NRA
An tÚdarás um Bóithre Náisiúnta
National Roads Authority

Project Appraisal Guidelines

Unit 6.4 Default COBA Input File

July 2011

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Version	Date	Comments
1.0	July 2011	New Guidance

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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

1 Introduction

1.1. This PAG Unit provides a default COBA input file that can be modified for use in COBA assessments. It is of particular relevance to those using the programme for the first time.

1.2. The example in this PAG Unit should be read in conjunction with *PAG Unit 6.2: Guidance on Using COBA*, which provides further detail on the structure of the COBA input file, and the type of information required.

1.3. It is not the intention of this Unit to provide an example of best practice that will apply to all schemes, as this depends on the individual scheme being appraised.

2. Default COBA File

Overview

2.1. The example COBA data file presented in this PAG Unit illustrates a hypothetical "Scheme A" at design phase. The first year of the scheme is predicted to be 2015. The data file illustrates how the default parameter values should be entered into the basic data section of the COBA input deck, and how scheme costs are entered.

Basic Data

2.2. The Basic Data section of the input file comprises network wide data that either remain constant throughout the project or change in the same way from the base year value in each scheme of the project. The following are mandatory records, and should be entered in the order presented:

KEY001 General title;

KEY003 Years for this scheme – i.e. defines the first and last years in the 30-year appraisal period. COBA allows users to redefine the present value year on the same record as the first and last scheme years; this should be left blank. Key003 also allows users to set a journey time year. This should be set to the same year as journey time surveys, which are required for all schemes, are undertaken to facilitate comparison between each;

KEY 004 Defining the network classification, flow period (i.e. AADT), year and month of traffic forecasts, accidents and whether or not tidality is to be modelled; and

KEY 009 Growth Rates by vehicle category from the traffic modelling.

2.3. If any of these records are omitted, then the program run will be reduced to a data check only. All other items in the Basic Data will take the NRA default values and should not be amended unless otherwise directed by the NRA.

Network

2.4 Figure 6.4.1 shows the network coded in the data file, with nodes and links labelled according to the convention recommended in *PAG Unit 6.2: Guidance on Using*

COBA. Link 1191 and 1193 represents a new motorway forming a bypass in the Do-Something scenario between Nodes 101 and 107 via node 109.

2.5 Links 1031, 1061 and 1071 are 2+1 Roads and provide an example of how such road types are now classified within COBA. Node 105 illustrates how a signalised junction should be coded.

Scheme Costs

2.6 The Target Scheme Cost profile is shown in Table 6.4.1. The derivation of the scheme costs is presented in detail in *PAG Unit 6.7: Preparation of Scheme Costs*. Scheme Costs are to be entered, in multiples of €1,000, into COBA using Key055 – these are undiscounted values at 2009 prices.

```
GENERAL TITLE                        COBA 11 TEST
PRINT PHASE DCO   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16
YEARS FOR THIS SCHEME -  FIRST      LAST  PRES-VAL                  JOURNEY TIME
                         2015      2044                                    2010
NTWRK CLASSIFICATION TF-PERIOD   TF-YEAR  TF-MONTH ACCIDENTS  TIDALITY
                  TNB      AADT      2015                 COM
TRAFFIC PROPNS  YEAR PER CAT-1     CAT-2     CAT-3     CAT-4     CAT-5     CAT-6
                2010  24 0.865     0.072     0.011     0.045     0.007
GROWTH OF TRAFF   FSTYR  LSTYR    CAT-1   CAT-2   CAT-3   CAT-4   CAT-5   CAT-6
                   2015   2030      1.1     1.1     0.4     0.4     0.4
                   2031   2040      0.8     0.8     0.2     0.2     0.7
                   2041   2050      999     999     999     999     999
9999
ACCPROPORTIONS   FORM TYPE MAX-S FATAL SERIOUS SLIGHT
                  COM    4   100 0.097   0.246  0.657

END OF BASIC DATA ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
SCHEME TITLE                        Do Minimum Network
NODE-LINK DATA      NODE LINK LINK LINK LINK LINK LINK
                     101 1011 2031
                     102 1011 1021
                     103 1021 1031
                     104 1031 1041
                     105 1041 1051 1052 1053
                     106 1051 1061
                     107 1061 1071
                     109 1053 1092
                     110 1052
                     111 1092 1111
                     201 3021 2011
                     202 2011 2021
                     204 1071 2041
                     203 2021 2031
                     205 2051 2061
                     206 2061 2071
                     207 2071 2081
                     209 2081 2091
                     210 2091 2101 1111
                     301 2101 3011
                     302 3011 3021
END OF NODE-LINK DATA ++++++++++++++++++++++++++++++++++++++++++++++++++++++++
FLOW ON         LINK   VMG1   VMG2   VMG3 INTO NODE
                1011  18686
                1021  18686
                1031  18686
                1041  18686
                1051  10277
                1052  14945
                1053   8652
                1061  14945
                1071  14945
                1092   8652
                2011  66467
                2021  47045
                2031  21862
                2041   9101
                2051  17562
                2061  11641
                2071  26183
                2081  31423
                2091  44304
                2101  53205
                3011 111031
                3021 128533
                1111   8652
9999
RURAL ROAD LINK  C AT DES LENGTH  CWID  HILLS DOWN BEND SWID VWID JUNC VISI MAXS
           1011  1  4       1.58  7.30     25    0  150       1.0             100
           1021  1  4       0.39  7.30     50    0   75       1.0              50
           1031 14  5       0.26  10.5     80    0   30                        50
           1061 14  5       0.34  10.5     35    0   30                        80
           1071 14  5       0.31  10.5     32    0   30                        80
           1092  1  4       1.42  7.30     18    0   30       1.0              80
           2011  4 10       3.62 22.00      0    0   30                       100
           2021  5  1      13.38 14.60      5    0   30                       100
           2031  1  4      20.18  7.30      6    0   30       1.0             100
           2041  1  4       6.83  7.30     25    0   30       1.0             100
           2061  1  4       8.48  7.30     22    0   30       1.0             100
           2081  1  4       7.93  7.30      3    0   30       1.0             100
           2091  5  1      15.38 14.60     18    0   30                       120
```

```
           2101  5  1      40.00 14.60      8    0   30                      120
           3011  6  1       1.53 22.00      0    0   30                      120
           3021  6  1       5.94 22.00      0    0   30                      120
           1111  1  4       7.60  7.30     16    0   30       1.0             80
9999
SMALL TOWN LINK  R AT S/D LENGTH WIDTH  HILLS        MAX-S     LD
           1041     4  1    0.08  7.30     80           50   0.04
           1051     4  1    0.46  7.30     15           50   0.37
           1052     4  1    1.26  7.30     40           50   1.13
           1053     4  1    1.29  7.30     28           50   0.52
           2051     4  1    0.62  7.30     40           50   0.37
           2071     4  1    2.73  7.30     18           50   1.91
9999
GATE  NODE   T LINK N WIDTH PO FLG   NUM TIME ENTRYCAP INFL AMP1 PMP1        MXD
       102                          700   60                               300
              1011 1  3.00          700   60
              1021 1  3.00          700   60
9999
SIGNALS    RST  LNK1 GR LNK2 GR LNK3 GR LNK4 GR LNK5 GR LNK6 GR    M M1   LTM MXD
       105 210  1041  0 1051  0 1052  0 1053  0                    0 99    24 300
      LINK INDEX LN  1L   R  GD 2L   R  GD 3L   R  GD WIDTH   1S2 STO OP  MVTS  XGR
              1  1   2 25   0  0   0   0  0   0   0  4.00   1 0   0
              1  2   3 99   0  0   0   0  0   0   0  3.50   1 0   0
              1  3   4 33   0  0   0   0  0   0   0  3.40   1 0   0
              2  1   3 25   0  0   0   0  0   0   0  3.60   2 0   0
              2  2   4 99   0  1 25   0  0   0   0  3.40   2 0   0
              3  1   4 25   0  0   0   0  0   0   0  3.90   1 0   0
              3  2   1 99   0  0   0   0  0   0   0  3.40   1 0   0
              3  3   2 33   0  0   0   0  0   0   0  3.40   1 0   0
              4  1   1 25   0  0   0   0  0   0   0  3.00   3 0   0
              4  2   2 99   0  3 33   0  0   0   0  3.50   3 0   0

9999
TURNF NODE F/P   FROM    TO 1   TO 2   TO 3   TO 4   TO 5   TO 6  INFL AMPI PMPI
       105  P           1041   1051   1052   1053
                1041       0    660    250     90
                1051     430      0    450    110
                1052     100    560      0    340
                1053     270    600    130      0
9999
LOCAL LINK ACC  LINK TYPE  RATE    YEAR1 NYRS   NO   NO   NO   NO   NO
               2031   4            2004    5    1    1    1    5    2
               2041   4            2004    5    1    1    0    0    3
               2051   4            2004    5    2    2    0    1    1
               2061   4            2004    5    3    3    2    3    3
               2071   4            2004    5    1    2    1    2    2
               2081   4            2004    5    0    0    1    1    0
               2091   1            2004    5    0    0    3    4    0
               2101   1            2004    5    1    1    2    1    3
               3011   1            2004    5    0    0    0    2    0
               3021   1            2004    5    1    1    1    1    4
9999
END OF SCHEME DATA ============================================================
SCHEME TITLE                    Do Something Network - CONTRACT 1
LINKS TO BE ADDED            LINK JOINS NODE TO NODE
                             1093        101     109
                             1091        109     107
END OF NODE-LINK DATA ++++++++++++++++++++++++++++++++++++++++++++++++++++++++
COSTS  YEAR       CAPITAL-COST   CONSTR-DELAY   MAINT-CAPITL    MAINT-DELAY
       2011             1290
       2012             3255
       2013            11604
       2014            18047
       2015             4577
       2016              548
9999
FLOW ON        LINK   VMG1   VMG2   VMG3 INTO NODE
               1011   5139
               1021   5139
               1031   5139
               1041   5139
               1051  10277
               1052   3736
               1053  12908
               1061   3736
               1071   3736
               1091  19725
               1092   8652
               1093  23840
               2011  70467
```

```
               2021  51045
               2031  25862
               2041  13101
               2051  21562
               2061  15641
               2071  30183
               2081  27423
               2091  40304
               2101  49205
               3011 107031
               3021 124533
               1111   8652
9999
RURAL ROAD LINK  C AT DES LENGTH  CWID  HILLS DOWN BEND SWID VWID JUNC VISI MAXS
           1091  5  1       1.28  12.0     15    0   20                       120
           1093  5  1       2.54  12.0     15    0   20                       120
9999
TURNF NODE F/P   FROM    TO 1   TO 2   TO 3   TO 4   TO 5   TO 6  INFL AMPI PMPI
       105  P           1041   1051   1052   1053
                1041       0    110    370    520
                1051      20      0    400    580
                1052      30    160      0    810
                1053      40    750    210      0
9999
END OF SCHEME DATA ============================================================
FINISH
```

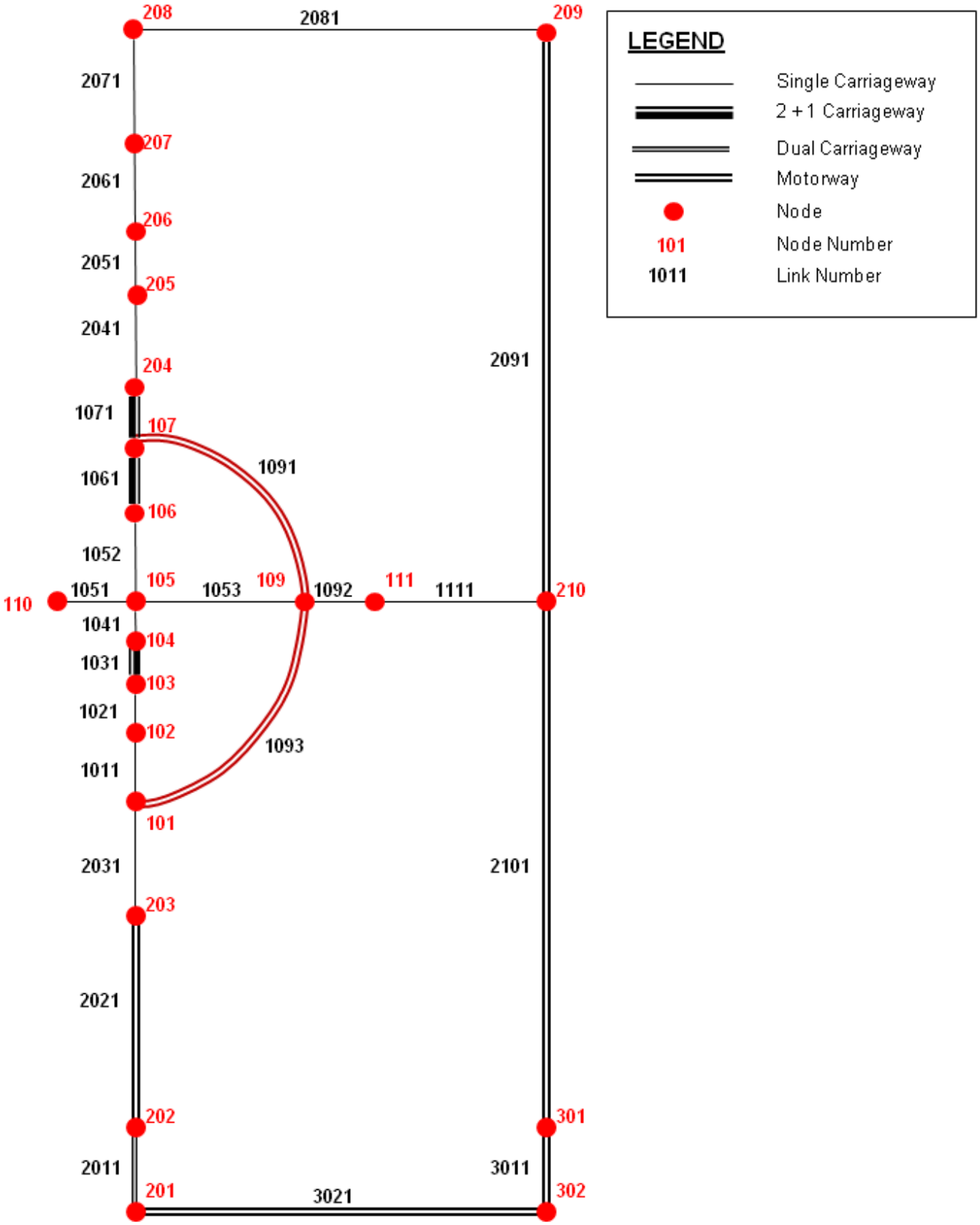

Figure 6.4.1 – COBA network

Table 6.4.1: Target Cost Spreadsheet

Year	Main Contract Construction (€m)	Main Contract Supervision (€m)	Archaeology (all phases) (€m)	Advance works (€m)	Residual Network (€m)	Land & Property (€m)	Planning and Design (€m)	**COSTS TO INPUT INTO COBA (€ '000s)**
2002 (and before)	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
2003	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
2004	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
2005	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
2006	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
2007	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
2008	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
2009	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
2010	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
2011	€ -	€ -	€ -	€ -	€ -	€ 0.4	€ 0.9	€ 1,290
2012	€ -	€ -	€ 1.4	€ 0.3	€ -	€ 1.1	€ 0.6	€ 3,255
2013	€ 7.4	€ 0.4	€ 1.4	€ 0.4	€ -	€ 1.8	€ 0.2	€ 11,604
2014	€ 14.9	€ 0.6	€ 0.4	€ -	€ 0.2	€ 1.8	€ 0.1	€ 18,047
2015	€ 3.2	€ 0.2	€ -	€ -	€ 0.2	€ 0.9	€ -	€ 4,577
2016	€ -	€ 0.1	€ -	€ -	€ 0.2	€ 0.3	€ -	€ 548
2017	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
2018	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
2019	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
2020	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
2021	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
2022	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
Total	**€ 25.6**	**€ 1.4**	**€ 3.2**	**€ 0.7**	**€ 0.6**	**€ 6.2**	**€ 1.8**	