

Project Appraisal Guidelines

Unit 6.12 CBA Report

August 2011

Project Appraisal Guidelines

Unit 6.12
CBA Report

Version	Date	Comments
1.0	August 2011	New Guidance

This document is available to download at www.nra.ie/publications/projectappraisal

For further queries please contact:

Strategic Planning Unit
National Roads Authority
St Martin's House
Waterloo Road
Dublin 4

Tel: (01) 660-2511
Email: info@nra.ie
Web: www.nra.ie

Attachments to this PAG Unit:

- *Sample CBA Report.pdf*
-

1 Introduction

- 1.1. After completion of a CBA, it is necessary to submit a full report to the National Roads Authority (NRA). The structure and content of the CBA Report are outlined in this PAG Unit, and apply equally to CBA using either COBA, TUBA or other manual methods.
- 1.2. A sample CBA report is available for download as part of this PAG Unit.

2 Responsibilities

- 1.3. Having carried out a cost benefit analysis, the CBA Team is responsible for producing a formal CBA Report for submission to the DOPM. The purpose of the report is to detail and justify the methodology, provide detailed information on the data inputs and to present the results of the economic appraisal.
- 1.4. The CBA Report is the primary output from the CBA process, and will contain all the information required by both the NRA and the DOPM to perform a full audit of the results.
- 1.5. A CBA Report will normally be required at Phase 2 Route Selection, Phase 3 Design, Phase 5 Tender and Phase 7 Closeout. The level of detail included in the report may reflect the phase at which it is prepared. For example, if default parameter values have been used during route selection, Section 5 of the report (as detailed below) will only need to state that default values have been used, with reference to the National Parameter Value Sheet (see PAG Unit 6.11: National Parameter Values Sheet). Conversely, a report produced at design, will have to contain full documentation on the derivation of local parameter values. At handover, review & closeout the report should compare the results with the design COBA results.

3 Structure of CBA Report

- 3.1. The CBA report shall contain a main report detailing the methodology and assumptions of the CBA process, and a set of appendices containing supporting information. The main report shall be structured as follows:

Section 1 – Introduction

- 3.2. An introductory section should set the scene for the report, identifying at what stage the assessment is being undertaken (route selection, design or handover, review & closeout) and broadly describing the nature of the scheme(s) being appraised. A map of the geographical extents of the scheme appraisal, showing the proposed scheme should also be included.

Section 2 – Software Specification

- 3.3. The report should confirm the version of the CBA software that has been used in the assessment, and the version of the National Parameter Values Sheet.

Section 3 – CBA Network

- 3.4. The rationale behind the extent of the area modelled will be set out. For TUBA, reference can be made to the Traffic Modelling Report on the basis that the modelled areas for the traffic modelling and the TUBA are identical. For COBA, a schematic diagram of the COBA node-link diagram should be presented in a clear format. The COBA node-link diagram will clearly illustrate the following data:

- Network layout and road names;
- Node numbers: nodes should be numbered starting with node number 101 and increasing in increments of 1, e.g. 101, 102, 103 etc. Where schemes are separated into specific sections or regions the first digit can be changed to distinguish each region clearly within the COBA output file, e.g. 201, 202, 203, 301, 302, 303;
- Link numbers: link numbers should be four digits in length and broadly relate to each node number into which they run, i.e. links 2011, 2012, 2013, and 2014 will run into node 201. Where 2-way links are coded, link numbers can be defined by running into either node at the end of the link. For example, a link joining nodes 201 and 202 can be defined by either 2011 or 2021;
- Do-Minimum and Do-Something traffic flows; and
- Road type of each link.

- 3.5. The required format for a COBA network diagram is provided as an example in Figure 6.12.1. The justification for a standard coding methodology is to facilitate easier interpretation of COBA output data files by the Design Office and the NRA. A separate diagram showing Do-Minimum and Do-Something flows is required.

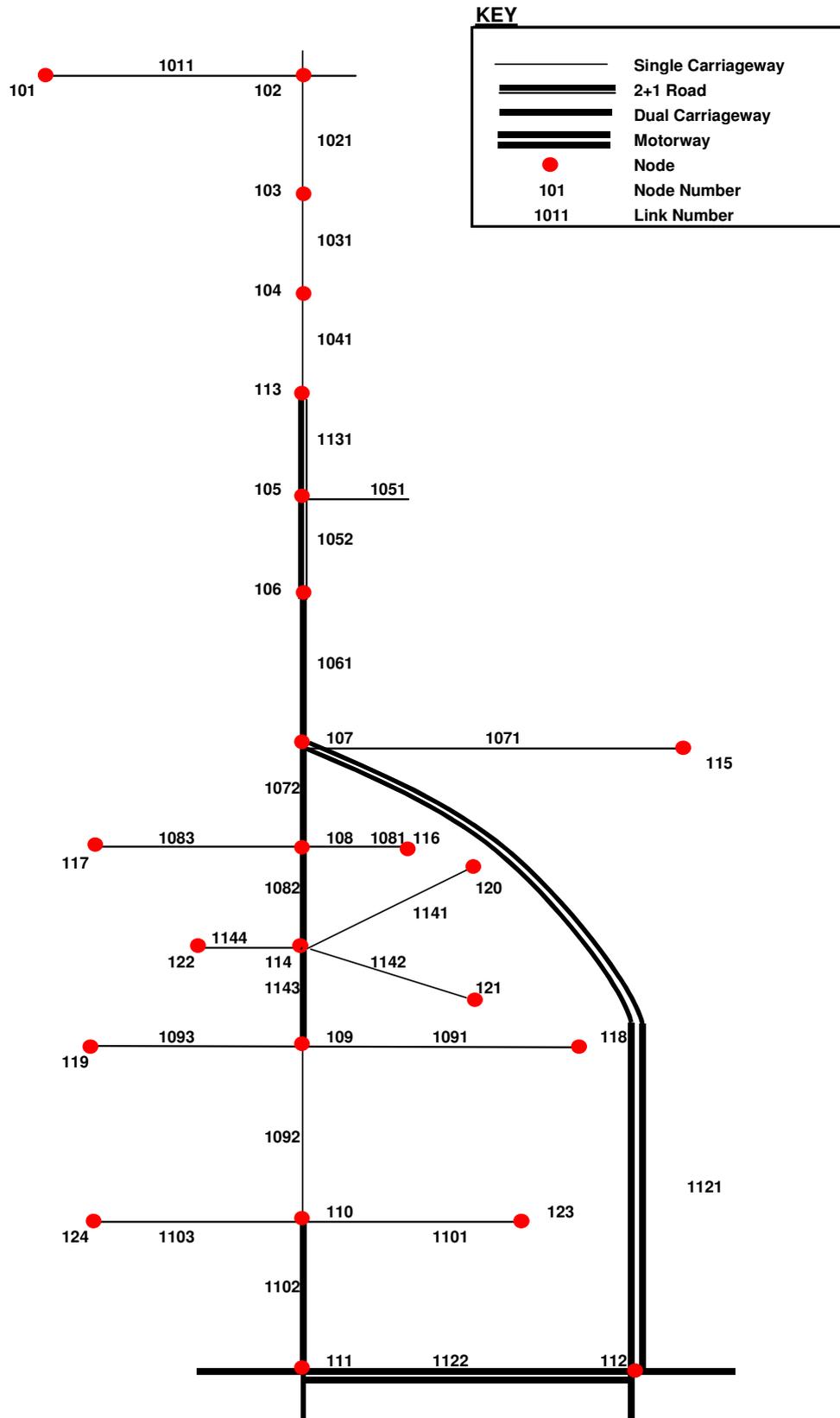


Figure 6.12.1 Example COBA network diagram

Section 4 – Data Collection

- 3.6. Details on data collection for the purpose of CBA model development should be outlined. Normally, this will comprise network data (link characteristics, speed limits, junction details etc), journey time surveys, accident data, and traffic surveys if appropriate. The compilation, checking and use of this data should be described.

Section 5 – CBA Input Assumptions

- 3.7. All data input assumptions should be described, with specific reference to the treatment of the CBA parameters. Significantly, where NRA default values have not been used in the assessment, the derivation of these values should be presented.
- 3.8. Information relating to the calculation of the scheme costs is also required, describing the approach taken. Completed spreadsheets as provided in *PAG Unit 6.7: Preparation of Scheme Costs* should be included.

Section 6 – CBA Validation

- 3.9. The process of validation of CBA models should be presented, where appropriate, which examines the base year journey times. Any significant deviation from journey times between modelled and surveyed data should be explained and justified.

Section 7 – CBA Results

- 3.10. The results section will contain the summary of results of the assessment for all scenarios (Opening Year, Design Year and Forecast year as appropriate for Low, Medium and High growth scenarios. This section should also include reports of any sensitivity tests that may be necessary and an incremental analysis of link and junction standards if required.
- 3.11. The report should contain a separate section on the Impact on the Public Accounts summary table, which fulfils the requirements of the exchequer cash flow analysis. For a handover, review & closeout CBA, section 7 should also contain a discussion of how the results compare with the CBA from previous project phases.

Appendices

- 3.12. The appendices provide all the supporting documentation that accompanies the CBA appraisal report. The appendices should include:
- Cost calculation spreadsheet (e.g. Total Scheme Budget and Target Cost);
 - The COBA input files;
 - The COBA output summaries;
 - A copy of the COBA schematic network diagrams;
 - A summary of any relevant data collected to validate the COBA model; and
 - A CD containing all the above information in digital form, including a full copy of the CBA output files and the scheme drawings