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Project Appraisal Guidelines for National Roads Unit 6.2 - Preparation of Scheme Costs

PE-PAG-02021
October 2016

PE Planning & Evaluation

Technical

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1. Context

This PAG Unit provides guidance on the conversion of scheme costs estimates into a format to be used in the Cost Benefit Analysis (CBA) of national road schemes. Specifically, the processes described in the document relate to the preparation of the input required for use with the TUBA program.

Guidance is given on how scheme costs are treated at different phases of the project and a worked example is presented. To assist in the process, spreadsheets for deriving the input costs during appraisal and evaluation have been developed, which are available for download, along with other appendices described in this document, from the "Downloads" section of the TII Publications website under section PE-PAG-02021_Unit 6.2.

A number of Input Cost Spreadsheets are available for download as part of this PAG Unit for the following project phases:

- Phase 2 Option Selection (PAG Unit 6.2 Input Cost Spreadsheet - Phase 2 Option Selection.xlsm);
- Phase 3 Design and Environmental Evaluation/Phase 5 Enabling and Procurement (PAG Unit 6.2 Input Cost Spreadsheet - Phases 3, 4 & 5.xlsm); and
- Phase 7 Closeout and Review (PAG Unit 6.2 Input Cost Spreadsheet - Phase 7 Closeout and Review.xlsm).

It is important to note that all scheme costs used in the economic appraisal must be agreed with TII in advance of any CBA commencing (see Section 3 for further guidance).

2. Components of Scheme Costs

The Scheme Cost in CBA is made up from the following elements:

- Main contract construction;
- Main contract supervision;
- Land and property acquisitions;
- Planning and design; and
- Archaeology – investigation & implications of finds.

For the purpose of the discussion here, costs associated with Residual Network, Advance Works & Other Contracts as outlined in the TII Project Management Guidelines and Cost Management Manual are included in the headings above.

All costs are input into TUBA exclusive of VAT.

2.1 Main Contract Construction Costs

Construction costs comprise:

- The **main works**, covering the preliminaries, earthworks, roadworks, main carriageways, interchanges and junctions, side roads, structures, signage, accommodation works, etc;
- The **ancillary works**, covering lighting, landscaping, noise mitigation, maintenance compounds, motorway communications, tolling, etc; and
- Those **works by other authorities**, such as Iarnród Éireann, Local Authorities and Utility Companies.

All construction costs should include any costs associated with measures required to mitigate the environmental impact of the scheme.

2.2 Archaeology

Archaeology costs comprise all those associated with the undertaking of excavations and the management of discovered sites.

2.3 Advance Works

All works required prior to execution of Main Contract.

2.4 Residual network

Works required to mitigate impacts or to make good the existing road network. Expenditure might also include Traffic Management on the residual road network that forms part of the scheme.

2.5 Land and Property Costs

Land and property costs are those which accrue as a result of the scheme, and may comprise both online and offline costs. Such costs are often difficult to predict, since they can depend on the outcome of arbitration or other factors. However, information on the likely costs involved is available from the outturn costs of previous schemes.

Land and property costs relate to all payments for land and property, including:

- **Acquisition costs** – the current valuation of the land and property, converted to the price base year;
- **Legal transaction costs** – the amount paid to estate agents and solicitors to support in the acquisition or sale, in addition to compensation costs. All acquisition or sale costs should exclude stamp duties;
- **Property management costs** – the costs of managing and preparing the land and property before it is used for the scheme. It is usually desirable to keep agricultural land farmed and properties occupied, rather than let them go unused. There may be a transaction cost of renting out the land or property to be included; and
- **Resale value of surplus** (i.e. off-line) land and property. The current valuation of the land and property that the Authority might buy, but would be subsequently sold. This is entered in the appraisal as a negative cost at the point in time in which it is likely to be resold.

Land and property costs should also include the value of land already owned by the Authority.

Payments for land and property may be made at various times before, during and after construction. Where land has been purchased in advance of its use for a scheme, the value of the land may have changed in the interval. This change reflects a change in the 'opportunity cost' of the land, that is, the value of the land when put to its best alternative use. Irrespective of the original purchase price, the current price estimated by the valuer should be used in the scheme appraisal.

2.6 Preparation – Planning and Design

Preparation costs include the fees payable to those involved in developing the project up to construction stage. These include costs associated with design, planning, public consultation and oral hearing, in addition to the costs of any surveys carried out during scheme preparation. If the relevant NRO (National Roads Office) undertakes the design work, the design costs incurred should be included in the CBA. In considering preparation costs, reference should be made to the discussion of 'bygone and retrievable costs' later in this PAG Unit.

2.7 Main Contract Supervision

Supervision costs are those associated with the costs of site staff acting on behalf of the client, together with the back office support. Supervision costs are inclusive of income tax but exclusive of VAT.

3. Maintenance

The difference in costs incurred from maintaining the Do-Minimum and Do-Something networks must be accounted for. Maintenance costs comprise traffic related works such as reconstruction, overlaying, resurfacing works, etc.

Default values maintenance costs by road type are provided in *PAG Unit 6.11: National Parameter Values Sheet*.

4. Operation

The difference in costs incurred from operating the Do-Minimum and Do-Something networks must be accounted for. Routine and non-traffic related maintenance costs (e.g. structures, drainage, street lighting, verge maintenance, repainting lines, signals, signage etc) which are largely independent of traffic flows should be included in the appraisal.

Operation costs would be particularly relevant on ITS and Tolling schemes where the costs associated with additional staff or independent operators should be accounted for where appropriate.

5. Timing of Costs

5.1 Dealing with Land Costs

An important general principle of cost benefit analysis (CBA) is that the cost of resources should be recorded at the time that the resources are to be used (that is, become unavailable for alternative uses), rather than when they are actually paid for. This issue is particularly relevant to land and property costs where the purchase of agricultural land, for example, may occur sometime before the time when farming of the land ceases. In such instances the acquisition cost should relate to the year in which the land is taken out of current use, which for many schemes will occur in the first year of construction. However, there are situations when this is an inappropriate assumption:

- Where significant land or property is taken out of use before the first year of construction;
- Where the land and property costs of a scheme are unusually large; and
- For all schemes at Design when the simplifying assumption should be reviewed if better information is available.

Land and property costs consist of a number of different items and it is important to consider when each resource cost is likely to be incurred. This may mean that instead of making the assumption that land costs are incurred in the first year of construction, costs are disaggregated and each element is input at different stages of the appraisal period.

The following treatment for land and property costs is recommended:

- **Scenario 1** – Land and property 'on-line', not farmed / unoccupied from purchase to construction. The costs to be input into the CBA appraisal are all acquisition costs and legal transaction costs, to be input at time of purchase, and any property management costs.
- **Scenario 2** – Land and property 'on-line', farmed/occupied until construction begins. The costs to be input into the CBA appraisal are legal transaction costs, estimated costs of renting and property management costs, to be input at time of purchase, with acquisition costs input when taken out of use for construction of the road scheme.
- **Scenario 3** – Land and property 'off-line', not farmed / unoccupied and later resold. The costs to be input into the COBA appraisal are the full purchase costs (acquisition and legal transaction costs) input when taken out of use, and resale value input when resold and returned to use.
- **Scenario 4** – Land and property 'off-line', farmed / occupied and later resold. The costs to be input into the COBA appraisal are the transaction costs of purchase and property management costs, which should be input at time of acquisition.

5.2 Bygone and Retrievable Costs

Bygones' are expenditures incurred prior to economic appraisal that cannot be retrieved as a result of any subsequent decision. A distinction should be made between expenditure that is genuinely a bygone, and that which is retrievable.

An example of a bygone cost might be the preparation costs that have been incurred in the design of a scheme in order to take it to the planning stage. These costs are not retrievable, as they will have been 'sunk' regardless as to whether or not the scheme goes ahead. However, land and

property costs are generally retrievable since it is usually possible to resell if the scheme does not go ahead. These costs should not, therefore, be treated as a bygone. Even if the property has actually been demolished the land on which the property stood will still have a resale value.

Unless otherwise directed by the TII, all expenditure incurred in the development of a scheme should be included within the CBA appraisal. Costs may only be treated as 'bygones' only with TII approval.

6. Shadow Pricing

Current guidance from the Department of Transport Tourism and Sport (DTTAS) Common Appraisal Framework (CAF) (2016) requires that a shadow price factor of 1.3 should be adopted for public funds. The CAF mandates that economic appraisals in the transport sector should be estimated in the basis of a shadow price of labour of 0.8 with a sensitivity analysis on the upper bound of the scale (shadow price of labour of 1.0).

A worked example of the application of shadow pricing in provided in Section 10 of this Unit.

7. Applicability of Scheme Estimates

CBA is required at four distinct project phases:

- Phase 2 Option Selection;
- Phase 3 Design and Environmental Evaluation;
- Phase 5 Enabling and Procurement; and
- Phase 7 Closeout and Review (a CBA is required for a sample of schemes at this stage).

At all stages of the appraisal process the best available information on scheme costs should be used in the CBA. Hence, depending on the phase, a different cost estimate is to be used in the economic evaluation of road schemes. At all phases, the costs used in the economic assessment must have been agreed by TII's Cost Estimation Unit.

The following terminology is used to describe the various types of cost estimates:

- **Feasibility Working Cost** - Estimates prepared during Phase 1 of the scheme (Concept and Feasibility).
- **Option Comparison Cost Estimate (OCCE)** - Estimates prepared during Phase 2 of the scheme (Option Selection).
- **Target Cost (TC)** – Required for Phases 3 and 5 of CBA. This is the realistic estimate of the Final Outturn for the project based on assumptions made, identified risks and defined scope of work inclusive of VAT and inflation. It does not take into account exceptional events happening on the project.
- **Total Scheme Budget (TSB)** – Required for Phases 3 and 5 of CBA. This is the formal cost estimate for the project incorporating the identified core cost elements, an appropriate contingency in respect of these elements, and an allowance for future inflation to the completion of the project. In addition, a programme level contingency, known as "Programme Risk", will be included to cover the situation of exceptional items occurring on isolated projects.

The risk related variance between the TC and TSB provides a means to take account of risk/uncertainty around cost estimates and scheme delivery and are used as cost sensitivities as part of the CBA process in line with the CAF guidelines.

At Phases 3 and 5 the CBA must therefore be run six times: one for each combination of traffic growth scenario ('high', 'central' and 'low') and cost estimate (Total Scheme Budget and Target Cost). The results of each of the six scenarios should be presented separately.

Additional scenario testing / sensitivity analysis may be required as part of Phases 3 and 5, in which case additional CBA runs may be necessary.

CBAs are required at Closeout and Review stage for a sample of schemes. The Design Office Project Manager (DOPM) should contact TII in advance of Phase 7 closeout stage to ascertain whether a closeout CBA will be required for their scheme.

Final outturn costs should be used as part of any Phase 7 CBA. The results of 'high', 'central' and 'low' traffic growth scenarios should be presented.

7.1 Contingencies

The OCCE, TC and TSB estimates described above all contain an element of contingency to account for project risk. There is no requirement for any further adjustment to be made to the approved estimates prior to developing cost data for input into CBA.

8. Converting Scheme Estimated to CBA Format

8.1 Correcting for Inflation

Scheme costs are incurred over a period of years. All costs should, therefore, be allocated to appropriate years for input to the CBA process.

The effects of general inflation should be removed by application of the Consumer Price Index (CPI) to convert from the current year to the price base year. For example, an expenditure of €1.15m in 2016 at a CPI inflation of 15% from 2011 to 2016 would be equivalent to an expenditure of €1.0m in 2016 but based on 2011 prices. The user undertakes this calculation before costs are input to the CBA file.

The CPI is used to covert scheme costs to the price base year using the following expression.

$$\text{Cost at Price Base Year} = \text{Latest Available Costing} \times \frac{\text{CPI}_b}{\text{CPI}_q}$$

where:

q refers to the year and month corresponding to the rates used; and

b refers to the price base year

8.2 Correcting for Year of Expenditure

Costs also require discounting to account for the year in which they are accrued. Discounting of costs to the present value year is undertaken by TUBA software. In the above example, the €1.0m expenditure in 2016 is discounted to 2011 values by applying the discount rate of 5%, leading to an expenditure of €0.78m in 2011 values and 2011 prices.

The discount rate (r) is used to convert a sum (S) received in year I to a value at the present value year (P) using the following expression.

$$\text{Present Value} = \frac{S}{(1+r)^{I-P}}$$

Discounting and the price base are discussed in detail in PAG Unit 6.1: Guidance on Conducting CBA. The latest information on the CPI and discount rate should be obtained from Transport Infrastructure Ireland (TII) and CSO where appropriate.

8.3 Relative Price Factor

The process of accounting for the changes in the price of construction relative to movements in the general price index is undertaken by application of the Relative Price Factor (RPF). For all project phases, an RPF value of unity is applicable unless the TII direct otherwise.

8.4 Indirect Taxation

All elements of scheme costs should be input into CBA net of indirect taxation and VAT. A different rate of VAT is applicable for the various expenditure headings.

Table 6.2.1: VAT rates

Base cost expenditure heading	VAT
Land and Property	0.0%
Main Contract Construction, Advance Works, Residual Network	13.5%
Archaeology	18.3%
Main Contract Supervision, Planning and Design	23.0%

8.5 Input to TUBA Format

Both costs and benefits are to be presented in CBA reports to a given base year. In addition, costs must be entered into TUBA in multiples of €1,000 and are generally input in factor prices of a given base year (i.e. exclusive of VAT and indirect taxes). Consequently, the cost figure inputted into TUBA is quite different to the TII estimates at each project phase.

The procedure to be used to convert cost estimates to TUBA format is largely the same for various phases. The procedure is described below, with reference to the user inputs into spreadsheets that have been developed to assist in this task. Copies of these spreadsheets for Phase 2 (Option Selection), Phases 3/5 and Phase 7 (Closeout and Review) are provided as annexes to this PAG Unit. These spreadsheets are available from the “Downloads” section of the TII Publications website under section PE-PAG-02021_Unit 6.2.

9. CBA Procedures

The procedures for the calculation of scheme costs associated with each project phase are outlined below.

9.1 Phase 2 Option Selection

1. Based on information in the signed off option comparison cost estimate spreadsheet, the user enters the breakdown of expenditure according to expenditure category (main contract construction, main contract supervision, archaeology, advance works, residual network, land & property, planning & design, maintenance and operation), as well as the total inflation allowance and TII programme risk. All these figures are inputted in units of €1 million.
2. The spreadsheet calculates the option comparison cost estimate itself (though the user should check this number to ensure that the figures were entered correctly).
3. The user reviews the assumed labour content (labour as a % of total cost) for each expenditure category as well as the applicable VAT rate, making changes where appropriate. In the case of schemes with external funding (e.g. some PPP schemes, schemes with developer contributions or schemes with EU funding) the Government funding percentage may need to be lowered from 100%, in which case advice from the TII Strategic & Transport Planning team should be sought.
4. Shadow pricing is taken into account and reflected in input costs.
5. The user enters CPI for year and month of the price estimate and an average value for the price base year. Current guidance is to apply an RPF factor of unity for all appraisals.
6. Using the data provided, the spreadsheet deducts the total inflation allowance from the option comparison cost estimate to bring costs to a current base year and then, using the CPI data, rebases to the price base year.
7. The spreadsheet applies the appropriate RPF factor and automatically deducts VAT from the resulting figures.
8. The spreadsheet calculates the undiscounted costs for input into the CBA, according to the year in which they accrue in multiples of €1,000 in base year factor prices.

9.2 Phase 3 Design and Environmental Evaluation / Phase 5 Enabling and Procurement

1. Based on information in the signed off scheme cost estimate reporting form, the user enters the Total Scheme Budget, Target Cost and the inflation allocated to Target Cost into the spreadsheet. All values are to be entered in multiples of €m.
2. The user reviews the assumed labour content (labour as a % of total cost) for each expenditure category as well as the applicable VAT rate, making changes where appropriate. In the case of schemes with external funding (e.g. some PPP schemes, schemes with developer contributions or schemes with EU funding) the Government funding percentage may need to be lowered from 100%, in which case advice from the TII Strategic & Transport Planning team should be sought.
3. Shadow pricing should be taken into account and reflected in input costs.

4. The spreadsheet subtracts the full inflation allowance from the Total Scheme Budget to get the un-inflated Total Scheme Budget.
5. The spreadsheet subtracts the full inflation allowance from the Target Cost figure to get the un-inflated Target Cost.
6. User enters CPI data for year and month when the price estimate was completed and CPI data for the price base year. User must also enter a value for RPF of unity.
7. Using CPI data the spreadsheet re-bases costs to scheme price base year.
8. The user enters the breakdown on the base cost expenditure into headings relating to main contract construction, main contract supervision, archaeology, advance works, residual network, land & property, planning & design, maintenance and operation. The sum of these expenditure items should exactly equal the un-inflated Target Cost.
9. VAT is automatically deducted from the resulting figures.
10. The user then allocates the proportion of each expenditure heading occurring over the years in which expenditure accrues.
11. Using the data in the scheme cost profile, the spreadsheet calculates the undiscounted costs for input into the CBA, according to the year in which they accrue in multiples of €1,000 in price base year factor prices. The spreadsheet produces two sets of cost data to enter into TUBA, one based on Target Costs and the other based on Total Scheme Budget.

Note that for design, statutory procedures and enabling and procurement CBAs, six runs are required, one for each combination of cost (Total Scheme Budget and Target Cost), and traffic growth scenario ('high', 'central' and 'low'). A CBA based on Total Scheme Budget and 'central' traffic growth scenario should ordinarily be taken as the baseline scenario.

9.3 Phase 7 Closeout and Review

1. The user enters actual expenditure figures into the spreadsheet for each single year of the project according to the expenditure item.
2. The user enters the VAT rate that is applicable to each item of expenditure as well as the labour content (labour costs as a percentage of total expenditure) and Government funds percentage – the percentage of scheme expenditure incurred by either local government or the national exchequer. Shadow price factors, currently unity, are then applied to costs.
3. The user enters the CPI index at expenditure year. The user re-bases the CPI data (with the price base year given the value of 1) and enters data into column provided.
4. The spreadsheet calculates the outturn cost at each year, exclusive of VAT and at the price base year for each item of expenditure.
5. The total factor cost at each year, at factor cost and at the price base year is entered into the CBA, according to the year in which the expenditure occurs in multiples of €1,000 in price base year factor prices.

9.4 Residual Value

A discussion on Residual Values is provided in Section 14 of PAG Unit 6.1: Guidance on Conducting CBA.

In TUBA, residual value can be calculated by a separate assessment of benefits from year 30 onwards.

10. Worked Example

The following worked example describes how to convert the Target Cost and Total Scheme Budget estimates to a format suitable for entry into TUBA. The example presented here is for a hypothetical road scheme "Scheme A", at Phase 3 Design and Environmental Evaluation. The corresponding spreadsheets for Phase 2 Option Selection and Phase 7 Closeout and Review are slightly different, but follow similar principles and should be easy to interpret by the user.

The derivation of the TUBA inputs requires cost data from the scheme cost estimate reporting form, duly signed off by the TII's Cost Estimate Unit. A sample scheme cost estimate is provided as Table 6.2.9.

In using each spreadsheet, the user is only required to input values into the coloured cells. Outputs are then calculated automatically.

Based on the agreed cost estimates, the user enters values for Total Scheme Budget (a), Target Cost (b) and Inflation (c) allocated to Target Cost. The spreadsheet then calculates:

- Un-inflated Total Scheme Budget (d) = (a)-(c), and
- Un-inflated Target Cost (e) = (b)-(c).

Table 6.2.2: Total Scheme Budget and Target Cost

	€m
Total Scheme Budget	€128.00
Target Cost	€106.00
Inflation allocated to Target Cost	€9.00
Un-inflated Total Scheme Budget	€119.00
Un-inflated Target Cost	€97.00

For this simplified hypothetical Scheme A we have assumed a CPI index for the price base year and month of cost estimate of 100.0. In practice these values will typically differ. The shadow price factors for Government funds (1.3) and Labour (0.8) are then entered. An RPF factor of unity is then applied.

Table 6.2.3: CPI, RPF and Shadow Prices

CPI / RPF DATA	
CPI Index for month of cost estimate	100.0
CPI Index for base year	100.0
Shadow Price of Government Funds	1.3
Shadow Price of Labour	0.8
RPF Factor	1.0

The spreadsheet then applies the CPI data to rebase the un-inflated Target Cost and the un-inflated Total Scheme Budget to base year prices.

Table 6.2.4: TC and TSB Calculation

TSB &TC	€m
Un-inflated Target Cost, base year	€97.00
Un-inflated Target Cost, base year, RPF applied	€97.00
Un-inflated TSB, base year	€119.00
Un-inflated TSB, base year, RPF applied	€119.00

The user then enters the un-inflated target costs under each heading of expenditure, the percentage of expenditure under each heading which Government funds accounts for and the estimated proportion of costs that are accounted for by labour. Default rates of Government funds (% of total expenditure), assumed labour content and applicable VAT rates are provided in the spreadsheet.

Table 6.2.5: Base Cost Expenditure Data

Base Cost Expenditure Heading	€m	Government funds (% of total expenditure)	Assumed Labour content	% of total	Applicable VAT rate
Main Contract Construction	€50.00	100%	30.0%	51.5%	13.5%
Main Contract Supervision	€5.00	100%	50.0%	5.2%	21.0%
Archaeology (all phases)	€2.00	100%	50.0%	2.1%	17.3%
Advance works	€10.00	100%	30.0%	10.3%	13.5%
Residual Network	€5.00	100%	30.0%	5.2%	13.5%
Land & Property	€20.00	100%	10.0%	20.6%	0.0%
Planning and Design	€5.00	100%	60.0%	5.2%	21.0%
Maintenance	€0.00	Scheme dependent, maintenance and operation costs of Do Min and DoSomething scenarios should Be accounted for in CBA			
Operation	€0.00				
Uninflated Target Cost	€97.00	100.0%			

The spreadsheet automatically applies the shadow price factors for Government funds (1.3) and Labour (0.8). The VAT is then automatically removed from both the un-inflated Target Cost (price base year, RPF applied) and the un-inflated Total Scheme Budget (price base year, RPF applied).

Table 6.2.6: Cost in Base year Prices

	TSB €m	Target Cost €m
Main Contract Construction	€62.15	€50.66
Main Contract Supervision	€5.24	€4.27
Archaeology (all phases)	€2.17	€1.78
Advance works	€12.43	€10.13
Residual Network	€6.20	€5.07
Land & Property	€30.68	€25.00
Planning and Design	€4.99	€4.07
Maintenance	€0	€0
Operation	€0	€0
TOTAL	€123.9	€101.0

Costs of each of the individual items are allocated according to the year in which they are expected to accrue. The proportion of expenditure (expressed as a percentage) within each category accruing in each year is taken to be identical to that in the un-inflated Target Cost profile in the scheme cost estimate reporting form. These percentages are entered into the spreadsheet under the 'Allocation of Costs to Each Year' heading.

Using this distribution, the spreadsheet automatically calculates the costs that are input to the CBA, for both the Target Cost and Total Scheme Budget scenarios. These costs are undiscounted and in multiples of €1,000 at factor prices at the appropriate price base year. Discounting is undertaken within the CBA programme.

For TUBA purposes, advance works and residual network costs are included within the Main Contract Construction costs. In addition, archaeology costs should be split 50/50 between Main Contract Construction and Preparation.

The output from the cost spreadsheets is presented as Tables 6.2.7 and 6.2.8 overleaf.

Table 6.2.7: Outputs for Total Scheme Budget (€ millions)

Year	%Construction	%Land	%Prep	%Super	%Maintenance	%Op	%Grant	%Dev
2016	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0
2017	0.0	7.7	3.0	0.0	0.0	0.0	0.0	0.0
2018	32.7	7.7	0.6	2.1	0.0	0.0	0.0	0.0
2019	32.7	7.7	0.0	2.1	0.0	0.0	0.0	0.0
2020	16.4	7.7	0.0	1.0	0.0	0.0	0.0	0.0
2021	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	81.9	**30.7**	**6.1**	**5.2**	**0.0**	**0.0**	**0.0**	**0.0**

Table 6.2.8: Outputs for Target Cost Scenario (€ millions)

Year	%Construction	%Land	%Prep	%Super	%Maintenance	%Op	%Grant	%Dev
2016	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	6.3	2.5	0.0	0.0	0.0	0.0	0.0
2018	26.7	6.3	0.5	1.7	0.0	0.0	0.0	0.0
2019	26.7	6.3	0.0	1.7	0.0	0.0	0.0	0.0
2020	13.3	6.3	0.0	0.9	0.0	0.0	0.0	0.0
2021	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	66.7	**25**	**5.0**	**4.3**	**0.0**	**0.0**	**0.0**	**0.0**

Table 6.2.9: Sample Cost Estimate Report

CBA Cost Conversion Spreadsheet - Phase 3 Planning & Design, Phase 4 EIA/EAR & The Statutory Processes and Phase 5 Advance Works & Constrcution Documents Preparation, Tender & Award.

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Scheme Name

FILL IN ALL CELLS SHADED IN THIS COLOUR IN INPUT SHEET

TOTAL SCHEME BUDGET / TARGET COST DATA

	€m
Total Scheme Budget	
Target Cost	
Inflation allocated to Target Cost	
Un-inflated Total Scheme Budget	€ -
Un-inflated Target Cost	€ -

CPI / RPF DATA

CPI Index for month of cost estimate	
CPI Index for base year	
Shadow Price of Government Funds	
Shadow Price of Labour	
RPF Factor	

UNINFLATED TC & TSB	€m
Uninflated Target Cost, base year	#DIV/0!
Uninflated Target Cost, base year, RPF applied	#DIV/0!
Uninflated TSB, base year	#DIV/0!
Uninflated TSB, base year, RPF applied	#DIV/0!

BASE COST EXPENDITURE DATA

Base Cost Expenditure Heading	€m	Government funds (% of total expenditure)	Assumed Labour content	% of total	Applicable VAT rate
Main Contract Construction		100%	30.0%	#DIV/0!	13.5%
Main Contract Supervision		100%	50.0%	#DIV/0!	23.0%
Archaeology (all phases)		100%	50.0%	#DIV/0!	13.5%
Advance works		100%	30.0%	#DIV/0!	13.5%
Residual Network		100%	30.0%	#DIV/0!	13.5%
Land & Property		100%	10.0%	#DIV/0!	0.0%
Planning and Design		100%	60.0%	#DIV/0!	23.0%
Uninflated Target Cost 1	€ -			#DIV/0!	

COSTS IN BASE YEAR FACTOR PRICES INCLUDING SHADOW PRICE FACTOR

	TSB €m	Target Cost €m
Main Contract Construction	#DIV/0!	#DIV/0!
Main Contract Supervision	#DIV/0!	#DIV/0!
Archaeology (all phases)	#DIV/0!	#DIV/0!
Advance works	#DIV/0!	#DIV/0!
Residual Network	#DIV/0!	#DIV/0!
Land & Property	#DIV/0!	#DIV/0!
Planning and Design	#DIV/0!	#DIV/0!

ALLOCATION OF COSTS TO EACH YEAR

Allocate the percentage of each expenditure heading according to year of occurrance. Note: the percentages in each expenditure heading must sum to 100%.

	Expenditure Headings (%)						
Year	Main Contract Construction	Main Contract Supervision	Archaeology (all phases)	Advance works	Residual Network	Land & Property	Planning and Design
2011 (and before)							
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							
2021							
2022							
2023							
2024							
2025							
2026							
2027							
2028							
2029							
2030							
2031							
2032							
2033							
2034							
2035							
2036							
2037							
	0%	0%	0%	0%	0%	0%	0%

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