questions are proposed for each element which then automatically update the overall summary impact at the end of each section. Similar to Part B, the AT can provide additional comment on the ranking if necessary, for example if the AT feels that the overall ranking should be more or less positive, a comment can be made to suggest this;
- **Part D:** This is the PABS Summary Sheet which is automatically populated based on Part A, B and C inputs.

The structure and content of the PABS is fixed and should not be altered.

### 3. Project Management

3.1. The PABS should be completed at the following stages of the appraisal process:

- **Route Selection:** The PABS should be completed for the preferred route corridor only and be a key input of the Business Case. Note that the preparation of the PABS for the preferred route only does not mitigate the requirement for a Multi-Criteria Assessment of each route in the Route Selection process;
- **Preliminary Design:** Following Preliminary Design, the PABS should be updated to form one of the key deliverables for the Business Case. Any revisions to the traffic modelling and economic appraisal should be incorporated;
- **Statutory Procedures:** If the project scope, design or cost has altered since delivery of the Business Case, each of the outputs will need to be updated, including the PABS; and
- **Construction Documents Preparation and Tender Award:** If the project scope, design or cost has altered since delivery of the Business Case, each of the outputs will need to be updated, including the PABS.

3.2. It is the responsibility of the Project Manager or expert for each component of the appraisal to carry out the assessment. This ensures that the scaling of project impacts is meaningfully and realistically apportioned. The proposed scaling for each element should be clearly justified by the expert within the PABS and the Business Case.

3.3. The Design Office Project Manager (DOPM) is responsible for ensuring that the PABS is subject of internal audit for compliance with the procedures set out below, and for approving the PABS after completion of the internal audit. The NRA or an NRA appointed consultant will, in addition, undertake an external audit of the PABS at each project phase.

3.4. The following sections provide a guide to completing the assessment of each of the impact criteria in the PABS.

### 4. Environment

4.1. Environment is the most detailed of the five appraisal criteria in PABS. The appraisal reflects requirements of the NRA Environmental Assessment and Construction Guidelines which should also be used as a Guide in completing the PABS. The

environmental assessment should include all the information required for each of the following sections of the PABS.

#### *Air Quality & Climate*

- 4.2. The NRA's Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (Revision 1, National Roads Authority, Dublin May 2011) requires a number of quantitative assessments to be carried out in order to assist in examining the likely significant air quality impacts associated with a national road development proposal. These quantitative assessments include an assessment of the significance of predicted concentrations of relevant pollutants at sensitive locations as per Appendix 10 of the Guidelines. According to Appendix 10, air quality impacts can be described with descriptors ranging from Substantial Adverse through Negligible to Substantial Beneficial. Additionally, the Guidelines require the calculation of the Index of Overall Change in Exposure in terms of both PM10 and NO<sub>2</sub>, which allows an assessment of the overall air quality impact on people by the national road development proposal. A negative index indicates an overall positive impact, whereas a positive index indicates an overall negative impact. Given the relative importance of the two quantitative assessments mentioned above, these have been selected for inclusion in the PABS Environmental Input Sheet.
- 4.3. Standard CBA Analysis monetises the impact of the project on CO<sub>2</sub> emissions. The outputs of the analysis should be included in the PABS in terms of the Present Value of Benefits (PVB) from this element. The overall PVB from emissions to air should also be expressed as a ratio of the Present Value of Project Costs, this ratio is (PVB(CO<sub>2</sub> Emissions)/PVC). Where the project results in an increase in emissions over and above the do-minimum, the PVB will be a negative number.
- 4.4. The impact on climate is measured through a number of quantitative statements relating to the amount of carbon dioxide (CO<sub>2</sub>) likely to be produced for both the "Do Minimum" and "Do Something" scenarios.

#### *Noise and Vibration*

- 4.5. The NRA Guidelines for the Treatment of Noise and Vibration in National Road Schemes, Rev 1 25th October 2004 states three conditions which must be met for mitigation to be required. These are as follows:

*Mitigation measures are only deemed necessary when the following three conditions are satisfied at designated sensitive receptors:*

- (a) the combined expected maximum traffic noise level, i.e. the relevant noise level, from the proposed road scheme together with other traffic in the vicinity is greater than the design goal;*
- (b) the relevant noise level is at least 1dB more than the expected traffic noise level without the proposed road scheme in place;*
- (c) the contribution to the increase in the relevant noise level from the proposed road scheme is at least 1dB.*

- 4.6. For the purposes of PABS there are two quantitative statements required, the first is the number of properties meeting these three requirements and therefore requiring mitigation and the second is to state the number of properties that although requiring noise mitigation cannot feasibly be mitigated to the required level. Both of these are numbered per kilometre to allow for schemes of differing lengths to be assessed.

*Waste*

- 4.7. Road schemes have the potential to produce significant amounts of waste where a cut/fill balance cannot be achieved. Disposal of this material can have adverse effects on the environment in terms of transport of material to/from site causing increased vehicle trip with increased air pollution, noise levels along existing roads and also issues with regard to disposal to licensed sites. For the purposes of PABS three quantitative statements need to be provided, two with reference to the quantities of material to be disposed of off site (suitable and unsuitable material (U1 and U2) as defined in NRA Specification for Road Works Volume 1 Clause 601) and whether any contaminated land/hazardous material is being left in situ.

*Biodiversity (Flora and Fauna)*

- 4.8. The NRA has produced a revised ecological guidance document called Guidelines for Assessment of Ecological Impacts of National Road Schemes (Revision 2, 1st June 2009). The aim of this document is to provide guidance on the assessment of impacts on the natural environment during the planning and design of national road schemes. It elaborates on the references to ecology (habitats, flora and fauna) contained in the NRPMG.
- 4.9. National road schemes are large developments that have potential impacts on the natural environment (habitats, flora and fauna, including fisheries) along their entire length. One of the objectives of the planning stages of road schemes is to avoid or reduce the negative impacts of the final route on the natural environment. This is achieved in part through the Environmental Impact Assessment (EIA) process. The aim of PABS is to quickly highlight the number of sites of ecological value affected by the road project. There are two questions asked; the number of significant negative impacts sites of ecological importance and the number of significant positive impacts sites of ecological importance. The sites are then broken down as per the NRA Guidelines for Assessment of Ecological Impacts of National Road Schemes (Revision 2, 1st June 2009) from Local Importance (lower value) to sites of International Importance
- 4.10. According to the NRA Guidelines for Assessment of Ecological Impacts of National Road Schemes (Revision 2, 1st June 2009) an adverse effect on the integrity of a European site will be expressed as a significant impact on an ecological resource of international importance (this was not necessarily the case with previous revisions of this document). This means that the project proponents have determined that the project will adversely affect the integrity of the site (note that it is the competent authority, An Bord Pleanála will ultimately make this decision) having regard to Regulations 30 and 33 of the Habitats Regulation, 1997 (S.I. No. 94 of 1997) and Articles 6(3) and 6(4) of the Habitats Directive. In such a case the scheme project can only proceed where, inter alia, there is an 'absence of alternative solutions' and 'imperative reasons of overriding public interest' exist. The presence of a significant impact on an ecological resource of international importance will, therefore, operate as a warning flag. Appendix II of the NRA Guidelines for Assessment of Ecological Impacts of National Road Schemes (Revision 2, 1st June 2009) provides guidance in relation to Appropriate Assessment.

*Agriculture*

- 4.11. The impact on agriculture is one of the most significant impacts of road schemes due to the largely rural nature of green field schemes. The degree to which a new road affects an agricultural property depends on a number of issues such as:
- The type of farm enterprises carried out;
  - Farm size;
  - Land take;
  - The degree of severance with mitigation;
  - Viability;
  - Removal of buildings and / or facilities.
- 4.12. The impact assessment criteria to be used for rating agricultural impact range from Major Positive through Neutral to Major Negative.

*Non Agricultural Properties*

- 4.13. All affected properties and types of land use which are not of an agricultural nature are considered under this heading of Non agricultural properties. The impact assessment criteria adopted in the PABS are adapted from the EPA Guidelines on Information to be contained in Environmental Impact Statements (March 2002) ranging from profound negative to significant positive allowing also for an imperceptible impact.

*Architectural Heritage*

- 4.14. The NRA has produced a set of guidelines called the NRA Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes. The aim of this document is to provide guidance on the assessment of architectural heritage impacts during the planning and design of national road schemes in Ireland. It specifically outlines the approach to be adopted in the assessment of architectural heritage at the Constraints Study, Route Corridor Selection and Preliminary Design / Environmental Impact Assessment phases. The impact assessment criteria in the PABS are the same as stated in the Guidelines as adapted from the EPA Guidelines on Information to be contained in Environmental Impact Statements (March 2002) ranging from profound negative to significant positive allowing also for an imperceptible impact.

*Archaeological & Cultural Heritage*

- 4.15. The NRA has produced a set of guidelines called the “Guidelines for the Assessment of Archaeological Impacts of National Road Schemes.” The aim of this document is to provide guidance on the assessment of archaeological impacts during the planning and design of national road schemes in Ireland. It specifically outlines the approach to be adopted in the assessment of archaeology at the Constraints Study, Route Corridor Selection and Preliminary Design / Environmental Impact Assessment phases. The impact assessment criteria in the PABS are the same as

stated in the Guidelines as adapted from the EPA Guidelines on Information to be contained in Environmental Impact Statements (March 2002) ranging from profound negative to significant positive allowing also for an imperceptible impact.

#### *Landscape & Visual (including light)*

- 4.16. The quantitative statement for landscape and visual requires the number of properties affected by the scheme either in a positive or negative manner from profound negative to profound positive allowing for an imperceptible impact. A second quantitative statement regarding potential impact on the landscape. The landscape is divided into three distinct sections those with National designations or listings, County designations or listings and those not designated or listed but of significant landscape value.
- 4.17. Although the NRA do not currently have a set of guidelines with regard to assessing landscape and visual impact most environmental assessments have a reasonably standardised set of assessment criteria based largely on the EPA Guidelines and the UK DMRB Volume 11. Therefore as all EIA's are required to assess the visual impact of a scheme on properties the PABS now standardises the impact ratings so that the Appraisal Team can simply state the number of properties and landscapes within each impact rating.

#### *Soils and Geology*

- 4.18. The NRA Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes aim to provide guidance on the assessment of geological, hydrological and hydrogeological impacts during the planning and design of national road schemes in Ireland. It expands on references to soil and water contained in the NRPMG and specifically outlines the approach to be adopted in the consideration and treatment of geology, hydrology and hydrogeology at the Constraints Study, Route Corridor Selection and Preliminary Design / Environmental Impact Assessment phases. All construction projects, including national road schemes, are constructed in, or on, the geological environment. A wide range of geologically related issues therefore affect the planning and construction of roads. The impact assessment criteria in the PABS are the same as stated in the aforementioned Guidelines ranging from profound negative to profound positive allowing also for an imperceptible impact.

#### *Hydrology*

- 4.19. The NRA Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes is also the basis for measuring Hydrology impact in the PABS. It expands on references to soil and water contained in the NRPMG and specifically outlines the approach to be adopted in the consideration and treatment of geology, hydrology and hydrogeology at the Constraints Study, Route Corridor Selection and Preliminary Design / Environmental Impact Assessment phases. Road schemes have the potential to significantly affect surface water bodies such as rivers, lakes/ponds, estuaries and reservoirs. In particular construction of a road scheme may affect the flood response of a catchment or alter the established drainage pattern. The impact assessment criteria

in the PABS are the same as stated in the NRA Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes ranging from profound negative to profound positive allowing also for an imperceptible impact.

### *Hydrogeology*

- 4.20. The NRA Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes gives references to soil and water contained in the NRPMG and specifically outlines the approach to be adopted in the consideration and treatment of geology, hydrology and hydrogeology at the Constraints Study, Route Corridor Selection and Preliminary Design / Environmental Impact Assessment phases. The impact assessment criteria in the PABS are the same as stated in the Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes ranging from profound negative to profound positive allowing also for an imperceptible impact.

## **5. Safety**

- 5.1. Two principal road safety impacts are considered through the appraisal process: accident reduction and security of road users.
- 5.2. A large proportion of NRA schemes will aim to deliver road safety benefits, the most significant impact being accident reduction. Road safety costs and benefits of the scheme should be apparent based on the traffic modelling and economic analysis completed throughout project planning and design.
- 5.3. The key element of road safety impact to be taken into account through the PABS is the accident Benefit Cost Ratio (BCR). The Present Value of Costs and Present Value of Benefits for accident reduction should be recorded and the BCR will be automatically generated. The resulting BCR will automatically be ranked on a scale from Highly Positive to Highly Negative. This scale has been proposed based on an assessment of the accident BCR on a range of NRA schemes.
- 5.4. In addition to the economic impacts of accident reduction, the PABS also takes into account the security impacts of the proposed scheme. The security objective is concerned with improving the personal security of travellers and their property. Security should also take into account the security of vulnerable road users, such as pedestrians and cyclists. For example, schemes provided segregated infrastructure to cater for the needs of pedestrians and cyclists should be ranked highly.

## **6. Economy**

- 6.1. The measurement of economic impacts within the PABS aims to determine the relative welfare gain from implementation of the proposed project. At the Business Case Stage of project delivery, more detailed costings for the preferred option will be available and economic analysis will be completed. The appraisal of economic impacts therefore utilises a summary of both qualitative and quantitative data from

these assessments. Three elements are proposed as outlined in the following sections.

#### *Transport Efficiency and Effectiveness*

- 6.2. Economic efficiency and effectiveness is measured by the willingness-to-pay of the consumer, the financial impact on transport providers and the effects on government finance. These factors are generally captured through Cost Benefit Analysis (CBA). CBA analyses how projects could increase overall welfare, after allowing for economic costs. If Benefits exceed Costs, or if the Benefits/Costs ratio greatly exceeds 1, then the project should add to overall welfare of society.
- 6.3. The key measure of Efficiency and Effectiveness to be used in the PABS is the Benefit Cost Ratio, excluding the safety and environment components which have already been accounted for. The Present Value of Costs and Present Value of Benefits should be recorded and the BCR will be automatically generated. The resulting BCR will automatically be ranked on a scale from Highly Positive to Highly Negative based on an assessment of the BCR on a range of NRA schemes.

#### *Wider Economic Impacts*

- 6.4. The BCR does not capture all of the potential economic benefits of a project. The PABS therefore includes additional questions to identify and score any wider economic benefits of a project. As discussed below, these wider economic impacts may only arise in a minority of projects. A project which does not provide these wider economic impacts should receive a neutral score on this criterion. If a road project does provide wider economic impacts this should be considered a Highly or Moderately Positive impact:
- **Competition in the market:** Transport can affect the competitiveness of a market by reducing the cost of accessing markets. In theory improved transport can link two geographic markets that were previously separate. This will increase competition on the enlarged market, as consumers will have a wider choice of suppliers. This will increase efficiency and consumer welfare. Most road projects will score neutral in this regard but in exceptional circumstances road projects which connect two previously separate goods markets may deliver this benefit. Projects which present these opportunities should be ranked Highly/Moderately Positive;
  - **Agglomeration:** Benefits arise when markets or firms derive additional productivity from being closer together. Generally, most projects will have a Neutral impact in terms of agglomeration but projects which reduce travel time between two production centres resulting in an improvement in supply and contracting arrangements should be ranked Highly/Moderately Positive;
  - **Inward Investment:** The potential of the proposed project in attracting sustainable inward investment should be considered. Although most projects will rate as Neutral in this regard, it is possible that some projects could harm investment opportunities and would therefore be ranked negatively. In the case of a road scheme which is at the request of an inward investor, a Highly/Moderately Positive ranking should be proposed;

- **Labour Supply:** Better transport links may increase a market's employment catchment. While most projects will score Neutral in this regard, projects which connect two previously separate labour markets should score Highly/Moderately Positive; and
- **Urban Regeneration:** Although a large proportion of road network investment offers indirect urban regeneration benefits, in exceptional circumstances where a project addresses specific regeneration issues the project should be ranked Highly/Moderately Positive.

6.5. For further information and guidance, see *PAG Unit 6.8: Wider Impacts*.

#### *Funding Impacts*

6.6. Where non-exchequer funding is available for the project, this should be recorded in the appraisal process. Schemes without non-exchequer funding should be ranked as Neutral and positive scores should be ranked as follows:

- Slightly positive: less than 10% non-exchequer funding;
- Moderately positive: between 10% and 30% non-exchequer funding; and
- Highly positive: over 30% non-exchequer funding.

The potential source of non-exchequer funding should be recorded in Part A of the PABS.

## **7. Accessibility and Social Inclusion**

7.1. Government objectives for reducing social exclusion have been set out in the National Anti Poverty Strategy (2002). The overall aim of the Strategy is to reduce social exclusion as it affects vulnerable groups such as young people, older people, people with disabilities, ethnic minorities and lower socio-economic groups as well as identified deprived areas. These two elements, Deprived Geographical Areas and Vulnerable Groups, therefore form the basis of Accessibility and Social Inclusion impact assessment.

#### *Deprived Geographical Areas*

7.2. Transport has a major role in improving accessibility to employment, education and essential services and amenities. It is important therefore, with regards this element, that the impacts of the proposed scheme in improving access from socially excluded areas are accounted for. Due to data and resource issues, a detailed analysis of the social implications of transport investment may not be feasible, therefore the Appraisal Team should have regard to the impact the project will have on areas of identified social exclusion through the CLAR and RAPID programmes as well as broader accessibility objectives. These programmes have been put in place by the Government to target socio-economic deprivation on an area basis.

7.3. The CLAR programme is a targeted investment programme for identified rural areas which support physical, community and social infrastructure within identified rural areas of social exclusion. One of the key issues the programme aims to tackle is

depopulation by ensuring a high level of infrastructure locally to attract employment and services. CLAR provides funding and co-funding to Government departments, state agencies and local authorities to accelerate investment in these selected priority areas.

- 7.4. RAPID is a similar investment programme targeting urban areas. The programme has identified the most disadvantaged urban areas across the country. Strand One targets twenty five most disadvantaged urban centres while Strand Two target twenty provincial towns. Overall, the programme aims to increase Government investment in these areas and improve the delivery of public services through integration and co-ordination. An action plan for reducing social inclusion is prepared for each RAPID area and implemented locally by a dedicated team from across the public sector. Identified RAPID areas are highlighted in Figure 1 below.
- 7.5. In relation to CLAR and RAPID areas, the AT should consider whether the project will improve accessibility to and within CLAR/RAPID areas. For example, schemes connecting CLAR and RAPID areas would be ranked as Highly Positive, schemes which run directly through these areas as Moderately Positive. Schemes which do not impact on these areas in any way should be ranked as Neutral. In circumstances where project delivery may result in adverse impacts on CLAR and RAPID areas by, for example, isolating employment and social services the project should rank negatively.
- 7.6. Additional information on the CLAR and RAPID programmes and their designated areas can be found at [www.pobal.ie](http://www.pobal.ie).

#### *Vulnerable Groups*

- 7.7. To assess the wider impacts of the project in delivering improved accessibility for communities, the AT should consider the project impacts on:
- Access to employment for lower income groups; and
  - Access to vital infrastructure such as schools and hospitals.
- 7.8. In most circumstances, a road scheme will be neutral with regards each of the above criteria, however, in exceptional circumstances new road infrastructure may provide access to vital services and employment for identified. These schemes should be positively ranked within the PABS.

## **8. Integration**

- 8.1. The integration element aims to ensure planning for transport infrastructure takes account of other elements Government policy and infrastructure investment. Four types of transport integration are appraised to ensure that investment across the transportation portfolio is integrated towards achieving a common goal, these are outlined below.

### *Transport Integration*

8.2. This element addresses the promotion of integration of transport infrastructure and services by focusing on gaps in the existing network and improving opportunities for interchange between modes. Through the PABS, it is important that the AT give consideration to the impact of the project on integrating transport services as well as infrastructure. As such, the PABS should rank the proposed project on its merits in relation to:

- **Connectivity of the strategic road network:** It is important that proposed investment on the national road network is strategic in the sense that it creates a strong link to the existing network and adds value to it. In this regard, schemes which improve connectivity of the national road network or satisfy an identified gap in the network should be ranked positively. Similarly, those projects which little or no connectivity to the existing network should be negatively ranked;
- **Connectivity between transport modes:** Improving integration between transport modes and the delivery of more seamless transport connectivity is an important Government objective. NRA projects support this objective by improving integration between the road network and other modes. Through the appraisal process, projects which present new opportunities for public transport nodes or corridors should be positively ranked. Similarly, projects which could result in isolation of public transport services or infrastructure should be negatively ranked;
- **Support for sustainable transport modes:** Planning for road network infrastructure needs to incorporate the needs of non-mechanised modes such as walking and cycling. Projects which improve the connectivity of existing sustainable transport networks should be highly ranked while the possibility of a scheme hindering the development of pedestrian and cycling networks should also be taken into account;
- **Access to other transport infrastructure such as ports and airports:** Access to international ports and airports is of national economic importance and should be reflected in the appraisal of major road schemes. Although many schemes will rank as neutral in this regard, the potential of projects to impact on the capacity of routes serving these nodes should be accounted for in the PABS.

### *Land Use Integration*

8.3. Clarification of the compatibility between adopted land use objectives and the proposed scheme are investigated through this element. Land use integration impacts to be considered are:

- **Support for Local Development Plan:** The project should be compatible with the aims and objectives of local development planning frameworks. Schemes ranking positively in this regard should form part of the development

aspiration for the local area and have already been integrated into a sustainable framework for future development;

- **Strategic connectivity for long distance trips:** Development on the national road network primarily aims to cater for strategic long distance trips. This ensures investment is likely to present greater benefits regionally and nationally. It is preferable therefore that future development of the network responds to regional and national rather than local demand. The impact of the proposed scheme in catering for this demand should be reflected in the PABS. For example, projects which are expected to cater for a high proportion of local traffic should be rated negatively and the reverse for regional and national traffic; and
- **Mitigate risks of urban sprawl:** Urban sprawl is the unplanned and uneven pattern of land use development which can be driven by multitude of processes, including transport, leading to inefficient use of resources. Urban sprawl and the low density development it often supports can put the road network under immense pressure if unchecked. It is important therefore that planning of upgrades and new links to the road network mitigate the potential for development which is likely to adversely impact on the road network. Because it is difficult to ascertain the future implication of road development in relation to urban sprawl, most projects will rank as Neutral. However, in consideration of existing land uses, and the type and location of the proposed scheme, the AT may have reason to rank a project negatively in this regard.

### *Geographical Integration*

- 8.4. Improving connectivity within Ireland and to other parts of the world is a key objective of national transport policy. Three factors should be considered through the PABS in this regard: connectivity between Hubs and Gateways as identified in the National Spatial Strategy, connectivity to Northern Ireland and access to transport links with Europe and the rest of the world.
- 8.5. The National Spatial Strategy identifies Gateways as large towns or groups of large towns which have the critical mass in terms of social and economic infrastructure to drive the development of regions. Hubs are identified as those towns which will support, and be supported by, the gateways and provide a link to wider rural areas. The importance of transport links between the identified centres is emphasised in terms of its potential in strengthening the centres but also in strengthening the economic potential of Ireland by improving access to markets throughout Ireland. As a result, it is important that the PABS considers the impact of the project in improving access between Hubs and Gateways. Schemes which serve Gateways or Hubs or which propose to connect both should be ranked positively.
- 8.6. Improvements in cross border connectivity is one of the major objectives of the NDP All Island Infrastructure Co-Operation Plan. The Plan identifies efficient and competitive integrated public and private transport services as critical to the development of trade. Schemes which therefore contribute to this goal should be given recognition through the appraisal process. The impact of the proposed scheme in improving connectivity with Northern Ireland should therefore be ranked.

- 8.7. The Trans-European Transport Network is the strategic road, rail, air and water transport network which is proposed to serve the whole of Europe and accounts for half of all the goods and passengers transported within the European Union. Because of the economic importance of the network to the whole of the Union, projects affecting it should be highly ranked within appraisal.

*Other Government Policy Integration*

- 8.8. Although the latter sections incorporate a review of the relevant national and regional transport policies, it is important to ensure that proposed investment compliments wider Government policy. Themes that should be considered include:
- 8.9. The relative impact of a project in achieving these wider objectives needs to be accounted for in this final section.